Hoffmann Group



MACHINING AND CLAMPING TECHNOLOGY 1

Catalogue 56

Valid from 01/08/2025

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OUR ADVICE IS PERSONALIZED SO YOU CAN MAXIMIZE YOUR PRODUCTIVITY.

We will find exactly the right solution for every stage of your production process.

In industrial manufacturing, everything revolves around maximum productivity. If you are wondering how to achieve this, just ask us. You will receive professional advice tailored to your business - so that together we can find the perfect solutions for your project as well as the right product from our comprehensive range of machining tools and clamping technology. We can also offer you new approaches when it comes to use: innovative digital solutions make your production system more transparent and efficient.

We set the standard when it comes to making procurement simple. We create the right eBusiness solutions for you, meaning you can buy your quality tools with ground-breaking simplicity.

We offer personal, customized service online and in-person so you can stay focused on your projects.

OPTIMIZE YOUR PROCESSES. WITH OUR SOLUTIONS.

We support you every step of the way.

GOODS DISPATCH

LOGISTICS / PACKAGING

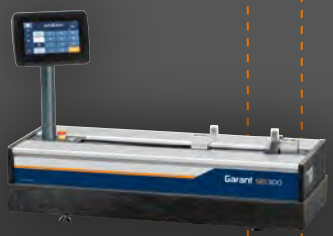
INSTALLATION



HCT

Hoffmann Group Connected Tools:
Bluetooth®-capable measuring tools and an innovative HCT app for quick documentation and data transmission.





GARANT Setting Bench:
85% time savings when setting measuring tools.



GARANT vibratoryfinishing machine GMT35:
Reduce your process and production times thanks to automatic reworking of your workpieces.

QUALITY ASSURANCE

Our eShop:
Save valuable time during ordering while enjoying maximum flexibility.

The availability of our products differs across regions. Simply contact us.



QUOTE DRAFTING

ORDER PLANNING



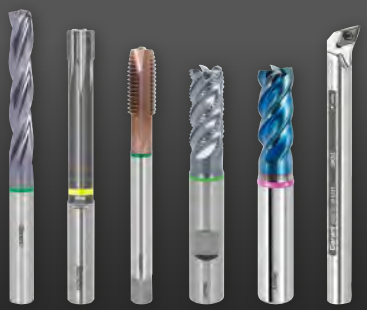
GARANT industrial vending solutions:
Ensure efficient C-parts management and goods or tool issuing.



WORK PLANNING

GARANT VG1 pre-setting device:
Guarantees efficient and precise measurement and pre-setting of machining tools.





GARANT Master range:
Our best drilling, thread-cutting, milling and turning tools. For high demands in different materials and applications.

PRODUCTION

SIMPLY AT A GLANCE: OUR RANGE. FOR YOU.

These are our products, solutions and services – simply everything to make you even more successful.

A top range of selected tools, best price-performance ratio

- **Approx. 120,000 state-of-the-art quality tools** carefully pre-selected for you.
- Product management available around the **world**.
- Catalogue available in **17 languages**, in printed form, online and as an app.

Personal, flexible and digital services

- eTool
- ToolScout
- Regrinding service
- Calibration service
- Workstations and storage planning and installation
- Textile customisation
- Wear test support and measurement
- Protection plans
- Connected Metrology

Maximum reliability

- **99% Availability of products** (excluding projects)
- **Perfect delivery accuracy.**
- **95%** of our customers class us as a preferred supplier.

Efficient eBusiness solutions

- eShop for **quick and secure ordering**.
- **Electronic catalogue** in 17 languages.
- simple system – **procurement market place** for C items with over 80 million items.
- Electronic data interchange for efficient business processes.
- GARANT Tool24 and HOLEX 24seven industrial vending solutions.

Hoffmann Group

Competent support team

- **Throughout** Europe.
- Consistent support from field sales, key account managers, application technicians, metrology technicians, technical advisers for workstations and storage, technical advisers for occupational safety, eBusiness experts, technical advisers in internal sales.
- A total of **more than 1,400** qualified and motivated technical advisers.

Garant Our system brand

- **The range:** More than 55,000 top certified tools of the highest quality for all application areas.
- **GARANT expertise:** Developed with users, suppliers and 12 of our own technology centres.
- **A success story:** At your side every day for more than 50 years, and recognised with more than 55 awards.
- **The quality promise:**
  10-year warranty on GARANT products.*

Market leader for quality tools

- **Number 1** in Europe.
- **Global** availability.

HOLEX Our quality brand

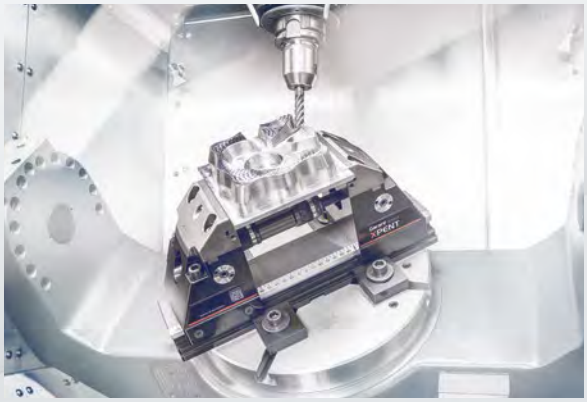
- **A wide range:** More than 17,000 tools forevery standard application.
- **Focus on functionality:** Exactly those products that you really need.
- **Solid and proven:** Industrial quality for everyday use.

* 10-year warranty on materials and manufacture of GARANT products when used as intended, excluding regular wear as a result of mechanical stress and excluding workstations and storage solutions installed in containers as well as all electronic components.

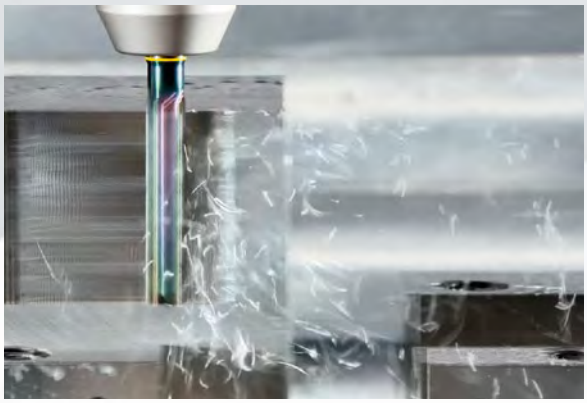
WE CAN HELP YOU SET UP YOUR MACHINING PROCESSES FOR LONG-TERM SUCCESS!

We are industry experts. This means we always have a solution that is right for you. Everything to make your everyday work easier, save money, and increase productivity in the long run.





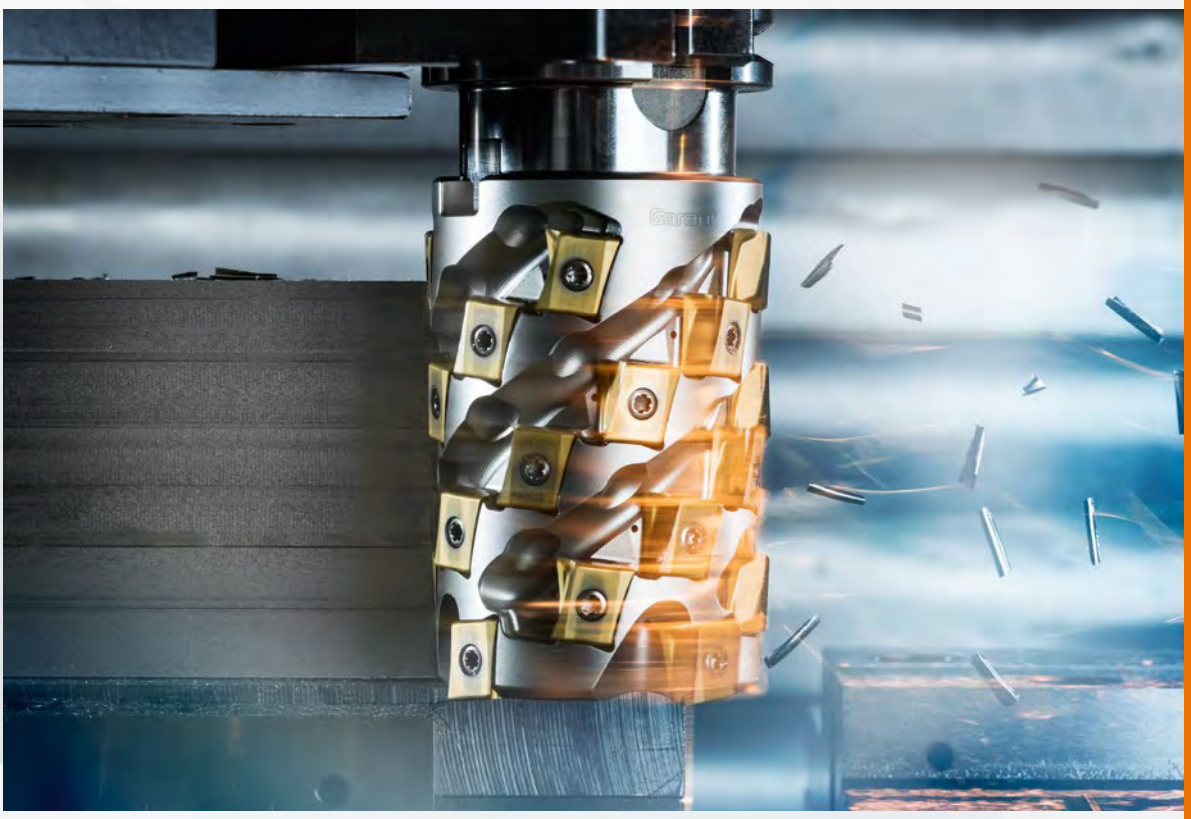




Good advice just for you:

Expert knowledge from machining specialists

- Our **application technicians** are specialists for **boring, milling** and **turning**, as well as **clamping technology.**
- **Valuable expertise** on the use of high-quality cutting edge technologies and clamping technologies.
- **Innovative solutions** for improving the production process.









Garant

MY MOST ACCURATE COLLEAGUES WHEN IT COMES TO MACHINING.

GARANT machining and clamping technology will make your production work processes faster and more reliable. With systematic, intelligent solutions.

Sophisticated systems for greater efficiency

- **GARANT Softcut:** high-precision shoulder mill with irregular pitch for very smooth cutting. High-performance inserts, ideal for general-purpose use in all material groups and automated production lines.
- **GARANT HB7020-2:** high-performance turning grade for machining steel, designed for maximum productivity.
- **GARANT X-Team:** powerful clamping technology for systematic 5-axis processing.

More than 55,000 certified system-based tools for all application areas in the highest quality (VDA 6.4; ISO 9001) provide systematic solutions for your workplace. GARANT tools stand for the utmost reliability. This is why we also provide a 10-year warranty on all GARANT products.*



Industrial Tooling & Equipment by Hoffmann Group

GERMAN DESIGN AWARD WINNER 2020

DESIGN AWARD 2018





* 10-year warranty on materials and manufacture of GARANT products when used as intended, excluding regular wear as a result of mechanical stress and excluding all electronic components.







HOLEX

SO CLEVER – PLUG & PLAY FOR THE MACHINING PROCESS.

The intelligent solution for everyday production work: HOLEX machining and clamping technology. Clever, authentic tools that always work. Without compromise. Reliable.

Simply clever machining

- **HOLEX Clever Tap:** Sturdy tap for conventional standard applications.
- **HOLEX Pro toolholder:** Targeted cooling on the cutting edge.
- **HOLEX centring vice:** Clamps blanks and finished parts with the least possible lifting of the jaws/component, very good accessibility and exactly symmetrical.

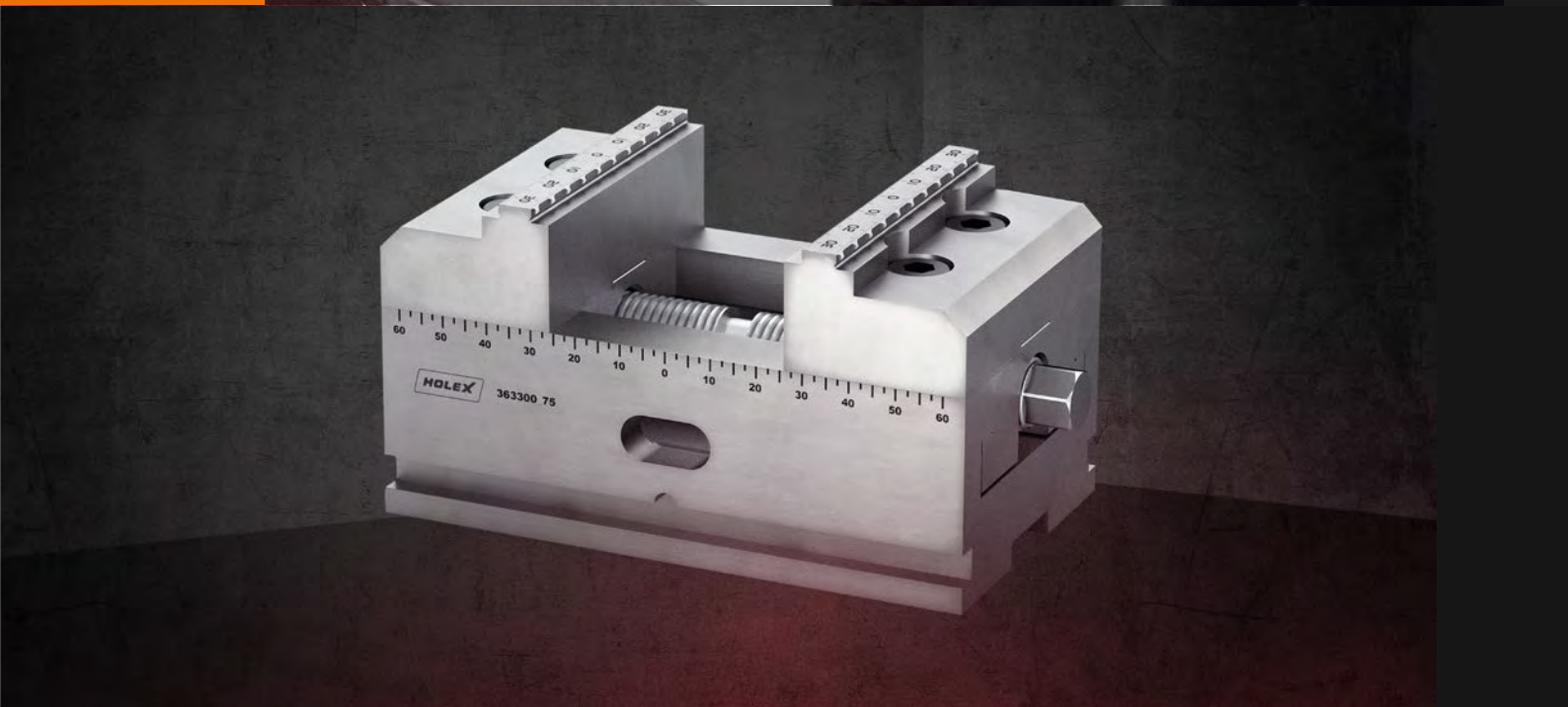


More than 17,000 products for day-to-day working life: HOLEX has the right products for every standard application at a great price and good industrial quality.

Industrial Tooling & Equipment by Hoffmann Group






HOLEX
363300 75

WHEN IT COMES TO PURCHASING TOOLS AND EQUIPMENT, WE GIVE YOU PEACE OF MIND.

Your success builds on everything running smoothly in procurement. We ensure this happens with the highest delivery capability and perfect delivery accuracy.

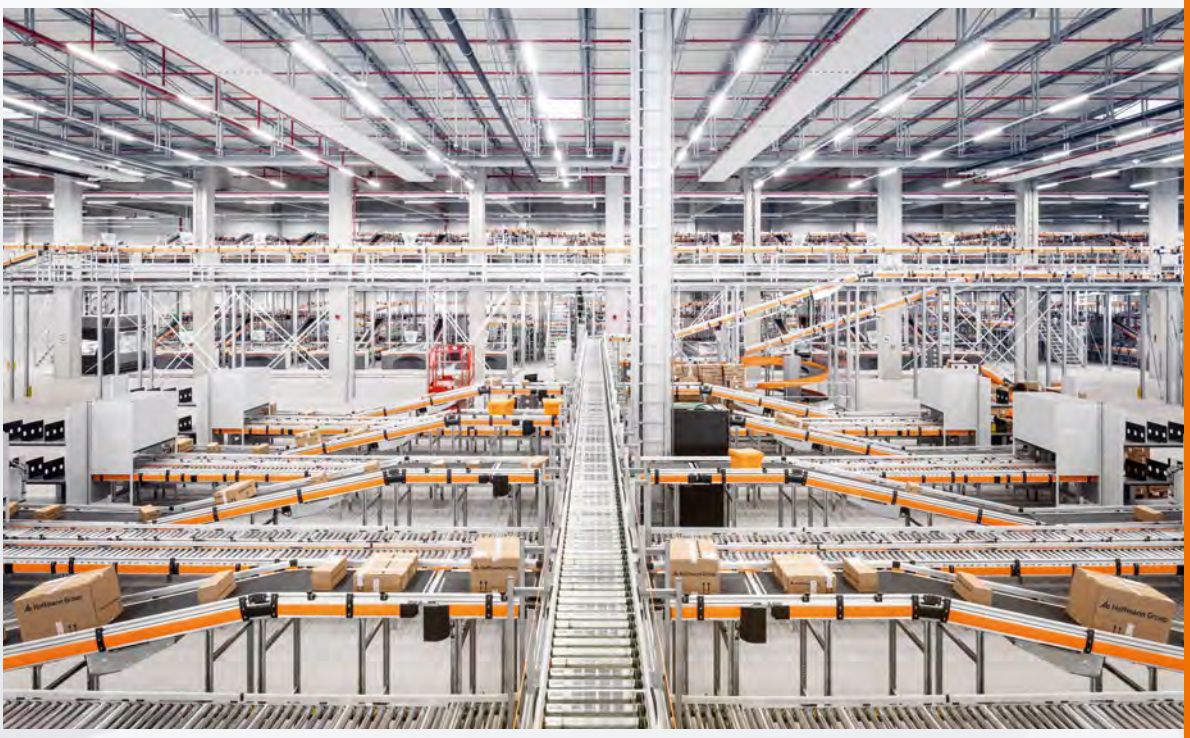


We believe delivery capability is a big deal.
Which is why we are building big, too



To be able to supply you with goods reliably in the future, we have created something big: LogisticCity – the most powerful tooling logistics solution.

LogisticCity is a crucial step towards networked digital logistics which fully exploits the technological opportunities available today. This reliably ensures our outstanding delivery performance for you on a long-term basis, even in times when we have to react constantly to changing market conditions.



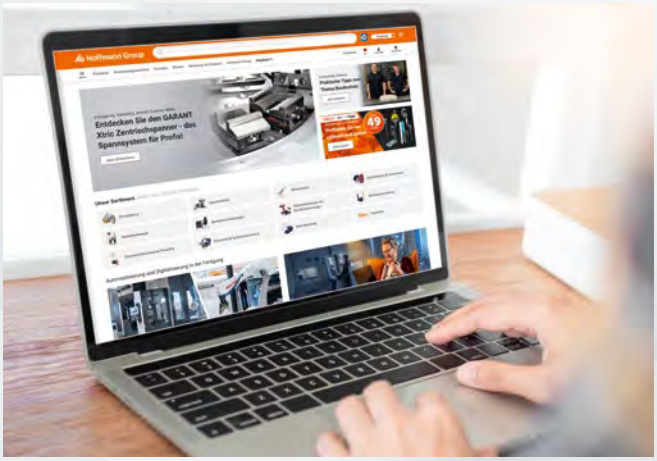
Hoffmann Group LogisticCity:
Taking logistics to the next level



- **100,000 m²** of logistics area, fully automatic warehouse with **500,000** container and **30,000** pallet spaces, **14 kilometres** of conveyor systems, **40,000 packages** a day.
- **TechnologyCenter** and **ServiceCenter** for calibration, regrinding, textile customisation and laser labelling.
- Ships within 24–48 from ourlocal warehouse (ground to most states); 3–4 business days from LogisticCity in Germany.
- LogisticCity, **Europe's largest tool logistics centre** in Nuremberg.
- Numerous logistics sites **worldwide**.

SIMPLE, FAST AND RELIABLE PROCUREMENT.

Take advantage of our procurement solutions to optimize your processes. We will be happy to advise you and find tailored solutions perfectly matched to your needs.



Our eShop:
Intuitive, flexible and fast

The simple way to **order online** and **request quotations**.

All functions at a glance.
www.hoffmann-group.com



Electronic catalogues:
Tailor-made content and prices

Our range of **the very latest quality tools** is put together especially for you.

Find out more.



Catalogue browser app:
All products on your smartphone or tablet

Quick browsing and **effective** searching – wherever and whenever you like, even offline.

Download now.

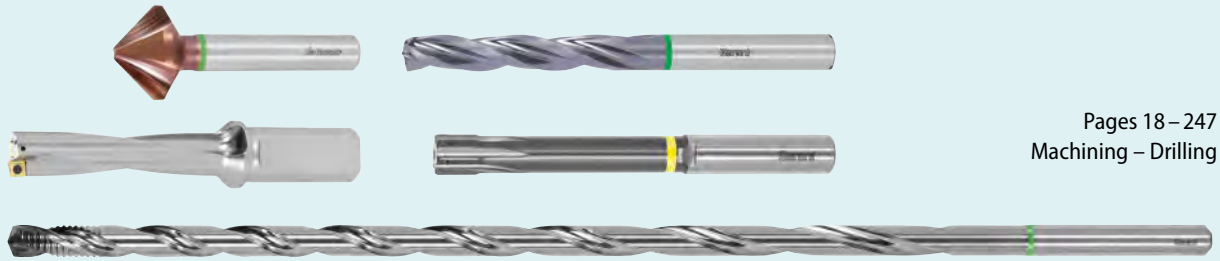
Ask us about **worldwide** regrinding and re-coating solutions for your cutting tools.
Within **Europe,** we can assess technical feasibility and economic viability of tool reconditioning for you.
If reconditioning is no longer viable, we mark your tools and send them back to you **at no extra cost**.
You can find out more at: **http://ho7.eu/regrinding**

The following tools can be reground by our regrinding service within **the European area**:

- Drills from ∅ 2mm
- Milling cutters from ∅ 4mm
- Reamers from ∅ 3mm
- Countersinks and circular saw blades

The following tools **cannot** be reground:

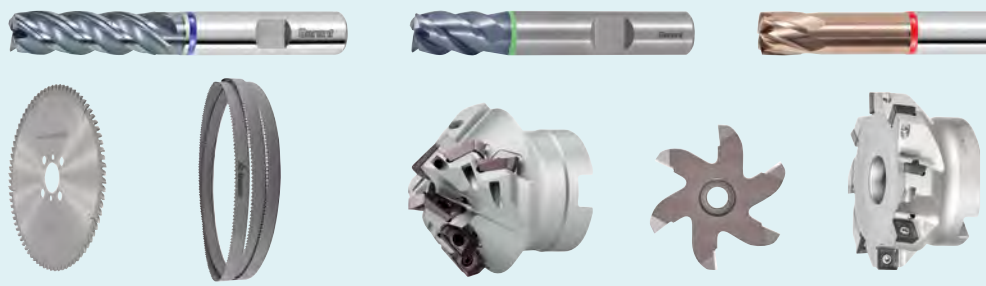
- Tools with diamond coating
- Routers
- Band saw blades



Pages 18 – 247
Machining – Drilling



Pages 248 – 369
Machining – Threads



Pages 370 – 709
Machining – Milling



Pages 710 – 931
Machining – Turning



Pages 932 – 1261
Clamping technology





NEW

New: Machining accessories

Cutting data and insert ISO code
ISO standard shafts and holes
Comparison table Vickers – Brinell – Rockwell – hardness and tensile strength

From page 1262
Machining accessories, information and index

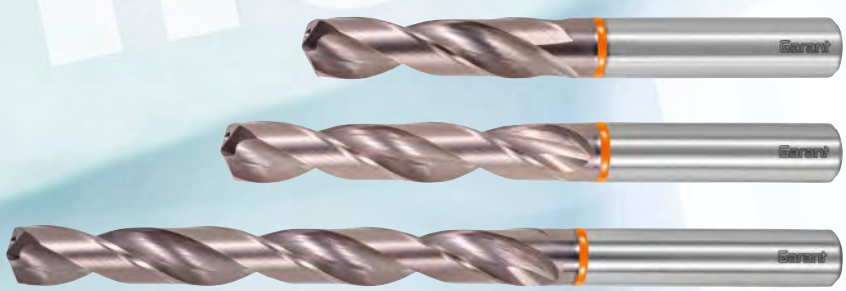
New products –
Machining – Drilling

NEW

We use this symbol to tag new items in our range of catalogue products

Group 12

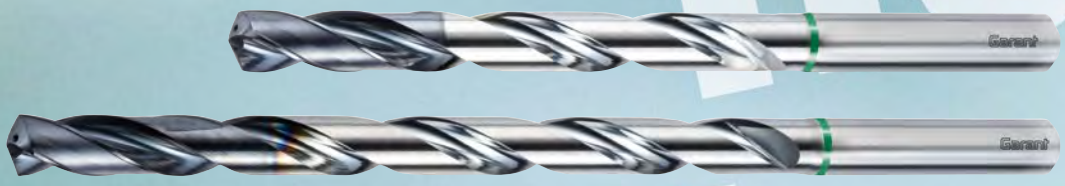
Garant UNI HERO



Pages **96 / 118 / 132**

GARANT Uni Hero solid carbide multi-purpose drill 4×D, 6×D and 8×D
- Maximum universality and tool efficiency.
- Convex-concave main cutting edges and special pointed tip.
- Optimised chip groove geometry and polished flutes for optimum chip evacuation.
- Ultra-smooth, latest-generation TiAlSiN high-performance coating.

Garant MASTER STEEL



Pages **135 / 142**

GARANT Master Steel solid carbide high-performance drill 8×D and 12×D
- Extremely sturdy tool design and optimised special point geometry.
- Patented face geometry for optimum chip formation and reliable chip breakage.
- Special flute geometry for reliable chip evacuation.
- High performance with a focus on steel materials.

Machining – Drilling

Machining / clamping technology for optimal processes.
Now sorted by **application drilling, tapping, milling, turning and clamping.**



Garant HOLEX

HSS Mono drilling
Technical literature, HSS drills
Overview page 28/29

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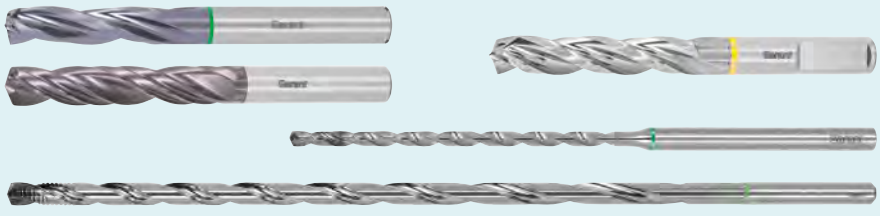

Garant HOLEX

Solid carbide Mono drilling
Solid carbide drills
Overview page 76/77

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Garant HOLEX KOMET

Modular drills
Overview page 156

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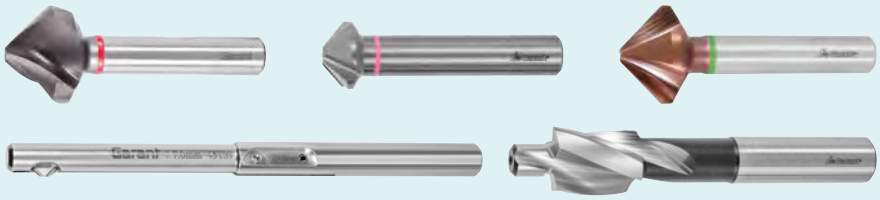


Garant HOLEX

Mono countersinking
Countersinks, deburrers

15 202 – 220



Garant KOMET

Modular countersinking

21 221 – 223



Garant HOLEX

Mono reaming
Reamers
Overview pages 224/225

16 224 – 246



Garant

Modular reaming

23 247

Pictograms and graphics

Version

Tool material

- HSS E — High-performance tool steel with 5 % cobalt
- HSS E-PM — Powder metallurgy HSS
- Solid carbide — Micrograin solid carbide in the range K10-K40 and P40
- HSS E-SPM — Special powder metallurgy substrate with high cobalt content

Type

- Type N — Type N = Standard
- Solid carbide router cutter with high performance diamond cut
- HR — Fine knuckle form
- Left-hand cutting

Standard

- DIN 206 B — Satisfies DIN 206
- EN 22568 — Satisfies Euro Standard 22568
- Standard — Manufacturer's standard
- DIN 371 — Satisfies DIN 371

Shank

Solid carbide drill and milling cutter with shank DIN 6535-HA (from shank ∅ ≥ 6 mm) on request with drive flat HB or HE:

Please note the respective instruction text concerning the desired cutting tool.
Required: 1 × drill No. 122659 size 10 with HE drive flat:
Ordering example: 1 pc. No. 12 2659 size 10 +1 pc. No. 12 9100 HE

Generating a drive flat: Made to order – cannot be returned.

- h6 DIN 1835 B — Shank in h6 tolerance with DIN 1835-B drive flat
- h7 — Tolerance h7 shank with 3 drive flats for use in a 3-jaw chuck

Diameter/ length

- x — Nominal diameter divergent from standard Dc **Semi-standard**
- 25×D — Flute length 25× ∅ (deep hole drill)
- 4×D — Indexable drill 4×D

Angle

- 180° — Stepped tool for 180° countersink angle
- 90° — Insert NC spotting drill 90°
- 60° — Countersink with 60° point angle
- 90° — Counterbore
- 118° — 118° point angle
- 90° — High-accuracy tool tolerance in the µm range
- ≠ — Dynamic helical pitch
- 45° — Corner chamfer width at 45°
- R — Defined corner radius
- r_v — Corners rounded off

Form / teeth

- Special drill tip – for aramide fibres
- 3 — Tool with 3 teeth
- Form C
- High-performance drill with 6 guide chamfers and IC
- ≠ — Countersinks with unequal spacing for precision counterbores

Threads

- MF — Metric fine threads
- EG-M — Metric thread for wire inserts
- 60° — With 60° flank angle
- CS — 2-3 pitch chamfer lead Form C **with spiral point**
- ≤3×D — For through holes up to 3×D thread depth

Note on the use of taps with coolant holes on synchronised spindles:
For optimum lubrication (for longest service life and highest process reliability) using cutting oil or MQL, we recommend GARANT quick-change tapping heads with minimum quantity lubrication system and minimum length compensation (MLA) No. 33 8100 – 8121.

- Voll-profil — Creates a full profile
- **Dynamic.** Cost-effective machining for highly demanding work.
- **Synchronous.** Very high performance, for use on machines with synchronised spindles.
- ≠ — Thread mills with unequally spaced cutting edges

Tolerance

- H7 — For manufacturing to fit H7
- ISO 2 6H — Metric ISO threads application class 2 6H = medium tolerance
- m7 — Cutter ∅ tolerance m7
- −0.007 +0.002 — Cutter ∅ tolerance dimensioning

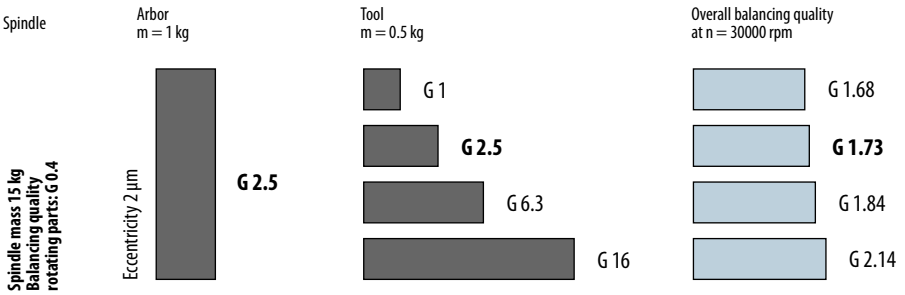
Application

- HPC — **High Performance Cutting** for very high machining volumes
- MTC — **Multi Task Cutting** MTC tool with cutting force reduction
- TPC — **Trochoidal Performance Cutting** A synthesis of a HPC and MTC tool
- Pilot hole and co-pilot hole required
- 25 bar — With internal coolant supply at 25 bar minimum pressure. **For drills from 12×D a filter with 20 – 25 µm must be used in the coolant system.**
- Centre hole
  - Use half feed rate
- Aperture:
  1. Drill the outer holes,
  2. Drill intermediate holes, offset maximum 0.8×D
- Drilling through cross holes
- Cross drilling
  - Use half feed rate
  - Cross bore maximum 1/3 of the bore ∅
  - Eccentric cross bores not possible

Balancing quality

G 2.5 n_{max} — **Milling cutter with balancing quality G 2.5** maintained up to the stated speed n_{max} (as shown on the shank marking).
Adequate balancing quality of the overall tooling system (arbor and tool) is important at high speeds.
The diagram shows examples of the relationship between various balancing qualities and the resulting overall balancing quality.

Example: Arbor G 2.5 + tool G 2.5 = overall balancing quality G 1.73



For more information see machining handbook No. 11 0010



Note: Precondition for achieving an overall balancing quality ≤ G2.5 is a balanced toolholder with a balancing quality G2.5.

Garant ToolScout – Special application tables for mono machining

Polymer materials

easy → difficult

	Thermoplastics				Ther-mo	Plastics and fibres (GF / CF in %)							Sandwich			General		
Suitability/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP CRP	Graphite	Uni
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
20 9785							200	190	170	150	180	160	●	350		190	340	

Icons:
How the tool can be used

Oil lubrication

Emulsion (for taps with at least 8% grease)

Minimal quantities of lubricant

Dry machining

Compressed air supply

Copper materials

easy → difficult

			Machining group I					Machining group II						Machining group III						
Suitable for/ v_c [m/min]	Alu plastics	AlCuPb AW2011 Index 50	CuZnPb CW603N Index 100	CuNiZn CW400J Index 90	CuSnZn CC493K Index 90	CuPb CW113C Index 80	CuSnPb CW458K Index 70	CuNiZn CW408J Index 60	CuZnPb CW604N Index 60	CuZnMn CW713R Index 50	CuAlFe CC333G Index 50	CuZnAl CC766S Index 40	CuBe CW101C Index 30	CuSiMn CW116C Index 30	ECu58 CW005A Index 20	ECu57 CW004A Index 20	WCu WCu80/20 Index 19	GRP CRP
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13 2610		18	11	14	18	18	14	14	18	11	11	11			14	14		

Non-ferrous / steel materials

easy → difficult

Assignment of the ISO code																			
Suitability/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
20 5548				200	180	160	140	110						50	35		200	●

v_c = 160 m/min
Average cutting speed **as application recommendation**

The GARANT colour code family:
Trouble-free **specification** and **application fields at a glance.**

● / **Bold script = highly suitable;**
○ / Normal script = suitable only under restricted conditions



Application recommendations for all cutting tools

f_z = 0.07 mm
Average feed rate
as application recommendation for full-slot machining, for Ø 12 mm.

f_z = 0.09 mm
Average feed rate
as application recommendation for side milling, for Ø12 mm.

Ø d11 D_c	11X **20 5548** GARANT Master Steel SlotMachine solid carbide roughing end mill HPC TiAlN	L_c	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
mm		mm	mm	mm	mm	mm	mm
12	current price	16	73	12	0.6	0.07	0.09
14	current price	18	75	14	0.7	0.08	0.1

Lateral infeed a_e: (respective pictograms)

slot milled from solid	Side milling	Trochoidal	Copying
a_e = 1×D	a_e = 0.5×D	$a_{e\,max}$ = 0.2×D	a_e = 0.05×D

Uniform depth of cut a_p: (for variations see notes)

a_p = 1×D	a_p = 1×D	a_p = L_c	a_p = a_e

Note: For longer tool life and optimum results, we recommend for milling cutters with Ø ≤ 4 mm: a_p = 0.5×D.

ISO fits and tool overview for drilling

Tolerances and fits

In addition to the general ISO standards for describing the geometric tolerancing and quality of surfaces, the **ISO system of fits** is a basic requirement for components to work smoothly together.
A distinction can be made between **general tolerances according to ISO-2768**, **ISO tolerances** and **freely toleranced dimensions**.
In this case, the respective tolerances define the permissible deviations from nominal dimensions.

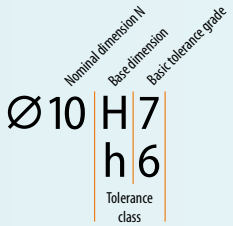
Zero line
Nominal dimension of the hole or shaft,
Reference value for tolerance and dimension.

Dimensional tolerance
Difference between maximum and minimum.

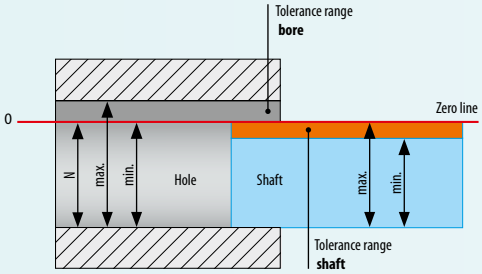
Basic dimension
Displays the position of the tolerance zone in relation to the zero line. Example for hole **H**

Basic tolerance grade
Specifies the basic tolerance range: Example: **IT7**

Tolerance class
Limit deviation in µm (combination of basic dimension and tolerance grade) Example: Hole **H7**

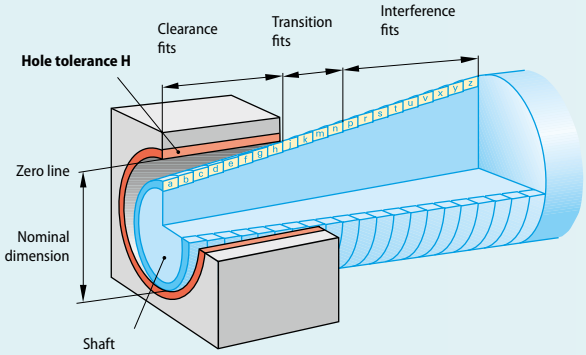


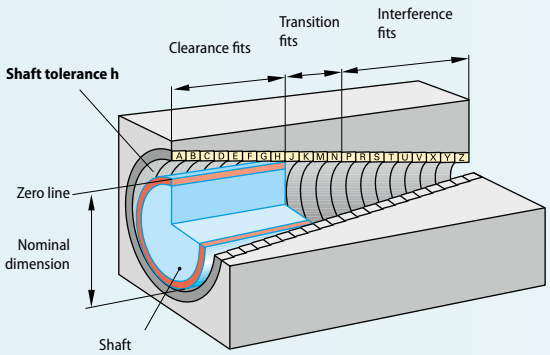
Ø 10H7	Bore maximum	10.015
	Bore minimum	10.000
	Tolerance of bore	0.015
Ø 10h6	Shaft maximum	10.000
	Shaft minimum	9.991
	Tolerance of shaft	0.009



ISO system of fits, standard bore and standard shaft

Systems of fit for optimised, cost-effective production. The basic idea is to produce one of the associated workpieces in a standardised manner and to transfer the appropriate tolerance to the other workpiece. Typical applications include shaft-hub connections.





Standard bore holes system (see DIN ISO 286-1)

The tolerance for the **hole diameter** is standardised **with a H tolerance class** based on the IT Grade system. The minimum dimension of the hole goes exactly up to the zero line and the maximum dimension of the hole is limited upwards by the tolerance grade (example 10H7 - Ø max: 10.015/ min: 10.000). A tolerance field position is selected as required for the counterpart (shaft).

Standard shaft system (see DIN ISO 286-1)

An **h tolerance class** is provided for **the shaft diameter**. The maximum dimension of the shaft goes exactly up to the zero line and the minimum dimension of the shaft is limited downwards by the tolerance grade (example 10h6 - Ø max: 10.000/ min: 9.991). The counterpart (hole) then receives an individual tolerance zone.

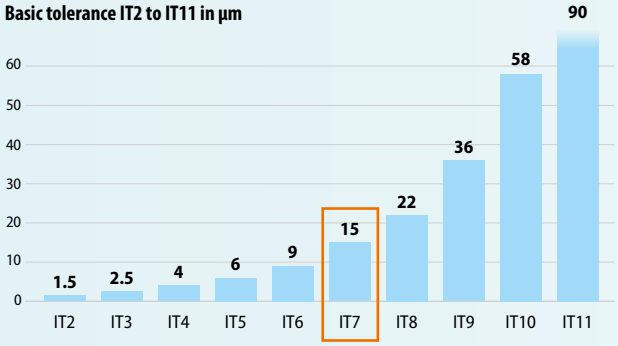
The IT basic tolerance grade

In the ISO tolerance system, the tolerance grade (e.g. IT7) defines the accuracy level (basic tolerance).
The range up to IT11 is decisive for tool making and mechanical engineering.

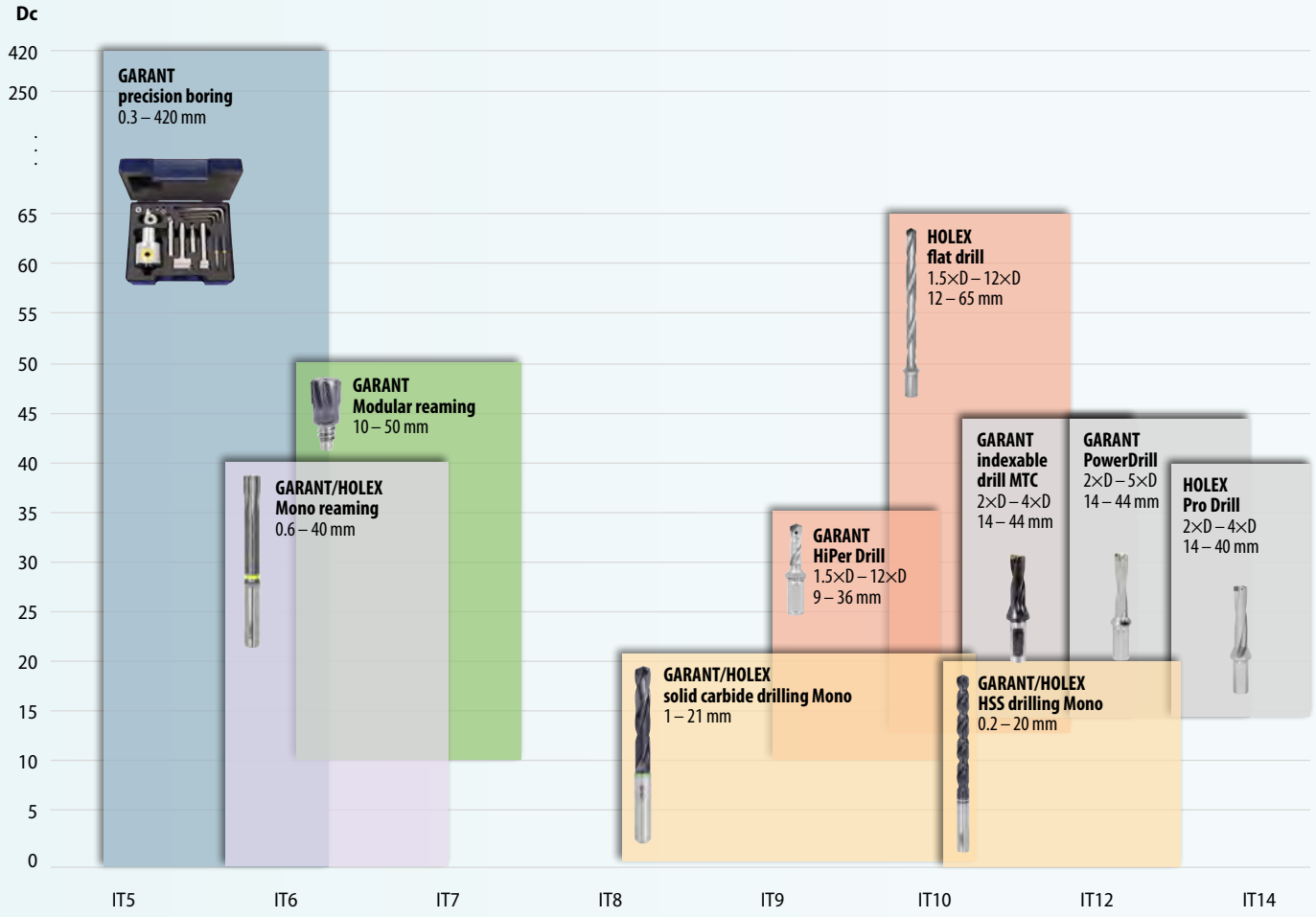
Nominal dimension (mm)		Finish machining (grinding, lapping, honing)							Tool, machine and vehicle construction (reaming, milling, drilling, turning)					
		Basic tolerance grades												
		IT01	IT0	IT1	IT2	IT3	IT4	IT5	IT6	IT7	IT8	IT9	IT10	IT11
More than	Up to and including	Basic tolerances µm												
–	3	0.3	0.5	0.8	1.2	2	3	4	6	10	14	25	40	60
3	6	0.4	0.6	1	1.5	2.5	4	5	8	12	18	30	48	75
6	10	0.4	0.6	1	1.5	2.5	4	6	9	15	22	36	58	90
10	18	0.5	0.8	1.2	2	3	5	8	11	18	27	43	70	110
18	30	0.6	1	1.5	2.5	4	6	9	13	21	33	52	84	130
30	50	0.6	1	1.5	2.5	4	7	11	16	25	39	62	100	160

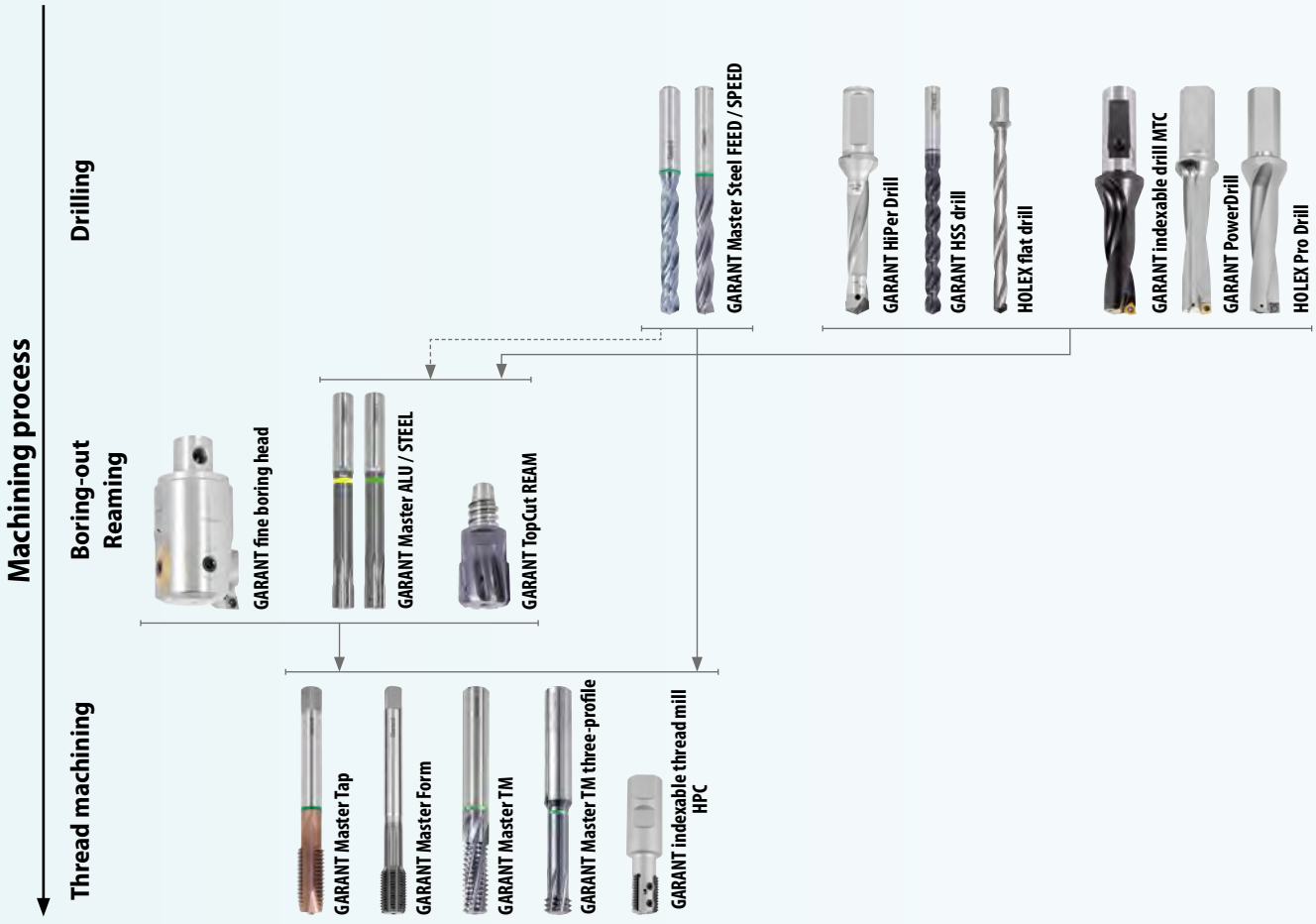
(Table: Extract from DIN ISO 286)

Example: Ø > 6 – 10 mm / basic tolerance grade IT7 / basic tolerance = 15 µm



Change in accuracy level (for Ø range > 6 – 10 mm)

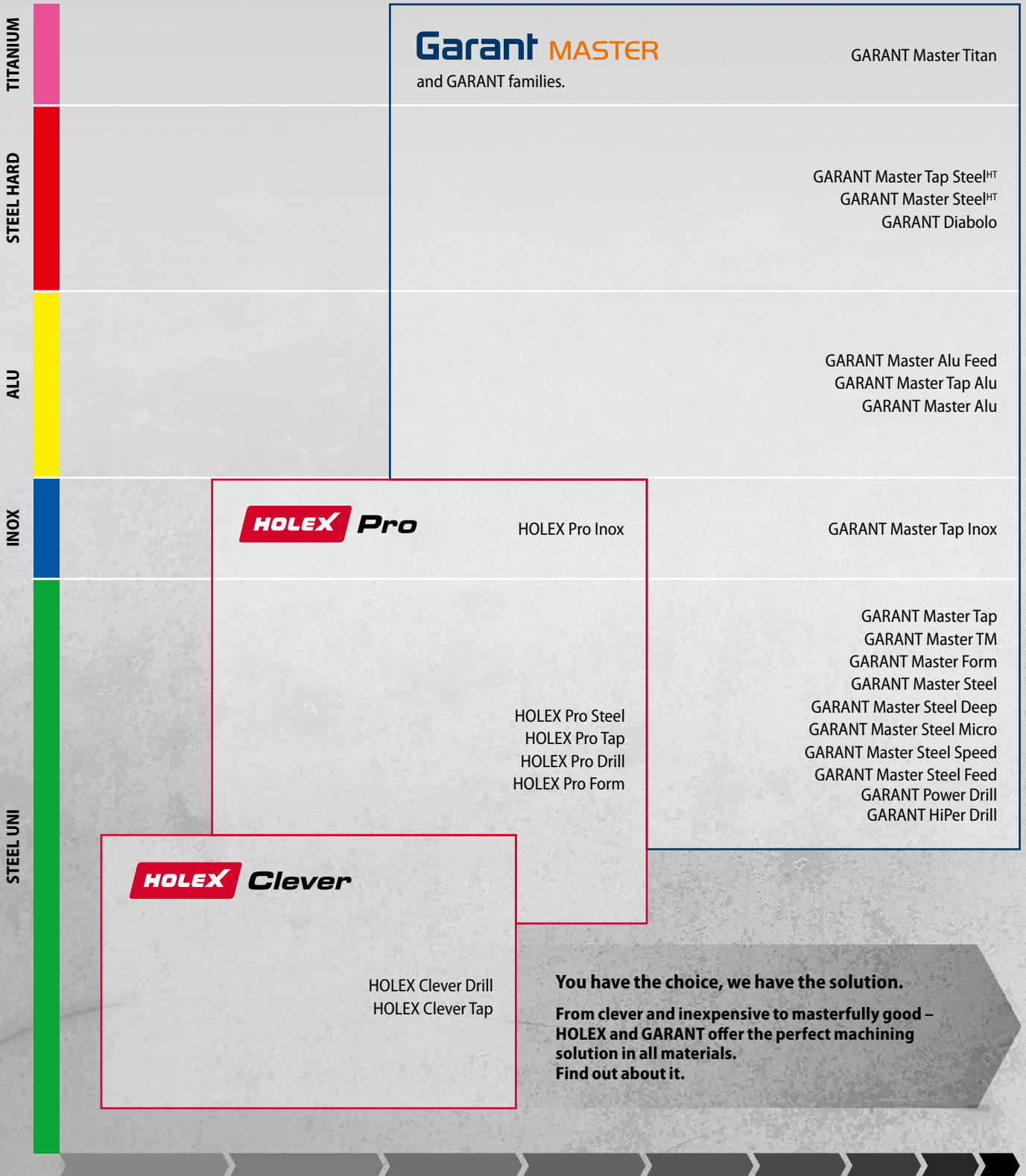

Dc
420
250
65
60
55
50
45
40
35
30
25
20
15
10
5
0
GARANT
precision boring
0.3 – 420 mm
GARANT
Modular reaming
10 – 50 mm
GARANT/HOLEX
Mono reaming
0.6 – 40 mm
HOLEX
flat drill
1.5×D – 12×D
12 – 65 mm
GARANT
HiPer Drill
1.5×D – 12×D
9 – 36 mm
GARANT
indexable
drill MTC
2×D – 4×D
14 – 44 mm
GARANT
PowerDrill
2×D – 5×D
14 – 44 mm
HOLEX
Pro Drill
2×D – 4×D
14 – 40 mm
GARANT/HOLEX
solid carbide drilling Mono
1 – 21 mm
GARANT/HOLEX
HSS drilling Mono
0.2 – 20 mm
IT5
IT6
IT7
IT8
IT9
IT10
IT12
IT14


Machining process
Drilling
Boring-out
Reaming
Thread machining
GARANT Master Steel FEED / SPEED
GARANT HiPer Drill
GARANT HSS drill
HOLEX flat drill
GARANT indexable drill MTC
GARANT PowerDrill
HOLEX Pro Drill
GARANT fine boring head
GARANT Master ALU / STEEL
GARANT TopCut REAM
GARANT Master Tap
GARANT Master Form
GARANT Master TM
GARANT Master TM three-profile
GARANT indexable thread mill HPC

ALWAYS THE PERFECT SOLUTION ...

The GARANT and HOLEX product ranges always offer the perfect tool for any bespoke requirements.

- The outstanding features of the top GARANT Master quality include the highest process reliability, performance and the best tool life.
- Our HOLEX product lines are synonymous with conventional and economical machining.



... FOR ALL MATERIALS.

HOLEX Clever

Tried-and-tested brand quality with the best value for money



STEEL UNI

HOLEX Pro

For efficient machining in a wide range of materials. The sophisticated performance and very good wear resistance result in **high cost efficiency**.



STEEL UNI INOX

Garant MASTER

The all-rounders

Ideal for steel processing, these multi-talented products also deliver excellent results in many other materials. High feed rates and smooth running, **excellent performance** and the best tool life – these are the hallmarks of the innovative GARANT Master range.



STEEL UNI STEEL UNI

The specialists

Cutter geometries that are **individually designed for demanding materials** and perfectly matched coatings ensure the highest level of process reliability in any situation.

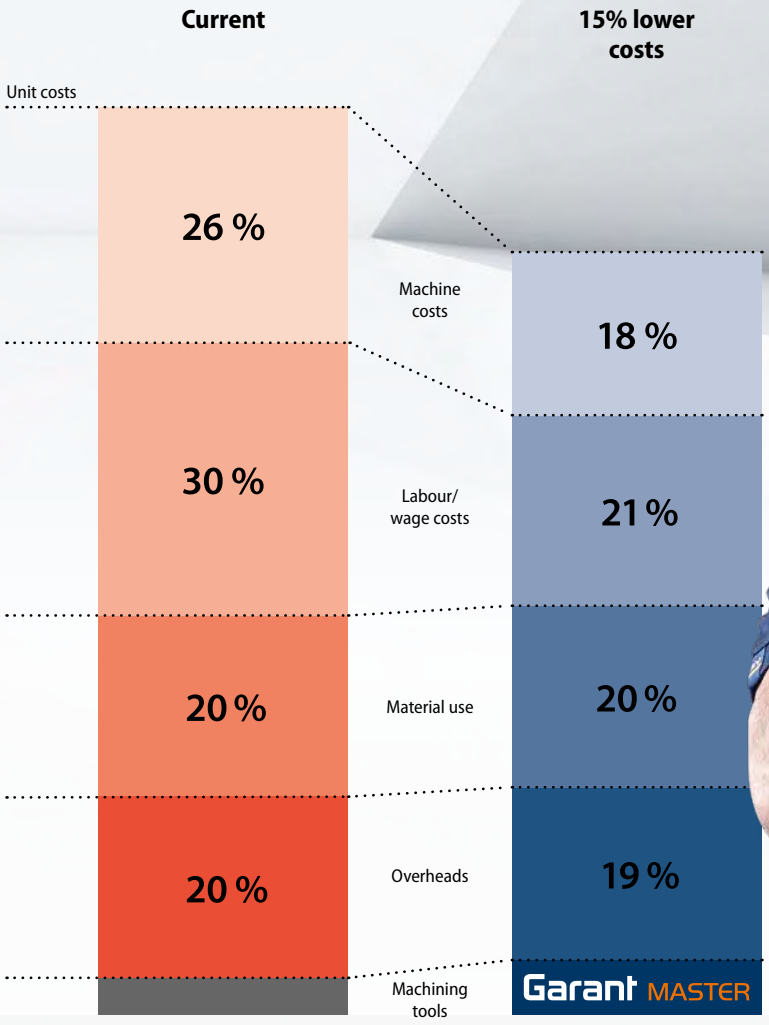


INOX ALU STEEL HARD TITANIUM

The potential applications and uses in each case are detailed on the product pages.

Garant MASTER INNOVATION THAT MAKES A REAL DIFFERENCE.

Given that the price of the tool only makes up a small proportion of the overall costs, even significant price reductions will not noticeably reduce the overall costs.
In contrast, the uncompromising dynamics of GARANT Master machining tools **optimise the machining time and material use** and help bring about significant improvements under corresponding operating conditions.



Standard tool without improved efficiency.

Even a 30% reduction in the tool purchase price **reduces unit costs by 1.5% at most.**

GARANT Master for maximum productivity.

GARANT Master machining tools reduce unit costs by up to 15% thanks to:

- **Longer** tool life → less time spent changing tools.
- **Higher** metal removal rate → higher productivity.
- **Improved** cutting parameters → more efficient machines.







Garant MASTER

- **Comprehensive range –** drilling, countersinking, reaming, thread machining and much more.
- **Protection against wear,** even at high temperatures, thanks to high-quality coatings.
- **Optimum bending strength and toughness** thanks to high-performance substrates.
- **Reliable chip evacuation and optimum metal removal rate** thanks to optimised cutting edge and flute geometries.

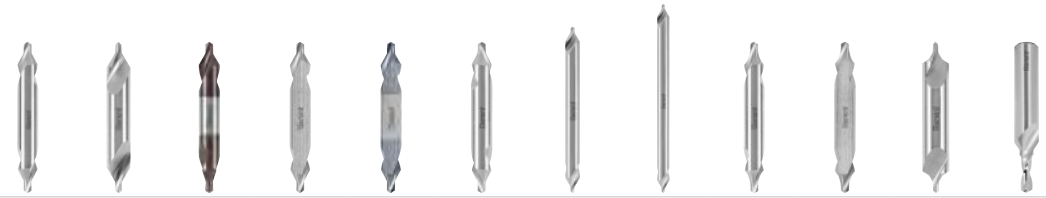
Garant MASTER + Automation

- Increased machine capacity thanks to additional unstaffed shifts.
- Free employees from routine tasks / no overtime in the event of order peaks.
- Reduce manufacturing costs.
- Increase profit.



Conclusion: An additional automation solution significantly increases the potential savings once more! We would be pleased to show you how it works. **Simply contact us!**

Garant HOLEX Overview – HSS jobber drill range



Designation		Centre drills											
DIN >		333						Man. std		333			332/2
Item number		111000 / 111005	111050	111100	111200	111205	111250	111290	111300	111350	111450	111520	11 1310
Drill type		A	A	A	A (surface)	A (surface)	A / left-hand	A / long	A / long	R	R (surface)	B	A
Tool material		HSS	HSS-E	HSS-E	HSS-E	HSS-E	HSS	HSS-E	HSS-E	HSS	HSS-E	HSS	HSS-E
Coating				TiAlN		TiAlN							
Centring angle / point angle		60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	120° / 60°	60°
Size range (∅ mm)		0.5 – 10	0.5 – 6.3	0.5 – 5	1.6 – 6.3	1.6 – 6.3	0.5 – 8	0.75 – 3	1 – 5	0.5 – 6.3	1.6 – 6.3	1 – 5	M3 – M12
for hand-held machines													
Page	ISO 513	30	30	30	31	31	31	31	31	32	33	33	32
Aluminium, plastics	N	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 500 N/mm²	P	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 900 N/mm²	P	●	●	●	●	●	●	●	●	●	●	●	●
Steel < 1400 N/mm²	P	○	●	●	●	●	○	●	●	○	●	○	●
INOX	M		●	●	●	●		●	●		●		●
Ti	S			●		●							
GG (G)	K		○	●	○	●		○	○		○		●
CuZn	N	●	●	●	●	●	●	●	●	●	●	●	●
UNI													●



Designation		Jobber drills, short			Jobber drills											
DIN >		1897			338											
Item number		113265	113341 / 113421	113001	114001	114004	114008	114000	114020	114031	114150	114200	114360	114400	114405	114450
Drill type				N	N	N	N	N	N	N	N	W	N	N	N	FS
Tool material		HSS-E	HSS	HSS-E	HSS-E	HSS	HSS-E	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS-E	HSS-E
Coating		TiAlN											TiN			
Point angle		118°	135°	130°	130°	118°	118°	118°	118°	118°	118°	130°	118°	130°	135°	130°
Size range (∅ mm)		1 – 13	2.5 – 9.6	1 – 20	1 – 20	1 – 13	1 – 13	1 – 13	1 – 20	1 – 20	0.2 – 20	0.9 – 13	1 – 16	1 – 16	1 – 13	1 – 13
for hand-held machines			●	●	●	●	●			●		●				
Page	ISO 513	40	41	42	43	44	44	46	46	47	47	49	49	50	50	50
Aluminium, plastics	N	○	○	○	○	○	○	○	○	○	○	●	○			●
Steel < 500 N/mm²	P	●	●	●	●	●	●	●	●	●	●		●	○	●	●
Steel < 900 N/mm²	P	●	○	●	●	●	●	●	●	●	●		●	●	●	○
Steel < 1400 N/mm²	P	○		●	●		○				○		○	●	●	
INOX	M	○		○	○		●						○	○	○	
Ti	S	○											○	○		
GG (G)	K	●		○	○	●	●	○	○	○	●		●	●		●
CuZn	N	●		○	○	○	●			●	●		○	○		
UNI		●		●	●									●		



Designation		Jobber drills with MT shank								Stepped drills 90°						
DIN >		345			Man. std	343	341	1870		1897		8378	1897		Man. std	8374
Item number		116340	116320	116360	116380	116620	116700	116720	116760	117020	117040	117060	117120	117140	117160	117180
Drill type		N	N	VA	H	N	N	FS	N							
Tool material		HSS	HSS	HSS-E	HSS-Co8	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS
Coating										vaporised	TiAlN	vaporised	vaporised	TiAlN		vaporised
Point angle		118°	118°	135°	130°	120°	118°	130°	118°	118°	118°	118°	118°	118°	118°	118°
Size range (∅ mm)		5 – 70	13 – 70	10 – 35	8.5 – 30	7.8 – 50	10 – 50	10 – 30	8 – 30	3 – 12	3 – 12	3 – 12	3 – 10	3 – 10	4 – 10	3 – 10
for hand-held machines																
Page	ISO 513	62	62	63	63	64	65	65	66	66	66	67	67	67	68	68
Aluminium, plastics	N	○				○				○	○	○	○	○	○	○
Steel < 500 N/mm²	P	●	●	●		●	●	●	●	●	●	●	●	●	●	●
Steel < 900 N/mm²	P	●	○	●		●	●	●	●	●	●	●	●	●	●	●
Steel < 1400 N/mm²	P			○	●	○					○			○		
INOX	M			●		○										
Ti	S			●	●											
GG (G)	K	●	○	●		○	●		●	●	●	●	●	●	●	●
CuZn	N			●						○	○	○	○	○	○	○
UNI																

● very suitable ○ suitable only under certain conditions the application areas are reference values for



	NC spotting drills							Jobber drills, short						
	Man. std							1899/A	1897					
	112000	112020	112060	112100	112110	112160	112140	112305	113006	113020	113140	113150	113230	113260
	N	N	N	N / long	N	N / long	N	N	N	FS	FS	N	N	
	HSS-E	HSS-E TiAlN	HSS-E-PM TiAlN	HSS-E TiAlN	HSS-E TiAlN	HSS-E TiAlN	HSS-E TiAlN	HSS-E-PM	HSS	HSS	HSS-Co8 TiAlN	HSS-E	HSS-E TiN	HSS-E TiAlN
	90°	90°	90°	90°	120°	120°	142°	118°	118°	135°	130°	130°	130°	130°
	3 – 20	3 – 20	3 – 20	3 – 20	3 – 20	4 – 16	3 – 16	0.15 – 1.8	2 – 20	1 – 20	1 – 12	1 – 20	1 – 20	1 – 13
									●			●		
	34	34	34	34	35	35	35	36	37	38	38	39	39	40
	●	●	●	●	●	●	●	●	○	●	○	○		○
	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	○	●	●	●	○
	●	●	●	●	●	●	●	●			○	○	●	○
	●	●	●	●	●	●	●	●			○	○	○	●
		●	●	●	●	●	●	●			○	○	○	●
		●	●	●	●	●	●	○	○	●		●	●	
	●	●	●	●	●	●	●	●	●			○	○	●
	●	●	●	●	●	●	●					●		



	Jobber drills, long											Jobber drills, extra long					
	340											1869					1898A
	114500	114550	114580	114610	114620	116000	116040	116051	116061	116063	116065	116070	116240	116245	116250	116280	116285	116310
						N	W	N	FS	FS	N	VA	FS	N	FS	FS	N	
	HSS-E TiAlN	HSS-Co8 TiAlN	HSS-E TiAlN	HSS-E-PM TiAlN	HSS-E-PM TiAlN	HSS	HSS	HSS	HSS-E	HSS-E TiAlN	HSS-E	HSS-E	HSS	HSS	HSS-E	HSS-E TiAlN	HSS-E TiAlN	HSS
	130°	135°	118°	130°	130°	118°	130°	118°	130°	130°	118°	130°	130°	118°	130°	135°	118°	118°
	1 – 13	1 – 13	1 – 13	1 – 13	2 – 13	0.6 – 16	2.5 – 10	2 – 16	1 – 14	1 – 13	1 – 12	1 – 12	2.5 – 12	2 – 12	2.5 – 10.2	3 – 10.2	3 – 10	3 – 12
								●										
	51	51	52	53	53	57	57	57	58	58	59	59	60	60	60	61	61	61
			○	○	○	○	●	○	●	○			○	○	○	○		
			●	○	○	●		●	●	●	○	○	●	●	●	●	○	●
	○	○	●	●	●	●		●	○	●	●		○	●	●	●	●	○
		●	○	●	●					○	●			○	○		●	
	●	●	○	○	○						○	●			○		○	
	●	○	○	○	○					○		●						
			●	●	●	○		○	●	●			●	●	○			
			●	○	○			●			○						○	
			●	●	●													



	Stepped drills 180°				Taper sheet and tube drills			Stepped drills		Hole saws / core drills					
	1897		8376	8377	Man. std			Man. std		Man. std					
	117240	117260	117280	117320	118020	118030	118040	118320	118324	118400 – 118505	118782	118792	118802 / 118822	119000	119010
											35 mm	30 mm	30 / 55 mm	35 mm	25 mm
	HSS vaporised	HSS TiAlN	HSS vaporised	HSS vaporised	HSS	HSS TiN	HSS TiAlN	HSS-E	HSS TiAlN	Carbide	Carbide TiAlN	HSS	HSS TiAlN	Carbide	HSS
	118°	118°	118°	118°											
	3 – 10	3 – 10	3 – 10	5 – 20	3 – 60	3 – 60	4 – 30.5	4 – 60	4 – 40	16 – 120	14 – 26	12 – 50	12 – 50	12 – 65	12 – 32
					●	●	●	●	●	●					
	69	69	69	69	70	70	70	71	71	72	73	73	73	74	74
	○	○	○	○	○	○	○			○	○	●	●		●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	○	●	○	○	●	○
		○				○	○				○			○	
						○	○	○	○	○	●	○	○	●	○
	●	●	●	●	●	●		●			●		●	●	○
	○	○	○	○										●	
										●	●	●	●	●	

pre-selection, for detailed cutting data, see individual products

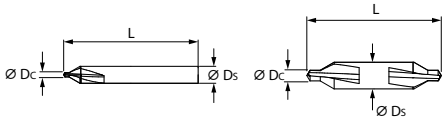
HSS | DIN 333 | Type A | k12 | 60° | h7


GARANT


11 1000

Centre drill

Ground from solid and relief ground, spiral fluted.
Size 0,5; 0,8 – Single-ended.




11 1005

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N
11 1000/1005	70	45		40	30	25	10	8									80	

Nominal Ø D_c k12	11A 11 1000 Garant	12A 11 1005 HOLEX	for workpiece Ø	Ø D_s	L	< 900 N f
	Centre drill A					
mm			mm	mm	mm	mm/rev.
0,5	eShop	eShop	< 4	3.15	25	0.01
0,8	eShop	–	4 – 6	3.15	25	0.01
1	eShop	eShop	6 – 8	3.15	31.5	0.02
1,25	eShop	eShop	8 – 10	3.15	31.5	0.02
1,6	eShop	eShop	10 – 15	4	35.5	0.02
2	eShop	eShop	15 – 20	5	40	0.02
2,5	eShop	eShop	20 – 30	6.3	45	0.03
3,15	eShop	eShop	30 – 40	8	50	0.03
4	eShop	eShop	40 – 63	10	56	0.03
5	eShop	eShop	63 – 100	12.5	63	0.04
6,3	eShop	eShop	100 – 150	16	71	0.05
8	eShop	eShop	150 – 250	20	80	0.06
10	eShop	eShop	> 250	25	100	0.09

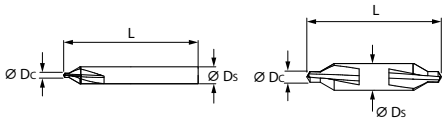
HSS E | DIN 333 | Type A | k12 | 60° | h7




11 1050

Garant Centre drill

Ground from solid and relief ground, spiral fluted.
Size 0,5 – Single-ended.




11 1100

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
11 1050	70	45		40	30	25	10	8						12	8		25	80
11 1100	70	45	40	40	30	25	10	8						12	8	5	25	80

Nominal Ø D_c k12	11A 11 1050	11A 11 1100	for workpiece Ø	Ø D_s		L		< 900 N f
	Centre drill HSS-E A							
		TiAlN		11 1050	11 1100	11 1050	11 1100	
mm			mm	mm	mm	mm	mm	mm/rev.
0,5	eShop	eShop	< 4	3.15	3.15	25	25	0.01
0,75	eShop	eShop	4 – 6	3.5	3.5	35	35	0.01
1	eShop	eShop	6 – 8	4	3.15	35	31.5	0.02
1,5	eShop	eShop	8 – 15	5	5	40	40	0.02
1,6	eShop	eShop	10 – 15	4	4	35.5	35.5	0.02
2	eShop ■	eShop	15 – 20	6	5	45	40	0.02
2,5	eShop ■	eShop	20 – 30	8	6.3	50	45	0.03
3	eShop ■	eShop	20 – 40	8	8	50	50	0.03
3,15	eShop	eShop	30 – 40	8	8	50	50	0.03
4	eShop ■	eShop	40 – 63	10	10	55	56	0.03
5	eShop	eShop	63 – 100	12	12	63	63	0.04
6,3	eShop	–	100 – 150	16	–	71	–	0.05

HSS E | DIN 333 | Type A | k12 | 60° | h7

Garant Set of centre drills in a case

Composed of centre drills DIN 333.

Content:

11 1055 – Centre drill No. 111050, 1 pc. each in size 0.75; 1; 1.5; 1.6; 2; 2.5; 3; 3.15; 4; 5.
11 1060 – Centre drill No. 111100, 1 pc. each in size 0.75; 1; 1.5; 1.6; 2; 2.5; 3; 3.15; 4; 5.

Number of drills			10
11A 11 1055	Centre drill set HSS-E No. 111050 in a case		eShop ■
11A 11 1060	Centre drill set HSS-E No. 111100 in a case	TiAlN	eShop
Number of drills			10

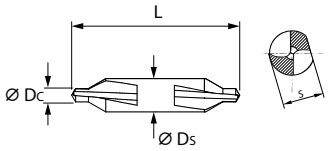

11 1055


11 1060

HSS E | DIN 333 | Type A | k12 | 60° | h7

Garant Centre drill with flat

Ground from solid and relief ground, spiral fluted.




11 1200

11 1205

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 1200	70	45		40	30	25	10	8						12	8		25	80	●	●			
11 1205	70	45	40	40	30	25	10	8						12	8	5	25	80	●	●			

Nominal Ø D_c k12	11A 11 1200 / 11A 11 1205 Centre drill HSS-E A with flat	TiAlN	Ø D_s	s – 0.1	L	< 900 N f
mm			mm	mm	mm	mm/rev.
1,6	eShop	eShop	4	3.25	35	0.02
2	eShop	eShop	5	4.2	40	0.02
2,5	eShop	eShop	6.3	5.35	45	0.03
3,15	eShop	eShop	8.3	6.95	50	0.03

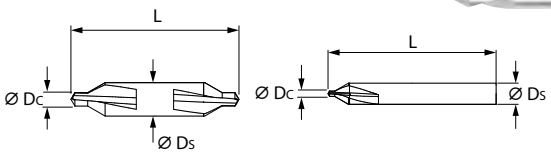
Nominal Ø D_c k12	11A 11 1200 / 11A 11 1205 Centre drill HSS-E A with flat	TiAlN	Ø D_s	s – 0.1	L	< 900 N f
mm			mm	mm	mm	mm/rev.
4	eShop	eShop	10	8.4	55	0.03
5	eShop	eShop	12.5	10.95	63	0.04
6,3	eShop	eShop	16	14	71	0.05

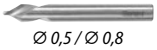
HSS | DIN 333 | Type A | k12 | 60° | h7

Garant Centre drill, left-hand cutting

Ground from solid and relief-ground.
Left–hand cutting, spiral fluted.
Size 0,5–0,8 – Single-ended.


11 1250




Ø 0,5 / Ø 0,8

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
11 1250	70	45		40	30	25	10	8									80		●	●			

Nominal Ø D_c k12	11A 11 1250 Centre drill HSS A left-hand	for workpiece Ø	Ø D_s	L	< 900 N f
mm		mm	mm	mm	mm/rev.
0,5	eShop	< 4	3.15	25	0.01
0,8	eShop	4 – 6	3.15	25	0.01
1	eShop	6 – 8	3.15	31.5	0.02
1,25	eShop	8 – 10	3.15	31.5	0.02
1,6	eShop	10 – 15	4	35.5	0.02
2	eShop	15 – 20	5	40	0.02

Nominal Ø D_c k12	11A 11 1250 Centre drill HSS A left-hand	for workpiece Ø	Ø D_s	L	< 900 N f
mm		mm	mm	mm	mm/rev.
2,5	eShop	20 – 30	6.3	45	0.03
3,15	eShop	30 – 40	8	50	0.03
4	eShop	40 – 63	10	56	0.03
5	eShop	63 – 100	12.5	63	0.04
6,3	eShop	100 – 150	16	71	0.05
8	eShop	150 – 250	20	80	0.06

HSS E | Standard | Type A | k12 | 60° | h7

Garant Long and extra long centre drills

Ground from solid and relief-ground.
Spiral fluted, extra long shank, similar to DIN 333-A.



11 1290


11 1300

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 1290/1300	70	45		40	30	25	10	8						12	8		25	80	●	●			

Nominal Ø D_c k12	11A 11 1290 Centre drill HSS-E, long	11A 11 1300 Centre drill HSS-E, extra long	for workpiece Ø	Ø D_s	L 11 1290	L 11 1300	< 900 N f
mm	A		mm	mm	mm	mm	mm/rev.
0,75	eShop	–	< 6	3.5	60	–	0.01
1	eShop	eShop	6 – 8	4	60	120	0.02
1,5	eShop	–	8 – 15	5	60	–	0.02
1,6	–	eShop	10	5	–	120	0.02
2	eShop	eShop	15 – 20	6	80	120	0.02

Nominal Ø D_c k12	11A 11 1290 Centre drill HSS-E, long	11A 11 1300 Centre drill HSS-E, extra long	for workpiece Ø	Ø D_s	L 11 1290	L 11 1300	< 900 N f
mm	A		mm	mm	mm	mm	mm/rev.
2,5	eShop	eShop	20 – 30	8	80	120	0.03
3	eShop	–	20 – 40	8	80	–	0.03
3,15	–	eShop	30 – 40	10	–	120	0.03
4	–	eShop	40 – 63	10	–	120	0.03
5	–	eShop	63 – 100	14	–	120	0.04

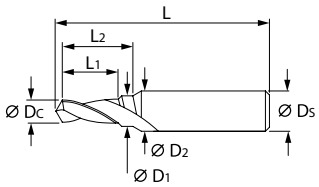
HSS E	DIN 332/2	Type A	0 −0.05	60°		h7

Garant Stepped centre drill for tapping hole, 60°

Stepped centre drill for tapping holes to Form A.
For **combined production** of centring, entry chamfer and tapping hole **all in a single operation.**



11 1310



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 1310	65	65	60	28	30	30	9	7						7			28	35	●	●			

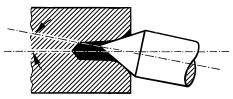
for threads	11 1310 Stepped centre drill for tapping holes HSS-E A	Ø D_c mm	Ø D_1 ±0.05 mm	Ø D_2 mm	L_1 mm	L_2 mm	for workpiece Ø mm	Ø D_s mm	L mm	< 900 N f mm/rev.
M3	eShop	2.5	3.2	6	8	9	30 – 40	6	55	0.03
M4	eShop	3.3	4.3	8	11	12.6	40 – 63	8	63	0.05
M5	eShop	4.2	5.3	10	13	15.1	63 – 100	10	67	0.07
M6	eShop	5	6.4	12.5	16	18.9	100 – 150	12.5	71	0.1
M8	eShop	6.8	8.4	14	19	23	150 – 180	14	88	0.12
M10	eShop	8.5	10.5	16	23	27.7	180 – 210	16	90	0.15
M12	eShop	10.2	13	20	28	34.5	210 – 250	20	105	0.2

HSS	DIN 333	Type R	k12	60°		h7

Garant Centre drill

Ground from solid and relief ground, spiral fluted.
Centre drill with radius form R:

- The radius curve eliminates the sharp transition from drill point to countersink angle that is present on form A, so the risk of fracture is reduced.
- In the event of angular misalignment of the lathe centre, the ring bearing face avoids the component running only on the external or internal edge of the bearing face. Even if the lathe centres are not in line, good support is provided.
  Size 0,5–0,8 – Single-ended.

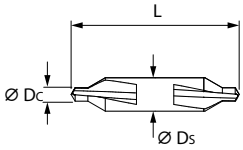




11 1350



Ø 0.5 / Ø 0.8



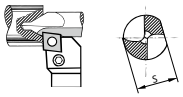
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
11 1350	70	45		40	30	25	10	8									80		●	●			

Nominal Ø D_c k12 mm	11 1350 Centre drill HSS R	for workpiece Ø mm	Ø D_s mm	L mm	< 900 N f mm/rev.
0,5	eShop	< 4	3.15	25	0.01
0,8	eShop	4 – 6	3.15	25	0.01
1	eShop	6 – 8	3.15	31.5	0.02
1,25	eShop	8 – 10	3.15	31.5	0.02
1,6	eShop	10 – 15	4	35.5	0.02
2	eShop	15 – 20	5	40	0.02
2,5	eShop	20 – 30	6.3	45	0.03
3,15	eShop	30 – 40	8	50	0.03
4	eShop	40 – 63	10	56	0.03
5	eShop	63 – 100	12.5	63	0.04
6,3	eShop	100 – 150	16	71	0.05

HSS E | DIN 333 | Type R | k12 | 60° | h7

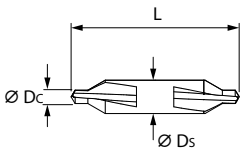
Garant Centre drill with flat

Ground from solid and relief ground, spiral fluted.
Features of centre drills with radius form R: See No. 111350.





11 1450



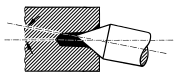
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 1450	70	45		40	30	25	10	8						12	8		25	80	●	●			

Nominal Ø D_c k12	11A	11 1450	for workpiece Ø	Ø D_s	s – 0.1	L	< 900 N f
		Centre drill HSS-E					
mm		R with flat	mm	mm	mm	mm	mm/rev.
1,6		eShop	10 – 15	4	3.25	35.5	0.02
2		eShop	15 – 20	5	4.2	40	0.02
2,5		eShop	20 – 30	6.3	5.35	45	0.03
3,15		eShop	30 – 40	8	6.95	50	0.03
4		eShop	40 – 63	10	8.4	55	0.03
5		eShop	63 – 100	12.5	10.95	63	0.04
6,3		eShop	100 – 150	16	14	71	0.05

HSS | DIN 333 | Type B | k12 | 120°/60° | h7

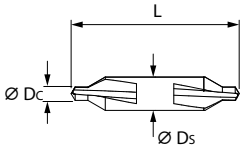
Garant Centre drill with protective countersink

Ground from solid and relief-ground.
With additional centre protection (120° countersink angle), spiral fluted.





11 1520



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
11 1520	70	45		40	30	25	10	8									80		●	●			

Nominal Ø D_c k12	11A	11 1520	for workpiece Ø	Ø D_s	L	< 900 N f
		Centre drill HSS				
mm		B	mm	mm	mm	mm/rev.
1		eShop	6 – 8	4	35	0.02
1,25		eShop	8 – 10	5	40	0.02
1,6		eShop	10 – 15	6.3	45	0.02
2		eShop	15 – 20	8	50	0.02
2,5		eShop	20 – 30	10	56	0.03
3,15		eShop	30 – 40	11.2	60	0.03
4		eShop	40 – 63	14	67	0.03
5		eShop	63 – 100	18	76	0.04

Standard | Type N | h6 | 90° | h6 DIN 1835 B | 2

Garant NC spotting drill plain shank

≥ Ø 6 mm with **drive flat to DIN 1835-B.**
Precision centred ground point with thin chisel edge - gives easy spot drilling and high accuracy of the centre hole form. Very sturdy due to short flutes.

11 2060 – **High-performance NC spotting drill.**
Tool substrate made of sintered powder metallurgy **for applications** demanding high standards of tool life and accurate centring.
Very good wear resistance in stainless steels.

Note: Use speed for the actual hole Ø
(not necessarily the speed for the drill outer Ø).

HSS E



11 2000

HSS E



11 2020

HSS E-PM

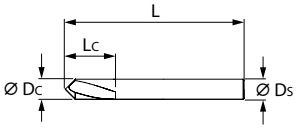


11 2060

HSS E



11 2100



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 2000	70	45		40	30	25	10	8					12	8			80	●	●	●			
11 2020/2100	87	56	50	50	37	31	12	10					15	10	6	31	100	●	●	●			
11 2060	96	62	55	55	42	35	14	12					18	13	8	35	112	●	●	●			

Ø D_c h6	11A 11 2000 NC spotting drill HSS-E 90° N	11A 11 2020 NC spotting drill HSS-E 90° N	11A 11 2060 NC spotting drill HSS-E-PM 90° N	11A 11 2100 NC spotting drill HSS-E 90° N	L_c	L 11 2000 11 2020 11 2060	L 11 2100	Ø D_s	< 900 N f
mm		TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm/rev.
3	eShop ■	eShop	eShop	eShop	12	46	80	3	0.03
4	eShop	eShop	eShop	eShop	12	55	100	4	0.04
5	eShop	eShop	eShop	eShop	15	60	120	5	0.04
6	eShop ■	eShop	eShop	eShop	20	66	140	6	0.04
8	eShop	eShop	eShop	eShop	25	79	140	8	0.05
10	eShop ■	eShop	eShop	eShop	25	89	170	10	0.06
12	eShop ■	eShop	eShop	eShop	30	102	170	12	0.06
16	eShop	eShop	eShop	eShop	35	115	200	16	0.07
20	eShop	eShop	eShop	eShop	40	131	200	20	0.07

HSS E | Standard | Type N | h6 | 90° | h6 DIN 1835 B | 2

Garant NC spotting drill sets

With drive flats to DIN 1835-B.
Precision centred ground point with thin chisel edge – gives easy spot drilling and high accuracy of the centre hole form.
Very sturdy due to short flutes.

Supplied with: 4-piece set of NC spotting drills in a plastic box.

Note: Use speed for the actual hole Ø
(not generally the speed for the drill outer Ø).



11 2107

11 2108

Type			6-12
11A 11 2107	NC spotting drill HSS-E No. 112000 with plastic box **90°**		eShop
11A 11 2108	NC spotting drill HSS-E No. 112020 with plastic box **90°**	TiAlN	eShop
Content: 1 each NC spotting drills			Size 6; 8; 10; 12.

HSS E | Standard | Type N | h6 | 120° | h6 DIN 1835 B | 2

Garant NC spotting drill plain shank

≥ Ø 6 mm with **drive flat to DIN 1835-B.**
Precision centred ground point with thin chisel edge - gives easy spot drilling and high accuracy of the centre hole form. Very sturdy due to short flutes.

Application: **Point angle 120°** so that the cutting edges of the following drill engage easily.

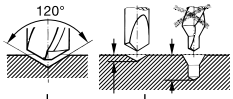
Note: Use speed for the actual hole Ø (not necessarily the speed for the drill outer Ø).



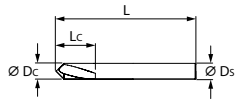
11 2110



11 2160



Tip angle for spotting drills the same as for standard drills



NC spotting drills for quick spot-facing by means of short drill travel

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 2110/2160	87	56	50	50	37	31	12	10					15	10	6	31	100	●	●	●			

Ø D_c h6	11 2110	11 2160	L_c	L		Ø D_s	< 900 N f
	NC spotting drill HSS-E 120° N			11 2110	11 2160		
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm/rev.
3	eShop	–	12	46	–	3	0.03
4	eShop	eShop	12	55	100	4	0.04
5	eShop	eShop	15	60	120	5	0.04
6	eShop	eShop	20	66	140	6	0.04
8	eShop	eShop	25	79	140	8	0.05
10	eShop	eShop	25	89	170	10	0.06
12	eShop	eShop	30	102	170	12	0.06
16	eShop	eShop	35	115	200	16	0.07
20	eShop	–	40	131	–	20	0.07

HSS E | Standard | Type N | h6 | 142° | h6 DIN 1835 B | 2

Garant NC spotting drill plain shank

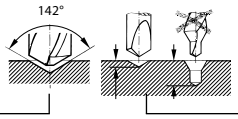
≥ Ø 6 mm with **drive flat to DIN 1835-B.**
Precision centred ground point with thin chisel edge - gives easy spot drilling and high accuracy of the centre hole form. Very sturdy due to short flutes.

Application: **Point angle 142°** so that the cutting edges of the following drill engage easily.

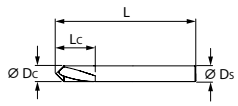
Note: Use speed for the actual hole Ø (not necessarily the speed for the drill outer Ø).



11 2140



Tip angle for spotting drills the same as for standard drills



NC spotting drills for quick spot-facing by means of short drill travel

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 2140	87	56	50	50	37	31	12	10					15	10	6	31	100	●	●	●			

Ø D_c h6	11 2140	L_c	L	Ø D_s	< 900 N f
	NC spotting drill HSS-E 142° N				
mm	TiAlN	mm	mm	mm	mm/rev.
3	eShop	12	46	3	0.03
4	eShop	12	55	4	0.04
5	eShop	15	60	5	0.04
6	eShop	20	66	6	0.04
8	eShop	25	79	8	0.05
10	eShop	25	89	10	0.06
12	eShop	30	102	12	0.06
16	eShop	35	115	16	0.07

HSS E-PM	DIN 1899 A	Type N	0 −0.004	118°	h8	2

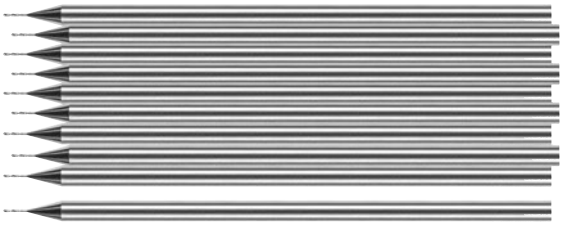
Garant

Micro drill

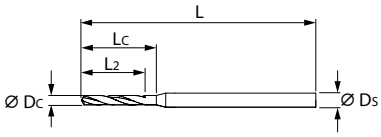
Special drill with reinforced shank, high concentricity and precision ground point.

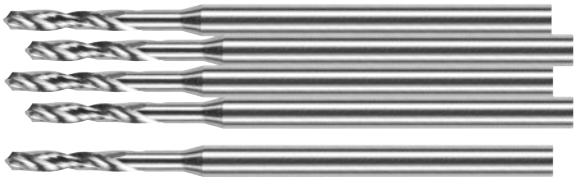
Recommendation: Maximum drilling depth:

$L_2 = L_C - 1.5 \times D_C$.



11 2305_0,15





11 2305_1,00

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 2305	70	45	40	40	30	25	10	8					12	8	5	25	80	○	●	●			

$\varnothing D_c$ -0.004	11A 11 2305 Micro drill set HSS-E-PM	Number of drills	L_c	L	$\varnothing D_s$	< 900 N f
mm	N		mm	mm	mm	mm/rev.
0,15	eShop	10	1	25	1	0.006
0,20	eShop	5	1.8	25	1	0.007
0,25	eShop	5	2.2	25	1	0.009
0,30	eShop	5	2.2	25	1	0.011
0,35	eShop	5	2.8	25	1	0.011
0,40	eShop	5	3.6	25	1	0.011
0,45	eShop	5	3.6	25	1	0.011
0,50	eShop	5	4	25	1	0.014
0,55	eShop	5	4.5	25	1	0.014
0,60	eShop	5	4.5	25	1	0.014
0,65	eShop	5	5	25	1	0.02
0,70	eShop	5	5.6	25	1	0.02
0,75	eShop	5	5.6	25	1	0.02
0,80	eShop	5	6.3	25	1.5	0.024
0,85	eShop	5	6.3	25	1.5	0.024
0,90	eShop	5	7.1	25	1.5	0.024
0,95	eShop	5	7.1	25	1.5	0.024
1,00	eShop	5	8	25	1.5	0.041
1,05	eShop	5	8	25	1.5	0.041
1,10	eShop	5	9	25	1.5	0.041
1,15	eShop	5	9	25	1.5	0.041
1,20	eShop	5	10	25	1.5	0.041
1,25	eShop	5	10	25	1.5	0.041
1,30	eShop	5	10	25	1.5	0.041
1,35	eShop	5	11.2	25	1.5	0.041
1,40	eShop	5	11.2	25	1.5	0.041
1,45	eShop	5	11.2	25	1.5	0.041
1,50	eShop	5	11.2	30	2	0.052
1,55	eShop	5	12.4	30	2	0.052
1,70	eShop	5	12.4	30	2	0.052
1,80	eShop	5	13.8	30	2	0.052

HSS | DIN 1897 | Type N | h8 | 118° | 2

HOLEX CleverDrill jobber drill, plain shank

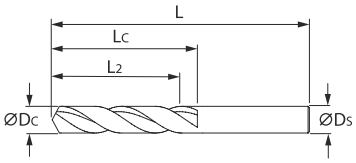
Sturdy drills for all standard applications. Improved spot drilling behaviour due to cross-ground form. Standard core thickness and core taper. Profile ground. Surface: Bronze-coloured tempered helical flutes.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.

Note:	**Successor product to No. 113005.**



11 3006



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 3006	80	63	50	**35**	**32**	**25**	20										30	**40**	●	●			

Ø D_c h8 mm	12B 11 3006 HOLEX CleverDrill HSS jobber drill		L_c mm	L mm	< 750 N f mm/rev.	Ø D_c h8 mm	12B 11 3006 HOLEX CleverDrill HSS jobber drill		L_c mm	L mm	< 750 N f mm/rev.
2	eShop	10	12	38	0.05	7,1	eShop	10	34	74	0.08
2,1	eShop	10	12	38	0.05	7,2	eShop	10	34	74	0.08
2,2	eShop	10	13	40	0.05	7,3	eShop	10	34	74	0.08
2,3	eShop	10	13	40	0.05	7,4	eShop	10	34	74	0.08
2,4	eShop	10	14	43	0.05	7,5	eShop	10	34	74	0.08
2,5	eShop	10	14	43	0.05	7,6	eShop	5	37	79	0.08
2,6	eShop	10	14	43	0.05	7,7	eShop	5	37	79	0.08
2,7	eShop	10	16	46	0.05	7,8	eShop	5	37	79	0.08
2,8	eShop	10	16	46	0.05	7,9	eShop	5	37	79	0.08
2,9	eShop	10	16	46	0.05	8	eShop	5	37	79	0.1
3	eShop	10	16	46	0.05	8,1	eShop	5	37	79	0.1
3,1	eShop	10	18	49	0.05	8,2	eShop	5	37	79	0.1
3,2	eShop	10	18	49	0.05	8,3	eShop	5	37	79	0.1
3,3	eShop	10	18	49	0.05	8,4	eShop	5	37	79	0.1
3,4	eShop	10	20	52	0.05	8,5	eShop	5	37	79	0.1
3,5	eShop	10	20	52	0.05	8,6	eShop	5	40	84	0.1
3,6	eShop	10	20	52	0.05	8,7	eShop	5	40	84	0.1
3,7	eShop	10	20	52	0.05	8,8	eShop	5	40	84	0.1
3,8	eShop	10	22	55	0.05	8,9	eShop	5	40	84	0.1
3,9	eShop	10	22	55	0.05	9	eShop	5	40	84	0.1
4	eShop	10	22	55	0.05	9,1	eShop	5	40	84	0.1
4,1	eShop	10	22	55	0.05	9,2	eShop	5	40	84	0.1
4,2	eShop	10	22	55	0.05	9,3	eShop	5	40	84	0.1
4,3	eShop	10	24	58	0.05	9,4	eShop	5	40	84	0.1
4,4	eShop	10	24	58	0.05	9,5	eShop	5	40	84	0.1
4,5	eShop	10	24	58	0.05	9,7	eShop	5	43	89	0.1
4,6	eShop	10	24	58	0.05	9,8	eShop	5	43	89	0.1
4,7	eShop	10	24	58	0.05	10	eShop	5	43	89	0.1
4,8	eShop	10	26	62	0.05	10,2	eShop	5	43	89	0.1
4,9	eShop	10	26	62	0.05	10,5	eShop	5	43	89	0.1
5	eShop	10	26	62	0.08	11	eShop	5	47	95	0.1
5,1	eShop	10	26	62	0.08	11,5	eShop	5	47	95	0.1
5,2	eShop	10	26	62	0.08	11,8	eShop	5	47	95	0.1
5,3	eShop	10	26	62	0.08	12	eShop	5	51	102	0.16
5,4	eShop	10	28	66	0.08	12,5	eShop	5	51	102	0.16
5,5	eShop	10	28	66	0.08	13	eShop	5	51	102	0.16
5,6	eShop	10	28	66	0.08	13,5	eShop	5	54	107	0.16
5,7	eShop	10	28	66	0.08	13,8	eShop	5	54	107	0.16
5,8	eShop	10	28	66	0.08	14	eShop	5	54	107	0.16
5,9	eShop	10	28	66	0.08	14,5	eShop	5	56	111	0.16
6	eShop	10	28	66	0.08	15	eShop	5	56	111	0.16
6,1	eShop	10	31	70	0.08	15,5	eShop	1	58	115	0.16
6,2	eShop	10	31	70	0.08	16	eShop	1	58	115	0.2
6,3	eShop	10	31	70	0.08	16,5	eShop	1	60	119	0.2
6,4	eShop	10	31	70	0.08	17	eShop	1	60	119	0.2
6,5	eShop	10	31	70	0.08	17,5	eShop	1	62	123	0.2
6,6	eShop	10	31	70	0.08	18	eShop	1	62	123	0.2
6,7	eShop	10	31	70	0.08	18,5	eShop	1	64	127	0.2
6,8	eShop	10	34	74	0.08	19	eShop	1	64	127	0.2
6,9	eShop	10	34	74	0.08	19,5	eShop	1	66	131	0.2
7	eShop	10	34	74	0.08	20	eShop	1	66	131	0.2

DIN 1897 | Type FS | h8 | 38° | 2

≤ 3.9 mm ≥ 4 mm



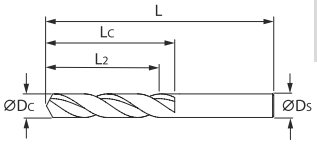
11 3020

HSS E 135°



11 3140

HSS Co8 130°



Garant **Stub drill plain shank**

Particularly **robust and strong** due to **strengthened core.**
Ground flutes, with high concentricity.

11 3020 – Bright finish flutes, nitrided lands.

Advantage: **Ideal for drilling shallow holes (approx. 2 - 4×D)** on NC machines and automatic machines.

Recommendation: **Maximum drilling depth:**
$L_2 = L_c - 1.5 \times D_c$.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 3020	70	45		40	30												25		●	●			
11 3140	87	56	50	50	35	30	12							15	10	6			●	●			

Ø D_c h8 mm	11 3020 Stub drill HSS-E FS	11 3140 Stub drill HSS-Co8 FS TiAlN		L_c mm	L mm	< 750 N f mm/rev.
1	eShop	eShop	10	6	26	0.03
1,1	eShop	eShop	10	7	28	0.03
1,2	eShop	eShop	10	8	30	0.03
1,3	eShop	eShop	10	8	30	0.03
1,4	eShop	eShop	10	9	32	0.03
1,5	eShop	eShop	10	9	32	0.03
1,6	eShop	eShop	10	10	34	0.03
1,7	eShop	eShop	10	10	34	0.03
1,8	eShop	eShop	10	11	36	0.03
1,9	eShop	eShop	10	11	36	0.03
2	eShop	eShop	10	12	38	0.03
2,1	eShop	eShop	10	12	38	0.03
2,2	eShop	eShop	10	13	40	0.03
2,3	eShop	eShop	10	13	40	0.03
2,4	eShop	eShop	10	14	43	0.03
2,5	eShop	eShop	10	14	43	0.03
2,6	eShop	eShop	10	14	43	0.03
2,7	eShop	eShop	10	16	46	0.03
2,8	eShop	eShop	10	16	46	0.03
2,9	eShop	eShop	10	16	46	0.03
3	eShop	eShop	10	16	46	0.03
3,1	eShop	eShop	10	18	49	0.03
3,2	eShop	eShop	10	18	49	0.03
3,3	eShop	eShop	10	18	49	0.03
3,4	eShop	eShop	10	20	52	0.03
3,5	eShop	eShop	10	20	52	0.03
3,6	eShop	eShop	10	20	52	0.03
3,7	eShop	eShop	10	20	52	0.03
3,8	eShop	eShop	10	22	55	0.03
3,9	eShop	eShop	10	22	55	0.03
4	eShop	eShop	10	22	55	0.05
4,1	eShop	eShop	10	22	55	0.05
4,2	eShop	eShop	10	22	55	0.05
4,3	eShop	eShop	10	24	58	0.05
4,4	eShop	eShop	10	24	58	0.05
4,5	eShop	eShop	10	24	58	0.05
4,6	eShop	eShop	10	24	58	0.05
4,65	eShop	–	10	24	58	0.05
4,7	eShop	eShop	10	24	58	0.05
4,8	eShop	eShop	10	26	62	0.05
4,9	eShop	eShop	10	26	62	0.05
5	eShop	eShop	10	26	62	0.05
5,1	eShop	eShop	10	26	62	0.05
5,2	eShop	eShop	10	26	62	0.05
5,3	eShop	eShop	10	26	62	0.05
5,4	eShop	eShop	10	28	66	0.05
5,5	eShop	eShop	10	28	66	0.05
5,55	eShop	eShop	10	28	66	0.05
5,6	eShop	eShop	10	28	66	0.05
5,7	eShop	eShop	10	28	66	0.05
5,8	eShop	eShop	10	28	66	0.05
5,9	eShop	eShop	10	28	66	0.05
6	eShop	eShop	10	28	66	0.07
6,1	eShop	eShop	10	31	70	0.07
6,2	eShop	eShop	10	31	70	0.07
6,3	eShop	eShop	10	31	70	0.07
6,4	eShop	eShop	10	31	70	0.07
6,5	eShop	eShop	10	31	70	0.07
6,6	eShop	eShop	10	31	70	0.07
6,7	eShop	eShop	10	31	70	0.07
6,8	eShop	eShop	10	34	74	0.07
6,9	eShop	eShop	10	34	74	0.07
7	eShop	eShop	10	34	74	0.07
7,1	eShop	eShop	10	34	74	0.07
7,2	eShop	eShop	10	34	74	0.07

Ø D_c h8 mm	11 3020 Stub drill HSS-E FS	11 3140 Stub drill HSS-Co8 FS TiAlN		L_c mm	L mm	< 750 N f mm/rev.
7,3	eShop	eShop	10	34	74	0.07
7,4	eShop	–	10	34	74	0.07
7,45	eShop	–	10	34	74	0.07
7,5	eShop	eShop	10	34	74	0.07
7,6	eShop	–	5	37	79	0.07
7,7	eShop	eShop	5	37	79	0.07
7,8	eShop	eShop	5	37	79	0.07
7,9	eShop	eShop	5	37	79	0.07
8	eShop	eShop	5	37	79	0.1
8,1	eShop	eShop	5	37	79	0.1
8,2	eShop	eShop	5	37	79	0.1
8,3	eShop	eShop	5	37	79	0.1
8,4	eShop	eShop	5	37	79	0.1
8,5	eShop	eShop	5	37	79	0.1
8,6	eShop	eShop	5	40	84	0.1
8,7	eShop	eShop	5	40	84	0.1
8,8	eShop	eShop	5	40	84	0.1
8,9	eShop	–	5	40	84	0.1
9	eShop	eShop	5	40	84	0.1
9,1	eShop	eShop	5	40	84	0.1
9,2	eShop	–	5	40	84	0.1
9,25	eShop	–	5	40	84	0.1
9,3	eShop	–	5	40	84	0.1
9,4	eShop	eShop	5	40	84	0.1
9,5	eShop	eShop	5	40	84	0.1
9,6	eShop	–	5	43	89	0.1
9,7	eShop	–	5	43	89	0.1
9,8	eShop	eShop	5	43	89	0.1
9,9	eShop	eShop	5	43	89	0.1
10	eShop	eShop	5	43	89	0.1
10,1	eShop	–	5	43	89	0.1
10,2	eShop	eShop	5	43	89	0.1
10,3	eShop	–	5	43	89	0.1
10,5	eShop	–	5	43	89	0.1
10,8	eShop	–	5	47	95	0.1
11	eShop	eShop	5	47	95	0.1
11,2	eShop	–	5	47	95	0.1
11,3	eShop	–	5	47	95	0.1
11,5	eShop	eShop	5	47	95	0.1
11,8	eShop	eShop	5	47	95	0.1
12	eShop	eShop	5	51	102	0.16
12,5	eShop	–	5	51	102	0.16
12,8	eShop	–	5	51	102	0.16
13	eShop	–	5	51	102	0.16
13,3	eShop	–	5	54	107	0.16
13,5	eShop	–	5	54	107	0.16
13,8	eShop	–	5	54	107	0.16
14	eShop	–	5	54	107	0.16
14,5	eShop	–	5	56	111	0.16
14,8	eShop	–	5	56	111	0.16
15	eShop	–	5	56	111	0.16
15,3	eShop	–	5	58	115	0.16
15,5	eShop	–	5	58	115	0.16
15,75	eShop	–	5	58	115	0.16
16	eShop	–	1	58	115	0.2
16,5	eShop	–	1	60	119	0.2
17	eShop	–	1	60	119	0.2
17,5	eShop	–	1	62	123	0.2
17,75	eShop	–	1	62	123	0.2
18	eShop	–	1	62	123	0.2
18,5	eShop	–	1	64	127	0.2
19	eShop	–	1	64	127	0.2
19,5	eShop	–	1	66	131	0.2
19,75	eShop	–	1	66	131	0.2
20	eShop	–	1	66	131	0.2

HSS E	DIN 1897	Type N	h8	130°		2

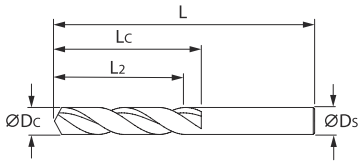
Garant Stub drill plain shank

Particularly robust and strong due to strengthened core.
Ground flutes, with high concentricity.

11 3150 – Bright finish.

Advantage: **Ideal for drilling shallow holes (approx. 2 - 4×D)** on NC machines and automatic machines.

Recommendation: **Maximum drilling depth:**
$L_2 = L_C - 1.5 \times D_C$.




≥ 2.4 mm — 11 3150


≥ 2.4 mm — 11 3230

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 3150	80	45	50	40	30	25	10	8					12	8	5	25	80	●	●	●			
11 3230				50	37	31	12	10					15	10	6	31	100	●	●	●			

Ø D_C h8	11B 11 3150	11B 11 3230		L_c	L	< 900 N f
	Stub drill HSS-E N					
mm		TiN		mm	mm	mm/rev.
1	eShop	eShop	10	6	26	0.03
1,1	eShop	eShop	10	7	28	0.03
1,2	eShop	eShop	10	8	30	0.03
1,3	eShop	eShop	10	8	30	0.03
1,4	eShop	eShop	10	9	32	0.03
1,5	eShop	eShop	10	9	32	0.03
1,6	eShop	eShop	10	10	34	0.03
1,7	eShop	eShop	10	10	34	0.03
1,8	eShop	eShop	10	11	36	0.03
1,85	–	eShop	10	11	36	0.03
1,9	eShop	eShop	10	11	36	0.03
2	eShop	eShop	10	12	38	0.03
2,1	eShop	eShop	10	12	38	0.03
2,2	eShop	eShop	10	13	40	0.03
2,3	eShop	eShop	10	13	40	0.03
2,4	eShop	eShop	10	14	43	0.03
2,5	eShop	eShop	10	14	43	0.03
2,6	eShop	eShop	10	14	43	0.03
2,7	eShop	eShop	10	16	46	0.03
2,8	eShop	eShop	10	16	46	0.03
2,9	eShop	eShop	10	16	46	0.03
3	eShop	eShop	10	16	46	0.03
3,1	eShop	eShop	10	18	49	0.03
3,2	eShop	eShop	10	18	49	0.03
3,3	eShop	eShop	10	18	49	0.03
3,4	eShop	eShop	10	20	52	0.03
3,5	eShop	eShop	10	20	52	0.03
3,6	eShop	eShop	10	20	52	0.03
3,7	eShop	eShop	10	20	52	0.03
3,8	eShop	eShop	10	22	55	0.03
3,9	eShop	eShop	10	22	55	0.03
4	eShop	eShop	10	22	55	0.05
4,1	eShop	eShop	10	22	55	0.05
4,2	eShop	eShop	10	22	55	0.05
4,3	eShop	eShop	10	24	58	0.05
4,4	eShop	eShop	10	24	58	0.05
4,5	eShop	eShop	10	24	58	0.05
4,6	eShop	eShop	10	24	58	0.05
4,65	eShop	eShop	10	24	58	0.05
4,7	eShop	eShop	10	24	58	0.05
4,8	eShop	eShop	10	26	62	0.05
4,9	eShop	eShop	10	26	62	0.05
5	eShop	eShop	10	26	62	0.05
5,1	eShop	eShop	10	26	62	0.05
5,2	eShop	eShop	10	26	62	0.05
5,3	eShop	eShop	10	26	62	0.05
5,4	eShop	eShop	10	28	66	0.05
5,5	eShop	eShop	10	28	66	0.05
5,55	eShop	eShop	10	28	66	0.05
5,6	eShop	eShop	10	28	66	0.05
5,7	eShop	eShop	10	28	66	0.05
5,8	eShop	eShop	10	28	66	0.05
5,9	eShop	eShop	10	28	66	0.05
6	eShop	eShop	10	28	66	0.07
6,1	eShop	eShop	10	31	70	0.07
6,2	eShop	eShop	10	31	70	0.07
6,3	eShop	eShop	10	31	70	0.07
6,4	eShop	eShop	10	31	70	0.07
6,5	eShop	eShop	10	31	70	0.07
6,6	eShop	eShop	10	31	70	0.07
6,7	eShop	eShop	10	31	70	0.07

Ø D_C h8	11B 11 3150	11B 11 3230		L_c	L	< 900 N f
	Stub drill HSS-E N					
mm		TiN		mm	mm	mm/rev.
6,8	eShop	eShop	10	34	74	0.07
6,9	eShop	eShop	10	34	74	0.07
7	eShop	eShop	10	34	74	0.07
7,1	eShop	eShop	10	34	74	0.07
7,2	eShop	eShop	10	34	74	0.07
7,3	eShop	eShop	10	34	74	0.07
7,4	eShop	eShop	10	34	74	0.07
7,45	eShop	eShop	10	34	74	0.07
7,5	eShop	eShop	10	34	74	0.07
7,6	eShop	eShop	5	37	79	0.07
7,7	eShop	eShop	5	37	79	0.07
7,8	eShop	eShop	5	37	79	0.07
7,9	eShop	eShop	5	37	79	0.07
8	eShop	eShop	5	37	79	0.1
8,1	eShop	eShop	5	37	79	0.1
8,2	eShop	eShop	5	37	79	0.1
8,3	eShop	eShop	5	37	79	0.1
8,4	eShop	eShop	5	37	79	0.1
8,5	eShop	eShop	5	37	79	0.1
8,6	eShop	eShop	5	40	84	0.1
8,7	eShop	eShop	5	40	84	0.1
8,8	eShop	eShop	5	40	84	0.1
8,9	eShop	eShop	5	40	84	0.1
9	eShop	eShop	5	40	84	0.1
9,1	eShop	eShop	5	40	84	0.1
9,2	eShop	eShop	5	40	84	0.1
9,25	eShop	eShop	5	40	84	0.1
9,3	eShop	eShop	5	40	84	0.1
9,4	eShop	eShop	5	40	84	0.1
9,5	eShop	eShop	5	40	84	0.1
9,6	eShop	eShop	5	43	89	0.1
9,7	eShop	eShop	5	43	89	0.1
9,8	eShop	eShop	5	43	89	0.1
9,9	eShop	eShop	5	43	89	0.1
10	eShop	eShop	5	43	89	0.1
10,2	eShop	eShop	5	43	89	0.1
10,5	eShop	eShop	5	43	89	0.1
11	eShop	eShop	5	47	95	0.1
11,5	eShop	eShop	5	47	95	0.1
11,8	eShop	eShop	5	47	95	0.1
12	eShop	eShop	5	51	102	0.16
12,5	eShop	eShop	5	51	102	0.16
13	eShop	eShop	5	51	102	0.16
13,5	eShop	eShop	5	54	107	0.16
13,8	eShop	eShop	5	54	107	0.16
14	eShop	eShop	5	54	107	0.16
14,5	eShop	eShop	5	56	111	0.16
15	eShop	eShop	5	56	111	0.16
15,5	eShop	eShop	5	58	115	0.16
15,75	eShop	eShop	5	58	115	0.16
16	eShop	eShop	1	58	115	0.2
16,5	eShop	eShop	1	60	119	0.2
17	eShop	eShop	1	60	119	0.2
17,5	eShop	eShop	1	62	123	0.2
17,75	eShop	eShop	1	62	123	0.2
18	eShop	eShop	1	62	123	0.2
18,5	eShop	eShop	1	64	127	0.2
19	eShop	eShop	1	64	127	0.2
19,5	eShop	eShop	1	66	131	0.2
19,75	eShop	eShop	1	66	131	0.2
20	eShop	eShop	1	66	131	0.2

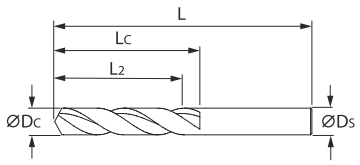
HSS E | DIN 1897 | h8 | 2

Garant High performance stub drills

High concentricity and **special chip flutes** ensure precise bores.

Advantage: **Ideal for drilling shallow holes (approx. 2 - 4×D)** on NC machines and automatic machines.

Recommendation: **Maximum drilling depth:**
$L_2 = L_C - 1.5 \times D_C$.





11 3260



11 3265

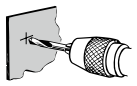
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 3260		56		50	37	31	12						17	13	6		100		●	●			
11 3265	75	65	60	50	40	35	16						17	13	8	40	50	●	●	●			

∅ D_c h8	11B 11 3260	11B 11 3265		L_c	L	INOX < 900 N f
	Stub drill HSS-E					
mm	TiAlN	TiAlN		mm	mm	mm/rev.
1	eShop	eShop	10	6	26	0.02
1,1	eShop	eShop	10	7	28	0.02
1,2	eShop	eShop	10	8	30	0.02
1,3	eShop	eShop	10	8	30	0.02
1,4	eShop	eShop	10	9	32	0.02
1,5	eShop	eShop	10	9	32	0.02
1,6	eShop	eShop	10	10	34	0.02
1,7	eShop	eShop	10	10	34	0.02
1,8	eShop	eShop	10	11	36	0.02
1,9	eShop	eShop	10	11	36	0.02
2	eShop	eShop	10	12	38	0.02
2,1	eShop	eShop	10	12	38	0.02
2,2	eShop	eShop	10	13	40	0.02
2,3	eShop	eShop	10	13	40	0.02
2,4	eShop	eShop	10	14	43	0.02
2,5	eShop	eShop	10	14	43	0.02
2,6	eShop	eShop	10	14	43	0.02
2,7	eShop	eShop	10	16	46	0.02
2,8	eShop	eShop	10	16	46	0.02
2,9	eShop	eShop	10	16	46	0.02
3	eShop	eShop	10	16	46	0.02
3,1	eShop	eShop	10	18	49	0.02
3,2	eShop	eShop	10	18	49	0.02
3,3	eShop	eShop	10	18	49	0.02
3,4	eShop	eShop	10	20	52	0.02
3,5	eShop	eShop	10	20	52	0.02
3,6	eShop	eShop	10	20	52	0.02
3,7	eShop	eShop	10	20	52	0.02
3,8	eShop	eShop	10	22	55	0.02
3,9	eShop	eShop	10	22	55	0.02
4	eShop	eShop	10	22	55	0.03
4,1	eShop	eShop	10	22	55	0.03
4,2	eShop	eShop	10	22	55	0.03
4,3	eShop	eShop	10	24	58	0.03
4,4	eShop	eShop	10	24	58	0.03
4,5	eShop	eShop	10	24	58	0.03
4,6	eShop	eShop	10	24	58	0.03
4,65	eShop	–	10	24	58	0.03
4,7	eShop	eShop	10	24	58	0.03
4,8	eShop	eShop	10	26	62	0.03
4,9	eShop	eShop	10	26	62	0.03
5	eShop	eShop	10	26	62	0.04
5,1	eShop	eShop	10	26	62	0.04
5,2	eShop	eShop	10	26	62	0.04
5,3	eShop	eShop	10	26	62	0.04
5,4	eShop	eShop	10	28	66	0.04
5,5	eShop	eShop	10	28	66	0.04
5,55	eShop	–	10	28	66	0.04
5,6	eShop	eShop	10	28	66	0.04
5,7	eShop	eShop	10	28	66	0.04
5,8	eShop	eShop	10	28	66	0.04
5,9	eShop	eShop	10	28	66	0.04
6	eShop	eShop	10	28	66	0.05
6,1	eShop	eShop	10	31	70	0.05
6,2	eShop	eShop	10	31	70	0.05

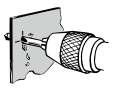
∅ D_c h8	11B 11 3260	11B 11 3265		L_c	L	INOX < 900 N f
	Stub drill HSS-E					
mm	TiAlN	TiAlN		mm	mm	mm/rev.
6,3	eShop	eShop	10	31	70	0.05
6,4	eShop	eShop	10	31	70	0.05
6,5	eShop	eShop	10	31	70	0.05
6,6	eShop	eShop	10	31	70	0.05
6,7	eShop	eShop	10	31	70	0.05
6,8	eShop	eShop	10	34	74	0.05
6,9	eShop	eShop	10	34	74	0.05
7	eShop	eShop	10	34	74	0.05
7,1	eShop	eShop	10	34	74	0.05
7,2	eShop	eShop	10	34	74	0.05
7,3	eShop	eShop	10	34	74	0.05
7,4	eShop	eShop	10	34	74	0.05
7,45	eShop	–	10	34	74	0.05
7,5	eShop	eShop	10	34	74	0.05
7,6	eShop	eShop	5	37	79	0.05
7,7	eShop	eShop	5	37	79	0.05
7,8	eShop	eShop	5	37	79	0.05
7,9	eShop	eShop	5	37	79	0.05
8	eShop	eShop	5	37	79	0.09
8,1	eShop	eShop	5	37	79	0.09
8,2	eShop	eShop	5	37	79	0.09
8,3	eShop	eShop	5	37	79	0.09
8,4	eShop	eShop	5	37	79	0.09
8,5	eShop	eShop	5	37	79	0.09
8,6	eShop	eShop	5	40	84	0.09
8,7	eShop	eShop	5	40	84	0.09
8,8	eShop	eShop	5	40	84	0.09
8,9	eShop	eShop	5	40	84	0.09
9	eShop	eShop	5	40	84	0.09
9,1	eShop	eShop	5	40	84	0.09
9,2	eShop	eShop	5	40	84	0.09
9,25	eShop	–	5	40	84	0.09
9,3	eShop	eShop	5	40	84	0.09
9,4	eShop	eShop	5	40	84	0.09
9,5	eShop	eShop	5	40	84	0.09
9,6	eShop	eShop	5	43	89	0.09
9,7	eShop	eShop	5	43	89	0.09
9,8	eShop	eShop	5	43	89	0.09
9,9	eShop	eShop	5	43	89	0.09
10	eShop	eShop	5	43	89	0.09
10,1	–	eShop	5	43	89	0.09
10,2	eShop	eShop	5	43	89	0.09
10,3	eShop	eShop	5	43	89	0.09
10,4	–	eShop	5	43	89	0.09
10,5	eShop	eShop	5	43	89	0.09
11	eShop	eShop	5	47	95	0.09
11,2	–	eShop	5	47	95	0.09
11,5	eShop	eShop	5	47	95	0.09
11,8	eShop	eShop	5	47	95	0.09
12	eShop	eShop	5	51	102	0.13
12,1	eShop	–	5	51	102	0.13
12,3	–	eShop	5	51	102	0.13
12,5	eShop	eShop	5	51	102	0.13
12,7	–	eShop	5	51	102	0.13
13	eShop	eShop	5	51	102	0.13

HSS | DIN 1897 | h8 | 135° | 2

HOLEX Sheet metal drill plain shank



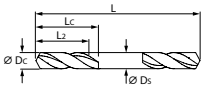
Drill positioning without centre punching.



No material deformation due to easy drilling without pressure.

Extremely break-resistant due to short helix and strong core taper. Self-centring point. **Cylindrically ground on circumference**(without chamfers) to prevent jamming.
Vaporised surface.
Dimensions similar to DIN 1897.

Application: **Especially for drilling sheet metal.**





11 3341



11 3421

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
11 3341/3421	○	○		●	○													●

Ø D_c h8 mm	12B 11 3341 single-sided	12B 11 3421 double-sided		L_c mm	L mm
2,5	eShop	–	10	10	43
3	eShop	eShop	10	11	46
3,1	eShop	eShop	10	12	49
3,2	eShop	eShop	10	12	49
3,3	eShop	eShop	10	12	49
3,5	eShop	eShop	10	13	52
4	eShop	eShop	10	14	55
4,1	eShop	eShop	10	14	55
4,2	eShop	eShop	10	14	55
4,5	–	eShop	10	16	58
4,8	eShop	–	10	17	62

Ø D_c h8 mm	12B 11 3341 single-sided	12B 11 3421 double-sided		L_c mm	L mm
4,9	eShop	–	10	17	62
5	eShop	eShop	10	17	62
5,1	eShop	–	10	17	62
5,2	eShop	–	10	17	62
5,7	eShop	–	10	19	66
6	eShop	eShop	10	19	66
6,4	eShop	–	10	21	70
6,8	eShop	eShop	10	23	72
7,2	eShop	–	5	24	74
8,1	eShop	–	5	25	79
9,6	eShop	–	5	25	89

Sets of stub drills DIN 1897 in a case

DIN 1897 | h8 | 2

Type				1-10
12B 11 3515	HOLEX	HOLEX CleverDrill stub drill set HSS No. 113006, type N in a case		eShop
11B 11 3520	Garant	Stub drill set HSS-E No. 113020, type FS with case		eShop
11B 11 3540	Garant	Stub drill set HSS-Co8 No. 113140, type FS with case	TiAlN	eShop
Drill range			mm	1 – 10
Number of drills				19
Incremental steps of drills			mm	0.5

HSS | Type N | 118°
HSS E | Type FS | 135°
HSS Co8 | Type FS | 130°



11 3515

HSS E | DIN 1897 | Type N | h8 | 130° | 2

Type				1-10	1-10,5	1-13
11B 11 3730	Garant	Stub drill set HSS-E No. 113150, type N as a refill set, without case		eShop	eShop	eShop
11B 11 3740	Garant	Stub drill set HSS-E No. 113230, type N with case	TiN	eShop	–	–
Drill range			mm	1 – 10	1 – 10.5	1 – 13
Number of drills				19	24	121
Tapping hole Ø			mm	–	3.3; 4.2; 6.8; 10.2	–
Incremental steps of drills			mm	0.5	0.5	0.1

HSS E | DIN 1897 | h8 | 2

Type				1-10
11B 11 3760		Stub drill set HSS-E No. 113260, with case	TiAlN	eShop
11B 11 3780	Garant	Stub drill set HSS-E No. 113265, with case	TiAlN	eShop
11B 11 3790		Stub drill set HSS-E No. 113265, refill set without a case	TiAlN	eShop
Drill range			mm	1 – 10
Number of drills				19
Incremental steps of drills			mm	0.5

130° | 118° | 118°

Empty case suitable for stub drills to DIN 1897

Type			1-10
12B 11 3825	HOLEX	Empty case for stub drills to DIN 1897	eShop
11B 11 3830	Garant		eShop
for drills		mm	1 – 10
for number of drills			19
Incremental steps of drills		mm	0.5



11 3830

HSS E | DIN 1897 | Type N | h8 | 130° | 2

≤ 3.5 mm | ≥ 4 mm

Garant Stub drill, plain shank with 3 clamping faces

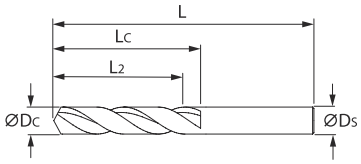
Stable and sturdy stub drill with **strengthened core diameter.**
Ground flutes, with high concentricity. Precision ground point.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.

Note:
Size 1–3,5 – Drills with plain shank, **without drive flats.**
Size 4–20 – Three **drive flats on the shank** for use in a 3-jaw chuck.
Size 13,5–16 – Shank Ø 9.5mm.
Size 17–20 – Shank Ø 12.5mm.



11 3001



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
11 3001	70	45	40	40	30	25	10	8						12	8	25	80	●

Ø D_C h8 mm	11 3001 Stub drill with 3 clamping faces HSS-E		L_c mm	L mm	< 900 N f mm/rev.
1	eShop	10	6	26	0.03
1,5	eShop	10	9	32	0.03
1,6	eShop	10	10	34	0.03
2	eShop	10	12	38	0.03
2,5	eShop	10	14	43	0.03
3	eShop	10	16	46	0.03
3,3	eShop	10	18	49	0.03
3,5	eShop	10	20	52	0.03
4	eShop	10	22	55	0.05
4,2	eShop	10	22	55	0.05
4,5	eShop	10	24	58	0.05
5	eShop	10	26	62	0.05
5,5	eShop	10	28	66	0.05
6	eShop	10	28	66	0.07
6,5	eShop	10	31	70	0.07
6,8	eShop	10	34	74	0.07
7	eShop	10	34	74	0.07
7,5	eShop	10	34	74	0.07
8	eShop	5	37	79	0.1
8,5	eShop	5	37	79	0.1

Ø D_C h8 mm	11 3001 Stub drill with 3 clamping faces HSS-E		L_c mm	L mm	< 900 N f mm/rev.
9	eShop	5	40	84	0.1
9,5	eShop	5	40	84	0.1
10	eShop	5	43	89	0.1
10,2	eShop	5	43	89	0.1
10,5	eShop	5	43	89	0.1
11	eShop	5	47	95	0.1
11,5	eShop	5	47	95	0.1
12	eShop	5	51	102	0.16
12,5	eShop	5	51	102	0.16
13	eShop	5	51	102	0.16
13,5	eShop	1	54	107	0.16
14	eShop	1	54	107	0.16
14,5	eShop	1	56	111	0.16
15	eShop	1	56	111	0.16
15,5	eShop	1	56	111	0.16
16	eShop	1	58	115	0.2
17	eShop	1	60	119	0.2
18	eShop	1	62	123	0.2
19	eShop	1	64	127	0.2
20	eShop	1	66	131	0.2

HSS E | DIN 1897 | Type N | h8 | 130° | 2

Garant Stub drill set, plain shank with 3 clamping faces

Composed of jobber drills DIN 1897.

Note: Ø 1 - 3.5 mm: Drills with plain shank, **without drive flats.**
Ø 4 - 10 mm: Drill with plain shank and 3 drive flats.

Type		1-10
11B 11 3010	Stub drill set HSS-E No. 113001 with case	eShop
Drill range	mm	1 – 10
Number of drills		19
Incremental steps of drills	mm	0.5



11 3010

Further accessories

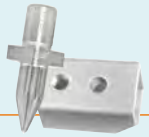
Our portfolio additions in the area of **manual drilling, flow drilling** as well as **thread repairs** can be found in catalogue volume 2 (Hand tools and Metrology) as well as in the eShop.



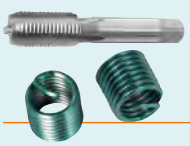
Drills for stone, concrete and wood in volume 2 section 78 Gripping, cutting, and striking tools.



Cordless and mains-powered equipment for a wide range of drilling applications in volume 2 area 07 Power Tools & Workshop Accessories.



Flow drilling
Our flow drill range can be found in the eShop.



Thread repair/threaded inserts in volume 2 section 08 Power Tools & Workshop Accessories.

HSS E | DIN 338 | Type N | h8 | 2

130° 135° ≤ 16 mm ≥ 17 mm ≤ 3.5 mm ≥ 4 mm

Garant Jobber drill, plain shank with 3 clamping faces

Particularly sturdy and robust due to the **strengthened core diameter.** Ground flutes, with high concentricity. Precision ground point.

Recommendation: Maximum drilling depth:

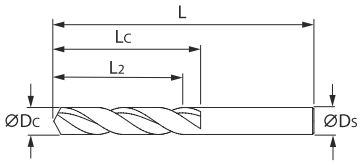
$L_2 = L_C - 1.5 \times D_C$.

Note:

Size 1–3,5 – Drills with plain shank, **without drive flats**
Size 4–20 – Three **drive flats on the shank** for use in a 3-jaw chuck.
Size 13,5–16 – Shank Ø 9.5 mm.
Size 17–20 – Shank Ø 12.5 mm.



11 4001



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
11 4001	70	45	40	40	30	25	10	8						12	8	25	80	●

Ø D_C h8 mm	11B 11 4001 Jobber drill with 3 clamping faces HSS-E		L_c mm	L mm	< 900 N f mm/rev.
1	eShop	5	12	34	0.03
1,5	eShop	5	18	40	0.03
1,6	eShop	5	20	43	0.03
2	eShop	5	24	49	0.03
2,5	eShop	5	30	57	0.03
3	eShop	10	33	61	0.03
3,2	eShop	10	36	65	0.03
3,3	eShop	10	36	65	0.03
3,5	eShop	10	39	70	0.03
4	eShop	10	43	75	0.05
4,2	eShop	10	43	75	0.05
4,5	eShop	10	47	80	0.05
5	eShop	10	52	86	0.05
5,2	eShop	10	52	86	0.05
5,5	eShop	10	57	93	0.05
6	eShop	10	57	93	0.07
6,5	eShop	10	63	101	0.07
6,8	eShop	10	69	109	0.07
7	eShop	10	69	109	0.07
7,5	eShop	10	69	109	0.07
8	eShop	5	75	117	0.1

Ø D_C h8 mm	11B 11 4001 Jobber drill with 3 clamping faces HSS-E		L_c mm	L mm	< 900 N f mm/rev.
8,5	eShop	5	75	117	0.1
9	eShop	5	81	125	0.1
9,5	eShop	5	81	125	0.1
10	eShop	5	87	133	0.1
10,2	eShop	5	87	133	0.1
10,5	eShop	5	87	133	0.1
11	eShop	5	94	142	0.1
11,5	eShop	5	94	142	0.1
12	eShop	5	101	151	0.16
12,5	eShop	5	101	151	0.16
13	eShop	5	101	151	0.16
13,5	eShop	1	108	160	0.16
14	eShop	1	108	160	0.16
14,5	eShop	1	114	169	0.16
15	eShop	1	114	169	0.16
15,5	eShop	1	120	178	0.16
16	eShop	1	120	178	0.2
17	eShop	1	125	184	0.2
18	eShop	1	130	191	0.2
19	eShop	1	135	198	0.2
20	eShop	1	140	205	0.2

HSS E | DIN 338 | Type N | h8 | 130° | 2

Garant Jobber drill set, plain shank with 3 clamping faces

Composed of jobber drills DIN 338.

Additionally with intermediate sizes for tapping drill holes Ø 1.6; 3.3; 4.2; 6.8; and 10.2 mm.

Note: Ø 1 - 3.5 mm: Drills with plain shank, **without drive flats.**
Ø 4 - 10.5 mm: Drill with plain shank and 3 drive flats.

Type		1-10,5
11B 11 4010	Jobber drill set HSS-E No. 114001 with case	eShop
Drill range	mm	1 – 10.5
Number of drills		25
Tapping hole Ø	mm	1.6; 3.3; 4.2; 6.8; 10.2
Incremental steps of drills	mm	0.5



11 4010

DIN 338 | h8 | 118° | 2

≤ Ø 3,5 | ≥ Ø 4

Garant

Jobber drill, plain shank with stepped tip

Chamfers are nitrided. Particularly sturdy and robust due to the **strengthened core diameter.**
Ground flutes, with high concentricity. Precision ground point.
Three **drive flats on the shank** for use in a 3-jaw chuck.

- Ideal for producing precise holes in sheet metal, pipes, and profiles.
- Reliable spot drilling without centring or centre punching – even on curved surfaces – thanks to **innovative ground point.**
- **Oblique drilling** possible without any problems after the first level of the drill tip has penetrated the material.
- Drilling with significantly less force required than with conventional DIN338 HSS drills – up to a diameter of 13 mm directly in the cordless drill/driver.
- Stable and secure form fit in the 3-jaw chuck.
- **General use** across a wide spectrum of materials including plastic, wood and acrylic without tearing or splintering.
- The drill does not rattle or dig in – even in the case of thin-walled materials.
- Burr-free drill exit.
- Ideal for drilling out bolts and rivets.

11 4008 – With special cutter geometry also for use in stainless steels.

Recommendation: Maximum drilling depth:

$L_2 = L_C - 1.5 \times D_C$.

Note:
Size 1–3,5 – Drills with plain shank, **without drive flat.**
Size 4–13 – Drill with plain shank and 3 drive flats.



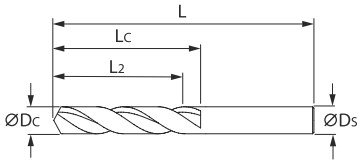
11 4004

HSS | Type N



11 4008

HSS E | Type S/STL



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 4004	70	70	50	30	27	22	10										25	50	●	●			
11 4008	70	70	50	35	32	25	15							14	12		30	50	●	●			

Ø D_C h8	11Q 11 4004 Jobber drill with stepped tip HSS	11Q 11 4008 Jobber drill with stepped tip HSS-E		L_c	L	< 750 N f
mm	N	Stainless steel		mm	mm	mm/rev.
1	eShop	eShop	10	12	34	0.02
1,5	eShop	eShop	10	18	40	0.02
2	eShop	eShop	10	24	49	0.04
2,5	eShop	eShop	10	30	57	0.04
3	eShop	eShop	10	33	61	0.06
3,2	eShop	eShop	10	36	65	0.06
3,3	eShop	eShop	10	36	65	0.06
3,5	eShop	eShop	10	39	70	0.06
4	eShop	eShop	10	43	75	0.08
4,1	eShop	eShop	10	43	75	0.08
4,2	eShop	eShop	10	43	75	0.08
4,5	eShop	eShop	10	47	80	0.08
4,9	eShop	eShop	10	52	86	0.08
5	eShop	eShop	10	52	86	0.1
5,1	eShop	eShop	10	52	86	0.1
5,2	eShop	eShop	10	52	86	0.1
5,5	eShop	eShop	10	57	93	0.1

Ø D_C h8	11Q 11 4004 Jobber drill with stepped tip HSS	11Q 11 4008 Jobber drill with stepped tip HSS-E		L_c	L	< 750 N f
mm	N	Stainless steel		mm	mm	mm/rev.
6	eShop	eShop	10	57	93	0.1
6,5	eShop	eShop	10	63	101	0.125
6,8	eShop	eShop	10	69	109	0.125
7	eShop	eShop	10	69	109	0.125
7,5	eShop	eShop	10	69	109	0.125
8	eShop	eShop	5	75	117	0.16
8,5	eShop	eShop	5	75	117	0.16
9	eShop	eShop	5	81	125	0.16
9,5	eShop	eShop	5	81	125	0.16
10	eShop	eShop	5	87	133	0.2
10,2	eShop	eShop	5	87	133	0.2
10,5	eShop	eShop	5	87	133	0.2
11	eShop	eShop	1	94	142	0.2
11,5	eShop	eShop	1	94	142	0.2
12	eShop	eShop	1	101	151	0.2
12,5	eShop	eShop	1	101	151	0.2
13	eShop	eShop	1	101	151	0.2

Flexible and reliable – the drilling tool for professionals who get on with the job.

Assembly, repair, maintenance and service.

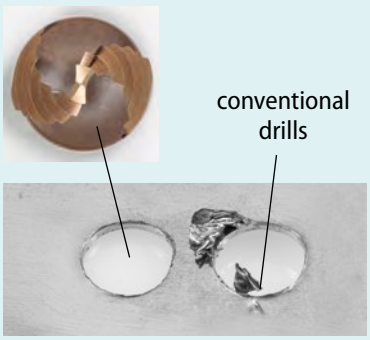
Soft-cutting stepped geometry for process-reliable spot drilling, even without centre punching.

Optionally with HSS or HSS-E substrate.



Version in DIN 338 with 3 clamping faces.





conventional drills

DIN 338 | h8 | 118° | 2

≤ Ø 3,5 | ≥ Ø 4

Garant

Jobber drill sets, plain shank with stepped tip

Composed of jobber drills DIN 338.

11 4014/4018 Size 1-10,5; 1-13KB – **Additionally with intermediate sizes** for tapping drill holes Ø 3.3; 4.2; 6.8 and 10.2 mm.

Note: Ø 1 - 3.5 mm: Drills with plain shank, **without drive flats.**
Ø 4 - 10 mm: Drill with plain shank and 3 drive flats.

HSS
Type N



11 4014_1–10

HSS E
Type S/STL



11 4018_1–10

Type		1-10	1-10,5	1-13	1-13KB
11Q 11 4014	Jobber drill set HSS with stepped tip No. 114004 with case	eShop	eShop	eShop	eShop
11Q 11 4018	Jobber drill set HSS-E with stepped tip No. 114008 with case	eShop	eShop	eShop	eShop
Drill range	mm	1 – 10	1 – 10.5	1 – 13	1 – 13
Number of drills		19	24	25	29
Tapping hole Ø	mm	–	3.3; 4.2; 6.8; 10.2	–	3.3; 4.2; 6.8; 10.2
Incremental steps of drills	mm	0.5			

11

Application areas

General purpose steel => **HSS**

Stainless, brass => **HSS-E**



HSS 11 4004



HSS-E 11 4008

For use on general materials:

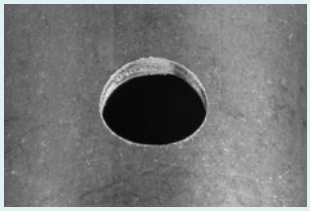
- Aluminium pipe
- Copper pipe
- Brass panel
- Acrylic glass
- PVC plastic pipe
- St37 (structural steel)
- and much more.



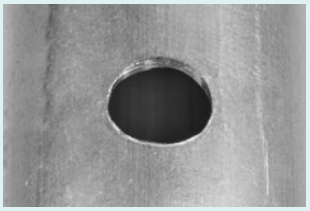




PVC



St37



Aluminium



Brass

Our customers' opinions:

- St37 (S235) => "No problems, holes are beautifully round and smooth."
- INOX (VA, stainless) => "Works flawlessly. Choosing the right cutting data is crucial."
- Plastic => "Clean surface without burrs."
- Copper => "So far only positive feedback from my mechanics."

HSS | Type N | h8 | 118° | 2

Jobber drills, plain shank

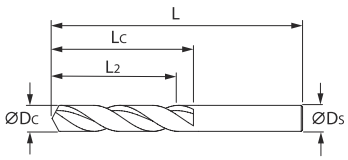
Roll forged, standard helix angle, core thickness and core taper.
Dimensions to DIN 338.

11 4000 – No interruption in the material structure, so the drill is more resilient and suitable for arduous drilling tasks (e. g. with hand held drills). Economy version.

11 4020 – Robust jobber drill with strengthened core and small chisel point for easy spot drilling and accurate centring of the designated hole. **Precision roll forged flutes.**

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.

Note:
11 4020 – Size 14-20: Shank ⌀ 13 mm with 3 drive flats.




11 4000


11 4020


Precision roll forged (11 4020):
The profile is forged in a chipless process, the guide chamfers are additionally ground.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 4000		45		**40**	**30**	**25**											25		●	●		○	
11 4020		45		**40**	**30**	**25**											25		●	●			

⌀ D_c h8	12B 11 4000 roll forged N	12B 11 4020 Precision roll forged N		L_c	L	< 750 N f
	HSS jobber drill					
mm				mm	mm	mm/rev.
1	eShop	eShop	5	12	34	0.03
1,1	eShop	eShop	5	14	36	0.03
1,2	eShop	eShop	5	16	38	0.03
1,3	eShop	eShop	5	16	38	0.03
1,4	eShop	eShop	5	18	40	0.03
1,5	eShop	eShop	5	18	40	0.03
1,6	eShop	eShop	5	20	43	0.03
1,7	eShop	eShop	5	20	43	0.03
1,8	eShop	eShop	5	22	46	0.03
1,9	eShop	eShop	5	22	46	0.03
2	eShop	eShop	5	24	49	0.03
2,1	eShop	eShop	5	24	49	0.03
2,2	eShop	eShop	5	27	53	0.03
2,3	eShop	eShop	5	27	53	0.03
2,4	eShop	eShop	5	30	57	0.03
2,5	eShop	eShop	5	30	57	0.03
2,6	eShop	eShop	5	30	57	0.03
2,7	eShop	eShop	5	33	61	0.03
2,8	eShop	eShop	5	33	61	0.03
2,9	eShop	eShop	5	33	61	0.03
3	eShop	eShop	10	33	61	0.03
3,1	eShop	eShop	10	36	65	0.03
3,2	eShop	eShop	10	36	65	0.03
3,3	eShop	eShop	10	36	65	0.03
3,4	eShop	eShop	10	39	70	0.03
3,5	eShop	eShop	10	39	70	0.03
3,6	eShop	eShop	10	39	70	0.03
3,7	eShop	eShop	10	39	70	0.03
3,8	eShop	eShop	10	43	75	0.03
3,9	eShop	eShop	10	43	75	0.03
4	eShop	eShop	10	43	75	0.05
4,1	eShop	eShop	10	43	75	0.05
4,2	eShop	eShop	10	43	75	0.05
4,3	eShop	eShop	10	47	80	0.05
4,4	eShop	eShop	10	47	80	0.05
4,5	eShop	eShop	10	47	80	0.05
4,6	eShop	eShop	10	47	80	0.05
4,7	eShop	eShop	10	47	80	0.05
4,8	eShop	eShop	10	52	86	0.05
4,9	eShop	eShop	10	52	86	0.05
5	eShop	eShop	10	52	86	0.05
5,1	eShop	eShop	10	52	86	0.05
5,2	eShop	eShop	10	52	86	0.05
5,3	eShop	eShop	10	52	86	0.05
5,4	eShop	eShop	10	57	93	0.05
5,5	eShop	eShop	10	57	93	0.05
5,6	eShop	eShop	10	57	93	0.05
5,7	eShop	eShop	10	57	93	0.05
5,8	eShop	eShop	10	57	93	0.05
5,9	eShop	eShop	10	57	93	0.05
6	eShop	eShop	10	57	93	0.07
6,1	eShop	eShop	10	63	101	0.07
6,2	eShop	eShop	10	63	101	0.07
6,3	eShop	eShop	10	63	101	0.07

⌀ D_c h8	12B 11 4000 roll forged N	12B 11 4020 Precision roll forged N		L_c	L	< 750 N f
	HSS jobber drill					
mm				mm	mm	mm/rev.
6,4	eShop	eShop	10	63	101	0.07
6,5	eShop	eShop	10	63	101	0.07
6,6	eShop	eShop	10	63	101	0.07
6,7	eShop	eShop	10	63	101	0.07
6,8	eShop	eShop	10	69	109	0.07
6,9	eShop	eShop	10	69	109	0.07
7	eShop	eShop	10	69	109	0.07
7,1	eShop	eShop	10	69	109	0.07
7,2	eShop	eShop	10	69	109	0.07
7,3	eShop	eShop	10	69	109	0.07
7,4	eShop	eShop	10	69	109	0.07
7,5	eShop	eShop	10	69	109	0.07
7,6	eShop	eShop	5	75	117	0.07
7,7	eShop	eShop	5	75	117	0.07
7,8	eShop	eShop	5	75	117	0.07
7,9	eShop	eShop	5	75	117	0.07
8	eShop	eShop	5	75	117	0.1
8,1	eShop	eShop	5	75	117	0.1
8,2	eShop	eShop	5	75	117	0.1
8,3	eShop	eShop	5	75	117	0.1
8,4	eShop	eShop	5	75	117	0.1
8,5	eShop	eShop	5	75	117	0.1
8,6	eShop	eShop	5	81	125	0.1
8,7	eShop	eShop	5	81	125	0.1
8,8	eShop	eShop	5	81	125	0.1
8,9	eShop	eShop	5	81	125	0.1
9	eShop	eShop	5	81	125	0.1
9,1	eShop	eShop	5	81	125	0.1
9,2	eShop	eShop	5	81	125	0.1
9,3	eShop	eShop	5	81	125	0.1
9,4	eShop	eShop	5	81	125	0.1
9,5	eShop	eShop	5	81	125	0.1
9,6	eShop	eShop	5	87	133	0.1
9,7	eShop	eShop	5	87	133	0.1
9,8	eShop	eShop	5	87	133	0.1
9,9	eShop	eShop	5	87	133	0.1
10	eShop	eShop	5	87	133	0.1
10,2	eShop	eShop	5	87	133	0.1
10,5	eShop	eShop	5	87	133	0.1
10,8	eShop	eShop	5	94	142	0.1
11	eShop	eShop	5	94	142	0.1
11,2	eShop	eShop	5	94	142	0.1
11,5	eShop	eShop	5	94	142	0.1
11,8	eShop	eShop	5	94	142	0.1
12	eShop	eShop	5	101	151	0.16
12,2	eShop	eShop	5	101	151	0.16
12,5	eShop	eShop	5	101	151	0.16
12,8	eShop	eShop	5	101	151	0.16
13	eShop	eShop	5	101	151	0.16
14	–	eShop	1	108	160	0.16
15	–	eShop	1	114	169	0.16
16	–	eShop	1	120	178	0.2
18	–	eShop	1	130	191	0.2
20	–	eShop	1	140	205	0.2

HSS | DIN 338 | Type N | h8 | 118° | 2

Jobber drills, plain shank

11 4031 – **HOLEX CleverDrill:** Sturdy drills for all standard applications. Improved spot drilling behaviour due to cross-ground form. Standard core thickness and core taper. Profile ground. Surface: Bronze-coloured tempered helical flutes.

11 4150 – Profile ground: Jobber drill with high pitch accuracy and concentricity as well as precision ground point. Steam tempered from Ø 2.4 mm.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.

Note:

11 4031 – **Successor product to No. 114030.**
Size 13.2 – 20: With stepped shank Ø 12.7 mm.

11 4150 – Size 16 - 20: Drills with shank Ø 16 mm.

≥ 3 mm

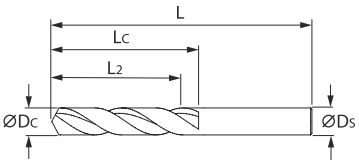


11 4031

≥ 4 mm



11 4150



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 4031	80	60	50	**35**	**32**	**22**	18										30	**40**	●	●			
11 4150	80	45	50	**40**	**30**	**25**	10	8									**25**	**80**	●	●			

Ø D_C h8 (mm or inch)	12B 11 4031 HOLEX CleverDrill HSS jobber drill N	11B 11 4150 Garant HSS jobber drill		Inch Ø ≙ mm	L_c mm	L mm	< 750 N f mm/rev.
0,2	eShop	eShop	5	–	2.5	19	0.03
0,25	–	eShop	5	–	3	19	0.03
0,3	eShop	eShop	5	–	3	19	0.03
0,35	eShop	eShop	5	–	4	19	0.03
0,4	eShop	eShop	5	–	5	20	0.03
1/64	–	eShop ■	–	0.4	5	20	0.03
0,45	eShop	eShop	5	–	5	20	0.03
0,5	eShop	eShop	5	–	6	22	0.03
0,55	eShop	eShop	5	–	7	24	0.03
0,6	eShop	eShop	5	–	7	24	0.03
0,65	eShop	eShop	5	–	8	26	0.03
0,7	eShop	eShop	5	–	9	28	0.03
0,75	eShop	eShop	5	–	9	28	0.03
1/32	–	eShop ■	–	0.79	10	30	0.03
0,8	eShop	eShop	5	–	10	30	0.03
0,85	eShop	eShop	5	–	10	30	0.03
0,9	eShop	eShop	5	–	11	32	0.03
0,95	eShop	eShop	5	–	11	32	0.03
1	eShop	eShop	5	–	12	34	0.03
1,05	eShop	eShop	5	–	12	34	0.03
1,1	eShop	eShop	5	–	14	36	0.03
1,15	eShop	eShop	5	–	14	36	0.03
3/64	–	eShop ■	–	1.19	16	38	0.03
1,2	eShop	eShop	5	–	16	38	0.03
1,25	eShop	eShop	5	–	16	38	0.03
1,3	eShop	eShop	5	–	16	38	0.03
1,35	eShop	eShop	5	–	18	40	0.03
1,4	eShop	eShop	5	–	18	40	0.03
1,45	eShop	eShop	5	–	18	40	0.03
1,5	eShop	eShop	5	–	18	40	0.03
1,55	eShop	eShop	5	–	20	43	0.03
1/16	–	eShop ■	–	1.59	20	43	0.03
1,6	eShop	eShop	5	–	20	43	0.03
1,65	eShop	eShop	5	–	20	43	0.03
1,7	eShop	eShop	5	–	20	43	0.03
1,75	eShop	eShop	5	–	22	46	0.03
1,8	eShop	eShop	5	–	22	46	0.03
1,85	eShop	eShop	5	–	22	46	0.03
1,9	eShop	eShop	5	–	22	46	0.03
1,95	eShop	eShop	5	–	24	49	0.03
5/64	–	eShop ■	–	1.98	24	49	0.03

Ø D_C h8 (mm or inch)	12B 11 4031 HOLEX CleverDrill HSS jobber drill N	11B 11 4150 Garant HSS jobber drill		Inch Ø ≙ mm	L_c mm	L mm	< 750 N f mm/rev.
2	eShop	eShop	5	–	24	49	0.03
2,05	eShop	eShop	5	–	24	49	0.03
2,1	eShop	eShop	5	–	24	49	0.03
2,15	eShop	eShop	5	–	27	53	0.03
2,2	eShop	eShop	5	–	27	53	0.03
2,3	eShop	eShop	5	–	27	53	0.03
3/32	–	eShop ■	–	2.38	30	57	0.03
2,4	eShop	eShop	5	–	30	57	0.03
2,5	eShop	eShop ■	5	–	30	57	0.03
2,6	eShop	eShop	5	–	30	57	0.03
2,7	eShop	eShop	5	–	33	61	0.03
7/64	–	eShop ■	–	2.78	33	61	0.03
2,8	eShop	eShop	5	–	33	61	0.03
2,9	eShop	eShop	5	–	33	61	0.03
3	eShop	eShop	10	–	33	61	0.03
3,1	eShop	eShop	10	–	36	65	0.03
1/8	–	eShop ■	–	3.17	36	65	0.03
3,2	eShop	eShop	10	–	36	65	0.03
3,25	eShop	eShop	10	–	36	65	0.03
3,3	eShop	eShop	10	–	36	65	0.03
3,4	eShop	eShop	10	–	39	70	0.03
3,5	eShop	eShop ■	10	–	39	70	0.03
9/64	–	eShop ■	–	3.57	39	70	0.03
3,6	eShop	eShop	10	–	39	70	0.03
3,7	eShop	eShop	10	–	39	70	0.03
3,8	eShop	eShop	10	–	43	75	0.03
3,9	eShop	eShop	10	–	43	75	0.03
5/32	–	eShop ■	–	3.97	43	75	0.03
4	eShop	eShop ■	10	–	43	75	0.05
4,1	eShop	eShop	10	–	43	75	0.05
4,2	eShop	eShop	10	–	43	75	0.05
4,3	eShop	eShop	10	–	47	80	0.05
11/64	–	eShop ■	–	4.37	47	80	0.05
4,4	eShop	eShop	10	–	47	80	0.05
4,5	eShop	eShop	10	–	47	80	0.05
4,6	eShop	eShop	10	–	47	80	0.05
4,65	eShop	eShop	10	–	47	80	0.05
4,7	eShop	eShop	10	–	47	80	0.05
3/16	–	eShop ■	–	4.76	52	86	0.05
4,8	eShop	eShop	10	–	52	86	0.05
4,9	eShop	eShop	10	–	52	86	0.05

Ø D_c h8 (mm or inch)	12B 11 4031 HOLEX CleverDrill HSS jobber drill N	11B 11 4150 Garant HSS jobber drill		Inch Ø ≙ mm	L_c mm	L mm	< 750 N f mm/rev.
5	eShop	eShop	10	–	52	86	0.05
5,1	eShop	eShop	10	–	52	86	0.05
13/64	–	eShop	–	5.16	52	86	0.05
5,2	eShop	eShop	10	–	52	86	0.05
5,3	eShop	eShop	10	–	52	86	0.05
5,4	eShop	eShop	10	–	57	93	0.05
5,5	eShop	eShop	10	–	57	93	0.05
5,55	eShop	eShop	10	–	57	93	0.05
7/32	–	eShop	–	5.56	57	93	0.05
5,6	eShop	eShop	10	–	57	93	0.05
5,65	–	eShop	10	–	57	93	0.05
5,7	eShop	eShop	10	–	57	93	0.05
5,8	eShop	eShop	10	–	57	93	0.05
5,9	eShop	eShop	10	–	57	93	0.05
15/64	–	eShop	–	5.95	57	93	0.07
6	eShop	eShop	10	–	57	93	0.07
6,1	eShop	eShop	10	–	63	101	0.07
6,2	eShop	eShop	10	–	63	101	0.07
6,3	eShop	eShop	10	–	63	101	0.07
1/4	–	eShop	–	6.35	63	101	0.07
6,4	eShop	eShop	10	–	63	101	0.07
6,5	eShop	eShop	10	–	63	101	0.07
6,6	eShop	eShop	10	–	63	101	0.07
6,7	eShop	eShop	10	–	63	101	0.07
6,75	–	eShop	10	–	69	109	0.07
17/64	–	eShop	–	6.75	69	109	0.07
6,8	eShop	eShop	10	–	69	109	0.07
6,9	eShop	eShop	10	–	69	109	0.07
7	eShop	eShop	10	–	69	109	0.07
7,1	eShop	eShop	10	–	69	109	0.07
9/32	–	eShop	–	7.14	69	109	0.07
7,2	eShop	eShop	10	–	69	109	0.07
7,3	eShop	eShop	10	–	69	109	0.07
7,4	eShop	eShop	10	–	69	109	0.07
7,45	eShop	eShop	10	–	69	109	0.07
7,5	eShop	eShop	10	–	69	109	0.07
19/64	–	eShop	–	7.54	75	117	0.07
7,55	–	eShop	10	–	75	117	0.07
7,6	eShop	eShop	5	–	75	117	0.07
7,7	eShop	eShop	5	–	75	117	0.07
7,8	eShop	eShop	5	–	75	117	0.07
7,9	eShop	eShop	5	–	75	117	0.07
5/16	–	eShop	–	7.94	75	117	0.07
8	eShop	eShop	5	–	75	117	0.1
8,1	eShop	eShop	5	–	75	117	0.1
8,2	eShop	eShop	5	–	75	117	0.1
8,3	eShop	eShop	5	–	75	117	0.1
21/64	–	eShop	–	8.33	75	117	0.1
8,4	eShop	eShop	5	–	75	117	0.1
8,5	eShop	eShop	5	–	75	117	0.1
8,6	eShop	eShop	5	–	81	125	0.1
8,7	eShop	eShop	5	–	81	125	0.1
11/32	–	eShop	–	8.73	81	125	0.1
8,8	eShop	eShop	5	–	81	125	0.1
8,9	eShop	eShop	5	–	81	125	0.1
9	eShop	eShop	5	–	81	125	0.1
9,1	eShop	eShop	5	–	81	125	0.1
23/64	–	eShop	–	9.13	81	125	0.1
9,2	eShop	eShop	5	–	81	125	0.1
9,25	eShop	eShop	5	–	81	125	0.1
9,3	eShop	eShop	5	–	81	125	0.1
9,4	eShop	eShop	5	–	81	125	0.1
9,5	eShop	eShop	5	–	81	125	0.1
3/8	–	eShop	–	9.52	87	133	0.1
9,55	–	eShop	5	–	87	133	0.1
9,6	eShop	eShop	5	–	87	133	0.1
9,7	eShop	eShop	5	–	87	133	0.1
9,8	eShop	eShop	5	–	87	133	0.1
9,9	eShop	eShop	5	–	87	133	0.1
25/64	–	eShop	–	9.92	87	133	0.1
10	eShop	eShop	5	–	87	133	0.1
10,1	eShop	eShop	5	–	87	133	0.1
10,2	eShop	eShop	5	–	87	133	0.1

Ø D_c h8 (mm or inch)	12B 11 4031 HOLEX CleverDrill HSS jobber drill N	11B 11 4150 Garant HSS jobber drill		Inch Ø ≙ mm	L_c mm	L mm	< 750 N f mm/rev.
10,25	–	eShop	5	–	87	133	0.1
10,3	eShop	eShop	5	–	87	133	0.1
13/32	–	eShop	–	10.32	87	133	0.1
10,4	eShop	eShop	5	–	87	133	0.1
10,5	eShop	eShop	5	–	87	133	0.1
10,6	eShop	eShop	5	–	87	133	0.1
10,7	eShop	eShop	5	–	94	142	0.1
27/64	–	eShop	–	10.72	94	142	0.1
10,8	eShop	eShop	5	–	94	142	0.1
10,9	eShop	eShop	5	–	94	142	0.1
11	eShop	eShop	5	–	94	142	0.1
11,1	eShop	eShop	5	–	94	142	0.1
7/16	–	eShop	–	11.11	94	142	0.1
11,2	eShop	eShop	5	–	94	142	0.1
11,3	eShop	eShop	5	–	94	142	0.1
11,35	–	eShop	5	–	94	142	0.1
11,4	eShop	eShop	5	–	94	142	0.1
11,5	eShop	eShop	5	–	94	142	0.1
29/64	–	eShop	–	11.51	94	142	0.1
11,55	–	eShop	5	–	94	142	0.1
11,6	eShop	eShop	5	–	94	142	0.1
11,7	eShop	eShop	5	–	94	142	0.1
11,8	eShop	eShop	5	–	94	142	0.1
11,9	eShop	eShop	5	–	101	151	0.1
15/32	–	eShop	–	11.91	101	151	0.1
12	eShop	eShop	5	–	101	151	0.16
12,2	eShop	eShop	5	–	101	151	0.16
31/64	–	eShop	–	12.3	101	151	0.16
12,5	eShop	eShop	5	–	101	151	0.16
1/2	–	eShop	–	12.7	101	151	0.16
12,8	eShop	eShop	5	–	101	151	0.16
12,9	eShop	eShop	5	–	101	151	0.16
13	eShop	eShop	5	–	101	151	0.16
33/64	–	eShop	–	13.1	101	151	0.16
13,2	eShop	eShop	1	–	101	151	0.16
17/32	–	eShop	–	13.49	108	160	0.16
13,5	eShop	eShop	1	–	108	160	0.16
13,8	eShop	eShop	1	–	108	160	0.16
35/64	–	eShop	–	13.89	108	160	0.16
14	eShop	eShop	1	–	108	160	0.16
9/16	eShop	eShop	1	14.29	114	169	0.16
14,5	eShop	eShop	1	–	114	169	0.16
37/64	–	eShop	–	14.68	114	169	0.16
14,75	eShop	eShop	1	–	114	169	0.16
15	eShop	eShop	1	–	114	169	0.16
19/32	–	eShop	–	15.08	120	178	0.16
15,1	–	eShop	1	–	120	178	0.16
15,25	eShop	eShop	1	–	120	178	0.16
39/64	–	eShop	–	15.48	120	178	0.16
15,35	–	eShop	1	–	120	178	0.16
15,5	eShop	eShop	1	–	120	178	0.16
15,75	eShop	eShop	1	–	120	178	0.16
5/8	–	eShop	–	15.87	120	178	0.16
16	eShop	eShop	1	–	120	178	0.2
41/64	–	eShop	–	16.27	125	184	0.2
16,5	eShop	eShop	1	–	125	184	0.2
21/32	–	eShop	–	16.67	125	184	0.2
17	eShop	eShop	1	–	125	184	0.2
43/64	–	eShop	–	17.07	130	191	0.2
17,35	–	eShop	1	–	130	191	0.2
11/16	–	eShop	–	17.46	130	191	0.2
17,5	eShop	eShop	1	–	130	191	0.2
45/64	–	eShop	–	17.86	130	191	0.2
18	eShop	eShop	1	–	130	191	0.2
23/32	–	eShop	–	18.26	135	198	0.2
18,5	eShop	eShop	1	–	135	198	0.2
47/64	–	eShop	–	18.65	135	198	0.2
19	eShop	eShop	1	–	135	198	0.2
3/4	–	eShop	–	19.05	140	205	0.2
19,35	–	eShop	1	–	140	205	0.2
19,5	eShop	eShop	1	–	140	205	0.2
25/32	–	eShop	–	19.84	140	205	0.2
20	eShop	eShop	1	–	140	205	0.2

HSS | DIN 338 | h8 | 35-40° | 2

Jobber drills, plain shank

Standard core without core taper.
Precision ground point.

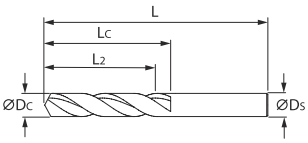
11 4200 – Ground flute with high helix.
Bright ground surface finish.

11 4360 – **Profile ground:**
High concentricity and pitch accuracy, drills for series production use.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.

≥ 2 mm — Type W 130° — 11 4200

≥ 2.4 mm — Type N 118° — 11 4360



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 4200	70	45	40																●	●			
11 4360		56	50	50	37	31	12	10						15	10	6	31	80	●	●			

∅ D_C h8	11B 11 4200 Garant W	12B 11 4360 HOLEX N TiN		L_c	L	Alu plastics f 11 4200	< 500 N f 11 4360
mm	HSS jobber drill			mm	mm	mm/rev.	mm/rev.
0,9	eShop	–	5	11	32	0.05	–
1	eShop	eShop	5	12	34	0.05	0.05
1,1	eShop	eShop	5	14	36	0.05	0.05
1,2	eShop	eShop	5	16	38	0.05	0.05
1,3	eShop	eShop	5	16	38	0.05	0.05
1,4	eShop	eShop	5	16	38	0.05	0.05
1,5	eShop	eShop	5	18	40	0.05	0.05
1,6	eShop	eShop	5	20	43	0.05	0.05
1,7	eShop	eShop	5	20	43	0.05	0.05
1,8	eShop	eShop	5	22	46	0.05	0.05
1,9	eShop	eShop	5	22	46	0.05	0.05
2	eShop	eShop	5	24	49	0.05	0.05
2,1	eShop	eShop	5	24	49	0.05	0.05
2,2	eShop	eShop	5	27	57	0.05	0.05
2,3	eShop	eShop	5	27	57	0.05	0.05
2,4	eShop	eShop	5	30	57	0.05	0.05
2,5	eShop	eShop	5	30	57	0.05	0.05
2,6	eShop	eShop	5	30	57	0.05	0.05
2,7	eShop	eShop	5	33	61	0.05	0.05
2,8	eShop	eShop	5	33	61	0.05	0.05
2,9	eShop	eShop	5	33	61	0.05	0.05
3	eShop	eShop	10	33	61	0.05	0.05
3,1	eShop	eShop	10	36	65	0.05	0.05
3,2	eShop	eShop	10	36	65	0.05	0.05
3,3	eShop	eShop	10	36	65	0.05	0.05
3,4	eShop	eShop	10	39	70	0.05	0.05
3,5	eShop	eShop	10	39	70	0.05	0.05
3,6	eShop	eShop	10	39	70	0.05	0.05
3,7	eShop	eShop	10	39	70	0.05	0.05
3,8	eShop	eShop	10	43	75	0.05	0.05
3,9	eShop	eShop	10	43	75	0.05	0.05
4	eShop	eShop	10	43	75	0.05	0.09
4,1	eShop	eShop	10	43	75	0.05	0.09
4,2	eShop	eShop	10	43	75	0.05	0.09
4,3	eShop	eShop	10	47	80	0.05	0.09
4,4	eShop	eShop	10	47	80	0.05	0.09
4,5	eShop	eShop	10	47	80	0.05	0.09
4,6	eShop	eShop	10	47	80	0.05	0.09
4,7	eShop	eShop	10	47	80	0.05	0.09
4,8	eShop	eShop	10	52	86	0.05	0.09
4,9	eShop	eShop	10	52	86	0.05	0.09
5	eShop	eShop	10	52	86	0.14	0.09
5,1	eShop	eShop	10	52	86	0.14	0.09
5,2	eShop	eShop	10	52	86	0.14	0.09
5,3	eShop	eShop	10	52	86	0.14	0.09
5,4	eShop	eShop	10	57	93	0.14	0.09
5,5	eShop	eShop	10	57	93	0.14	0.09
5,6	eShop	eShop	10	57	93	0.14	0.09
5,7	eShop	eShop	10	57	93	0.14	0.09
5,8	eShop	eShop	10	57	93	0.14	0.09
5,9	eShop	eShop	10	57	93	0.14	0.09
6	eShop	eShop	10	57	93	0.14	0.13
6,1	eShop	eShop	10	63	101	0.14	0.13
6,2	eShop	eShop	10	63	101	0.14	0.13
6,3	eShop	eShop	10	63	101	0.14	0.13

∅ D_C h8	11B 11 4200 Garant W	12B 11 4360 HOLEX N TiN		L_c	L	Alu plastics f 11 4200	< 500 N f 11 4360
mm	HSS jobber drill			mm	mm	mm/rev.	mm/rev.
6,4	eShop	eShop	10	63	101	0.14	0.13
6,5	eShop	eShop	10	63	101	0.14	0.13
6,6	eShop	eShop	10	63	101	0.14	0.13
6,7	eShop	eShop	10	63	101	0.14	0.13
6,8	eShop	eShop	10	69	109	0.14	0.13
6,9	eShop	eShop	10	69	109	0.14	0.13
7	eShop	eShop	10	69	109	0.14	0.13
7,1	eShop	eShop	10	69	109	0.14	0.13
7,2	eShop	eShop	10	69	109	0.14	0.13
7,3	eShop	eShop	10	69	109	0.14	0.13
7,4	eShop	eShop	10	69	109	0.14	0.13
7,5	eShop	eShop	10	69	109	0.14	0.13
7,6	eShop	eShop	5	75	117	0.14	0.13
7,7	eShop	eShop	5	75	117	0.14	0.13
7,8	eShop	eShop	5	75	117	0.14	0.13
7,9	eShop	eShop	5	75	117	0.14	0.13
8	eShop	eShop	5	75	117	0.18	0.16
8,1	eShop	eShop	5	75	117	0.18	0.16
8,2	eShop	eShop	5	75	117	0.18	0.16
8,3	eShop	eShop	5	75	117	0.18	0.16
8,4	eShop	eShop	5	75	117	0.18	0.16
8,5	eShop	eShop	5	75	117	0.18	0.16
8,6	eShop	eShop	5	81	125	0.18	0.16
8,7	eShop	eShop	5	81	125	0.18	0.16
8,8	eShop	eShop	5	81	125	0.18	0.16
8,9	eShop	eShop	5	81	125	0.18	0.16
9	eShop	eShop	5	81	125	0.18	0.16
9,1	eShop	eShop	5	81	125	0.18	0.16
9,2	eShop	eShop	5	81	125	0.18	0.16
9,3	eShop	eShop	5	81	125	0.18	0.16
9,4	eShop	eShop	5	81	125	0.18	0.16
9,5	eShop	eShop	5	81	125	0.18	0.16
9,6	eShop	eShop	5	87	133	0.18	0.16
9,7	eShop	eShop	5	87	133	0.18	0.16
9,8	eShop	eShop	5	87	133	0.18	0.16
9,9	eShop	eShop	5	87	133	0.18	0.16
10	eShop	eShop	5	87	133	0.18	0.16
10,1	–	eShop	5	87	133	–	0.16
10,2	eShop	eShop	5	87	133	0.18	0.16
10,5	eShop	eShop	5	87	133	0.18	0.16
10,8	–	eShop	5	94	142	–	0.16
11	eShop	eShop	5	94	142	0.18	0.16
11,2	–	eShop	5	94	142	–	0.16
11,5	eShop	eShop	5	94	142	0.18	0.16
11,8	–	eShop	5	94	142	–	0.16
12	eShop	eShop	5	101	151	0.22	0.2
12,2	–	eShop	5	101	151	–	0.2
12,5	eShop	eShop	5	101	151	0.22	0.2
12,8	–	eShop	5	101	151	–	0.2
13	eShop	eShop	5	101	151	0.22	0.2
14	–	eShop	1	108	160	–	0.2
14,5	–	eShop	1	114	169	–	0.2
15	–	eShop	1	114	169	–	0.2
15,5	–	eShop	1	120	178	–	0.2
16	–	eShop	1	120	178	–	0.25

HSS E | DIN 338 | h8 | 2

Jobber drills, plain shank

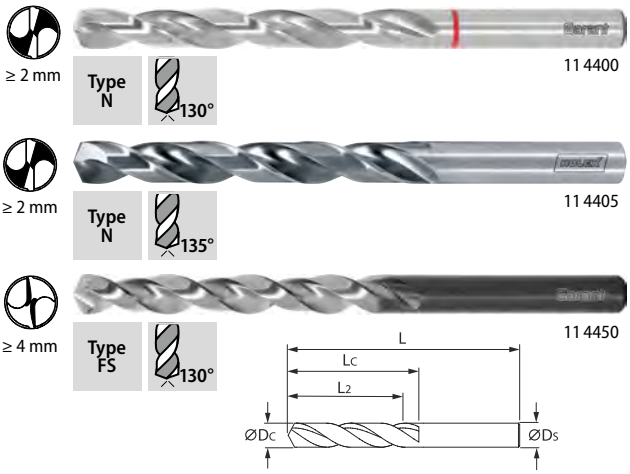
Profile ground: this ensures high concentricity and pitch accuracy. Precision ground point. Drill for production use.

11 4400 – **Reinforced core**, bright finish.

11 4450 – **Strengthened core.** Bright finish **parabolic flutes,** from 3 mm nitrided chamfers.

Recommendation: Maximum drilling depth:

$L_2 = L_C - 1.5 \times D_C$.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	TOOLOX® 33 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 4400				40	30	25	10	8				8	12	8	5	25	80	●	●	●			
11 4405				35	28	22	8	6					8						●	●			
11 4450	70	45		40	30	25										25			●	●			

Ø D_C h8	11B 11 4400 Garant N	12B 11 4405 HOLEX N	11B 11 4450 Garant FS		L_c	L	< 750 N f
mm					mm	mm	mm/rev.
1	eShop	eShop	eShop	5	12	34	0.03
1,1	eShop	eShop	eShop	5	14	36	0.03
1,2	eShop	eShop	eShop	5	16	38	0.03
1,3	eShop	eShop	eShop	5	16	38	0.03
1,4	eShop	eShop	eShop	5	18	40	0.03
1,5	eShop	eShop	eShop	5	18	40	0.03
1,6	eShop	eShop	eShop	5	20	43	0.03
1,7	eShop	eShop	eShop	5	20	43	0.03
1,8	eShop	eShop	eShop	5	22	46	0.03
1,9	eShop	eShop	eShop	5	22	46	0.03
2	eShop	eShop	eShop	5	24	49	0.03
2,1	eShop	eShop	eShop	5	24	49	0.03
2,2	eShop	eShop	eShop	5	27	53	0.03
2,3	eShop	eShop	eShop	5	27	53	0.03
2,4	eShop	eShop	eShop	5	30	57	0.03
2,5	eShop	eShop	eShop	5	30	57	0.03
2,6	eShop	eShop	eShop	5	30	57	0.03
2,7	eShop	eShop	eShop	5	33	61	0.03
2,8	eShop	eShop	eShop	5	33	61	0.03
2,9	eShop	eShop	eShop	5	33	61	0.03
3	eShop	eShop	eShop	10	33	61	0.03
3,1	eShop	eShop	eShop	10	36	65	0.03
3,2	eShop	eShop	eShop	10	36	65	0.03
3,3	eShop ■	eShop	eShop	10	36	65	0.03
3,4	eShop	eShop	eShop	10	39	70	0.03
3,5	eShop	eShop	eShop	10	39	70	0.03
3,6	eShop	eShop	eShop	10	39	70	0.03
3,7	eShop	eShop	eShop	10	39	70	0.03
3,8	eShop	eShop	eShop	10	43	75	0.03
3,9	eShop	eShop	eShop	10	43	75	0.03
4	eShop	eShop	eShop	10	43	75	0.05
4,1	eShop	eShop	eShop	10	43	75	0.05
4,2	eShop ■	eShop	eShop	10	43	75	0.05
4,3	eShop	eShop	eShop	10	47	80	0.05
4,4	eShop	eShop	eShop	10	47	80	0.05
4,5	eShop	eShop	eShop	10	47	80	0.05
4,6	eShop	eShop	eShop	10	47	80	0.05
4,7	eShop	eShop	eShop	10	47	80	0.05
4,8	eShop	eShop	eShop	10	52	86	0.05
4,9	eShop	eShop	eShop	10	52	86	0.05
5	eShop	eShop	eShop	10	52	86	0.05
5,1	eShop	eShop	eShop	10	52	86	0.05
5,2	eShop	eShop	eShop	10	52	86	0.05
5,3	eShop	eShop	eShop	10	52	86	0.05
5,4	eShop	eShop	eShop	10	57	93	0.05
5,5	eShop	eShop	eShop	10	57	93	0.05
5,6	eShop	eShop	eShop	10	57	93	0.05
5,7	eShop	eShop	eShop	10	57	93	0.05
5,8	eShop	eShop	eShop	10	57	93	0.05
5,9	eShop	eShop	eShop	10	57	93	0.05
6	eShop	eShop	eShop	10	57	93	0.07
6,1	eShop	eShop	eShop	10	63	101	0.07
6,2	eShop	eShop	eShop	10	63	101	0.07
6,3	eShop	eShop	eShop	10	63	101	0.07
6,4	eShop	eShop	eShop	10	63	101	0.07
6,5	eShop	eShop	eShop	10	63	101	0.07

Ø D_C h8	11B 11 4400 Garant N	12B 11 4405 HOLEX N	11B 11 4450 Garant FS		L_c	L	< 750 N f
mm					mm	mm	mm/rev.
6,6	eShop	eShop	eShop	10	63	101	0.07
6,7	eShop	eShop	eShop	10	63	101	0.07
6,8	eShop	eShop	eShop	10	69	109	0.07
6,9	eShop	eShop	eShop	10	69	109	0.07
7	eShop	eShop	eShop	10	69	109	0.07
7,1	eShop	eShop	eShop	10	69	109	0.07
7,2	eShop	eShop	eShop	10	69	109	0.07
7,3	eShop	eShop	eShop	10	69	109	0.07
7,4	eShop	eShop	eShop	10	69	109	0.07
7,5	eShop	eShop	eShop	10	69	109	0.07
7,6	eShop	eShop	eShop	5	75	117	0.07
7,7	eShop	eShop	eShop	5	75	117	0.07
7,8	eShop	eShop	eShop	5	75	117	0.07
7,9	eShop	eShop	eShop	5	75	117	0.07
8	eShop	eShop	eShop	5	75	117	0.1
8,1	eShop	eShop	eShop	5	75	117	0.1
8,2	eShop	eShop	eShop	5	75	117	0.1
8,3	eShop	eShop	eShop	5	75	117	0.1
8,4	eShop	eShop	eShop	5	75	117	0.1
8,5	eShop	eShop	eShop	5	75	117	0.1
8,6	eShop	eShop	eShop	5	81	125	0.1
8,7	eShop	eShop	eShop	5	81	125	0.1
8,8	eShop	eShop	eShop	5	81	125	0.1
8,9	eShop	eShop	eShop	5	81	125	0.1
9	eShop	eShop	eShop	5	81	125	0.1
9,1	eShop	eShop	eShop	5	81	125	0.1
9,2	eShop	eShop	eShop	5	81	125	0.1
9,3	eShop	eShop	eShop	5	81	125	0.1
9,4	eShop	eShop	eShop	5	81	125	0.1
9,5	eShop	eShop	eShop	5	81	125	0.1
9,6	eShop	eShop	eShop	5	87	133	0.1
9,7	eShop	eShop	eShop	5	87	133	0.1
9,8	eShop	eShop	eShop	5	87	133	0.1
9,9	eShop	eShop	eShop	5	87	133	0.1
10	eShop	eShop	eShop	5	87	133	0.1
10,1	eShop	eShop	eShop	5	87	133	0.1
10,2	eShop	eShop	eShop	5	87	133	0.1
10,3	eShop	–	–	5	87	133	0.1
10,5	eShop	eShop	eShop	5	87	133	0.1
10,8	eShop	eShop	eShop	5	94	142	0.1
11	eShop	eShop	eShop	5	94	142	0.1
11,2	eShop	eShop	eShop	5	94	142	0.1
11,5	eShop	eShop	eShop	5	94	142	0.1
11,8	eShop	eShop	eShop	5	94	142	0.1
12	eShop	eShop	eShop	5	101	151	0.16
12,1	eShop	–	–	5	101	151	0.16
12,2	eShop	eShop	eShop	5	101	151	0.16
12,5	eShop	eShop	eShop	5	101	151	0.16
12,8	eShop	eShop	eShop	5	101	151	0.16
13	eShop	eShop	eShop	5	101	151	0.16
13,5	eShop	–	–	1	108	160	0.16
14	eShop	–	–	1	108	160	0.16
14,1	eShop	–	–	1	114	169	0.16
14,5	eShop	–	–	1	114	169	0.16
15	eShop	–	–	1	114	169	0.16
16	eShop	–	–	1	120	178	0.16

DIN 338 | h8 | 35° | 2

Garant

Jobber drill with plain shank, for stainless steels

11 4500 – **Strengthened core taper.**

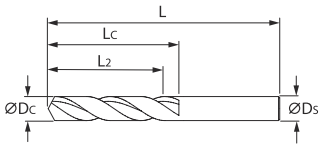
11 4550 – **Extremely high heat resistance, very robust** due to **strong core.**

11 4580 – High performance drills for outstanding performance. Precision holes due to optimised diamond point geometry and 4-face grinding. The special flute profile yields a significant reduction in cutting forces.

Recommendation: Maximum drilling depth:
$L_2 = L_c - 1.5 \times D_c$.







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
11 4500					37	31								15	12	6			●	●			
11 4550					37	31	12	10						20	15	6			●	●			

Ø D_c h8	11 4500 Jobber drill HSS-E TiAlN	11 4550 Jobber drill HSS-Co8 TiAlN		L_c	L	INOX > 900 N f
mm				mm	mm	mm/rev.
1	eShop	eShop	5	12	34	0.02
1,1	eShop	eShop	5	14	36	0.02
1,2	eShop	eShop	5	16	38	0.02
1,3	eShop	eShop	5	16	38	0.02
1,4	eShop	eShop	5	18	40	0.02
1,5	eShop	eShop	5	18	40	0.02
1,6	eShop	eShop	5	20	43	0.02
1,7	eShop	eShop	5	20	43	0.02
1,8	eShop	eShop	5	22	46	0.02
1,9	eShop	eShop	5	22	46	0.02
2	eShop	eShop	5	24	49	0.02
2,1	eShop	eShop	5	24	49	0.02
2,2	eShop	eShop	5	27	53	0.02
2,3	eShop	eShop	5	27	53	0.02
2,4	eShop	eShop	5	30	57	0.02
2,5	eShop	eShop	5	30	57	0.02
2,6	eShop	eShop	5	30	57	0.02
2,7	eShop	eShop	5	33	61	0.02
2,8	eShop	eShop	5	33	61	0.02
2,9	eShop	eShop	5	33	61	0.02
3	eShop	eShop	10	33	61	0.02
3,1	eShop	eShop	10	36	65	0.02
3,2	eShop	eShop	10	36	65	0.02
3,3	eShop	eShop	10	36	65	0.02
3,4	eShop	eShop	10	39	70	0.02
3,5	eShop	eShop	10	39	70	0.02
3,6	eShop	eShop	10	39	70	0.02
3,7	eShop	eShop	10	39	70	0.02
3,8	eShop	eShop	10	43	75	0.02
3,9	eShop	eShop	10	43	75	0.02
4	eShop	eShop	10	43	75	0.03
4,1	eShop	eShop	10	43	75	0.03
4,2	eShop	eShop	10	43	75	0.03
4,3	eShop	eShop	10	47	80	0.03
4,4	eShop	eShop	10	47	80	0.03
4,5	eShop	eShop	10	47	80	0.03
4,6	eShop	eShop	10	47	80	0.03
4,7	eShop	eShop	10	47	80	0.03
4,8	eShop	eShop	10	52	86	0.03
4,9	eShop	eShop	10	52	86	0.03
5	eShop	eShop	10	52	86	0.04
5,1	eShop	eShop	10	52	86	0.04
5,2	eShop	eShop	10	52	86	0.04
5,3	eShop	eShop	10	52	86	0.04
5,4	eShop	eShop	10	57	93	0.04
5,5	eShop	eShop	10	57	93	0.04
5,6	eShop	eShop	10	57	93	0.04
5,7	eShop	eShop	10	57	93	0.04
5,8	eShop	eShop	10	57	93	0.04
5,9	eShop	eShop	10	57	93	0.04
6	eShop	eShop	10	57	93	0.05
6,1	eShop	eShop	10	63	101	0.05
6,2	eShop	eShop	10	63	101	0.05

Ø D_c h8	11 4500 Jobber drill HSS-E TiAlN	11 4550 Jobber drill HSS-Co8 TiAlN		L_c	L	INOX > 900 N f
mm				mm	mm	mm/rev.
6,3	eShop	eShop	10	63	101	0.05
6,4	eShop	eShop	10	63	101	0.05
6,5	eShop	eShop	10	63	101	0.05
6,6	eShop	eShop	10	63	101	0.05
6,7	eShop	eShop	10	63	101	0.05
6,8	eShop	eShop	10	69	109	0.05
6,9	eShop	eShop	10	69	109	0.05
7	eShop	eShop	10	69	109	0.05
7,1	eShop	eShop	10	69	109	0.05
7,2	eShop	eShop	10	69	109	0.05
7,3	eShop	eShop	10	69	109	0.05
7,4	eShop	eShop	10	69	109	0.05
7,5	eShop	eShop	10	69	109	0.05
7,6	eShop	eShop	5	75	117	0.05
7,7	eShop	eShop	5	75	117	0.05
7,8	eShop	eShop	5	75	117	0.05
7,9	eShop	eShop	5	75	117	0.05
8	eShop	eShop	5	75	117	0.09
8,1	eShop	eShop	5	75	117	0.09
8,2	eShop	eShop	5	75	117	0.09
8,3	eShop	eShop	5	75	117	0.09
8,4	eShop	eShop	5	75	117	0.09
8,5	eShop	eShop	5	75	117	0.09
8,6	eShop	eShop	5	81	125	0.09
8,7	eShop	eShop	5	81	125	0.09
8,8	eShop	eShop	5	81	125	0.09
8,9	eShop	eShop	5	81	125	0.09
9	eShop	eShop	5	81	125	0.09
9,1	eShop	eShop	5	81	125	0.09
9,2	eShop	eShop	5	81	125	0.09
9,3	eShop	eShop	5	81	125	0.09
9,4	eShop	eShop	5	81	125	0.09
9,5	eShop	eShop	5	81	125	0.09
9,6	eShop	eShop	5	87	133	0.09
9,7	eShop	eShop	5	87	133	0.09
9,8	eShop	eShop	5	87	133	0.09
9,9	eShop	eShop	5	87	133	0.09
10	eShop	eShop	5	87	133	0.09
10,1	eShop	eShop	5	87	133	0.09
10,2	eShop	eShop	5	87	133	0.09
10,3	–	eShop	5	87	133	0.09
10,5	eShop	eShop	5	87	133	0.09
10,8	eShop	eShop	5	94	142	0.09
11	eShop	eShop	5	94	142	0.09
11,2	eShop	eShop	5	94	142	0.09
11,5	eShop	eShop	5	94	142	0.09
11,8	eShop	eShop	5	94	142	0.09
12	eShop	eShop	5	101	151	0.13
12,2	eShop	eShop	5	101	151	0.13
12,5	eShop	eShop	5	101	151	0.13
12,8	eShop	–	5	101	151	0.13
13	eShop	eShop	5	101	151	0.13

HSS E | DIN 338 | h8 | 118° | 35° | 2

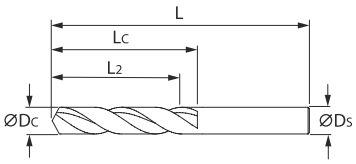
Garant Jobber drills, plain shank

High performance drills for outstanding performance.
Precision holes due to optimised diamond point geometry and 4-face grinding.
The special flute profile yields a significant reduction in cutting forces.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.



11 4580



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 4580	75	65	60	50	40	35	16						17	13	8	40	50	●	●	●			

Ø D_C h8	11B	11 4580		L_c	L	INOX > 900 N f
		Jobber drill HSS-E				
mm		TiAlN		mm	mm	mm/rev.
1		eShop	5	12	34	0.02
1,1		eShop	5	14	36	0.02
1,2		eShop	5	16	38	0.02
1,3		eShop	5	16	38	0.02
1,4		eShop	5	18	40	0.02
1,5		eShop	5	18	40	0.02
1,6		eShop	5	20	43	0.02
1,7		eShop	5	20	43	0.02
1,8		eShop	5	22	46	0.02
1,9		eShop	5	22	46	0.02
2		eShop	5	24	49	0.02
2,1		eShop	5	24	49	0.02
2,2		eShop	5	27	53	0.02
2,3		eShop	5	27	53	0.02
2,4		eShop	5	30	57	0.02
2,5		eShop	5	30	57	0.02
2,6		eShop	5	30	57	0.02
2,7		eShop	5	33	61	0.02
2,8		eShop	5	33	61	0.02
2,9		eShop	5	33	61	0.02
3		eShop	10	33	61	0.02
3,1		eShop	10	36	65	0.02
3,2		eShop	10	36	65	0.02
3,3		eShop	10	36	65	0.02
3,4		eShop	10	39	70	0.02
3,5		eShop	10	39	70	0.02
3,6		eShop	10	39	70	0.02
3,7		eShop	10	39	70	0.02
3,8		eShop	10	43	75	0.02
3,9		eShop	10	43	75	0.02
4		eShop	10	43	75	0.03
4,1		eShop	10	43	75	0.03
4,2		eShop	10	43	75	0.03
4,3		eShop	10	47	80	0.03
4,4		eShop	10	47	80	0.03
4,5		eShop	10	47	80	0.03
4,6		eShop	10	47	80	0.03
4,7		eShop	10	47	80	0.03
4,8		eShop	10	52	86	0.03
4,9		eShop	10	52	86	0.03
5		eShop	10	52	86	0.04
5,1		eShop	10	52	86	0.04
5,2		eShop	10	52	86	0.04
5,3		eShop	10	52	86	0.04
5,4		eShop	10	57	93	0.04
5,5		eShop	10	57	93	0.04
5,6		eShop	10	57	93	0.04
5,7		eShop	10	57	93	0.04
5,8		eShop	10	57	93	0.04
5,9		eShop	10	57	93	0.04
6		eShop	10	57	93	0.05
6,1		eShop	10	63	101	0.05

Ø D_C h8	11B	11 4580		L_c	L	INOX > 900 N f
		Jobber drill HSS-E				
mm		TiAlN		mm	mm	mm/rev.
6,2		eShop	10	63	101	0.05
6,3		eShop	10	63	101	0.05
6,4		eShop	10	63	101	0.05
6,5		eShop	10	63	101	0.05
6,6		eShop	10	63	101	0.05
6,7		eShop	10	63	101	0.05
6,8		eShop	10	69	109	0.05
6,9		eShop	10	69	109	0.05
7		eShop	10	69	109	0.05
7,1		eShop	10	69	109	0.05
7,2		eShop	10	69	109	0.05
7,3		eShop	10	69	109	0.05
7,4		eShop	10	69	109	0.05
7,5		eShop	10	69	109	0.05
7,6		eShop	5	75	117	0.05
7,7		eShop	5	75	117	0.05
7,8		eShop	5	75	117	0.05
7,9		eShop	5	75	117	0.05
8		eShop	5	75	117	0.09
8,1		eShop	5	75	117	0.09
8,2		eShop	5	75	117	0.09
8,3		eShop	5	75	117	0.09
8,4		eShop	5	75	117	0.09
8,5		eShop	5	75	117	0.09
8,6		eShop	5	81	125	0.09
8,7		eShop	5	81	125	0.09
8,8		eShop	5	81	125	0.09
8,9		eShop	5	81	125	0.09
9		eShop	5	81	125	0.09
9,1		eShop	5	81	125	0.09
9,2		eShop	5	81	125	0.09
9,3		eShop	5	81	125	0.09
9,4		eShop	5	81	125	0.09
9,5		eShop	5	81	125	0.09
9,6		eShop	5	87	133	0.09
9,7		eShop	5	87	133	0.09
9,8		eShop	5	87	133	0.09
9,9		eShop	5	87	133	0.09
10		eShop	5	87	133	0.09
10,1		eShop	5	87	133	0.09
10,2		eShop	5	87	133	0.09
10,5		eShop	5	87	133	0.09
10,8		eShop	5	94	142	0.09
11		eShop	5	94	142	0.09
11,2		eShop	5	94	142	0.09
11,5		eShop	5	94	142	0.09
11,8		eShop	5	94	142	0.09
12		eShop	5	101	151	0.13
12,2		eShop	5	101	151	0.13
12,5		eShop	5	101	151	0.13
13		eShop	5	101	151	0.13

HSS E-PM | DIN 338 | h8 | 130° | 38° | 2 | HPC

Garant

HPC jobber drill

High-performance HPC twist drills for high-alloy and high tensile materials. Particularly strong due to **strengthened core and a parabolic flute profile**. Point geometry with rake angle correction. Precise concentricity for exact holes.

11 4620 – Dimensions similar to DIN 338.
Shank to DIN 1835A.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.

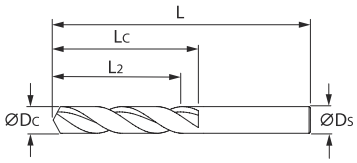


11 4610



11 4620

h6 DIN 1835 A



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
11 4610/4620	80	70	60		50	40	25	14					20	15	12	50	60	●	●	●			

ØD$_C$ h8	11 4610	11 4620		L_c	L		ØD$_s$	< 900 N f
	Jobber drill HSS-E-PM HPC				11 4610	11 4620	11 4620	
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm/rev.
1	eShop	–	5	12	34	–	–	0.03
1,1	eShop	–	5	14	36	–	–	0.03
1,2	eShop	–	5	16	38	–	–	0.03
1,3	eShop	–	5	16	38	–	–	0.03
1,4	eShop	–	5	18	40	–	–	0.03
1,5	eShop	–	5	18	40	–	–	0.03
1,6	eShop	–	5	20	43	–	–	0.03
1,7	eShop	–	5	20	43	–	–	0.03
1,8	eShop	–	5	22	46	–	–	0.03
1,9	eShop	–	5	22	46	–	–	0.03
2	eShop	eShop	5	24	49	56	3	0.03
2,1	eShop	eShop	5	24	49	56	3	0.03
2,2	eShop	–	5	27	53	–	–	0.03
2,3	eShop	eShop	5	27	53	59	3	0.03
2,4	eShop	eShop	5	30	57	62	3	0.03
2,5	eShop	eShop	5	30	57	62	3	0.03
2,6	eShop	eShop	5	30	57	62	3	0.03
2,7	eShop	eShop	5	33	61	65	3	0.03
2,8	eShop	eShop	5	33	61	65	3	0.03
2,9	eShop	eShop	5	33	61	65	3	0.03
3	eShop	eShop	10	33	61	65	3	0.03
3,1	eShop	–	10	36	65	–	–	0.03
3,2	eShop	eShop	10	36	65	68	4	0.03
3,3	eShop	eShop	10	36	65	68	4	0.03
3,4	eShop	–	10	39	70	–	–	0.03
3,5	eShop	eShop	10	39	70	71	4	0.03
3,6	eShop	–	10	39	70	–	–	0.03
3,7	eShop	eShop	10	39	70	71	4	0.03
3,8	eShop	eShop	10	43	75	75	4	0.03
3,9	eShop	–	10	43	75	–	–	0.03
4	eShop	eShop	10	43	75	75	4	0.05
4,1	eShop	–	10	43	75	–	–	0.05
4,2	eShop	eShop	10	43	75	87	6	0.05
4,3	eShop	–	10	47	80	–	–	0.05
4,4	eShop	–	10	47	80	–	–	0.05
4,5	eShop	eShop	10	47	80	91	6	0.05
4,6	eShop	–	10	47	80	–	–	0.05
4,65	–	eShop	10	47	–	91	6	0.05
4,7	eShop	–	10	47	80	–	–	0.05
4,8	eShop	eShop	10	52	86	96	6	0.05
4,9	eShop	–	10	52	86	–	–	0.05
5	eShop	eShop	10	52	86	96	6	0.05
5,1	eShop	–	10	52	86	–	–	0.05
5,2	eShop	eShop	10	52	86	96	6	0.05
5,3	eShop	–	10	52	86	–	–	0.05
5,4	eShop	–	10	57	93	–	–	0.05
5,5	eShop	eShop	10	57	93	101	6	0.05
5,55	–	eShop	10	57	–	101	6	0.05
5,6	eShop	–	10	57	93	–	–	0.05
5,7	eShop	–	10	57	93	–	–	0.05
5,8	eShop	eShop	10	57	93	101	6	0.05
5,9	eShop	–	10	57	93	–	–	0.05
6	eShop	eShop	10	57	93	101	6	0.08

ØD$_C$ h8	11 4610	11 4620		L_c	L		ØD$_s$	< 900 N f
	Jobber drill HSS-E-PM HPC				11 4610	11 4620	11 4620	
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm/rev.
6,1	eShop	–	10	63	101	–	–	0.08
6,2	eShop	eShop	10	63	101	107	8	0.08
6,3	eShop	–	10	63	101	–	–	0.08
6,4	eShop	–	10	63	101	–	–	0.08
6,5	eShop	eShop	10	63	101	107	8	0.08
6,6	eShop	–	10	63	101	–	–	0.08
6,7	eShop	–	10	63	101	–	–	0.08
6,8	eShop	eShop	10	69	109	113	8	0.08
6,9	eShop	–	10	69	109	–	–	0.08
7	eShop	eShop	10	69	109	113	8	0.08
7,1	eShop	–	10	69	109	–	–	0.08
7,2	eShop	–	10	69	109	–	–	0.08
7,3	eShop	–	10	69	109	–	–	0.08
7,4	eShop	–	10	69	109	–	–	0.08
7,5	eShop	eShop	10	69	109	113	8	0.08
7,6	eShop	–	5	75	117	–	–	0.08
7,7	eShop	–	5	75	117	–	–	0.08
7,8	eShop	eShop	5	75	117	119	8	0.08
7,9	eShop	–	5	75	117	–	–	0.08
8	eShop	eShop	5	75	117	119	8	0.11
8,1	eShop	–	5	75	117	–	–	0.11
8,2	eShop	–	5	75	117	–	–	0.11
8,3	eShop	–	5	75	117	–	–	0.11
8,4	eShop	–	5	75	117	–	–	0.11
8,5	eShop	eShop	5	75	117	125	10	0.11
8,6	eShop	–	5	81	125	–	–	0.11
8,7	eShop	–	5	81	125	–	–	0.11
8,8	eShop	–	5	81	125	–	–	0.11
8,9	eShop	–	5	81	125	–	–	0.11
9	eShop	eShop	5	81	125	131	10	0.11
9,1	eShop	–	5	81	125	–	–	0.11
9,2	eShop	–	5	81	125	–	–	0.11
9,3	eShop	–	5	81	125	–	–	0.11
9,4	eShop	–	5	81	125	–	–	0.11
9,5	eShop	eShop	5	81	125	131	10	0.11
9,6	eShop	–	5	87	133	–	–	0.11
9,7	eShop	–	5	87	133	–	–	0.11
9,8	eShop	–	5	87	133	–	–	0.11
9,9	eShop	–	5	87	133	–	–	0.11
10	eShop	eShop	5	87	133	137	10	0.11
10,1	eShop	–	5	87	133	–	–	0.11
10,2	eShop	eShop	5	87	133	144	12	0.11
10,5	eShop	eShop	5	87	133	144	12	0.11
10,8	eShop	–	5	94	142	–	–	0.11
11	eShop	eShop	5	94	142	151	12	0.11
11,2	eShop	–	5	94	142	–	–	0.11
11,5	eShop	–	5	94	142	–	–	0.11
11,8	eShop	eShop	5	94	142	151	12	0.11
12	eShop	eShop	5	101	151	158	12	0.17
12,2	eShop	–	5	101	151	–	–	0.17
12,5	eShop	–	5	101	151	–	–	0.17
13	eShop	eShop	5	101	151	161	14	0.17

h8

Jobber drill sets, DIN 338

Composed of jobber drills DIN 338.

11 5000/5051/5120 Size 1-10C – **Large assortment case**
from 1 mm – 10 mm, with 150 jobber drills:
10 pcs. each ∅ 1 – 6,
5 pcs. each ∅ 6.5 – 10.
Ideal for sitework and workshop use.



11 5000_1-13 | 11 5000_1-13KB with core hole-∅ (3.3; 4.2; 6.8; 10.2) | 11 5000_1-10C

HSS | Type N | 118°



Type			1-6	6-10	1-10	1-10,5	1-13	1-13KB	1-10C
12B 11 5000	HOLEX	Jobber drill set HSS No. 114000 in a case	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop
12B 11 5020		Jobber drill set HSS No. 114000 as refill set	eShop	eShop	eShop	eShop	eShop	eShop	–
Drill range		mm	1 – 6	6 – 10	1 – 10	1 – 10.5	1 – 13	1 – 13	1 – 10
Number of drills			51	41	19	24	25	29	150
Tapping hole ∅		mm	–	–	–	3.3; 4.2; 6.8; 10.2	–	3.3; 4.2; 6.8; 10.2	–
Incremental steps of drills		mm	0.1	0.1	0.5	0.5	0.5	0.5	0.5

HSS | DIN 338 | Type N | 118°



Type			1-10	1-13
12B 11 5030	HOLEX	Jobber drill set HSS No. 114020 in a case	eShop	eShop
12B 11 5032		Jobber drill set HSS No. 114020 as refill set	eShop	eShop
Drill range		mm	1 – 10	1 – 13
Number of drills			19	25
Incremental steps of drills		mm	0.5	

HSS | DIN 338 | Type N | 118° | ≥ 3 mm



Type			1-6	6-10	1-10	1-10,5	1-13	1-13KB	1-10C
12B 11 5051	HOLEX	HOLEX CleverDrill jobber drill set HSS No. 114031 in a case	eShop	eShop	eShop	eShop	eShop	eShop	eShop
12B 11 5056		HOLEX CleverDrill HSS jobber drill set No. 114031 as a refill set	eShop	eShop	eShop	eShop	eShop	eShop	–
Drill range		mm	1 – 6	6 – 10	1 – 10	1 – 10.5	1 – 13	1 – 13	1 – 10
Number of drills			51	41	19	24	25	29	150
Tapping hole ∅		mm	–	–	–	3.3; 4.2; 6.8; 10.2	–	3.3; 4.2; 6.8; 10.2	–
Incremental steps of drills		mm	0.1	0.1	0.5	0.5	0.5	0.5	0.5

HSS | DIN 338 | Type N | 118° | ≥ 4 mm



Type			1-6	6-10	1-10	1-13	1-13KB	1-10C
11B 11 5120	Garant	Jobber drill set HSS No. 114150 in a case	eShop	eShop	eShop ■	eShop	eShop	eShop
11B 11 5140		Jobber drill set HSS No. 114150 as refill set	eShop	eShop	eShop	eShop	eShop	–
Drill range		mm	1 – 6	6 – 10	1 – 10	1 – 13	1 – 13	1 – 10
Number of drills			51	41	19	25	29	150
Tapping hole ∅		mm	–	–	–	–	3.3; 4.2; 6.8; 10.2	–
Incremental steps of drills		mm	0.1	0.1	0.5	0.5	0.5	0.5

HSS | DIN 338 | Type W | 130° | 35-40° | ≥ 2 mm



Type			1-6	6-10	1-10	1-13
11B 11 5160	Garant	Jobber drill set HSS No. 114200 in a case	eShop	eShop	eShop	eShop
Drill range		mm	1 – 6	6 – 10	1 – 10	1 – 13
Number of drills			51	41	19	25
Incremental steps of drills		mm	0.1	0.1	0.5	0.5

HSS | DIN 338 | Type N | 118°

≥ 2.4 mm



Type			1-6	6-10	1-10	1-10,5	1-13	1-13KB
12B 11 5245	HOLEX Jobber drill set HSS No. 114360 in a case	TiN	eShop	eShop	eShop	eShop	eShop	eShop
12B 11 5265	HOLEX Jobber drill set HSS No. 114360 as refill set	TiN	eShop	eShop	eShop	eShop	eShop	eShop
Drill range		mm	1 – 6	6 – 10	1 – 10	1 – 10.5	1 – 13	1 – 13
Number of drills			51	41	19	24	25	29
Tapping hole ∅		mm	–	–	–	3.3; 4.2; 6.8; 10.2	–	3.3; 4.2; 6.8; 10.2
Incremental steps of drills		mm	0.1	0.1	0.5	0.5	0.5	0.5

HSS E | DIN 338 | Type N | 130°

≥ 2 mm



Type			1-6	6-10	1-10	1-10,5	1-13	1-13KB
11B 11 5280	Garant Jobber drill set HSS-E No. 114400 in a case		eShop	eShop	eShop	eShop	eShop ■	eShop
11B 11 5300	Garant Jobber drill set HSS-E No. 114400 as refill set		eShop	eShop	eShop	eShop	eShop	eShop
Drill range		mm	1 – 6	6 – 10	1 – 10	1 – 10.5	1 – 13	1 – 13
Number of drills			51	41	19	24	25	29
Tapping hole ∅		mm	–	–	–	3.3; 4.2; 6.8; 10.2	–	3.3; 4.2; 6.8; 10.2
Incremental steps of drills		mm	0.1	0.1	0.5	0.5	0.5	0.5

HSS E | DIN 338 | Type N | 135°

≥ 2 mm



Type			1-10	1-13
12B 11 5305	HOLEX Jobber drill set HSS-E No. 114405 in a case		eShop	eShop
12B 11 5315	HOLEX Jobber drill set HSS-E No. 114405 as refill set		eShop	eShop
Drill range		mm	1 – 10	1 – 13
Number of drills			19	25
Incremental steps of drills		mm	0.5	

HSS E | DIN 338 | Type FS | 130°

≤ 3.9 mm | ≥ 4 mm



Type			1-10	1-13
11B 11 5320	Garant Jobber drill set HSS-E No. 114450 in a case		eShop	eShop
Drill range		mm	1 – 10	1 – 13
Number of drills			19	25
Incremental steps of drills		mm	0.5	

HSS E | DIN 338 | 130° | 35°



Type			1-10	1-13
11B 11 5350	Garant Jobber drill set HSS-E No. 114500 in a case	TiAlN	eShop	eShop
11B 11 5355	Garant Jobber drill set HSS-E No. 114500 as refill set	TiAlN	eShop	eShop
Drill range		mm	1 – 10	1 – 13
Number of drills			19	25
Incremental steps of drills		mm	0.5	

HSS Co8 | DIN 338 | 135° | 35°



Type			1-10	1-13	1-13KB
11B 11 5370	Garant	HSS-Co8 jobber drill set No. 114550 in a case	TiAlN	eShop	eShop	eShop
11B 11 5375	Garant	HSS-Co8 jobber drill set No. 114550 as a refill set	TiAlN	eShop	eShop	eShop
Drill range			mm	1 – 10	1 – 13	1 – 13
Number of drills				19	25	29
Tapping hole ∅			mm	–	–	3.3; 4.2; 6.8; 10.2
Incremental steps of drills			mm	0.5		

HSS E | DIN 338 | 118° | 35°



Type			1-6	6-10	1-10	1-13
11B 11 5450	Garant	Jobber drill set HSS-E No. 114580 in a case	TiAlN	eShop	eShop	eShop	eShop
Drill range			mm	1 – 6	6 – 10	1 – 10	1 – 13
Number of drills				51	41	19	25
Incremental steps of drills			mm	0.1	0.1	0.5	0.5

HSS E-PM | DIN 338 | 130° | 38° | HPC



Type			1-10	1-13
11B 11 5465	Garant	Jobber drill set HSS-E-PM No. 114610 in a case	TiAlN	eShop	eShop
Drill range			mm	1 – 10	1 – 13
Number of drills				19	25
Incremental steps of drills			mm	0.5	

11

Cases and plastic stands, empty

For filling with refill sets, suitable for jobber drills to DIN 338.
Size 1-10,5; 1-13KB – With additional capacity for intermediate sizes ∅ 3.3 / 4.2 / 6.8 / 10.2 (tapping drill hole sizes).



11 5480_1-5



11 5475_1-10,5



11 5470_1-10



11 5470_1-10C

Type			1-6	6-10	1-10	1-10,5	1-5	5,1-10	1-13	1-13KB	1-10C
11B 11 5470	Garant	Empty case for jobber drills to DIN 338	eShop	eShop	eShop	eShop	–	–	eShop	eShop	eShop
12B 11 5475	HOLEX		eShop	eShop	eShop	eShop	–	–	eShop	eShop	eShop
12B 11 5480	HOLEX		–	–	–	–	eShop	eShop	eShop	–	–
for drills		mm	1 – 6	6 – 10	1 – 10	1 – 10.5	1 – 5	5.1 – 10	1 – 13	1 – 13	1 – 10
Incremental steps of drills		mm	0.1	0.1	0.5	0.5	0.1	0.1	0.5	0.5	0.5

HSS | DIN 340 | h8 | 2

Long jobber drills, deep hole drills, plain shank

11 6000 – Vaporised from 2.4 mm.
Particularly for deep hole drilling (for deep holes, repeated chip evacuation is necessary).

11 6040 – Strengthened core **without core taper.**
Precision ground point.
Wide flutes with heavily honed back edges.
Bright ground surface finish.

11 6051 – **HOLEX CleverDrill** –
Sturdy drill for all standard applications. Improved spot drilling behaviour due to cross-ground form.
Standard core thickness and core taper.
Profile ground.
Surface: Bronze-coloured tempered helical flutes.

≥ 4 mm



11 6000

Type N 

≥ 2.5 mm



11 6040

Type W 



11 6051

Type N 

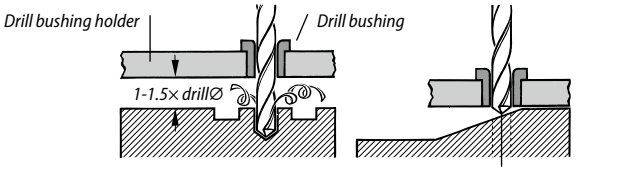
Advantage:

11 6000 – Especially suitable for **long reach purposes.**
(When used to drill deep holes, low feed rates and frequent drill pecks are necessary).

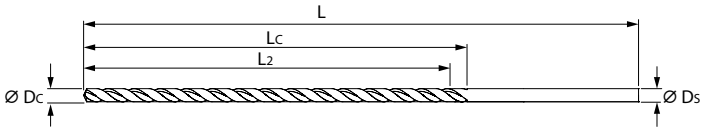
11 6040 – For deep hole drilling and for use with drill bushings.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.

Note:
11 6051 – **Successor product to No. 116050.**



Accurate working even on difficult workpiece surfaces.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	< 900 N	> 900 N	> 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 6000	64	52	40	**40**	**30**	**25**											25		●	●			
11 6040	**70**	**45**	40																●	●			
11 6051	64	52	40	**26**	**26**	**20**	15										24	**32**	●	●			

Ø D_C 8	11B 11 6000 Garant Jobber drill long HSS	11B 11 6040 Garant Jobber drill long HSS	12B 11 6051 HOLEX HOLEX CleverDrill jobber drill, long, HSS		L_c	L
mm	N	W	N		mm	mm
0,6	eShop	–	–	5	15	35
0,8	eShop	–	–	5	25	46
1	eShop	–	–	5	33	56
1,1	eShop	–	–	5	37	60
1,2	eShop	–	–	5	41	65
1,3	eShop	–	–	5	41	65
1,4	eShop	–	–	5	45	70
1,5	eShop	–	–	5	45	70
1,6	eShop	–	–	5	50	76
1,7	eShop	–	–	5	50	76
1,8	eShop	–	–	5	53	80
1,9	eShop	–	–	5	53	80
2	eShop	–	eShop	5	56	85
2,1	eShop	–	eShop	5	56	85
2,2	eShop	–	eShop	5	59	90
2,3	eShop	–	eShop	5	59	90
2,4	eShop	–	eShop	5	62	95
2,5	eShop	eShop	eShop	5	62	95
2,6	eShop	–	eShop	5	62	95
2,7	eShop	–	eShop	5	66	100
2,8	eShop	–	eShop	5	66	100
2,9	eShop	–	eShop	5	66	100
3	eShop	eShop	eShop	10	66	100
3,1	eShop	–	eShop	10	69	106
3,2	eShop	eShop	eShop	10	69	106
3,3	eShop	eShop	eShop	10	69	106
3,4	eShop	–	eShop	10	73	112
3,5	eShop	eShop	eShop	10	73	112
3,6	eShop	–	eShop	10	73	112
3,7	eShop	–	eShop	10	73	112
3,8	eShop	–	eShop	10	78	119
3,9	eShop	–	eShop	10	78	119
4	eShop	eShop	eShop	10	78	119

Ø D_C 8	11B 11 6000 Garant Jobber drill long HSS	11B 11 6040 Garant Jobber drill long HSS	12B 11 6051 HOLEX HOLEX CleverDrill jobber drill, long, HSS		L_c	L
mm	N	W	N		mm	mm
4,1	eShop	–	eShop	10	78	119
4,2	eShop	eShop	eShop	10	78	119
4,5	eShop	eShop	eShop	10	82	126
4,8	eShop	–	eShop	10	87	132
5	eShop	eShop	eShop	10	87	132
5,1	–	–	eShop	10	87	132
5,2	eShop	–	–	10	87	132
5,5	eShop	eShop	eShop	10	91	139
5,8	eShop	–	eShop	10	91	139
6	eShop	eShop	eShop	10	91	139
6,2	eShop	–	eShop	10	97	148
6,5	eShop	eShop	eShop	10	97	148
6,8	eShop	–	eShop	5	102	156
7	eShop	eShop	eShop	5	102	156
7,2	eShop	–	eShop	5	102	156
7,5	eShop	eShop	eShop	5	102	156
7,8	eShop	–	eShop	5	109	165
8	eShop	eShop	eShop	5	109	165
8,2	eShop	–	eShop	5	109	165
8,5	eShop	eShop	eShop	5	109	165
9	eShop	eShop	eShop	5	115	175
9,5	eShop	–	eShop	5	115	175
9,8	eShop	–	eShop	5	121	184
10	eShop	eShop	eShop	5	121	184
10,5	eShop	–	eShop	1	121	184
11	eShop	–	eShop	1	128	195
11,5	eShop	–	eShop	1	128	195
12	eShop	–	eShop	1	134	205
12,5	eShop	–	eShop	1	134	205
13	eShop	–	eShop	1	134	205
14	eShop	–	eShop	1	140	214
15	eShop	–	eShop	1	144	220
16	eShop	–	eShop	1	149	227

HSS E | DIN 340 | Type FS | h8 | 130° | 38° | 2

Garant Deep hole drills, plain shank

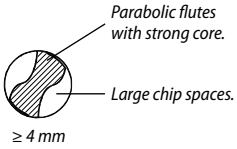
Significantly **strengthened core** without taper.
Precision ground point.
With **specially shaped slots**. Designed for deep holes up to 10×D and materials with critical chip formation characteristics.

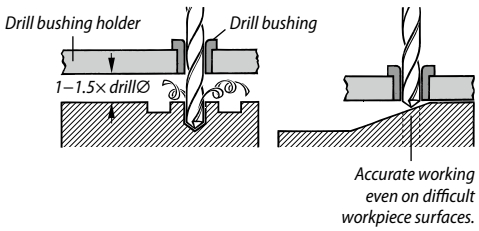
11 6063 – With **TiAlN coating** for long tool lives.

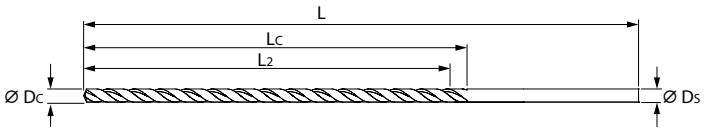
Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.











Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 6061	70	45		28	21	18											25		●	●			
11 6063	87	56	50	31	23	20	12									6	31		●	●			

Ø D_c h8	11B 11 6061	11B 11 6063		L_c	L	< 500 N f	< 750 N f
	Deep hole drill HSS-E					11 6061	11 6063
mm		TiAlN		mm	mm	mm/rev.	mm/rev.
1	eShop	eShop	5	33	56	0.05	0.03
1,1	eShop	eShop	5	37	60	0.05	0.03
1,2	eShop	eShop	5	41	65	0.05	0.03
1,3	eShop	eShop	5	41	65	0.05	0.03
1,4	eShop	eShop	5	45	70	0.05	0.03
1,5	eShop	eShop	5	45	70	0.05	0.03
1,6	eShop	eShop	5	50	76	0.05	0.03
1,7	eShop	eShop	5	50	76	0.05	0.03
1,8	eShop	eShop	5	53	80	0.05	0.03
1,9	eShop	eShop	5	53	80	0.05	0.03
2	eShop	eShop	5	56	85	0.05	0.03
2,1	eShop	eShop	5	56	85	0.05	0.03
2,2	eShop	eShop	5	59	90	0.05	0.03
2,3	eShop	eShop	5	59	90	0.05	0.03
2,4	eShop	eShop	5	62	95	0.05	0.03
2,5	eShop	eShop	5	62	95	0.05	0.03
2,6	eShop	eShop	5	62	95	0.05	0.03
2,7	eShop	eShop	5	66	100	0.05	0.03
2,8	eShop	eShop	5	66	100	0.05	0.03
2,9	eShop	eShop	5	66	100	0.05	0.03
3	eShop	eShop	10	66	100	0.05	0.03
3,1	eShop	eShop	10	69	106	0.05	0.03
3,2	eShop	eShop	10	69	106	0.05	0.03
3,3	eShop	eShop	10	69	106	0.05	0.03
3,4	eShop	eShop	10	73	112	0.05	0.03
3,5	eShop	eShop	10	73	112	0.05	0.03
3,6	eShop	eShop	10	73	112	0.05	0.03
3,7	eShop	eShop	10	73	112	0.05	0.03
3,8	eShop	eShop	10	78	119	0.05	0.03
3,9	eShop	eShop	10	78	119	0.05	0.03
4	eShop	eShop	10	78	119	0.05	0.05

Ø D_c h8	11B 11 6061	11B 11 6063		L_c	L	< 500 N f	< 750 N f
	Deep hole drill HSS-E					11 6061	11 6063
mm		TiAlN		mm	mm	mm/rev.	mm/rev.
4,2	eShop	eShop	10	78	119	0.05	0.05
4,5	eShop	eShop	10	82	126	0.05	0.05
4,8	eShop	eShop	10	87	132	0.05	0.05
5	eShop	eShop	10	87	132	0.05	0.05
5,2	eShop	eShop	10	87	132	0.05	0.05
5,5	eShop	eShop	10	91	139	0.05	0.05
5,8	eShop	eShop	10	91	139	0.05	0.05
6	eShop	eShop	10	91	139	0.12	0.08
6,2	eShop	–	10	97	148	0.12	–
6,5	eShop	eShop	10	97	148	0.12	0.08
6,8	eShop	eShop	5	102	156	0.12	0.08
7	eShop	eShop	5	102	156	0.12	0.08
7,2	eShop	–	5	102	156	0.12	–
7,5	eShop	eShop	5	102	156	0.12	0.08
7,8	eShop	eShop	5	109	165	0.12	0.08
8	eShop	eShop	5	109	165	0.2	0.11
8,2	eShop	–	5	109	165	0.2	–
8,5	eShop	eShop	5	109	165	0.2	0.11
9	eShop	eShop	5	115	175	0.2	0.11
9,5	eShop	eShop	5	115	175	0.2	0.11
9,8	eShop	eShop	5	121	184	0.2	0.11
10	eShop	eShop	5	121	184	0.2	0.11
10,2	eShop	–	1	121	184	0.2	–
10,5	eShop	eShop	1	121	184	0.2	0.11
11	eShop	eShop	1	128	195	0.2	0.11
11,5	eShop	eShop	1	128	195	0.2	0.11
12	eShop	eShop	1	134	205	0.25	0.17
12,5	eShop	eShop	1	134	205	0.25	0.17
13	eShop	eShop	1	134	205	0.25	0.17
14	eShop	–	1	140	214	0.25	–

HSS E | DIN 340 | h8 | 35-40° | 2

Garant Jobber drills, long, plain shank

Profile ground. Standard core thickness and core taper. Bright finish.

Advantage: For drilling with drill bushes or long reach applications.

11 6065 – For high-tensile tempered steels, **including TOOLOX.**

Recommendation: Maximum drilling depth:

$L_2 = L_C - 1.5 \times D_C$.

≥ 2 mm



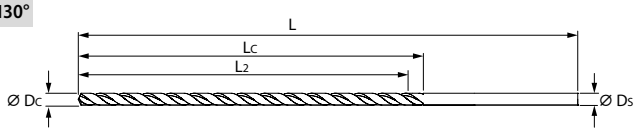
11 6065

Type N | 118°



11 6070

130°



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
11 6065					30	25	10	8					8	5	12	8		80	●	●			
11 6070				40	20										12	8	5		●	●			

Ø D_C h8	11B 11 6065	11B 11 6070		L_c	L	< 1100 N f	INOX < 900 N f
	Jobber drill, long, HSS-E					11 6065	11 6070
mm	N	VA		mm	mm	mm/rev.	mm/rev.
1	eShop	eShop	5	33	56	0.01	0.01
1,1	eShop	eShop	5	37	60	0.01	0.01
1,2	eShop	eShop	5	41	65	0.01	0.01
1,3	eShop	eShop	5	41	65	0.01	0.01
1,4	eShop	eShop	5	45	70	0.01	0.01
1,5	eShop	eShop	5	45	70	0.01	0.01
1,6	eShop	eShop	5	50	76	0.01	0.01
1,7	eShop	eShop	5	50	76	0.01	0.01
1,8	eShop	eShop	5	53	80	0.01	0.01
1,9	eShop	eShop	5	53	80	0.01	0.01
2	eShop	eShop	5	56	85	0.02	0.02
2,1	eShop	eShop	5	56	85	0.02	0.02
2,2	eShop	eShop	5	59	90	0.02	0.02
2,3	eShop	eShop	5	59	90	0.02	0.02
2,4	eShop	eShop	5	62	95	0.02	0.02
2,5	eShop	eShop	5	62	95	0.02	0.02
2,6	eShop	eShop	5	62	95	0.02	0.02
2,7	eShop	eShop	5	66	100	0.02	0.02
2,8	eShop	eShop	5	66	100	0.02	0.02
2,9	eShop	eShop	5	66	100	0.02	0.02
3	eShop	eShop	10	66	100	0.02	0.02
3,1	eShop	eShop	10	69	106	0.02	0.02
3,2	eShop	eShop	10	69	106	0.02	0.02
3,3	eShop	eShop	10	69	106	0.02	0.02
3,4	eShop	eShop	10	73	112	0.02	0.02
3,5	eShop	eShop	10	73	112	0.02	0.02
3,6	eShop	eShop	10	73	112	0.02	0.02
3,7	eShop	eShop	10	73	112	0.02	0.02
3,8	eShop	eShop	10	78	119	0.02	0.02
3,9	eShop	eShop	10	78	119	0.02	0.02
4	eShop	eShop	10	78	119	0.05	0.05
4,1	–	eShop	10	78	119	–	0.05
4,2	eShop	eShop	10	78	119	0.05	0.05
4,3	–	eShop	10	82	126	–	0.05
4,4	–	eShop	10	82	126	–	0.05
4,5	eShop	eShop	10	82	126	0.05	0.05
4,6	–	eShop	10	82	126	–	0.05
4,7	–	eShop	10	82	126	–	0.05
4,8	eShop	eShop	10	87	132	0.05	0.05
4,9	–	eShop	10	87	132	–	0.05
5	eShop	eShop	10	87	132	0.05	0.05
5,1	–	eShop	10	87	132	–	0.05
5,2	eShop	eShop	10	87	132	0.05	0.05
5,3	–	eShop	10	87	139	–	0.05
5,4	–	eShop	10	91	139	–	0.05
5,5	eShop	eShop	10	91	139	0.05	0.05
5,6	–	eShop	10	91	139	–	0.05
5,7	–	eShop	10	91	139	–	0.05
5,8	eShop	eShop	10	91	139	0.05	0.05

Ø D_C h8	11B 11 6065	11B 11 6070		L_c	L	< 1100 N f	INOX < 900 N f
	Jobber drill, long, HSS-E					11 6065	11 6070
mm	N	VA		mm	mm	mm/rev.	mm/rev.
5,9	–	eShop	10	91	139	–	0.05
6	eShop	eShop	10	91	139	0.05	0.05
6,1	–	eShop	10	97	148	–	0.05
6,2	eShop	eShop	10	97	148	0.05	0.05
6,3	–	eShop	10	97	148	–	0.05
6,4	–	eShop	10	97	148	–	0.05
6,5	eShop	eShop	10	97	148	0.05	0.05
6,6	–	eShop	10	97	148	–	0.05
6,7	–	eShop	10	97	148	–	0.05
6,8	eShop	eShop	5	102	156	0.05	0.05
6,9	–	eShop	5	102	156	–	0.05
7	eShop	eShop	5	102	156	0.05	0.05
7,1	–	eShop	5	102	156	–	0.05
7,3	–	eShop	5	102	156	–	0.05
7,4	–	eShop	5	102	156	–	0.05
7,5	eShop	eShop	5	102	156	0.05	0.05
7,6	–	eShop	5	109	165	–	0.05
7,7	–	eShop	5	109	165	–	0.05
7,8	eShop	eShop	5	109	165	0.05	0.05
7,9	–	eShop	5	109	165	–	0.05
8	eShop	eShop	5	109	165	0.08	0.08
8,1	–	eShop	5	109	165	–	0.08
8,2	eShop	eShop	5	109	165	0.08	0.08
8,3	–	eShop	5	109	165	–	0.08
8,4	–	eShop	5	109	165	–	0.08
8,5	eShop	eShop	5	109	165	0.08	0.08
8,6	–	eShop	5	115	175	–	0.08
8,7	–	eShop	5	115	175	–	0.08
8,8	–	eShop	5	115	175	–	0.08
8,9	–	eShop	5	115	175	–	0.08
9	eShop	eShop	5	115	175	0.08	0.08
9,1	–	eShop	5	115	175	–	0.08
9,2	–	eShop	5	115	175	–	0.08
9,3	–	eShop	5	115	175	–	0.08
9,4	–	eShop	5	115	175	–	0.08
9,5	eShop	eShop	5	115	175	0.08	0.08
9,6	–	eShop	5	121	184	–	0.08
9,7	–	eShop	5	121	184	–	0.08
9,8	eShop	eShop	5	121	184	0.08	0.08
9,9	–	eShop	5	121	184	–	0.08
10	eShop	eShop	5	121	184	0.08	0.08
10,2	eShop	eShop	1	121	184	0.08	0.08
10,5	eShop	eShop	1	121	184	0.08	0.08
10,8	–	eShop	1	128	195	–	0.08
11	eShop	eShop	1	128	195	0.08	0.08
11,2	–	eShop	1	128	195	–	0.08
11,5	eShop	eShop	1	128	195	0.08	0.08
11,8	–	eShop	1	128	195	–	0.08
12	eShop	eShop	1	134	205	0.12	0.12

DIN 1869 | h8 | 38° | 2

Garant Extra long jobber drills, plain shank

With precision ground point.

11 6240 – Significantly strengthened core without core taper. Bright finish flutes, nitrided chamfers.

11 6245 – Vaporised high performance drills for drilling particularly deep holes.
Take particular care to ensure **frequent chip clearance.**

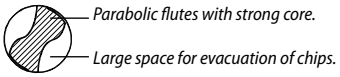
11 6250 – Special 4-chamfer relief ground for very good guidance within the bore. Bright finish flutes, nitrided chamfers.

Advantage:

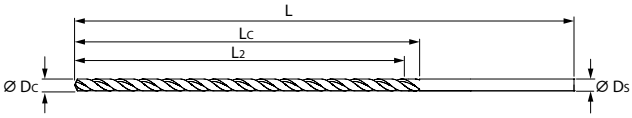
11 6240/6250 – **Special deep hole drills. For particularly deep or recessed holes.**
Good chip evacuation due to parabolic flutes, resulting in fewer chip evacuations even in particularly deep holes.

Recommendation: Maximum drilling depth:
$L_2 = L_c - 1.5 \times D_c$.





116240/6250 type FS



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 6240	50	32		28	21												18		●	●			
11 6245	50	32		28	21	18	5										18		●	●			
11 6250	55	30		32	25	20	5							8	4		20		●	●			

Ø D_c h8 × overall length L	11 6240	11 6245	11 6250	L_c	L	< 750 N f
	Jobber drill extra long HSS		Jobber drill, extra long HSS-E			
mm	FS	N	FS	mm	mm	mm/rev.
2×125	–	eShop	–	85	125	0.03
2,5×140	–	eShop	–	95	140	0.05
2,5×225	eShop	eShop	eShop	150	225	0.05
3×150	eShop	eShop	eShop	100	150	0.05
3×190	eShop	eShop	eShop	130	190	0.05
3,3×155	–	eShop	–	105	155	0.05
3,5×165	eShop	eShop	eShop	115	165	0.05
3,5×210	eShop	eShop	eShop	145	210	0.05
3,5×265	–	eShop	–	180	265	0.05
4×175	eShop	eShop	eShop	120	175	0.05
4×220	eShop	eShop	eShop	150	220	0.05
4×280	eShop	eShop	eShop	190	280	0.05
4,2×175	–	eShop	–	120	175	0.05
4,2×220	–	eShop	–	150	220	0.05
4,2×280	–	eShop	–	190	280	0.05
4,5×185	eShop	eShop	eShop	125	185	0.05
4,5×235	eShop	eShop	eShop	160	235	0.05
4,8×195	–	eShop	–	135	195	0.05
4,9×195	–	eShop	–	135	195	0.05
5×195	eShop	eShop	eShop	135	195	0.07
5×245	eShop	eShop	eShop	170	245	0.07
5×315	eShop	eShop	eShop	210	315	0.07
5,5×205	eShop	eShop	eShop	140	205	0.07
5,5×260	eShop	eShop	eShop	180	260	0.07
5,5×330	–	eShop	–	225	330	0.07
5,8×205	–	eShop	–	140	205	0.07
6×205	eShop	eShop	eShop	140	205	0.07
6×260	eShop	eShop	eShop	180	260	0.07
6×330	eShop	eShop	eShop	225	330	0.07
6,2×215	–	eShop	–	150	215	0.07
6,2×350	–	eShop	–	235	350	0.07
6,3×215	–	eShop	–	150	215	0.07
6,5×215	–	eShop	–	150	215	0.07
6,5×275	eShop	eShop	eShop	190	275	0.07
6,5×350	–	eShop	–	235	350	0.07
6,7×215	–	eShop	–	150	215	0.07
6,8×225	eShop	eShop	eShop	155	225	0.07
6,8×370	–	eShop	–	250	370	0.07
6,9×225	–	eShop	–	155	225	0.07
7×225	eShop	eShop	eShop	155	225	0.07

Ø D_c h8 × overall length L	11 6240	11 6245	11 6250	L_c	L	< 750 N f
	Jobber drill extra long HSS		Jobber drill, extra long HSS-E			
mm	FS	N	FS	mm	mm	mm/rev.
7×290	eShop	eShop	eShop	200	290	0.07
7×370	–	eShop	–	250	370	0.07
7,5×225	eShop	eShop	eShop	155	225	0.07
7,5×290	eShop	eShop	eShop	200	290	0.07
7,5×370	–	eShop	–	250	370	0.07
8×240	eShop	eShop	eShop	165	240	0.1
8×305	eShop	eShop	eShop	210	305	0.1
8×390	eShop	eShop	eShop	265	390	0.1
8,5×240	eShop	eShop	eShop	165	240	0.1
8,5×305	eShop	eShop	eShop	210	305	0.1
8,5×390	–	eShop	–	265	390	0.1
9×250	eShop	eShop	eShop	175	250	0.1
9×320	eShop	eShop	eShop	220	320	0.1
9×410	–	eShop	–	280	410	0.1
9,5×250	–	eShop	–	175	250	0.1
9,5×320	eShop	eShop	eShop	220	320	0.1
9,5×410	–	eShop	–	280	410	0.1
10×265	eShop	eShop	eShop	185	265	0.1
10×340	eShop	eShop	eShop	235	340	0.1
10×430	eShop	eShop	eShop	295	430	0.1
10,2×340	eShop	eShop	eShop	235	340	0.1
10,5×265	–	eShop	–	185	265	0.1
10,5×340	–	eShop	–	235	340	0.1
10,5×430	–	eShop	–	295	430	0.1
11×280	–	eShop	–	195	280	0.1
11×365	–	eShop	–	250	365	0.1
11×455	–	eShop	–	310	455	0.1
11,5×280	–	eShop	–	195	280	0.1
11,5×365	–	eShop	–	250	365	0.1
11,5×455	–	eShop	–	310	455	0.1
12×295	–	eShop	–	205	295	0.1
12×375	–	eShop	–	260	375	0.1
12×480	–	eShop	–	330	480	0.1
12,5×295	–	eShop	–	205	295	0.1
12,5×375	–	eShop	–	260	375	0.1
12,5×480	–	eShop	–	330	480	0.1
13×295	–	eShop	–	205	295	0.1
13×375	–	eShop	–	260	375	0.1
13×480	–	eShop	–	330	480	0.1

HSS E | DIN 1869 | h8 | 38° | 2

Garant Extra long jobber drills plain shank HSS-E

Advantage:

11 6280 – **Particularly suitable for drilling under difficult conditions,** e.g. insufficient cooling of the cutting edges due to poor chip evacuation.

11 6285 – Flute length to DIN 340. For high-tensile tempered steels, **including TOOLOX.**

Recommendation: Maximum drilling depth:

$L_2 = L_C - 1.5 \times D_C$.



Type FS | 135°

11 6280

Type N | 118°

11 6285

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M	N					
11 6280	60		38	38	28	22													●	●			
11 6285				38	28	22	7	5						10	8	10	5	70	●	●			

Ø D_C h8 × overall length L	11 6280 FS	11 6280 N	11 6285 FS	11 6285 N	L_c 11 6280	L_c 11 6285	L	< 750 N f
	Jobber drill, extra long HSS-E							
mm	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm/rev.
3×150	eShop	eShop	–	–	100	66	150	0.05
3×190	eShop	–	–	–	130	–	190	0.05
3,5×165	eShop	–	–	–	115	–	165	0.05
3,5×210	eShop	–	–	–	145	–	210	0.05
4×175	eShop	eShop	–	–	120	78	175	0.05
4×220	eShop	–	–	–	150	–	220	0.05
4×280	eShop	eShop	–	–	190	78	280	0.05
4,5×185	eShop	–	–	–	125	–	185	0.05
4,5×235	eShop	–	–	–	160	–	235	0.05
5×195	eShop	eShop	–	–	135	87	195	0.07
5×245	eShop	–	–	–	170	–	245	0.07
5×315	eShop	eShop	–	–	210	87	315	0.07
5,5×205	eShop	–	–	–	140	–	205	0.07
5,5×260	eShop	–	–	–	180	–	260	0.07
6×205	eShop	eShop	–	–	140	91	205	0.07
6×260	eShop	–	–	–	180	–	260	0.07
6×330	eShop	eShop	–	–	225	91	330	0.07

Ø D_C h8 × overall length L	11 6280 FS	11 6280 N	11 6285 FS	11 6285 N	L_c 11 6280	L_c 11 6285	L	< 750 N f
	Jobber drill, extra long HSS-E							
mm	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm/rev.
6,5×275	eShop	–	–	–	190	–	275	0.07
6,8×225	eShop	–	–	–	155	–	225	0.07
7×225	eShop	–	–	–	155	–	225	0.07
7×290	eShop	–	–	–	200	–	290	0.07
7,5×290	eShop	–	–	–	200	–	290	0.07
8×240	eShop	eShop	–	–	165	109	240	0.1
8×305	eShop	–	–	–	210	–	305	0.1
8×390	eShop	eShop	–	–	265	109	390	0.1
8,5×240	eShop	–	–	–	165	–	240	0.1
8,5×305	eShop	–	–	–	210	–	305	0.1
9×250	eShop	–	–	–	175	–	250	0.1
9×320	eShop	–	–	–	220	–	320	0.1
9,5×320	eShop	–	–	–	220	–	320	0.1
10×265	eShop	eShop	–	–	185	121	265	0.1
10×340	eShop	–	–	–	235	–	340	0.1
10×430	eShop	eShop	–	–	295	121	430	0.1
10,2×340	eShop	–	–	–	235	–	340	0.1

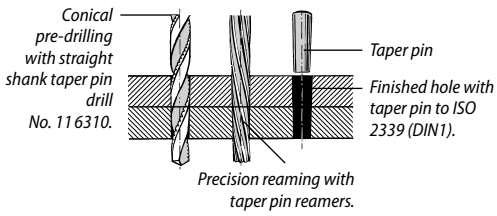
HSS | DIN 1898 A | 118° | 1:50 | 2

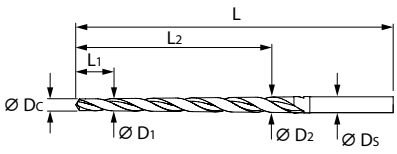
Garant Taper pin drills, plain shank

Conically increasing cutting edges with chip breaker flutes on the circumference. Special surface treatment.

Advantage: Conical holes 1:50 for taper pins to ISO 2339 (DIN 1) and ISO 8736 (DIN 7978) can be drilled in a single operation.

Note: Ø1.5; 2; 2.5 available with plain shank on request.
Ø14;16; 20; 25 available with MT shank on request.
For finishing use taper pin reamers No. 161200.







11 6310

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
11 6310				24	20														●	●			

Ø D_C	11 6310 Straight shank taper pin drill	Ø D_1	Ø D_2	L_1	L_2	L	Ø D_s	< 750 N f
mm		mm	mm	mm	mm	mm	mm	mm/rev.
3	eShop	2.9	4.24	5	58	100	4	0.05
4	eShop	3.9	5.44	5	68	112	5	0.05
5	eShop	4.9	6.55	5	73	122	6.3	0.05
6	eShop	5.9	8.23	5	105	160	8	0.05

Ø D_C	11 6310 Straight shank taper pin drill	Ø D_1	Ø D_2	L_1	L_2	L	Ø D_s	< 750 N f
mm		mm	mm	mm	mm	mm	mm	mm/rev.
8	eShop	7.9	11.07	5	145	207	10	0.05
10	eShop	9.9	13.74	5	175	245	12.5	0.07
12	eShop	11.8	16.37	10	210	290	16	0.07

HSS | DIN 345 | Type N | h8 | 118° | 20-30° | 2

Jobber drills with Morse taper shank

Special surface treatment, resulting in reduced tendency to edge build-up **and improved chip evacuation.**

11 6340 – **Top quality high performance twist drills.**
Cutting edge section ≤ 26.5 mm Ø ground from solid, > 26.5 mm Ø milled. This ensures high concentricity and pitch accuracy, and precision ground point up to 40 mm Ø.

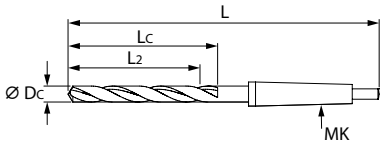
Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.



11 6340



11 6320



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 6320				40	30	25											25		●	●			
11 6340		45		40	30	25											25		●	●			

Ø D_c h8	11C 11 6340 Garant	12C 11 6320 HOLEX	L_c	L	MT	< 750 N f
	Jobber drill HSS N					
mm			mm	mm		mm/rev.
5	eShop	–	52	133	1	0.07
5,5	eShop	–	57	138	1	0.07
6	eShop	–	57	138	1	0.07
6,5	eShop	–	63	144	1	0.07
7	eShop	–	69	150	1	0.07
7,5	eShop	–	69	150	1	0.07
8	eShop	–	75	156	1	0.1
8,5	eShop	–	75	156	1	0.1
9	eShop	–	81	162	1	0.1
9,5	eShop	–	81	162	1	0.1
9,8	eShop	–	87	168	1	0.1
10	eShop	–	87	168	1	0.1
10,25	eShop	–	87	168	1	0.1
10,5	eShop	–	87	168	1	0.1
10,75	eShop	–	94	175	1	0.1
11	eShop	–	94	175	1	0.1
11,25	eShop	–	94	175	1	0.1
11,5	eShop	–	94	175	1	0.1
11,75	eShop	–	94	175	1	0.1
12	eShop	–	101	182	1	0.16
12,25	eShop	–	101	182	1	0.16
12,5	eShop	–	101	182	1	0.16
12,75	eShop	–	101	182	1	0.16
13	eShop	eShop	101	182	1	0.16
13,25	eShop	–	108	189	1	0.16
13,5	eShop	eShop	108	189	1	0.16
13,75	eShop	eShop	108	189	1	0.16
14	eShop	eShop	108	189	1	0.16
14,25	eShop	eShop	114	212	2	0.16
14,5	eShop	eShop	114	212	2	0.16
14,75	eShop	–	114	212	2	0.16
15	eShop	eShop	114	212	2	0.16
15,25	eShop	eShop	120	218	2	0.16
15,5	eShop	eShop	120	218	2	0.16
15,75	eShop	eShop	120	218	2	0.16
16	eShop	eShop	120	218	2	0.2
16,25	eShop	eShop	125	223	2	0.2
16,5	eShop	eShop	125	223	2	0.2
16,75	eShop	–	125	223	2	0.2
17	eShop	eShop	125	223	2	0.2
17,25	eShop	–	130	228	2	0.2
17,5	eShop	eShop	130	228	2	0.2
17,75	eShop	eShop	130	228	2	0.2
18	eShop	eShop	130	228	2	0.2
18,25	eShop	–	135	233	2	0.2
18,5	eShop	eShop	135	233	2	0.2
18,75	eShop	–	135	233	2	0.2
19	eShop	eShop	135	233	2	0.2
19,25	eShop	–	140	238	2	0.2
19,5	eShop	eShop	140	238	2	0.2
19,75	eShop	eShop	140	238	2	0.2
20	eShop	eShop	140	238	2	0.2
20,25	eShop	–	145	243	2	0.2
20,5	eShop	eShop	145	243	2	0.2
20,75	eShop	–	145	243	2	0.2
21	eShop	eShop	145	243	2	0.2
21,25	eShop	–	150	248	2	0.2
21,5	eShop	eShop	150	248	2	0.2
21,75	eShop	–	150	248	2	0.2

Ø D_c h8	11C 11 6340 Garant	12C 11 6320 HOLEX	L_c	L	MT	< 750 N f
	Jobber drill HSS N					
mm			mm	mm		mm/rev.
22	eShop	eShop	150	248	2	0.2
22,25	eShop	–	150	248	2	0.2
22,5	eShop	eShop	155	253	2	0.2
22,75	eShop	–	155	253	2	0.2
23	eShop	eShop	155	253	2	0.2
23,5	eShop	eShop	155	276	3	0.2
23,75	eShop	–	160	281	3	0.2
24	eShop	eShop	160	281	3	0.2
24,5	eShop	eShop	160	281	3	0.2
24,75	eShop	–	160	281	3	0.2
25	eShop	eShop	160	281	3	0.25
25,5	eShop	eShop	165	286	3	0.25
25,75	eShop	–	165	286	3	0.25
26	eShop	eShop	165	286	3	0.25
26,5	eShop	eShop	165	286	3	0.25
27	eShop	eShop	170	291	3	0.25
27,5	eShop	eShop	170	291	3	0.25
27,75	eShop	–	170	291	3	0.25
28	eShop	eShop	170	291	3	0.25
28,5	eShop	eShop	175	296	3	0.25
29	eShop	eShop	175	296	3	0.25
29,5	eShop	eShop	175	296	3	0.25
29,75	eShop	–	175	296	3	0.25
30	eShop	eShop	175	296	3	0.25
30,5	eShop	eShop	180	301	3	0.25
31	eShop	eShop	180	301	3	0.25
31,5	eShop	–	180	301	3	0.25
32	eShop	eShop	185	334	4	0.25
32,5	eShop	–	185	334	4	0.25
33	eShop	eShop	185	334	4	0.25
33,5	eShop	–	185	334	4	0.25
34	eShop	eShop	190	339	4	0.25
34,5	eShop	–	190	339	4	0.25
35	eShop	eShop	190	339	4	0.25
35,5	eShop	–	190	339	4	0.25
36	eShop	eShop	195	344	4	0.25
37	eShop	–	195	344	4	0.25
37,5	eShop	–	195	344	4	0.25
38	eShop	eShop	200	349	4	0.25
38,5	eShop	–	200	349	4	0.25
39	eShop	eShop	200	349	4	0.25
39,5	eShop	–	200	349	4	0.25
40	eShop	eShop	200	349	4	0.32
40,5	eShop	–	205	354	4	0.32
41	eShop	eShop	205	354	4	0.32
42	eShop	eShop	205	354	4	0.32
43	eShop	eShop	210	359	4	0.32
44	eShop	eShop	210	359	4	0.32
45	eShop	eShop	210	359	4	0.32
46	eShop	eShop	215	364	4	0.32
47	eShop	eShop	215	364	4	0.32
48	eShop	eShop	220	369	4	0.32
49	eShop	eShop	220	369	4	0.32
50	eShop	eShop	220	369	4	0.32
51	eShop	eShop	225	412	5	0.32
55	eShop	eShop	230	417	5	0.32
60	eShop	eShop	235	422	5	0.32
65	eShop	eShop	245	432	5	0.4
70	eShop	eShop	250	437	5	0.4

HSS E | DIN 345 | Type S/STL | h8 | 135° | 35-40° | 2

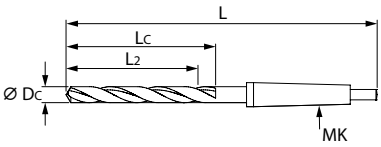
Garant Jobber drill with Morse taper shank, for high-tensile and stainless steels

With strengthened core.
Specially treated surface, reducing edge build up and improving chip evacuation.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.



11 6360



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
11 6360				40	30	25	10							12		5	25	80

Ø D_C h8	11C 11 6360 Jobber drill HSS-E	L_c	L	MT	< 750 N f
mm	VA	mm	mm		mm/rev.
10	eShop	87	168	1	0.1
10,2	eShop	87	168	1	0.1
10,5	eShop	87	168	1	0.1
11	eShop	94	175	1	0.1
11,5	eShop	94	175	1	0.1
11,8	eShop	94	175	1	0.1
12	eShop	101	182	1	0.16
12,2	eShop	101	182	1	0.16
12,5	eShop	101	182	1	0.16
13	eShop	101	182	1	0.16
13,5	eShop	108	189	1	0.16
13,8	eShop	108	189	1	0.16
14	eShop	108	189	1	0.16
14,25	eShop	114	212	2	0.16
14,5	eShop	114	212	2	0.16
15	eShop	114	212	2	0.16
15,25	eShop	120	218	2	0.16
15,5	eShop	120	218	2	0.16
15,75	eShop	120	218	2	0.16
16	eShop	120	218	2	0.2
16,25	eShop	125	223	2	0.2
16,5	eShop	125	223	2	0.2
17	eShop	125	223	2	0.2
17,5	eShop	130	228	2	0.2
17,75	eShop	130	228	2	0.2
18	eShop	130	228	2	0.2
18,5	eShop	135	233	2	0.2

Ø D_C h8	11C 11 6360 Jobber drill HSS-E	L_c	L	MT	< 750 N f
mm	VA	mm	mm		mm/rev.
18,75	(eShop)	135	233	2	0.2
19	eShop	135	233	2	0.2
19,5	eShop	140	238	2	0.2
19,75	eShop	140	238	2	0.2
20	eShop	140	238	2	0.2
20,5	eShop	145	243	2	0.2
21	eShop	145	243	2	0.2
21,5	eShop	150	248	2	0.2
22	eShop	150	248	2	0.2
22,5	eShop	155	253	2	0.2
23	eShop	155	253	2	0.2
23,5	eShop	155	276	3	0.2
24	eShop	160	281	3	0.2
24,5	eShop	160	281	3	0.2
25	eShop	160	281	3	0.25
25,5	eShop	165	286	3	0.25
26	eShop	165	286	3	0.25
26,5	eShop	165	286	3	0.25
27	eShop	170	291	3	0.25
28	eShop	170	291	3	0.25
29,5	eShop	175	296	3	0.25
30	eShop	175	296	3	0.25
30,5	(eShop)	180	301	3	0.25
32	eShop	185	334	4	0.25
33	(eShop)	185	334	4	0.25
35	eShop	190	339	4	0.25

HSS Co8 | Standard | Type H | h8 | 130° | 8-15° | 2

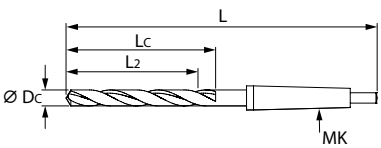
Garant Short jobber drills with Morse taper shank, for difficult to machine materials

Particularly sturdy due to **extra short drilling section** and partly with larger MT.
Strengthened core.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.



11 6380



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N
11 6380							10	8						5			5	

Ø D_C h8	11C 11 6380 Jobber drill HSS-E for Hardox	L_c	L	MT	< 1400 N f
mm	H	mm	mm		mm/rev.
8,5	eShop	43	124	1	0.08
10	eShop	50	131	1	0.08
10,5	eShop	50	131	1	0.08
12	eShop	59	157	2	0.12
13	eShop	59	157	2	0.12
14	eShop	63	161	2	0.12
17	eShop	73	171	2	0.14
17,5	eShop	77	175	2	0.14

Ø D_C h8	11C 11 6380 Jobber drill HSS-E for Hardox	L_c	L	MT	< 1400 N f
mm	H	mm	mm		mm/rev.
18	eShop	77	175	2	0.14
20	eShop	83	204	3	0.14
21	eShop	87	208	3	0.14
22	eShop	90	211	3	0.14
25	eShop	98	219	3	0.18
26	eShop	103	224	3	0.18
30	eShop	112	261	4	0.18

HSS | DIN 343 | Type N | h8 | 120° | 3

Garant

Core drill with Morse taper shank

Strong core. Sturdy jobber drill for better guidance in the hole

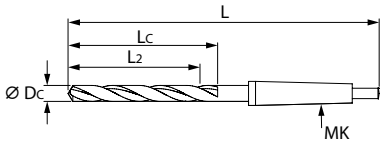
Advantage: Particularly suitable **for drilling out** holes that are out of round. Misaligned holes can be aligned.

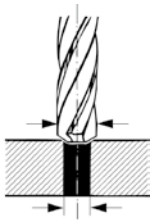
Recommendation: **Maximum drilling depth:**
$L_2 = L_C - 1.5 \times D_C$.

Note: **Please note:**
Do not drill the respective tapping hole Ø (see table) less than the stated size.

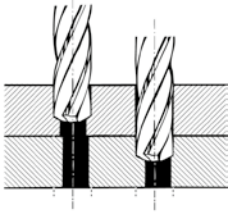


11 6620





For pilot hole (D_{min}) see table.



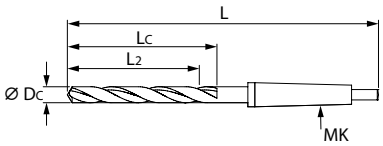
Misaligned holes can be realigned using the core drill.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 6620		45		40	30	25	10	8						12			25			●			

Ø D_c h8	11C 11 6620 Core drill HSS	L_c	L	Min. pre-drilling -Ø D_{min}	MT	< 750 N f
mm	N	mm	mm	mm		mm/rev.
7,8	eShop	75	156	5.6	1	0.1
8,8	(eShop)	81	162	6.3	1	0.11
9,7	(eShop)	87	168	7	1	0.12
9,8	eShop	87	168	7	1	0.12
10	(eShop)	87	168	7	1	0.12
10,75	eShop	94	175	7.7	1	0.13
11	(eShop)	94	175	7.7	1	0.13
11,5	(eShop)	94	175	7.7	1	0.13
11,75	eShop	101	182	8.4	1	0.14
12	eShop	101	182	8.4	1	0.14
12,5	(eShop)	101	182	8.4	1	0.14
12,75	eShop	101	182	9.1	1	0.15
13	(eShop)	101	182	9.1	1	0.15
13,5	(eShop)	108	189	9.8	1	0.15
13,75	eShop	108	189	9.8	1	0.15
14	eShop	108	189	9.8	1	0.16
14,5	eShop	114	212	10.5	2	0.16
14,75	eShop	114	212	10.5	2	0.16
15	eShop	114	212	10.5	2	0.16
15,25	(eShop)	120	218	11.2	2	0.17
15,5	eShop	120	218	11.2	2	0.17
15,75	eShop	120	218	11.2	2	0.17
16	eShop	120	218	11.2	2	0.17
16,2	(eShop)	125	223	11.9	2	0.17
16,5	(eShop)	125	223	11.9	2	0.18
16,75	eShop	125	223	11.9	2	0.18
17	(eShop)	125	223	11.9	2	0.18
17,5	(eShop)	130	228	12.6	2	0.18
17,75	eShop	130	228	12.6	2	0.19
18	eShop	130	228	12.6	2	0.19
18,25	(eShop)	135	233	13.3	2	0.19
18,5	(eShop)	135	233	13.3	2	0.19
18,7	eShop	135	233	13.3	2	0.19
19	(eShop)	135	233	13.3	2	0.2
19,25	(eShop)	140	238	14	2	0.2
19,5	(eShop)	140	238	14	2	0.2
19,7	eShop	140	238	14	2	0.2
19,75	eShop	140	238	14	2	0.2
20	eShop	140	238	14	2	0.2
20,25	(eShop)	145	243	14.6	2	0.21

Ø D_c h8	11C 11 6620 Core drill HSS	L_c	L	Min. pre-drilling -Ø D_{min}	MT	< 750 N f
mm	N	mm	mm	mm		mm/rev.
20,5	(eShop)	145	243	14.6	2	0.21
20,7	eShop	145	243	14.6	2	0.21
21	(eShop)	145	243	14.6	2	0.21
21,5	(eShop)	150	248	15.3	2	0.22
21,7	eShop	150	248	15.3	2	0.22
22	(eShop)	150	248	15.3	2	0.22
22,5	(eShop)	155	253	16	2	0.22
22,7	(eShop)	155	253	16	2	0.23
23	(eShop)	155	253	16	2	0.23
23,7	(eShop)	160	281	16.6	3	0.23
24	(eShop)	160	281	16.6	3	0.24
24,5	(eShop)	160	281	17.3	3	0.24
24,7	eShop	160	281	17.3	3	0.24
24,75	(eShop)	160	281	17.3	3	0.24
25	eShop	160	281	17.3	3	0.24
25,7	(eShop)	165	286	18	3	0.25
26	eShop	165	286	18	3	0.25
27	eShop	170	291	18.6	3	0.26
27,7	(eShop)	170	291	19.3	3	0.26
28	eShop	170	291	19.3	3	0.26
28,7	(eShop)	175	296	20	3	0.27
29,7	eShop	175	296	20.5	3	0.28
30	eShop	175	296	20.5	3	0.28
30,5	(eShop)	180	301	21	3	0.28
30,6	(eShop)	180	301	21	3	0.28
31	(eShop)	180	301	21	3	0.29
31,6	(eShop)	185	334	22	4	0.29
32	(eShop)	185	334	22	4	0.29
32,6	(eShop)	185	334	23	4	0.3
33	(eShop)	185	334	23	4	0.3
33,6	(eShop)	190	339	24	4	0.3
34	(eShop)	190	339	24	4	0.31
34,6	(eShop)	190	339	25	4	0.31
35	(eShop)	190	339	25	4	0.31
35,6	(eShop)	195	344	25.5	4	0.32
36	eShop	195	344	25.5	4	0.32
39,6	(eShop)	200	349	28	4	0.34
40	(eShop)	200	349	28	4	0.35
50	(eShop)	220	369	34.5	4	0.41

HSS | DIN 341 | Type N | h8 | 118° | 16-30° | 2



Garant Long jobber drills (bushing drill) with Morse taper shank

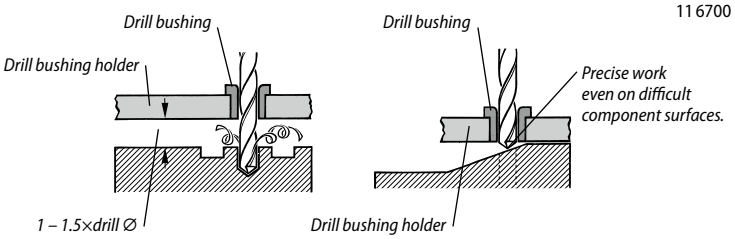
Compared to DIN 345 the flute length is longer by the drill bushing height. Thus the effective drilling depth is unaffected.
Special surface treatment for improved chip evacuation.

Advantage: **For drilling through drill bushings** in tool making, machine building and series production. Particularly important for drilling into uneven, inclined or arched surfaces.

Recommendation: **Maximum drilling depth:**
$L_2 = L_C - 1.5 \times D_C$.



11 6700



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
11 6700				40	30	25											25	

Ø D_c h8	11C 11 6700 Jobber drill long HSS	L_c	L	MT	< 750 N f
mm	N	mm	mm		mm/rev.
10	eShop	116	197	1	0.1
10,5	eShop	116	197	1	0.1
11	eShop	125	206	1	0.1
11,5	eShop	125	206	1	0.1
12	eShop	134	215	1	0.16
12,5	eShop	134	215	1	0.16
13	eShop	134	215	1	0.16
13,5	eShop	142	223	1	0.16
14	eShop	142	223	1	0.16
14,5	eShop	147	245	2	0.16
15	eShop	147	245	2	0.16
15,5	eShop	153	251	2	0.16
16	eShop	153	251	2	0.16

Ø D_c h8	11C 11 6700 Jobber drill long HSS	L_c	L	MT	< 750 N f
mm	N	mm	mm		mm/rev.
16,5	eShop	159	257	2	0.2
17	eShop	159	257	2	0.2
17,5	eShop	165	263	2	0.2
18	eShop	165	263	2	0.2
18,5	eShop	171	269	2	0.2
19	eShop	171	269	2	0.2
19,5	eShop	177	275	2	0.2
20	eShop	177	275	2	0.2
20,5	eShop	184	282	2	0.2
21	eShop	184	282	2	0.2
22	eShop	191	289	2	0.2
22,5	(eShop)	198	296	2	0.2
23	eShop	198	296	2	0.2

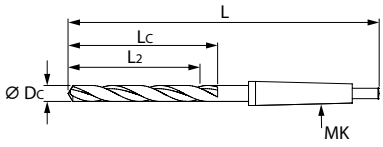
Ø D_c h8	11C 11 6700 Jobber drill long HSS	L_c	L	MT	< 750 N f
mm	N	mm	mm		mm/rev.
24	eShop	206	327	3	0.2
25	eShop	206	327	3	0.25
26	eShop	214	335	3	0.25
27	eShop	222	343	3	0.25
28	eShop	222	343	3	0.25
30	eShop	230	351	3	0.25
31	eShop	239	360	3	0.25
32	eShop	248	397	4	0.25
33	eShop	248	397	4	0.25
35	eShop	257	406	4	0.25
40	eShop	277	426	4	0.32
45	(eShop)	298	447	4	0.32
50	eShop	321	470	4	0.32

HSS | Type FS | h8 | 130° | 2 | DIN 1870 R1 | DIN 1870 R2

Garant Extra long jobber drills with Morse taper shank

High concentricity.
Large section parabolic flutes; strong due to strengthened core thickness (without core taper).
≤ 16 mm Ø: Bright finish flutes, nitrided lands; > 16 mm Ø: Specially treated surface.
Special sturdy drills **for extremely deep holes.** Up to approx. 15×Ø without drill withdrawal.

Recommendation: **Maximum drilling depth:**
$L_2 = L_C - 1.5 \times D_C$.





11 6720

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
11 6720				40	30	25												

Ø D_c h8	11C 11 6720 Jobber drill extra long HSS	L_c	L	MT	< 750 N f
mm	FS	mm	mm		mm/rev.
10R1	eShop	185	285	1	0.1
10R2	(eShop)	235	360	1	0.1
10,5R2	(eShop)	235	360	1	0.1
11R1	eShop	195	300	1	0.1
11R2	eShop	250	375	1	0.1
11,5R2	eShop	250	375	1	0.1
12R1	eShop	205	310	1	0.16
12R2	eShop	260	395	1	0.16
12,5R2	(eShop)	260	395	1	0.16
13R1	eShop	205	310	1	0.16
13R2	(eShop)	260	395	1	0.16
13,5R2	eShop	275	410	1	0.16

Ø D_c h8	11C 11 6720 Jobber drill extra long HSS	L_c	L	MT	< 750 N f
mm	FS	mm	mm		mm/rev.
14R1	eShop	220	325	1	0.16
14R2	eShop	275	410	1	0.16
15R1	eShop	220	340	2	0.16
15R2	eShop	275	425	2	0.16
16R1	eShop	230	355	2	0.2
16R2	eShop	295	445	2	0.2
17R1	eShop	220	355	2	0.2
17,5R2	eShop	310	465	2	0.2
18R1	eShop	245	370	2	0.2
18R2	(eShop)	310	465	2	0.2
19R1	eShop	245	370	2	0.2
20R1	eShop	260	385	2	0.2

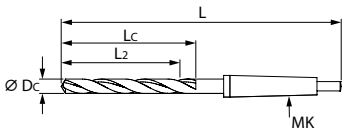
Ø D_c h8	11C 11 6720 Jobber drill extra long HSS	L_c	L	MT	< 750 N f
mm	FS	mm	mm		mm/rev.
20R2	eShop	325	490	2	0.2
21R1	eShop	260	385	2	0.2
21R2	(eShop)	325	490	2	0.2
22R1	eShop	270	405	2	0.2
24R1	eShop	290	440	3	0.2
24R2	(eShop)	365	555	3	0.2
25R1	eShop	290	440	3	0.25
25R2	(eShop)	365	555	3	0.25
26R1	eShop	290	440	3	0.25
26R2	eShop	365	555	3	0.25
28R1	(eShop)	305	460	3	0.25
30R1	(eShop)	305	460	3	0.25

HSS | Type N | h8 | 118° | 16-30° | DIN 1870 R1 | DIN 1870 R2

Garant Extra long jobber drills with Morse taper shank

High concentricity. Core thickness and core taper are standard.
Special surface treatment.
Precision ground point. When drilling deep holes, evacuate chips from the hole frequently, and ensure adequate cooling.
Economy version with standard flutes.

Recommendation: Maximum drilling depth:
$L_2 = L_C - 1.5 \times D_C$.





11 6760

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 6760				40	30	25											25		●	●			

Ø D_C h8	11C	11 6760 Jobber drill extra long HSS	L_c	L	MT	< 750 N f
mm		N	mm	mm		mm/rev.
8R1		eShop	165	265	1	0.1
9R1		(eShop)	175	275	1	0.1
9R2		(eShop)	220	345	1	0.1
10R1		eShop	185	285	1	0.1
10R2		(eShop)	235	360	1	0.1
10,5R2		eShop	235	360	1	0.1
11R1		eShop	195	300	1	0.1
11R2		eShop	250	375	1	0.1
11,5R2		eShop	250	375	1	0.1
12R1		eShop	205	310	1	0.16
12R2		eShop	260	395	1	0.16
12,5R2		eShop	260	395	1	0.16
13R1		eShop	205	310	1	0.16
13R2		eShop	260	395	1	0.16
13,5R2		eShop	275	410	1	0.16
14R1		eShop	220	325	1	0.16
14R2		eShop	275	410	1	0.16
14,5R2		eShop	275	425	2	0.16
15R1		eShop	220	340	2	0.16
15R2		eShop	275	425	2	0.16

Ø D_C h8	11C	11 6760 Jobber drill extra long HSS	L_c	L	MT	< 750 N f
mm		N	mm	mm		mm/rev.
15,5R2		eShop	295	445	2	0.16
16R1		eShop	230	355	2	0.2
16R2		eShop	295	445	2	0.2
16,5R2		eShop	295	445	2	0.2
17R1		eShop	230	355	2	0.2
17R2		eShop	295	445	2	0.2
17,5R2		eShop	310	465	2	0.2
18R1		eShop	245	370	2	0.2
18R2		eShop	310	465	2	0.2
19R1		eShop	245	370	2	0.2
20R1		eShop	260	385	2	0.2
20R2		eShop	325	490	2	0.2
21R1		eShop	260	385	2	0.2
22R1		eShop	270	405	2	0.2
22R2		eShop	345	515	2	0.2
23R1		(eShop)	270	405	2	0.2
24R1		eShop	290	440	3	0.2
26R1		eShop	290	440	3	0.25
30R1		(eShop)	305	460	3	0.25
30R2		eShop	385	580	3	0.25

HSS | DIN 1897 | h8 | 2 | 118° | h8 | 90°

Garant Stub stepped drills for tapping holes, 90° countersink

Very sturdy. Tight concentricity tolerances between drill Ø and counterbore Ø guarantee exact alignment.
11 7020 – Special surface treatment, resulting in reduced tendency to edge build-up and improved chip evacuation.

Advantage: **Hole and countersink are produced in one operation and precisely aligned.**

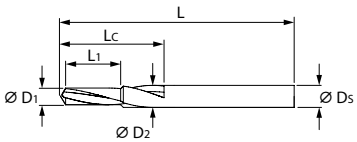
Application: **Particularly suitable for NC machines** due to high positional accuracy, excellent centring properties and great sturdiness. The preceding centring operation can thus often be omitted. For thread tapping drill holes to DIN 336 sheet 1 with 90° countersink. In the following operation, the tap therefore does not have to cut into the sharp edge of the hole.



11 7020



11 7040



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 7020		45		40	30	25											25	80	●	●			
11 7040		56	50	50	37	31	12	10									31	80	●	●			

for threads	11C	11 7020 Stub stepped drill HSS 90° vaporised	11C	11 7040 Stub stepped drill HSS 90° TiAlN	Ø D_1 h8	Ø D_2 h8	L_1	L_c	L	Ø D_s	< 750 N f
					mm	mm	mm	mm	mm	mm	mm/rev.
M3		eShop		eShop	2.5	3.4	8.8	20	52	3.4	0.03
M4		eShop		eShop	3.3	4.5	11.4	24	58	4.5	0.03
M5		eShop		eShop	4.2	5.5	13.6	28	66	5.5	0.07
M6		eShop		eShop	5	6.6	16.5	31	70	6.6	0.07
M8		eShop		eShop	6.8	9	21	40	84	9	0.1
M10		eShop		eShop	8.5	11	25.5	47	95	11	0.1
M12		eShop		eShop	10.2	13.5	30	54	107	13.5	0.16

HSS | DIN 8378 | h9 | 2 | 118° | h8 | 20-30° | 90°

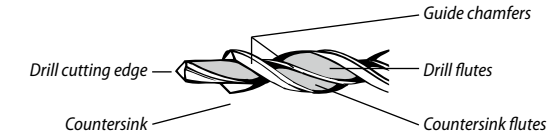


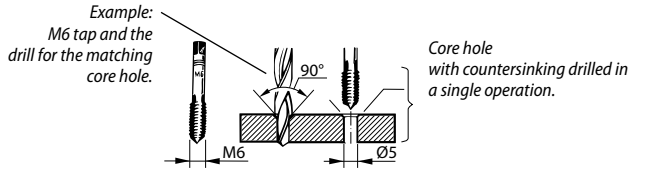
11 7060

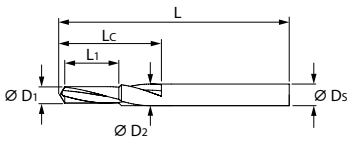
Garant Subland drill for tapping holes, 90° countersink

Drill and counterbore each with its own chip flutes and guide chamfers.
This means the profile of the stepped drill is retained even after repeated regrinding.

Application: **Tapping hole and countersink** are produced **in one operation**, precisely aligned.
For drilling tapping holes to DIN 336 sheet 1 with 90° countersinking (similar to DIN 69, medium version).







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
11 7060		45		40	30	25											25	80

for threads	11C 11 7060	$Ø D_1$ h9	$Ø D_2$ h8	L_1	L_c	L	$Ø D_s$	< 750 N f
	Subland drill HSS 90° vaporised	mm	mm	mm	mm	mm	mm	mm/rev.
M3	eShop	2.5	3.4	8.8	39	70	3.4	0.03
M4	eShop	3.3	4.5	11.4	47	80	4.5	0.03
M5	eShop	4.2	5.5	13.6	57	93	5.5	0.07
M6	eShop	5	6.6	16.5	63	101	6.6	0.07
M8	eShop	6.8	9	21	81	125	9	0.1
M10	eShop	8.5	11	25.5	94	142	11	0.1
M12	eShop	10.2	13.5	30	108	160	13.5	0.16

HSS | DIN 1897 | h8 | 118° | h8 | 90° | 2



11 7120

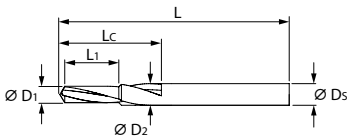


11 7140

Garant Stub subland drill for through holes, 90° (for countersunk screws)

Very sturdy. Tight concentricity tolerances between drill Ø and counterbore Ø guarantee exact alignment.
11 7120 – Special surface treatment, resulting in reduced tendency to edge build-up and improved chip evacuation.

Application: **Particularly suitable for NC machines** due to high positional accuracy, excellent centring properties and great sturdiness. The preceding centring operation can thus often be omitted.
For through holes for screws to DIN-ISO 273 and countersinks to DIN 74, sheet 1 form A, fine version.
For screws to ISO 2009, 2010, 7046, 7047 (DIN 963, 964, 965 and 966).



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
11 7120		45		40	30	25											25	80
11 7140		56	50	50	37	31	12	10									31	80

for screws	11C 11 7120	11C 11 7140	$Ø D_1$ h8	$Ø D_2$ h8	L_1	L_c	L	$Ø D_s$	< 750 N f
	Stub subland drill HSS 90° vaporised	TiAlN	mm	mm	mm	mm	mm	mm	mm/rev.
M3	eShop	eShop	3.2	6	9	28	66	6	0.03
M4	eShop	eShop	4.3	8	11	37	79	8	0.03
M5	eShop	eShop	5.3	10	13	43	89	10	0.07
M6	eShop	eShop	6.4	11.5	15	47	95	11.5	0.07
M8	eShop	eShop	8.4	15	19	56	111	15	0.1
M10	eShop	eShop	10.5	19	23	64	127	19	0.1

HSS E | Standard | ±0.05 | 118° | h8 | 90° | 2

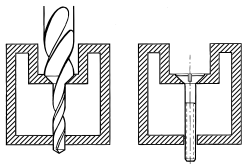
Garant Stub subland drill for through holes, 90° (for countersunk screws)

With long drilling step.

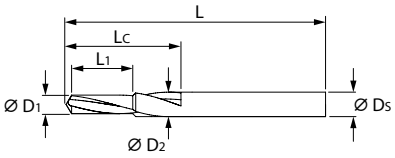
Application: For through holes for screws to DIN-ISO 273 and countersinks to DIN 74, sheet 1 form A, medium version.
For screws to ISO 2009, 2010, 7046, 7047 (DIN 963, 964, 965 and 966).
Especially suitable for holes with simultaneous countersinking in the profile material.



11 7160



Through hole with counterbore for screw head drilled in a single operation.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
11 7160	70	45		40	30	25											25	80

for screws	11 7160 Subland drill HSS-E with long drilling step 90°	$Ø D_1$ ±0.05	$Ø D_2$ h9	L_1	L_c	L	$Ø D_s$	< 750 N f
		mm	mm	mm	mm	mm	mm	mm/rev.
M4	eShop	4.3	8.6	30	55	110	8.6	0.03
M5	eShop	5.3	10.4	30	55	110	10.4	0.07
M6	eShop	6.4	12.4	30	55	110	12.4	0.07
M8	eShop	8.4	16.4	30	70	110	12.5	0.1
M10	eShop	10.5	20.4	30	70	110	12.5	0.1

HSS | DIN 8374 | h9 | 118° | 20-30° | h8 | 90° | 2

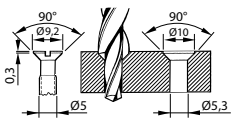
Garant Subland drill for through holes, 90° (for countersunk screws)

Drill and counterbore each with its own chip flutes and guide chamfers.
This means it can be reground many times.

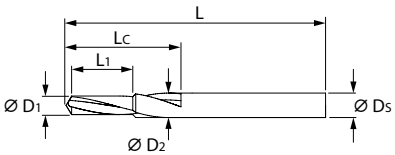
Application: For through holes for screws to DIN-ISO 273 and countersinks to DIN 74, sheet 1 form A, fine version.
For countersunk screws to ISO 2009, 2010, 7046, 7047 (DIN 963, 964, 965 and 966).



11 7180



Example: M5 countersunk screw and the appropriate subland drill No. 117180_M5.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
11 7180		45		40	30	25											25	80

for screws	11 7180 Subland drill HSS 90° vaporised	$Ø D_1$ h9	$Ø D_2$ h8	L_1	L_c	L	$Ø D_s$	< 750 N f
		mm	mm	mm	mm	mm	mm	mm/rev.
M3	eShop	3.2	6	9	57	93	6	0.03
M4	eShop	4.3	8	11	75	117	8	0.03
M5	eShop	5.3	10	13	87	133	10	0.07
M6	eShop	6.4	11.5	15	94	142	11.5	0.07
M8	eShop	8.4	15	19	114	169	15	0.1
M10	eShop	10.5	19	23	135	198	19	0.1

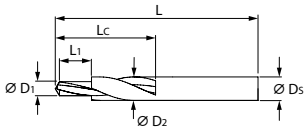
HSS | DIN 1897 | h8 | 118° | h8 | 180° | 2



11 7240



11 7260



Garant Stub subland drills for through holes, 180° (for socket-head screws)

Very sturdy. Tight concentricity tolerances between drill Ø and counterbore Ø guarantee exact alignment.

11 7240 – Special surface treatment, resulting in reduced tendency to edge build-up and improved chip evacuation.

Application: For through holes for screws to DIN-ISO 273 and countersinking to DIN 74, sheet 2 form H, J and K, medium version.
For screws to DIN 912, 6912 and 7984, ISO 1207 (DIN 84).

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 7240		45		**40**	**30**	**25**											**25**	80	●	●			
11 7260		56	50	**50**	**37**	**31**	12	10									**31**	80	●	●			

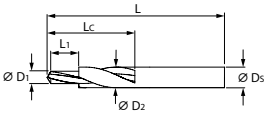
for screws	11C		$Ø D_1$ h8	$Ø D_2$ h8	L_1	L_c	L	$Ø D_s$	< 750 N f
	11 7240 Stub subland drill HSS 180° vaporised	11 7260 TiAlN	mm	mm	mm	mm	mm	mm	mm/rev.
M3	eShop	eShop	3.4	6	9	28	66	6	0.03
M4	eShop	eShop	4.5	8	11	37	79	8	0.03
M5	eShop	eShop	5.5	10	13	43	89	10	0.07
M6	eShop	eShop	6.6	11	15	47	95	11	0.07
M8	eShop	eShop	9	15	19	56	111	15	0.1
M10	eShop	eShop	11	18	23	62	123	18	0.1

HSS | DIN 8376 | h9 | 118° | 20-30° | h8 | 180°



h8 | DIN 8376

11 7280



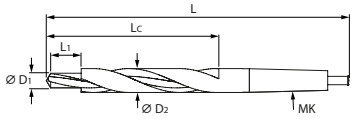
Drill and counterbore each with its own chip flutes and guide chamfers.
This means the profile of the stepped drill is retained even after repeated regrinding.

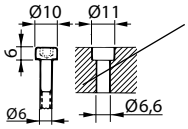
Application: For screw through holes to DIN-ISO 273 and screw head counterbores shape H, J, and K. Medium version to DIN 74 sheet 2.



DIN 8377

11 7320





Example:
Hole and counterbore for hexagon socket screws M6 DIN 912 and matching subland drill No. 11 7280_M6.

Garant Subland drill for through holes, 180° (for socket-head screws)

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 7280/7320		45		**40**	**30**	**25**											**25**	80	●	●			

for screws	11C		$Ø D_1$ h9	$Ø D_2$ h8	L_1	L_c	L	$Ø D_s$	< 750 N f
	11 7280 Subland drill HSS 180° vaporised		mm	mm	mm	mm	mm	mm	mm/rev.
M3	eShop		3.4	6.5	9	63	101	6.5	0.03
M4	eShop		4.5	8	11	75	117	8	0.03
M5	eShop		5.5	10	13	87	133	10	0.07
M6	eShop		6.6	11	15	94	142	11	0.07
M8	eShop		9	15	19	114	169	15	0.1
M10	eShop		11	18	23	130	191	18	0.1

for screws	11C		$Ø D_1$ h9	$Ø D_2$ h8	L_1	L_c	L	MT	< 750 N f
	11 7320 Subland drill HSS 180° vaporised		mm	mm	mm	mm	mm		mm/rev.
M5	eShop		5.5	10	13	87	168	1	0.07
M6	eShop		6.6	11	15	94	175	1	0.07
M8	eShop		9	15	19	114	212	2	0.1
M10	eShop		11	18	23	130	228	2	0.1
M12	eShop		13.5	20	27	140	238	2	0.16
M14	eShop		15.5	24	31	160	281	3	0.16
M16	eShop		17.5	26	35	165	286	3	0.2
M20	eShop		22	33	43	185	334	4	0.2

Garant Precision taper sheet and tube drill

HSS | Standard

With sharp drill point, pre-drilling not necessary.
Conically increasing cutting edges and radially relief ground circumference for a paring cut.
With scale in the flutes. Three drive flats on the shank.

11 8030 – **TiN coating:** Higher cutting speeds and significantly longer tool life.
Specially for soft materials with a tendency to smear.

11 8040 – **TiAlN coating for dry machining,** optimum tool life and highest cutting speeds.
Helical flutes for reliable chip evacuation.

Application: Leaves no burr or chatter marks.
Sheet metal 0.1 – 2 mm,
stainless steel 0.1 – 1 mm,
non-ferrous metals: 0.1 – 5 mm,
plastics up to 10 mm.


11 8020


11 8030


11 8040

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 8020	○	○		●	●	●											●		●	●		○	
11 8030	○	○	○	●	●	●	●							●	○		●		●	●		○	
11 8040	○	○	○	●	●	●	●							●	○				○	○		●	

Cutter ∅ D_c			mm	3-14	8-20	16-30,5	4-30,5	26-40	36-50	46-60
11C 11 8020	Precision taper sheet and tube drill HSS			eShop	eShop	eShop	eShop	eShop	eShop	eShop
11C 11 8030	Precision taper sheet and tube drill HSS	TiN		eShop	eShop	eShop	eShop	eShop	eShop	eShop
11C 11 8040	Precision taper sheet and tube drill with helical flute HSS	TiAlN		eShop	eShop	eShop	eShop	–	–	–
Overall length			mm	58	62	71	102	83	95	96
Shank ∅			mm	6	8	10	10	12	13	13

Taper sheet and tube drill sets

HSS | Standard

With sharp drill point, pre-drilling not necessary.
Conically increasing cutting edges and radially relief ground circumference for a paring cut.
With scale in the flutes. Three drive flats on the shank.
Set of 3 conical sheet and tube drills and 1 cutting compound No. 118160 in a case.

Application: Leaves no burr or chatter marks.
Sheet metal 0.1 – 2 mm,
stainless steel 0.1 – 1 mm,
non-ferrous metals: 0.1 – 5 mm,
plastics up to 10 mm.


11 8120


11 8130

Cutter ∅ D_c			mm	3-30,5
11C 11 8120	Precision taper sheet and tube drill set HSS			eShop
11C 11 8130	Precision taper sheet and tube drill set HSS	TiN		eShop
11C 11 8140	Precision taper sheet and tube drill set with helical flute HSS	TiAlN		eShop
Content: 1x each taper sheet and tube drill (11 8120)				No. 118020 size 3 – 14; 8 – 20; 16 – 30.5
1x each taper sheet and tube drill (11 8130)				No. 118030 size 3 – 14; 8 – 20; 16 – 30.5
1x each taper sheet and tube drill (11 8140)				No. 118040 size 3 – 14; 8 – 20; 16 – 30.5
Cutting compound				No. 118160

Cutting compound


11 8160

11C 11 8160	Cutting compound ∅ 29 mm×91 mm		eShop

Garant Stepped drill

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
11 8320				●	●	●								●			●		●	●		○	
11 8324				●	●	●								○					●	●		○	

Stepped drill

Standard

With cylindrical spotting drill, ∅ figures shown in the flute. Three drive flats on the shank.

Size PG – Combination stepped drill (core **and** through holes) **for conduit threads** (to DIN40430) PG7; PG8; PG11; PG13,5; PG16; PG21

Size MF – Size MF combination stepped drill (core holes **and** through holes) **for metric fine threads** (to DIN 60423) M12×1.5; M16×1.5; M20×1.5; M25×1.5; M32×1.5; M40×1.5

11 8324 – Stepped drill with spiral flutes for optimum chip evacuation and high-performance coating for high wear resistance.

Application: Drilling and deburring, maximum material thickness = step height (see table).

HSS E



11 8320_4-20

HSS E



11 8320_PG

HSS



11 8324 _4-20

Cutter ∅			mm	4-12	4-20	6-30	9-36	12-20	20-30	30-40	40-50	50-60	PG	MF
11C 11 8320	Stepped drill HSS-E			eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
11C 11 8324	Stepped drill HSS	TiAlN		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	eShop	eShop
Step height			mm	6	4	4	4	4	4	5	5	5	4	4
Overall length			mm	79	70	100	85	75	88	98	112	119	93	94
Shank ∅			mm	6	9	10	12	9	12	13	13	13	12	12
Drill steps in increments of			mm	1	2	2	3	1	1	1	1	1	–	–

Stepped drill set

Standard

Set of 3 stepped drills and 1 cutting compound No. 118160 in a case.

Application: Drilling and deburring of plain holes in material up to 4 / 6 mm strength.

HSS E



11 8330

Cutter ∅ D_c			mm	4-30
11C 11 8330	Stepped drill set HSS-E			eShop ■
11C 11 8332	Stepped drill set HSS	TiAlN		eShop
Drill steps in increments of			mm	1
Content: 1× each stepped drill (11 8330)				No. 118320 size 4 – 12; 12 – 20; 20 – 30
1× each stepped drill (11 8332)				No. 118324 size 4 – 12; 12 – 20; 20 – 30
Cutting compound				No. 118160

Case



11 8340

11B 11 8340	Empty case for 3 stepped drills	eShop

Standard

Carbide

11 8400
11 8500

Carbide hole saw plain shank

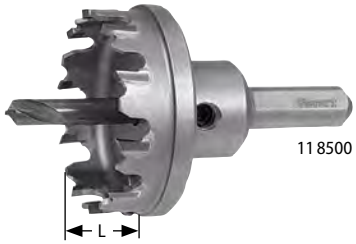
Extremely strong and with perfect concentricity due to **drill crown and shank of one piece** (hardened).
Narrow carbide cutting edges with **positive rake** and **large clearance angle** provide good cutting performance at low cutting pressure.
Exchangeable centre drill, shank with 3 clamping faces.

11 8400 – Dimension L: **size ≤ 55 = 35 mm / size 60 = 60 mm.**
11 8500 – Dimension L: **all sizes = 8 mm.**
11 8505 – Cutting width 1.9 mm for all sizes. ∅ tolerance: **+ 0.15 / – 0.05 mm.**
Dimension L: **all sizes = 11.8 mm.**
11 8400/8500 – Cutting width 2 mm for all sizes. ∅ tolerance: **+ 0.10 / – 0.05 mm.**

Application: For use on stationary machines. Suitable for fibre-reinforced plastics (GRP and CRP).
11 8400 – For flat material up to 4 mm thickness, and pipes of up to 4 mm wall thickness.
11 8500 – Only for flat material up to 5 mm thickness.
11 8505 – Only for flat material up to 5 mm thickness.



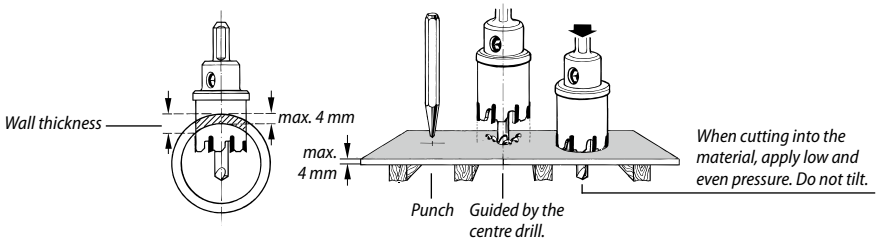
11 8400



11 8500



11 8505



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
11 8400–11 8505		70		50	50									35			80	●		○		●	

∅ D_c	11C 11 8400 Garant	11C 11 8500 Garant	12C 11 8505 HOLEX	Shank ∅	
	Carbide hole saw			11 8400 11 8500	11 8505
mm	high	flat	flat	mm	mm
16	eShop	eShop	eShop	6	10
17	eShop	eShop	eShop	6	10
18	eShop	eShop	eShop	6	10
19	eShop	eShop	eShop	6	10
20	eShop	eShop	eShop	6	10
21	eShop	eShop	eShop	6	10
22	eShop	eShop	eShop	6	10
23	eShop	eShop	eShop	10	10
24	eShop	eShop	eShop	10	10
25	eShop	eShop	eShop	10	10
26	eShop	eShop	eShop	10	10
27	eShop	eShop	eShop	10	10
28	eShop	eShop	eShop	10	10
29	eShop	eShop	eShop	10	10
30	eShop	eShop	eShop	10	10
31	eShop	eShop	eShop	10	10
32	eShop	eShop	eShop	10	10
33	eShop	eShop	eShop	10	10
34	eShop	eShop	eShop	10	10
35	eShop	eShop	eShop	10	10
36	eShop	eShop	eShop	10	10
37	eShop	eShop	eShop	10	10
38	eShop	eShop	eShop	10	10
39	eShop	eShop	eShop	10	10
40	eShop	eShop	eShop	10	10
41	eShop	eShop	eShop	10	10
42	eShop	eShop	eShop	10	10
43	eShop	eShop	eShop	10	10

∅ D_c	11C 11 8400 Garant	11C 11 8500 Garant	12C 11 8505 HOLEX	Shank ∅	
	Carbide hole saw			11 8400 11 8500	11 8505
mm	high	flat	flat	mm	mm
44	eShop	eShop	eShop	10	10
45	eShop	eShop	eShop	10	10
46	eShop	eShop	eShop	10	10
47	–	eShop	–	10	–
48	eShop	eShop	eShop	10	10
49	eShop	eShop	eShop	10	10
50	eShop	eShop	eShop	10	10
51	–	eShop	–	10	–
52	eShop	eShop	eShop	10	10
53	–	eShop	–	10	–
54	–	eShop	–	10	–
55	eShop	eShop	eShop	10	10
56	–	eShop	–	10	–
58	–	eShop	–	10	–
60	eShop	eShop	eShop	13	10
65	eShop	eShop	–	13	–
68	–	eShop	–	13	–
70	eShop	eShop	eShop	13	13
75	–	eShop	–	13	–
80	eShop	eShop	–	13	–
85	–	eShop	–	13	–
90	eShop	eShop	–	13	–
95	–	eShop	–	13	–
100	eShop	eShop	–	13	–
105	–	eShop	–	13	–
110	–	eShop	–	13	–
115	–	eShop	–	13	–
120	–	eShop	–	13	–

Spare centre drill

HSS E

∅×overall length			mm	6×69	8×69	8×94	6×48	8×48
11C 11 8450	Garant	Spare centre drill for hole saw No. 118400		eShop	eShop	eShop	–	–
11C 11 8550	Garant	Spare centre drill for hole saw No. 118500		–	–	–	eShop	eShop
12C 11 8555	HOLEX	Spare centre drill for hole saw No. 118505		–	–	–	eShop	–
for hole saw ∅ (11 8450, 11 8550)			mm	16 – 22	23 – 55	60 – 100	16 – 58	60 – 120
for hole saw ∅ (11 8555)			mm	–	–	–	16 – 70	–


11 8450


11 8550


11 8555

Core drill for magnetic core drilling machines 30, 35 and 55 mm cutting depth

Standard

Suitable for all popular magnetic core drilling machines. Very good cutting properties due to optimised cutting edge geometry. Easy to regrind. With Weldon shank - ∅ **19 mm.**

11 8782 – **Carbide with special TiAlN coating** – long tool life and outstanding cutting performance.

11 8792 – **HSS uncoated** – attractively priced alternative.

11 8802/8822 – **HSS with special TiAlN coating** for improved cutting characteristics (prevents edge build-up).

Application: On mobile magnetic drilling machines or stationary pillar drilling machines to produce large holes in steel construction. The core drill cuts only a thin material ring. The drilled core is ejected by a spring loaded ejector pin.

Supplied with: **Without** ejector pin.

Note: For the lubrication of core drills, we recommend high performance cutting oil (see No. 084210).



Core drilling machines see No. 076520 – 076536 (Volume II / section 0).

Carbide



11 8782

HSS



11 8792

HSS



11 8802

HSS



11 8822

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
11 8782		●	●	●	●	●	●							●	●	●	●	●	●	●	○	●	
11 8792	●	●		●	●									●				●	●	●	○	○	
11 8802/8822	●	●		●	●									●		●	●	●	●	●	○	●	

∅ D_c mm	11F 11 8782 Garant Carbide core drill Depth of cut 35 mm TiAlN	12D 11 8792 HOLEX HSS core drill Depth of cut 30 mm	12D 11 8802 HOLEX HSS core drill Depth of cut 30 mm TiAlN	12D 11 8822 HOLEX HSS core drill Depth of cut 55 mm TiAlN
12	–	eShop	eShop	eShop
13	–	eShop	eShop	eShop
14	eShop	eShop	eShop	eShop
15	eShop	eShop	eShop	eShop
16	eShop	eShop	eShop	eShop
17	eShop	eShop	eShop	eShop
17,5	–	–	eShop	–
18	eShop	eShop	eShop	eShop
19	eShop	eShop	eShop	–
20	eShop	eShop	eShop	eShop
21	eShop	eShop	eShop	eShop
22	eShop	eShop	eShop	eShop
23	eShop	eShop	eShop	–
24	eShop	eShop	eShop	eShop

∅ D_c mm	11F 11 8782 Garant Carbide core drill Depth of cut 35 mm TiAlN	12D 11 8792 HOLEX HSS core drill Depth of cut 30 mm	12D 11 8802 HOLEX HSS core drill Depth of cut 30 mm TiAlN	12D 11 8822 HOLEX HSS core drill Depth of cut 55 mm TiAlN
25	eShop	eShop	eShop	eShop
26	eShop	eShop	eShop	eShop
26,5	–	–	–	eShop
27	–	–	eShop	eShop
28	–	eShop	eShop	eShop
30	–	eShop	eShop	eShop
32	–	eShop	eShop	eShop
35	–	eShop	eShop	eShop
36	–	–	eShop	–
38	–	–	eShop	–
40	–	eShop	eShop	eShop
45	–	eShop	eShop	–
50	–	eShop	eShop	eShop

Ejector pins

∅×Length mm	6×77	6×90	6×103
12D 11 8892 HOLEX Ejector pin	eShop	eShop	eShop
fits core drill No.	118792; 118802	118782	118822



11 8892

MT arbors, adapters

11 8925 – Adapter **with Weldon shank 19 mm ∅** for BDS core drilling machines. Required when using FEIN carbide core drills No. 119000.

Suitable for:

11 8922 – Core drills with Weldon shank ∅ 19 mm.

Application:

11 8922 – For mounting core drills in stationary drilling machines.



11 8922

Type	2/19	3/19
12D 11 8922 HOLEX MT arbor	eShop	eShop
MT	2	3
Shank ∅ mm	19	
suitable for core drill ∅ mm	12 – 60	
Cooling lubrication	manual	

03G 11 8925	Adapter for core drills (QuickIN)	eShop



11 8925

Carbide and HSS QuickIN core drills for FEIN core drilling machines

11 9000 – **High-performance carbide** core drill with QuickIN holder.
For maximum tool life and excellent metal removal rate.
Overall length: 77 mm for all cutter sizes.

11 9010 – **HSS** core drill with long tool life and QuickIn holder.
Overall length: 72 mm for all cutter sizes.

Suitable for: FEIN core drilling machines with QuickIN holder for fast, keyless tool changes. Also suitable for other makes with adapter. The core drill cuts only a ring of material, saving approx. 40 % – 60 % cutting time.

Supplied with: **Without** centring pin.

Note: For FEIN core drilling machines see No. 076520/ 076524/ 076526 group 0 – workshop accessories.
The centring pin No. 119019 is required when using the core drills No. 119010 and 119000.



Carbide



11 9000

HSS



11 9010

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
11 9000			○	●	●	●	●							●	●	●	●	●	●	●	○	●	
11 9010	○	●	○	●	●	○								○		○			●	●			

Ø D_c	03G 11 9000	03G 11 9010
	Carbide core drill	HSS core drill
mm	**Depth of cut 35 mm**	**Depth of cut 25 mm**
12	eShop	eShop
13	eShop	eShop
14	eShop	eShop
15	eShop	eShop
16	eShop	eShop
17	eShop	eShop
18	eShop	eShop
19	–	eShop
20	eShop	eShop
21	eShop	eShop

Ø D_c	03G 11 9000	03G 11 9010
	Carbide core drill	HSS core drill
mm	**Depth of cut 35 mm**	**Depth of cut 25 mm**
22	eShop	eShop
23	–	eShop
24	eShop	eShop
25	eShop	eShop
26	eShop	eShop
28	eShop	eShop
30	eShop	eShop
32	eShop	eShop
35	eShop	–
36	eShop	–

Ø D_c	03G 11 9000	03G 11 9010
	Carbide core drill	HSS core drill
mm	**Depth of cut 35 mm**	**Depth of cut 25 mm**
38	eShop	–
40	eShop	–
43	eShop	–
45	eShop	–
50	eShop	–
52	eShop	–
55	eShop	–
60	eShop	–
62	eShop	–
65	eShop	–

Carbide core drill set

Carbide

Supplied with: 6 QuickIN core drills No. 119000 size 12 / 14 / 16 / 18 / 20 / 22 mm and 2 centring pins in plastic carrying case.



11 9022

03G 11 9022	Carbide core drill set	eShop

QuickIN MT arbors

Application:

11 9030 – For all FEIN core drills Ø 12 - 35 mm.
11 9035 – For all FEIN core drills Ø 12 - 65 mm.
11 9037 – Spare centring pin for QuickIN core drill No. 119000.
11 9030/9035 – **QuickIN arbor** for table and pillar drilling machines.
Including hand pump and centring pin for external coolant feed.



11 9030

03G 11 9030	QuickIN arbor MT2	eShop
03G 11 9035	QuickIN arbor MT3	eShop

Length	mm	100
03G 11 9037	Centring pin for 119000	eShop

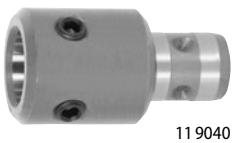


11 9037

Adapter

Application:

11 9040 – Adapter **with QuickIN shank** for FEIN core drill units.
Accepts carbide and HSS core drills No. 118780 – 118820 (with Weldon shank 19 mm).
11 9042 – Spare centring pin for core drills when using adapter No. 119040.



11 9040

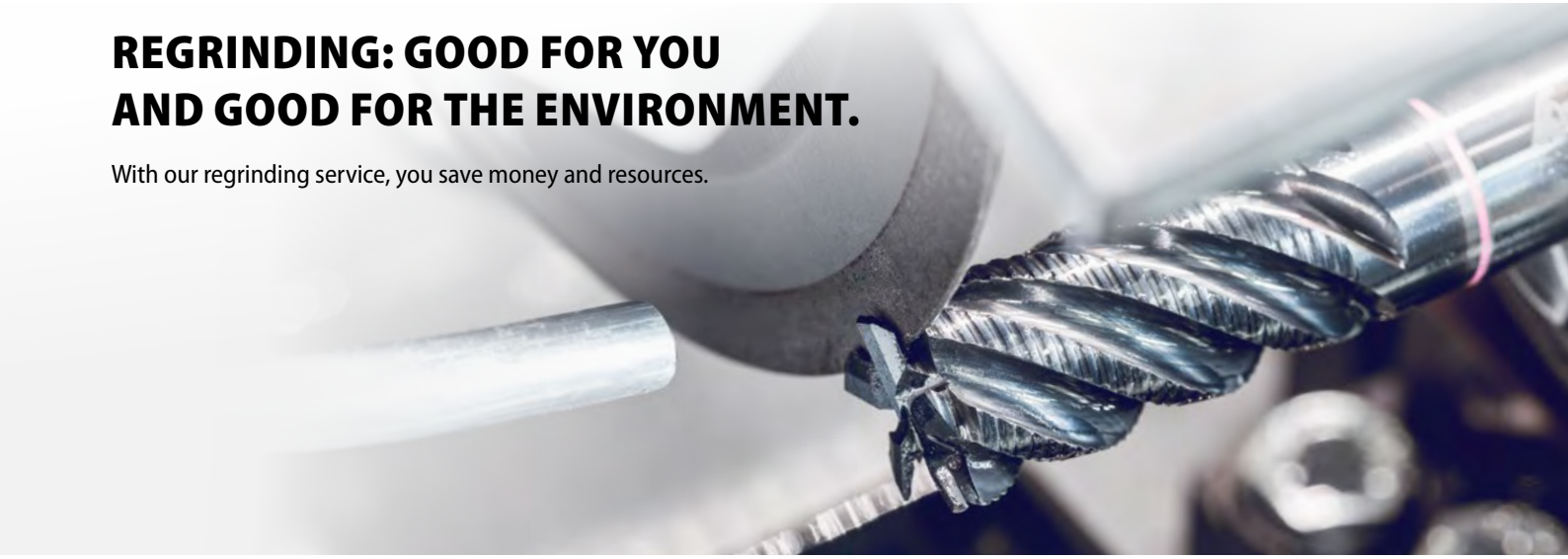
03G 11 9040	Adapter for HSS core drill (Weldon)	eShop
03G 11 9042	Centring pin	eShop



11 9042

REGRINDING: GOOD FOR YOU AND GOOD FOR THE ENVIRONMENT.

With our regrinding service, you save money and resources.



Hoffmann Group
Regrinding service



Good for you

It is already worth it from the first regrind. Overall, you can expect amazing savings of up to 85%. And all with the original regrind quality, to the original geometry and on the original production machines. There are no compromises here.
In addition: Of course, we also provide you with excellent regrinding results for your third-party brands!

Good for the environment

Reusing the tool saves valuable resources and avoids unnecessary waste. In addition, the shorter transport distances also ensure a reduced CO_2 footprint. A good contribution to environmental protection.

Just good all round

Pick-up and delivery service, coating service, measurement certificate service, labelling service.
An all-round worry-free package has never been so easy – and with maximum cost transparency.
For you, this means the highest precision and reliability as quickly as possible.

> "The efficiency and quality of the reconditioned tools due to the original regrind quality surprised me very positively!"
> **Marin Engelsberger, Bacher GmbH**

Further information on the regrinding service:
Discover all about our services online now.
https://hog.tools/regrinding

Garant HOLEX Overview – Solid carbide jobber drill range



Colour ring																			
Brand		Garant		Garant		Garant		Garant		Garant		HOLEX		Garant		Garant		Garant	
Coating		DLC				DLC				TiAlN		TiAlN		TiAlN		TiAlSiN		TiAlSiN	
		No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page
3×D																			
4×D without IC								12 1230	82	12 2361	91	12 2390	93						
4×D		12 2306	90									12 2490	94	12 2380	92	12 2480	95	122450	96
5×D without IC								12 1201	82										
5×D																			
6×D without IC										12 2641	113								
6×D		12 2602	111	12 2590	110	12 2595	110			12 2651	113	12 2685	116	12 2659	114	12 2680	117	122700	118
6×D pilot drill		12 2606	112																
8×D		12 2808	130											12 3008	131			123020	132
10×D														12 3110	137				
12×D		12 3178	138											12 3212	139				
16×D		12 3588	146																
20×D		12 3590	146																
20×D co-pilot drill																			
25×D		12 3593	146																
30×D		12 3595	146																
40×D																			
50×D																			
ISO 513																			
Aluminium, plastics	N	●		●		●		●				○		○				○	
Steel < 500 N/mm²	P									○		●		●				●	
Steel < 900 N/mm²	P									●		●		●				●	
Steel < 1400 N/mm²	P									●		○		○				●	
Steel > 45 HRC	H									●									
INOX	M											●		●				●	
Titanium	S											○		○		●		●	
GG (G)	K									●		○		○				●	
CuZn	N	●		●		●						○						○	
Graphite, GRP, CRP	O	●																	
UNI																		●	



		Centre drill				NC spotting drill 90°						NC spotting drill 142°						NC spotting drill 155°	
Brand		Garant		Garant		Garant		Garant		Garant		Garant		Garant		Garant		Garant	
Coating				TiAlN						TiAlN						TiAlN		TiAlN	
		No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page
Drills to DIN / manufacturer's standard		12 1000	78	12 1001	78	12 1019	78	12 1020	78	12 1040 12 1051	78	12 1068	79	12 1070	79	12 1110 12 1121	79	12 1130	81
ISO 513																			
Aluminium, plastics	N	●				○		○		●		○		○		●		●	
Steel < 500 N/mm²	P	●		●		●		●		●		●		●		●		●	
Steel < 900 N/mm²	P	●		●						●						●		●	
Steel < 1400 N/mm²	P	●		●						○						○		○	
Steel > 45 HRC	H			●														●	
INOX	M	●		●						●						●		●	
Titanium	S	●								●						●		○	
GG (G)	K	●		●						●						●		●	
CuZn	N	●								●						●			
Graphite, GRP, CRP	O																		
UNI		●								●						●		●	

● = highly suitable; ○ = suitable only under restricted conditions

Colour ring																					
																					
Brand		HOLEX		Garant		Garant		Garant		Garant		Garant		Garant		Garant		Garant		Garant	
Coating		TiAlN		TiAlN		TiN		TiAlN		TiAlN		TiAlN		AlCrN		TiAlN		TiAlN		TiAlN	
		No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page
3×D																122506	106				
4×D without IC		122501	103	122470	102	122415	97														
4×D		122504	106	122475	102	122425	98	122435	99												
5×D without IC																					
5×D pilot drill														121223	84	122793	128			122797	129
6×D without IC		122771	124															122540	109		
6×D		122776	125	122761	123	122715	120	122725	121											122790	127
6×D pilot drill										122736	122										
8×D		123103	136	123040	135	123025	133	123035	134					121224	84						
10×D																					
12×D		123303	143	123240	142	123225	140	123235	141					121226	85						
16×D										123688	147	123888	149								
20×D										123690	147	123890	149	121228	85						
20×D co-pilot drill										123691	148										
25×D										123693	147										
30×D										123695	147	123893	150	121231	86						
40×D										123740	148	123895	150								
50×D										123750	148										
ISO 513																					
Aluminium, plastics	N	○								○				○				●		○	
Steel < 500 N/mm²	P	●		●		●		●		○		●				●		●		●	
Steel < 900 N/mm²	P	●		●		●		●		●		●		●		●		●		●	
Steel < 1400 N/mm²	P	●		●		●		●		●		●		●		○		●		○	
Steel > 45 HRC	H			●				●		○		○									
INOX	M	○		○		○		●		○		○		●		○		○		○	
Titanium	S							○		○		○		●				○			
GG (G)	K	●		●		●		●		●		●		●		●		○		●	
CuZn	N																	○			
Graphite, GRP, CRP	O																				
UNI		●		●		●		●		●		●		●		●		●			

		Drill, through shank						Carbide drill		Single-lip drills		Micro-drill		Stepped drill							
																					
Brand		Garant		Garant		HOLEX		Garant		Garant		Garant		Garant		Garant		Garant		Garant	
Coating				TiAlN		TiN				TiAlN		TiAlN		TiAlN		TiAlN		TiAlN		TiAlN	
		No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page	No.	Page
Drills to DIN / manufacturer's standard		122100 122250	88/89	122151 122251	88/89	122160 122301	88/89	121150	81	124002– 124010	152	121220	87	125035*	153	125050	154	125100	155	125120	155
ISO 513																					
Aluminium, plastics	N	○		●		●		○		○		●				●		●		●	
Steel < 500 N/mm²	P	●		●		●		●		●		●		●		●		●		●	
Steel < 900 N/mm²	P	●		●		●		●		●		●		●		●		●		●	
Steel < 1400 N/mm²	P	●		●		●		●				●		●		●		●		●	
Steel > 45 HRC	H											○		●							
INOX	M	○		●		○						●		●		●		●		●	
Titanium	S	●		●		●						●		○		●		●		●	
GG (G)	K			●		●		●		●		●		●		○		●		○	
CuZn	N	●		●		●		●				●				●		●		●	
Graphite, GRP, CRP	O			●																	
UNI				●		●						●		●		●		●		●	

● = highly suitable; ○ = suitable only under restricted conditions

*configurable with 125040 – 125044

Solid carbide | DIN 333 | Type A | k13 | 60° | h6

Garant Solid carbide centre drill

12 1001 – Ground from solid carbide bar. Spiral fluted.
For materials up to **62 HRC.**
Size 0,5; 0,8 – Single-ended!

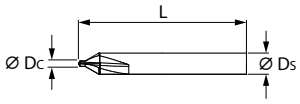

12 1000


12 1001

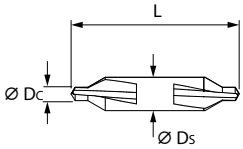

Ø 0.5 – 0.8

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 1000	200	180	160	80	75	65	50	35					35	30	25	70	160	●	●	●			○
12 1001							60	40	20	15		10							●	●			○

Ø D_c k13	11E 12 1000	11E 12 1001	for workpiece Ø	Ø D_s	L	< 1100 N f
	Solid carbide centre drills					
	A					
		TiAlN				
mm			mm	mm	mm	mm/rev.
0,5	eShop	eShop	< 4	3.15	20	0.01
0,8	eShop	eShop	4 – 6	3.15	20	0.01
1	eShop	eShop	6 – 8	3.15	31.5	0.02
1,25	eShop	eShop	8 – 10	3.15	31.5	0.02
1,6	eShop	eShop	10 – 15	4	35.5	0.06
2	eShop	eShop	15 – 20	5	40	0.06
2,5	eShop	eShop	20 – 30	6.3	45	0.08
3,15	eShop	eShop	30 – 40	8	50	0.08
4	eShop	eShop	40 – 63	10	56	0.1
5	eShop	eShop	63 – 100	12.5	63	0.1
6,3	eShop	eShop	100 – 150	16	71	0.15



12 1000_0,5–0,8



12

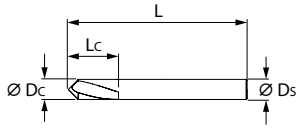
Solid carbide | Standard | h6 | 90°

h6 DIN 6535 HA | h6 DIN 6535 HB

Garant Solid carbide NC spotting drill

12 1019 – **Self-centring** with **1-cutter geometry**, achieves **very high alignment accuracy.**
12 1051 – **Extra long version.**
12 1020–1051 – Exactly **central ground point. Easy spot drilling** and **high shape accuracy** of the centre hole. Sturdy due to short flutes.
12 1020/1040 – **≥ Ø 6 mm with HB drive flat.**
Application: Point angle **90°** for spot drilling and countersinking in one operation when a drill of smaller Ø is used afterwards.

Note: Use the speed for the actual hole Ø (not generally the speed for the drill outer Ø).
12 1019 – **Maintain a feed rate f** = 0.015 mm/rev**!**
12 1051 – HB and HE shanks are available at the same price as HA. (from Ø 6 mm)
form **HB:** order with **No. 121050**.
Form **HE:** order with **No. 121051 + 129100 HE.**




12 1019


12 1020


12 1040


12 1051

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 1019/1020	200	180		80															●	●			○
12 1040/1051	260	240	200	90	80	65	55						35	30	40	90	200	●	●	●			○

Ø D_c h6	11E 12 1019	11E 12 1020	11E 12 1040	11E 12 1051	L_c		L		Ø D_s	< 1100 N f	
	Solid carbide NC precision spotting drill	Solid carbide NC spotting drill									
	90°	90° spiral flutes	90° spiral flutes	90° extra long spiral flutes	12 1019	12 1020 12 1040 12 1051	12 1019 12 1020 12 1040	12 1051		12 1019	12 1020 12 1040 12 1051
			TiAlN	TiAlN							
mm					mm	mm	mm	mm	mm	mm/rev.	mm/rev.
1	eShop	–	–	–	4	–	25	–	1	0.015	–
2	eShop	eShop	eShop	eShop	5	6	32	75	2	0.015	0.03
3	eShop	eShop	eShop	eShop	6	8	32	80	3	0.015	0.03
4	eShop	eShop	eShop	eShop	8	10	40	100	4	0.015	0.03
5	eShop	eShop	eShop	eShop	8	13	50	120	5	0.015	0.03
6	eShop	eShop	eShop	eShop	8	13	50	140	6	0.015	0.03
8	eShop	eShop	eShop	eShop	10	23	60	140	8	0.015	0.03
10	eShop	eShop	eShop	eShop	10	24	70	170	10	0.015	0.03
12	eShop	eShop	eShop	eShop	12	24	70	170	12	0.015	0.03
16	eShop	eShop	eShop	eShop	16	29	75	200	16	0.015	0.03
20	eShop	eShop	eShop	eShop	20	35	100	200	20	0.015	0.03

Solid carbide | Standard | h6 | 142°

h6 DIN 6535 HA | h6 DIN 6535 HB

Garant Solid carbide NC spotting drill

12 1068 – **Self-centring** with **1-cutter geometry**, achieves **very high alignment accuracy.**
12 1121 – **Extra long version.**
12 1070–1121 – Exactly **central ground point. Easy spot drilling** and **high shape accuracy** of the centre hole. Sturdy due to short flutes.
12 1070/1110 – **≥ Ø 6 mm with HB drive flat.**

Application: Point angle **142°** so that the cutting edges of the following twist drill engage easily.

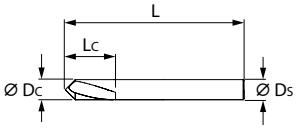
Note: Use speed for the actual hole Ø (not generally the speed for the drill outer Ø).
12 1068 – **Maintain a feed rate f** = 0.015 mm/rev**!**
12 1121 – Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 121120**.
Form **HE:** order with **No. 121121 + 129100 HE**.


12 1068


12 1070


12 1110


12 1121



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 1068/1070	200	180		80														●	●	●		○	
12 1110/1121	260	240	200	90	80	65	55						35	30	40	90	200	●	●	●		○	

Ø D_c h6	11E 12 1068	11E 12 1070	11E 12 1110	11E 12 1121	L_c		L		Ø D_s	< 1100 N f	
	Solid carbide NC precision spotting drill	Solid carbide NC spotting drill			12 1068	12 1070 12 1110 12 1121	12 1068 12 1070 12 1110	12 1121		12 1068	12 1070 12 1110 12 1121
	142°	142° spiral flutes	142° spiral flutes TiAlN	142° extra long spiral flutes TiAlN							
mm					mm	mm	mm	mm	mm	mm/rev.	mm/rev.
1	eShop	–	–	–	4	–	25	–	1	0.015	–
2	eShop	eShop	eShop	eShop	5	6	32	75	2	0.015	0.03
3	eShop	eShop	eShop	eShop	6	8	32	80	3	0.015	0.03
4	eShop	eShop	eShop	eShop	8	10	40	100	4	0.015	0.03
5	eShop	eShop	eShop	eShop	8	13	50	120	5	0.015	0.03
6	eShop	eShop	eShop	eShop	8	13	50	140	6	0.015	0.03
8	eShop	eShop	eShop	eShop	10	23	60	140	8	0.015	0.03
10	eShop	eShop	eShop	eShop	10	24	70	170	10	0.015	0.03
12	eShop	eShop	eShop	eShop	12	24	70	170	12	0.015	0.03
16	eShop	eShop	eShop	eShop	16	29	75	200	16	0.015	0.03
20	eShop	eShop	eShop	eShop	20	35	100	200	20	0.015	0.03

REAL MASTERS OF HIGH-FEED BORE MACHINING.

The GARANT Master Feed solid carbide drilling tools.

Garant MASTER STEEL FEED



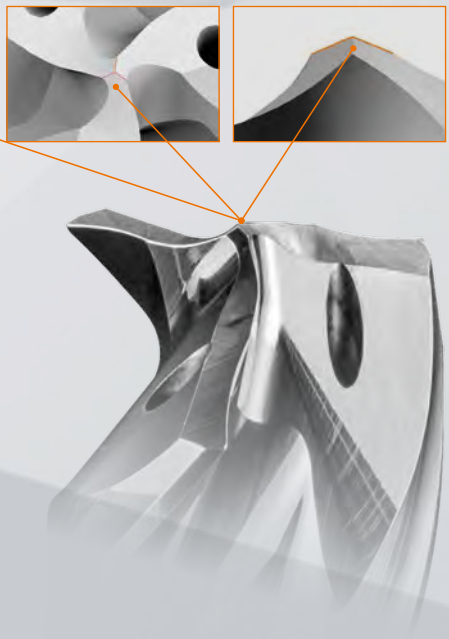
- 4×D — 12 2435 (page 99)
- 6×D — 12 2725 (page 121)
- 8×D — 12 3035 (page 134)
- 12×D — 12 3235 (page 141)

Garant MASTER ALU FEED



- 6×D — 12 2590 (page 110) uncoated.
- 6×D — 12 2595 (page 110) with DLC coating.

- Optimal centring thanks to pyramid tip.
- No additional NC spot drilling is necessary.

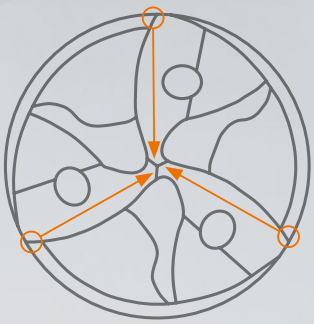


- Robust tool design.
- Special cutting and chip groove geometry.
- Up to **+ 50% metal removal rate** thanks to the third cutting edge.
- Maximum universality in the respective material segment.

Master Steel Feed NC spotting drill*
for maximum process reliability
12 1130 (page 81).

Master Steel Feed stepped drill
for tapping drill holes
12 5035 (page 153)
and configurable
12 5040 – 12 5044 (page 153).

Reliable self-centring when engaging in the material.



* Only necessary for the GARANT Master Steel Feed.

Solid carbide | Standard | h6 | 155° | h6 DIN 6535 HA | 3

Garant GARANT Master Steel Feed solid carbide NC spotting drill

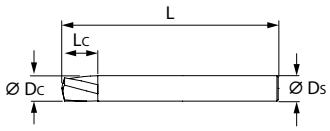
3-flute NC spotting drill with high positioning accuracy and special point angle 155° for the GARANT Master Steel Feed drill. The **sector-leading technology of the drill point** guarantees **optimum self-centring behaviour** and permits spot drilling on irregular surfaces.

Note: Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 121130 + 129100 HB.**
Form **HE:** order with **No. 121130 + 129100 HE**.


Plain shank DIN 653SHA 12 1130


Weldon shank DIN 6535HB 12 1130 + 12 9100HB


Whistle-Notch shank DIN 6535HE 12 1130 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K						
12 1130	260	220	200	120	110	100	90	70	60				55	50	40	120	80	●	●	●	●	●	○

Ø D_c h6	11E	12 1130	L_c	L	Ø D_s	Depth of spot facing	< 1100 N f
		GARANT Master Steel Feed solid carbide NC spotting drill, plain shank 155° DIN 6535 HA					
mm		TiAlN	mm	mm	mm	mm	mm/rev.
4		eShop	6	55	4	0.24 – 0.4	0.12
5		eShop	7	62	6	0.3 – 0.5	0.12
6		eShop	9	66	6	0.36 – 0.6	0.15
8		eShop	11	79	8	0.48 – 0.8	0.18
10		eShop	14	89	10	0.6 – 1	0.2
12		eShop	17	102	12	0.72 – 1.2	0.22
16		eShop	23	115	16	0.96 – 1.6	0.25
20		eShop	28	131	20	1.2 – 2	0.3

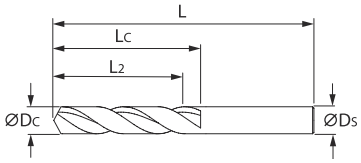
Carbide K20 | DIN 8037 | h8 | 2 | 118°

Garant Carbide tipped jobber drill plain shank

With carbide cutting tip. Ground between centres.
Shank with driver tang for use in clamping collets.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.


12 1150



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
12 1150			140	70	70	60	40	25									90	140	●	●			

Ø D_c h8	11E	12 1150	L_2	L	< 1100 N f
		Carbide tipped jobber drill			
mm			mm	mm	mm/rev.
3		eShop	15.5	50	0.07
3,2		eShop	20.2	56	0.07
3,5		eShop	19.8	56	0.07
4		eShop	19	56	0.07
4,2		eShop	21.7	63	0.07
4,5		eShop	21.3	63	0.07
5		eShop	20.5	63	0.07
5,5		eShop	23.8	71	0.07
6		eShop	23	71	0.1
6,5		eShop	22.3	71	0.1
7		eShop	29.5	80	0.1
7,5		eShop	28.8	80	0.1

Ø D_c h8	11E	12 1150	L_2	L	< 1100 N f
		Carbide tipped jobber drill			
mm			mm	mm	mm/rev.
8		eShop	28	80	0.1
8,5		eShop	37.3	90	0.1
9		eShop	36.5	90	0.13
9,5		eShop	35.8	90	0.13
10		eShop	41	100	0.13
10,5		eShop	40.3	100	0.13
11		eShop	39.5	100	0.13
12		eShop	45	112	0.17
13		eShop	43.5	112	0.17
14		eShop	50	125	0.17
15		eShop	48.5	125	0.17
16		eShop	56	140	0.19

Solid carbide | Standard | 5×D | ±0.003 | 1 | 120° | h6 DIN 6535 HA | x

Garant Solid carbide special drill for plastics

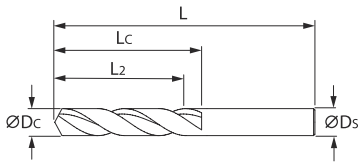
Spiral flute precision drill for plastics. **Self-centring** with **1-cutter geometry**, achieves **very high alignment accuracy. Polished** helical flutes for **optimum chip evacuation.**
Maintains the **tolerance band IT7** from entry ∅ through to exit ∅, **due to special point geometry**.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **No. 121201 + 129100HB**.
For **HE shanks:** use order **No. 121201 + 129100HE**.


12 1201


Weldon shank DIN 6535HB 12 1201 + 12 9100HB


Whistle-Notch shank DIN 6535HE 12 1201 + 12 9100HE



Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	CRP	Graphite GRP CRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
12 1201	30	50	50	50	50		60	60	60	50	40	40								○		●	●

∅ D_C ±0.003 mm	11E 12 1201 Solid carbide special drill DIN 6535 HA	L_2 mm	L mm	∅ D_s mm	PEEK f mm/rev.
1	eShop	5.5	45	3	0.1
1,5	eShop	11.8	50	3	0.1
1,97	eShop	11.1	50	3	0.1
1,98	eShop	11.1	50	3	0.1
1,99	eShop	11.1	50	3	0.1
2	eShop	11	50	3	0.1
2,01	eShop	11	50	3	0.1
2,02	eShop	11	50	3	0.1
2,03	eShop	11	50	3	0.1
2,5	eShop	24.3	66	4	0.1
2,97	eShop	23.6	66	4	0.1
2,98	eShop	23.6	66	4	0.1

∅ D_C ±0.003 mm	11E 12 1201 Solid carbide special drill DIN 6535 HA	L_2 mm	L mm	∅ D_s mm	PEEK f mm/rev.
2,99	eShop	23.6	66	4	0.1
3	eShop	23.5	66	4	0.1
3,01	eShop	23.5	66	4	0.1
3,02	eShop	23.5	66	4	0.1
3,03	eShop	23.5	66	4	0.1
4	eShop	30	74	4	0.15
4,01	eShop	30	74	4	0.15
4,02	eShop	30	74	4	0.15
4,03	eShop	30	74	4	0.15
5	eShop	36.5	82	6	0.15
5,01	eShop	36.5	82	6	0.15
5,02	eShop	36.5	82	6	0.15

∅ D_C ±0.003 mm	11E 12 1201 Solid carbide special drill DIN 6535 HA	L_2 mm	L mm	∅ D_s mm	PEEK f mm/rev.
5,03	eShop	36.5	82	6	0.15
6	eShop	35	82	6	0.15
6,01	eShop	35	82	6	0.15
6,02	eShop	35	82	6	0.15
6,03	eShop	35	82	6	0.15
6,8	eShop	42.8	91	8	0.2
7	eShop	42.5	91	8	0.2
8	eShop	41	91	8	0.2
9	eShop	47.5	103	10	0.25
10	eShop	46	103	10	0.25

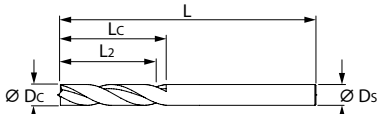
Solid carbide | Standard | 4×D | h6 | 2 | h6

Garant Solid carbide drill for aramide

Special geometry for reliable drilling of aramide plastics (polyaramides) and aramide fibres as well as thermoplastics and thermosetting plastics.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.


12 1230



Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	CRP	Graphite GRP CRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
12 1230		140	130	120	100	110								120								●	●

∅ D_C h6 mm	11Y 12 1230 Solid carbide drill for aramide	L_2 mm	L mm	∅ D_s mm	AFRP aramid f mm/rev.
3	eShop	7.5	40	3	0.05
4	eShop	12	55	4	0.05
5	eShop	18.5	62	5	0.05
6	eShop	19	66	6	0.07
6,5	eShop	21.3	70	6.5	0.07
7	eShop	23.5	74	7	0.07

∅ D_C h6 mm	11Y 12 1230 Solid carbide drill for aramide	L_2 mm	L mm	∅ D_s mm	AFRP aramid f mm/rev.
8	eShop	25	79	8	0.09
8,5	eShop	24.3	79	8.5	0.09
9	eShop	26.5	84	9	0.09
10	eShop	33	89	10	0.1
12	eShop	32	102	12	0.1

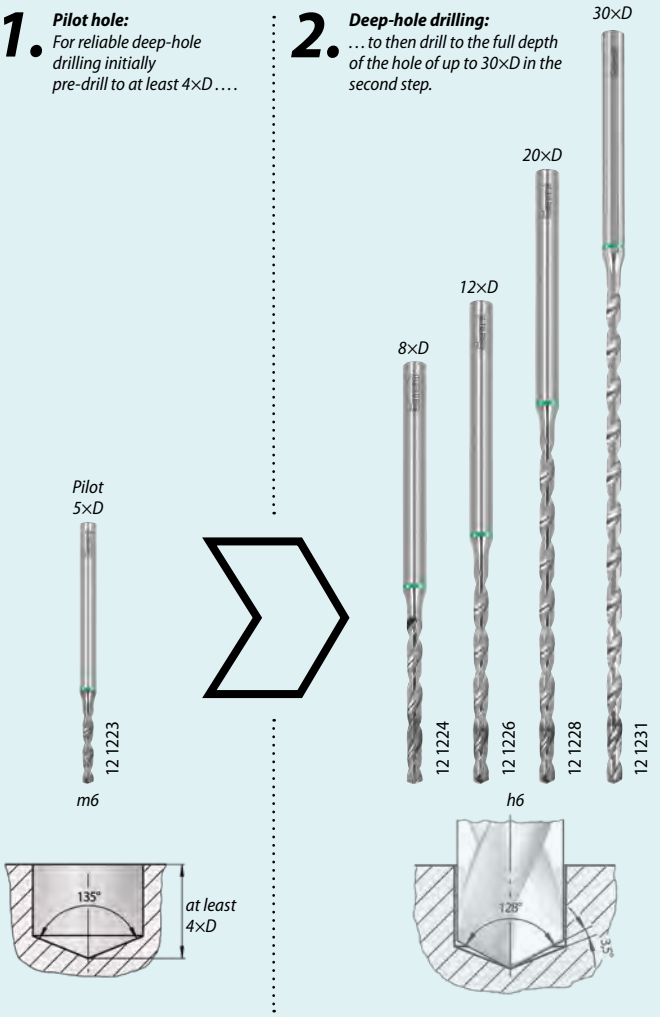
Technical precision at the highest level.

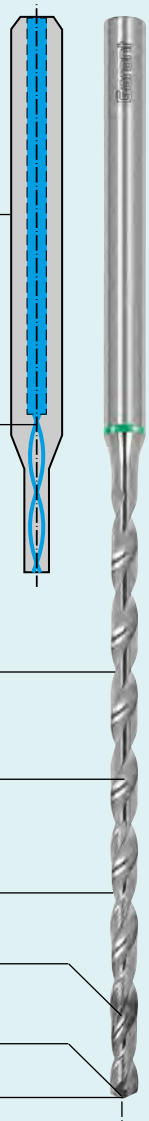
Process-reliable, general high-performance precision boring in the micro-range – up to a drilling depth of 30×D.

Exactly matching tools within the overall system.

1. ***Pilot hole:*** *For reliable deep-hole drilling initially pre-drill to at least 4×D ….*

2. ***Deep-hole drilling:*** *… to then drill to the full depth of the hole of up to 30×D in the second step.*





Central high-pressure cooling
Increased coolant hole cross-section in the shank area for increased flow of coolant and maximum extended range. Top flow speed and optimum cooling over the entire shank length for all versions and sizes.

Transition to helical coolant channel

Ultra-micrograin substrate with 10% cobalt proportion
Specially developed for micro-machining.

Lapped flute surface
For optimum chip evacuation.

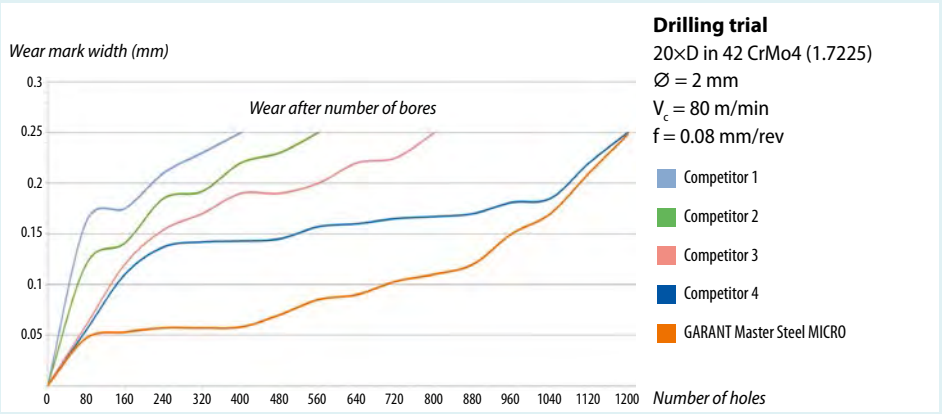
Diameter range
5×D: 0.75 mm – 3.00 mm;
8×D – 30×D: 0.80 mm – 3.00 mm

Wear-resistant and ultra-smooth AlCrN-based high-performance coating

Specially prepared and homogenised cutting edge for optimum chip shape

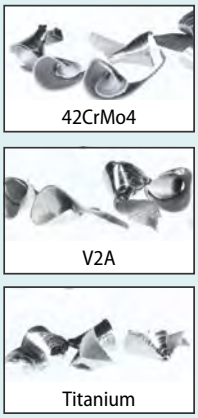
Very precise point geometry for reliable centring behaviour

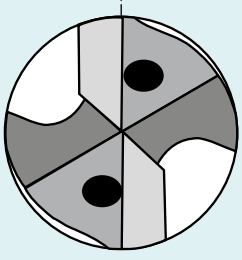
Outstanding in steel and absolutely reliable UNI.



Drilling trial
20×D in 42 CrMo4 (1.7225)
Ø = 2 mm
V_c = 80 m/min
f = 0.08 mm/rev

- Competitor 1
- Competitor 2
- Competitor 3
- Competitor 4
- GARANT Master Steel MICRO



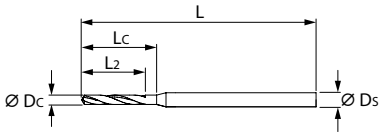


Solid carbide | Standard | 2 | h6 DIN 6535 HA | 40 bar | HPC | x

Garant GARANT Master Steel Micro solid carbide drill

High-performance micro-drill for general-purpose use on material, focussing on steel processing.
Maximum process reliability due to **exactly matched tools within the overall system** and **expanded guide chamfer.**
Drilling of very small diameters down to the maximum depth after creating a pilot hole.
Optimum compromise between core diameter and flute size for optimum chip evacuation – even with long-chipping materials.
The **increased metal removal rates and longer tool life** ensure an economical drilling process,
even with very small hole diameters combined with a large L/D ratio.

Note:
For reliable use of the micro-drills from 8×D, a **pilot hole** of **at least 4×D** is required using the micro-pilot drill 121223.
For vertical machining and flat workpiece surfaces, a pilot hole can be dispensed with from D_C = Ø 1 mm up to a length of 12×D.
Please always ensure that the **pilot hole is free from chips** before using the subsequent drilling tool.
We recommend setting a 90° counterbore with a suitable NC spotting drill after the pilot hole has been completed.
For critical applications (e.g. highest possible production accuracy, minimal burr formation, reduced coolant pressure),
reduce the feed rate of the tool by 50% before entering and exiting the material.
Long-chipping materials may require **chips to be evacuated** in steps of 3×D each by moving the drill back slightly at pilot hole depth.
Please make sure that you use a suitable **tool clamping device** (shrink-fit chuck, hydraulic clamping chuck)
with a radial run-out of less than 0.003 mm, a sufficiently high **coolant pressure** (at least 30 bar),
as well as sufficiently fine **filtration** of the cooling medium (D_C <Ø 2 mm with filter ≤ 0.010 mm; D_C <Ø 3 mm filter ≤ 0.020 mm).
The specified L/D ratio gives the **minimum achievable depth of hole** with the respective micro-drill.
Flute length $L_C = L_2 + 1.5 \times D_C$.





12 1223



12 1224

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 1223/1224		50	50		80	70	60	50					50	35	25	70	50	●		●	○		

Ø D_C	10F 12 1223 GARANT Master Steel Micro solid carbide pilot drill, plain shank DIN 6535 HA 5×D AlCrN	10F 12 1224 GARANT Master Steel Micro solid carbide drill, plain shank DIN 6535 HA 8×D AlCrN	L_2 12 1223	L_2 12 1224	L 12 1223	L 12 1224	Ø D_s	< 1100 N f	INOX < 900 N f
mm			mm	mm	mm	mm	mm	mm/rev.	mm/rev.
0,75	eShop	–	4.5	–	39	–	3	0.028	0.015
0,8	eShop	eShop	4.4	6.8	39	41	3	0.028	0.015
0,85	eShop	eShop	5	7.7	39	42	3	0.028	0.015
0,9	eShop	eShop	5.6	7.6	39	42	3	0.028	0.015
0,95	eShop	eShop	5.5	8.5	40	43	3	0.028	0.015
1	eShop	eShop	5.5	8.5	41	43	3	0.028	0.015
1,05	eShop	eShop	6.1	9.4	41	44	3	0.034	0.018
1,1	eShop	eShop	6	9.3	41	44	3	0.034	0.018
1,15	eShop	eShop	6.6	10.2	41	45	3	0.034	0.018
1,2	eShop	eShop	6.6	10.2	41	45	3	0.034	0.018
1,25	eShop	eShop	7.2	11.1	42	46	3	0.034	0.018
1,3	eShop	eShop	7.1	11	42	46	3	0.045	0.024
1,35	eShop	eShop	7.7	11.9	42	47	3	0.045	0.024
1,4	eShop	eShop	7.7	11.9	42	47	3	0.045	0.024
1,45	eShop	eShop	8.3	12.8	43	47	3	0.045	0.024
1,5	eShop	eShop	8.2	12.7	43	47	3	0.045	0.024
1,55	eShop	eShop	8.8	13.6	44	48	3	0.07	0.04
1,6	eShop	eShop	8.8	13.6	44	48	3	0.07	0.04
1,65	eShop	eShop	9.4	14.5	44	49	3	0.07	0.04
1,7	eShop	eShop	9.3	14.4	44	49	3	0.07	0.04
1,75	eShop	eShop	9.9	15.3	45	50	3	0.07	0.04
1,8	eShop	eShop	9.9	15.3	45	50	3	0.07	0.04
1,85	eShop	eShop	10.5	16.2	45	51	3	0.07	0.04
1,9	eShop	eShop	10.4	16.1	45	51	3	0.07	0.04
1,95	eShop	eShop	11	17	46	52	3	0.07	0.04
2	eShop	eShop	11	17	46	52	3	0.07	0.04
2,05	eShop	eShop	11.6	17.9	47	53	3	0.095	0.06
2,1	eShop	eShop	11.5	17.8	47	53	3	0.095	0.06
2,2	eShop	eShop	12.1	18.7	47	54	3	0.095	0.06
2,3	eShop	eShop	12.6	19.5	48	55	3	0.095	0.06
2,4	eShop	eShop	13.2	20.4	48	56	3	0.095	0.06
2,5	eShop	eShop	13.7	21.2	49	56	3	0.095	0.06
2,6	eShop	eShop	14.3	22.1	50	57	3	0.115	0.08
2,7	eShop	eShop	14.8	22.9	50	58	3	0.115	0.08
2,8	eShop	eShop	15.4	23.8	51	59	3	0.115	0.08
2,9	eShop	eShop	15.9	24.6	51	60	3	0.115	0.08
3	eShop	eShop	16.4	25.4	52	61	3	0.115	0.08

Solid carbide | Standard | h6 | 2 | 128° | h6 DIN 6535 HA | 40 bar | HPC | x

Garant GARANT Master Steel Micro solid carbide drill

High-performance micro-drill for universal material use, focussing on steel processing.
Maximum process reliability due to **exactly matched tools within the overall system** and **expanded guide chamfers.**
Drilling of very small diameters down to the maximum depth after creating a pilot hole.
Optimum compromise between core diameter and flute size for optimum chip evacuation – even with long-chipping materials.
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Note:
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For critical applications (e.g. highest possible production accuracy, minimal burr formation, reduced coolant pressure),
reduce the feed rate of the tool by 50% before entering and exiting the material.
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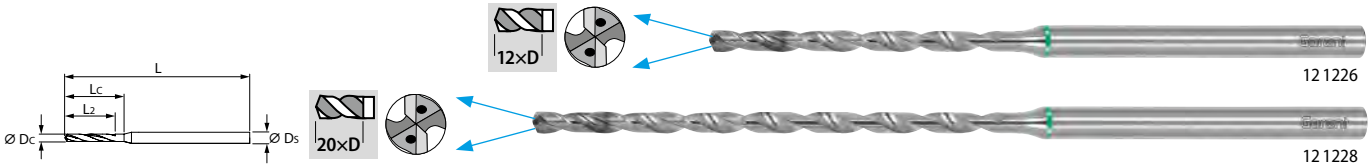
Please make sure that you use a suitable **tool clamping device** (shrink-fit chuck, hydraulic clamping chuck)
with a radial run-out of less than 0.003 mm, a sufficiently high **coolant pressure** (at least 30 bar),
as well as sufficiently fine **filtration** of the cooling medium (D_C <Ø 2 mm with filter ≤ 0.010 mm; D_C <Ø 3 mm filter ≤ 0.020 mm).
The specified L/D ratio gives the **minimum achievable depth of hole** with the respective micro-drill.
Flute length $L_C = L_2 + 1.5 \times D_C$.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
12 1226		50	50		80	70	60	50					50	35	25	70	50	●
12 1228		50	50		70	60	50	42					42	30	25	58	50	●

Ø D_C h6	10F 12 1226	10F 12 1228	L_2		L		Ø D_s	< 1100 N f	INOX < 900 N f
	GARANT Master Steel Micro solid carbide drill, plain shank								
	DIN 6535 HA 12×D	DIN 6535 HA 20×D	12 1226	12 1228	12 1226	12 1228			
mm	AlCrN	AlCrN	mm	mm	mm	mm	mm	mm/rev.	mm/rev.
0,8	eShop	eShop	10	16.4	44	51	3	0.028	0.015
0,85	eShop	eShop	11.3	18.5	46	53	3	0.028	0.015
0,9	eShop	eShop	11.2	18.4	46	53	3	0.028	0.015
0,95	eShop	eShop	12.5	20.5	47	55	3	0.028	0.015
1	eShop	eShop	12.5	20.5	47	55	3	0.028	0.015
1,05	eShop	eShop	13.8	22.6	48	57	3	0.034	0.018
1,1	eShop	eShop	13.7	22.5	48	57	3	0.034	0.018
1,15	eShop	eShop	15	24.6	50	59	3	0.034	0.018
1,2	eShop	eShop	15	24.6	50	59	3	0.034	0.018
1,25	eShop	eShop	16.3	26.7	51	61	3	0.034	0.018
1,3	eShop	eShop	16.2	26.6	51	61	3	0.045	0.024
1,35	eShop	eShop	17.5	28.7	52	63	3	0.045	0.024
1,4	eShop	eShop	17.5	28.7	52	63	3	0.045	0.024
1,45	eShop	eShop	18.8	30.8	53	66	3	0.045	0.024
1,5	eShop	eShop	18.7	30.7	53	66	3	0.045	0.024
1,55	eShop	eShop	20	32.8	55	68	3	0.07	0.04
1,6	eShop	eShop	20	32.8	55	68	3	0.07	0.04
1,65	eShop	eShop	21.3	34.9	56	70	3	0.07	0.04
1,7	eShop	eShop	21.2	34.8	56	70	3	0.07	0.04
1,75	eShop	eShop	22.5	36.9	57	72	3	0.07	0.04
1,8	eShop	eShop	22.5	36.9	57	72	3	0.07	0.04
1,85	eShop	eShop	23.8	39	59	74	3	0.07	0.04
1,9	eShop	eShop	23.7	38.9	59	74	3	0.07	0.04
1,95	eShop	eShop	25	41	60	76	3	0.07	0.04
2	eShop	eShop	25	41	60	76	3	0.07	0.04
2,05	eShop	eShop	26.3	43.1	61	78	3	0.095	0.06
2,1	eShop	eShop	26.2	43	61	78	3	0.095	0.06
2,2	eShop	eShop	27.5	45.1	63	80	3	0.095	0.06
2,3	eShop	eShop	28.7	47.1	64	82	3	0.095	0.06
2,4	eShop	eShop	30	49.2	65	85	3	0.095	0.06
2,5	eShop	eShop	31.2	51.2	67	87	3	0.095	0.06
2,6	eShop	eShop	32.5	53.3	68	89	3	0.115	0.08
2,7	eShop	eShop	33.7	55.3	69	91	3	0.115	0.08
2,8	eShop	eShop	35	57.4	70	93	3	0.115	0.08
2,9	eShop	eShop	36.2	59.4	72	95	3	0.115	0.08
3	eShop	eShop	37.4	61.3	73	97	3	0.115	0.08

Solid carbide | Standard | 30×D | h6 | 2 | 128° | h6 DIN 6535 HA | 40 bar | HPC | x

Garant GARANT Master Steel Micro solid carbide drill

High-performance micro-drill for universal material use, focussing on steel processing.
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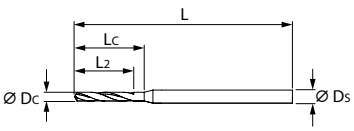
Flute length $L_C = L_2 + 1.5 \times D_C$.



12 1231



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
12 1231					60	50	45	40						35	30		50	40		●			

Ø D_C h6	10F 12 1231 GARANT Master Steel Micro solid carbide drill, plain shank DIN 6535 HA 30×D AlCrN	L_2	L	Ø D_s	< 1100 N f	INOX < 900 N f
mm		mm	mm	mm	mm/rev.	mm/rev.
0,8	eShop	24.4	59	3	0.028	0.015
0,85	eShop	27.5	62	3	0.028	0.015
0,9	eShop	27.5	62	3	0.028	0.015
0,95	eShop	30.6	65	3	0.028	0.015
1	eShop	30.5	65	3	0.028	0.015
1,05	eShop	33.6	68	3	0.034	0.018
1,1	eShop	33.6	68	3	0.034	0.018
1,15	eShop	36.7	71	3	0.034	0.018
1,2	eShop	36.6	71	3	0.034	0.018
1,25	eShop	39.7	74	3	0.034	0.018
1,3	eShop	39.7	74	3	0.045	0.024
1,35	eShop	42.8	78	3	0.045	0.024
1,4	eShop	42.7	78	3	0.045	0.024
1,45	eShop	45.8	81	3	0.045	0.024
1,5	eShop	45.8	81	3	0.045	0.024
1,55	eShop	48.9	84	3	0.07	0.04
1,6	eShop	48.8	84	3	0.07	0.04
1,65	eShop	51.9	87	3	0.07	0.04
1,7	eShop	51.9	87	3	0.07	0.04
1,75	eShop	55	90	3	0.07	0.04
1,8	eShop	54.9	90	3	0.07	0.04
1,85	eShop	58	93	3	0.07	0.04
1,9	eShop	58	93	3	0.07	0.04
1,95	eShop	61.1	96	3	0.07	0.04
2	eShop	61	96	3	0.07	0.04
2,05	eShop	64.1	99	3	0.095	0.06
2,1	eShop	64.1	99	3	0.095	0.06
2,2	eShop	67.1	102	3	0.095	0.06
2,3	eShop	70.2	106	3	0.095	0.06
2,4	eShop	73.2	109	3	0.095	0.06
2,5	eShop	76.3	112	3	0.095	0.06
2,6	eShop	79.3	115	3	0.115	0.08
2,7	eShop	82.3	118	3	0.115	0.08
2,8	eShop	85.4	121	3	0.115	0.08
2,9	eShop	88.5	124	3	0.115	0.08
3	eShop	91.5	127	3	0.115	0.08

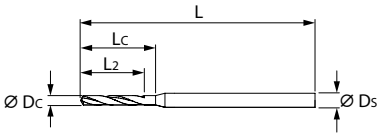
Solid carbide | Standard | Type N | 0 +0.004 | 2 | 130° | h6 | HPC | x

Garant Solid carbide micro drill HPC with shank Ø 3 h6

High performance miniature drill **with extra long flutes.**
Shank Ø 3 h6 for shrink-fit chucks.
High concentricity, precision ground for **HPC applications in steel.**

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 1220	200	140	140	70	70	70	55	35	25				35	30	20	90	140	●		●		○	

$Ø D_C$ +0.004	1IE 12 1220 Solid carbide HPC micro-drill	L_2	L	$Ø D_s$	< 1100 N f
mm	TiAlN	mm	mm	mm	mm/rev.
0,1	eShop	1.1	38	3	0.01
0,15	eShop	1.8	38	3	0.01
0,2	eShop	3.2	38	3	0.01
0,25	eShop	3.2	38	3	0.01
0,3	eShop	5.1	38	3	0.01
0,35	eShop	5	38	3	0.01
0,4	eShop	6.4	38	3	0.01
0,45	eShop	6.4	38	3	0.01
0,5	eShop	6.3	38	3	0.02
0,55	eShop	6.2	38	3	0.02
0,6	eShop	6.1	38	3	0.02
0,65	eShop	6.1	38	3	0.02
0,7	eShop	9.5	38	3	0.02
0,75	eShop	9.4	38	3	0.02
0,8	eShop	9.3	38	3	0.02
0,85	eShop	9.3	38	3	0.03
0,9	eShop	9.2	38	3	0.03
0,95	eShop	9.1	38	3	0.03
0,97	eShop	9.1	38	3	0.03
0,98	eShop	9.1	38	3	0.03
0,99	eShop	9.1	38	3	0.03
1	eShop	9	38	3	0.03
1,01	eShop	9	38	3	0.03
1,02	eShop	9	38	3	0.03
1,03	eShop	9	38	3	0.03
1,05	eShop	9	38	3	0.03
1,1	eShop	8.9	38	3	0.03
1,15	eShop	8.8	38	3	0.03
1,2	eShop	8.7	38	3	0.03
1,25	eShop	8.7	38	3	0.03
1,3	eShop	8.6	38	3	0.03
1,35	eShop	8.5	38	3	0.03
1,4	eShop	8.4	38	3	0.04
1,45	eShop	8.4	38	3	0.04
1,47	eShop	8.3	38	3	0.04
1,48	eShop	8.3	38	3	0.04
1,49	eShop	8.3	38	3	0.04

$Ø D_C$ +0.004	1IE 12 1220 Solid carbide HPC micro-drill	L_2	L	$Ø D_s$	< 1100 N f
mm	TiAlN	mm	mm	mm	mm/rev.
1,5	eShop	8.3	38	3	0.04
1,51	eShop	8.3	38	3	0.04
1,52	eShop	8.3	38	3	0.04
1,53	eShop	8.3	38	3	0.04
1,55	eShop	8.2	38	3	0.04
1,6	eShop	8.1	38	3	0.04
1,65	eShop	8.1	38	3	0.04
1,7	eShop	8	38	3	0.04
1,75	eShop	7.9	38	3	0.04
1,8	eShop	7.8	38	3	0.04
1,85	eShop	9.3	38	3	0.04
1,9	eShop	9.2	38	3	0.05
1,95	eShop	9.1	38	3	0.05
1,97	eShop	9.1	38	3	0.05
1,98	eShop	9.1	38	3	0.05
1,99	eShop	9.1	38	3	0.05
2	eShop	10	42	3	0.05
2,01	eShop	10	42	3	0.05
2,02	eShop	10	42	3	0.05
2,03	eShop	10	42	3	0.05
2,05	eShop	10	42	3	0.05
2,1	eShop	9.9	42	3	0.05
2,15	eShop	9.8	42	3	0.05
2,2	eShop	11.7	46	3	0.05
2,25	eShop	11.7	46	3	0.05
2,3	eShop	11.6	46	3	0.05
2,35	eShop	11.5	46	3	0.05
2,4	eShop	11.4	46	3	0.05
2,45	eShop	11.4	46	3	0.05
2,47	eShop	11.3	46	3	0.05
2,48	eShop	11.3	46	3	0.05
2,49	eShop	11.3	46	3	0.05
2,5	eShop	11.3	46	3	0.05
2,51	eShop	11.3	46	3	0.05
2,52	eShop	11.3	46	3	0.05
2,53	eShop	11.3	46	3	0.05

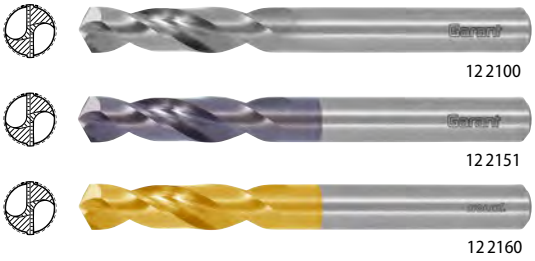
Solid carbide	DIN 6539	Type N	h7	2	118°	30°	h7

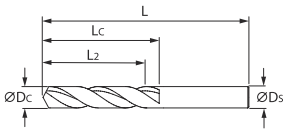
Solid carbide jobber drill

Similar to DIN 6539 (extra short).
Nominal Ø and shank Ø equal.

12 2151 – TiAlN coating for even better performance.
12 2160 – TiN coating.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
Non slip clamping in drill chuck No. 341050 with diamond coated jaws.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 2100	200	140	140	70	70	60	40	25					20	20	15		140	●	●	●		○	
12 2151	260	180	180	90	90	80	60	35					35	25	25	90	180	●	●	●		○	
12 2160	230	160	160	80	80	70	50	30					30	25	20	85	160	●	●	●		○	

Ø D_c h7	11E 12 2100 Garant	11E 12 2151 Garant	12E 12 2160 HOLEX	L_2	L	< 1100 N f
	Solid carbide jobber drill extra short					
mm		TiAlN	TiN	mm	mm	mm/rev.
0,5	eShop	eShop	eShop	2.3	20	0.01
0,6	eShop	eShop	eShop	2.6	21	0.01
0,7	eShop	eShop	eShop	3.5	23	0.01
0,8	eShop	eShop	eShop	3.8	24	0.01
0,9	eShop	eShop	eShop	4.2	25	0.01
1	eShop	eShop	eShop	4.5	26	0.03
1,1	eShop	eShop	eShop	5.4	28	0.03
1,2	eShop	eShop	eShop	6.2	30	0.03
1,25	eShop	–	eShop	6.2	30	0.03
1,3	eShop	eShop	eShop	6.1	30	0.03
1,4	eShop	eShop	eShop	6.9	32	0.03
1,45	eShop	–	eShop	6.9	32	0.03
1,5	eShop	eShop	eShop	6.8	32	0.03
1,55	eShop	–	eShop	6.7	32	0.03
1,6	eShop	eShop	eShop	7.6	34	0.03
1,7	eShop	eShop	eShop	7.5	34	0.03
1,8	eShop	eShop	eShop	8.3	36	0.03
1,9	eShop	eShop	eShop	8.2	36	0.03
2	eShop	eShop	eShop	9	38	0.05
2,05	eShop	–	eShop	9	38	0.05
2,1	eShop	eShop	eShop	8.9	38	0.05
2,2	eShop	eShop	eShop	9.7	40	0.05
2,3	eShop	eShop	eShop	9.6	40	0.05
2,4	eShop	eShop	eShop	10.4	43	0.05
2,5	eShop	eShop	eShop	10.3	43	0.05
2,6	eShop	eShop	eShop	10.1	43	0.05
2,7	eShop	eShop	eShop	12	46	0.05
2,8	eShop	eShop	eShop	11.8	46	0.05
2,9	eShop	eShop	eShop	11.7	46	0.05
3	eShop	eShop	eShop	11.5	46	0.08
3,1	eShop	eShop	eShop	13.4	49	0.08
3,2	eShop	eShop	eShop	13.2	49	0.08
3,25	eShop	–	eShop	13.2	49	0.08
3,3	eShop	eShop	eShop	13.1	49	0.08
3,4	eShop	eShop	eShop	14.9	52	0.08
3,5	eShop	eShop	eShop	14.8	52	0.08
3,6	eShop	eShop	eShop	14.6	52	0.08
3,7	eShop	eShop	eShop	14.5	52	0.08
3,8	eShop	eShop	eShop	16.3	55	0.08
3,9	eShop	eShop	eShop	16.2	55	0.08
4	eShop	eShop	eShop	16	55	0.08
4,1	eShop	eShop	eShop	15.9	55	0.08
4,2	eShop	eShop	eShop	15.7	55	0.08
4,3	eShop	eShop	eShop	17.6	58	0.08
4,4	eShop	eShop	eShop	17.4	58	0.08
4,5	eShop	eShop	eShop	17.3	58	0.08
4,6	eShop	eShop	eShop	17.1	58	0.08
4,7	eShop	eShop	eShop	17	58	0.08
4,8	eShop	eShop	eShop	18.8	62	0.08
4,9	eShop	eShop	eShop	18.7	62	0.08
5	eShop	eShop	eShop	18.5	62	0.08
5,1	eShop	eShop	eShop	18.4	62	0.08
5,2	eShop	eShop	eShop	18.2	62	0.08
5,3	eShop	eShop	eShop	18.1	62	0.08

Ø D_c h7	11E 12 2100 Garant	11E 12 2151 Garant	12E 12 2160 HOLEX	L_2	L	< 1100 N f
	Solid carbide jobber drill extra short					
mm		TiAlN	TiN	mm	mm	mm/rev.
5,4	eShop	eShop	eShop	19.9	66	0.08
5,5	eShop	eShop	eShop	19.8	66	0.08
5,6	eShop	eShop	eShop	19.6	66	0.08
5,7	eShop	eShop	eShop	19.5	66	0.08
5,8	eShop	eShop	eShop	19.3	66	0.08
5,9	eShop	eShop	eShop	19.2	66	0.08
6	eShop	eShop	eShop	19	66	0.11
6,1	eShop	eShop	eShop	21.9	70	0.11
6,2	eShop	eShop	eShop	21.7	70	0.11
6,3	eShop	eShop	eShop	21.6	70	0.11
6,4	eShop	eShop	eShop	21.4	70	0.11
6,5	eShop	eShop	eShop	21.3	70	0.11
6,6	eShop	eShop	eShop	21.1	70	0.11
6,7	eShop	–	eShop	21	70	0.11
6,8	eShop	eShop	eShop	23.8	74	0.11
6,9	eShop	eShop	eShop	23.7	74	0.11
7	eShop	eShop	eShop	23.5	74	0.11
7,1	eShop	–	eShop	23.4	74	0.11
7,2	eShop	eShop	–	23.2	74	0.11
7,3	eShop	eShop	–	23.1	74	0.11
7,4	eShop	eShop	eShop	22.9	74	0.11
7,5	eShop	eShop	eShop	22.8	74	0.11
7,6	eShop	eShop	–	25.6	79	0.11
7,7	eShop	eShop	–	25.5	79	0.11
7,8	eShop	eShop	eShop	25.3	79	0.11
7,9	eShop	eShop	–	25.2	79	0.11
8	eShop	eShop	eShop	25	79	0.11
8,1	eShop	eShop	eShop	24.9	79	0.11
8,2	eShop	eShop	eShop	24.7	79	0.11
8,3	eShop	eShop	–	24.6	79	0.11
8,4	eShop	eShop	–	24.4	79	0.11
8,5	eShop	eShop	eShop	24.3	79	0.11
8,6	eShop	eShop	eShop	27.1	84	0.11
8,7	eShop	eShop	–	27	84	0.11
8,8	eShop	eShop	–	26.8	84	0.11
8,9	eShop	eShop	–	26.7	84	0.11
9	eShop	eShop	eShop	26.5	84	0.14
9,1	eShop	eShop	–	26.4	84	0.14
9,2	eShop	–	–	26.2	84	0.14
9,3	eShop	–	eShop	26.1	84	0.14
9,4	eShop	eShop	–	25.9	84	0.14
9,5	eShop	eShop	eShop	25.8	84	0.14
9,6	eShop	–	–	28.6	89	0.14
9,7	eShop	–	eShop	28.5	89	0.14
9,8	eShop	–	eShop	28.3	89	0.14
9,9	eShop	–	–	28.2	89	0.14
10	eShop	eShop	eShop	28	89	0.14
10,2	eShop	eShop	eShop	27.7	89	0.14
10,5	eShop	eShop	eShop	27.3	89	0.14
11	eShop	eShop	eShop	30.5	95	0.14
11,2	eShop	–	eShop	30.2	95	0.14
11,5	eShop	–	eShop	29.8	95	0.14
12	eShop	eShop	eShop	33	102	0.18
13	eShop	eShop	eShop	31.5	102	0.18

Solid carbide	DIN 338	Type N	h7	2	118°	30°	h7

Solid carbide jobber drill

Similar to DIN 338.
Nominal Ø and shank Ø equal.

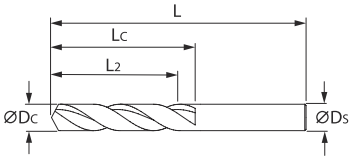
12 2251 – TiAlN coating for even better performance.
12 2301 – TiN coating.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
Non slip clamping in drill chuck No. 341050 with diamond coated jaws.


12 2250


12 2251


12 2301



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 2250	200	140	140	70	70	60	40	25					20	20	15		140	●	●	●		○	
12 2251	260	180	180	90	90	80	60	35					35	25	25	90	180	●	●	●		○	
12 2301	230	160	160	80	80	70	50	30					30	25	20	85	160	●	●	●		○	

Ø D_c h7	11E 12 2250 Garant	11E 12 2251 Garant	12E 12 2301 HOLEX	L_2	L	< 1100 N f
	Solid carbide jobber drill					
mm		TiAlN	TiN	mm	mm	mm/rev.
1	eShop	eShop	eShop	10.5	34	0.03
1,1	eShop	eShop	eShop	12.4	36	0.03
1,2	eShop	eShop	eShop	14.2	38	0.03
1,3	eShop	eShop	eShop	14.1	38	0.03
1,4	eShop	eShop	eShop	15.9	40	0.03
1,5	eShop	eShop	eShop	15.8	40	0.03
1,6	eShop	eShop	eShop	17.6	43	0.03
1,7	eShop	eShop	eShop	17.5	43	0.03
1,8	eShop	eShop	eShop	19.3	46	0.03
1,9	eShop	eShop	eShop	19.2	46	0.03
2	eShop	eShop	eShop	21	49	0.05
2,1	eShop	eShop	eShop	20.9	49	0.05
2,2	eShop	eShop	eShop	23.7	53	0.05
2,3	eShop	eShop	eShop	23.6	53	0.05
2,4	eShop	eShop	eShop	26.4	57	0.05
2,5	eShop	eShop	eShop	26.3	57	0.05
2,6	eShop	eShop	eShop	26.1	57	0.05
2,7	eShop	eShop	eShop	29	61	0.05
2,8	eShop	eShop	eShop	28.8	61	0.05
2,9	eShop	eShop	eShop	28.7	61	0.05
3	eShop	eShop ■	eShop	28.5	61	0.08
3,1	eShop	eShop	eShop	31.4	65	0.08
3,2	eShop	eShop	eShop	31.2	65	0.08
3,3	eShop	eShop	eShop	31.1	65	0.08
3,4	eShop	eShop	eShop	33.9	70	0.08
3,5	eShop	eShop	eShop	33.8	70	0.08
3,6	eShop	eShop	eShop	33.6	70	0.08
3,7	eShop	eShop	eShop	33.5	70	0.08
3,8	eShop	eShop	eShop	37.3	75	0.08
3,9	eShop	eShop	eShop	37.2	75	0.08
4	eShop	eShop	eShop	37	75	0.08
4,1	eShop	eShop	eShop	36.9	75	0.08
4,2	eShop	eShop	eShop	36.7	75	0.08
4,3	eShop	eShop	eShop	40.6	80	0.08
4,4	eShop	eShop	eShop	40.4	80	0.08
4,5	eShop	eShop	eShop	40.3	80	0.08
4,6	eShop	eShop	eShop	40.1	80	0.08
4,7	eShop	eShop	eShop	40	80	0.08
4,8	eShop	eShop	eShop	44.8	86	0.08
4,9	eShop	eShop	eShop	44.7	86	0.08
5	eShop	eShop ■	eShop	44.5	86	0.08
5,1	eShop	eShop	eShop	44.4	86	0.08
5,2	eShop	eShop	eShop	44.2	86	0.08
5,3	eShop	eShop	eShop	44.1	86	0.08
5,4	eShop	eShop	eShop	48.9	93	0.08
5,5	eShop	eShop ■	eShop	48.8	93	0.08

Ø D_c h7	11E 12 2250 Garant	11E 12 2251 Garant	12E 12 2301 HOLEX	L_2	L	< 1100 N f
	Solid carbide jobber drill					
mm		TiAlN	TiN	mm	mm	mm/rev.
5,6	eShop	eShop	eShop	48.6	93	0.08
5,7	eShop	eShop	eShop	48.5	93	0.08
5,8	eShop	eShop	eShop	48.3	93	0.08
5,9	eShop	eShop	eShop	48.2	93	0.08
6	eShop	eShop	eShop	48	93	0.11
6,1	eShop	eShop	eShop	53.9	101	0.11
6,2	eShop	eShop	eShop	53.7	101	0.11
6,3	eShop	eShop	eShop	53.6	101	0.11
6,4	eShop	–	eShop	53.4	101	0.11
6,5	eShop	eShop	eShop	53.3	101	0.11
6,6	eShop	eShop	eShop	53.1	101	0.11
6,7	eShop	eShop	eShop	53	101	0.11
6,8	eShop	eShop	eShop	58.8	109	0.11
6,9	eShop	eShop	eShop	58.7	109	0.11
7	eShop	eShop	eShop	58.5	109	0.11
7,1	eShop	–	eShop	58.4	109	0.11
7,2	eShop	eShop	–	58.2	109	0.11
7,3	eShop	–	–	58.1	109	0.11
7,4	eShop	eShop	eShop	57.9	109	0.11
7,5	eShop	eShop	eShop	57.8	109	0.11
7,6	eShop	–	–	63.6	117	0.11
7,7	eShop	eShop	–	63.5	117	0.11
7,8	eShop	eShop	eShop	63.3	117	0.11
7,9	eShop	–	eShop	63.2	117	0.11
8	eShop	eShop	eShop	63	117	0.11
8,1	eShop	eShop	–	62.9	117	0.11
8,2	eShop	eShop	–	62.7	117	0.11
8,3	eShop	–	eShop	62.6	117	0.11
8,4	eShop	–	–	62.4	117	0.11
8,5	eShop	eShop	eShop	62.3	117	0.11
8,6	eShop	–	eShop	68.1	125	0.11
8,7	eShop	eShop	–	68	125	0.11
8,8	eShop	–	eShop	67.8	125	0.11
9	eShop	eShop	eShop	67.5	125	0.14
9,4	eShop	–	eShop	66.9	125	0.14
9,5	eShop	–	eShop	66.8	125	0.14
9,7	eShop	eShop	–	72.5	133	0.14
9,8	eShop	eShop	eShop	72.3	133	0.14
10	eShop	eShop	eShop	72	133	0.14
10,2	eShop	eShop	eShop	71.7	133	0.14
10,5	eShop	eShop	eShop	71.3	133	0.14
11	eShop	eShop	eShop	77.5	142	0.14
11,5	eShop	–	–	76.8	142	0.14
12	eShop	eShop	eShop	83	151	0.18
13	eShop	eShop	eShop	81.5	151	0.18

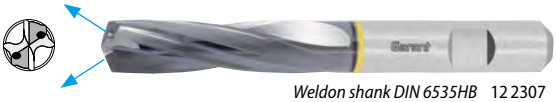
Solid carbide | DIN 6537 K | 4×D | Type W | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant Solid carbide HPC drill

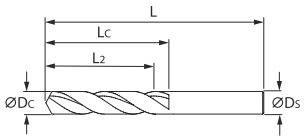
DLC coating sp² of the latest generation with **low coefficient of friction** results in **outstanding chip clearance.** For **high-performance milling** of **aluminium materials**. **High alignment accuracy** and **roundness of the hole,** thanks to **6 guide chamfers**.
Size 1 - 1.5 with 4 guide chamfers.

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122307**.
Form **HE:** order with **No. 122306 + 129100HE**.


Plain shank DIN 6535HA 12 2306


Weldon shank DIN 6535HB 12 2307


Whistle-Notch shank DIN 6535HE 12 2306 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	Cu	CuZn	GRP	CRP
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12 2306	360	400	350	150			120			90		80	70	80	160	200	80	80

Ø D_C h7	TiE	12 2306	L_2	L	Ø D_s	Alu f
		Solid carbide HPC drill, plain shank DIN 6535 HA				
mm		DLC	mm	mm	mm	mm/rev.
1		eShop	5.5	45	4	0.1
1,1		eShop	5.4	45	4	0.15
1,2		eShop	5.2	45	4	0.15
1,3		eShop	5.1	45	4	0.15
1,4		eShop	4.9	45	4	0.15
1,5		eShop	11.8	55	4	0.15
1,6		eShop	11.6	55	4	0.2
1,7		eShop	11.5	55	4	0.2
1,8		eShop	11.3	55	4	0.2
1,9		eShop	11.2	55	4	0.2
2		eShop	17	55	4	0.2
2,1		eShop	16.9	55	4	0.22
2,2		eShop	16.7	55	4	0.22
2,3		eShop	16.6	55	4	0.22
2,4		eShop	16.4	55	4	0.22
2,5		eShop	16.3	55	4	0.22
2,6		eShop	16.1	55	4	0.22
2,7		eShop	16	55	4	0.22
2,8		eShop	15.8	55	4	0.22
2,9		eShop	15.7	55	4	0.22
3		eShop	15.5	62	6	0.22
3,1		eShop	15.4	62	6	0.35
3,2		eShop	15.2	62	6	0.35
3,3		eShop	15.1	62	6	0.35
3,4		eShop	14.9	62	6	0.35
3,5		eShop	14.8	62	6	0.35
3,6		eShop	14.6	62	6	0.35
3,7		eShop	14.5	62	6	0.35
3,8		eShop	18.3	66	6	0.35
3,9		eShop	18.2	66	6	0.35
4		eShop	18	66	6	0.35
4,1		eShop	17.9	66	6	0.35
4,2		eShop	17.7	66	6	0.35
4,3		eShop	17.6	66	6	0.35
4,4		eShop	17.4	66	6	0.35
4,5		eShop	17.3	66	6	0.35
4,6		eShop	17.1	66	6	0.35
4,65		eShop	17.1	66	6	0.35
4,7		eShop	17	66	6	0.35
4,8		eShop	20.8	66	6	0.35
4,9		eShop	20.7	66	6	0.35
5		eShop	20.5	66	6	0.35

Ø D_C h7	TiE	12 2306	L_2	L	Ø D_s	Alu f
		Solid carbide HPC drill, plain shank DIN 6535 HA				
mm		DLC	mm	mm	mm	mm/rev.
5,1		eShop	20.4	66	6	0.45
5,2		eShop	20.2	66	6	0.45
5,3		eShop	20.1	66	6	0.45
5,4		eShop	19.9	66	6	0.45
5,5		eShop	19.8	66	6	0.45
5,55		eShop	19.7	66	6	0.45
5,6		eShop	19.6	66	6	0.45
5,7		eShop	19.5	66	6	0.45
5,8		eShop	19.3	66	6	0.45
5,9		eShop	19.2	66	6	0.45
6		eShop	19	66	6	0.45
6,1		eShop	24.9	79	8	0.45
6,2		eShop	24.7	79	8	0.45
6,3		eShop	24.6	79	8	0.45
6,4		eShop	24.4	79	8	0.45
6,5		eShop	24.3	79	8	0.45
6,6		eShop	24.1	79	8	0.45
6,7		eShop	24	79	8	0.45
6,8		eShop	23.8	79	8	0.45
6,9		eShop	23.7	79	8	0.45
7		eShop	23.5	79	8	0.45
7,1		eShop	30.4	79	8	0.45
7,2		eShop	30.2	79	8	0.45
7,3		eShop	30.1	79	8	0.45
7,4		eShop	29.9	79	8	0.45
7,45		eShop	29.9	79	8	0.45
7,5		eShop	29.8	79	8	0.45
7,6		eShop	29.6	79	8	0.45
7,7		eShop	29.5	79	8	0.45
7,8		eShop	29.3	79	8	0.45
7,9		eShop	29.2	79	8	0.45
8		eShop	29	79	8	0.45
8,1		eShop	34.9	89	10	0.55
8,2		eShop	34.7	89	10	0.55
8,3		eShop	34.6	89	10	0.55
8,4		eShop	34.4	89	10	0.55
8,5		eShop	34.3	89	10	0.55
8,6		eShop	34.1	89	10	0.55
8,7		eShop	34	89	10	0.55
8,8		eShop	33.8	89	10	0.55
8,9		eShop	33.7	89	10	0.55
9		eShop	33.5	89	10	0.55

Ø D_C h7	TiE	12 2306	L_2	L	Ø D_s	Alu f
		Solid carbide HPC drill, plain shank DIN 6535 HA				
mm		DLC	mm	mm	mm	mm/rev.
9,1		eShop	33.4	89	10	0.55
9,2		eShop	33.2	89	10	0.55
9,3		eShop	33.1	89	10	0.55
9,4		eShop	32.9	89	10	0.55
9,5		eShop	32.8	89	10	0.55
9,6		eShop	32.6	89	10	0.55
9,7		eShop	32.5	89	10	0.55
9,8		eShop	32.3	89	10	0.55
9,9		eShop	32.2	89	10	0.55
10		eShop	32	89	10	0.55
10,2		eShop	39.7	102	12	0.55
10,3		eShop	39.7	102	12	0.55
10,5		eShop	39.3	102	12	0.55
10,8		eShop	38.8	102	12	0.55
11		eShop	38.5	102	12	0.55
11,5		eShop	37.8	102	12	0.55
11,8		eShop	37.3	102	12	0.55
12		eShop	37	102	12	0.55
12,5		eShop	41.3	107	14	0.65
12,8		eShop	40.8	107	14	0.65
13		eShop	40.5	107	14	0.65
13,5		eShop	39.8	107	14	0.65
13,8		eShop	39.3	107	14	0.65
14		eShop	39	107	14	0.65
14,5		eShop	43.3	115	16	0.65
14,8		eShop	42.8	115	16	0.65
15		eShop	42.5	115	16	0.65
15,5		eShop	41.8	115	16	0.65
15,8		eShop	41.3	115	16	0.65
16		eShop	41	115	16	0.65
16,5		eShop	48.3	123	18	0.7
16,8		eShop	47.8	123	18	0.7
17		eShop	47.5	123	18	0.7
17,5		eShop	46.8	123	18	0.7
17,8		eShop	46.3	123	18	0.7
18		eShop	46	123	18	0.7
18,5		eShop	51.3	131	20	0.7
18,8		eShop	50.8	131	20	0.7
19		eShop	50.5	131	20	0.7
19,5		eShop	49.8	131	20	0.7
19,8		eShop	49.3	131	20	0.7
20		eShop	49	131	20	0.7

Solid carbide | DIN 6537 K | 4×D | Type H | h7 | 2 | 140° | h6 DIN 6535 HA | HPC | x

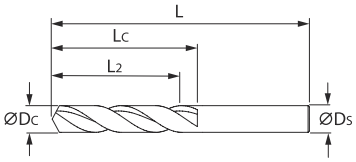
Garant GARANT Diabolo solid carbide HPC drill for hard machining

Cutting chisel edge with high centring accuracy
due to **strong core and special point geometry**.
Convex major cutting edges with **defined honed edge**
ensure the drill has high stability and maximum load capacity.
Special multi-nano layer coating for drilling in hardened steels.

Note: HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **No. 122362**.
For **HE shanks:** use order **No. 122361 + 129100HE**.
Flute length $L_C = L_2 + 1.5 \times D_C$.



Plain shank DIN 6535 HA 12 2361



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
12 2361				90	80	70	65	55	28	16	14	10					70		●		●	

$Ø D_C$ h7 (mm or inch)	11E	12 2361 GARANT Diabolo solid carbide HPC drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	$Ø D_S$ mm	< 60 HRC f mm/rev.
1		eShop	5.5	45	4	0.03
1,1		eShop	5.4	45	4	0.03
1,2		eShop	5.2	45	4	0.03
1,3		eShop	5.1	45	4	0.03
1,4		eShop	4.9	45	4	0.03
1,5		eShop	11.8	55	4	0.03
1,6		eShop	11.6	55	4	0.04
1,7		eShop	11.5	55	4	0.04
1,8		eShop	11.3	55	4	0.04
1,9		eShop	11.2	55	4	0.04
2		eShop	17	55	4	0.04
2,1		eShop	16.9	55	4	0.05
2,2		eShop	16.7	55	4	0.05
2,3		eShop	16.6	55	4	0.05
2,4		eShop	16.4	55	4	0.05
2,5		eShop	16.3	55	4	0.05
2,6		eShop	16.1	55	4	0.05
2,7		eShop	16	55	4	0.05
2,8		eShop	15.8	55	4	0.05
2,9		eShop	15.7	55	4	0.05
3		eShop	15.5	62	6	0.05
3,1		eShop	15.4	62	6	0.06
3,2		eShop	15.2	62	6	0.06
3,3		eShop	15.1	62	6	0.06
3,4		eShop	14.9	62	6	0.06
3,5		eShop	14.8	62	6	0.06
3,6		eShop	14.6	62	6	0.06
3,7		eShop	14.5	62	6	0.06
3,8		eShop	18.3	66	6	0.06
3,9		eShop	18.2	66	6	0.06
4		eShop	18	66	6	0.06
4,1		eShop	17.9	66	6	0.07
4,2		eShop	17.7	66	6	0.07
4,3		eShop	17.6	66	6	0.07
4,4		eShop	17.4	66	6	0.07
4,5		eShop	17.3	66	6	0.07
4,6		eShop	17.1	66	6	0.07
4,8		eShop	20.8	66	6	0.07
4,9		eShop	20.7	66	6	0.07
5		eShop	20.5	66	6	0.07
5,1		eShop	20.4	66	6	0.08
5,2		eShop	20.2	66	6	0.08
5,3		eShop	20.1	66	6	0.08
5,5		eShop	19.8	66	6	0.08
5,6		eShop	19.6	66	6	0.08
5,8		eShop	19.3	66	6	0.08
5,9		eShop	19.2	66	6	0.08
6		eShop	19	66	6	0.08
6,1		eShop	24.9	79	8	0.09
6,2		eShop	24.7	79	8	0.09
6,3		eShop	24.6	79	8	0.09

$Ø D_C$ h7 (mm or inch)	11E	12 2361 GARANT Diabolo solid carbide HPC drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	$Ø D_S$ mm	< 60 HRC f mm/rev.
6,4		eShop	24.4	79	8	0.09
6,5		eShop	24.3	79	8	0.09
6,6		eShop	24.1	79	8	0.09
6,8		eShop	23.8	79	8	0.09
6,9		eShop	23.7	79	8	0.09
7		eShop	23.5	79	8	0.09
7,1		eShop	30.4	79	8	0.09
7,2		eShop	30.2	79	8	0.09
7,5		eShop	29.8	79	8	0.09
7,8		eShop	29.3	79	8	0.09
7,9		eShop	29.2	79	8	0.09
8		eShop	29	79	8	0.09
8,1		eShop	34.9	89	10	0.11
8,2		eShop	34.7	89	10	0.11
8,5		eShop	34.3	89	10	0.11
8,6		eShop	34.1	89	10	0.11
8,7		eShop	34	89	10	0.11
8,8		eShop	33.8	89	10	0.11
9		eShop	33.5	89	10	0.11
9,5		eShop	32.8	89	10	0.11
9,8		eShop	32.3	89	10	0.11
9,9		eShop	32.2	89	10	0.11
10		eShop	32	89	10	0.11
10,2		eShop	39.7	102	12	0.11
10,3		eShop	39.6	102	12	0.11
10,5		eShop	39.3	102	12	0.11
10,8		eShop	38.8	102	12	0.11
11		eShop	38.5	102	12	0.11
11,5		eShop	37.8	102	12	0.11
11,8		eShop	37.3	102	12	0.11
12		eShop	37	102	12	0.11
12,5		eShop	41.3	107	14	0.13
12,8		eShop	40.8	107	14	0.13
13		eShop	40.5	107	14	0.13
13,5		eShop	39.8	107	14	0.13
13,8		eShop	39.3	107	14	0.13
14		eShop	39	107	14	0.13
14,5		eShop	43.3	115	16	0.13
14,8		eShop	42.8	115	16	0.13
14,9		eShop	42.7	115	16	0.13
15		eShop	42.5	115	16	0.13
15,5		eShop	41.8	115	16	0.13
15,8		eShop	41.3	115	16	0.13
15,9		eShop	41.2	115	16	0.13
16		eShop	41	115	16	0.13
16,5		eShop	48.3	123	18	0.15
17		eShop	47.5	123	18	0.15
17,5		eShop	46.8	123	18	0.15
18		eShop	46	123	18	0.15
20		eShop	49	131	20	0.15

Solid carbide | DIN 6537 K | 4×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant Solid carbide HPC drill

Cutting chisel edge with **high centring accuracy** due to **strong core and special point geometry. Straight major cutting edges** with slightly honed edges and special flute profile produce **short chips.**

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122385**.
Form **HE:** order with **No. 122380 + 12900HE**.



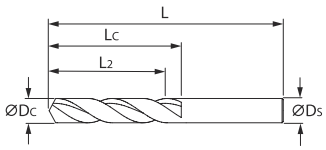
Plain shank DIN 6535 HA 12 2380



Weldon shank DIN 6535 HB 12 2385



Whistle-Notch shank DIN 6535 HE 12 2380 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
12 2380		245		110	90	85	60	35						55	50	35			●	●		●	

Ø D_C h7	11E	12 2380	L_2	L	Ø D_s	INOX < 900 N f
		Solid carbide HPC drill plain shank DIN 6535 HA				
mm		TiAlN	mm	mm	mm	mm/rev.
1		eShop	5.5	45	4	0.05
1,1		eShop	5.4	45	4	0.05
1,2		eShop	5.2	45	4	0.05
1,3		eShop	5.1	45	4	0.05
1,4		eShop	4.9	45	4	0.05
1,5		eShop	11.8	55	4	0.05
1,6		eShop	11.6	55	4	0.05
1,7		eShop	11.5	55	4	0.05
1,8		eShop	11.3	55	4	0.05
1,9		eShop	11.2	55	4	0.05
2		eShop	17	55	4	0.07
2,1		eShop	16.9	55	4	0.07
2,2		eShop	16.7	55	4	0.07
2,3		eShop	16.6	55	4	0.07
2,4		eShop	16.4	55	4	0.07
2,5		eShop	16.3	55	4	0.07
2,6		eShop	16.1	55	4	0.07
2,7		eShop	16	55	4	0.07
2,8		eShop	15.8	55	4	0.07
2,9		eShop	15.7	55	4	0.07
3		eShop	15.5	62	6	0.09
3,1		eShop	15.4	62	6	0.09
3,2		eShop	15.2	62	6	0.09
3,3		eShop	15.1	62	6	0.09
3,4		eShop	14.9	62	6	0.09
3,5		eShop	14.8	62	6	0.09
3,7		eShop	14.5	62	6	0.09
3,8		eShop	18.3	66	6	0.09
3,9		eShop	18.2	66	6	0.09
4		eShop	18	66	6	0.09
4,1		eShop	17.9	66	6	0.09
4,2		eShop	17.7	66	6	0.09
4,3		eShop	17.6	66	6	0.09
4,5		eShop	17.3	66	6	0.09
4,6		eShop	17.1	66	6	0.09
4,8		eShop	20.8	66	6	0.09
4,9		eShop	20.7	66	6	0.09
5		eShop	20.5	66	6	0.09
5,1		eShop	20.4	66	6	0.09
5,2		eShop	20.2	66	6	0.09
5,5		eShop	19.8	66	6	0.09
5,6		eShop	19.6	66	6	0.09
5,7		eShop	19.5	66	6	0.09

Ø D_C h7	11E	12 2380	L_2	L	Ø D_s	INOX < 900 N f
		Solid carbide HPC drill plain shank DIN 6535 HA				
mm		TiAlN	mm	mm	mm	mm/rev.
5,8		eShop	19.3	66	6	0.09
6		eShop	19	66	6	0.12
6,1		eShop	24.9	79	8	0.12
6,2		eShop	24.7	79	8	0.12
6,3		eShop	24.6	79	8	0.12
6,4		eShop	24.4	79	8	0.12
6,5		eShop	24.3	79	8	0.12
6,6		eShop	24.1	79	8	0.12
6,8		eShop	23.8	79	8	0.12
6,9		eShop	23.7	79	8	0.12
7		eShop	23.5	79	8	0.12
7,45		eShop	29.9	79	8	0.12
7,8		eShop	29.3	79	8	0.12
8		eShop	29	79	8	0.12
8,5		eShop	34.3	89	10	0.12
9		eShop	33.5	89	10	0.15
9,35		eShop	33	89	10	0.15
9,5		eShop	32.8	89	10	0.15
9,8		eShop	32.3	89	10	0.15
10		eShop	32	89	10	0.15
10,2		eShop	39.7	102	12	0.15
10,3		eShop	39.6	102	12	0.15
10,5		eShop	39.3	102	12	0.15
10,8		eShop	38.8	102	12	0.15
11		eShop	38.5	102	12	0.15
11,5		eShop	37.8	102	12	0.15
11,8		eShop	37.3	102	12	0.15
12		eShop	37	102	12	0.18
12,2		eShop	41.7	107	14	0.18
12,5		eShop	41.3	107	14	0.18
12,8		eShop	40.8	107	14	0.18
13		eShop	40.5	107	14	0.18
13,5		eShop	39.8	107	14	0.18
13,8		eShop	39.3	107	14	0.18
14		eShop	39	107	14	0.18
15		eShop	42.5	115	16	0.18
15,8		eShop	41.3	115	16	0.18
16		eShop	41	115	16	0.2
16,5		eShop	48.3	123	18	0.2
17		(eShop)	47.5	123	18	0.2
18,5		eShop	51.3	131	20	0.2
19,5		eShop	49.8	131	20	0.23
20		eShop	49	131	20	0.23

Solid carbide | DIN 6537 K | 4×D | m7 | 2 | 140° | h6 DIN 6535 HA

HOLEX Pro INOX solid carbide high-performance drill

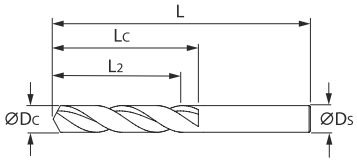
Efficient drilling especially for use in **stainless and acid-resistant steels.**
Straight main cutting edges with **optimised cutting edge design** for improved chip breaking behaviour. Enlarged flutes for **excellent chip evacuation.**
Increased wear resistance due to **improved carbide substrate** and **high temperature resistant coating.**

Note:
Flute length $L_c = L_2 + 1.5 \times D_c$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **no. 122391**.
For **HE shanks:** use order **no. 122392**.


Plain shank DIN 6535 HA 12 2390


Weldon shank DIN 6535 HB 12 2391


Whistle-Notch shank DIN 6535 HE 12 2392



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
12 2390		140	120	80	75	65								35	30			

Ø D_c m7	12 2390 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA AlTiN	L_2	L	Ø D_s	INOX < 900 N f
mm		mm	mm	mm	mm/rev.
1	eShop	4.5	45	4	0.02
1,1	eShop	4.9	45	4	0.02
1,2	eShop	5.2	45	4	0.02
1,3	eShop	5.1	45	4	0.02
1,4	eShop	6.4	45	4	0.02
1,5	eShop	6.8	50	4	0.03
1,6	eShop	7.1	50	4	0.03
1,7	eShop	7.5	50	4	0.03
1,8	eShop	8.3	50	4	0.03
1,9	eShop	8.7	50	4	0.03
2	eShop	13	58	6	0.03
2,1	eShop	12.9	58	6	0.03
2,2	eShop	12.7	58	6	0.04
2,3	eShop	12.6	58	6	0.04
2,4	eShop	12.4	58	6	0.04
2,5	eShop	12.3	58	6	0.04
2,6	eShop	12.1	58	6	0.04
2,7	eShop	12	58	6	0.04
2,8	eShop	11.8	58	6	0.04
2,9	eShop	11.7	58	6	0.05
3	eShop	15.5	62	6	0.05
3,1	eShop	15.4	62	6	0.05
3,2	eShop	15.2	62	6	0.05
3,3	eShop	15.1	62	6	0.05
3,4	eShop	14.9	62	6	0.05
3,5	eShop	14.8	62	6	0.05
3,6	eShop	14.6	62	6	0.06
3,7	eShop	14.5	62	6	0.06
3,8	eShop	18.3	66	6	0.06
3,9	eShop	18.2	66	6	0.06
4	eShop	18	66	6	0.06
4,1	eShop	17.9	66	6	0.06
4,2	eShop	17.7	66	6	0.06
4,3	eShop	17.6	66	6	0.06
4,4	eShop	17.4	66	6	0.07
4,5	eShop	17.3	66	6	0.07
4,6	eShop	17.1	66	6	0.07
4,7	eShop	17	66	6	0.07
4,8	eShop	20.8	66	6	0.07
4,9	eShop	20.7	66	6	0.07
5	eShop	20.5	66	6	0.07
5,1	eShop	20.4	66	6	0.07
5,2	eShop	20.2	66	6	0.07

Ø D_c m7	12 2390 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA AlTiN	L_2	L	Ø D_s	INOX < 900 N f
mm		mm	mm	mm	mm/rev.
5,3	eShop	20.1	66	6	0.08
5,4	eShop	19.9	66	6	0.08
5,5	eShop	19.8	66	6	0.08
5,6	eShop	19.6	66	6	0.08
5,7	eShop	19.5	66	6	0.08
5,8	eShop	19.3	66	6	0.08
5,9	eShop	19.2	66	6	0.08
6	eShop	19	66	6	0.08
6,1	eShop	24.9	79	8	0.08
6,2	eShop	24.7	79	8	0.09
6,3	eShop	24.6	79	8	0.09
6,4	eShop	24.4	79	8	0.09
6,5	eShop	24.3	79	8	0.09
6,6	eShop	24.1	79	8	0.09
6,7	eShop	24	79	8	0.09
6,8	eShop	23.8	79	8	0.09
6,9	eShop	23.7	79	8	0.09
7	eShop	23.5	79	8	0.09
7,1	eShop	30.4	79	8	0.09
7,2	eShop	30.2	79	8	0.1
7,3	eShop	30.1	79	8	0.1
7,4	eShop	29.9	79	8	0.1
7,5	eShop	29.8	79	8	0.1
7,6	eShop	29.6	79	8	0.1
7,7	eShop	29.5	79	8	0.1
7,8	eShop	29.3	79	8	0.1
7,9	eShop	29.2	79	8	0.1
8	eShop	29	79	8	0.1
8,1	eShop	34.9	89	10	0.1
8,2	eShop	34.7	89	10	0.1
8,3	eShop	34.6	89	10	0.11
8,4	eShop	34.4	89	10	0.11
8,5	eShop	34.3	89	10	0.11
8,6	eShop	34.1	89	10	0.11
8,7	eShop	34	89	10	0.11
8,8	eShop	33.8	89	10	0.11
8,9	eShop	33.7	89	10	0.11
9	eShop	33.5	89	10	0.11
9,1	eShop	33.4	89	10	0.11
9,2	eShop	33.2	89	10	0.11
9,3	eShop	33.1	89	10	0.11
9,4	eShop	32.9	89	10	0.12
9,5	eShop	32.8	89	10	0.12

Ø D_c m7	12 2390 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA AlTiN	L_2	L	Ø D_s	INOX < 900 N f
mm		mm	mm	mm	mm/rev.
9,6	eShop	23.6	89	10	0.12
9,7	eShop	32.5	89	10	0.12
9,8	eShop	32.3	89	10	0.12
9,9	eShop	32.2	89	10	0.12
10	eShop	32	89	10	0.12
10,2	eShop	39.7	102	12	0.12
10,3	eShop	39.6	102	12	0.12
10,5	eShop	39.3	102	12	0.12
10,8	eShop	38.8	102	12	0.13
11	eShop	38.5	102	12	0.13
11,2	eShop	37.8	102	12	0.13
11,5	eShop	37.8	102	12	0.13
11,8	eShop	11.8	102	12	0.13
12	eShop	37	102	12	0.14
12,2	eShop	41.7	107	14	0.14
12,5	eShop	41.3	107	14	0.14
12,8	eShop	40.8	107	14	0.14
13	eShop	40.5	107	14	0.14
13,5	eShop	39.8	107	14	0.15
13,8	eShop	39.3	107	14	0.15
14	eShop	39	107	14	0.15
14,2	eShop	43.7	115	16	0.15
14,5	eShop	43.3	115	16	0.15
14,8	eShop	42.8	115	16	0.16
15	eShop	42.5	115	16	0.16
15,1	eShop	42.4	115	16	0.16
15,2	eShop	41.8	115	16	0.16
15,5	eShop	41.8	115	16	0.16
15,8	eShop	41.3	115	16	0.16
16	eShop	41	115	16	0.17
16,5	eShop	48.3	123	18	0.17
17	eShop	47.5	123	18	0.17
17,3	eShop	47.1	123	18	0.18
17,5	eShop	46.8	123	18	0.18
17,7	eShop	46.5	123	18	0.18
18	eShop	46	123	18	0.18
18,5	eShop	51.3	131	20	0.19
19	eShop	50.5	131	20	0.19
19,3	eShop	50.1	131	20	0.19
19,5	eShop	49.8	131	20	0.2
20	eShop	49	131	20	0.2

Solid carbide	DIN 6537 K	4×D	m7	2	140°	h6 DIN 6535 HA	25 bar

HOLEX Pro INOX solid carbide high-performance drill

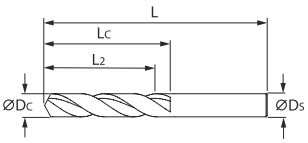
Efficient drilling especially for use in **stainless and acid-resistant steels.**
Straight main cutting edges with **optimised cutting edge design** for improved chip breaking behaviour.
Enlarged flutes for **excellent chip evacuation.**
Increased wear resistance due to **improved carbide substrate** and **high temperature resistant coating.**

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **no. 122491**.
For **HE shanks:** use order **no. 122492**.


Plain shank DIN 6535 HA 12 2490


Weldon shank DIN 6535 HB 12 2491


Whistle-Notch shank DIN 6535 HE 12 2492



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
12 2490		140	120	120	110	90	80							55	45	35		

Ø D_C m7	12 2490 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA	L_2	L	Ø D_S	INOX < 900 N f
mm	AlTiN	mm	mm	mm	mm/rev.
2	eShop	9	50	4	0.03
2,1	eShop	9.35	55	4	0.03
2,2	eShop	9.7	55	4	0.04
2,3	eShop	10.6	55	4	0.04
2,4	eShop	10.9	55	4	0.04
2,5	eShop	11.3	55	4	0.04
2,6	eShop	11.6	55	4	0.04
2,7	eShop	12	55	4	0.04
2,8	eShop	12.8	55	4	0.04
2,9	eShop	13.2	55	4	0.05
3	eShop	15.5	62	6	0.05
3,1	eShop	15.4	62	6	0.05
3,2	eShop	15.2	62	6	0.05
3,3	eShop	15.1	62	6	0.05
3,4	eShop	14.9	62	6	0.05
3,5	eShop	14.8	62	6	0.05
3,6	eShop	14.6	62	6	0.06
3,7	eShop	14.5	62	6	0.06
3,8	eShop	18.3	66	6	0.06
3,9	eShop	18.2	66	6	0.06
4	eShop	18	66	6	0.06
4,1	eShop	17.9	66	6	0.06
4,2	eShop	17.7	66	6	0.06
4,3	eShop	17.6	66	6	0.06
4,4	eShop	17.4	66	6	0.07
4,5	eShop	17.3	66	6	0.07
4,6	eShop	17.1	66	6	0.07
4,7	eShop	17	66	6	0.07
4,8	eShop	20.8	66	6	0.07
4,9	eShop	20.7	66	6	0.07
5	eShop	20.5	66	6	0.07
5,1	eShop	20.4	66	6	0.07
5,2	eShop	20.2	66	6	0.07
5,3	eShop	20.1	66	6	0.08
5,4	eShop	19.9	66	6	0.08
5,5	eShop	19.8	66	6	0.08
5,6	eShop	19.6	66	6	0.08
5,7	eShop	19.5	66	6	0.08
5,8	eShop	19.3	66	6	0.08
5,9	eShop	19.2	66	6	0.08

Ø D_C m7	12 2490 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA	L_2	L	Ø D_S	INOX < 900 N f
mm	AlTiN	mm	mm	mm	mm/rev.
6	eShop	19	66	6	0.08
6,1	eShop	24.9	79	8	0.08
6,2	eShop	24.7	79	8	0.09
6,3	eShop	24.6	79	8	0.09
6,4	eShop	24.4	79	8	0.09
6,5	eShop	24.3	79	8	0.09
6,6	eShop	24.1	79	8	0.09
6,7	eShop	24	79	8	0.09
6,8	eShop	23.8	79	8	0.09
6,9	eShop	23.7	79	8	0.09
7	eShop	23.5	79	8	0.09
7,1	eShop	30.4	79	8	0.09
7,2	eShop	30.2	79	8	0.1
7,3	eShop	30.1	79	8	0.1
7,4	eShop	29.9	79	8	0.1
7,5	eShop	29.8	79	8	0.1
7,6	eShop	29.6	79	8	0.1
7,7	eShop	29.5	79	8	0.1
7,8	eShop	29.3	79	8	0.1
7,9	eShop	29.2	79	8	0.1
8	eShop	29	79	8	0.1
8,1	eShop	34.9	89	10	0.1
8,2	eShop	34.7	89	10	0.1
8,3	eShop	34.6	89	10	0.11
8,4	eShop	34.4	89	10	0.11
8,5	eShop	34.3	89	10	0.11
8,6	eShop	34.1	89	10	0.11
8,7	eShop	34	89	10	0.11
8,8	eShop	33.8	89	10	0.11
8,9	eShop	33.7	89	10	0.11
9	eShop	33.5	89	10	0.11
9,1	eShop	33.4	89	10	0.11
9,2	eShop	33.2	89	10	0.11
9,3	eShop	33.1	89	10	0.11
9,4	eShop	32.9	89	10	0.12
9,5	eShop	32.8	89	10	0.12
9,6	eShop	32.6	89	10	0.12
9,7	eShop	32.5	89	10	0.12
9,8	eShop	32.3	89	10	0.12
9,9	eShop	32.2	89	10	0.12

Ø D_C m7	12 2490 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA	L_2	L	Ø D_S	INOX < 900 N f
mm	AlTiN	mm	mm	mm	mm/rev.
10	eShop	32	89	10	0.12
10,2	eShop	39.7	102	12	0.12
10,3	eShop	40	102	12	0.12
10,5	eShop	39.3	102	12	0.12
10,8	eShop	38.8	102	12	0.13
11	eShop	38.5	102	12	0.13
11,2	eShop	38.2	102	12	0.13
11,5	eShop	37.8	102	12	0.13
11,8	eShop	37.3	102	12	0.13
12	eShop	37	102	12	0.14
12,2	eShop	41.7	107	14	0.14
12,5	eShop	41.3	107	14	0.14
12,8	eShop	40.8	107	14	0.14
13	eShop	40.5	107	14	0.14
13,5	eShop	39.8	107	14	0.15
13,8	eShop	39.3	107	14	0.15
14	eShop	39	107	14	0.15
14,2	eShop	43.7	115	16	0.15
14,5	eShop	43.3	115	16	0.15
14,8	eShop	42.8	115	16	0.16
15	eShop	42.5	115	16	0.16
15,1	eShop	42.4	115	16	0.16
15,2	eShop	42.2	115	16	0.16
15,5	eShop	41.8	115	16	0.16
15,8	eShop	41.3	115	16	0.16
16	eShop	41	115	16	0.17
16,5	eShop	48.3	123	18	0.17
16,8	eShop	47.8	123	18	0.17
17	eShop	47.5	123	18	0.17
17,3	eShop	47.1	123	18	0.18
17,5	eShop	46.8	123	18	0.18
17,7	eShop	46.5	123	18	0.18
18	eShop	46	123	18	0.18
18,5	eShop	51.3	131	20	0.19
19	eShop	50.5	131	20	0.19
19,3	eShop	50.1	131	20	0.19
19,5	eShop	49.8	131	20	0.2
20	eShop	49	131	20	0.2

Solid carbide | DIN 6537 K | 4×D | m7 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant

Solid carbide HPC drill

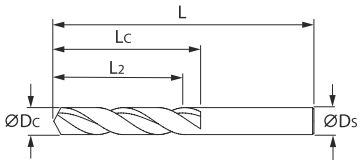
Specially for machining **titanium-based and nickel-based alloys.** With wear-resistant, ultra-smooth TiAlSiN high-performance coating for a **long tool life** combined with **optimum bore quality** and **very low burr formation.**

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
For **HB**: use order **No. 122481**.
For **HE**: use order **No. 122480** and **129100HE**.


plain shank DIN 6535 HA 12 2480


Weldon shank DIN 6535 HB 12 2481


Whistle-notch shank DIN 6535 HE 12 2480 + 129100 HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	N
12 2480																45	35	

Ø D_C m7	11E 12 2480 Solid carbide HPC drill, plain shank DIN 6535 HA TiAlSiN	L_2	L	Ø D_s	Ti > 850 N f
mm		mm	mm	mm	mm/rev.
3	eShop	15.5	62	6	0.04
3,1	eShop	15.4	62	6	0.04
3,2	eShop	15.2	62	6	0.04
3,3	eShop	15.1	62	6	0.04
3,4	eShop	14.9	62	6	0.05
3,5	eShop	14.8	62	6	0.05
3,6	eShop	14.6	62	6	0.05
3,7	eShop	14.5	62	6	0.05
3,8	eShop	18.3	66	6	0.05
3,9	eShop	18.2	66	6	0.05
4	eShop	18	66	6	0.05
4,1	eShop	17.9	66	6	0.06
4,2	eShop	17.7	66	6	0.06
4,3	eShop	17.6	66	6	0.06
4,4	eShop	17.4	66	6	0.06
4,5	eShop	17.3	66	6	0.06
4,6	eShop	17.1	66	6	0.06
4,7	eShop	17	66	6	0.06
4,8	eShop	20.8	66	6	0.06
4,9	eShop	20.7	66	6	0.07
5	eShop	20.5	66	6	0.07
5,1	eShop	20.4	66	6	0.07
5,2	eShop	20.2	66	6	0.07
5,3	eShop	20.1	66	6	0.07
5,4	eShop	19.9	66	6	0.07
5,5	eShop	19.8	66	6	0.07
5,6	eShop	19.6	66	6	0.08
5,7	eShop	19.5	66	6	0.08
5,8	eShop	19.3	66	6	0.08
5,9	eShop	19.2	66	6	0.08
6	eShop	19	66	6	0.08
6,1	eShop	24.9	79	8	0.08
6,2	eShop	24.7	79	8	0.08
6,3	eShop	24.6	79	8	0.08
6,4	eShop	24.4	79	8	0.09
6,5	eShop	24.5	79	8	0.09
6,6	eShop	24.1	79	8	0.09
6,7	eShop	24	79	8	0.09
6,8	eShop	23.8	79	8	0.09
6,9	eShop	23.7	79	8	0.09
7	eShop	23.5	79	8	0.09
7,1	eShop	23.4	79	8	0.09
7,2	eShop	23.2	79	8	0.1
7,3	eShop	23.1	79	8	0.1

Ø D_C m7	11E 12 2480 Solid carbide HPC drill, plain shank DIN 6535 HA TiAlSiN	L_2	L	Ø D_s	Ti > 850 N f
mm		mm	mm	mm	mm/rev.
7,4	eShop	22.9	79	8	0.1
7,5	eShop	22.8	79	8	0.1
7,6	eShop	22.6	79	8	0.1
7,7	eShop	22.5	79	8	0.1
7,8	eShop	22.3	79	8	0.1
7,9	eShop	22.2	79	8	0.1
8	eShop	22	79	8	0.1
8,1	eShop	34.9	89	10	0.11
8,2	eShop	34.7	89	10	0.11
8,3	eShop	34.6	89	10	0.11
8,4	eShop	34.4	89	10	0.11
8,5	eShop	34.3	89	10	0.11
8,6	eShop	34.1	89	10	0.11
8,7	eShop	34	89	10	0.11
8,8	eShop	33.8	89	10	0.11
8,9	eShop	33.7	89	10	0.12
9	eShop	33.5	89	10	0.12
9,1	eShop	33.4	89	10	0.12
9,2	eShop	33.2	89	10	0.12
9,3	eShop	33.1	89	10	0.12
9,4	eShop	32.9	89	10	0.12
9,5	eShop	32.8	89	10	0.12
9,6	eShop	32.6	89	10	0.12
9,7	eShop	32.5	89	10	0.12
9,8	eShop	32.3	89	10	0.13
9,9	eShop	32.2	89	10	0.13
10	eShop	32	89	10	0.13
10,2	eShop	39.7	102	12	0.13
10,5	eShop	39.3	102	12	0.13
10,8	eShop	38.8	102	12	0.14
11	eShop	38.5	102	12	0.14
11,2	eShop	38.2	102	12	0.14
11,5	eShop	37.8	102	12	0.14
11,8	eShop	37.3	102	12	0.14
12	eShop	37	102	12	0.15
12,2	eShop	41.7	107	14	0.15
12,5	eShop	41.3	107	14	0.15
13	eShop	40.5	107	14	0.16
13,5	eShop	39.8	107	14	0.16
14	eShop	39	107	14	0.16
14,5	eShop	43.3	115	16	0.17
15	eShop	42.5	115	16	0.17
15,5	eShop	41.8	115	16	0.17
16	eShop	41	115	16	0.18

Solid carbide | DIN 6537 K | 4×D | h7 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Uni Hero solid carbide high-performance drill

The ultimate in universality and profitability in one tool.
Robust tool design and **convex-concave curved cutting edge design**
for optimum tool stability and chip breakage behaviour in a wide range of materials.
Special flute geometry and **polished flutes**
for ideal chip evacuation and maximum process reliability.
Ultra-smooth TiAlSiN high-performance coating
to effectively reduce wear and the formation of built-up edges.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **no. 122451**.
For **HE shanks:** order with **No. 122450** and **12900HE**.
Articles with prices in brackets: Different delivery time and minimum order quantity is 3 pieces.



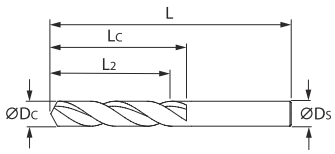
Plain shank DIN 6535 HA 12 2450



Weldon shank DIN 6535 HB 12 2451



Whistle-Notch shank DIN 6535 HE 12 2450+ 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
12 2450	190	200		160	150	140	110	90						90	80	40	130	●		●	●		○

$\varnothing D_C$ h7	12 2450 GARANT Uni Hero solid carbide drill plain shank DIN 6535 HA TiAlSiN	Tolerance nominal ∅	L_2	L	$\varnothing D_s$	< 1100 N f
mm			mm	mm	mm	mm/rev.
2,5	eShop	h7	15.3	55	4	0.07
2,6	eShop	h7	15.1	55	4	0.08
2,7	eShop	h7	15	55	4	0.08
2,8	eShop	h7	14.8	55	4	0.08
2,9	eShop	h7	14.7	55	4	0.08
3	eShop	h7	15.5	62	6	0.09
3,1	eShop	h7	15.4	62	6	0.09
3,2	eShop	h7	15.2	62	6	0.09
3,3	eShop	h7	15.1	62	6	0.09
3,4	eShop	h7	14.9	62	6	0.1
3,5	eShop	h7	14.8	62	6	0.1
3,6	eShop	h7	14.6	62	6	0.1
3,7	eShop	h7	14.5	62	6	0.1
3,8	eShop	h7	18.3	66	6	0.11
3,9	eShop	h7	18.2	66	6	0.11
4	eShop	h7	18	66	6	0.11
4,1	eShop	h7	17.9	66	6	0.11
4,2	eShop	h7	17.7	66	6	0.12
4,3	eShop	h7	17.6	66	6	0.12
4,4	eShop	h7	17.4	66	6	0.12
4,5	eShop	h7	17.3	66	6	0.12
4,6	eShop	h7	17.1	66	6	0.12
4,7	eShop	h7	17	66	6	0.13
4,8	eShop	h7	20.8	66	6	0.13
4,9	eShop	h7	20.7	66	6	0.13
5	eShop	h7	20.5	66	6	0.13
5,1	eShop	h7	20.4	66	6	0.13
5,2	eShop	h7	20.2	66	6	0.14
5,3	eShop	h7	20.1	66	6	0.14
5,4	eShop	h7	19.9	66	6	0.14
5,5	eShop	h7	19.8	66	6	0.14
5,6	eShop	h7	19.6	66	6	0.15
5,7	eShop	h7	19.5	66	6	0.15
5,8	eShop	h7	19.3	66	6	0.15
5,9	eShop	h7	19.2	66	6	0.15
6	eShop	h7	19	66	6	0.15
6,1	eShop	h7	24.9	79	8	0.15
6,2	eShop	h7	24.7	79	8	0.16
6,3	eShop	h7	24.6	79	8	0.16
6,4	eShop	h7	24.4	79	8	0.16
6,5	eShop	h7	24.3	79	8	0.16
6,6	eShop	h7	24.1	79	8	0.16
6,7	eShop	h7	24	79	8	0.17
6,8	eShop	h7	23.8	79	8	0.17
6,9	eShop	h7	23.7	79	8	0.17
7	eShop	h7	23.5	79	8	0.17
7,1	eShop	h7	30.4	79	8	0.17
7,2	eShop	h7	30.2	79	8	0.18
7,3	eShop	h7	30.1	79	8	0.18
7,4	eShop	h7	29.9	79	8	0.18
7,5	eShop	h7	29.8	79	8	0.18

$\varnothing D_C$ h7	12 2450 GARANT Uni Hero solid carbide drill plain shank DIN 6535 HA TiAlSiN	Tolerance nominal ∅	L_2	L	$\varnothing D_s$	< 1100 N f
mm			mm	mm	mm	mm/rev.
7,6	eShop	h7	29.6	79	8	0.18
7,7	eShop	h7	29.5	79	8	0.18
7,8	eShop	h7	29.3	79	8	0.19
7,9	eShop	h7	29.2	79	8	0.19
8	eShop	h7	29	79	8	0.19
8,1	eShop	h7	34.9	89	10	0.19
8,2	eShop	h7	34.7	89	10	0.19
8,3	eShop	h7	34.6	89	10	0.19
8,4	eShop	h7	34.4	89	10	0.2
8,5	eShop	h7	34.3	89	10	0.2
8,6	eShop	h7	34.1	89	10	0.2
8,7	eShop	h7	34	89	10	0.2
8,8	eShop	h7	33.8	89	10	0.2
8,9	eShop	h7	33.7	89	10	0.2
9	eShop	h7	33.5	89	10	0.2
9,1	eShop	h7	33.4	89	10	0.21
9,2	eShop	h7	33.2	89	10	0.21
9,3	eShop	h7	33.1	89	10	0.21
9,4	eShop	h7	32.9	89	10	0.21
9,5	eShop	h7	32.8	89	10	0.21
9,6	eShop	h7	32.6	89	10	0.21
9,7	eShop	h7	32.5	89	10	0.21
9,8	eShop	h7	32.3	89	10	0.22
9,9	eShop	h7	32.2	89	10	0.22
10	eShop	h7	32	89	10	0.22
10,2	eShop	h7	39.7	102	12	0.22
10,3	eShop	h7	39.6	102	12	0.22
10,5	eShop	h7	39.3	102	12	0.22
10,8	eShop	h7	38.8	102	12	0.23
11	eShop	h7	38.5	102	12	0.23
11,2	eShop	h7	38.2	102	12	0.23
11,5	eShop	h7	37.8	102	12	0.24
11,8	eShop	h7	37.3	102	12	0.24
12	eShop	h7	37	102	12	0.24
12,2	(eShop)	h7	41.7	107	14	0.24
12,5	eShop	h7	41.3	107	14	0.25
12,8	(eShop)	h7	40.8	107	14	0.25
13	eShop	h7	40.5	107	14	0.25
13,2	(eShop)	h7	40.2	107	14	0.25
13,5	eShop	h7	39.8	107	14	0.25
13,8	(eShop)	h7	39.3	107	14	0.26
14	eShop	h7	39	107	14	0.26
14,2	(eShop)	h7	43.7	115	16	0.26
14,5	eShop	h7	43.3	115	16	0.26
14,8	(eShop)	h7	42.8	115	16	0.26
15	eShop	h7	42.5	115	16	0.26
15,2	(eShop)	h7	42.2	115	16	0.27
15,3	(eShop)	h7	42.1	115	16	0.27
15,5	(eShop)	h7	41.8	115	16	0.27
15,8	(eShop)	h7	41.3	115	16	0.27
16	eShop	h7	41	115	16	0.27

Solid carbide | DIN 6537 K | 4×D | h7 | 2 | 135° | h6 DIN 6535 HA | HPC | x

Garant GARANT Master Steel Speed solid carbide drill

Developed for use with **very high cutting speeds**. Outstandingly suitable for machines with **low power output** and high speeds.

- Clear reduction in cutting forces due to special cutter geometry.
- Coating for best wear resistance even at high process temperatures.
- Polished flutes for good chip clearance.

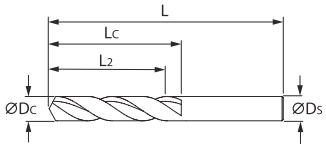
A **slim chisel edge** and the **special arrangement of the 4 guide chamfers** ensure **high positioning and alignment accuracy**. Optimised micro-geometry for increased working life and performance capability.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122416**.
Form **HE:** order with **No. 122415 + 129100HE**.


Plain shank DIN 6535 HA 122415


Weldon shank DIN 6535 HB 122416


Whistle-Notch shank DIN 6535 HE 122415 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K	
122415				170	150	120	110	60								110	100	●

Ø D_C h7 mm	11E 122415 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
2	eShop	17	55	4	0.09
2,1	eShop	16.9	55	4	0.09
2,2	eShop	16.7	55	4	0.09
2,3	eShop	16.6	55	4	0.09
2,4	eShop	16.4	55	4	0.09
2,5	eShop	16.3	55	4	0.09
2,6	eShop	16.1	55	4	0.09
2,7	eShop	16	55	4	0.09
2,8	eShop	15.8	55	4	0.09
2,9	eShop	15.7	55	4	0.09
3	eShop	15.5	62	6	0.12
3,1	eShop	15.4	62	6	0.12
3,2	eShop	15.2	62	6	0.12
3,3	eShop	15.1	62	6	0.12
3,4	eShop	14.9	62	6	0.12
3,5	eShop	14.8	62	6	0.12
3,6	eShop	14.6	62	6	0.12
3,7	eShop	14.5	62	6	0.12
3,8	eShop	18.3	66	6	0.12
3,9	eShop	18.2	66	6	0.12
4	eShop	18	66	6	0.12
4,1	eShop	17.9	66	6	0.16
4,2	eShop	17.7	66	6	0.16
4,3	eShop	17.6	66	6	0.16
4,4	eShop	17.4	66	6	0.16
4,5	eShop	17.3	66	6	0.16
4,7	eShop	17	66	6	0.16
4,8	eShop	20.8	66	6	0.16
4,9	eShop	20.7	66	6	0.16
5	eShop	20.5	66	6	0.16
5,1	eShop	20.4	66	6	0.19
5,2	eShop	20.2	66	6	0.19
5,3	eShop	20.1	66	6	0.19
5,4	eShop	19.9	66	6	0.19
5,5	eShop	19.8	66	6	0.19
5,6	eShop	19.6	66	6	0.19
5,7	eShop	19.5	66	6	0.19
5,8	eShop	19.3	66	6	0.19
5,9	eShop	19.2	66	6	0.19
6	eShop	19	66	6	0.19
6,1	eShop	24.9	79	8	0.22
6,2	eShop	24.7	79	8	0.22
6,3	eShop	24.6	79	8	0.22

Ø D_C h7 mm	11E 122415 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
6,4	eShop	24.4	79	8	0.22
6,5	eShop	24.3	79	8	0.22
6,6	eShop	24.1	79	8	0.22
6,7	eShop	24	79	8	0.22
6,8	eShop	23.8	79	8	0.22
6,9	eShop	23.7	79	8	0.22
7	eShop	23.5	79	8	0.22
7,1	eShop	30.4	79	8	0.22
7,2	eShop	30.2	79	8	0.22
7,3	eShop	30.1	79	8	0.22
7,4	eShop	29.9	79	8	0.22
7,5	eShop	29.8	79	8	0.22
7,6	eShop	29.6	79	8	0.22
7,7	eShop	29.5	79	8	0.22
7,8	eShop	29.3	79	8	0.22
7,9	eShop	29.2	79	8	0.22
8	eShop	29	79	8	0.22
8,1	eShop	34.9	89	10	0.26
8,2	eShop	34.7	89	10	0.26
8,3	eShop	34.6	89	10	0.26
8,4	eShop	34.4	89	10	0.26
8,5	eShop	34.3	89	10	0.26
8,6	eShop	34.1	89	10	0.26
8,7	eShop	34	89	10	0.26
8,8	eShop	33.8	89	10	0.26
9	eShop	33.5	89	10	0.26
9,1	eShop	33.4	89	10	0.26
9,3	eShop	33.1	89	10	0.26
9,4	eShop	32.9	89	10	0.26
9,5	eShop	32.8	89	10	0.26
9,7	eShop	32.5	89	10	0.26
9,8	eShop	32.3	89	10	0.26
9,9	eShop	32.2	89	10	0.26
10	eShop	32	89	10	0.26
10,1	eShop	39.9	102	12	0.28
10,2	eShop	39.7	102	12	0.28
10,3	eShop	39.6	102	12	0.28
10,4	eShop	39.4	102	12	0.28
10,5	eShop	39.3	102	12	0.28
10,6	eShop	39.1	102	12	0.28
10,7	eShop	39	102	12	0.28
10,8	eShop	38.8	102	12	0.28
10,9	eShop	38.7	102	12	0.28

Ø D_C h7 mm	11E 122415 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
11	eShop	38.5	102	12	0.28
11,1	eShop	38.4	102	12	0.28
11,2	eShop	38.2	102	12	0.28
11,3	eShop	38.1	102	12	0.28
11,4	eShop	37.9	102	12	0.28
11,5	eShop	37.8	102	12	0.28
11,6	eShop	37.6	102	12	0.28
11,7	eShop	37.5	102	12	0.28
11,8	eShop	37.3	102	12	0.28
11,9	eShop	37.2	102	12	0.28
12	eShop	37	102	12	0.28
12,2	eShop	41.7	107	14	0.31
12,5	eShop	41.3	107	14	0.31
12,8	eShop	40.8	107	14	0.31
13	eShop	40.5	107	14	0.31
13,2	eShop	40.2	107	14	0.31
13,5	eShop	39.8	107	14	0.31
13,8	eShop	39.3	107	14	0.31
14	eShop	39	107	14	0.31
14,2	eShop	43.7	115	16	0.34
14,5	eShop	43.3	115	16	0.34
14,8	eShop	42.8	115	16	0.34
15	eShop	42.5	115	16	0.34
15,2	eShop	42.2	115	16	0.34
15,8	eShop	41.3	115	16	0.34
16	eShop	41	115	16	0.34
16,2	eShop	48.7	123	18	0.35
16,5	eShop	48.3	123	18	0.35
16,8	eShop	47.8	123	18	0.35
17	eShop	47.5	123	18	0.35
17,5	eShop	46.8	123	18	0.35
17,8	eShop	46.3	123	18	0.35
18	eShop	46	123	18	0.35
18,2	eShop	51.7	131	20	0.38
18,5	eShop	51.3	131	20	0.38
18,8	eShop	50.8	131	20	0.38
19	eShop	50.5	131	20	0.38
19,2	eShop	50.2	131	20	0.38
19,5	eShop	49.8	131	20	0.38
19,8	eShop	49.3	131	20	0.38
20	eShop	49	131	20	0.38

Solid carbide | DIN 6537 K | 4×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Master Steel Speed solid carbide drill

Developed for use with **very high cutting speeds**. Outstandingly suitable for machines with **low power output** and high speeds.

- Clear reduction in cutting forces due to special cutter geometry.
- Coating for best wear resistance even at high process temperatures.
- Polished flutes for good chip clearance.

A **slim chisel edge** and the **special arrangement of the 4 guide chamfers** ensure **high positioning and alignment accuracy**. Optimised micro-geometry for increased working life and performance capability.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Versions HB and HE supplied at the same price as HA.
Form **HB:** state **No.122426** on the order.
Form **HE:** order with **No.122425 + 129100HE**.



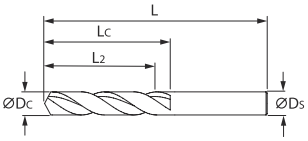
Plain shank DIN 6535 HA 122425



Weldon shank DIN 6535 HB 122426



Whistle-Notch shank DIN 6535 HE 122425 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
122425				220	200	180	170	90						75		160	130	●		●	●		

Ø D_C h7	11E 122425 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 1100 N f
mm		mm	mm	mm	mm/rev.
2	eShop	17	55	4	0.09
2,05	eShop	16.9	55	4	0.09
2,1	eShop	16.9	55	4	0.09
2,2	eShop	16.7	55	4	0.09
2,3	eShop	16.6	55	4	0.09
2,4	eShop	16.4	55	4	0.09
2,5	eShop	16.3	55	4	0.09
2,6	eShop	16.1	55	4	0.09
2,7	eShop	16	55	4	0.09
2,8	eShop	15.8	55	4	0.09
2,9	eShop	15.7	55	4	0.09
3	eShop	15.5	62	6	0.12
3,1	eShop	15.4	62	6	0.12
3,2	eShop	15.2	62	6	0.12
3,3	eShop	15.1	62	6	0.12
3,4	eShop	14.9	62	6	0.12
3,5	eShop	14.8	62	6	0.12
3,6	eShop	14.6	62	6	0.12
3,7	eShop	14.5	62	6	0.12
3,8	eShop	18.3	66	6	0.12
3,9	eShop	18.2	66	6	0.12
4	eShop	18	66	6	0.12
4,1	eShop	17.9	66	6	0.16
4,2	eShop	17.7	66	6	0.16
4,3	eShop	17.6	66	6	0.16
4,4	eShop	17.4	66	6	0.16
4,5	eShop	17.3	66	6	0.16
4,6	eShop	17.1	66	6	0.16
4,65	eShop	17.1	66	6	0.16
4,7	eShop	17	66	6	0.16
4,8	eShop	20.8	66	6	0.16
4,9	eShop	20.7	66	6	0.16
5	eShop	20.5	66	6	0.16
5,1	eShop	20.4	66	6	0.19
5,2	eShop	20.2	66	6	0.19
5,3	eShop	20.1	66	6	0.19
5,4	eShop	19.9	66	6	0.19
5,5	eShop	19.8	66	6	0.19
5,55	eShop	19.7	66	6	0.19
5,6	eShop	19.6	66	6	0.19
5,7	eShop	19.5	66	6	0.19
5,8	eShop	19.3	66	6	0.19
5,9	eShop	19.2	66	6	0.19
6	eShop	19	66	6	0.19

Ø D_C h7	11E 122425 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 1100 N f
mm		mm	mm	mm	mm/rev.
6,1	eShop	24.9	79	8	0.22
6,2	eShop	24.7	79	8	0.22
6,3	eShop	24.6	79	8	0.22
6,4	eShop	24.4	79	8	0.22
6,5	eShop	24.3	79	8	0.22
6,6	eShop	24.3	79	8	0.22
6,7	eShop	24	79	8	0.22
6,8	eShop	23.8	79	8	0.22
6,9	eShop	23.7	79	8	0.22
7	eShop	23.5	79	8	0.22
7,1	eShop	30.4	79	8	0.22
7,2	eShop	30.2	79	8	0.22
7,3	eShop	30.1	79	8	0.22
7,4	eShop	29.9	79	8	0.22
7,45	eShop	29.9	79	8	0.22
7,5	eShop	29.8	79	8	0.22
7,6	eShop	29.6	79	8	0.22
7,7	eShop	29.5	79	8	0.22
7,8	eShop	29.3	79	8	0.22
7,9	eShop	29.2	79	8	0.22
8	eShop	29	79	8	0.22
8,1	eShop	34.9	89	10	0.26
8,2	eShop	34.7	89	10	0.26
8,3	eShop	34.6	89	10	0.26
8,4	eShop	34.4	89	10	0.26
8,5	eShop	34.3	89	10	0.26
8,6	eShop	34.1	89	10	0.26
8,7	eShop	34	89	10	0.26
8,8	eShop	33.8	89	10	0.26
8,9	eShop	33.7	89	10	0.26
9	eShop	33.5	89	10	0.26
9,1	eShop	33.4	89	10	0.26
9,2	eShop	33.2	89	10	0.26
9,3	eShop	33.1	89	10	0.26
9,4	eShop	32.9	89	10	0.26
9,5	eShop	32.8	89	10	0.26
9,6	eShop	32.6	89	10	0.26
9,7	eShop	32.5	89	10	0.26
9,8	eShop	32.3	89	10	0.26
9,9	eShop	32.2	89	10	0.26
10	eShop	32	89	10	0.26
10,1	eShop	39.9	102	12	0.28
10,2	eShop	39.7	102	12	0.28
10,3	eShop	39.6	102	12	0.28

Ø D_C h7	11E 122425 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 1100 N f
mm		mm	mm	mm	mm/rev.
10,4	eShop	10.4	102	12	0.28
10,5	eShop	39.3	102	12	0.28
10,6	eShop	39.1	102	12	0.28
10,7	eShop	39	102	12	0.28
10,8	eShop	38.8	102	12	0.28
11	eShop	38.5	102	12	0.28
11,1	eShop	38.4	102	12	0.28
11,2	eShop	38.2	102	12	0.28
11,5	eShop	37.8	102	12	0.28
11,6	eShop	37.6	102	12	0.28
11,7	eShop	37.5	102	12	0.28
11,8	eShop	37.3	102	12	0.28
11,9	eShop	37.2	102	12	0.28
12	eShop	37	102	12	0.28
12,2	eShop	41.7	107	14	0.31
12,5	eShop	41.3	107	14	0.31
12,8	eShop	40.8	107	14	0.31
13	eShop	40.5	107	14	0.31
13,2	eShop	40.2	107	14	0.31
13,5	eShop	39.8	107	14	0.31
14	eShop	39	107	14	0.31
14,2	eShop	43.7	115	16	0.34
14,5	eShop	43.7	115	16	0.34
14,8	eShop	42.8	115	16	0.34
15	eShop	42.5	115	16	0.34
15,2	eShop	42.2	115	16	0.34
15,5	eShop	41.8	115	16	0.34
15,8	eShop	41.3	115	16	0.34
16	eShop	41	115	16	0.34
16,2	eShop	48.7	123	18	0.35
16,5	eShop	48.3	123	18	0.35
16,8	eShop	47.8	123	18	0.35
17	eShop	47.5	123	18	0.35
17,2	eShop	47.2	123	18	0.35
17,5	eShop	46.8	123	18	0.35
17,8	eShop	46.8	123	18	0.35
18	eShop	46	123	18	0.35
18,2	eShop	51.7	131	20	0.38
18,5	eShop	51.3	131	20	0.38
19	eShop	50.5	131	20	0.38
19,5	eShop	49.8	131	20	0.38
19,8	eShop	49.3	131	20	0.38
20	eShop	49	131	20	0.38

Solid carbide | DIN 6537 K | 4×D | h7 | 3 | 145° | h6 DIN 6535 HA | 25 bar | HPC

Garant GARANT Master Steel Feed solid carbide drill

3-flute drill, specially developed for **use at very high feed rates**. Extremely suitable for **machines with high power** output and stable machining conditions.

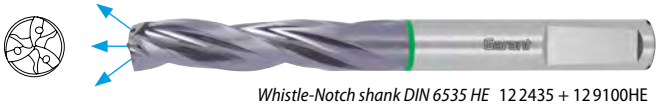
- Special point geometry with stable cutting edges and large clearance at the centre permits very high feed rates.
- The patented point geometry is optimised for chip flow and generates low cutting forces with good chip breakage.
- With 145° point angle for low burr formation when drilling through holes.

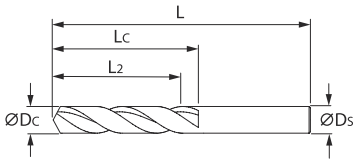
The **sector-leading technology of the chisel point** guarantees **optimum self-centring behaviour** and permits spot drilling on irregular surfaces.
3 guide chamfers guarantee a stable exit from the hole and an exact roundness of the hole.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **No. 122436**.
For **HE shanks:** use order **No. 122435 + 129100HE**.


Plain shank DIN 6535 HA 122435


Weldon shank DIN 6535 HB 122436


Whistle-Notch shank DIN 6535 HE 122435 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K						
122435				160	140	130	110	90	60				60	50	40	130	80	●		●	●		

Ø D_C h7 (mm or inch)	11E 122435 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
4	eShop	18	66	6	0.28
4,1	eShop	17.9	66	6	0.28
4,2	eShop	17.7	66	6	0.28
4,3	eShop	17.6	66	6	0.28
4,4	eShop	17.4	66	6	0.28
4,5	eShop	17.3	66	6	0.28
4,6	eShop	17.1	66	6	0.28
4,65	eShop	17.1	66	6	0.28
4,7	eShop	17	66	6	0.28
3/16	eShop	17	66	6	0.28
4,8	eShop	20.8	66	6	0.28
4,9	eShop	20.7	66	6	0.28
5	eShop	20.5	66	6	0.28
5,1	eShop	20.4	66	6	0.32
5,2	eShop	20.2	66	6	0.32
5,3	eShop	20.1	66	6	0.32
5,4	eShop	19.9	66	6	0.32
5,5	eShop	19.8	66	6	0.32
5,55	eShop	19.7	66	6	0.32
7/32	eShop	19.7	66	6	0.32
5,6	eShop	19.6	66	6	0.32
5,7	eShop	19.5	66	6	0.32
5,8	eShop	19.3	66	6	0.32
5,9	eShop	19.2	66	6	0.32
6	eShop	19	66	6	0.32
6,1	eShop	24.9	79	8	0.37
6,2	eShop	24.7	79	8	0.37
6,3	eShop	24.6	79	8	0.37
1/4	eShop	24.6	79	8	0.37
6,35	eShop	24.5	79	8	0.37
6,4	eShop	24.4	79	8	0.37
6,5	eShop	24.3	79	8	0.37
6,6	eShop	24.1	79	8	0.37
6,7	eShop	24	79	8	0.37
6,8	eShop	23.8	79	8	0.37
6,9	eShop	23.7	79	8	0.37
7	eShop	23.5	79	8	0.37
7,1	eShop	30.4	79	8	0.37
9/32	eShop	30.4	79	8	0.37
7,2	eShop	30.2	79	8	0.37
7,3	eShop	30.1	79	8	0.37
7,4	eShop	29.9	79	8	0.37
7,45	eShop	29.9	79	8	0.37
7,5	eShop	29.8	79	8	0.37

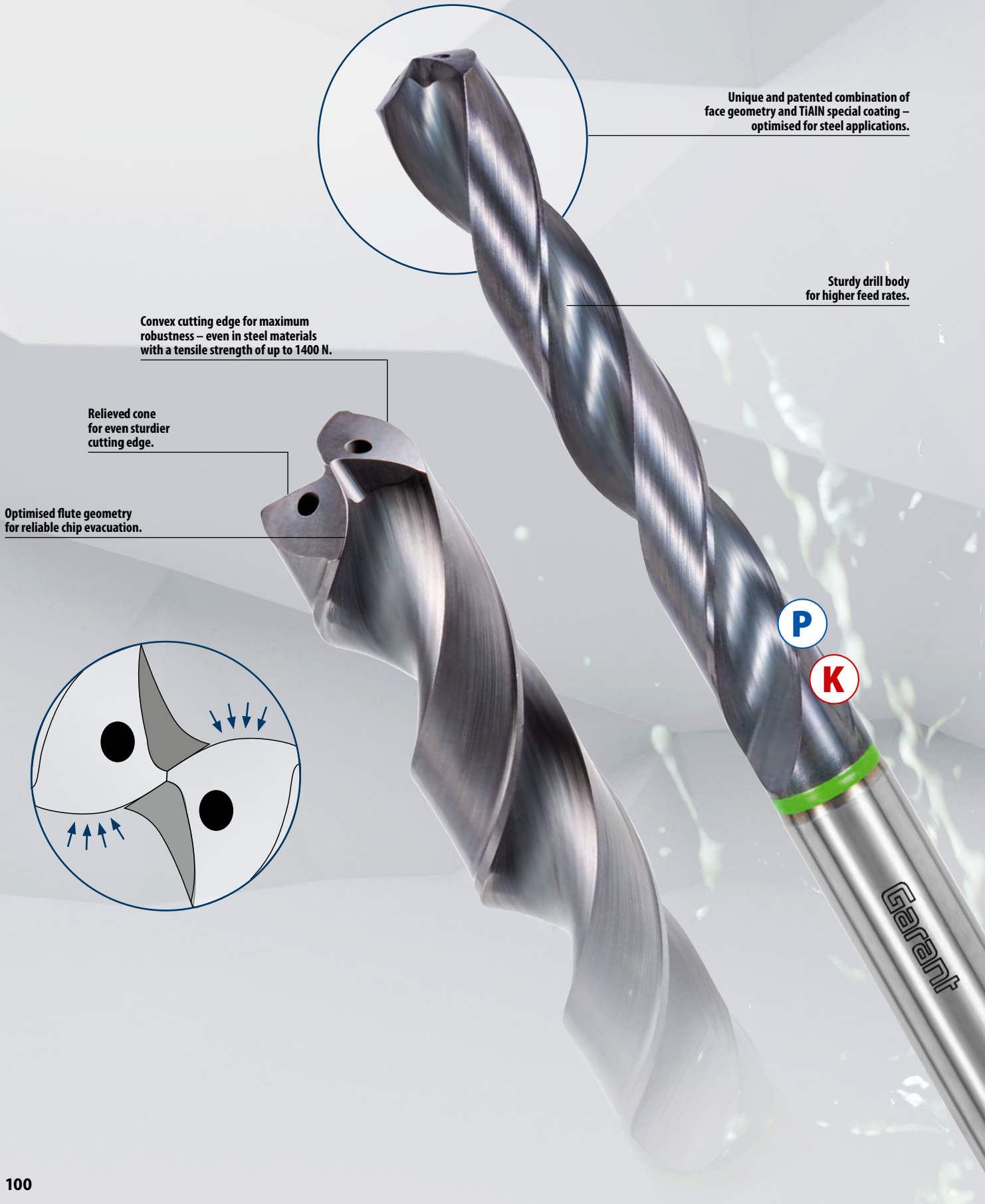
Ø D_C h7 (mm or inch)	11E 122435 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
7,6	eShop	29.6	79	8	0.37
7,7	eShop	29.5	79	8	0.37
7,8	eShop	29.3	79	8	0.37
7,9	eShop	29.2	79	8	0.37
5/16	eShop	29.2	79	8	0.37
8	eShop	29	79	8	0.37
8,1	eShop	34.9	89	10	0.44
8,2	eShop	34.7	89	10	0.44
8,3	eShop	34.6	89	10	0.44
8,4	eShop	34.4	89	10	0.44
8,5	eShop	34.3	89	10	0.44
8,6	eShop	34.1	89	10	0.44
8,7	eShop	34	89	10	0.44
11/32	eShop	34	89	10	0.44
8,8	eShop	33.8	89	10	0.44
8,9	eShop	33.7	89	10	0.44
9	eShop	33.5	89	10	0.44
9,1	eShop	33.4	89	10	0.44
9,2	eShop	33.2	89	10	0.44
9,3	eShop	33.1	89	10	0.44
9,35	eShop	32.9	89	10	0.44
9,4	eShop	32.9	89	10	0.44
9,5	eShop	32.8	89	10	0.44
3/8	eShop	32.8	89	10	0.44
9,6	eShop	32.6	89	10	0.44
9,7	eShop	32.5	89	10	0.44
9,8	eShop	32.3	89	10	0.44
9,9	eShop	32.2	89	10	0.44
10	eShop	32	89	10	0.44
10,1	eShop	39.9	102	12	0.5
10,2	eShop	39.7	102	12	0.5
10,3	eShop	39.6	102	12	0.5
13/32	eShop	39.6	102	12	0.5
10,4	eShop	39.4	102	12	0.5
10,5	eShop	39.3	102	12	0.5
10,6	eShop	39.1	102	12	0.5
10,7	eShop	39	102	12	0.5
10,8	eShop	38.8	102	12	0.5
10,9	eShop	38.7	102	12	0.5
11	eShop	38.5	102	12	0.5
11,1	eShop	38.4	102	12	0.5
7/16	eShop	38.4	102	12	0.5
11,2	eShop	38.2	102	12	0.5
11,3	eShop	38.1	102	12	0.5

Ø D_C h7 (mm or inch)	11E 122435 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
11,4	eShop	37.9	102	12	0.5
11,5	eShop	37.8	102	12	0.5
11,6	eShop	37.6	102	12	0.5
11,7	eShop	37.5	102	12	0.5
11,8	eShop	37.3	102	12	0.5
11,9	eShop	37.2	102	12	0.5
12	eShop	37	102	12	0.5
12,2	eShop	41.7	107	14	0.56
12,5	eShop	41.3	107	14	0.56
1/2	eShop	41.3	107	14	0.56
12,7	eShop	40.95	107	14	0.56
12,8	eShop	40.8	107	14	0.56
13	eShop	40.5	107	14	0.56
13,2	eShop	40.2	107	14	0.56
13,5	eShop	39.8	107	14	0.56
13,8	eShop	39.3	107	14	0.56
14	eShop	39	107	14	0.56
14,2	eShop	43.7	115	16	0.61
9/16	eShop	43.7	115	16	0.61
14,5	eShop	43.3	115	16	0.61
14,8	eShop	42.8	115	16	0.61
15	eShop	42.5	115	16	0.61
15,2	eShop	42.2	115	16	0.61
15,5	eShop	41.8	115	16	0.61
15,8	eShop	41.3	115	16	0.61
5/8	eShop	41.3	115	16	0.61
16	eShop	41	115	16	0.61
16,2	eShop	48.7	123	18	0.66
16,5	eShop	48.3	123	18	0.66
16,8	eShop	47.8	123	18	0.66
17	eShop	47.5	123	18	0.66
17,2	eShop	47.2	123	18	0.66
17,5	eShop	46.8	123	18	0.66
17,8	eShop	46.3	123	18	0.66
18	eShop	46	123	18	0.66
18,2	eShop	51.7	131	20	0.69
18,5	eShop	51.3	131	20	0.69
18,8	eShop	50.8	131	20	0.69
19	eShop	50.5	131	20	0.69
19,2	eShop	50.2	131	20	0.69
19,5	eShop	49.8	131	20	0.69
19,8	eShop	49.3	131	20	0.69
20	eShop	49	131	20	0.69

Garant MASTER STEEL

MASTERFUL PERFORMANCE IN STEEL

The latest technology meets the tried-and-tested sturdiness and reliability of a convex cutting edge.





The initial portfolio

- Diameter range:
  3 mm* to 20 mm.
- Types:
  – 4×D without internal cooling (12 2470)
  – 4×D with internal cooling (12 2475)
  – 6×D with internal cooling (12 2761)
  – 8×D with internal cooling (12 3040)
  – 12×D with internal cooling (12 3240)
- Convenient tool upgrade
  as the **dimensions**
  and **list price are the same**
  as the old tool!

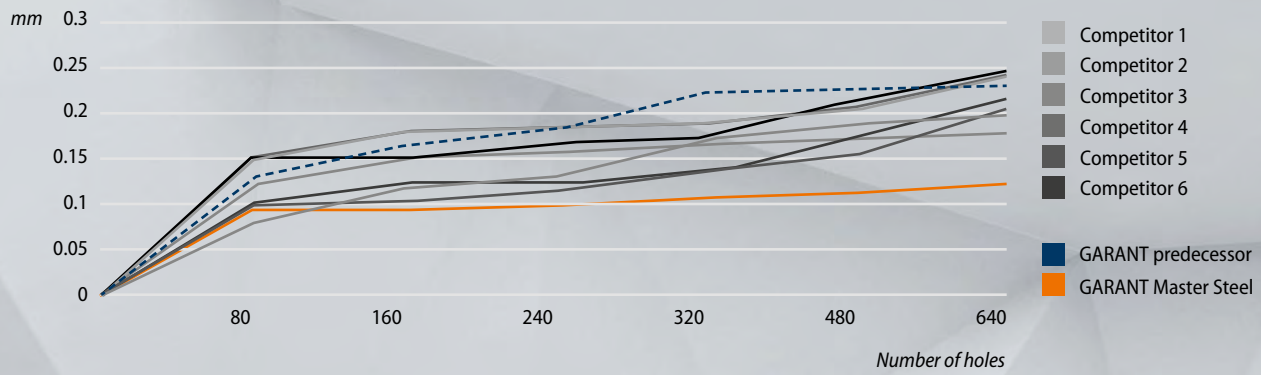
Advantages

- Up to **200% longer tool life**
  in comparison with the competition.
- Up to **50% longer tool life**
  compared with the previous product.

… and with up to
30% higher metal removal rate!

12

Development of wear in 1.2379 up to 640 holes



Garant MASTER STEEL MICRO



* Use the GARANT Master Steel Micro solid carbide micro-drill (see pages 83 – 86) for efficient machining of steel in diameters ranging from 0.8 mm to 3 mm.

Solid carbide | DIN 6537 K | 4×D | h7 | 2 | 140° | h6 DIN 6535 HA | HPC | x

Garant GARANT Master Steel solid carbide high-performance drill

Robust drill design and optimised special point geometry for the **best possible chip formation and reliable chip breakage** with **higher feed rates at the same time. Advanced micro-geometry, convex** cutting edge and **relieved cone**to provide additional stability for the main cutting edge. **Optimised flute geometry and patented face geometry** for **reliable chip evacuation** in steel materials and cast material. **High-performance coating** of the latest generation.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
HB shank: order with **No. 122471 / 122476**.
HE shank: order with **No. 122470 / 122475** and **129100HE**.

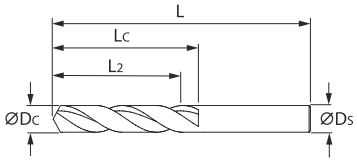


Plain shank DIN 6535HA 12 2470

25 bar



Plain shank DIN 6535HA 12 2475

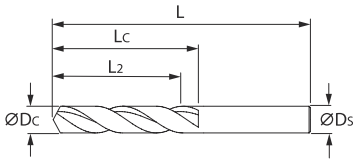


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
12 2470				115	105	100	70	60								110	75	●		●		●	
12 2475				170	155	145	130	110	60					55	45	130	90	●		●	●		●

Ø D_C h7	11E 12 2470	11E 12 2475	L_2	L	Ø D_s	< 1100 N f
	GARANT Master Steel solid carbide HPC drill, plain shank DIN 6535 HA					
mm	TiAlN	TiAlN	mm	mm	mm	mm/rev.
1	eShop	–	5.5	45	4	0.05
1,1	eShop	–	5.4	45	4	0.05
1,2	eShop	–	5.2	45	4	0.06
1,3	eShop	–	5.1	45	4	0.06
1,4	eShop	–	4.9	45	4	0.06
1,5	eShop	–	11.8	55	4	0.07
1,6	eShop	–	11.6	55	4	0.07
1,7	eShop	–	11.5	55	4	0.07
1,8	eShop	–	11.3	55	4	0.08
1,9	eShop	–	11.2	55	4	0.08
2	eShop	–	17	55	4	0.08
2,1	eShop	–	16.9	55	4	0.09
2,2	eShop	–	16.7	55	4	0.09
2,3	eShop	–	16.6	55	4	0.09
2,4	eShop	–	16.4	55	4	0.1
2,5	eShop	–	16.3	55	4	0.1
2,6	eShop	–	16.1	55	4	0.1
2,7	eShop	–	16	55	4	0.11
2,8	eShop	–	15.8	55	4	0.11
2,9	eShop	–	15.7	55	4	0.11
3	eShop	eShop	15.5	62	6	0.12
3,1	eShop	eShop	15.4	62	6	0.12
3,2	eShop	eShop	15.2	62	6	0.12
3,3	eShop	eShop	15.1	62	6	0.13
3,4	eShop	eShop	14.9	62	6	0.13
3,5	eShop	eShop	14.8	62	6	0.13
3,6	eShop	–	14.6	62	6	0.14
3,7	eShop	eShop	14.5	62	6	0.14
3,8	eShop	eShop	18.3	66	6	0.14
3,9	eShop	eShop	18.2	66	6	0.15
4	eShop	eShop	18	66	6	0.15
4,1	eShop	eShop	17.9	66	6	0.15
4,2	eShop	eShop	17.7	66	6	0.16
4,3	eShop	eShop	17.6	66	6	0.16
4,4	eShop	–	17.4	66	6	0.16
4,5	eShop	eShop	17.3	66	6	0.16
4,6	eShop	–	17.1	66	6	0.17
4,8	eShop	eShop	20.8	66	6	0.17
4,9	eShop	–	20.7	66	6	0.18
5	eShop	eShop	20.5	66	6	0.18
5,1	eShop	eShop	20.4	66	6	0.18
5,2	eShop	eShop	20.2	66	6	0.18
5,3	eShop	eShop	20.1	66	6	0.19
5,4	eShop	–	19.9	66	6	0.19
5,5	eShop	eShop	19.8	66	6	0.19
5,6	eShop	–	19.6	66	6	0.2
5,7	eShop	eShop	19.5	66	6	0.2
5,8	eShop	eShop	19.3	66	6	0.2
5,9	eShop	–	19.2	66	6	0.2
6	eShop	eShop	19	66	6	0.21
6,1	eShop	–	24.9	79	8	0.21
6,2	eShop	eShop	24.7	79	8	0.21
6,3	eShop	eShop	24.6	79	8	0.22
6,4	eShop	–	24.4	79	8	0.22

Ø D_C h7	11E 12 2470	11E 12 2475	L_2	L	Ø D_s	< 1100 N f
	GARANT Master Steel solid carbide HPC drill, plain shank DIN 6535 HA					
mm	TiAlN	TiAlN	mm	mm	mm	mm/rev.
6,5	eShop	eShop	24.3	79	8	0.22
6,6	eShop	–	24.1	79	8	0.22
6,8	eShop	eShop	23.8	79	8	0.23
6,9	eShop	eShop	23.7	79	8	0.23
7	eShop	eShop	23.5	79	8	0.23
7,1	eShop	–	30.4	79	8	0.24
7,2	eShop	eShop	30.2	79	8	0.24
7,3	eShop	eShop	30.1	79	8	0.24
7,5	eShop	eShop	29.8	79	8	0.25
7,8	eShop	eShop	29.3	79	8	0.25
7,9	eShop	–	29.2	79	8	0.26
8	eShop	eShop	29	79	8	0.26
8,1	eShop	eShop	34.9	89	10	0.26
8,2	eShop	eShop	34.7	89	10	0.26
8,3	eShop	eShop	34.6	89	10	0.27
8,4	eShop	–	34.4	89	10	0.27
8,5	eShop	eShop	34.3	89	10	0.27
8,6	eShop	–	34.1	89	10	0.27
8,7	eShop	–	34	89	10	0.28
8,8	eShop	eShop	33.8	89	10	0.28
9	eShop	eShop	33.5	89	10	0.28
9,1	eShop	–	33.4	89	10	0.29
9,2	eShop	eShop	33.2	89	10	0.29
9,3	eShop	eShop	33.1	89	10	0.29
9,5	eShop	eShop	32.8	89	10	0.29
9,8	eShop	eShop	32.3	89	10	0.3
10	eShop	eShop	32	89	10	0.3
10,2	eShop	eShop	39.7	102	12	0.31
10,3	eShop	eShop	39.6	102	12	0.31
10,5	eShop	eShop	39.3	102	12	0.32
10,8	eShop	eShop	38.8	102	12	0.32
11	eShop	eShop	38.5	102	12	0.33
11,2	eShop	eShop	38.2	102	12	0.33
11,5	eShop	eShop	37.8	102	12	0.33
11,8	eShop	eShop	37.3	102	12	0.34
12	eShop	eShop	37	102	12	0.34
12,2	eShop	eShop	41.7	107	14	0.35
12,5	eShop	eShop	41.3	107	14	0.35
13	eShop	eShop	40.5	107	14	0.36
13,5	eShop	eShop	39.8	107	14	0.37
14	eShop	eShop	39	107	14	0.38
14,2	eShop	eShop	43.7	115	16	0.38
14,5	eShop	eShop	43.3	115	16	0.38
15	eShop	eShop	42.5	115	16	0.39
15,5	eShop	eShop	41.8	115	16	0.4
16	eShop	eShop	41	115	16	0.4
16,5	eShop	eShop	48.3	123	18	0.41
17	eShop	eShop	47.5	123	18	0.41
17,5	eShop	eShop	46.8	123	18	0.42
18	eShop	eShop	46	123	18	0.42
18,5	eShop	eShop	51.3	131	20	0.43
19	eShop	eShop	50.5	131	20	0.43
19,5	eShop	eShop	49.8	131	20	0.43
20	eShop	eShop	49	131	20	0.44

Solid carbide | DIN 6537 K | 4×D | h7 | 2 | 140° | h6 DIN 6535 HA | HPC | x



HOLEX Pro Steel solid carbide high-performance drill

Straight major cutting edges and a **special flute profile** ensure a good chip evacuation. The robust cutter geometry ensures high-performance drilling with good process reliability.
A wide range of applications in steel materials thanks to a combination of tough ultra-fine grain carbide and an extremely wear-resistant coating.
Up to Ø 1.9 with 4 facets, from Ø 2 with relieved cone.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
Versions with HB and HE shank available at the same price as HA.
For **HB shanks:** use order **no. 122502**.
For **HE shanks:** use order **No. 122503**.



Plain shank DIN 6535 HA 12 2501



Weldon shank DIN 6535 HB 12 2502



Whistle-Notch shank DIN 6535 HE 12 2503

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
12 2501				115	105	85	80	60						30	25	90	55	●		●		●	

Ø D_c h7 (mm or inch)	12 2501 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
1	eShop	4.5	45	4	0.05
1,1	eShop	4.9	45	4	0.05
1,2	eShop	5.2	45	4	0.05
1,3	eShop	6.1	45	4	0.05
1,4	eShop	6.4	45	4	0.05
1,5	eShop	6.8	50	4	0.05
1/16	eShop ■	7.1	50	4	0.05
1,6	eShop	7.1	50	4	0.05
1,7	eShop	7.5	50	4	0.07
1,8	eShop	8.3	50	4	0.07
1,9	eShop	8.7	50	4	0.07
2	eShop	9	50	4	0.07
2,1	eShop	9.4	55	4	0.07
2,2	eShop	9.7	55	4	0.07
2,3	eShop	10.6	55	4	0.09
3/32	eShop ■	10.9	55	4	0.09
2,4	eShop	10.9	55	4	0.09
2,5	eShop	11.3	55	4	0.09
2,6	eShop	11.6	55	4	0.09
2,7	eShop	12	55	4	0.11
2,8	eShop	12.8	55	4	0.11
2,9	eShop	13.2	55	4	0.11
3	eShop	15.5	62	6	0.11
3,1	eShop	15.4	62	6	0.11
1/8	eShop ■	15.3	62	6	0.11
3,2	eShop	15.2	62	6	0.11
3,3	eShop	15.1	62	6	0.11
3,4	eShop	14.9	62	6	0.11
3,5	eShop	14.8	62	6	0.11
3,6	eShop	14.6	62	6	0.11

Ø D_c h7 (mm or inch)	12 2501 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
3,7	eShop	14.5	62	6	0.11
3,8	eShop	18.3	66	6	0.11
W/L-25	eShop ■	18.3	66	6	0.11
3,9	eShop	18.2	66	6	0.11
5/32	eShop ■	18.5	66	6	0.11
4	eShop	18	66	6	0.14
4,1	eShop	17.9	66	6	0.14
4,2	eShop	17.7	66	6	0.14
4,3	eShop	17.6	66	6	0.14
4,4	eShop	17.4	66	6	0.14
4,5	eShop	17.3	66	6	0.14
W/L-16	eShop ■	17.3	66	6	0.14
4,6	eShop	17.1	66	6	0.14
4,7	eShop	17	66	6	0.14
3/16	eShop ■	20.9	66	6	0.14
4,8	eShop	20.8	66	6	0.14
4,9	eShop	20.7	66	6	0.14
5	eShop	20.5	66	6	0.14
5,1	eShop	20.4	66	6	0.14
5,2	eShop	20.2	66	6	0.14
5,3	eShop	20.1	66	6	0.14
5,4	eShop	19.9	66	6	0.14
5,5	eShop	19.8	66	6	0.14
7/32	eShop ■	19.7	66	6	0.14
5,6	eShop	19.6	66	6	0.14
5,7	eShop	19.5	66	6	0.14
5,8	eShop	19.3	66	6	0.14
5,9	eShop	19.2	66	6	0.14
6	eShop	19	66	6	0.14
6,1	eShop	24.9	79	8	0.18

Ø D_c h7 (mm or inch)	12F 12 2501 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
W/L-C	eShop ■	24.8	79	8	0.18
6,15	eShop	24.8	79	8	0.18
6,2	eShop	24.7	79	8	0.18
6,3	eShop	24.6	79	8	0.18
1/4	eShop ■	24.5	79	8	0.18
6,35	eShop	24.5	79	8	0.18
6,4	eShop	24.4	79	8	0.18
6,5	eShop	24.3	79	8	0.18
6,6	eShop	24.1	79	8	0.18
6,7	eShop	24	79	8	0.18
6,8	eShop	23.8	79	8	0.18
6,9	eShop	23.7	79	8	0.18
7	eShop	23.5	79	8	0.18
7,1	eShop	30.4	79	8	0.18
9/32	eShop ■	30.3	79	8	0.18
7,2	eShop	30.2	79	8	0.18
7,3	eShop	30.1	79	8	0.18
7,4	eShop	29.9	79	8	0.18
7,5	eShop	29.8	79	8	0.18
7,6	eShop	29.6	79	8	0.18
7,7	eShop	29.5	79	8	0.18
7,8	eShop	29.3	79	8	0.18
7,9	eShop	29.2	79	8	0.18
5/16	eShop ■	29.1	79	8	0.18
8	eShop	29	79	8	0.18
8,1	eShop	34.9	89	10	0.2
8,2	eShop	34.7	89	10	0.2
8,3	eShop	34.6	89	10	0.2
8,4	eShop	34.4	89	10	0.2
8,5	eShop	34.3	89	10	0.2
8,6	eShop	34.1	89	10	0.2
8,7	eShop	34	89	10	0.2
11/32	eShop ■	33.9	89	10	0.2
8,8	eShop	33.8	89	10	0.2
8,9	eShop	33.7	89	10	0.2
9	eShop	33.5	89	10	0.2
9,1	eShop	33.4	89	10	0.22
9,2	eShop	33.2	89	10	0.22
9,3	eShop	33.1	89	10	0.22
9,4	eShop	32.9	89	10	0.22
9,5	eShop	32.8	89	10	0.22
3/8	eShop ■	32.7	89	10	0.22
9,6	eShop	32.6	89	10	0.22
9,7	eShop	32.5	89	10	0.22
9,8	eShop	32.3	89	10	0.22
9,9	eShop	32.2	89	10	0.22
10	eShop	32	89	10	0.22
10,1	eShop	39.9	102	12	0.22
10,2	eShop	39.7	102	12	0.22
10,3	eShop	39.6	102	12	0.22
13/32	eShop ■	39.5	102	12	0.22
10,4	eShop	39.4	102	12	0.22
10,5	eShop	39.3	102	12	0.22
10,6	eShop	39.1	102	12	0.22
10,7	eShop	39	102	12	0.22
10,8	eShop	38.8	102	12	0.22
10,9	eShop	38.7	102	12	0.22

Ø D_c h7 (mm or inch)	12F 12 2501 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
11	eShop	38.5	102	12	0.22
11,1	eShop	38.4	102	12	0.22
7/16	eShop ■	38.3	102	12	0.22
11,2	eShop	38.2	102	12	0.22
11,3	eShop	38.1	102	12	0.22
11,4	eShop	37.9	102	12	0.22
11,5	eShop ■	37.8	102	12	0.22
11,6	eShop	37.6	102	12	0.22
11,7	eShop	37.5	102	12	0.22
11,8	eShop	37.3	102	12	0.22
11,9	eShop	37.2	102	12	0.22
12	eShop	37	102	12	0.22
12,2	eShop	41.7	107	14	0.26
12,5	eShop	41.3	107	14	0.26
1/2	eShop ■	40.1	107	14	0.26
12,7	eShop	40.1	107	14	0.26
12,8	eShop	40.8	107	14	0.26
13	eShop	40.5	107	14	0.26
13,2	eShop	40.2	107	14	0.26
13,5	eShop	39.8	107	14	0.26
13,8	eShop	39.3	107	14	0.26
14	eShop	39	107	14	0.26
14,2	eShop	43.7	115	16	0.26
9/16	eShop ■	43.6	115	16	0.26
14,5	eShop	43.3	115	16	0.26
14,8	eShop	42.8	115	16	0.26
15	eShop	42.5	115	16	0.26
19/32	eShop ■	42.4	115	16	0.26
15,1	eShop	42.4	115	16	0.26
15,2	eShop	42.2	115	16	0.26
15,5	eShop	41.8	115	16	0.26
15,8	eShop	41.3	115	16	0.26
5/8	eShop ■	41.2	115	16	0.26
16	eShop	41	115	16	0.26
16,2	eShop	48.7	123	18	0.28
16,5	eShop	48.3	123	18	0.28
21/32	eShop ■	48	123	18	0.28
16,8	eShop	47.8	123	18	0.28
17	eShop	47.5	123	18	0.28
17,2	eShop	47.2	123	18	0.28
17,3	eShop	47.2	123	18	0.28
11/16	eShop ■	46.8	123	18	0.28
17,5	eShop	46.8	123	18	0.28
17,7	eShop	46.5	123	18	0.28
17,8	eShop	46.3	123	18	0.28
18	eShop	46	123	18	0.28
18,2	eShop	51.7	131	20	0.28
18,5	eShop	51.3	131	20	0.28
18,8	eShop	50.8	131	20	0.28
19	eShop	50.5	131	20	0.28
3/4	eShop ■	50.4	131	20	0.28
19,05	eShop	50.4	131	20	0.28
19,2	eShop	50.2	131	20	0.28
19,3	eShop	50.2	131	20	0.28
19,5	eShop	49.8	131	20	0.28
19,8	eShop	49.3	131	20	0.28
20	eShop	49	131	20	0.28

Solid carbide | DIN 6537 K | 4×D | h7 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

HOLEX Pro Steel solid carbide high-performance drill

Straight major cutting edges and a **special flute profile** ensure good chip evacuation. The robust cutter geometry ensures high-performance drilling with good process reliability.
A wide range of applications in steel materials thanks to a combination of tough ultra-fine grain carbide and an extremely wear-resistant coating.
Up to ∅ 1.9 with 4 facets, from ∅ 2 with relieved cone.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Versions with HB and HE shank available at the same price as HA.
For **HB shanks:** use order **no. 122507**.
For **HE shanks:** use order **No. 122508**.



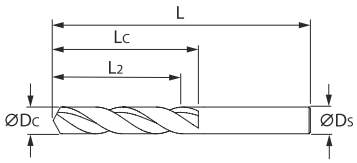
Plain shank DIN 6535 HA 12 2504



Weldon shank DIN 6535 HB 12 2507



Whistle-Notch shank DIN 6535 HE 12 2508



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
12 2504	250	200	160	125	115	95	90	65						35	30	100	65	●		●	●		

∅ D_C h7	12F 12 2504 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA	L_2	L	∅ D_s	< 900 N f
(mm or inch)	TiAlN	mm	mm	mm	mm/rev.
1	eShop	4.5	45	4	0.05
1,1	eShop	4.9	45	4	0.05
1,2	eShop	5.2	45	4	0.05
1,3	eShop	6.1	45	4	0.05
1,4	eShop	6.4	45	4	0.05
1,5	eShop	6.8	50	4	0.05
1/16	eShop ■	7.1	50	4	0.05
1,6	eShop	7.1	50	4	0.05
1,7	eShop	7.5	50	4	0.07
1,8	eShop	8.3	50	4	0.07
1,9	eShop	8.7	50	4	0.07
2	eShop	9	50	4	0.07
2,1	eShop	9.4	55	4	0.07
2,2	eShop	9.7	55	4	0.07
2,3	eShop	10.6	55	4	0.09
3/32	eShop ■	10.9	55	4	0.09
2,4	eShop	10.9	55	4	0.09
2,5	eShop	11.3	55	4	0.09
2,6	eShop	11.6	55	4	0.09
2,7	eShop	12	55	4	0.09
2,8	eShop	12.8	55	4	0.11
2,9	eShop	13.2	55	4	0.11
3	eShop	15.5	62	6	0.11
3,1	eShop	15.4	62	6	0.11
1/8	eShop ■	15.4	62	6	0.11
3,2	eShop	15.2	62	6	0.11
3,3	eShop	15.1	62	6	0.11

∅ D_C h7	12F 12 2504 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA	L_2	L	∅ D_s	< 900 N f
(mm or inch)	TiAlN	mm	mm	mm	mm/rev.
3,4	eShop	14.9	62	6	0.11
3,5	eShop	14.8	62	6	0.11
3,6	eShop	14.6	62	6	0.11
3,7	eShop	14.5	62	6	0.11
3,8	eShop	18.3	66	6	0.11
W/L-25	eShop ■	18.3	66	6	0.11
3,9	eShop	18.2	66	6	0.11
5/32	eShop ■	18.2	66	6	0.11
4	eShop	18	66	6	0.14
4,1	eShop	17.9	66	6	0.14
4,2	eShop	17.7	66	6	0.14
4,3	eShop	17.6	66	6	0.14
4,4	eShop	17.4	66	6	0.14
4,5	eShop	17.3	66	6	0.14
W/L-16	eShop ■	17.3	66	6	0.14
4,6	eShop	17.1	66	6	0.14
4,7	eShop	17	66	6	0.14
3/16	eShop ■	20.8	66	6	0.14
4,8	eShop	20.8	66	6	0.14
4,9	eShop	20.7	66	6	0.14
5	eShop	20.5	66	6	0.14
5,1	eShop	20.4	66	6	0.14
5,2	eShop	20.2	66	6	0.14
5,3	eShop	20.1	66	6	0.14
5,4	eShop	19.9	66	6	0.14
5,5	eShop	19.8	66	6	0.14
7/32	eShop ■	19.8	66	6	0.14

Ø D_C h7 (mm or inch)	12F 12 2504 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
5,6	eShop	19.6	66	6	0.14
5,7	eShop	19.5	66	6	0.14
5,8	eShop	19.3	66	6	0.14
5,9	eShop	19.2	66	6	0.14
6	eShop	19	66	6	0.14
6,1	eShop	24.9	79	8	0.18
W/L-C	eShop ■	24.9	79	8	0.18
6,15	eShop	24.8	79	8	0.18
6,2	eShop	24.7	79	8	0.18
6,3	eShop	24.6	79	8	0.18
1/4	eShop ■	24.6	79	8	0.18
6,35	eShop	24.8	79	8	0.18
6,4	eShop	24.4	79	8	0.18
6,5	eShop	24.3	79	8	0.18
6,6	eShop	24.1	79	8	0.18
6,7	eShop	24	79	8	0.18
6,8	eShop	23.8	79	8	0.18
6,9	eShop	23.7	79	8	0.18
7	eShop	23.5	79	8	0.18
7,1	eShop	30.4	79	8	0.18
9/32	eShop ■	30.4	79	8	0.18
7,2	eShop	30.2	79	8	0.18
7,3	eShop	30.1	79	8	0.18
7,4	eShop	29.9	79	8	0.18
7,5	eShop	29.8	79	8	0.18
7,6	eShop	29.6	79	8	0.18
7,7	eShop	29.5	79	8	0.18
7,8	eShop	29.3	79	8	0.18
7,9	eShop	29.2	79	8	0.18
5/16	eShop ■	29.2	79	8	0.18
8	eShop	29	79	8	0.18
8,1	eShop	34.9	89	10	0.2
8,2	eShop	34.7	89	10	0.2
8,3	eShop	34.6	89	10	0.2
8,4	eShop	34.4	89	10	0.2
8,5	eShop	34.3	89	10	0.2
8,6	eShop	34.1	89	10	0.2
8,7	eShop	34	89	10	0.2
11/32	eShop ■	34	89	10	0.2
8,8	eShop	33.8	89	10	0.2
8,9	eShop	33.7	89	10	0.2
9	eShop	33.5	89	10	0.2
9,1	eShop	33.4	89	10	0.22
9,2	eShop	33.2	89	10	0.22
9,3	eShop	33.1	89	10	0.22
9,4	eShop	32.9	89	10	0.22
9,5	eShop	32.8	89	10	0.22
3/8	eShop ■	32.8	89	10	0.22
9,6	eShop	32.6	89	10	0.22
9,7	eShop	32.5	89	10	0.22
9,8	eShop	32.3	89	10	0.22
9,9	eShop	32.2	89	10	0.22
10	eShop	32	89	10	0.22
10,1	eShop	39.9	102	12	0.22
10,2	eShop	39.7	102	12	0.22
10,3	eShop	39.6	102	12	0.22
13/32	eShop ■	39.6	102	12	0.22
10,4	eShop	39.4	102	12	0.22
10,5	eShop	39.3	102	12	0.22
10,6	eShop	39.1	102	12	0.22

Ø D_C h7 (mm or inch)	12F 12 2504 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
10,7	eShop	39	102	12	0.22
10,8	eShop	38.8	102	12	0.22
10,9	eShop	38.7	102	12	0.22
11	eShop	38.5	102	12	0.22
11,1	eShop	38.4	102	12	0.22
7/16	eShop ■	38.4	102	12	0.22
11,2	eShop	38.2	102	12	0.22
11,3	eShop	38.1	102	12	0.22
11,4	eShop	37.9	102	12	0.22
11,5	eShop	37.8	102	12	0.22
11,6	eShop	37.6	102	12	0.22
11,7	eShop	37.5	102	12	0.22
11,8	eShop	37.3	102	12	0.22
11,9	eShop	37.2	102	12	0.22
12	eShop	37	102	12	0.22
12,2	eShop	41.7	107	14	0.26
12,5	eShop	41.3	107	14	0.26
1/2	eShop ■	41.3	107	14	0.26
12,7	eShop	40.95	107	14	0.26
12,8	eShop	40.8	107	14	0.26
13	eShop	40.5	107	14	0.26
13,2	eShop	40.2	107	14	0.26
13,5	eShop	39.8	107	14	0.26
13,8	eShop	39.3	107	14	0.26
14	eShop	39	107	14	0.26
14,2	eShop	43.7	115	16	0.26
9/16	eShop ■	43.7	115	16	0.26
14,5	eShop	43.3	115	16	0.26
14,8	eShop	42.8	115	16	0.26
15	eShop	42.5	115	16	0.26
19/32	eShop ■	42.5	115	16	0.26
15,1	eShop	42.4	115	16	0.26
15,2	eShop	42.2	115	16	0.26
15,5	eShop	41.8	115	16	0.26
15,8	eShop	41.3	115	16	0.26
5/8	eShop ■	41.3	115	16	0.26
16	eShop	41	115	16	0.26
16,2	eShop	48.7	123	18	0.28
16,5	eShop	48.3	123	18	0.28
21/32	eShop ■	48.3	123	18	0.28
16,8	eShop	47.8	123	18	0.28
17	eShop	47.5	123	18	0.28
17,2	eShop	47.2	123	18	0.28
17,3	eShop	47.05	123	18	0.28
11/16	eShop ■	46.81	123	18	0.28
17,5	eShop	46.8	123	18	0.28
17,7	eShop	46.5	123	18	0.28
17,8	eShop	46.3	123	18	0.28
18	eShop	46	123	18	0.28
18,2	eShop	51.7	131	20	0.28
18,5	eShop	51.3	131	20	0.28
18,8	eShop	50.8	131	20	0.28
19	eShop	50.5	131	20	0.28
3/4	eShop ■	50.5	131	20	0.28
19,05	eShop	50.4	131	20	0.28
19,2	eShop	50.2	131	20	0.28
19,3	eShop	50.1	131	20	0.28
19,5	eShop	49.8	131	20	0.28
19,8	eShop	49.3	131	20	0.28
20	eShop	49	131	20	0.28

Solid carbide | Standard | 3×D | m7 | 2 | 180° | h6 DIN 6535 HA | 25 bar | x

Garant Solid carbide drill 180°

Special point geometry for generating **180° flat-bottomed holes.** Low radial forces even when spot drilling on faces with up to 45° slope. Flute geometry for optimum chip evacuation. With 4 guide chamfers to stabilise the drill in the hole.

Advantage: **The 180° point angle** permits drilling and counterboring in a single operation.

Recommendation: When using the solid carbide 180° drill it is absolutely essential for process reliability:

- **when spot drilling on flat surfaces** to drill a pilot hole 1×D using pilot drill No. 122736**.**
- **when spot drilling on sloping surfaces** up to 15° : reduce the feed rate f **to 50 %,** up to 30°: reduce the feed rate f **to 40 %** and up to 45°: reduce the feed rate f **to 25 %** of the stated value. **After spot drilling**, the **normal feed rate value** can be used.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122506 + 129100HB** .
Form **HE:** order with **No. 122506 + 129100HE**.
180° solid carbide drills for machining aluminium available on request.
Not suitable for generating counterbores for socket-head screws to DIN974-1.



Plain shank DIN 6535 HA 122506



Weldon shank DIN 6535 HB 122506 + 129100HB



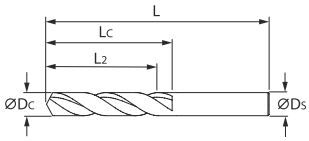
Whistle-Notch shank DIN 6535 HE 122506 + 129100HE

With cutting edge chamfer (= 5% of the nominal Ø)

Pilot drill



122736



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
122506				85	75	60	50							45			90	●		●	●		●

∅ D_C m7	122506 Solid carbide drill plain shank DIN 6535 HA 180°	L_2	L	∅ D_s	< 900 N f
mm	TiAlN	mm	mm	mm	mm/rev.
3	eShop	15.5	62	6	0.05
3,1	(eShop)	15.4	62	6	0.05
3,2	eShop	15.2	62	6	0.05
3,3	(eShop)	15.1	62	6	0.05
3,4	(eShop)	14.9	62	6	0.05
3,5	eShop	14.8	62	6	0.05
3,6	(eShop)	14.6	62	6	0.05
3,7	(eShop)	14.5	62	6	0.05
3,8	(eShop)	18.3	66	6	0.05
3,9	(eShop)	18.2	66	6	0.05
4	eShop	18	66	6	0.08
4,1	eShop	17.9	66	6	0.08
4,2	eShop	17.7	66	6	0.08
4,3	eShop	17.6	66	6	0.08
4,4	(eShop)	17.4	66	6	0.08
4,5	eShop	17.3	66	6	0.08
4,6	(eShop)	17.1	66	6	0.08
4,65	(eShop)	17	66	6	0.08
4,7	(eShop)	17	66	6	0.08
4,8	eShop	20.8	66	6	0.08
4,9	eShop	20.7	66	6	0.08
5	eShop	20.5	66	6	0.12
5,1	(eShop)	20.4	66	6	0.12
5,2	(eShop)	20.2	66	6	0.12
5,3	(eShop)	20.1	66	6	0.12
5,4	eShop	19.9	66	6	0.12
5,5	eShop	19.8	66	6	0.12
5,55	(eShop)	19.7	66	6	0.12
5,6	(eShop)	19.6	66	6	0.12
5,7	(eShop)	19.5	66	6	0.12
5,8	eShop	19.3	66	6	0.12
5,9	(eShop)	19.2	66	6	0.12
6	eShop	19	66	6	0.12
6,1	(eShop)	24.9	79	8	0.12
6,2	eShop	24.7	79	8	0.12
6,3	(eShop)	24.6	79	8	0.12
6,4	(eShop)	24.4	79	8	0.12
6,5	eShop	24.3	79	8	0.12
6,6	(eShop)	24.1	79	8	0.12

∅ D_C m7	122506 Solid carbide drill plain shank DIN 6535 HA 180°	L_2	L	∅ D_s	< 900 N f
mm	TiAlN	mm	mm	mm	mm/rev.
6,7	(eShop)	24	79	8	0.12
6,8	eShop	23.8	79	8	0.12
6,9	(eShop)	23.7	79	8	0.12
7	eShop	23.5	79	8	0.12
7,1	(eShop)	30.4	79	8	0.12
7,2	(eShop)	30.2	79	8	0.12
7,3	(eShop)	30.1	79	8	0.12
7,4	(eShop)	29.9	79	8	0.12
7,5	eShop	29.8	79	8	0.12
7,6	(eShop)	29.6	79	8	0.12
7,7	(eShop)	29.5	79	8	0.12
7,8	eShop	29.3	79	8	0.12
7,9	(eShop)	29.2	79	8	0.12
8	eShop	29	79	8	0.12
8,1	(eShop)	34.9	89	10	0.15
8,2	(eShop)	34.7	89	10	0.15
8,3	eShop	34.6	89	10	0.15
8,4	(eShop)	34.4	89	10	0.15
8,5	eShop	34.3	89	10	0.15
8,6	(eShop)	34.1	89	10	0.15
8,7	(eShop)	34	89	10	0.15
8,8	(eShop)	33.8	89	10	0.15
8,9	(eShop)	33.7	89	10	0.15
9	eShop	33.5	89	10	0.15
9,1	(eShop)	33.4	89	10	0.15
9,2	(eShop)	33.2	89	10	0.15
9,3	(eShop)	33.1	89	10	0.15
9,4	(eShop)	32.9	89	10	0.15
9,5	eShop	32.8	89	10	0.15
9,6	(eShop)	32.6	89	10	0.15
9,7	(eShop)	32.5	89	10	0.15
9,8	eShop	32.3	89	10	0.15
9,9	(eShop)	32.2	89	10	0.15
10	eShop	32	89	10	0.15
10,1	(eShop)	37.9	100	12	0.15
10,2	eShop	37.7	100	12	0.15
10,3	(eShop)	37.6	100	12	0.15
10,4	(eShop)	37.4	100	12	0.15
10,5	eShop	37.3	100	12	0.15

∅ D_C m7	122506 Solid carbide drill plain shank DIN 6535 HA 180°	L_2	L	∅ D_s	< 900 N f
mm	TiAlN	mm	mm	mm	mm/rev.
10,6	(eShop)	37.1	100	12	0.15
10,7	(eShop)	37	100	12	0.15
10,8	(eShop)	36.8	100	12	0.15
10,9	(eShop)	36.7	100	12	0.15
11	eShop	36.5	100	12	0.15
11,1	(eShop)	36.4	100	12	0.15
11,2	(eShop)	36.2	100	12	0.15
11,3	(eShop)	36.1	100	12	0.15
11,4	(eShop)	35.9	100	12	0.15
11,5	eShop	35.8	100	12	0.15
11,6	(eShop)	35.6	100	12	0.15
11,7	(eShop)	35.5	100	12	0.15
11,8	eShop	35.3	100	12	0.15
11,9	(eShop)	35.2	100	12	0.15
12	eShop	35	100	12	0.15
12,5	eShop	39.3	105	14	0.16
12,8	(eShop)	38.8	105	14	0.16
13	eShop	38.5	105	14	0.16
13,5	(eShop)	37.8	105	14	0.16
13,8	(eShop)	37.3	105	14	0.16
14	eShop	37	105	14	0.16
14,5	(eShop)	41.3	113	16	0.16
14,8	(eShop)	40.8	113	16	0.16
15	eShop	40.5	113	16	0.16
15,5	(eShop)	39.8	113	16	0.16
15,8	(eShop)	39.3	113	16	0.16
16	eShop	39	113	16	0.16
16,5	(eShop)	46.3	121	18	0.2
16,8	(eShop)	45.8	121	18	0.2
17	eShop	45.5	121	18	0.2
17,5	(eShop)	44.8	121	18	0.2
17,8	(eShop)	44.3	121	18	0.2
18	eShop	44	121	18	0.2
18,5	(eShop)	49.3	129	20	0.2
18,8	(eShop)	48.8	129	20	0.2
19	(eShop)	48.5	129	20	0.2
19,5	(eShop)	47.8	129	20	0.2
19,8	(eShop)	47.3	129	20	0.2
20	eShop	47	129	20	0.23

Solid carbide | Standard | 5×D | m7 | 90° | h6 DIN 6535 HA | 2

Garant

Solid carbide high performance special drill for GRP / CRP, non-standard sizes

With the latest generation of **crystalline diamond coating sp³**, for process reliability in machining **fibre-reinforced composites, CRP, GRP, and graphite. With 90° point angle** and special geometry to **avoid delamination.**

12 2512 – **With guide chamfer** for materials with **multi-directional** fibre orientation.

12 2522 – **With cutting guide chamfer** to avoid delamination, projecting fibres, and burr formation on materials with **uni-directional** fibre orientation.

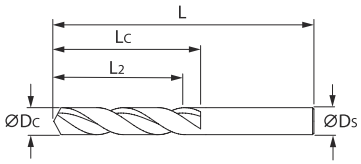
Note:
Flute length $L_c = L_2 + 1.5 \times D_c$.
Available in **1/100 sizes** and according to the table.
Please note the minimum order quantities for configurable sizes:
Ø range 1.01 – 2.99 mm: **10 pieces**
Ø range 3.01 – 9.99 mm: **5 pieces**
Ø range 10.01 – 11.99 mm: **3 pieces**



12 2512



12 2522



Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12 2512/2522	150	140	130	120	100		**110**	**100**	**90**	**80**	**90**	**80**	●				**100**	**340**

Ø D_c m7	11Y 12 2512	11Y 12 2522	Ø range (1/100 size) can be configured	L_2	L	Ø D_s	GFK CFK f
	Solid carbide drill plain shank						
	for multi-directional fibre orientation DIN 6535 HA	for uni-directional fibre orientation DIN 6535 HA					
mm	Diamond	Diamond	mm	mm	mm	mm	mm/rev.
0,9	eShop	–	–	5.2	45	4	0.01
1	eShop	–	–	5.5	45	4	0.02
1,1	(eShop)	–	1.01 – 1.1	5.9	45	4	0.02
1,2	(eShop)	–	1.11 – 1.2	6.7	45	4	0.02
1,3	(eShop)	–	1.21 – 1.3	7.1	45	4	0.02
1,4	(eShop)	–	1.31 – 1.49	7.9	45	4	0.02
1,5	eShop	–	–	8.3	50	4	0.02
1,6	(eShop)	–	1.51 – 1.6	8.6	50	4	0.03
1,7	(eShop)	–	1.61 – 1.7	9.5	50	4	0.03
1,8	(eShop)	–	1.71 – 1.8	9.8	50	4	0.03
1,9	(eShop)	–	1.81 – 1.99	10.7	50	4	0.03
2	eShop	–	–	11	50	4	0.04
2,1	(eShop)	–	2.01 – 2.1	11.4	55	4	0.04
2,2	(eShop)	–	2.11 – 2.2	12.2	55	4	0.04
2,3	(eShop)	–	2.21 – 2.3	12.6	55	4	0.04
2,4	(eShop)	–	2.31 – 2.49	13.4	55	4	0.04
2,5	eShop	eShop	–	20.3	66	6	0.04
2,7	(eShop)	(eShop)	2.51 – 2.99	20	66	6	0.04
3	eShop	eShop	–	23.5	66	6	0.06
3,5	(eShop)	(eShop)	3.01 – 3.99	22.8	66	6	0.06
4	eShop	eShop	–	30	74	6	0.06
4,5	(eShop)	(eShop)	4.01 – 4.99	29.3	74	6	0.06
5	eShop	eShop	–	36.5	82	6	0.11
5,5	(eShop)	(eShop)	5.01 – 5.99	35.8	82	6	0.11
6	eShop	eShop	–	35	82	6	0.11
7	(eShop)	(eShop)	6.01 – 7.99	42.5	91	8	0.11
8	eShop	eShop	–	41	91	8	0.15
8,5	(eShop)	(eShop)	8.01 – 8.99	48.3	103	10	0.15
9	eShop	eShop	–	47.5	103	10	0.15
9,5	(eShop)	(eShop)	9.01 – 9.99	46.8	103	10	0.15
10	eShop	eShop	–	46	103	10	0.19
10,5	(eShop)	(eShop)	10.01 – 10.99	55.3	118	12	0.19
11	eShop	eShop	–	54.5	118	12	0.19
11,5	(eShop)	(eShop)	11.01 – 11.99	53.8	118	12	0.19
12	eShop	eShop	–	53	118	12	0.21

Solid carbide | DIN 6537 L | 6×D | Type FS | h7 | 2 | 140° | h6 DIN 6535 HA | x

Garant Solid carbide NC high performance drill

Particularly strong due to strengthened core and **special profile.**
Special point geometry. **High concentricity** and **long tool life.**
High bore quality.

Note:
Flute length $L_c = L_2 + 1.5 \times D_c$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122545**.
Form **HE:** order with **No. 122540 + 129100HE**.



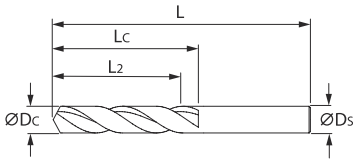
Plain shank DIN 6535 HA 12 2540



Weldon shank DIN 6535 HB 12 2545



Whistle-Notch shank DIN 6535 HE 12 2540 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
12 2540	190	170	140	90	85	75	65	40					40	30	25	70	160	●

Ø D_c h7	11E 12 2540 Solid carbide NC high performance drill FS, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 750 N f
mm		mm	mm	mm	mm/rev.
2	eShop	18	57	4	0.1
2,1	eShop	17.9	57	4	0.1
2,2	eShop	17.7	57	4	0.1
2,3	eShop	17.6	57	4	0.1
2,4	eShop	17.4	57	4	0.1
2,5	eShop	17.3	57	4	0.1
2,6	eShop	17.1	57	4	0.1
2,7	eShop	17	57	4	0.1
2,8	eShop	16.8	57	4	0.1
2,9	eShop	16.7	57	4	0.1
3	eShop	23.5	66	6	0.14
3,1	eShop	23.4	66	6	0.14
3,2	eShop	23.2	66	6	0.14
3,3	eShop	23.1	66	6	0.14
3,4	eShop	22.9	66	6	0.14
3,5	eShop	22.8	66	6	0.14
3,6	eShop	22.6	66	6	0.14
3,7	eShop	22.5	66	6	0.14
3,8	eShop	22.3	66	6	0.14
3,9	eShop	22.2	66	6	0.14
4	eShop	22	66	6	0.14
4,1	eShop	37.9	82	6	0.14
4,2	eShop	37.7	82	6	0.14
4,3	eShop	37.6	82	6	0.14
4,4	eShop	37.4	82	6	0.14
4,5	eShop	37.3	82	6	0.14
4,6	eShop	37.1	82	6	0.14
4,7	eShop	37	82	6	0.14
4,8	eShop	36.8	82	6	0.14
4,9	eShop	36.7	82	6	0.14
5	eShop	36.5	82	6	0.14
5,1	eShop	36.4	82	6	0.14
5,2	eShop	36.2	82	6	0.14
5,3	eShop	36.1	82	6	0.14
5,4	eShop	35.9	82	6	0.14
5,5	eShop	35.8	82	6	0.14
5,6	eShop	35.6	82	6	0.14
5,7	eShop	35.5	82	6	0.14
5,8	eShop	35.3	82	6	0.14
5,9	eShop	35.2	82	6	0.14
6	eShop	35	82	6	0.2
6,1	eShop	43.9	91	8	0.2
6,2	eShop	43.7	91	8	0.2
6,3	eShop	43.6	91	8	0.2
6,4	eShop	43.4	91	8	0.2
6,5	eShop	43.3	91	8	0.2

Ø D_c h7	11E 12 2540 Solid carbide NC high performance drill FS, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 750 N f
mm		mm	mm	mm	mm/rev.
6,6	eShop	43.1	91	8	0.2
6,7	eShop	43	91	8	0.2
6,8	eShop	42.8	91	8	0.2
6,9	eShop	42.7	91	8	0.2
7	eShop	42.5	91	8	0.2
7,2	eShop	42.2	91	8	0.2
7,4	eShop	41.9	91	8	0.2
7,5	eShop	41.8	91	8	0.2
7,6	(eShop)	41.6	91	8	0.2
7,8	eShop	41.3	91	8	0.2
7,9	eShop	41.2	91	8	0.2
8	eShop	41	91	8	0.2
8,1	eShop	48.9	103	10	0.2
8,2	eShop	48.7	103	10	0.2
8,4	eShop	48.4	103	10	0.2
8,5	eShop	48.3	103	10	0.2
8,6	eShop	48.1	103	10	0.2
8,7	eShop	48	103	10	0.2
8,8	eShop	47.8	103	10	0.2
9	eShop	47.5	103	10	0.27
9,1	eShop	47.4	103	10	0.27
9,3	eShop	47.1	103	10	0.27
9,5	eShop	46.8	103	10	0.27
9,6	eShop	46.6	103	10	0.27
9,8	eShop	46.3	103	10	0.27
10	eShop	46	103	10	0.27
10,2	eShop	55.7	118	12	0.27
10,5	eShop	55.3	118	12	0.27
10,8	eShop	54.8	118	12	0.27
11	eShop	54.5	118	12	0.27
11,2	eShop	54.2	118	12	0.27
11,5	eShop	53.8	118	12	0.27
11,8	eShop	53.3	118	12	0.27
12	eShop	53	118	12	0.35
12,2	eShop	58.7	124	14	0.35
12,5	eShop	58.3	124	14	0.35
13	eShop	57.5	124	14	0.35
13,5	eShop	56.8	124	14	0.35
14	eShop	56	124	14	0.35
14,2	eShop	61.7	133	16	0.35
14,5	eShop	61.3	133	16	0.35
15	eShop	60.5	133	16	0.35
15,2	eShop	60.2	133	16	0.35
15,8	eShop	59.3	133	16	0.35
16	eShop	59	133	16	0.45

Solid carbide | DIN 6537 L | 6×D | Type W | h7 | 3 | 130° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Master Alu Feed solid carbide drill

3-cutter tool, specially developed for use at **very high feed rates** in aluminium. Outstandingly suitable for machines with **high power consumption** and stable machining conditions.

- Specially developed cutter geometry, designed for very high feed rates, reduced cutting pressure and controlled chip breaking.
- Precision flute profile for reliable evacuation of chips.
- Achieve outstanding feed rates and tool life thanks to the third cutting edge.

The sector-leading technology of the drill point for the tool guarantees optimum self-centring behaviour and permits spot drilling on irregular surfaces. 3 guide chamfers guarantee a stable exit from the hole and an exact roundness of the hole.

12 2595 – **With DLC coating** – for longer tool lives, especially with aluminium with a higher Si content. **Coating on order – no return.** Delivery time approx. 3 weeks if the basic item is available ex stock. **Please note the minimum order quantity.**

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.

12 2590 – HB and HE shanks are available at the same price as HA.
For **HB:** use order **No. 122591**.
For **HE:** use order **No. 122590 + 129100HE**.

12 2595 – HB shanks are available at the same price as HA.
For **HB:** use order **No. 122596**.



Plain shank DIN 6535 HA 12 2590



Weldon shank DIN 6535 HB 12 2591



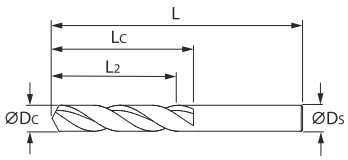
Whistle-Notch shank DIN 6535 HE 12 2590 +12 2591HE



Plain shank DIN 6535 HA 12 2595



Weldon shank DIN 6535 HB 12 2596



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N
12 2590/2595	300	250	200														200	

Ø D_c h7	11E 12 2590	11E 12 2595	L_2	L	Ø D_s	Alu f
	GARANT Master Alu Feed solid carbide drill, plain shank DIN 6535 HA					
mm		DLC	mm	mm	mm	mm/rev.
4	eShop	eShop	30	74	6	0.53
4,1	eShop	(eShop)	29.9	74	6	0.54
4,2	eShop	(eShop)	29.7	74	6	0.55
4,3	eShop	(eShop)	29.6	74	6	0.56
4,5	eShop	(eShop)	29.3	74	6	0.58
4,6	eShop	(eShop)	29.1	74	6	0.59
4,65	eShop	(eShop)	29	74	6	0.59
4,8	eShop	(eShop)	36.8	82	6	0.61
4,9	eShop	(eShop)	36.7	82	6	0.62
5	eShop	(eShop)	36.5	82	6	0.63
5,1	eShop	(eShop)	36.4	82	6	0.64
5,2	eShop	(eShop)	36.2	82	6	0.65
5,3	eShop	(eShop)	36.1	82	6	0.66
5,5	eShop	(eShop)	35.8	82	6	0.68
5,55	eShop	(eShop)	35.7	82	6	0.68
5,6	eShop	(eShop)	35.6	82	6	0.69
5,8	eShop	(eShop)	35.3	82	6	0.7
5,9	eShop	(eShop)	35.2	82	6	0.71
6	eShop	(eShop)	35	82	6	0.72
6,1	eShop	(eShop)	43.9	91	8	0.73
6,2	eShop	(eShop)	43.7	91	8	0.74
6,3	eShop	(eShop)	43.6	91	8	0.75
6,4	eShop	(eShop)	43.4	91	8	0.76
6,5	eShop	(eShop)	43.3	91	8	0.77
6,6	eShop	(eShop)	43.1	91	8	0.78
6,8	eShop	(eShop)	42.8	91	8	0.79
6,9	eShop	(eShop)	42.7	91	8	0.8

Ø D_c h7	11E 12 2590	11E 12 2595	L_2	L	Ø D_s	Alu f
	GARANT Master Alu Feed solid carbide drill, plain shank DIN 6535 HA					
mm		DLC	mm	mm	mm	mm/rev.
7	eShop	(eShop)	42.5	91	8	0.81
7,3	eShop	(eShop)	42	91	8	0.82
7,4	eShop	(eShop)	41.9	91	8	0.84
7,45	eShop	(eShop)	41.8	91	8	0.84
7,5	eShop	(eShop)	41.8	91	8	0.85
7,8	eShop	(eShop)	41.3	91	8	0.88
8	eShop	(eShop)	41	91	8	0.89
8,1	eShop	(eShop)	48.9	103	10	0.9
8,4	eShop	(eShop)	48.4	103	10	0.92
8,5	eShop	eShop	48.3	103	10	0.93
8,8	eShop	(eShop)	47.8	103	10	0.95
9	eShop	(eShop)	47.5	103	10	0.97
9,1	eShop	(eShop)	47.4	103	10	0.98
9,8	eShop	(eShop)	46.3	103	10	1.03
10	eShop	(eShop)	46	103	10	1.04
10,2	eShop	(eShop)	55.7	118	12	1.06
10,5	eShop	(eShop)	55.3	118	12	1.08
11	eShop	(eShop)	54.5	118	12	1.11
11,5	eShop	(eShop)	53.8	118	12	1.15
11,8	eShop	(eShop)	53.3	118	12	1.16
12	eShop	(eShop)	53	118	12	1.18
12,5	eShop	(eShop)	58.3	124	14	1.21
13	eShop	(eShop)	57.5	124	14	1.24
14	eShop	(eShop)	56	124	14	1.29
14,5	eShop	(eShop)	61.3	133	16	1.32
15	eShop	(eShop)	60.5	133	16	1.35
16	eShop	(eShop)	59	133	16	1.4

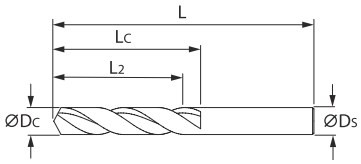
Solid carbide | DIN 6537 L | 6×D | Type W | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant Solid carbide HPC drill

DLC coating sp² of the latest generation with **low coefficient of friction** results in **outstanding chip clearance.** For **high-performance milling** of **aluminium materials**. **High alignment accuracy** and **roundness of the hole,** thanks to **6 guide chamfers**.
Size 1 - 1.5 with 4 guide chamfers.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122603**.
Form **HE:** order with **No. 122602 + 129100HE**.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	Cu	CuZn	GRP	CRP
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12 2602	360	400	350	150			120			90		80	70	80	160	200	80	80

Ø D_C h7	TiE 12 2602 Solid carbide HPC drill, plain shank DIN 6535 HA DLC	L_2	L	Shank Ø D_s	Alu f
mm		mm	mm	mm	mm/rev.
1	eShop	6.5	55	4	0.1
1,1	eShop	10.4	55	4	0.15
1,2	eShop	10.2	55	4	0.15
1,25	eShop	10.2	55	4	0.15
1,3	eShop	10.1	55	4	0.15
1,4	eShop	9.9	55	4	0.15
1,45	eShop	9.9	55	4	0.15
1,5	eShop	9.8	55	4	0.15
1,6	eShop	13.6	55	4	0.2
1,7	eShop	13.5	55	4	0.2
1,8	eShop	13.3	55	4	0.2
1,85	eShop	13.3	55	4	0.2
1,9	eShop	13.2	55	4	0.2
2	eShop	18	57	4	0.2
2,05	eShop	18	57	4	0.22
2,1	eShop	17.9	57	4	0.22
2,2	eShop	17.7	57	4	0.22
2,3	eShop	17.6	57	4	0.22
2,4	eShop	17.4	57	4	0.22
2,5	eShop	17.3	57	4	0.22
2,6	eShop	17.1	57	4	0.22
2,7	eShop	17	57	4	0.22
2,8	eShop	16.8	57	4	0.22
2,9	eShop	16.7	57	4	0.22
3	eShop	23.5	66	6	0.22
3,1	eShop	23.4	66	6	0.35
3,2	eShop	23.2	66	6	0.35
3,25	eShop	23.2	66	6	0.35
3,3	eShop	23.1	66	6	0.35
3,4	eShop	22.9	66	6	0.35
3,5	eShop	22.8	66	6	0.35
3,6	eShop	22.6	66	6	0.35
3,7	eShop	22.5	66	6	0.35
3,8	eShop	30.3	74	6	0.35
3,9	eShop	30.2	74	6	0.35
4	eShop	30	74	6	0.35
4,1	eShop	29.9	74	6	0.35
4,2	eShop	29.7	74	6	0.35
4,3	eShop	29.6	74	6	0.35
4,4	eShop	29.4	74	6	0.35
4,5	eShop	29.3	74	6	0.35
4,6	eShop	29.1	74	6	0.35
4,65	eShop	29.1	74	6	0.35
4,7	eShop	29	74	6	0.35
4,8	eShop	36.8	82	6	0.35
4,9	eShop	36.7	82	6	0.35

Ø D_C h7	TiE 12 2602 Solid carbide HPC drill, plain shank DIN 6535 HA DLC	L_2	L	Shank Ø D_s	Alu f
mm		mm	mm	mm	mm/rev.
5	eShop	36.5	82	6	0.35
5,1	eShop	36.4	82	6	0.45
5,2	eShop	36.2	82	6	0.45
5,3	eShop	36.1	82	6	0.45
5,4	eShop	35.9	82	6	0.45
5,5	eShop	35.8	82	6	0.45
5,55	eShop	35.7	82	6	0.45
5,6	eShop	35.6	82	6	0.45
5,7	eShop	35.5	82	6	0.45
5,8	eShop	35.3	82	6	0.45
5,9	eShop	35.2	82	6	0.45
6	eShop	35	82	6	0.45
6,1	eShop	43.9	91	8	0.45
6,2	eShop	43.7	91	8	0.45
6,3	eShop	43.6	91	8	0.45
6,4	eShop	43.4	91	8	0.45
6,5	eShop	43.3	91	8	0.45
6,6	eShop	43.1	91	8	0.45
6,7	eShop	43	91	8	0.45
6,8	eShop	42.8	91	8	0.45
6,9	eShop	42.7	91	8	0.45
7	eShop	42.5	91	8	0.45
7,1	eShop	42.4	91	8	0.45
7,2	eShop	42.2	91	8	0.45
7,3	eShop	42.1	91	8	0.45
7,4	eShop	41.9	91	8	0.45
7,45	eShop	41.9	91	8	0.45
7,5	eShop	41.8	91	8	0.45
7,6	eShop	41.6	91	8	0.45
7,7	eShop	41.5	91	8	0.45
7,8	eShop	41.3	91	8	0.45
7,9	eShop	41.2	91	8	0.45
8	eShop	41	91	8	0.45
8,1	eShop	48.9	103	10	0.55
8,2	eShop	48.7	103	10	0.55
8,3	eShop	48.6	103	10	0.55
8,4	eShop	48.4	103	10	0.55
8,5	eShop	48.3	103	10	0.55
8,6	eShop	48.1	103	10	0.55
8,7	eShop	48	103	10	0.55
8,8	eShop	47.8	103	10	0.55
8,9	eShop	47.7	103	10	0.55
9	eShop	47.5	103	10	0.55
9,1	eShop	47.4	103	10	0.55
9,2	eShop	47.2	103	10	0.55
9,3	eShop	47.1	103	10	0.55

Ø D_C h7	TiE 12 2602 Solid carbide HPC drill, plain shank DIN 6535 HA DLC	L_2	L	Shank Ø D_s	Alu f
mm		mm	mm	mm	mm/rev.
9,35	eShop	47	103	10	0.55
9,4	eShop	46.9	103	10	0.55
9,5	eShop	46.8	103	10	0.55
9,6	eShop	46.6	103	10	0.55
9,7	eShop	46.5	103	10	0.55
9,8	eShop	46.3	103	10	0.55
9,9	eShop	46.2	103	10	0.55
10	eShop	46	103	10	0.55
10,2	eShop	55.7	118	12	0.55
10,3	eShop	55.6	118	12	0.55
10,5	eShop	55.3	118	12	0.55
10,8	eShop	54.8	118	12	0.55
11	eShop	54.5	118	12	0.55
11,2	eShop	54.2	118	12	0.55
11,5	eShop	53.8	118	12	0.55
11,8	eShop	53.3	118	12	0.55
12	eShop	53	118	12	0.55
12,5	eShop	58.3	124	14	0.65
12,8	eShop	57.8	124	14	0.65
13	eShop	57.5	124	14	0.65
13,1	eShop	57.4	124	14	0.65
13,5	eShop	56.8	124	14	0.65
13,8	eShop	56.3	124	14	0.65
14	eShop	56	124	14	0.65
14,5	eShop	61.3	133	16	0.65
14,8	eShop	60.8	133	16	0.65
15	eShop	60.5	133	16	0.65
15,1	eShop	60.4	133	16	0.65
15,5	eShop	59.8	133	16	0.65
15,8	eShop	59.3	133	16	0.65
16	eShop	59	133	16	0.65
16,5	eShop	68.3	143	18	0.7
16,8	eShop	67.8	143	18	0.7
17	eShop	67.5	143	18	0.7
17,5	eShop	66.8	143	18	0.7
17,8	eShop	66.3	143	18	0.7
18	eShop	66	143	18	0.7
18,5	eShop	73.3	153	20	0.7
18,8	eShop	72.8	153	20	0.7
18,85	eShop	72.8	153	20	0.7
19	eShop	72.5	153	20	0.7
19,5	eShop	71.8	153	20	0.7
19,8	eShop	71.3	153	20	0.7
20	eShop	71	153	20	0.7

Solid carbide | DIN 6537 L | 6×D | Type W | p6 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant Solid carbide HPC pilot drill

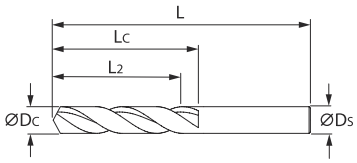
Spiral fluted, with **6 guide chamfers** and internal cooling channels.
New generation of high performance pilot drills in the HPC range.
With **140° point angle** and special **p6 cutting edge tolerance** for optimum generation of a pilot hole. High alignment accuracy and **roundness of the pilot hole.**

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
For deep-hole drilling deeper than 16×D a pilot hole is recommended, and for deep-hole drilling from 20×D to 30×D it is essential. **The generation of a pilot hole improves process reliability.**
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122608**.
Form **HE:** order with **No. 122606 + 129100HE**.


Plain shank DIN 6535 HA 12 2606


Weldon shank DIN 6535 HB 12 2608


Whistle-Notch shank DIN 6535 HE 12 2606 + 12 9100HE



12

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	Cu	CuZn	GRP	CRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
12 2606	360	400	350	150			120			90		80	70	80	160	200	80	80		●	●		

$\varnothing D_c$ p6 mm	11E 12 2606 Solid carbide HPC drill plain shank DIN 6535 HA DLC	L_2 mm	L mm	$\varnothing D_s$ mm	Alu f mm/rev.
2	eShop	18	57	4	0.16
2,2	eShop	17.7	57	4	0.18
2,3	eShop	17.6	57	4	0.18
2,4	eShop	17.4	57	4	0.18
2,5	eShop	17.3	57	4	0.18
2,7	eShop	17	57	4	0.18
2,8	eShop	16.8	57	4	0.18
3	eShop	23.5	66	6	0.18
3,2	eShop	23.2	66	6	0.28
3,3	eShop	23.1	66	6	0.28
3,5	eShop	22.8	66	6	0.28
3,8	eShop	30.3	74	6	0.28
4	eShop	30	74	6	0.28
4,2	eShop	29.7	74	6	0.28
4,5	eShop	29.3	74	6	0.28
4,7	eShop	29	74	6	0.28
4,8	eShop	36.8	82	6	0.28
5	eShop	36.5	82	6	0.28

$\varnothing D_c$ p6 mm	11E 12 2606 Solid carbide HPC drill plain shank DIN 6535 HA DLC	L_2 mm	L mm	$\varnothing D_s$ mm	Alu f mm/rev.
5,5	eShop	35.8	82	6	0.36
5,8	eShop	35.3	82	6	0.36
6	eShop	35	82	6	0.36
6,5	eShop	43.3	91	8	0.36
6,8	eShop	42.8	91	8	0.36
7	eShop	42.5	91	8	0.36
7,5	eShop	41.8	91	8	0.36
7,8	eShop	41.3	91	8	0.36
8	eShop	41	91	8	0.36
8,5	eShop	48.3	103	10	0.44
8,8	eShop	47.8	103	10	0.44
9	eShop	47.5	103	10	0.44
9,8	eShop	46.3	103	10	0.44
10	eShop	46	103	10	0.44
10,2	eShop	55.7	118	12	0.44
10,8	eShop	54.8	118	12	0.44
11,8	eShop	53.3	118	12	0.44
12	eShop	53	118	12	0.44

Solid carbide | DIN 6537 L | 6×D | Type H | h7 | 2 | 140° | h6 DIN 6535 HA | HPC | x

Garant GARANT Diabolo solid carbide HPC drill for hard machining

Cutting chisel edge with **high centring accuracy** due to **strong core and special point geometry. Convex major cutting edges** with **defined honed edge** ensure the drill has high stability and maximum load capacity.
Special multi-nano layer coating for drilling in hardened steels.

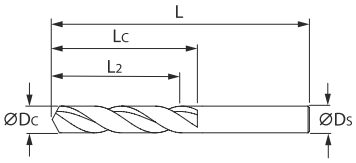
Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122642 / 122652**.
Form **HE:** order with **No. 122641 / 122651 + 129100HE**.
12 2651 – When drilling in hardened steels from 56 HRC, only cool using air!



plain shank DIN 6535 HA 12 2641



plain shank DIN 6535 HA 12 2651



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
12 2641				90	80	70	65	55	28	16	14	10					70			●		●	
12 2651				120	100	85	70	55	28	16	14	10					70	●		●	●		●

ØDc h7	11E 12 2641	11E 12 2651	L2	L	ØDs	< 60 HRC f	
	GARANT Diabolo solid carbide HPC drill, plain shank DIN 6535 HA					12 2641	12 2651
mm	TiAlN	TiAlN	mm	mm	mm	mm/rev.	mm/rev.
1	–	eShop	6.5	55	4	–	0.01
1,1	–	eShop	10.4	55	4	–	0.01
1,2	–	eShop	10.2	55	4	–	0.01
1,3	–	eShop	10.1	55	4	–	0.01
1,4	–	eShop	9.9	55	4	–	0.01
1,5	–	eShop	9.8	55	4	–	0.01
1,6	–	eShop	13.6	55	4	–	0.013
1,7	–	eShop	13.5	55	4	–	0.013
1,8	–	eShop	13.3	55	4	–	0.013
1,9	–	eShop	13.2	55	4	–	0.013
2	eShop	eShop	18	57	4	0.04	0.013
2,1	–	eShop	17.9	57	4	–	0.02
2,3	–	eShop	17.6	57	4	–	0.02
2,4	–	eShop	17.4	57	4	–	0.02
2,5	eShop	eShop	17.3	57	4	0.05	0.02
2,6	eShop	eShop	17.1	57	4	0.05	0.02
2,7	–	eShop	17	57	4	–	0.02
2,8	eShop	eShop	16.8	57	4	0.05	0.02
2,9	–	eShop	16.7	57	4	–	0.02
3	eShop	eShop	23.5	66	6	0.05	0.02
3,1	–	eShop	23.4	66	6	–	0.03
3,2	–	eShop	23.2	66	6	–	0.03
3,3	eShop	eShop	23.1	66	6	0.06	0.03
3,4	eShop	eShop	22.9	66	6	0.06	0.03
3,5	eShop	eShop	22.8	66	6	0.06	0.03
3,7	eShop	eShop	22.5	66	6	0.06	0.03
3,8	eShop	eShop	30.3	74	6	0.06	0.03
3,9	eShop	eShop	30.2	74	6	0.06	0.03
4	eShop	eShop	30	74	6	0.06	0.03
4,1	–	eShop	29.9	74	6	–	0.04
4,2	eShop	eShop	29.7	74	6	0.07	0.04
4,3	eShop	eShop	29.6	74	6	0.07	0.04
4,5	eShop	eShop	29.3	74	6	0.07	0.04
4,8	eShop	–	36.8	82	6	0.07	–
4,9	eShop	–	36.7	82	6	0.07	–
5	eShop	eShop	36.5	82	6	0.07	0.04
5,1	eShop	eShop	36.4	82	6	0.08	0.055
5,2	eShop	eShop	36.2	82	6	0.08	0.055
5,3	–	eShop	36.1	82	6	–	0.055
5,5	eShop	eShop	35.8	82	6	0.08	0.055
5,8	eShop	eShop	35.3	82	6	0.08	0.055
5,9	eShop	–	35.2	82	6	0.08	–
6	eShop	eShop	35	82	6	0.08	0.055
6,1	–	eShop	43.9	91	8	–	0.08
6,2	–	eShop	43.7	91	8	–	0.08

ØDc h7	11E 12 2641	11E 12 2651	L2	L	ØDs	< 60 HRC f	
	GARANT Diabolo solid carbide HPC drill, plain shank DIN 6535 HA					12 2641	12 2651
mm	TiAlN	TiAlN	mm	mm	mm	mm/rev.	mm/rev.
6,3	–	eShop	43.6	91	8	–	0.08
6,5	eShop	eShop	43.3	91	8	0.09	0.08
6,6	–	eShop	43.1	91	8	–	0.08
6,8	eShop	eShop	42.8	91	8	0.09	0.08
6,9	–	eShop	42.7	91	8	–	0.08
7	eShop	eShop	42.5	91	8	0.09	0.08
7,2	eShop	–	42.2	91	8	0.09	–
7,5	–	eShop	41.8	91	8	–	0.08
7,8	eShop	eShop	41.3	91	8	0.09	0.08
7,9	eShop	–	41.2	91	8	0.09	–
8	eShop	eShop	41	91	8	0.09	0.08
8,5	eShop	eShop	48.3	103	10	0.11	0.12
8,6	–	eShop	48.1	103	10	–	0.12
8,7	eShop	–	48	103	10	0.11	–
8,8	eShop	eShop	47.8	103	10	0.11	0.12
9	eShop	eShop	47.5	103	10	0.11	0.12
9,3	–	eShop	47.1	103	10	–	0.12
9,5	–	eShop	46.8	103	10	–	0.12
9,8	eShop	eShop	46.3	103	10	0.11	0.12
9,9	eShop	–	46.2	103	10	0.11	–
10	eShop	eShop	46	103	10	0.11	0.12
10,2	eShop	eShop	55.7	118	12	0.11	0.12
10,3	eShop	eShop	55.6	118	12	0.11	0.12
10,5	eShop	eShop	55.3	118	12	0.11	0.12
11	eShop	eShop	54.5	118	12	0.11	0.12
11,5	–	eShop	53.8	118	12	–	0.12
11,8	eShop	eShop	53.3	118	12	0.11	0.12
11,9	eShop	–	53.2	118	12	0.11	–
12	eShop	eShop	53	118	12	0.11	0.12
12,2	–	eShop	58.7	124	14	–	0.16
12,5	eShop	eShop	58.3	124	14	0.13	0.16
13	eShop	eShop	57.5	124	14	0.13	0.16
13,5	–	eShop	56.8	124	14	–	0.16
14	eShop	eShop	56	124	14	0.13	0.16
14,5	–	eShop	61.3	133	16	–	0.16
14,9	eShop	–	60.7	133	16	0.13	–
15	eShop	eShop	60.5	133	16	0.13	0.16
15,8	–	eShop	59.3	133	16	–	0.16
15,9	eShop	–	59.2	133	16	0.13	–
16	eShop	eShop	59	133	16	0.15	0.16
17	–	eShop	67.5	143	18	–	0.2
17,5	eShop	eShop	66.8	143	18	0.15	0.2
18	eShop	–	66	143	18	0.15	–
20	–	eShop	71	153	20	–	0.2

Solid carbide | DIN 6537 L | 6×D | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x | m6 | h7

Garant Solid carbide HPC reference drill with 4 cooling channels

Cutting chisel edge with **high centring accuracy** due to **strong core and special point geometry.** High roundness and alignment accuracy of the deep hole, thanks to **4 guide chamfers.** Outstanding chip evacuation due to **4 internal cooling channels** from Ø 3.8 mm. Up to 3.7 mm Ø with 2 internal cooling channels. **Straight major cutting edges** with honed edges and special flute profile for **short chips**, even on long chipping materials.

Attention: Sizes **ending with X** = cutter Ø tolerance **h7.**

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122661**.
Form **HE:** order with **No. 122659 + 129100HE**.



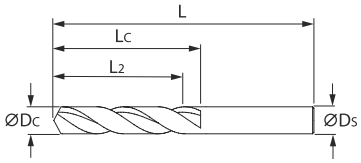
Plain shank DIN 6535 HA 12 2659



Weldon shank DIN 6535 HB 12 2661



Whistle-Notch shank DIN 6535 HE 12 2659 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
12 2659				170	140	130	110	70						90	80		95		●	●		●	

Ø D_c m6 (Ø D_c X = h7) (mm or inch)	12 2659 Solid carbide HPC drill plain shank DIN 6535 HA TiAlN	Tolerance nominal Ø	L_2 mm	L mm	Ø D_s mm	INOX > 900 N f mm/rev.
0,9	eShop	m6	6.7	55	4	0.02
1	eShop	m6	6.5	55	4	0.02
1,1	eShop	m6	10.4	55	4	0.03
1,2	eShop	m6	10.2	55	4	0.03
1,25	eShop	m6	10.2	55	4	0.03
1,3	eShop	m6	10.1	55	4	0.03
1,4	eShop	m6	9.9	55	4	0.03
1,45	eShop	m6	9.9	55	4	0.03
1,5	eShop	m6	9.8	55	4	0.03
1,55	eShop	m6	9.7	55	4	0.03
1/16	eShop ■	m6	13.6	55	4	0.03
1,6	eShop	m6	13.6	55	4	0.03
1,7	eShop	m6	13.5	55	4	0.03
1,8	eShop	m6	13.3	55	4	0.03
1,85	eShop	m6	13.3	55	4	0.03
1,9	eShop	m6	13.2	55	4	0.03
2	eShop	m6	18	57	4	0.05
2,02X	eShop	h7	–	57	4	0.05
2,05	eShop	m6	18	57	4	0.05
2,1	eShop	m6	17.9	57	4	0.05
2,15	eShop	m6	17.8	57	4	0.05
2,2	eShop	m6	17.7	57	4	0.05
2,3	eShop	m6	17.6	57	4	0.05
2,35	eShop	m6	17.5	57	4	0.05
3/32	eShop ■	m6	17.6	57	4	0.05
2,4	eShop	m6	17.4	57	4	0.05
2,5	eShop	m6	17.3	57	4	0.05
2,52X	eShop	h7	–	57	4	0.05
2,55	eShop	m6	17.2	57	4	0.05
2,6	eShop	m6	17.1	57	4	0.05
2,65	eShop	m6	17.1	57	4	0.05
2,7	eShop	m6	17	57	4	0.05
2,8	eShop	m6	16.8	57	4	0.05
2,85	eShop	m6	16.8	57	4	0.05
2,9	eShop	m6	16.7	57	4	0.05
3	eShop	m6	23.5	66	6	0.08
3,02X	eShop	h7	–	66	6	0.08
3,05	eShop	m6	23.4	66	6	0.08
3,1	eShop	m6	23.4	66	6	0.08
3,15	eShop	m6	23.3	66	6	0.08
1/8	eShop ■	m6	23.2	66	6	0.08
3,2	eShop	m6	23.2	66	6	0.08
3,25	eShop	m6	23.2	66	6	0.08
3,3	eShop	m6	23.1	66	6	0.08

Ø D_c m6 (Ø D_c X = h7) (mm or inch)	12 2659 Solid carbide HPC drill plain shank DIN 6535 HA TiAlN	Tolerance nominal Ø	L_2 mm	L mm	Ø D_s mm	INOX > 900 N f mm/rev.
3,4	eShop	m6	22.9	66	6	0.08
3,5	eShop	m6	22.8	66	6	0.08
3,52X	eShop	h7	–	66	6	0.08
3,55	eShop	m6	22.7	66	6	0.08
3,6	eShop	m6	22.6	66	6	0.08
3,65	eShop	m6	22.6	66	6	0.08
3,7	eShop	m6	22.5	66	6	0.08
3,8	eShop	m6	30.3	74	6	0.08
3,85	eShop	m6	30.2	74	6	0.08
3,9	eShop	m6	30.2	74	6	0.08
5/32	eShop ■	m6	30	74	6	0.08
4	eShop	m6	30	74	6	0.08
4,02X	eShop	h7	–	74	6	0.08
4,05	eShop	m6	29.9	74	6	0.08
4,1	eShop	m6	29.9	74	6	0.08
4,15	eShop	m6	29.8	74	6	0.08
4,2	eShop	m6	29.7	74	6	0.08
4,3	eShop	m6	29.6	74	6	0.08
4,35	eShop	m6	29.5	74	6	0.08
4,4	eShop	m6	29.4	74	6	0.08
4,45	eShop	m6	29.3	74	6	0.08
4,5	eShop	m6	29.3	74	6	0.08
4,6	eShop	m6	29.1	74	6	0.08
4,65	eShop	m6	29.1	74	6	0.08
4,7	eShop	m6	29	74	6	0.08
3/16	eShop ■	m6	36.8	82	6	0.08
4,8	eShop	m6	36.8	82	6	0.08
4,9	eShop	m6	36.7	82	6	0.08
5	eShop	m6	36.5	82	6	0.08
5,02X	eShop	h7	–	82	6	0.12
5,05	eShop	m6	36.4	82	6	0.12
5,1	eShop	m6	36.4	82	6	0.12
5,2	eShop	m6	36.2	82	6	0.12
5,25	eShop	m6	36.2	82	6	0.12
5,3	eShop	m6	36.1	82	6	0.12
5,4	eShop	m6	35.9	82	6	0.12
5,5	eShop	m6	35.8	82	6	0.12
5,55	eShop	m6	35.7	82	6	0.12
7/32	eShop ■	m6	35.6	82	6	0.12
5,6	eShop	m6	35.6	82	6	0.12
5,65	eShop	m6	35.6	82	6	0.12
5,7	eShop	m6	35.5	82	6	0.12
5,75	eShop	m6	35.4	82	6	0.12
5,8	eShop	m6	35.3	82	6	0.12

Ø D_C m6 (D_C X = h7) (mm or inch)	1E 12 2659 Solid carbide HPC drill plain shank DIN 6535 HA TiAlN	Tolerance nominal Ø	L_2 mm	L mm	Ø D_s mm	INOX > 900 N f mm/rev.
5,9	eShop	m6	35.2	82	6	0.12
5,95	eShop	m6	35	82	6	0.12
6	eShop	m6	35	82	6	0.12
6,02X	eShop	h7	–	82	6	0.12
6,05	eShop	m6	44	91	8	0.12
6,1	eShop	m6	43.9	91	8	0.12
6,15	eShop	m6	43.8	91	8	0.12
6,2	eShop	m6	43.7	91	8	0.12
6,3	eShop	m6	43.6	91	8	0.12
1/4	eShop ■	m6	43.6	91	8	0.12
6,35	eShop	m6	43.5	91	8	0.12
6,4	eShop	m6	43.4	91	8	0.12
6,5	eShop	m6	43.3	91	8	0.12
6,6	eShop	m6	43.1	91	8	0.12
6,7	eShop	m6	43	91	8	0.12
6,8	eShop	m6	42.8	91	8	0.12
6,9	eShop	m6	42.7	91	8	0.12
7	eShop	m6	42.5	91	8	0.12
7,02X	eShop	h7	–	91	8	0.12
7,1	eShop	m6	42.4	91	8	0.12
9/32	eShop ■	m6	42.4	91	8	0.12
7,2	eShop	m6	42.2	91	8	0.12
7,25	eShop	m6	42.2	91	8	0.12
7,3	eShop	m6	42.1	91	8	0.12
7,4	eShop	m6	41.9	91	8	0.12
7,45	eShop	m6	41.9	91	8	0.12
7,5	eShop	m6	41.8	91	8	0.12
7,55	eShop	m6	41.7	91	8	0.12
7,6	eShop	m6	41.6	91	8	0.12
7,7	eShop	m6	41.5	91	8	0.12
7,8	eShop	m6	41.3	91	8	0.12
7,9	eShop	m6	41.2	91	8	0.12
5/16	eShop ■	m6	41.2	91	8	0.12
8	eShop	m6	41	91	8	0.12
8,02X	eShop	h7	–	91	8	0.15
8,05	eShop	m6	49	103	10	0.15
8,1	eShop	m6	48.9	103	10	0.15
8,15	eShop	m6	48.8	103	10	0.15
8,2	eShop	m6	48.7	103	10	0.15
8,25	eShop	m6	48.7	103	10	0.15
8,3	eShop	m6	48.6	103	10	0.15
8,4	eShop	m6	48.4	103	10	0.15
8,5	eShop	m6	48.3	103	10	0.15
8,52X	eShop	h7	–	103	10	0.15
8,6	eShop	m6	48.1	103	10	0.15
8,7	eShop	m6	48	103	10	0.15
11/32	eShop ■	m6	48	103	10	0.15
8,8	eShop	m6	47.8	103	10	0.15
8,9	eShop	m6	47.7	103	10	0.15
9	eShop	m6	47.5	103	10	0.15
9,02X	eShop	h7	–	103	10	0.15
9,05	eShop	m6	47.4	103	10	0.15
9,1	eShop	m6	47.4	103	10	0.15
9,2	eShop	m6	47.2	103	10	0.15
9,25	eShop	m6	47.2	103	10	0.15
9,3	eShop	m6	47.1	103	10	0.15
9,35	eShop	m6	47	103	10	0.15
9,4	eShop	m6	46.9	103	10	0.15
9,5	eShop	m6	46.8	103	10	0.15
3/8	eShop ■	m6	46.8	103	10	0.15
9,55	eShop	m6	46.7	103	10	0.15
9,6	eShop	m6	46.6	103	10	0.15
9,7	eShop	m6	46.5	103	10	0.15
9,8	eShop	m6	46.3	103	10	0.15
9,9	eShop	m6	46.2	103	10	0.15
10	eShop	m6	46	103	10	0.15
10,02X	eShop	h7	–	103	10	0.15
10,05	eShop	m6	56	118	12	0.15
10,1	eShop	m6	55.9	118	12	0.15
10,2	eShop	m6	55.7	118	12	0.15
10,25	eShop	m6	55.7	118	12	0.15
10,3	eShop	m6	55.6	118	12	0.15
13/32	eShop ■	m6	55.6	118	12	0.15
10,4	eShop	m6	55.4	118	12	0.15
10,5	eShop	m6	55.3	118	12	0.15
10,55	eShop	m6	55.2	118	12	0.15
10,6	eShop	m6	55.1	118	12	0.15
10,7	eShop	m6	55	118	12	0.15
10,75	eShop	m6	54.9	118	12	0.15

Ø D_C m6 (D_C X = h7) (mm or inch)	1E 12 2659 Solid carbide HPC drill plain shank DIN 6535 HA TiAlN	Tolerance nominal Ø	L_2 mm	L mm	Ø D_s mm	INOX > 900 N f mm/rev.
10,8	eShop	m6	54.8	118	12	0.15
10,85	eShop	m6	54.8	118	12	0.15
10,9	eShop	m6	54.7	118	12	0.15
11	eShop	m6	54.5	118	12	0.15
11,1	eShop	m6	54.4	118	12	0.15
7/16	eShop ■	m6	54.4	118	12	0.15
11,2	eShop	m6	54.2	118	12	0.15
11,25	eShop	m6	54.2	118	12	0.15
11,3	eShop	m6	54.1	118	12	0.15
11,35	eShop	m6	54	118	12	0.15
11,4	(eShop)	m6	53.9	118	12	0.15
11,5	eShop	m6	53.8	118	12	0.15
11,55	eShop	m6	53.7	118	12	0.15
11,6	eShop	m6	53.6	118	12	0.15
11,7	eShop	m6	53.5	118	12	0.15
11,8	eShop	m6	53.3	118	12	0.15
11,9	eShop	m6	53.2	118	12	0.15
12	eShop	m6	53	118	12	0.15
12,02X	eShop	h7	–	118	12	0.2
12,05	eShop	m6	59	124	14	0.2
12,1	eShop	m6	58.9	124	14	0.2
12,2	eShop	m6	58.7	124	14	0.2
12,25	eShop	m6	58.7	124	14	0.2
12,3	eShop	m6	58.6	124	14	0.2
12,5	eShop	m6	58.3	124	14	0.2
12,55	eShop	m6	58.2	124	14	0.2
1/2	eShop ■	m6	58.2	124	14	0.2
12,7	eShop	m6	58	124	14	0.2
12,8	eShop	m6	57.8	124	14	0.2
12,9	eShop	m6	57.7	124	14	0.2
13	eShop	m6	57.5	124	14	0.2
13,1	eShop	m6	57.4	124	14	0.2
33/64	eShop ■	m6	57.4	124	14	0.2
13,2	eShop	m6	57.2	124	14	0.2
13,3	eShop	m6	57	124	14	0.2
13,5	eShop	m6	56.8	124	14	0.2
13,8	eShop	m6	56.3	124	14	0.2
14	eShop	m6	56	124	14	0.2
14,05	eShop	m6	62	133	16	0.2
14,1	eShop	m6	61.9	133	16	0.2
14,2	eShop	m6	61.7	133	16	0.2
14,25	eShop	m6	61.7	133	16	0.2
9/16	eShop ■	m6	61.7	133	16	0.2
14,3	eShop	m6	61.6	133	16	0.2
14,5	eShop	m6	61.3	133	16	0.2
14,8	eShop	m6	60.8	133	16	0.2
15	eShop	m6	60.5	133	16	0.2
15,05	eShop	m6	60.5	133	16	0.2
15,1	eShop	m6	60.4	133	16	0.2
15,2	eShop	m6	60.2	133	16	0.2
15,25	eShop	m6	60.2	133	16	0.2
15,35	eShop	m6	60	133	16	0.2
15,5	eShop	m6	59.8	133	16	0.2
15,8	eShop	m6	59.3	133	16	0.2
5/8	eShop ■	m6	59	133	16	0.2
16	eShop	m6	59	133	16	0.2
16,05	eShop	m6	59	133	16	0.2
16,25	eShop	m6	68.7	143	18	0.2
16,5	eShop	m6	68.3	143	18	0.25
16,8	eShop	m6	67.8	143	18	0.25
17	eShop	m6	67.5	143	18	0.25
17,35	eShop	m6	67	143	18	0.25
17,5	eShop	m6	66.8	143	18	0.25
17,8	eShop	m6	66.3	143	18	0.25
17,85	eShop	m6	66.3	143	18	0.25
17,9	eShop	m6	66.2	143	18	0.25
18	eShop	m6	66	143	18	0.25
18,3	eShop	m6	73.6	153	20	0.25
18,5	eShop	m6	73.3	153	20	0.25
18,8	eShop	m6	72.8	153	20	0.25
18,85	eShop	m6	72.8	153	20	0.25
18,9	eShop	m6	72.7	153	20	0.25
19	eShop	m6	72.5	153	20	0.25
19,35	eShop	m6	72	153	20	0.25
19,5	eShop	m6	71.8	153	20	0.25
19,8	eShop	m6	71.3	153	20	0.25
20	eShop	m6	71	153	20	0.25
20,05	eShop	m6	71	153	20	0.25
21	eShop	m6	69.5	153	20	0.25

Solid carbide	DIN 6537 L	6×D	m7	2	140°	h6 DIN 6535 HA	25 bar

HOLEX Pro INOX solid carbide high-performance drill

Efficient drilling especially for use in **stainless and acid-resistant steels.** Straight main cutting edges with **optimised cutting edge design** for improved chip breaking behaviour. Enlarged flutes for **excellent chip evacuation.** Increased wear resistance due to **improved carbide substrate** and **high temperature resistant coating.**

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **no. 122686**.
For **HE shanks:** use order **no. 122687**.



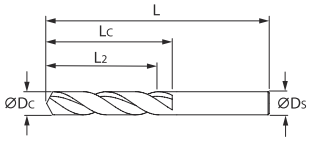
Plain shank DIN 6535 HA 12 2685



Weldon shank DIN 6535 HB 122686



Whistle-Notch shank DIN 6535 HE 122687



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
12 2685		140	120	120	110	90	80							55	45	35		

Ø D_c m7	12 2685 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA AlTiN	L_2	L	Ø D_s	INOX < 900 N f
mm		mm	mm	mm	mm/rev.
2	eShop	13	50	4	0.03
2,1	eShop	13.9	55	4	0.03
2,2	eShop	14.2	55	4	0.04
2,3	eShop	15.1	55	4	0.04
2,4	eShop	15.4	55	4	0.04
2,5	eShop	16.3	55	4	0.04
2,6	eShop	17.1	55	4	0.04
2,7	eShop	17.5	55	4	0.04
2,8	eShop	18.3	55	4	0.04
2,9	eShop	18.7	55	4	0.05
3	eShop	23.5	66	6	0.05
3,1	eShop	23.4	66	6	0.05
3,2	eShop	23.2	66	6	0.05
3,25	eShop	23.1	66	6	0.05
3,3	eShop	23.1	66	6	0.05
3,4	eShop	22.9	66	6	0.05
3,5	eShop	22.8	66	6	0.05
3,6	eShop	22.6	66	6	0.06
3,7	eShop	22.5	66	6	0.06
3,8	eShop	30.3	74	6	0.06
3,9	eShop	30.2	74	6	0.06
4	eShop	30	74	6	0.06
4,1	eShop	29.9	74	6	0.06
4,2	eShop	29.7	74	6	0.06
4,3	eShop	29.6	74	6	0.06
4,4	eShop	29.4	74	6	0.07
4,5	eShop	29.3	74	6	0.07
4,6	eShop	29.1	74	6	0.07
4,65	eShop	29	74	6	0.07
4,7	eShop	29	74	6	0.07
4,8	eShop	36.8	82	6	0.07
4,9	eShop	36.7	82	6	0.07
5	eShop	36.5	82	6	0.07
5,1	eShop	36.4	82	6	0.07
5,2	eShop	36.2	82	6	0.07
5,3	eShop	36.1	82	6	0.08
5,4	eShop	35.9	82	6	0.08
5,5	eShop	35.8	82	6	0.08
5,55	eShop	35.7	82	6	0.08
5,6	eShop	35.6	82	6	0.08
5,7	eShop	35.5	82	6	0.08
5,8	eShop	35.3	82	6	0.08

Ø D_c m7	12 2685 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA AlTiN	L_2	L	Ø D_s	INOX < 900 N f
mm		mm	mm	mm	mm/rev.
5,9	eShop	35.2	82	6	0.08
6	eShop	35	82	6	0.08
6,1	eShop	43.9	91	8	0.08
6,2	eShop	43.7	91	8	0.09
6,3	eShop	43.6	91	8	0.09
6,4	eShop	43.4	91	8	0.09
6,5	eShop	43.3	91	8	0.09
6,6	eShop	43.1	91	8	0.09
6,7	eShop	43	91	8	0.09
6,8	eShop	42.8	91	8	0.09
6,9	eShop	42.7	91	8	0.09
7	eShop	42.5	91	8	0.09
7,3	eShop	42.1	91	8	0.09
7,4	eShop	41.9	91	8	0.1
7,45	eShop	41.8	91	8	0.1
7,5	eShop	41.8	91	8	0.1
7,55	eShop	41.7	91	8	0.1
7,7	eShop	41.5	91	8	0.1
7,8	eShop	41.3	91	8	0.1
7,9	eShop	41.2	91	8	0.1
8	eShop	41	91	8	0.1
8,1	eShop	48.9	103	10	0.1
8,2	eShop	48.7	103	10	0.1
8,3	eShop	48.6	103	10	0.11
8,5	eShop	48.3	103	10	0.11
8,6	eShop	48.1	103	10	0.11
8,7	eShop	48	103	10	0.11
8,8	eShop	47.8	103	10	0.11
8,9	eShop	47.7	103	10	0.11
9	eShop	47.5	103	10	0.11
9,1	eShop	47.4	103	10	0.11
9,25	eShop	47.1	103	10	0.11
9,3	eShop	47.1	103	10	0.11
9,35	eShop	47	103	10	0.11
9,4	eShop	46.9	103	10	0.12
9,5	eShop	46.8	103	10	0.12
9,55	eShop	46.7	103	10	0.12
9,6	eShop	46.6	103	10	0.12
9,8	eShop	46.3	103	10	0.12
9,9	eShop	46.2	103	10	0.12
10	eShop	46	103	10	0.12
10,2	eShop	55.7	118	12	0.12

Ø D_c m7	12 2685 HOLEX Pro Inox solid carbide high-performance drill, plain shank DIN 6535 HA AlTiN	L_2	L	Ø D_s	INOX < 900 N f
mm		mm	mm	mm	mm/rev.
10,3	eShop	55.6	118	12	0.12
10,5	eShop	55.3	118	12	0.12
10,8	eShop	54.8	118	12	0.13
11	eShop	54.5	118	12	0.13
11,2	eShop	54.2	118	12	0.13
11,35	eShop	54	118	12	0.13
11,5	eShop	53.8	118	12	0.13
11,55	eShop	53.7	118	12	0.13
11,8	eShop	53.3	118	12	0.13
12	eShop	53	118	12	0.14
12,2	eShop	58.7	124	14	0.14
12,5	eShop	58.3	124	14	0.14
12,55	eShop	58.2	124	14	0.14
12,8	eShop	57.8	124	14	0.14
13	eShop	57.5	124	14	0.14
13,1	eShop	57.4	124	14	0.14
13,3	eShop	57.1	124	14	0.15
13,5	eShop	56.8	124	14	0.15
13,8	eShop	56.3	124	14	0.15
14	eShop	56	124	14	0.15
14,2	eShop	61.7	133	16	0.15
14,5	eShop	61.3	133	16	0.15
14,8	eShop	60.8	133	16	0.16
15	eShop	60.5	133	16	0.16
15,1	eShop	60.4	133	16	0.16
15,35	eShop	60	133	16	0.16
15,5	eShop	59.8	133	16	0.16
15,8	eShop	59.3	133	16	0.16
16	eShop	59	133	16	0.17
16,05	eShop	68.9	143	18	0.17
16,5	eShop	68.3	143	18	0.17
17	eShop	67.5	143	18	0.17
17,5	eShop	66.8	143	18	0.18
17,8	eShop	66.3	143	18	0.18
18	eShop	66	143	18	0.18
18,5	eShop	73.3	153	20	0.19
18,9	eShop	72.7	153	20	0.19
19	eShop	72.5	153	20	0.19
19,5	eShop	71.8	153	20	0.2
20	eShop	71	153	20	0.2

Solid carbide | DIN 6537 L | 6×D | m7 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant Solid carbide HPC drill

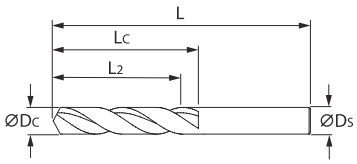
Specially for machining **titanium-based and nickel-based alloys.**
With wear-resistant, ultra-smooth TiAlSiN high-performance coating for a **long tool life** combined with **optimum bore quality** and **very low burr formation.**

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
For **HB**: use order **No. 122681**.
For **HE**: use order **No. 122680** and **129100HE**.


Plain shank DIN 6535 HA 12 2680


Weldon shank DIN 6535 HB 12 2681


Whistle-notch shank DIN 6535 HE 12 2681 + 12 9100 HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	N					
12 2680																45	35		●				

Ø D_C m7	12 2680 Solid carbide HPC drill, plain shank DIN 6535 HA TiAlSiN	L_2	L	Ø D_s	Ti > 850 N f
mm		mm	mm	mm	mm/rev.
2	eShop	15	55	4	0.02
2,1	eShop	14.85	55	4	0.02
2,2	eShop	14.7	55	4	0.02
2,3	eShop	14.55	55	4	0.02
2,4	eShop	18.4	55	4	0.02
2,5	eShop	18.25	55	4	0.02
2,6	eShop	18.1	55	4	0.03
2,7	eShop	17.95	55	4	0.03
2,8	eShop	17.8	55	4	0.03
2,9	eShop	17.65	55	4	0.03
3	eShop	23.5	66	6	0.04
3,1	eShop	23.4	66	6	0.04
3,2	eShop	23.2	66	6	0.04
3,3	eShop	23.1	66	6	0.04
3,4	eShop	22.9	66	6	0.05
3,5	eShop	22.8	66	6	0.05
3,6	eShop	22.6	66	6	0.05
3,7	eShop	22.5	66	6	0.05
3,8	eShop	30.3	74	6	0.05
3,9	eShop	30.2	74	6	0.05
4	eShop	30	74	6	0.05
4,1	eShop	29.9	74	6	0.06
4,2	eShop	29.7	74	6	0.06
4,3	eShop	29.6	74	6	0.06
4,4	eShop	29.4	74	6	0.06
4,5	eShop	29.3	74	6	0.06
4,6	eShop	29.1	74	6	0.06
4,7	eShop	29	74	6	0.06
4,8	eShop	36.8	82	6	0.06
4,9	eShop	36.7	82	6	0.07
5	eShop	36.5	82	6	0.07
5,1	eShop	36.4	82	6	0.07
5,2	eShop	36.2	82	6	0.07
5,3	eShop	36.1	82	6	0.07
5,4	eShop	35.9	82	6	0.07
5,5	eShop	35.8	82	6	0.07
5,6	eShop	35.6	82	6	0.08
5,7	eShop	35.5	82	6	0.08
5,8	eShop	35.3	82	6	0.08
5,9	eShop	35.2	82	6	0.08
6	eShop	35	82	6	0.08
6,1	eShop	43.9	91	8	0.08
6,2	eShop	43.7	91	8	0.08
6,3	eShop	43.6	91	8	0.08
6,4	eShop	43.4	91	8	0.09
6,5	eShop	43.3	91	8	0.09
6,6	eShop	43.1	91	8	0.09
6,7	eShop	43	91	8	0.09
6,8	eShop	42.8	91	8	0.09

Ø D_C m7	12 2680 Solid carbide HPC drill, plain shank DIN 6535 HA TiAlSiN	L_2	L	Ø D_s	Ti > 850 N f
mm		mm	mm	mm	mm/rev.
6,9	eShop	42.7	91	8	0.09
7	eShop	42.5	91	8	0.09
7,1	eShop	42.4	91	8	0.09
7,2	eShop	42.2	91	8	0.1
7,3	eShop	42.1	91	8	0.1
7,4	eShop	41.9	91	8	0.1
7,5	eShop	41.8	91	8	0.1
7,6	eShop	41.6	91	8	0.1
7,7	eShop	41.5	91	8	0.1
7,8	eShop	41.3	91	8	0.1
7,9	eShop	41.2	91	8	0.1
8	eShop	41	91	8	0.1
8,1	eShop	48.9	103	10	0.1
8,2	eShop	48.7	103	10	0.11
8,3	eShop	48.6	103	10	0.11
8,4	eShop	48.4	103	10	0.11
8,5	eShop	48.3	103	10	0.11
8,6	eShop	48.1	103	10	0.11
8,7	eShop	48	103	10	0.11
8,8	eShop	47.8	103	10	0.11
8,9	eShop	47.7	103	10	0.12
9	eShop	47.5	103	10	0.12
9,1	eShop	47.4	103	10	0.12
9,2	eShop	47.2	103	10	0.12
9,3	eShop	47.1	103	10	0.12
9,4	eShop	46.9	103	10	0.12
9,5	eShop	46.8	103	10	0.12
9,6	eShop	46.6	103	10	0.12
9,7	eShop	46.5	103	10	0.12
9,8	eShop	46.3	103	10	0.13
9,9	eShop	46.2	103	10	0.13
10	eShop	46	103	10	0.13
10,2	eShop	55.7	118	12	0.13
10,5	eShop	55.3	118	12	0.13
10,8	eShop	54.8	118	12	0.14
11	eShop	54.5	118	12	0.14
11,2	eShop	54.2	118	12	0.14
11,5	eShop	53.8	118	12	0.14
11,8	eShop	53.3	118	12	0.14
12	eShop	53	118	12	0.15
12,2	eShop	58.7	124	14	0.15
12,5	eShop	58.3	124	14	0.15
13	eShop	57.5	124	14	0.16
13,5	eShop	56.8	124	14	0.16
14	eShop	56	124	14	0.16
14,5	eShop	61.3	133	16	0.17
15	eShop	60.5	133	16	0.17
15,5	eShop	59.8	133	16	0.17
16	eShop	59	133	16	0.18

Solid carbide	DIN 6537 L	6×D	h7	2	140°	h6 DIN 6535 HA	25 bar	HPC	x

Garant GARANT Uni Hero solid carbide high-performance drill

The ultimate in universality and profitability in one tool.
Robust tool design and **convex-concave curved cutting edge design** for optimum tool stability and chip breakage behaviour in a wide range of materials. **Special flute geometry** and **polished flutes** for ideal chip evacuation and maximum process reliability.
Ultra-smooth TiAlSiN high-performance coating to effectively reduce wear and the formation of built-up edges.

Note:
Flute length $L_c = L_2 + 1.5 \times D_c$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **no. 122701**.
HE shank: order with **No. 122700** and **12900HE**.
Items with prices in brackets:
Differing delivery time and minimum order quantity 3 pieces.



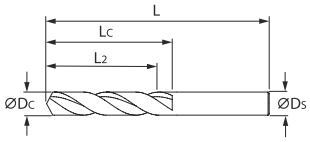
Plain shank DIN 6535 HA 12 2700



Weldon shank DIN 6535 HB 12 2701



Whistle-notch shank DIN 6535 HE 12 2700 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
12 2700	190	200		160	150	140	110	90						90	80	40	130	●		●	●		○

Ø D_c h7	13M	12 2700 GARANT Uni Hero solid carbide drill plain shank DIN 6535 HA	L_2	L	Ø D_s	< 1100 N f
mm		TiAlSiN	mm	mm	mm	mm/rev.
2,5		eShop	18.3	57	4	0.07
2,6		eShop	18.1	57	4	0.08
2,7		eShop	18	57	4	0.08
2,8		eShop	17.8	57	4	0.08
2,9		eShop	17.7	57	4	0.08
3		eShop	23.5	66	6	0.09
3,1		eShop	23.4	66	6	0.09
3,2		eShop	23.2	66	6	0.09
3,3		eShop	23.1	66	6	0.09
3,4		eShop	22.9	66	6	0.1
3,5		eShop	22.8	66	6	0.1
3,6		eShop	22.6	66	6	0.1
3,7		eShop	22.5	66	6	0.1
3,8		eShop	30.3	74	6	0.11
3,9		eShop	30.2	74	6	0.11
4		eShop	30	74	6	0.11
4,1		eShop	29.9	74	6	0.11
4,2		eShop	29.7	74	6	0.12
4,3		eShop	29.6	74	6	0.12
4,4		eShop	29.4	74	6	0.12
4,5		eShop	29.3	74	6	0.12
4,6		eShop	29.1	74	6	0.12
4,65		eShop	29	74	6	0.13
4,7		eShop	29	74	6	0.13
4,8		eShop	36.8	82	6	0.13
4,9		eShop	36.7	82	6	0.13
5		eShop	36.5	82	6	0.13
5,1		eShop	36.4	82	6	0.14
5,2		eShop	36.2	82	6	0.14
5,3		eShop	36.1	82	6	0.14
5,4		eShop	35.9	82	6	0.14
5,5		eShop	35.8	82	6	0.14
5,55		eShop	35.7	82	6	0.14
5,6		eShop	35.6	82	6	0.15
5,7		eShop	35.5	82	6	0.15
5,8		eShop	35.3	82	6	0.15
5,9		eShop	35.2	82	6	0.15
6		eShop	35	82	6	0.15
6,1		eShop	43.9	91	8	0.15
6,2		eShop	43.7	91	8	0.16
6,3		eShop	43.6	91	8	0.16
6,4		eShop	43.4	91	8	0.16
6,5		eShop	43.3	91	8	0.16
6,6		eShop	43.1	91	8	0.16
6,7		eShop	43	91	8	0.17
6,8		eShop	42.8	91	8	0.17
6,9		eShop	42.7	91	8	0.17
7		eShop	42.5	91	8	0.17
7,1		eShop	42.4	91	8	0.17
7,2		eShop	42.2	91	8	0.18
7,3		eShop	42.1	91	8	0.18
7,4		eShop	41.9	91	8	0.18
7,45		eShop	41.8	91	8	0.18

Ø D_c h7	13M	12 2700 GARANT Uni Hero solid carbide drill plain shank DIN 6535 HA	L_2	L	Ø D_s	< 1100 N f
mm		TiAlSiN	mm	mm	mm	mm/rev.
7,5		eShop	41.8	91	8	0.18
7,6		eShop	41.6	91	8	0.18
7,7		eShop	41.5	91	8	0.18
7,8		eShop	41.3	91	8	0.19
7,9		eShop	41.2	91	8	0.19
8		eShop	41	91	8	0.19
8,1		eShop	48.9	103	10	0.19
8,2		eShop	48.7	103	10	0.19
8,3		eShop	48.6	103	10	0.19
8,4		eShop	48.4	103	10	0.2
8,5		eShop	48.3	103	10	0.2
8,6		eShop	48.1	103	10	0.2
8,7		eShop	48	103	10	0.2
8,8		eShop	47.8	103	10	0.2
8,9		eShop	47.7	103	10	0.2
9		eShop	47.5	103	10	0.2
9,1		eShop	47.4	103	10	0.21
9,2		eShop	47.2	103	10	0.21
9,3		eShop	47.1	103	10	0.21
9,35		eShop	47	103	10	0.21
9,4		eShop	46.9	103	10	0.21
9,5		eShop	46.8	103	10	0.21
9,6		eShop	46.6	103	10	0.21
9,7		eShop	46.5	103	10	0.21
9,8		eShop	46.3	103	10	0.22
9,9		eShop	46.2	103	10	0.22
10		eShop	46	103	10	0.22
10,2		eShop	55.7	118	12	0.22
10,3		eShop	55.6	118	12	0.22
10,5		eShop	55.3	118	12	0.22
10,8		eShop	54.8	118	12	0.23
11		eShop	54.5	118	12	0.23
11,2		eShop	54.2	118	12	0.23
11,5		eShop	53.8	118	12	0.24
11,8		eShop	53.3	118	12	0.24
12		eShop	53	118	12	0.24
12,2		eShop	58.7	124	14	0.24
12,5		eShop	58.3	124	14	0.25
12,8		(eShop)	57.8	124	14	0.25
13		eShop	57.5	124	14	0.25
13,2		(eShop)	57.2	124	14	0.25
13,5		eShop	56.8	124	14	0.25
13,8		eShop	56.3	124	14	0.26
14		eShop	56	124	14	0.26
14,2		eShop	61.7	133	16	0.26
14,5		eShop	61.3	133	16	0.26
14,8		eShop	60.8	133	16	0.26
15		eShop	60.5	133	16	0.26
15,2		(eShop)	60.2	133	16	0.27
15,3		eShop	60.1	133	16	0.27
15,5		(eShop)	59.8	133	16	0.27
15,8		eShop	59.3	133	16	0.27
16		eShop	59	133	16	0.27

Garant UNI HERO

UNIVERSAL. SIMPLE. UNIQUE. THE NEW SUPERHERO FOR DRILLING.

True machining heroes are not born, they are made!
The ultimate in universality and profitability in one tool.





Convex-concave curved main cutting edge

- Optimum chip-breaking behaviour and maximum sturdiness in a wide range of materials.
- Reliable centering with increased feed rate.

Special flute geometry and polished flutes

for ideal chip evacuation and maximum process reliability in a wide range of materials.

Stable tool design

prevents tool breakages.

Ultra-smooth TiAlSiN high-performance coating.

to effectively reduce wear and the formation of built-up edges.

Initial portfolio

- Types:
  4 × D (12 2450/51)
  6 × D (12 2700/01)
  8 × D (12 3020/21)
- All tools with through-coolant.
- Diameter range ∅ 2.5 – 16.0 mm.
- Semi-standard for ordering all intermediate dimensions via the Hoffmann eShop (size designation "– X").

S
M
K
P
N

Use in almost all ISO material groups.*

*Except hard machining > 55 HRC. Suitable to a limited extent for superalloys and long-chipping aluminium. ISO S: Application focus on titanium

Hoffmann Group
Regrinding service

Future-proof with the Data Matrix Code (DMC) to clearly identify tools.

12

Solid carbide | DIN 6537 L | 6×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Master Steel Speed solid carbide drill

Developed for use with **very high cutting speeds**. Outstandingly suitable for machines with **low power output** and high speeds.

- Clear reduction in cutting forces due to special cutter geometry.
- Coating for best wear resistance even at high process temperatures.
- Polished flutes for good chip clearance.

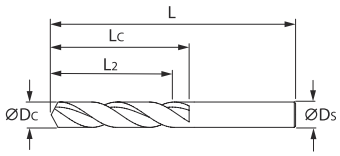
A **slim chisel edge** and the **special arrangement of the 4 guide chamfers** ensure **high positioning and alignment accuracy**. Optimised micro-geometry for increased working life and performance capability.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122716**.
Form **HE:** order with **No. 122715 + 129100HE**.


Plain shank DIN 6535 HA 12 2715


Weldon shank DIN 6535 HB 12 2716


Whistle-Notch shank DIN 6535 HE 12 2715 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
12 2715				220	200	180	170	90						75		160	130	●		●	●		

Ø D_c h7	11E 12 2715 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA	L_2	L	Ø D_s	< 1100 N f
mm	TiAlN	mm	mm	mm	mm/rev.
2	eShop	18	57	4	0.09
2,05	eShop	18	57	4	0.09
2,1	eShop	17.9	57	4	0.09
2,2	eShop	17.7	57	4	0.09
2,3	eShop	17.6	57	4	0.09
2,4	eShop	17.4	57	4	0.09
2,5	eShop	17.3	57	4	0.09
2,6	eShop	17.1	57	4	0.09
2,7	eShop	17	57	4	0.09
2,8	eShop	16.8	57	4	0.09
2,9	eShop	16.7	57	4	0.09
3	eShop	23.5	66	6	0.12
3,1	eShop	23.4	66	6	0.12
3,2	eShop	23.2	66	6	0.12
3,25	eShop	23.1	66	6	0.12
3,3	eShop	23.1	66	6	0.12
3,4	eShop	22.9	66	6	0.12
3,5	eShop	22.8	66	6	0.12
3,6	eShop	22.6	66	6	0.12
3,7	eShop	22.5	66	6	0.12
3,8	eShop	30.3	74	6	0.12
3,9	eShop	30.2	74	6	0.12
4	eShop	30	74	6	0.12
4,1	eShop	29.9	74	6	0.16
4,2	eShop	29.7	74	6	0.16
4,3	eShop	29.6	74	6	0.16
4,4	eShop	29.4	74	6	0.16
4,5	eShop	29.3	74	6	0.16
4,6	eShop	29.1	74	6	0.16
4,65	eShop	29.1	74	6	0.16
4,7	eShop	29	74	6	0.16
4,8	eShop	36.8	82	6	0.16
4,9	eShop	36.7	82	6	0.16
5	eShop	36.5	82	6	0.16
5,1	eShop	36.4	82	6	0.19
5,2	eShop	36.2	82	6	0.19
5,3	eShop	36.1	82	6	0.19
5,4	eShop	35.9	82	6	0.19
5,5	eShop	35.8	82	6	0.19
5,55	eShop	35.7	82	6	0.19
5,6	eShop	35.6	82	6	0.19
5,7	eShop	35.5	82	6	0.19
5,8	eShop	35.3	82	6	0.19
5,9	eShop	35.2	82	6	0.19
6	eShop	35	82	6	0.19
6,1	eShop	43.9	91	8	0.22
6,2	eShop	43.7	91	8	0.22

Ø D_c h7	11E 12 2715 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA	L_2	L	Ø D_s	< 1100 N f
mm	TiAlN	mm	mm	mm	mm/rev.
6,3	eShop	43.6	91	8	0.22
6,4	eShop	43.4	91	8	0.22
6,5	eShop	43.3	91	8	0.22
6,6	eShop	43.1	91	8	0.22
6,7	eShop	43	91	8	0.22
6,8	eShop	42.8	91	8	0.22
6,9	eShop	42.7	91	8	0.22
7	eShop	42.5	91	8	0.22
7,1	eShop	42.4	91	8	0.22
7,2	eShop	42.2	91	8	0.22
7,3	eShop	42.1	91	8	0.22
7,4	eShop	41.9	91	8	0.22
7,45	eShop	41.9	91	8	0.22
7,5	eShop	41.8	91	8	0.22
7,6	eShop	41.6	91	8	0.22
7,7	eShop	41.5	91	8	0.22
7,8	eShop	41.3	91	8	0.22
7,9	eShop	41.2	91	8	0.22
8	eShop	41	91	8	0.22
8,1	eShop	48.9	103	10	0.26
8,2	eShop	48.7	103	10	0.26
8,3	eShop	48.6	103	10	0.26
8,4	eShop	48.4	103	10	0.26
8,5	eShop	48.3	103	10	0.26
8,6	eShop	48.1	103	10	0.26
8,7	eShop	48	103	10	0.26
8,8	eShop	47.8	103	10	0.26
8,9	eShop	47.7	103	10	0.26
9	eShop	47.5	103	10	0.26
9,1	eShop	47.4	103	10	0.26
9,2	eShop	47.2	103	10	0.26
9,3	eShop	47.1	103	10	0.26
9,35	eShop	47	103	10	0.26
9,4	eShop	46.9	103	10	0.26
9,5	eShop	46.8	103	10	0.26
9,55	eShop	46.7	103	10	0.26
9,6	eShop	46.6	103	10	0.26
9,7	eShop	46.5	103	10	0.26
9,8	eShop	46.3	103	10	0.26
9,9	eShop	46.2	103	10	0.26
10	eShop	46	103	10	0.26
10,1	eShop	55.9	118	12	0.28
10,2	eShop	55.7	118	12	0.28
10,3	eShop	55.6	118	12	0.28
10,4	eShop	55.4	118	12	0.28
10,5	eShop	55.3	118	12	0.28
10,6	eShop	55.1	118	12	0.28

Ø D_c h7	11E 12 2715 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA	L_2	L	Ø D_s	< 1100 N f
mm	TiAlN	mm	mm	mm	mm/rev.
10,7	eShop	55	118	12	0.28
10,8	eShop	54.8	118	12	0.28
10,9	eShop	54.7	118	12	0.28
11	eShop	54.5	118	12	0.28
11,1	eShop	54.4	118	12	0.28
11,2	eShop	54.2	118	12	0.28
11,3	eShop	54.1	118	12	0.28
11,35	eShop	53.9	118	12	0.28
11,4	eShop	53.9	118	12	0.28
11,5	eShop	53.8	118	12	0.28
11,6	eShop	53.6	118	12	0.28
11,7	eShop	53.5	118	12	0.28
11,8	eShop	53.3	118	12	0.28
11,9	eShop	53.2	118	12	0.28
12	eShop	53	118	12	0.28
12,2	eShop	58.7	124	14	0.31
12,5	eShop	58.3	124	14	0.31
12,8	eShop	57.8	124	14	0.31
13	eShop	57.5	124	14	0.31
13,2	eShop	57.2	124	14	0.31
13,5	eShop	56.8	124	14	0.31
13,8	eShop	56.3	124	14	0.31
14	eShop	56	124	14	0.31
14,2	eShop	61.7	133	16	0.34
14,5	eShop	61.3	133	16	0.34
14,8	eShop	60.8	133	16	0.34
15	eShop	60.5	133	16	0.34
15,1	eShop	60.4	133	16	0.34
15,2	eShop	60.2	133	16	0.34
15,25	eShop	60.2	133	16	0.34
15,5	eShop	59.8	133	16	0.34
15,8	eShop	59.3	133	16	0.34
16	eShop	59	133	16	0.34
16,2	eShop	68.7	143	18	0.35
16,5	eShop	68.3	143	18	0.35
16,8	eShop	67.8	143	18	0.35
17	eShop	67.5	143	18	0.35
17,2	eShop	67.2	143	18	0.35
17,5	eShop	66.8	143	18	0.35
17,8	eShop	66.3	143	18	0.35
18	eShop	66	143	18	0.35
18,2	eShop	73.7	153	20	0.38
18,5	eShop	73.3	153	20	0.38
19	eShop	72.5	153	20	0.38
19,2	eShop	72.2	153	20	0.38
19,5	eShop	71.8	153	20	0.38
20	eShop	71	153	20	0.38

Solid carbide	DIN 6537 L	6×D	h7	3	145°	h6 DIN 6535 HA	25 bar	HPC	x

Garant GARANT Master Steel Feed solid carbide drill

3-flute drill, specially developed for use at **very high feed rates**. Outstandingly suitable for **machines with high installed power** and stable operating conditions.

- Special cutter geometry with stable cutting edges and large clearance at the centre enables very high feed rates.
- The patented tip is optimised for chip flow and generates low cutting pressure with good chip breakage.
- With 145° tip angle for low burr formation when drilling through holes.

The **sector-leading technology of the chisel edge** guarantees **optimum self-centring behaviour** and permits spot drilling on irregular surfaces. 3 guide chamfers guarantee a stable exit from the hole and an exact roundness of the hole.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122726**.
Form **HE:** order with **No. 122725 + 129100HE**.



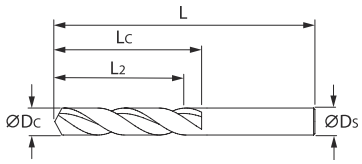
Plain shank DIN 6535 HA 122725



Weldon shank DIN 6535 HB 122726



Whistle-Notch shank DIN 6535 HE 122725 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K						
122725				160	140	130	110	90	60				60	50	40	130	80	●		●	●		

Ø D_c h7 (mm or inch)	1IE 122725 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
4	eShop	30	74	6	0.28
4,1	eShop	29.9	74	6	0.28
4,2	eShop	29.7	74	6	0.28
4,3	eShop	29.6	74	6	0.28
4,4	eShop	29.4	74	6	0.28
4,5	eShop	29.3	74	6	0.28
4,6	eShop	29.1	74	6	0.28
4,65	eShop	29.1	74	6	0.28
4,7	eShop	29	74	6	0.28
3/16	eShop	36.9	82	6	0.28
4,8	eShop	36.8	82	6	0.28
4,9	eShop	36.7	82	6	0.28
5	eShop	36.5	82	6	0.28
5,1	eShop	36.4	82	6	0.32
5,2	eShop	36.2	82	6	0.32
5,3	eShop	36.1	82	6	0.32
5,4	eShop	35.9	82	6	0.32
5,5	eShop	35.8	82	6	0.32
5,55	eShop	35.7	82	6	0.32
5,6	eShop	35.6	82	6	0.32
5,7	eShop	35.5	82	6	0.32
5,8	eShop	35.3	82	6	0.32
5,9	eShop	35.2	82	6	0.32
6	eShop	35	82	6	0.32
6,1	eShop	43.9	91	8	0.37
6,2	eShop	43.7	91	8	0.37
6,3	eShop	43.6	91	8	0.37
1/4	eShop	43.5	91	8	0.37
6,35	eShop	43.4	91	8	0.37
6,4	eShop	43.4	91	8	0.37
6,5	eShop	43.3	91	8	0.37
6,6	eShop	43.1	91	8	0.37
6,7	eShop	43	91	8	0.37
6,8	eShop	42.8	91	8	0.37
6,9	eShop	42.7	91	8	0.37
7	eShop	42.5	91	8	0.37
7,1	eShop	42.4	91	8	0.37
9/32	eShop	42.3	91	8	0.37
7,2	eShop	42.2	91	8	0.37
7,3	eShop	42.1	91	8	0.37
7,4	eShop	41.9	91	8	0.37
7,45	eShop	41.9	91	8	0.37
7,5	eShop	41.8	91	8	0.37
7,55	eShop	41.7	91	8	0.37
7,6	eShop	41.6	91	8	0.37
7,7	eShop	41.5	91	8	0.37
7,8	eShop	41.3	91	8	0.37

Ø D_c h7 (mm or inch)	1IE 122725 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
7,9	eShop	41.2	91	8	0.37
8	eShop	41	91	8	0.37
8,1	eShop	48.9	103	10	0.44
8,2	eShop	48.7	103	10	0.44
8,3	eShop	48.6	103	10	0.44
8,4	eShop	48.4	103	10	0.44
8,5	eShop	48.3	103	10	0.44
8,6	eShop	48.1	103	10	0.44
8,7	eShop	48	103	10	0.44
8,8	eShop	47.8	103	10	0.44
8,9	eShop	47.7	103	10	0.44
9	eShop	47.5	103	10	0.44
9,1	eShop	47.4	103	10	0.44
9,2	eShop	47.2	103	10	0.44
9,25	eShop	47.1	103	10	0.44
9,3	eShop	47.1	103	10	0.44
9,35	eShop	47	103	10	0.44
9,4	eShop	46.9	103	10	0.44
9,5	eShop	46.8	103	10	0.44
9,55	eShop	46.7	103	10	0.44
9,6	eShop	46.6	103	10	0.44
9,7	eShop	46.5	103	10	0.44
9,8	eShop	46.3	103	10	0.44
9,9	eShop	46.2	103	10	0.44
10	eShop	46	103	10	0.44
10,1	eShop	55.9	118	12	0.5
10,2	eShop	55.7	118	12	0.5
10,3	eShop	55.6	118	12	0.5
13/32	eShop	55.6	118	12	0.5
10,4	eShop	55.4	118	12	0.5
10,5	eShop	55.3	118	12	0.5
10,6	eShop	55.1	118	12	0.5
10,7	eShop	55	118	12	0.5
10,8	eShop	54.8	118	12	0.5
10,9	eShop	54.7	118	12	0.5
11	eShop	54.5	118	12	0.5
11,1	eShop	54.4	118	12	0.5
7/16	eShop	54.4	118	12	0.5
11,2	eShop	54.2	118	12	0.5
11,3	eShop	54.1	118	12	0.5
11,35	eShop	54	118	12	0.5
11,4	eShop	53.9	118	12	0.5
11,5	eShop	53.8	118	12	0.5
11,55	eShop	53.7	118	12	0.5
11,6	eShop	53.6	118	12	0.5
11,7	eShop	53.5	118	12	0.5
11,8	eShop	53.3	118	12	0.5

Ø D_c h7 (mm or inch)	1IE 122725 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
11,9	eShop	53.2	118	12	0.5
12	eShop	53	118	12	0.5
12,2	eShop	58.7	124	14	0.56
12,5	eShop	58.3	124	14	0.56
12,55	eShop	58.2	124	14	0.56
1/2	eShop	58	124	14	0.56
12,7	eShop	58	124	14	0.56
12,8	eShop	57.8	124	14	0.56
13	eShop	57.5	124	14	0.56
13,1	eShop	57.4	124	14	0.56
13,2	eShop	57.2	124	14	0.56
13,3	eShop	57	124	14	0.56
13,5	eShop	56.8	124	14	0.56
13,8	eShop	56.3	124	14	0.56
14	eShop	56	124	14	0.56
14,1	eShop	61.9	133	16	0.56
14,2	eShop	61.7	133	16	0.61
9/16	eShop	61.6	133	16	0.61
14,5	eShop	61.3	133	16	0.61
14,8	eShop	60.8	133	16	0.61
15	eShop	60.5	133	16	0.61
15,1	eShop	60.4	133	16	0.61
15,2	eShop	60.2	133	16	0.61
15,25	eShop	60.2	133	16	0.61
15,35	eShop	60	133	16	0.61
15,5	eShop	59.8	133	16	0.61
15,8	eShop	59.3	133	16	0.61
5/8	eShop	59.2	133	16	0.61
16	eShop	59	133	16	0.61
16,05	eShop	68.9	143	18	0.61
16,2	eShop	68.7	143	18	0.66
16,5	eShop	68.3	143	18	0.66
16,8	eShop	67.8	143	18	0.66
17	eShop	67.5	143	18	0.66
17,2	eShop	67.2	143	18	0.66
17,5	eShop	66.8	143	18	0.66
17,8	eShop	66.3	143	18	0.66
18	eShop	66	143	18	0.66
18,2	eShop	73.7	153	20	0.69
18,5	eShop	73.3	153	20	0.69
18,8	eShop	72.8	153	20	0.69
18,9	eShop	72.7	153	20	0.69
19	eShop	72.5	153	20	0.69
19,2	eShop	72.2	153	20	0.69
19,5	eShop	71.8	153	20	0.69
19,8	eShop	71.3	153	20	0.69
20	eShop	71	153	20	0.69

Solid carbide | DIN 6537 L | 6×D | p6 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant

Solid carbide HPC pilot drill with 4 cooling channels

Cutting chisel edge with **high centring accuracy** due to **strong core and special point geometry.** High roundness and alignment accuracy of the deep hole, thanks to **4 guide chamfers.** Outstanding chip evacuation due to **4 internal cooling channels** from Ø 3.8 mm. Up to 3.7 mm Ø with 2 internal cooling channels. With **140° point angle** and special **j6 cutting edge tolerance** for optimum generation of a pilot hole.

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
For deep-hole drilling deeper than 12×D a pilot hole is recommended, and for deep-hole drilling from 20×D to 30×D it is essential.
The generation of a pilot hole improves process reliability.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122738**.
Form **HE:** order with **No. 122736 + 129100HE**.



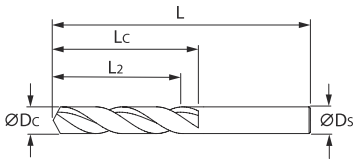
Plain shank DIN 6535 HA 122736



Weldon shank DIN 6535 HB 122738



Whistle-notch shank DIN 6535 HE 122736 + 129100HE



12

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
122736				170	130	120	110	65						75	70		95	●		●	●		●

Ø D_c p6	1IE	122736 Solid carbide HPC drill plain shank DIN 6535 HA	L_2	L	Ø D_s	< 1100 N f
mm		TiAlN	mm	mm	mm	mm/rev.
2		eShop ■	18	57	4	0.07
2,2		eShop	17.7	57	4	0.08
2,3		eShop	17.6	57	4	0.08
2,4		eShop	17.4	57	4	0.08
2,5		eShop	17.3	57	4	0.08
2,7		eShop	17	57	4	0.08
2,8		eShop	16.8	57	4	0.08
3		eShop	23.5	66	6	0.08
3,2		eShop	23.2	66	6	0.08
3,3		eShop	23.1	66	6	0.08
3,4		eShop	22.9	66	6	0.08
3,5		eShop	22.8	66	6	0.08
3,7		eShop	22.5	66	6	0.08
3,8		eShop	30.3	74	6	0.08
4		eShop	30	74	6	0.15
4,2		eShop	29.7	74	6	0.15
4,3		eShop	29.5	74	6	0.15
4,5		eShop	29.3	74	6	0.15
4,8		eShop	36.8	82	6	0.15
5		eShop	36.5	82	6	0.15
5,5		eShop	35.8	82	6	0.21
5,8		eShop	35.3	82	6	0.21
6		eShop	35	82	6	0.21
6,3		eShop	43.6	91	8	0.21
6,5		eShop	43.3	91	8	0.21
6,6		eShop	43.1	91	8	0.21

Ø D_c p6	1IE	122736 Solid carbide HPC drill plain shank DIN 6535 HA	L_2	L	Ø D_s	< 1100 N f
mm		TiAlN	mm	mm	mm	mm/rev.
6,8		eShop	42.8	91	8	0.21
7		eShop	42.5	91	8	0.21
7,5		eShop	41.8	91	8	0.21
7,8		eShop	41.3	91	8	0.21
8		eShop	41	91	8	0.21
8,2		eShop	48.7	103	10	0.27
8,5		eShop	48.3	103	10	0.27
8,8		eShop	47.8	103	10	0.27
9		eShop	47.5	103	10	0.27
9,5		eShop	46.8	103	10	0.27
9,8		eShop	46.3	103	10	0.27
10		eShop	46	103	10	0.27
10,2		eShop	55.7	118	12	0.27
10,5		eShop	55.3	118	12	0.27
10,8		eShop	54.8	118	12	0.27
11		eShop	54.5	118	12	0.27
11,5		eShop	53.8	118	12	0.27
11,8		eShop	53.3	118	12	0.27
12		eShop	53	118	12	0.27
13		eShop	57.5	124	14	0.32
13,5		eShop	56.8	124	14	0.32
13,8		eShop	56.3	124	14	0.32
14		eShop	56	124	14	0.32
14,8		eShop	60.8	133	16	0.32
15,8		eShop	59.3	133	16	0.32
16		eShop	59	133	16	0.32

Solid carbide | DIN 6537 L | 6×D | h7 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Master Steel solid carbide high-performance drill

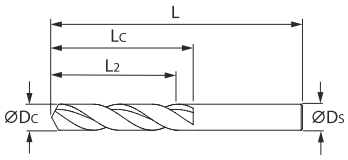
Robust drill design and optimised special point geometry for the **best possible chip formation and reliable chip breakage** with **higher feed rates at the same time. Advanced micro-geometry, convex** cutting edge and **relieved cone** to provide additional stability for the main cutting edge.
Optimised flute geometry and patented face geometry for **reliable chip evacuation** in steel materials and cast material. **High-performance coating** of the latest generation.

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
HB shanks: order with **No. 122762**.
For **HE shanks:** use order **No. 122761 + 129100HE**.
Articles with prices in brackets: Delivery time approx. 8 weeks, minimum order quantity 3 pieces.


Plain shank DIN 6535 HA 12 2761


Weldon shank DIN 6535 HB 12 2762


Whistle-Notch shank DIN 6535 HE 12 2761 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K	
12 2761				170	155	145	130	110	60					55	45	130	90	●

Ø D_C h7	1E	12 2761	L_2	L	Ø D_s	< 1100 N f
		GARANT Master Steel solid carbide high-performance drill, plain shank DIN 6535 HA				
mm		TiAlN	mm	mm	mm	mm/rev.
3		eShop	23.5	66	6	0.12
3,1		eShop	23.4	66	6	0.12
3,2		eShop	23.2	66	6	0.12
3,25		(eShop)	23.2	66	6	0.12
3,3		eShop	23.1	66	6	0.13
3,4		eShop	22.9	66	6	0.13
3,5		eShop	22.8	66	6	0.13
3,7		eShop	22.5	66	6	0.14
3,8		eShop	30.3	74	6	0.14
3,9		eShop	30.2	74	6	0.15
4		eShop	30	74	6	0.15
4,1		eShop	29.9	74	6	0.15
4,2		eShop	29.7	74	6	0.16
4,3		eShop	29.6	74	6	0.16
4,5		eShop	29.3	74	6	0.16
4,6		eShop	29.1	74	6	0.17
4,65		(eShop)	29.1	74	6	0.17
4,7		eShop	29	74	6	0.17
4,8		eShop	35.8	82	6	0.17
4,9		eShop	36.7	82	6	0.18
5		eShop	36.5	82	6	0.18
5,1		eShop	36.4	82	6	0.18
5,2		eShop	36.2	82	6	0.18
5,3		eShop	36.1	82	6	0.19
5,5		eShop	35.8	82	6	0.19
5,55		(eShop)	35.8	82	6	0.19
5,6		eShop	35.6	82	6	0.2
5,7		eShop	35.5	82	6	0.2
5,8		eShop	35.3	82	6	0.2
5,9		eShop	35.2	82	6	0.2
6		eShop	35	82	6	0.21
6,1		eShop	43.9	91	8	0.21
6,2		eShop	43.7	91	8	0.21
6,3		eShop	43.6	91	8	0.22
6,4		eShop	43.4	91	8	0.22
6,5		eShop	43.3	91	8	0.22
6,6		eShop	43.1	91	8	0.22
6,8		eShop	42.8	91	8	0.23
6,9		eShop	42.7	91	8	0.23
7		eShop	42.5	91	8	0.23
7,2		eShop	42.2	91	8	0.24
7,3		eShop	42.1	91	8	0.24
7,45		(eShop)	42.1	91	8	0.24
7,5		eShop	41.8	91	8	0.25
7,8		eShop	41.3	91	8	0.25
7,9		eShop	41.2	91	8	0.26
8		eShop	41	91	8	0.26
8,1		eShop	48.9	103	10	0.26

Ø D_C h7	1E	12 2761	L_2	L	Ø D_s	< 1100 N f
		GARANT Master Steel solid carbide high-performance drill, plain shank DIN 6535 HA				
mm		TiAlN	mm	mm	mm	mm/rev.
8,2		eShop	48.7	103	10	0.26
8,3		eShop	48.6	103	10	0.27
8,5		eShop	48.3	103	10	0.27
8,6		eShop	48.1	103	10	0.27
8,7		eShop	48	103	10	0.28
8,8		eShop	47.8	103	10	0.28
9		eShop	47.5	103	10	0.28
9,2		eShop	47.2	103	10	0.29
9,3		eShop	47.1	103	10	0.29
9,35		(eShop)	47.1	103	10	0.29
9,4		eShop	46.9	103	10	0.29
9,5		eShop	46.8	103	10	0.29
9,8		eShop	46.3	103	10	0.3
10		eShop	46	103	10	0.3
10,2		eShop	55.7	118	12	0.31
10,3		eShop	55.6	118	12	0.31
10,5		eShop	55.3	118	12	0.32
10,8		eShop	54.8	118	12	0.32
11		eShop	54.5	118	12	0.33
11,2		eShop	54.2	118	12	0.33
11,5		eShop	53.8	118	12	0.33
11,8		eShop	53.3	118	12	0.34
12		eShop	53	118	12	0.34
12,2		eShop	57.7	124	14	0.35
12,5		eShop	58.3	124	14	0.35
13		eShop	57.5	124	14	0.36
13,1		(eShop)	57.5	124	14	0.36
13,5		eShop	56.8	124	14	0.37
13,8		eShop	56.3	124	14	0.37
14		eShop	56	124	14	0.38
14,2		eShop	61.7	133	16	0.38
14,5		eShop	61.3	133	16	0.38
14,8		eShop	60.8	133	16	0.39
15		eShop	60.5	133	16	0.39
15,1		(eShop)	60.5	133	16	0.39
15,2		eShop	60.2	133	16	0.39
15,5		eShop	59.8	133	16	0.4
15,8		eShop	59.3	133	16	0.4
16		eShop	59	133	16	0.4
16,5		eShop	68.3	143	18	0.41
17		eShop	67.5	143	18	0.41
17,5		eShop	66.8	143	18	0.42
18		eShop	66	143	18	0.42
18,5		eShop	73.3	155	20	0.43
18,9		(eShop)	72.5	155	20	0.43
19		eShop	72.5	155	20	0.43
19,5		eShop	71.8	155	20	0.43
20		eShop	71	155	20	0.44

Solid carbide	DIN 6537 L	6×D	m7	2	140°	h6 DIN 6535 HA

HOLEX Solid carbide high performance drill

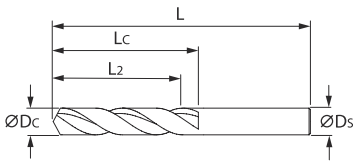

Plain shank DIN 6535 HA 12 2771


Weldon shank DIN 6535 HB 12 2772


Whistle-Notch shank DIN 6535 HE 12 2773

Tool specially matched to drilling holes without through-coolant. **Concave major cutting edges** and a **special flute profile** ensure a good chip evacuation. The sturdy cutter geometry with **special point geometry** and 4 cutting edges ensures drilling with good process reliability. A wide range of applications in steel materials thanks to a combination of tough ultra-fine grain carbide and extremely **wear-resistant** and **heat-resistant coating.**

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122772**.
Form **HE:** order with **No. 122773**.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K	
12 2771		200	160	110	90	80	70	60								90	60	●

Ø D_C m7 (mm or inch)	12 2771 Solid carbide drill plain shank DIN 6535 HA AlTiN-Si	L_2 mm	L mm	Ø D_s mm	f mm/rev.
1	eShop	6.5	55	3	0.05
1,1	eShop	10.4	55	3	0.05
1,2	eShop	10.2	55	3	0.05
1,3	eShop	10.1	55	3	0.05
1,4	eShop	9.9	55	3	0.05
1,5	eShop	13.8	55	3	0.05
1/16	eShop ■	13.6	55	3	0.05
1,6	eShop	13.6	55	3	0.05
1,7	eShop	13.5	55	3	0.07
1,8	eShop	13.3	55	3	0.07
1,9	eShop	13.2	55	3	0.07
2	eShop	18	57	4	0.07
2,1	eShop	17.9	57	4	0.07
2,2	eShop	17.7	57	4	0.07
2,3	eShop	17.6	57	4	0.07
3/32	eShop ■	17.4	57	4	0.09
2,4	eShop	17.4	57	4	0.09
2,5	eShop	17.3	57	4	0.09
2,6	eShop	17.1	57	4	0.09
2,7	eShop	17	57	4	0.11
2,8	eShop	16.8	57	4	0.11
2,9	eShop	16.7	57	4	0.11
3	eShop	23.5	66	6	0.16
3,1	eShop	23.4	66	6	0.16
1/8	eShop ■	23.2	66	6	0.16
3,2	eShop	23.2	66	6	0.16
3,3	eShop	23.1	66	6	0.16
3,4	eShop	22.9	66	6	0.16
3,5	eShop	22.8	66	6	0.16
3,6	eShop	22.6	66	6	0.16
3,7	eShop	22.5	66	6	0.16
3,8	eShop	30.3	74	6	0.16
3,9	eShop	30.2	74	6	0.16
5/32	eShop ■	30	74	6	0.16
4	eShop	30	74	6	0.16
4,1	eShop	29.9	74	6	0.16
4,2	eShop	29.7	74	6	0.16
4,3	eShop	29.6	74	6	0.16
4,4	eShop	29.4	74	6	0.16
4,5	eShop	29.3	74	6	0.16
4,6	eShop	29.1	74	6	0.16
4,65	eShop	29	74	6	0.16
4,7	eShop	29	74	6	0.16
3/16	eShop ■	36.9	82	6	0.16
4,8	eShop	36.8	82	6	0.16
4,9	eShop	36.7	82	6	0.16
5	eShop	36.5	82	6	0.16
5,1	eShop	36.4	82	6	0.18
5,2	eShop	36.2	82	6	0.18

Ø D_C m7 (mm or inch)	12 2771 Solid carbide drill plain shank DIN 6535 HA AlTiN-Si	L_2 mm	L mm	Ø D_s mm	f mm/rev.
5,3	eShop	36.1	82	6	0.18
5,4	eShop	35.9	82	6	0.18
5,5	eShop	35.8	82	6	0.18
5,55	eShop	35.7	82	6	0.18
7/32	eShop ■	35.7	82	6	0.18
5,6	eShop	35.6	82	6	0.18
5,7	eShop	35.5	82	6	0.18
5,8	eShop	35.3	82	6	0.18
5,9	eShop	35.2	82	6	0.18
6	eShop	35	82	6	0.18
6,1	eShop	43.9	91	8	0.18
6,2	eShop	43.7	91	8	0.18
6,3	eShop	43.6	91	8	0.18
6,35	eShop	43.5	91	8	0.18
1/4	eShop ■	43.5	91	8	0.18
6,4	eShop	43.4	91	8	0.18
6,5	eShop	43.3	91	8	0.18
6,6	eShop	43.1	91	8	0.18
6,7	eShop	43	91	8	0.18
6,8	eShop	42.8	91	8	0.18
6,9	eShop	42.7	91	8	0.18
7	eShop	42.5	91	8	0.18
7,1	eShop	42.4	91	8	0.18
9/32	eShop ■	42.3	91	8	0.18
7,2	eShop	42.2	91	8	0.18
7,3	eShop	42.1	91	8	0.18
7,4	eShop	41.9	91	8	0.18
7,45	eShop	41.8	91	8	0.18
7,5	eShop	41.8	91	8	0.18
7,6	eShop	41.6	91	8	0.18
7,7	eShop	41.5	91	8	0.18
7,8	eShop	41.3	91	8	0.18
7,9	eShop	41.2	91	8	0.18
5/16	eShop ■	41.1	91	8	0.18
8	eShop	41	91	8	0.18
8,1	eShop	48.9	103	10	0.2
8,2	eShop	48.7	103	10	0.2
8,3	eShop	48.6	103	10	0.2
8,4	eShop	48.4	103	10	0.2
8,5	eShop	48.3	103	10	0.2
8,6	eShop	48.1	103	10	0.2
8,7	eShop	48	103	10	0.2
11/32	eShop ■	47.9	103	10	0.2
8,8	eShop	47.8	103	10	0.2
8,9	eShop	47.7	103	10	0.2
9	eShop	47.5	103	10	0.2
9,1	eShop	47.4	103	10	0.2
9,2	eShop	47.2	103	10	0.2
9,3	eShop	47.1	103	10	0.2

Ø D_C m7 (mm or inch)	12 2771 Solid carbide drill plain shank DIN 6535 HA AlTiN-Si	L_2 mm	L mm	Ø D_s mm	f mm/rev.
9,35	eShop	47	103	10	0.2
9,4	eShop	46.9	103	10	0.2
9,5	eShop	46.8	103	10	0.2
3/8	eShop ■	46.7	103	10	0.2
9,6	eShop	46.6	103	10	0.2
9,7	eShop	46.5	103	10	0.2
9,8	eShop	46.3	103	10	0.2
9,9	eShop	46.2	103	10	0.2
10	eShop	46	103	10	0.2
10,2	eShop	55.7	118	12	0.2
10,3	eShop	55.6	118	12	0.2
13/32	eShop ■	55.5	118	12	0.2
10,5	eShop	55.3	118	12	0.2
10,8	eShop	54.8	118	12	0.2
11	eShop	54.5	118	12	0.2
7/16	eShop ■	54.3	118	12	0.2
11,2	eShop	54.2	118	12	0.2
11,5	eShop	53.8	118	12	0.2
11,8	eShop	53.3	118	12	0.2
12	eShop	53	118	12	0.2
12,2	eShop	58.7	124	14	0.26
12,5	eShop ■	58.3	124	14	0.26
12,7	eShop	58	124	14	0.26
1/2	eShop ■	58	124	14	0.26
12,8	eShop	57.8	124	14	0.26
13	eShop	57.5	124	14	0.26
13,2	eShop	57.2	124	14	0.26
13,5	eShop ■	56.8	124	14	0.26
13,8	eShop	56.3	124	14	0.26
14	eShop	56	124	14	0.26
14,2	eShop	61.7	133	16	0.26
9/16	eShop ■	61.6	133	16	0.26
14,5	eShop ■	61.3	133	16	0.26
14,8	eShop	60.8	133	16	0.26
15	eShop ■	60.5	133	16	0.26
15,1	eShop	60.4	133	16	0.26
15,2	eShop	60.2	133	16	0.26
15,5	eShop ■	59.8	133	16	0.26
15,8	eShop	59.3	133	16	0.26
5/8	eShop ■	59.2	133	16	0.26
16	eShop	59	133	16	0.26
16,5	eShop	68.3	143	18	0.28
17	eShop	67.5	143	18	0.28
17,5	eShop	66.8	143	18	0.28
18	eShop	66	143	18	0.28
18,5	eShop	73.3	153	20	0.28
19	eShop	72.5	153	20	0.28
19,5	eShop	71.8	153	20	0.28
20	eShop	71	153	20	0.28

Solid carbide | DIN 6537 L | 6×D | h7 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

HOLEX Pro Steel solid carbide high-performance drill

Straight major cutting edges and a **special flute profile** ensure a good chip evacuation. The robust cutter geometry ensures high-performance drilling with good process reliability. A wide range of applications in steel materials thanks to a combination of tough ultra-fine grain carbide and an extremely wear-resistant coating.
Up to ∅ 1.9 with 4 facets, from ∅ 2 with relieved cone.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Versions with HB and HE shank available at the same price as HA.
For **HB shanks:** use order **no. 122777**.
For **HE shanks:** use order **No. 122778**.



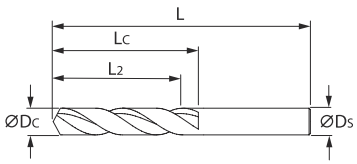
Plain shank DIN 6535 HA 122776



Weldon shank DIN 6535 HB 122777



Whistle-Notch shank DIN 6535 HE 122778



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
122776	250	200	160	125	115	95	90	65						35	30	100	65	●		●	●		

∅ D_C h7 (mm or inch)	12F 122776 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	∅ D_s mm	< 900 N f mm/rev.
1	eShop	6.5	45	4	0.05
1,1	eShop	7.4	45	4	0.05
1,2	eShop	7.7	45	4	0.05
1,25	eShop	8.6	45	4	0.05
1,3	eShop	8.6	45	4	0.05
1,4	eShop	8.9	45	4	0.05
1,45	eShop	9.8	50	4	0.05
1,5	eShop	9.8	50	4	0.05
1/16	eShop ■	10.7	50	4	0.05
1,6	eShop	10.6	50	4	0.05
1,7	eShop	11	50	4	0.07
1,8	eShop	11.8	50	4	0.07
1,85	eShop	12.2	50	4	0.07
1,9	eShop	12.2	50	4	0.07
2	eShop	13	50	4	0.07
2,05	eShop	13.9	55	4	0.07
2,1	eShop	13.9	55	4	0.07
2,2	eShop	14.2	55	4	0.07
2,3	eShop	15.1	55	4	0.09
3/32	eShop ■	15.5	55	4	0.09
2,4	eShop	15.4	55	4	0.09
2,5	eShop	16.3	55	4	0.09
2,6	eShop	17.1	55	4	0.09
2,7	eShop	17.5	55	4	0.09
2,8	eShop	18.3	55	4	0.11
2,9	eShop	18.7	55	4	0.11
3	eShop	23.5	66	6	0.11
3,1	eShop	23.4	66	6	0.11
1/8	eShop ■	23.3	66	6	0.11
3,2	eShop	23.2	66	6	0.11
3,25	eShop	23.1	66	6	0.11

∅ D_C h7 (mm or inch)	12F 122776 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	∅ D_s mm	< 900 N f mm/rev.
3,3	eShop	23.1	66	6	0.11
3,4	eShop	22.9	66	6	0.11
3,5	eShop	22.8	66	6	0.11
3,6	eShop	22.6	66	6	0.11
3,7	eShop	22.5	66	6	0.11
3,8	eShop	30.3	74	6	0.11
3,9	eShop	30.2	74	6	0.11
5/32	eShop ■	30.1	74	6	0.11
4	eShop	30	74	6	0.14
4,1	eShop	29.9	74	6	0.14
4,2	eShop	29.7	74	6	0.14
4,3	eShop	29.6	74	6	0.14
4,4	eShop	29.4	74	6	0.14
4,5	eShop	29.3	74	6	0.14
4,6	eShop	29.1	74	6	0.14
4,65	eShop	29.1	74	6	0.14
4,7	eShop	29	74	6	0.14
3/16	eShop ■	36.9	82	6	0.14
4,8	eShop	36.8	82	6	0.14
4,9	eShop	36.7	82	6	0.14
5	eShop	36.5	82	6	0.14
5,1	eShop	36.4	82	6	0.14
5,2	eShop	36.2	82	6	0.14
5,3	eShop	36.1	82	6	0.14
5,4	eShop	35.9	82	6	0.14
5,5	eShop	35.8	82	6	0.14
5,55	eShop	35.7	82	6	0.14
7/32	eShop ■	35.7	82	6	0.14
5,6	eShop	35.6	82	6	0.14
5,7	eShop	35.5	82	6	0.14
5,8	eShop	35.3	82	6	0.14

Ø D_c h7 (mm or inch)	12F 12 2776 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
5,9	eShop	35.2	82	6	0.14
6	eShop	35	82	6	0.14
6,1	eShop	43.9	91	8	0.18
6,2	eShop	43.7	91	8	0.18
6,3	eShop	43.6	91	8	0.18
1/4	eShop ■	43.5	91	8	0.18
6,35	eShop	43.5	91	8	0.18
6,4	eShop	43.4	91	8	0.18
6,5	eShop	43.3	91	8	0.18
6,6	eShop	43.1	91	8	0.18
6,7	eShop	43	91	8	0.18
6,8	eShop	42.8	91	8	0.18
6,9	eShop	42.7	91	8	0.18
7	eShop	42.5	91	8	0.18
7,1	eShop	42.4	91	8	0.18
9/32	eShop ■	42.3	91	8	0.18
7,2	eShop	42.2	91	8	0.18
7,3	eShop	42.1	91	8	0.18
7,4	eShop	41.9	91	8	0.18
7,45	eShop	41.9	91	8	0.18
7,5	eShop	41.8	91	8	0.18
7,55	eShop	41.7	91	8	0.18
7,6	eShop	41.6	91	8	0.18
7,7	eShop	41.5	91	8	0.18
7,8	eShop	41.3	91	8	0.18
7,9	eShop	41.2	91	8	0.18
5/16	eShop ■	41.1	91	8	0.18
8	eShop ■	41	91	8	0.18
8,1	eShop	48.9	103	10	0.2
8,2	eShop	48.7	103	10	0.2
8,3	eShop	48.6	103	10	0.2
8,4	eShop	48.4	103	10	0.2
8,5	eShop ■	48.3	103	10	0.2
8,6	eShop	48.1	103	10	0.2
8,7	eShop	48	103	10	0.2
11/32	eShop ■	48	103	10	0.2
8,8	eShop	47.8	103	10	0.2
8,9	eShop	47.7	103	10	0.2
9	eShop ■	47.5	103	10	0.2
9,1	eShop	47.4	103	10	0.22
9,2	eShop	47.2	103	10	0.22
9,25	eShop	47.1	103	10	0.22
9,3	eShop	47.1	103	10	0.22
9,35	eShop	47	103	10	0.22
9,4	eShop	46.9	103	10	0.22
9,5	eShop	46.8	103	10	0.22
3/8	eShop ■	46.8	103	10	0.22
9,55	eShop	46.7	103	10	0.22
9,6	eShop	46.6	103	10	0.22
9,7	eShop	46.5	103	10	0.22
9,8	eShop	46.3	103	10	0.22
9,9	eShop	46.2	103	10	0.22
10	eShop ■	46	103	10	0.22
10,1	eShop	55.9	118	12	0.22
10,2	eShop	55.7	118	12	0.22
10,3	eShop	55.6	118	12	0.22
13/32	eShop ■	55.6	118	12	0.22
10,4	eShop	55.4	118	12	0.22
10,5	eShop ■	55.3	118	12	0.22
10,6	eShop	55.1	118	12	0.22
10,7	eShop	55	118	12	0.22
10,8	eShop	54.8	118	12	0.22
10,9	eShop	54.7	118	12	0.22
11	eShop ■	54.5	118	12	0.22

Ø D_c h7 (mm or inch)	12F 12 2776 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
11,1	eShop	54.4	118	12	0.22
7/16	eShop ■	54.4	118	12	0.22
11,2	eShop	54.2	118	12	0.22
11,3	eShop	54.1	118	12	0.22
11,35	eShop	54	118	12	0.22
11,4	eShop	53.9	118	12	0.22
11,5	eShop	53.8	118	12	0.22
11,55	eShop	53.7	118	12	0.22
11,6	eShop	53.6	118	12	0.22
11,7	eShop	53.5	118	12	0.22
11,8	eShop	53.3	118	12	0.22
11,9	eShop	53.2	118	12	0.22
12	eShop	53	118	12	0.22
12,2	eShop	58.7	124	14	0.26
12,5	eShop ■	58.3	124	14	0.26
12,55	eShop	58.2	124	14	0.26
1/2	eShop ■	58	124	14	0.26
12,7	eShop	58	124	14	0.26
12,8	eShop	57.8	124	14	0.26
13	eShop	57.5	124	14	0.26
13,1	eShop	57.4	124	14	0.26
13,2	eShop	57.2	124	14	0.26
13,3	eShop	57	124	14	0.26
13,5	eShop ■	56.8	124	14	0.26
13,8	eShop	56.3	124	14	0.26
14	eShop ■	56	124	14	0.26
14,1	eShop	61.9	133	16	0.26
14,2	eShop	61.7	133	16	0.26
9/16	eShop ■	61.6	133	16	0.26
14,5	eShop	61.3	133	16	0.26
14,8	eShop	60.8	133	16	0.26
15	eShop	60.5	133	16	0.26
19/32	eShop ■	60.4	133	16	0.26
15,1	eShop	60.4	133	16	0.26
15,2	eShop	60.2	133	16	0.26
15,25	eShop	60.1	133	16	0.26
15,35	eShop	60	133	16	0.26
15,5	eShop ■	59.8	133	16	0.26
15,8	eShop	59.3	133	16	0.26
5/8	eShop ■	59.2	133	16	0.26
16	eShop	59	133	16	0.26
16,05	eShop	68.9	143	18	0.26
16,2	eShop	68.7	143	18	0.28
16,5	eShop	68.3	143	18	0.28
21/32	eShop ■	68	143	18	0.28
16,8	eShop	67.8	143	18	0.28
17	eShop	67.5	143	18	0.28
17,2	eShop	67.2	143	18	0.28
11/16	eShop ■	66.9	143	18	0.28
17,5	eShop	66.8	143	18	0.28
17,8	eShop	66.3	143	18	0.28
18	eShop	66	143	18	0.28
18,2	eShop	73.7	153	20	0.28
18,5	eShop	73.3	153	20	0.28
18,8	eShop	72.8	153	20	0.28
18,9	eShop	72.7	153	20	0.28
19	eShop	72.5	153	20	0.28
3/4	eShop ■	72.5	153	20	0.28
19,05	eShop	72.5	153	20	0.28
19,2	eShop	72.2	153	20	0.28
19,5	eShop	71.8	153	20	0.28
19,8	eShop	71.3	153	20	0.28
20	eShop	71	153	20	0.28

H7 | Solid carbide | DIN 6537 L | 6×D | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC

Garant

Solid carbide HPC precision drills for H7 fit

Drilling and reaming in a single operation. Cutting chisel edge with **high centring accuracy** due to **strong core and special point geometry.** Particularly high alignment accuracy due to **4 guide chamfers.**

Advantage: Very tight **manufacturing tolerances** with **H7 fit** can be produced without additional reaming.

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
Solid carbide precision fit drills for machining aluminium available on request.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122790 + 129100HB** .
Form **HE:** order with **No. 122790 + 129100HE**.



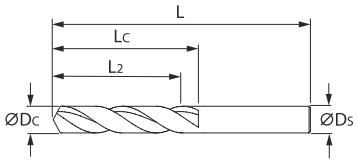
Plain shank DIN 6535 HA 12 2790



Weldon shank DIN 6535 HB 12 2790 + 12 9100 HB



Whistle-Notch shank DIN 6535 HE 12 2790 + 12 9100 HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
12 2790				120	100	85	60							35	30			●		●			○

Ø D_C	11E 12 2790 Solid carbide HPC drill plain shank DIN 6535 HA H7 TiAlN	L_2	L	Ø D_s	< 900 N f
mm		mm	mm	mm	mm/rev.
3H7	eShop	23.5	66	6	0.09
3,98	eShop	30.1	74	6	0.12
3,99	eShop	30.1	74	6	0.12
4H7	eShop	30	74	6	0.12
4,01	eShop	30	74	6	0.12
4,02	eShop	30	74	6	0.12
4,98	eShop	36.6	82	6	0.16
4,99	eShop	36.6	82	6	0.16
5H7	eShop	36.5	82	6	0.16
5,01	eShop	36.5	82	6	0.16
5,02	eShop	36.5	82	6	0.16
5,98	eShop	35.1	82	6	0.16
5,99	eShop	35.1	82	6	0.16
6H7	eShop	35	82	6	0.16
6,01	eShop	35	82	6	0.16
6,02	eShop	35	82	6	0.16
7H7	eShop	42.5	91	8	0.22
7,98	eShop	41.1	91	8	0.22
7,99	eShop	41.1	91	8	0.22
8H7	eShop	41	91	8	0.22
8,01	eShop	41	91	8	0.22
8,02	eShop	41	91	8	0.22
9H7	eShop	47.5	103	10	0.28
9,98	eShop	46.1	103	10	0.28
9,99	eShop	46.1	103	10	0.28
10H7	eShop	46	103	10	0.28
10,01	eShop	46	103	10	0.28
10,02	eShop	46	103	10	0.28
12H7	eShop	53	118	12	0.34
14H7	eShop	56	124	14	0.34

Solid carbide | Standard | 5×D | m7 | 2 | 180° | h6 DIN 6535 HA | 25 bar | x

Garant Solid carbide drill 180°

Special point geometry for generating **180° flat-bottomed holes.** Low radial forces even when spot drilling on faces with up to 15° slope. Flute geometry for optimum chip evacuation. With 4 guide chamfers to stabilise the drill in the hole.

Advantage: **The 180° point angle** permits drilling and counterboring in a single operation.

Recommendation: When using the solid carbide 180° drill it is absolutely essential for process reliability:

- **When spot drilling on flat surfaces** to drill a pilot hole 1×D using pilot drill No. 122736.
- **When spot drilling on sloping surfaces** up to max. 15° : **reduce** the feed rate f **to 25%** of the stated value. **After spot drilling**, the **normal feed rate value** can be used.

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122793 + 129100HB** .
Form **HE:** order with **No. 122793 + 129100HE**.
180° solid carbide drills for machining aluminium available on request.
Not suitable for generating counterbores for socket-head screws to DIN974-1.



Plain shank DIN 6535 HA 122793



Weldon shank DIN 6535 HB 122793 + 129100HB



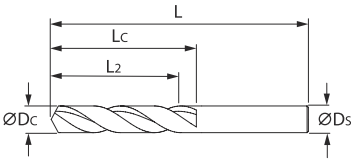
Whistle-Notch shank DIN 6535 HE 122793 + 129100HE



With cutting edge chamfer (= 5 % of the nominal ∅)

Pilot drill

122736



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	< 900 N	> 900 N	> 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
122793				85	75	60	50							45			90	●		●	●		●

∅ D_C m7	TiE 122793 Solid carbide drill plain shank DIN 6535 HA 180°	L_2	L	∅ D_s	< 900 N f
mm	TiAlN	mm	mm	mm	mm/rev.
3	eShop	23.5	66	6	0.05
3,1	(eShop)	23.4	66	6	0.05
3,2	eShop	23.2	66	6	0.05
3,3	(eShop)	23.1	66	6	0.05
3,4	(eShop)	22.9	66	6	0.05
3,5	eShop	22.8	66	6	0.05
3,6	(eShop)	22.6	66	6	0.05
3,7	eShop	22.5	66	6	0.05
3,8	eShop	30.3	74	6	0.05
3,9	(eShop)	30.2	74	6	0.05
4	eShop	30	74	6	0.08
4,1	(eShop)	29.9	74	6	0.08
4,2	eShop	29.7	74	6	0.08
4,3	(eShop)	29.6	74	6	0.08
4,4	(eShop)	29.4	74	6	0.08
4,5	eShop	29.3	74	6	0.08
4,6	(eShop)	29.1	74	6	0.08
4,65	(eShop)	29	74	6	0.08
4,7	(eShop)	29	74	6	0.08
4,8	eShop	36.8	82	6	0.08
4,9	(eShop)	36.7	82	6	0.08
5	eShop	36.5	82	6	0.12
5,1	(eShop)	36.4	82	6	0.12
5,2	(eShop)	36.2	82	6	0.12
5,3	(eShop)	36.1	82	6	0.12
5,4	(eShop)	35.9	82	6	0.12
5,5	eShop	35.8	82	6	0.12
5,55	(eShop)	35.7	82	6	0.12
5,6	(eShop)	35.6	82	6	0.12
5,7	(eShop)	35.5	82	6	0.12
5,8	eShop	35.3	82	6	0.12
5,9	(eShop)	35.2	82	6	0.12
6	eShop	35	82	6	0.12
6,1	(eShop)	43.9	91	8	0.12
6,2	(eShop)	43.7	91	8	0.12
6,3	(eShop)	43.6	91	8	0.12
6,4	(eShop)	43.4	91	8	0.12
6,5	eShop	43.3	91	8	0.12
6,6	(eShop)	43.1	91	8	0.12

∅ D_C m7	TiE 122793 Solid carbide drill plain shank DIN 6535 HA 180°	L_2	L	∅ D_s	< 900 N f
mm	TiAlN	mm	mm	mm	mm/rev.
6,7	(eShop)	43	91	8	0.12
6,8	eShop	42.8	91	8	0.12
6,9	(eShop)	42.7	91	8	0.12
7	eShop	42.5	91	8	0.12
7,1	(eShop)	42.4	91	8	0.12
7,2	(eShop)	42.2	91	8	0.12
7,3	(eShop)	42.1	91	8	0.12
7,4	(eShop)	41.9	91	8	0.12
7,5	eShop	41.8	91	8	0.12
7,6	(eShop)	41.6	91	8	0.12
7,7	(eShop)	41.5	91	8	0.12
7,8	eShop	41.3	91	8	0.12
7,9	(eShop)	41.2	91	8	0.12
8	eShop	41	91	8	0.12
8,1	(eShop)	48.9	103	10	0.15
8,2	(eShop)	48.7	103	10	0.15
8,3	(eShop)	48.6	103	10	0.15
8,4	(eShop)	48.4	103	10	0.15
8,5	eShop	48.3	103	10	0.15
8,6	(eShop)	48.1	103	10	0.15
8,7	(eShop)	48	103	10	0.15
8,8	(eShop)	47.8	103	10	0.15
8,9	(eShop)	47.7	103	10	0.15
9	eShop	47.5	103	10	0.15
9,1	(eShop)	47.4	103	10	0.15
9,2	(eShop)	47.2	103	10	0.15
9,3	(eShop)	47.1	103	10	0.15
9,4	(eShop)	46.9	103	10	0.15
9,5	eShop	46.8	103	10	0.15
9,6	(eShop)	46.6	103	10	0.15
9,7	(eShop)	46.5	103	10	0.15
9,8	(eShop)	46.3	103	10	0.15
9,9	(eShop)	46.2	103	10	0.15
10	eShop	46	103	10	0.15
10,1	(eShop)	53.9	116	12	0.15
10,2	eShop	53.7	116	12	0.15
10,3	(eShop)	53.6	116	12	0.15
10,4	(eShop)	53.4	116	12	0.15
10,5	eShop	53.3	116	12	0.15

∅ D_C m7	TiE 122793 Solid carbide drill plain shank DIN 6535 HA 180°	L_2	L	∅ D_s	< 900 N f
mm	TiAlN	mm	mm	mm	mm/rev.
10,6	(eShop)	53.1	116	12	0.15
10,7	(eShop)	53	116	12	0.15
10,8	(eShop)	52.8	116	12	0.15
10,9	(eShop)	52.7	116	12	0.15
11	eShop	52.5	116	12	0.15
11,1	(eShop)	52.4	116	12	0.15
11,2	(eShop)	52.2	116	12	0.15
11,3	(eShop)	52.1	116	12	0.15
11,4	(eShop)	51.9	116	12	0.15
11,5	(eShop)	51.8	116	12	0.15
11,6	(eShop)	51.6	116	12	0.15
11,7	(eShop)	51.5	116	12	0.15
11,8	eShop	51.3	116	12	0.15
11,9	(eShop)	51.2	116	12	0.15
12	eShop	51	116	12	0.15
12,5	eShop	56.3	122	14	0.16
12,8	(eShop)	55.8	122	14	0.16
13	eShop	55.5	122	14	0.16
13,5	(eShop)	54.8	122	14	0.16
13,8	(eShop)	54.3	122	14	0.16
14	eShop	54	122	14	0.16
14,5	(eShop)	59.3	131	16	0.16
14,8	(eShop)	58.8	131	16	0.16
15	eShop	58.5	131	16	0.16
15,5	(eShop)	57.8	131	16	0.16
15,8	(eShop)	57.3	131	16	0.16
16	eShop	57	131	16	0.16
16,5	eShop	66.3	141	18	0.2
16,8	(eShop)	65.8	141	18	0.2
17	(eShop)	65.5	141	18	0.2
17,5	eShop	64.8	141	18	0.2
17,8	(eShop)	64.3	141	18	0.2
18	eShop	64	141	18	0.2
18,5	(eShop)	71.3	151	20	0.2
18,8	(eShop)	70.8	151	20	0.2
19	eShop	70.5	151	20	0.2
19,5	(eShop)	69.8	151	20	0.2
19,8	(eShop)	69.3	151	20	0.2
20	eShop	69	151	20	0.23

Solid carbide | Standard | 5×D | 2 | 140° | h6 DIN 6535 HA | 25 bar | x

H7 | ±0.003

Garant Solid carbide drill-reamer with pyramid tip

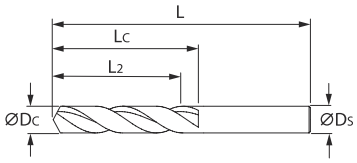
For producing toleranced holes in steel or short-chipping materials.
Reliable complete machining without separate centring and without subsequent reaming process. Significantly improved self-centring due to **additional pyramid tip** for optimum roundness and tolerance accuracy of the hole that is produced.
Two drill cutting edges and four reaming cutting edges for an attractive surface quality of the wall of the bore.
Tolerance specifications:
H7: Version for H7 bore tolerance.
+/– 0.003 mm: Manufacturing or cutting tolerance of nominal Ø D_C.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **No. 122797 + 129100HB**.
For **HE shanks:** use order **No. 122797 + 129100HE**.


Plain shank DIN 6535 HA 12 2797


Weldon shank DIN 6535 HB 12 2797 + 129100HB


WhisIte-Notch shank DIN 6535 HE 12 2797 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
12 2797				100	90	80	70	60									90			●	●		●

Ø D_C mm	12 2797 Solid carbide drill-reamer with pyramid tip DIN 6535 HA TiAlN	Tolerance	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
4H7	eShop	H7	30	74	6	0.13
4,01	eShop	± 0.003	30	74	6	0.13
4,02	eShop	± 0.003	30	74	6	0.13
4,98	eShop	± 0.003	45.5	91	6	0.13
5H7	eShop	H7	45.5	91	6	0.13
5,01	eShop	± 0.003	45.5	91	6	0.13
5,02	eShop	± 0.003	45.5	91	6	0.13
5,98	eShop	±0.003	44	91	6	0.15
5,99	eShop	± 0.003	44	91	6	0.15
6	(eShop)	±0.003	44	91	6	0.15
6H7	eShop	H7	44	91	6	0.15
6,01	eShop	±0.003	44	91	6	0.15
6,02	eShop	±0.003	44	91	6	0.15
6,03	eShop	± 0.003	44	91	6	0.15
7H7	eShop	H7	42.5	91	8	0.15
7,98	eShop	±0.003	41	91	8	0.17
7,99	eShop	± 0.003	41	91	8	0.17
8	(eShop)	±0.003	41	91	8	0.17
8H7	eShop	H7	41	91	8	0.17

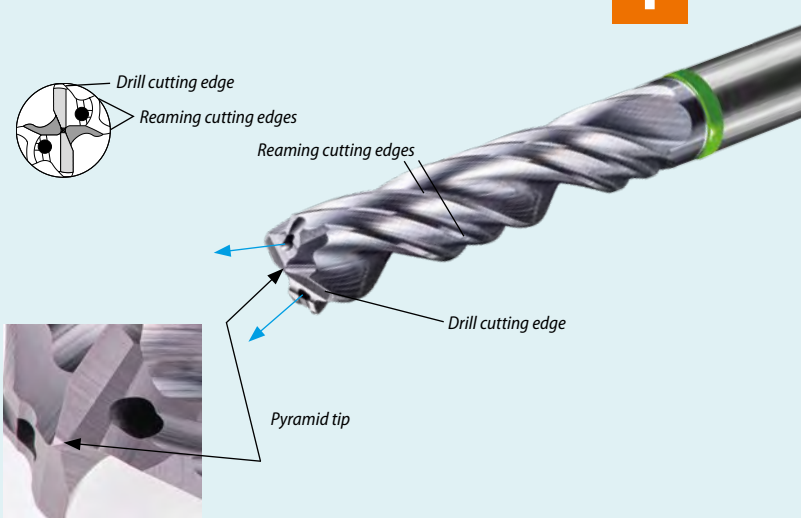
Ø D_C mm	12 2797 Solid carbide drill-reamer with pyramid tip DIN 6535 HA TiAlN	Tolerance	L_2 mm	L mm	Ø D_s mm	< 900 N f mm/rev.
8,01	eShop	±0.003	41	91	8	0.17
8,02	eShop	±0.003	41	91	8	0.17
9H7	eShop	H7	47.5	103	10	0.17
9,54	(eShop)	±0.003	46.7	103	10	0.22
9,98	eShop	± 0.003	46	103	10	0.22
9,99	eShop	± 0.003	46	103	10	0.22
10	eShop	±0.003	46	103	10	0.22
10H7	eShop	H7	46	103	10	0.22
10,01	eShop	±0.003	46	103	10	0.22
10,02	eShop	±0.003	46	103	10	0.22
11,98	(eShop)	±0.003	53	118	12	0.24
11,99	eShop	±0.003	53	118	12	0.24
12	(eShop)	±0.003	53	118	12	0.24
12H7	eShop	H7	53	118	12	0.24
12,01	eShop	±0.003	53	118	12	0.24
12,02	(eShop)	±0.003	53	118	12	0.24
12,7	(eShop)	±0.003	58	124	14	0.27
14H7	eShop	H7	56	124	14	0.3
16H7	eShop	H7	59	133	16	0.3

Garant Centring, drilling and reaming in a single operation

With the new GARANT solid carbide drill reamer 12 2797 **several work steps** are combined and toleranced holes are produced faster and more efficiently.

The additional pyramid tip ensures optimum self-centring. Two cutting edges take over the pre-machining and four reaming cutting edges ensure the required surface quality, roundness and dimensional accuracy of the hole in reaming quality.

The elimination of a separate reaming process significantly reduces both direct production times and ancillary production times. In addition, the geometry of the cutting edges and guide chamfers permits precise and economical regrinding.



Solid carbide | Standard | 8×D | Type W | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant

Solid carbide HPC drill

DLC coating sp² of the latest generation with **low coefficient of friction** results in **outstanding chip clearance.** For **high-performance milling** of **aluminium materials**. **High roundness** and **alignment accuracy of the deep hole**, thanks to **6 guide chamfers.**

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 122809**.
Form **HE:** order with **No. 122808 + 129100HE**.



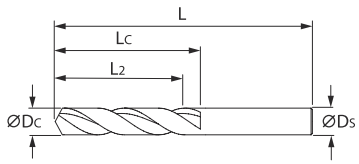
Plain shank DIN 6535 HA 12 2808



Weldon shank DIN 6535 HB 12 2809



Whistle-notch shank DIN 6535 HE 12 2808 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	Cu	CuZn	GRP	CRP
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12 2808	325	360	315	135			110			80		70	60	70	140	160	70	70

Ø D_C h7	11E 12 2808 Solid carbide HPC drill, plain shank DIN 6535 HA	L_2	L	Ø D_s	Alu f
mm	DLC	mm	mm	mm	mm/rev.
2	eShop	22	66	4	0.2
2,1	eShop	21.9	66	4	0.22
2,2	eShop	21.7	66	4	0.22
2,3	eShop	21.6	66	4	0.22
2,4	eShop	26.4	66	4	0.22
2,5	eShop	26.3	66	4	0.22
2,6	eShop	26.1	66	4	0.22
2,7	eShop	26	66	4	0.22
2,8	eShop	25.8	66	4	0.22
2,9	eShop	25.7	66	4	0.22
3	eShop	29.5	72	6	0.22
3,1	eShop	29.4	72	6	0.35
3,2	eShop	29.2	72	6	0.35
3,3	eShop	29.1	72	6	0.35
3,4	eShop	28.9	72	6	0.35
3,5	eShop	28.8	72	6	0.35
3,6	eShop	28.6	72	6	0.35
3,7	eShop	28.5	72	6	0.35
3,8	eShop	37.3	81	6	0.35
3,9	eShop	37.2	81	6	0.35
4	eShop	37	81	6	0.35
4,1	eShop	36.9	81	6	0.35
4,2	eShop	36.7	81	6	0.35
4,3	eShop	36.6	81	6	0.35
4,4	eShop	36.4	81	6	0.35
4,5	eShop	36.3	81	6	0.35
4,6	eShop	36.1	81	6	0.35
4,7	eShop	36	81	6	0.35
4,8	eShop	49.8	95	6	0.35
4,9	eShop	49.7	95	6	0.35
5	eShop	49.5	95	6	0.35
5,1	eShop	49.4	95	6	0.45
5,2	eShop	49.2	95	6	0.45
5,3	eShop	49.1	95	6	0.45
5,4	eShop	48.9	95	6	0.45
5,5	eShop	48.8	95	6	0.45
5,6	eShop	48.6	95	6	0.45
5,7	eShop	48.5	95	6	0.45
5,8	eShop	48.3	95	6	0.45
5,9	eShop	48.2	95	6	0.45
6	eShop	48	95	6	0.45
6,1	eShop	66.9	114	8	0.45
6,2	eShop	66.7	114	8	0.45
6,3	eShop	66.6	114	8	0.45
6,4	eShop	66.4	114	8	0.45
6,5	eShop	66.3	114	8	0.45
6,6	eShop	66.1	114	8	0.45
6,7	eShop	66	114	8	0.45
6,8	eShop	65.8	114	8	0.45
6,9	eShop	65.7	114	8	0.45
7	eShop	65.5	114	8	0.45
7,1	eShop	65.4	114	8	0.45
7,2	eShop	65.2	114	8	0.45
7,3	eShop	65.1	114	8	0.45
7,4	eShop	64.9	114	8	0.45
7,5	eShop	64.8	114	8	0.45

Ø D_C h7	11E 12 2808 Solid carbide HPC drill, plain shank DIN 6535 HA	L_2	L	Ø D_s	Alu f
mm	DLC	mm	mm	mm	mm/rev.
7,6	eShop	64.6	114	8	0.45
7,7	eShop	64.5	114	8	0.45
7,8	eShop	64.3	114	8	0.45
7,9	eShop	64.2	114	8	0.45
8	eShop	64	114	8	0.45
8,1	eShop	82.9	142	10	0.55
8,2	eShop	82.7	142	10	0.55
8,3	eShop	82.6	142	10	0.55
8,4	eShop	82.4	142	10	0.55
8,5	eShop	82.3	142	10	0.55
8,6	eShop	82.1	142	10	0.55
8,7	eShop	82	142	10	0.55
8,8	eShop	81.8	142	10	0.55
8,9	eShop	81.7	142	10	0.55
9	eShop	81.5	142	10	0.55
9,1	eShop	81.4	142	10	0.55
9,2	eShop	81.2	142	10	0.55
9,3	eShop	81.1	142	10	0.55
9,4	eShop	80.9	142	10	0.55
9,5	eShop	80.8	142	10	0.55
9,6	eShop	80.6	142	10	0.55
9,7	eShop	80.5	142	10	0.55
9,8	eShop	80.3	142	10	0.55
9,9	eShop	80.2	142	10	0.55
10	eShop	80	142	10	0.55
10,2	eShop	98.7	162	12	0.55
10,5	eShop	98.3	162	12	0.55
10,8	eShop	97.8	162	12	0.55
11	eShop	97.5	162	12	0.55
11,5	eShop	96.8	162	12	0.55
11,8	eShop	96.3	162	12	0.55
12	eShop	96	162	12	0.55
12,5	eShop	112.3	178	14	0.65
12,8	eShop	111.8	178	14	0.65
13	eShop	111.5	178	14	0.65
13,5	eShop	110.8	178	14	0.65
13,8	eShop	110.3	178	14	0.65
14	eShop	110	178	14	0.65
14,5	eShop	130.3	203	16	0.65
14,8	eShop	129.8	203	16	0.65
15	eShop	129.5	203	16	0.65
15,5	eShop	128.8	203	16	0.65
15,8	eShop	128.3	203	16	0.65
16	eShop	128	203	16	0.65
16,5	eShop	146.3	222	18	0.7
16,8	eShop	145.8	222	18	0.7
17	eShop	145.5	222	18	0.7
17,5	eShop	144.8	222	18	0.7
17,8	eShop	144.3	222	18	0.7
18	eShop	144	222	18	0.7
18,5	eShop	162.3	243	20	0.7
18,8	eShop	161.8	243	20	0.7
19	eShop	161.5	243	20	0.7
19,5	eShop	160.8	243	20	0.7
19,8	eShop	160.3	243	20	0.7
20	eShop	160	243	20	0.7

Solid carbide | Standard | 8×D | m6 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant

Solid carbide HPC drill with 4 cooling channels

Cutting chisel edge with **high centring accuracy** due to **strong core and special point geometry.**
High roundness and alignment accuracy of the deep hole, thanks to **4 guide chamfers.** Outstanding chip evacuation due to **4 internal cooling channels** from Ø 3.8 mm. Up to 3.7 mm Ø with 2 internal cooling channels.
Straight major cutting edges with honed edges and special flute profile for **short chips**, even on long chipping materials.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 123010**.
Form **HE:** order with **No. 123008 + 129100HE**.



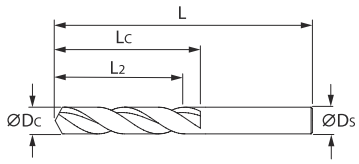
Plain shank DIN 6535 HA 12 3008



Weldon shank DIN 6535 HB 12 3010



Whistle-Notch shank DIN 6535 HE 12 3008 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
12 3008				90	75	70	55	32						70	60					●	●		

Ø D_c m6	11E	12 3008 Solid carbide HPC drill plain shank DIN 6535 HA	L_2	L	Ø D_s	INOX > 900 N f
(mm or inch)		TiAlN	mm	mm	mm	mm/rev.
3		eShop	29.5	72	6	0.06
3,3		eShop	29.1	72	6	0.06
3,4		eShop	28.9	72	6	0.06
3,5		eShop	28.8	72	6	0.06
3,7		eShop	28.5	72	6	0.06
3,8		eShop	37.3	81	6	0.06
4		eShop	37	81	6	0.08
4,1		eShop	36.9	81	6	0.08
4,2		eShop	36.7	81	6	0.08
4,3		eShop	36.6	81	6	0.08
4,5		eShop	36.3	81	6	0.08
4,6		eShop	36.1	81	6	0.08
3/16		eShop ■	49.8	95	6	0.08
4,8		eShop	49.8	95	6	0.08
4,9		eShop	49.7	95	6	0.08
5		eShop	49.5	95	6	0.08
5,1		eShop	49.4	95	6	0.12
5,2		eShop	49.2	95	6	0.12
5,3		eShop	49.1	95	6	0.12
5,5		eShop	48.8	95	6	0.12
7/32		eShop ■	48.3	95	6	0.12
5,8		eShop	48.3	95	6	0.12
5,9		eShop	48.2	95	6	0.12
6		eShop	48	95	6	0.12
6,1		eShop	66.9	114	8	0.12
6,2		eShop	66.7	114	8	0.12
6,3		eShop	66.6	114	8	0.12
1/4		eShop ■	66.3	114	8	0.12
6,35		eShop	66.5	114	8	0.12
6,5		eShop	66.3	114	8	0.12
6,6		eShop	66.1	114	8	0.12
6,7		eShop	66	114	8	0.12
6,8		eShop	65.8	114	8	0.12
7		eShop	65.5	114	8	0.12
9/32		eShop ■	64.9	114	8	0.12
7,4		eShop	64.9	114	8	0.12
7,5		eShop	64.8	114	8	0.12
7,7		eShop	64.5	114	8	0.12
7,8		eShop	64.3	114	8	0.12
7,9		eShop	64.2	114	8	0.12
5/16		eShop ■	64	114	8	0.12
8		eShop	64	114	8	0.12
8,1		eShop	82.9	142	10	0.15
8,2		eShop	82.7	142	10	0.15
8,3		eShop	82.6	142	10	0.15
8,5		eShop	82.3	142	10	0.15
8,6		eShop	82.1	142	10	0.15
8,7		eShop	82	142	10	0.15

Ø D_c m6	11E	12 3008 Solid carbide HPC drill plain shank DIN 6535 HA	L_2	L	Ø D_s	INOX > 900 N f
(mm or inch)		TiAlN	mm	mm	mm	mm/rev.
11/32		eShop ■	82	142	10	0.15
8,8		eShop	81.8	142	10	0.15
9		eShop	81.5	142	10	0.15
9,1		(eShop)	81.4	142	10	0.15
9,2		eShop	81.2	142	10	0.15
9,3		eShop	81.1	142	10	0.15
9,4		(eShop)	80.9	142	10	0.15
9,5		eShop	80.8	142	10	0.15
3/8		eShop ■	80.5	142	10	0.15
9,7		eShop	80.5	142	10	0.15
9,8		eShop	80.3	142	10	0.15
9,9		(eShop)	80.2	142	10	0.15
10		eShop	80	142	10	0.15
10,2		eShop	98.7	162	12	0.15
13/32		eShop ■	98.3	162	12	0.15
10,5		eShop	98.3	162	12	0.15
11		eShop	97.5	162	12	0.15
7/16		eShop ■	97.2	162	12	0.15
11,2		eShop	97.2	162	12	0.15
11,5		eShop ■	96.8	162	12	0.15
11,8		eShop	96.3	162	12	0.15
12		eShop	96	162	12	0.15
12,2		eShop	112.7	178	14	0.2
12,5		eShop	112.3	178	14	0.2
1/2		eShop ■	112.3	178	14	0.2
12,7		eShop	112	178	14	0.2
13		eShop	111.5	178	14	0.2
13,5		eShop	110.8	178	14	0.2
13,8		eShop	110.3	178	14	0.2
14		eShop	110	178	14	0.2
14,2		eShop	130.7	203	16	0.2
9/16		eShop ■	130.7	203	16	0.2
14,5		eShop ■	130.3	203	16	0.2
14,8		eShop	129.8	203	16	0.2
15		eShop ■	129.5	203	16	0.2
15,5		eShop	128.8	203	16	0.2
15,6		eShop	128.8	203	16	0.2
15,8		eShop	128.3	203	16	0.2
5/8		eShop ■	128.3	203	16	0.2
16		eShop ■	128	203	16	0.2
16,5		eShop	146.3	222	18	0.25
17		eShop	145.5	222	18	0.25
17,5		eShop	144.8	222	18	0.25
18		eShop	144	222	18	0.25
18,5		eShop	162.3	243	20	0.25
19		eShop	161.5	243	20	0.25
20		eShop	160	243	20	0.25

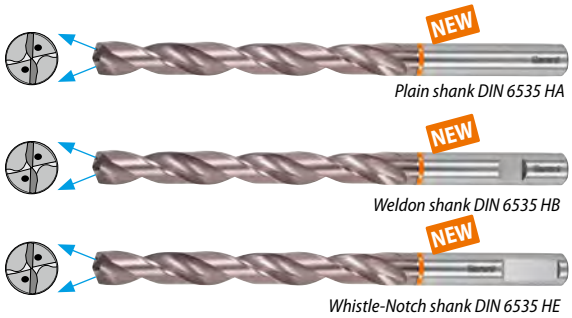
Solid carbide | Standard | 8×D | h7 | 2 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

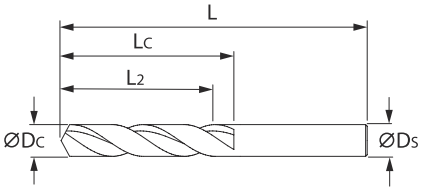
Garant

GARANT Uni Hero solid carbide high-performance drill

The ultimate in universality and profitability in one tool.
Robust tool design and **convex-concave curved cutting edge design** for optimum tool stability and chip breakage behaviour in a wide range of materials. **Special flute geometry** and **polished flutes** for ideal chip evacuation and maximum process reliability.
Ultra-smooth TiAlSiN high-performance coating to effectively reduce wear and the formation of built-up edges.

Note:
Flute length $L_c = L_2 + 1.5 \times D_c$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **no. 123021**.
HE shank: order with **No. 123020** and **129100HE**.
Items with prices in brackets: Differing delivery time and minimum order quantity 3 pieces.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
12 3020	140	150		120	115	110	80	70						65	60	35	95	●		●	●		○

Ø D_c h7	12 3020 GARANT Uni Hero solid carbide drill plain shank DIN 6535 HA TiAlSiN	L_2	L	Ø D_s	< 1100 N f
mm		mm	mm	mm	mm/rev.
3	eShop	29.5	72	6	0.08
3,1	eShop	29.4	72	6	0.08
3,2	eShop	29.2	72	6	0.08
3,3	eShop	29.1	72	6	0.08
3,4	eShop	28.9	72	6	0.09
3,5	eShop	28.8	72	6	0.09
3,6	(eShop)	28.6	72	6	0.09
3,7	eShop	28.5	72	6	0.09
3,8	eShop	37.3	81	6	0.1
3,9	eShop	37.2	81	6	0.1
4	eShop	37	81	6	0.1
4,1	eShop	36.9	81	6	0.1
4,2	eShop	36.7	81	6	0.1
4,3	eShop	36.6	81	6	0.11
4,4	(eShop)	36.4	81	6	0.11
4,5	eShop	36.3	81	6	0.11
4,6	eShop	36.1	81	6	0.11
4,7	eShop	36	81	6	0.11
4,8	eShop	49.8	95	6	0.12
4,9	eShop	49.7	95	6	0.12
5	eShop	49.5	95	6	0.12
5,1	eShop	49.4	95	6	0.12
5,2	eShop	49.2	95	6	0.12
5,3	(eShop)	49.1	95	6	0.12
5,4	eShop	48.9	95	6	0.13
5,5	eShop	48.8	95	6	0.13
5,6	eShop	48.6	95	6	0.13
5,7	(eShop)	48.5	95	6	0.13
5,8	eShop	48.3	95	6	0.13
5,9	eShop	48.2	95	6	0.14
6	eShop	48	95	6	0.14
6,1	eShop	66.9	114	8	0.14
6,2	eShop	66.7	114	8	0.14
6,3	eShop	66.6	114	8	0.14
6,4	eShop	66.4	114	8	0.14
6,5	eShop	66.3	114	8	0.15
6,6	eShop	66.1	114	8	0.15
6,7	(eShop)	66	114	8	0.15
6,8	eShop	65.8	114	8	0.15
6,9	eShop	65.7	114	8	0.15
7	eShop	65.5	114	8	0.15
7,1	eShop	65.4	114	8	0.16
7,2	(eShop)	65.2	114	8	0.16
7,3	(eShop)	65.1	114	8	0.16
7,4	eShop	64.9	114	8	0.16
7,5	eShop	64.8	114	8	0.16
7,6	(eShop)	64.6	114	8	0.16
7,7	(eShop)	64.5	114	8	0.17

Ø D_c h7	12 3020 GARANT Uni Hero solid carbide drill plain shank DIN 6535 HA TiAlSiN	L_2	L	Ø D_s	< 1100 N f
mm		mm	mm	mm	mm/rev.
7,8	eShop	64.3	114	8	0.17
7,9	(eShop)	64.2	114	8	0.17
8	eShop	64	114	8	0.17
8,1	eShop	82.9	142	10	0.17
8,2	eShop	82.7	142	10	0.17
8,3	eShop	82.6	142	10	0.17
8,4	eShop	82.4	142	10	0.18
8,5	eShop	82.3	142	10	0.18
8,6	eShop	82.1	142	10	0.18
8,7	eShop	82	142	10	0.18
8,8	eShop	81.8	142	10	0.18
9	eShop	81.5	142	10	0.18
9,1	eShop	81.4	142	10	0.19
9,2	eShop	81.2	142	10	0.19
9,3	eShop	81.1	142	10	0.19
9,4	eShop	80.9	142	10	0.19
9,5	eShop	80.8	142	10	0.19
9,6	eShop	80.6	142	10	0.19
9,7	(eShop)	80.5	142	10	0.19
9,8	eShop	80.3	142	10	0.2
9,9	eShop	80.2	142	10	0.2
10	eShop	80	142	10	0.2
10,2	eShop	98.7	162	12	0.2
10,3	eShop	98.6	162	12	0.2
10,5	eShop	98.3	162	12	0.2
10,8	eShop	97.8	162	12	0.21
11	eShop	97.5	162	12	0.21
11,2	eShop	97.2	162	12	0.21
11,5	eShop	96.8	162	12	0.21
11,8	eShop	96.3	162	12	0.22
12	eShop	96	162	12	0.22
12,2	eShop	114.7	178	14	0.22
12,5	eShop	114.3	178	14	0.22
12,8	(eShop)	113.8	178	14	0.22
13	eShop	113.5	178	14	0.23
13,2	(eShop)	113.2	178	14	0.23
13,5	eShop	112.8	178	14	0.23
13,8	(eShop)	112.3	178	14	0.23
14	eShop	112	178	14	0.23
14,2	(eShop)	130.7	203	16	0.23
14,5	eShop	130.3	203	16	0.24
14,8	(eShop)	129.8	203	16	0.24
15	eShop	129.5	203	16	0.24
15,2	(eShop)	129.2	203	16	0.24
15,3	(eShop)	129.1	203	16	0.24
15,5	(eShop)	128.8	203	16	0.24
15,8	eShop	128.3	203	16	0.24
16	eShop	128	203	16	0.24

Solid carbide | Standard | 8×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

GARANT Master Steel Speed solid carbide drill

Developed for use with **very high cutting speeds**.
Outstandingly suitable for machines with **low installed power** and high speeds.

- Clear reduction in cutting forces due to special cutter geometry.
- Coating for best wear resistance even at high process temperatures.
- Polished flutes for good chip clearance.

A **slim chisel point** and the **special arrangement of the 4 guide chamfers** ensure **high positioning and alignment accuracy**.
Optimised micro-geometry for increased working life and performance capability.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Versions HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 123026**.
Form **HE:** order with **No. 123025 + 129100HE**.



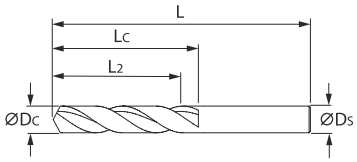
Plain shank DIN 6535 HA 12 3025



Weldon shank DIN 6535 HB 12 3026



Whistle-notch shank DIN 6535 HE 12 3025 + 12 9100 HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	< 900 N	> 900 N	GG	GGG	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K	
12 3025				195	150	135	125	80						65		120	115	●

ØDc h7	11E	12 3025 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA	L2	L	ØDs	< 1100 N f
mm		TiAlN	mm	mm	mm	mm/rev.
3		eShop	29.5	72	6	0.09
3,1		eShop	29.4	72	6	0.09
3,2		eShop	29.2	72	6	0.09
3,3		eShop	29.1	72	6	0.09
3,4		eShop	28.9	72	6	0.09
3,5		eShop	28.8	72	6	0.09
3,6		eShop	28.6	72	6	0.09
3,7		eShop	28.5	72	6	0.09
3,8		eShop	37.3	81	6	0.09
3,9		eShop	37.2	81	6	0.09
4		eShop	37	81	6	0.09
4,1		eShop	36.9	81	6	0.1
4,2		eShop	36.7	81	6	0.1
4,3		eShop	36.6	81	6	0.1
4,4		eShop	36.4	81	6	0.1
4,5		eShop	36.3	81	6	0.1
4,6		eShop	36.1	81	6	0.1
4,7		eShop	36	81	6	0.1
4,8		eShop	49.8	95	6	0.1
4,9		eShop	49.7	95	6	0.1
5		eShop	49.5	95	6	0.1
5,1		eShop	49.4	95	6	0.125
5,2		eShop	49.2	95	6	0.125
5,3		eShop	49.1	95	6	0.125
5,4		eShop	48.9	95	6	0.125
5,5		eShop	48.8	95	6	0.125
5,6		eShop	48.6	95	6	0.125
5,7		eShop	48.5	95	6	0.125
5,8		eShop	48.3	95	6	0.125
5,9		eShop	48.2	95	6	0.125
6		eShop	48	95	6	0.125
6,1		eShop	66.9	114	8	0.15
6,2		eShop	66.7	114	8	0.15
6,3		eShop	66.6	114	8	0.15
6,4		eShop	66.4	114	8	0.15
6,5		eShop	66.3	114	8	0.15
6,6		eShop	66.1	114	8	0.15
6,7		eShop	66	114	8	0.15
6,8		eShop	65.8	114	8	0.15
6,9		eShop	65.7	114	8	0.15
7		eShop	65.5	114	8	0.15

ØDc h7	11E	12 3025 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA	L2	L	ØDs	< 1100 N f
mm		TiAlN	mm	mm	mm	mm/rev.
7,1		eShop	65.4	114	8	0.15
7,2		eShop	65.2	114	8	0.15
7,3		eShop	65.1	114	8	0.15
7,4		eShop	64.9	114	8	0.15
7,5		eShop	64.8	114	8	0.15
7,6		eShop	64.6	114	8	0.15
7,7		eShop	64.5	114	8	0.15
7,8		eShop	64.3	114	8	0.15
7,9		eShop	64.2	114	8	0.15
8		eShop	64	114	8	0.15
8,1		eShop	82.9	142	10	0.18
8,2		eShop	82.7	142	10	0.18
8,3		eShop	82.6	142	10	0.18
8,4		eShop	82.4	142	10	0.18
8,5		eShop	82.3	142	10	0.18
8,6		eShop	82.1	142	10	0.18
8,7		eShop	82	142	10	0.18
8,8		eShop	81.8	142	10	0.18
8,9		eShop	81.7	142	10	0.18
9		eShop	81.5	142	10	0.18
9,1		eShop	81.4	142	10	0.18
9,2		eShop	81.2	142	10	0.18
9,3		eShop	81.1	142	10	0.18
9,4		eShop	80.9	142	10	0.18
9,5		eShop	80.8	142	10	0.18
9,6		eShop	80.6	142	10	0.18
9,7		eShop	80.5	142	10	0.18
9,8		eShop	80.3	142	10	0.18
9,9		eShop	80.2	142	10	0.18
10		eShop	80	142	10	0.18
10,1		eShop	98.9	162	12	0.2
10,2		eShop	98.7	162	12	0.2
10,3		eShop	98.6	162	12	0.2
10,4		eShop	98.4	162	12	0.2
10,5		eShop	98.3	162	12	0.2
10,6		eShop	98.1	162	12	0.2
10,7		eShop	98	162	12	0.2
10,8		eShop	97.8	162	12	0.2
10,9		eShop	97.7	162	12	0.2
11		eShop	97.5	162	12	0.2
11,1		eShop	97.4	162	12	0.2

ØDc h7	11E	12 3025 GARANT Master Steel Speed solid carbide drill, plain shank DIN 6535 HA	L2	L	ØDs	< 1100 N f
mm		TiAlN	mm	mm	mm	mm/rev.
11,2		eShop	97.2	162	12	0.2
11,3		eShop	97.1	162	12	0.2
11,4		eShop	96.9	162	12	0.2
11,5		eShop	96.8	162	12	0.2
11,6		eShop	96.6	162	12	0.2
11,7		eShop	96.5	162	12	0.2
11,8		eShop	96.3	162	12	0.2
11,9		eShop	96.2	162	12	0.2
12		eShop	96	162	12	0.2
12,2		eShop	114.7	178	14	0.23
12,5		eShop	114.3	178	14	0.23
12,8		eShop	113.8	178	14	0.23
13		eShop	113.5	178	14	0.23
13,2		eShop	113.2	178	14	0.23
13,5		eShop	112.8	178	14	0.23
13,8		eShop	112.3	178	14	0.23
14		eShop	112	178	14	0.23
14,2		eShop	130.7	203	16	0.26
14,5		eShop	130.3	203	16	0.26
14,8		eShop	129.8	203	16	0.26
15		eShop	129.5	203	16	0.26
15,2		eShop	129.2	203	16	0.26
15,5		eShop	128.8	203	16	0.26
15,8		eShop	128.3	203	16	0.26
16		eShop	128	203	16	0.26
16,2		eShop	146.7	222	18	0.29
16,5		eShop	146.3	222	18	0.29
16,8		eShop	145.8	222	18	0.29
17		eShop	145.5	222	18	0.29
17,2		eShop	145.2	222	18	0.29
17,5		eShop	144.8	222	18	0.29
17,8		eShop	144.3	222	18	0.29
18		eShop	144	222	18	0.29
18,2		eShop	162.7	243	20	0.325
18,5		eShop	162.3	243	20	0.325
18,8		eShop	161.8	243	20	0.325
19		eShop	161.5	243	20	0.325
19,2		eShop	161.2	243	20	0.325
19,5		eShop	160.8	243	20	0.325
19,8		eShop	160.3	243	20	0.325
20		eShop	160	243	20	0.325

Solid carbide | Standard | 8×D | h7 | 3 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Master Steel Feed solid carbide drill

3-flute drill, specially developed for **use at very high feed rates**. Outstandingly suitable for **machines with high installed power** and stable operating conditions.

- Special cutter geometry with stable cutting edges and large clearance at the centre enables very high feed rates.
- The patented tip is optimised for chip flow and generates low cutting pressure with good chip breakage.

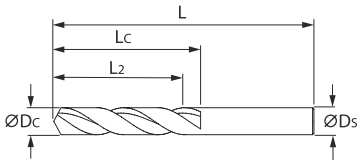
The **sector-leading technology of the drill point** guarantees **optimum self-centring behaviour.** 3 guide chamfers guarantee a stable exit from the hole and an exact roundness of the hole.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 123036**.
Form **HE:** order with **No. 123035 + 129100HE**.


Plain shank DIN 6535 HA 12 3035


Weldon shank DIN 6535 HB 12 3036


Whistle-Notch shank DIN 6535 HE 12 3035 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K	
12 3035				120	110	100	90	70	60				55	50	40	120	80	●

Ø D_c h7 (mm or inch)	11E 12 3035 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
4	eShop	37	81	6	0.28
4,1	eShop	36.9	81	6	0.28
4,2	eShop	36.7	81	6	0.28
4,3	eShop	36.6	81	6	0.28
4,4	eShop	36.4	81	6	0.28
4,5	eShop	36.3	81	6	0.28
4,6	eShop	36.1	81	6	0.28
4,7	eShop	36	81	6	0.28
3/16	eShop	49.8	95	6	0.28
4,8	eShop	49.8	95	6	0.28
4,9	eShop	49.7	95	6	0.28
5	eShop	49.5	95	6	0.28
5,1	eShop	49.4	95	6	0.32
5,2	eShop	49.2	95	6	0.32
5,3	eShop	49.1	95	6	0.32
5,4	eShop	48.9	95	6	0.32
5,5	eShop	48.8	95	6	0.32
7/32	eShop	48.6	95	6	0.32
5,6	eShop	48.6	95	6	0.32
5,7	eShop	48.5	95	6	0.32
5,8	eShop	48.3	95	6	0.32
5,9	eShop	48.2	95	6	0.32
6	eShop	48	95	6	0.32
6,1	eShop	66.9	114	8	0.37
6,2	eShop	66.7	114	8	0.37
6,3	eShop	66.6	114	8	0.37
6,35	eShop	66.5	114	8	0.37
6,4	eShop	66.4	114	8	0.37
6,5	eShop	66.3	114	8	0.37
6,6	eShop	66.1	114	8	0.37
6,7	eShop	66	114	8	0.37
6,8	eShop	65.8	114	8	0.37
6,9	eShop	65.7	114	8	0.37
7	eShop	65.5	114	8	0.37
7,1	eShop	65.4	114	8	0.37
7,2	eShop	65.2	114	8	0.37
7,3	eShop	65.1	114	8	0.37
7,4	eShop	64.9	114	8	0.37
7,5	eShop	64.8	114	8	0.37

Ø D_c h7 (mm or inch)	11E 12 3035 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
7,6	eShop	64.6	114	8	0.37
7,7	eShop	64.5	114	8	0.37
7,8	eShop	64.3	114	8	0.37
7,9	eShop	64.2	114	8	0.37
8	eShop	64	114	8	0.37
8,1	eShop	82.9	142	10	0.44
8,2	eShop	82.7	142	10	0.44
8,3	eShop	82.6	142	10	0.44
8,4	eShop	82.4	142	10	0.44
8,5	eShop	82.3	142	10	0.44
8,6	eShop	82.1	142	10	0.44
8,7	eShop	82	142	10	0.44
8,8	eShop	81.8	142	10	0.44
8,9	eShop	81.7	142	10	0.44
9	eShop	81.5	142	10	0.44
9,1	eShop	81.4	142	10	0.44
9,2	eShop	81.2	142	10	0.44
9,3	eShop	81.1	142	10	0.44
9,4	eShop	80.9	142	10	0.44
9,5	eShop	80.8	142	10	0.44
9,6	eShop	80.6	142	10	0.44
9,7	eShop	80.5	142	10	0.44
9,8	eShop	80.3	142	10	0.44
9,9	eShop	80.2	142	10	0.44
10	eShop	80	142	10	0.44
10,1	eShop	98.9	162	12	0.5
10,2	eShop	98.7	162	12	0.5
10,3	eShop	98.6	162	12	0.5
10,4	eShop	98.4	162	12	0.5
10,5	eShop	98.3	162	12	0.5
10,6	eShop	98.1	162	12	0.5
10,7	eShop	98	162	12	0.5
10,8	eShop	97.8	162	12	0.5
10,9	eShop	97.7	162	12	0.5
11	eShop	97.5	162	12	0.5
11,1	eShop	97.4	162	12	0.5
11,2	eShop	97.2	162	12	0.5
11,3	eShop	97.1	162	12	0.5
11,4	eShop	96.9	162	12	0.5

Ø D_c h7 (mm or inch)	11E 12 3035 GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
11,5	eShop	96.8	162	12	0.5
11,6	eShop	96.6	162	12	0.5
11,7	eShop	96.5	162	12	0.5
11,8	eShop	96.3	162	12	0.5
11,9	eShop	96.2	162	12	0.5
12	eShop	96	162	12	0.5
12,2	eShop	114.7	178	14	0.56
12,5	eShop	114.3	178	14	0.56
12,8	eShop	113.8	178	14	0.56
13	eShop	113.5	178	14	0.56
13,2	eShop	113.2	178	14	0.56
13,5	eShop	112.8	178	14	0.56
13,8	eShop	112.3	178	14	0.56
14	eShop	112	178	14	0.56
14,2	eShop	130.7	203	16	0.61
14,5	eShop	130.3	203	16	0.61
14,8	eShop	129.8	203	16	0.61
15	eShop	129.5	203	16	0.61
15,2	eShop	129.2	203	16	0.61
15,5	eShop	128.8	203	16	0.61
15,8	eShop	128.3	203	16	0.61
16	eShop	128	203	16	0.61
16,2	eShop	146.7	222	18	0.66
16,5	eShop	146.3	222	18	0.66
16,8	eShop	145.8	222	18	0.66
17	eShop	145.5	222	18	0.66
17,2	eShop	145.2	222	18	0.66
17,5	eShop	144.8	222	18	0.66
17,8	eShop	144.3	222	18	0.66
18	eShop	144	222	18	0.66
18,2	eShop	162.7	243	20	0.69
18,5	eShop	162.3	243	20	0.69
18,8	eShop	161.8	243	20	0.69
19	eShop	161.5	243	20	0.69
19,2	eShop	161.2	243	20	0.69
19,5	eShop	160.8	243	20	0.69
19,8	eShop	160.3	243	20	0.69
20	eShop	160	243	20	0.69

Solid carbide | Standard | 8×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant

Solid carbide HPC drill, plain shank

Robust drill design and optimised special point geometry for the **best possible chip formation and reliable chip breakage** with **higher feed rates at the same time.**
Advanced micro-geometry, convex cutting edge and **conical profile grinding** to provide additional stability for the main cutting edge.
Optimised flute geometry and patented face geometry for **reliable chip evacuation** in steel materials and cast material.
High-performance coating of the latest generation.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and **HE** shanks are available at the same price as HA.
For **HB shanks:** use order **no. 123041**.
HE shank: use order **No. 123040 + 129100 HE**.



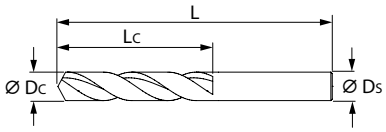
Plain shank DIN 6535 HA 12 3040



Weldon shank DIN 6535 HB 12 3041



Whistle-Notch shank DIN 6535 HE 12 3040+ 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
12 3040				130	120	110	100	80									95	●

Ø D_C h7	11E	12 3040	Tolerance nominal Ø	L_2	L	Ø D_s	< 1100 N f
		GARANT Master Steel solid carbide high-performance drill, plain shank DIN 6535 HA TiAlN					
mm				mm	mm	mm	mm/rev.
3		eShop	h7	29.5	72	6	0.11
3,3		eShop	h7	29.1	72	6	0.12
3,4		eShop	h7	28.9	72	6	0.12
3,5		eShop	h7	28.8	72	6	0.13
3,7		eShop	h7	28.5	72	6	0.13
3,8		eShop	h7	37.3	81	6	0.13
4		eShop	h7	37	81	6	0.14
4,1		eShop	h7	36.9	81	6	0.14
4,2		eShop	h7	36.7	81	6	0.14
4,3		eShop	h7	36.6	81	6	0.14
4,5		eShop	h7	36.3	81	6	0.15
4,6		eShop	h7	36.1	81	6	0.15
4,8		eShop	h7	49.8	95	6	0.16
5		eShop	h7	49.5	95	6	0.16
5,1		eShop	h7	49.4	95	6	0.16
5,2		eShop	h7	49.2	95	6	0.16
5,3		eShop	h7	49.1	95	6	0.17
5,5		eShop	h7	48.8	95	6	0.17
5,8		eShop	h7	48.3	95	6	0.18
6		eShop	h7	48	95	6	0.18
6,1		eShop	h7	66.9	114	8	0.18
6,5		eShop	h7	66.3	114	8	0.19
6,6		eShop	h7	66.1	114	8	0.19
6,8		eShop	h7	65.8	114	8	0.2
7		eShop	h7	65.5	114	8	0.2
7,5		eShop	h7	64.8	114	8	0.21
7,7		eShop	h7	64.5	114	8	0.22
7,8		eShop	h7	64.3	114	8	0.22
8		eShop	h7	64	114	8	0.22
8,1		eShop	h7	82.9	142	10	0.22
8,3		eShop	h7	82.6	142	10	0.23

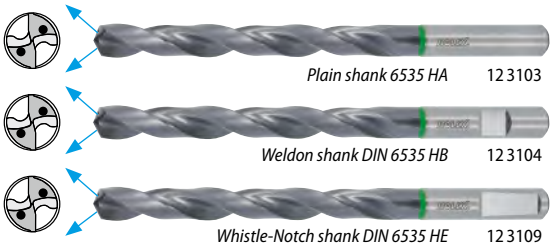
Ø D_C h7	11E	12 3040	Tolerance nominal Ø	L_2	L	Ø D_s	< 1100 N f
		GARANT Master Steel solid carbide high-performance drill, plain shank DIN 6535 HA TiAlN					
mm				mm	mm	mm	mm/rev.
8,5		eShop	h7	82.3	142	10	0.23
8,6		eShop	h7	82.1	142	10	0.23
8,8		eShop	h7	81.8	142	10	0.24
9		eShop	h7	81.5	142	10	0.24
9,3		eShop	h7	81.1	142	10	0.25
9,5		eShop	h7	80.8	142	10	0.25
9,7		eShop	h7	80.5	142	10	0.25
9,8		eShop	h7	80.3	142	10	0.26
10		eShop	h7	80	142	10	0.26
10,2		eShop	h7	98.7	162	12	0.26
10,5		eShop	h7	98.3	162	12	0.27
11		eShop	h7	97.5	162	12	0.28
11,2		eShop	h7	97.2	162	12	0.28
11,5		eShop	h7	96.8	162	12	0.29
11,8		eShop	h7	96.3	162	12	0.29
12		eShop	h7	96	162	12	0.29
12,2		eShop	h7	112.7	178	14	0.3
12,5		eShop	h7	112.3	178	14	0.3
12,8		eShop	h7	111.8	178	14	0.31
13		eShop	h7	111.5	178	14	0.31
13,5		eShop	h7	110.8	178	14	0.32
14		eShop	h7	110	178	14	0.33
14,5		eShop	h7	130.3	203	16	0.33
14,8		eShop	h7	129.8	203	16	0.34
15		eShop	h7	129.5	203	16	0.34
15,5		eShop	h7	128.8	203	16	0.35
16		eShop	h7	128	203	16	0.35
17,5		eShop	h7	144.8	222	18	0.37
18		eShop	h7	144	222	18	0.38
19		eShop	h7	161.5	243	20	0.39
20		eShop	h7	160	243	20	0.4

Solid carbide | Standard | 8×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

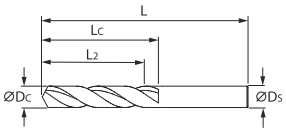
HOLEX Pro Steel solid carbide high-performance drill

Straight major cutting edges and a **special flute profile** ensure good chip evacuation. The robust cutter geometry ensures high-performance drilling with good process reliability. A wide range of applications in steel materials thanks to a combination of tough ultra-fine grain carbide and extremely wear-resistant coating.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
Versions with HB and HE shank available at the same price as HA.
For **HB shanks:** use order **No. 123104**.
For **HE shanks:** use order **no. 123109**.



Plain shank 6535 HA 123103
Weldon shank DIN 6535 HB 123104
Whistle-Notch shank DIN 6535 HE 123109



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K	
123103	250	200	160	125	115	95	90	65						35	30	100	65	●

Ø D_C h7	12F 123103 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 900 N f
mm		mm	mm	mm	mm/rev.
3	eShop	29.5	72	6	0.13
3,1	eShop	29.4	72	6	0.13
3,2	eShop	29.2	72	6	0.13
3,3	eShop	29.1	72	6	0.13
3,4	eShop	28.9	72	6	0.13
3,5	eShop	28.8	72	6	0.13
3,6	eShop	28.6	72	6	0.13
3,7	eShop	28.5	72	6	0.13
3,8	eShop	37.3	81	6	0.13
3,9	eShop	37.2	81	6	0.13
4	eShop	37	81	6	0.13
4,1	eShop	36.9	81	6	0.13
4,2	eShop	36.7	81	6	0.13
4,3	eShop	36.6	81	6	0.13
4,4	eShop	36.4	81	6	0.13
4,5	eShop	36.3	81	6	0.13
4,6	eShop	36.1	81	6	0.13
4,7	eShop	36	81	6	0.13
4,8	eShop	49.8	95	6	0.13
4,9	eShop	49.7	95	6	0.13
5	eShop	49.5	95	6	0.13
5,1	eShop	49.4	95	6	0.13
5,2	eShop	49.2	95	6	0.13
5,3	eShop	49.1	95	6	0.13
5,4	eShop	48.9	95	6	0.13
5,5	eShop	48.8	95	6	0.13
5,6	eShop	48.6	95	6	0.13
5,7	eShop	48.5	95	6	0.13
5,8	eShop	48.3	95	6	0.13
5,9	eShop	48.2	95	6	0.13
6	eShop	48	95	6	0.13
6,1	eShop	66.9	114	8	0.16
6,2	eShop	66.7	114	8	0.16
6,3	eShop	66.6	114	8	0.16
6,4	eShop	66.4	114	8	0.16
6,5	eShop	66.3	114	8	0.16
6,6	eShop	66.1	114	8	0.16
6,7	eShop	66	114	8	0.16
6,8	eShop	65.8	114	8	0.16
6,9	eShop	65.7	114	8	0.16
7	eShop	65.5	114	8	0.16
7,1	eShop	65.4	114	8	0.16
7,2	eShop	65.2	114	8	0.16
7,3	eShop	65.1	114	8	0.16
7,4	eShop	64.9	114	8	0.16
7,5	eShop	64.8	114	8	0.16
7,6	eShop	64.6	114	8	0.16
7,7	eShop	64.5	114	8	0.16
7,8	eShop	64.3	114	8	0.16
7,9	eShop	64.2	114	8	0.16
8	eShop	64	114	8	0.16
8,1	eShop	82.9	142	10	0.18
8,2	eShop	82.7	142	10	0.18
8,3	eShop	82.6	142	10	0.18
8,4	eShop	82.4	142	10	0.18

Ø D_C h7	12F 123103 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 900 N f
mm		mm	mm	mm	mm/rev.
8,5	eShop	82.3	142	10	0.18
8,6	eShop	82.1	142	10	0.18
8,7	eShop	82	142	10	0.18
8,8	eShop	81.8	142	10	0.18
9	eShop	81.5	142	10	0.2
9,1	eShop	81.4	142	10	0.2
9,2	eShop	81.2	142	10	0.2
9,3	eShop	81.1	142	10	0.2
9,4	eShop	80.9	142	10	0.2
9,5	eShop	80.8	142	10	0.2
9,6	eShop	80.6	142	10	0.2
9,7	eShop	80.5	142	10	0.2
9,8	eShop	80.3	142	10	0.2
9,9	eShop	80.2	142	10	0.2
10	eShop	80	142	10	0.2
10,1	eShop	98.9	162	12	0.2
10,2	eShop	98.7	162	12	0.2
10,3	eShop	98.6	162	12	0.2
10,4	eShop	98.4	162	12	0.2
10,5	eShop	98.3	162	12	0.2
10,8	eShop	97.8	162	12	0.2
11	eShop	97.5	162	12	0.2
11,2	eShop	97.2	162	12	0.2
11,3	eShop	97.1	162	12	0.2
11,4	eShop	96.9	162	12	0.2
11,5	eShop	96.8	162	12	0.2
11,7	eShop	96.5	162	12	0.2
11,8	eShop	96.3	162	12	0.2
12	eShop	96	162	12	0.2
12,2	eShop	114.7	178	14	0.23
12,5	eShop	114.3	178	14	0.23
12,8	eShop	113.8	178	14	0.23
13	eShop	113.5	178	14	0.23
13,5	eShop	112.8	178	14	0.23
13,8	eShop	112.3	178	14	0.23
14	eShop	112	178	14	0.23
14,2	eShop	130.7	203	16	0.23
14,5	eShop	130.3	203	16	0.23
14,8	eShop	129.8	203	16	0.23
15	eShop	129.5	203	16	0.23
15,1	eShop	129.4	203	16	0.23
15,2	eShop	129.2	203	16	0.23
15,5	eShop	128.8	203	16	0.23
15,8	eShop	128.3	203	16	0.23
16	eShop	128	203	16	0.23
16,2	eShop	146.7	222	18	0.25
16,5	eShop	146.3	222	18	0.25
17	eShop	145.5	222	18	0.25
17,5	eShop	144.8	222	18	0.25
18	eShop	144	222	18	0.25
18,5	eShop	162.3	243	20	0.25
19	eShop	161.5	243	20	0.25
19,8	eShop	160.3	243	20	0.25
20	eShop	160	243	20	0.25

Solid carbide | Standard | 10×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant Solid carbide HPC drill

Cutting chisel edge with **high centring accuracy** due to **strong core and special point geometry.**
Particularly high alignment accuracy due to **4 guide chamfers** which stabilise the drill even at extreme depths!
Straight major cutting edges with honed edges and special flute profile for **short chips**, even on long chipping materials.

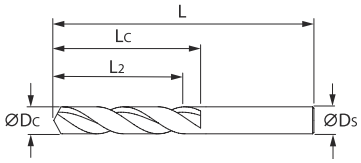
Advantage: **High process reliability and surface quality of the hole.**

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
Form HB and HE supplied at the same price as HA.
Form **HB:** order with **No. 123115**.
Form **HE:** order with **No. 123110 + 129100 HE**.


Plain shank DIN 6535 HA 123110


Weldon shank DIN 6535 HB 123115


Whistle-notch shank DIN 6535 HE 123110 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
123110		200	180	110	80	70								65	55	25			●	●			

Ø D_c h7	11E	123110 Solid carbide HPC drill plain shank DIN 6535 HA	L_2	L	Ø D_s	INOX < 900 N f
mm		TiAlN	mm	mm	mm	mm/rev.
1		eShop	13.5	45	4	0.05
1,1		eShop	13.4	45	4	0.05
1,2		eShop	13.2	45	4	0.05
1,3		eShop	13.1	45	4	0.05
1,4		eShop	12.9	45	4	0.05
1,5		eShop	17.8	50	4	0.05
1,6		eShop	17.6	50	4	0.05
1,7		eShop	17.5	50	4	0.05
1,8		eShop	17.3	50	4	0.05
1,9		eShop	21.2	55	4	0.05
2		eShop	21	55	4	0.05
2,1		eShop	20.9	55	4	0.05
2,2		eShop	20.7	55	4	0.05
2,3		eShop	25.6	60	4	0.05
2,4		eShop	25.4	60	4	0.05
2,5		eShop	25.3	60	4	0.05
2,6		eShop	25.1	60	4	0.05
2,7		eShop	30	65	4	0.05
2,8		eShop	29.8	65	4	0.05
2,9		eShop	29.7	65	4	0.05
3		eShop	35.5	80	6	0.05
3,3		eShop	35.1	80	6	0.08
3,5		eShop	34.8	80	6	0.08
3,8		eShop	42.3	86	6	0.08
4		eShop	42	86	6	0.08
4,2		eShop	41.7	86	6	0.08
4,5		eShop	41.3	86	6	0.08
4,8		eShop	54.8	100	6	0.08
5		eShop	54.5	100	6	0.08
5,1		eShop	54.4	100	6	0.12
5,2		eShop	54.2	100	6	0.12
5,5		eShop	53.8	100	6	0.12
5,7		eShop	61.5	110	6	0.12
5,8		eShop	61.3	110	6	0.12
5,9		eShop	61.2	110	6	0.12
6		eShop	61	110	6	0.12
6,2		eShop	65.7	114	8	0.12
6,3		eShop	65.6	114	8	0.12
6,5		eShop	65.3	114	8	0.12
6,6		eShop	65.1	114	8	0.12
6,7		eShop	65	114	8	0.12
6,8		eShop	64.8	114	8	0.12
6,9		eShop	64.7	114	8	0.12

Ø D_c h7	11E	123110 Solid carbide HPC drill plain shank DIN 6535 HA	L_2	L	Ø D_s	INOX < 900 N f
mm		TiAlN	mm	mm	mm	mm/rev.
7		eShop	64.5	114	8	0.12
7,1		eShop	80.4	130	8	0.12
7,5		eShop	79.8	130	8	0.12
7,6		eShop	79.6	130	8	0.12
7,7		eShop	79.5	130	8	0.12
7,8		eShop	79.3	130	8	0.12
8		eShop	79	130	8	0.12
8,1		eShop	94.9	150	10	0.15
8,2		eShop	94.7	150	10	0.15
8,4		eShop	94.4	150	10	0.15
8,5		eShop	94.3	150	10	0.15
8,6		eShop	94.1	150	10	0.15
8,7		eShop	94	150	10	0.15
9		eShop	93.5	150	10	0.15
9,3		eShop	93.1	150	10	0.15
9,4		eShop	92.9	150	10	0.15
9,5		eShop	92.8	150	10	0.15
9,8		eShop	92.3	150	10	0.15
10		eShop	92	150	10	0.15
10,2		eShop	114.7	180	12	0.15
10,5		eShop	114.3	180	12	0.15
10,8		eShop	113.8	180	12	0.15
11		eShop	113.5	180	12	0.15
11,2		eShop	113.2	180	12	0.15
11,5		eShop	112.8	180	12	0.15
11,8		eShop	112.3	180	12	0.15
12		eShop	112	180	12	0.15
12,2		eShop	141.7	208	14	0.2
12,5		eShop	141.3	208	14	0.2
13		eShop	140.5	208	14	0.2
13,5		eShop	139.8	208	14	0.2
14		eShop	139	208	14	0.2
14,2		eShop	164.7	236	16	0.2
15		eShop	163.5	236	16	0.2
15,5		eShop	162.8	236	16	0.2
15,8		eShop	162.3	236	16	0.2
16		eShop	162	236	16	0.2
16,5		eShop	185.3	262	18	0.25
17		eShop	184.5	262	18	0.25
17,5		eShop	183.8	262	18	0.25
18		eShop	183	262	18	0.25
19,5		eShop	204.8	286	20	0.25
20		eShop	204	286	20	0.25

Solid carbide | Standard | 12×D | Type W | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant

Solid carbide HPC drill

DLC coating sp² of the latest generation with **low coefficient of friction** results in **outstanding chip clearance.** For **high-performance milling** of **aluminium materials**. **High roundness** and **alignment accuracy of the deep hole**, thanks to **6 guide chamfers.**

Note:
Flute length $L_c = L_2 + 1.5 \times D_c$.
For process reliability when using the 12×D drill, an initial centre drilling with NC spotting drills No. 121068– 121130 is necessary.
Form HB and HE are supplied at the same price as HA.
Order form **HB:** with **No. 123179**.
Order form **HE:** with **No. 123178 + 129100HE**.



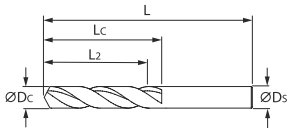
Plain shank DIN 6535 HA 123178



Weldon shank DIN 6535 HB 123179



Whistle-notch shank DIN 6535 HE 123178 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	Cu	CuZn	GRP	CRP
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
123178	250	280	245	105			85			60		55	50	55	120	150	55	55

Ø D_c h7	11E	123178	L_2	L	Ø D_s	Alu f
		Solid carbide HPC drill, plain shank DIN 6535 HA				
mm		DLC	mm	mm	mm	mm/rev.
2		eShop	31	72	4	0.2
2,1		eShop	30.9	72	4	0.22
2,2		eShop	30.7	72	4	0.22
2,3		eShop	30.6	72	4	0.22
2,4		eShop	36.4	81	4	0.22
2,5		eShop	36.3	81	4	0.22
2,6		eShop	36.1	81	4	0.22
2,7		eShop	38	81	4	0.22
2,8		eShop	37.8	81	4	0.22
2,9		eShop	37.7	81	4	0.22
3		eShop	49.5	92	6	0.22
3,1		eShop	49.4	92	6	0.35
3,2		eShop	49.2	92	6	0.35
3,3		eShop	49.1	92	6	0.35
3,4		eShop	48.9	92	6	0.35
3,5		eShop	48.8	92	6	0.35
3,6		eShop	48.6	92	6	0.35
3,7		eShop	48.5	92	6	0.35
3,8		eShop	58.3	102	6	0.35
3,9		eShop	58.2	102	6	0.35
4		eShop	58	102	6	0.35
4,1		eShop	57.9	102	6	0.35
4,2		eShop	57.7	102	6	0.35
4,3		eShop	57.6	102	6	0.35
4,4		eShop	57.4	102	6	0.35
4,5		eShop	57.3	102	6	0.35
4,6		eShop	57.1	102	6	0.35
4,7		eShop	57	102	6	0.35
4,8		eShop	70.8	116	6	0.35
4,9		eShop	70.7	116	6	0.35
5		eShop	70.5	116	6	0.35
5,1		eShop	70.4	116	6	0.45
5,2		eShop	70.2	116	6	0.45
5,3		eShop	70.1	116	6	0.45
5,4		eShop	69.9	116	6	0.45
5,5		eShop	69.8	116	6	0.45
5,6		eShop	69.6	116	6	0.45
5,7		eShop	69.5	116	6	0.45
5,8		eShop	69.3	116	6	0.45
5,9		eShop	69.2	116	6	0.45
6		eShop	69	116	6	0.45
6,1		eShop	98.9	146	8	0.45
6,2		eShop	98.7	146	8	0.45
6,3		eShop	98.6	146	8	0.45
6,4		eShop	98.4	146	8	0.45
6,5		eShop	98.3	146	8	0.45
6,6		eShop	98.1	146	8	0.45
6,7		eShop	98	146	8	0.45
6,8		eShop	97.8	146	8	0.45
6,9		eShop	97.7	146	8	0.45
7		eShop	97.5	146	8	0.45

Ø D_c h7	11E	123178	L_2	L	Ø D_s	Alu f
		Solid carbide HPC drill, plain shank DIN 6535 HA				
mm		DLC	mm	mm	mm	mm/rev.
7,1		eShop	97.4	146	8	0.45
7,2		eShop	97.2	146	8	0.45
7,3		eShop	97.1	146	8	0.45
7,4		eShop	96.9	146	8	0.45
7,5		eShop	96.8	146	8	0.45
7,6		eShop	96.6	146	8	0.45
7,7		eShop	96.5	146	8	0.45
7,8		eShop	96.3	146	8	0.45
7,9		eShop	96.2	146	8	0.45
8		eShop	96	146	8	0.45
8,1		eShop	107.9	162	10	0.55
8,2		eShop	107.7	162	10	0.55
8,3		eShop	107.6	162	10	0.55
8,4		eShop	107.4	162	10	0.55
8,5		eShop	107.3	162	10	0.55
8,6		eShop	107.1	162	10	0.55
8,7		eShop	107	162	10	0.55
8,8		eShop	106.8	162	10	0.55
8,9		eShop	106.7	162	10	0.55
9		eShop	106.5	162	10	0.55
9,1		eShop	106.4	162	10	0.55
9,2		eShop	106.2	162	10	0.55
9,3		eShop	106.1	162	10	0.55
9,4		eShop	105.9	162	10	0.55
9,5		eShop	105.8	162	10	0.55
9,6		eShop	105.6	162	10	0.55
9,7		eShop	105.5	162	10	0.55
9,8		eShop	105.3	162	10	0.55
9,9		eShop	105.2	162	10	0.55
10		eShop	105	162	10	0.55
10,2		eShop	140.7	204	12	0.55
10,5		eShop	140.3	204	12	0.55
10,8		eShop	139.8	204	12	0.55
11		eShop	139.5	204	12	0.55
11,5		eShop	138.8	204	12	0.55
11,8		eShop	138.3	204	12	0.55
12		eShop	138	204	12	0.55
12,5		eShop	163.3	230	14	0.65
12,8		eShop	162.8	230	14	0.65
13		eShop	162.5	230	14	0.65
13,5		eShop	161.8	230	14	0.65
13,8		eShop	161.3	230	14	0.65
14		eShop	161	230	14	0.65
14,5		eShop	186.3	260	16	0.65
14,8		eShop	185.8	260	16	0.65
15		eShop	185.5	260	16	0.65
15,5		eShop	184.8	260	16	0.65
15,8		eShop	184.3	260	16	0.65
16		eShop	184	260	16	0.65
16,5		eShop	209.3	285	18	0.7
16,8		eShop	208.8	285	18	0.7

Solid carbide | Standard | 12×D | m6 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant Solid carbide HPC drill with 4 cooling channels

Cutting chisel edge with **high centring accuracy** due to **strong core and special point geometry.**
High roundness and alignment accuracy of the deep hole, thanks to **4 guide chamfers.**
Outstanding chip evacuation due to **4 internal cooling channels** from Ø 3.8 mm.
Up to 3.7 mm Ø with 2 internal cooling channels.
Straight major cutting edges with honed edges and special flute profile for **short chips**, even on long chipping materials.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
For process reliability when using the 12×D drill, an initial centre drilling with NC spotting drills No. 121068– 121130 is necessary.
Form HB and HE are supplied at the same price as HA.
Order form **HB:** with **No. 123214**.
Order form **HE:** with **No. 123212 + 129100HE**.



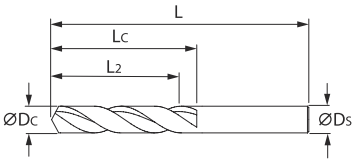
Plain shank DIN 6535 HA 123212



Weldon shank DIN 6535 HB 123214



Whistle-Notch shank DIN 6535 HE 123212 + 129100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
123212				90	75	70	55	32						70	60				●	●			

Ø D_C m6 (mm or inch)	11E 123212 Solid carbide HPC drill plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	INOX > 900 N f mm/rev.
3	eShop	49.5	92	6	0.06
3,3	eShop	49.1	92	6	0.06
3,4	eShop	48.9	92	6	0.06
3,5	eShop	48.8	92	6	0.06
3,7	eShop	48.5	92	6	0.06
3,8	eShop	58.3	102	6	0.06
4	eShop	58	102	6	0.08
4,2	eShop	57.7	102	6	0.08
4,5	eShop	57.3	102	6	0.08
3/16	eShop ■	70.8	116	6	0.08
4,8	eShop	70.8	116	6	0.08
5	eShop	70.5	116	6	0.08
5,5	eShop	69.8	116	6	0.12
7/32	eShop ■	69.3	116	6	0.12
5,8	eShop	69.3	116	6	0.12
6	eShop ■	69	116	6	0.12
6,3	eShop	98.6	146	8	0.12
1/4	eShop ■	69	146	8	0.12
6,35	eShop	98.5	146	8	0.12
6,5	eShop	98.3	146	8	0.12
6,6	eShop	98.1	146	8	0.12
6,8	eShop	97.8	146	8	0.12
7	eShop	97.5	146	8	0.12
9/32	eShop ■	97.5	146	8	0.12
7,5	eShop	96.8	146	8	0.12
7,8	eShop	96.3	146	8	0.12
5/16	eShop ■	96.3	146	8	0.12

Ø D_C m6 (mm or inch)	11E 123212 Solid carbide HPC drill plain shank DIN 6535 HA TiAlN	L_2 mm	L mm	Ø D_s mm	INOX > 900 N f mm/rev.
8	eShop	96	146	8	0.12
8,2	eShop	107.7	162	10	0.15
8,5	eShop	107.3	162	10	0.15
11/32	eShop ■	107.3	162	10	0.15
9	eShop	106.5	162	10	0.15
9,5	eShop ■	105.8	162	10	0.15
3/8	eShop ■	105.3	162	10	0.15
9,8	eShop	105.3	162	10	0.15
10	eShop	105	162	10	0.15
13/32	eShop ■	140.3	204	12	0.15
10,5	eShop ■	140.3	204	12	0.15
11	eShop	139.5	204	12	0.15
7/16	eShop ■	138.8	204	12	0.15
11,5	eShop ■	138.8	204	12	0.15
11,8	eShop	138.3	204	12	0.15
12	eShop	138	204	12	0.15
1/2	eShop ■	162.5	230	14	0.2
12,7	eShop	163	230	14	0.2
13	eShop ■	162.5	230	14	0.2
13,5	eShop ■	161.8	230	14	0.2
14	eShop ■	161	230	14	0.2
9/16	eShop ■	185.8	260	16	0.2
14,8	eShop	185.8	260	16	0.2
5/8	eShop ■	184	260	16	0.2
16	eShop ■	184	260	16	0.2
17,5	eShop	207.8	285	18	0.25

Solid carbide | Standard | 12×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Master Steel Speed solid carbide drill

Developed for use with **very high cutting speeds**.
Outstandingly suitable for machines with **low installed power** and high speeds.

- Clear reduction in cutting forces due to special cutter geometry.
- Coating for best wear resistance even at high process temperatures.
- Polished flutes for good chip clearance.

A **slim chisel point** and the **special arrangement of the 4 guide chamfers** ensure **high positioning and alignment accuracy**.
Optimised micro-geometry for increased working life and performance capability.

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
For process reliability when using the 12×D drill, an initial centre drilling with NC spotting drills No. 121068 – 121130 is necessary.
Form HB and HE are supplied at the same price as HA.
Order form **HB:** with **No. 123226**.
Order form **HE:** with **No. 123225 + 129100HE**.



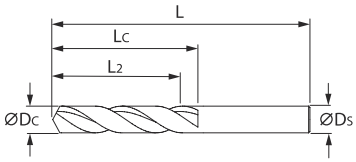
Plain shank DIN 6535 HA 12 3225



Weldon shank DIN 6535 HB 12 3226



Whistle-notch shank DIN 6535 HE 12 3225 + 12 9100HE



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K	
12 3225				160	125	115	105	65						55		100	95	●

Ø D_C h7 mm	12 3225 TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
3	eShop	49.5	92	6	0.09
3,1	eShop	49.4	92	6	0.09
3,2	eShop	49.2	92	6	0.09
3,3	eShop	49.1	92	6	0.09
3,4	eShop	48.9	92	6	0.09
3,5	eShop	48.8	92	6	0.09
3,6	eShop	48.6	92	6	0.09
3,7	eShop	48.5	92	6	0.09
3,8	eShop	58.3	102	6	0.09
3,9	eShop	58.2	102	6	0.09
4	eShop	58	102	6	0.09
4,1	eShop	57.9	102	6	0.1
4,2	eShop	57.7	102	6	0.1
4,3	eShop	57.6	102	6	0.1
4,4	eShop	57.4	102	6	0.1
4,5	eShop	57.3	102	6	0.1
4,6	eShop	57.1	102	6	0.1
4,7	eShop	57	102	6	0.1
4,8	eShop	70.8	116	6	0.1
4,9	eShop	70.7	116	6	0.1
5	eShop	70.5	116	6	0.1
5,1	eShop	70.4	116	6	0.125
5,2	eShop	70.2	116	6	0.125
5,3	eShop	70.1	116	6	0.125
5,4	eShop	69.9	116	6	0.125
5,5	eShop	69.8	116	6	0.125
5,6	eShop	69.6	116	6	0.125
5,7	eShop	69.5	116	6	0.125
5,8	eShop	69.3	116	6	0.125
5,9	eShop	69.2	116	6	0.125
6	eShop	69	116	6	0.125
6,1	eShop	98.9	146	8	0.15
6,2	eShop	98.7	146	8	0.15
6,3	eShop	98.6	146	8	0.15
6,4	eShop	98.4	146	8	0.15
6,5	eShop	98.3	146	8	0.15
6,6	eShop	98.1	146	8	0.15
6,7	eShop	98	146	8	0.15
6,8	eShop	97.8	146	8	0.15

Ø D_C h7 mm	12 3225 TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
6,9	eShop	97.7	146	8	0.15
7	eShop	97.5	146	8	0.15
7,1	eShop	97.4	146	8	0.15
7,2	eShop	97.2	146	8	0.15
7,3	eShop	97.1	146	8	0.15
7,4	eShop	96.9	146	8	0.15
7,5	eShop	96.8	146	8	0.15
7,6	eShop	96.6	146	8	0.15
7,7	eShop	96.5	146	8	0.15
7,8	eShop	96.3	146	8	0.15
7,9	eShop	96.2	146	8	0.15
8	eShop	96	146	8	0.15
8,1	eShop	107.9	162	10	0.18
8,2	eShop	107.7	162	10	0.18
8,3	eShop	107.6	162	10	0.18
8,4	eShop	107.4	162	10	0.18
8,5	eShop	107.3	162	10	0.18
8,6	eShop	107.1	162	10	0.18
8,7	eShop	107	162	10	0.18
8,8	eShop	106.8	162	10	0.18
8,9	eShop	106.7	162	10	0.18
9	eShop	106.5	162	10	0.18
9,1	eShop	106.4	162	10	0.18
9,2	eShop	106.2	162	10	0.18
9,3	eShop	106.1	162	10	0.18
9,4	eShop	105.9	162	10	0.18
9,5	eShop	105.8	162	10	0.18
9,6	eShop	105.6	162	10	0.18
9,7	eShop	105.5	162	10	0.18
9,8	eShop	105.3	162	10	0.18
9,9	eShop	105.2	162	10	0.18
10	eShop	105	162	10	0.18
10,1	eShop	140.9	204	12	0.2
10,2	eShop	140.7	204	12	0.2
10,3	eShop	140.6	204	12	0.2
10,4	eShop	140.4	204	12	0.2
10,5	eShop	140.3	204	12	0.2
10,6	eShop	140.1	204	12	0.2
10,7	eShop	140	204	12	0.2

Ø D_C h7 mm	12 3225 TiAlN	L_2 mm	L mm	Ø D_s mm	< 1100 N f mm/rev.
10,8	eShop	139.8	204	12	0.2
10,9	eShop	139.7	204	12	0.2
11	eShop	139.5	204	12	0.2
11,1	eShop	139.4	204	12	0.2
11,2	eShop	139.2	204	12	0.2
11,3	eShop	139.1	204	12	0.2
11,4	eShop	138.9	204	12	0.2
11,5	eShop	138.8	204	12	0.2
11,6	eShop	138.6	204	12	0.2
11,7	eShop	138.5	204	12	0.2
11,8	eShop	138.3	204	12	0.2
11,9	eShop	138.2	204	12	0.2
12	eShop	138	204	12	0.2
12,2	eShop	163.7	230	14	0.23
12,5	eShop	163.3	230	14	0.23
12,8	eShop	162.8	230	14	0.23
13	eShop	162.5	230	14	0.23
13,2	eShop	162.2	230	14	0.23
13,5	eShop	161.8	230	14	0.23
13,8	eShop	161.3	230	14	0.23
14	eShop	161	230	14	0.23
14,2	eShop	186.7	260	16	0.26
14,5	eShop	186.3	260	16	0.26
14,8	eShop	185.8	260	16	0.26
15	eShop	185.5	260	16	0.26
15,2	eShop	185.2	260	16	0.26
15,5	eShop	184.8	260	16	0.26
15,8	eShop	184.3	260	16	0.26
16	eShop	184	260	16	0.26
16,2	eShop	209.7	285	18	0.29
17	eShop	208.5	285	18	0.29
17,2	eShop	208.2	285	18	0.29
18	eShop	207	285	18	0.29
18,8	eShop	229.8	310	20	0.325
19	eShop	229.5	310	20	0.325
19,8	eShop	228.3	310	20	0.325
20	eShop	228	310	20	0.325

Solid carbide | Standard | 12×D | h7 | 3 | 140° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Master Steel Feed solid carbide drill

3-flute drill, specially developed for **use at very high feed rates**.
Outstandingly suitable for **machines with high installed power** and stable operating conditions.

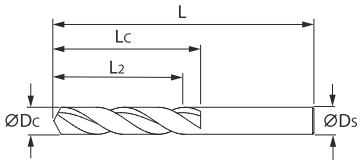
- Special cutter geometry with stable cutting edges and large clearance at the centre enables very high feed rates.
- The patented tip is optimised for chip flow and generates low cutting pressure with good chip breakage.

The **sector-leading technology of the drill point** guarantees **optimum self-centring behaviour.** 3 guide chamfers guarantee a stable exit from the hole and an exact roundness of the hole.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
For process reliability when using the 12×D drill, an initial centre drilling with an NC spotting drill No. 121130 with **155° point angle** is necessary.



Plain shank DIN 6535 HA 12 3235



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K	
12 3235				120	110	100	90	70	60				55	50	40	120	80	●

∅ D_c h7	11E	12 3235	L_2	L	∅ D_s	< 1100 N f
		GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA				
mm		TiAlN	mm	mm	mm	mm/rev.
4		eShop	58	102	6	0.28
4,1		eShop	57.9	102	6	0.28
4,2		eShop	57.7	102	6	0.28
4,3		eShop	57.6	102	6	0.28
4,4		eShop	57.4	102	6	0.28
4,5		eShop	57.3	102	6	0.28
4,6		eShop	57.1	102	6	0.28
4,7		eShop	57	102	6	0.28
4,8		eShop	70.8	116	6	0.28
4,9		eShop	70.7	116	6	0.28
5		eShop	70.5	116	6	0.28
5,1		eShop	70.4	116	6	0.32
5,2		eShop	70.2	116	6	0.32
5,3		eShop	70.1	116	6	0.32
5,4		eShop	69.9	116	6	0.32
5,5		eShop	69.8	116	6	0.32
5,6		eShop	69.6	116	6	0.32
5,7		eShop	69.5	116	6	0.32
5,8		eShop	69.3	116	6	0.32
5,9		eShop	69.2	116	6	0.32
6		eShop	69	116	6	0.32
6,1		eShop	98.9	146	8	0.37
6,2		eShop	98.7	146	8	0.37
6,3		eShop	98.6	146	8	0.37
6,4		eShop	98.4	146	8	0.37
6,5		eShop	98.3	146	8	0.37
6,6		eShop	98.1	146	8	0.37
6,7		eShop	98	146	8	0.37
6,8		eShop	97.8	146	8	0.37
6,9		eShop	97.7	146	8	0.37
7		eShop	97.5	146	8	0.37
7,1		eShop	97.4	146	8	0.37
7,2		eShop	97.2	146	8	0.37
7,3		eShop	97.1	146	8	0.37
7,4		eShop	96.9	146	8	0.37
7,5		eShop	96.8	146	8	0.37
7,6		eShop	96.6	146	8	0.37
7,7		eShop	96.5	146	8	0.37

∅ D_c h7	11E	12 3235	L_2	L	∅ D_s	< 1100 N f
		GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA				
mm		TiAlN	mm	mm	mm	mm/rev.
7,8		eShop	96.3	146	8	0.37
7,9		eShop	96.2	146	8	0.37
8		eShop	96	146	8	0.37
8,1		eShop	107.9	162	10	0.44
8,2		eShop	107.7	162	10	0.44
8,3		eShop	107.6	162	10	0.44
8,4		eShop	107.4	162	10	0.44
8,5		eShop	107.3	162	10	0.44
8,6		eShop	107.1	162	10	0.44
8,7		eShop	107	162	10	0.44
8,8		eShop	106.8	162	10	0.44
8,9		eShop	106.7	162	10	0.44
9		eShop	106.5	162	10	0.44
9,1		eShop	106.4	162	10	0.44
9,2		eShop	106.2	162	10	0.44
9,3		eShop	106.1	162	10	0.44
9,4		eShop	105.9	162	10	0.44
9,5		eShop	105.8	162	10	0.44
9,6		eShop	105.6	162	10	0.44
9,7		eShop	105.5	162	10	0.44
9,8		eShop	105.3	162	10	0.44
9,9		eShop	105.2	162	10	0.44
10		eShop	105	162	10	0.44
10,1		eShop	140.9	204	12	0.5
10,2		eShop	140.7	204	12	0.5
10,3		eShop	140.6	204	12	0.5
10,4		eShop	140.4	204	12	0.5
10,5		eShop	140.3	204	12	0.5
10,6		eShop	140.1	204	12	0.5
10,7		eShop	140	204	12	0.5
10,8		eShop	139.8	204	12	0.5
10,9		eShop	139.7	204	12	0.5
11		eShop	139.5	204	12	0.5
11,1		eShop	139.4	204	12	0.5
11,2		eShop	139.2	204	12	0.5
11,3		eShop	139.1	204	12	0.5
11,4		eShop	138.9	204	12	0.5
11,5		eShop	138.8	204	12	0.5

∅ D_c h7	11E	12 3235	L_2	L	∅ D_s	< 1100 N f
		GARANT Master Steel Feed solid carbide drill, plain shank DIN 6535 HA				
mm		TiAlN	mm	mm	mm	mm/rev.
11,6		eShop	138.6	204	12	0.5
11,7		eShop	138.5	204	12	0.5
11,8		eShop	138.3	204	12	0.5
11,9		eShop	138.2	204	12	0.5
12		eShop	138	204	12	0.5
12,2		eShop	163.7	230	14	0.56
12,5		eShop	163.3	230	14	0.56
12,8		eShop	162.8	230	14	0.56
13		eShop	162.5	230	14	0.56
13,2		eShop	162.2	230	14	0.56
13,5		eShop	161.8	230	14	0.56
13,8		eShop	161.3	230	14	0.56
14		eShop	161	230	14	0.56
14,2		eShop	186.7	260	16	0.61
14,5		eShop	186.3	260	16	0.61
14,8		eShop	185.8	260	16	0.61
15		eShop	185.5	260	16	0.61
15,2		eShop	185.2	260	16	0.61
15,5		eShop	184.8	260	16	0.61
15,8		eShop	184.3	260	16	0.61
16		eShop	184	260	16	0.61
16,2		eShop	209.7	285	18	0.66
16,5		eShop	209.3	285	18	0.66
16,8		eShop	208.8	285	18	0.66
17		eShop	208.5	285	18	0.66
17,2		eShop	208.2	285	18	0.66
17,5		eShop	207.8	285	18	0.66
17,8		eShop	207.3	285	18	0.66
18		eShop	207	285	18	0.66
18,2		eShop	230.7	310	20	0.69
18,5		eShop	230.3	310	20	0.69
18,8		eShop	229.8	310	20	0.69
19		eShop	229.5	310	20	0.69
19,2		eShop	229.2	310	20	0.69
19,5		eShop	228.8	310	20	0.69
19,8		eShop	228.3	310	20	0.69
20		eShop	228	310	20	0.69

Solid carbide | Standard | 12×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

Garant GARANT Master Steel solid carbide high-performance drill

Robust drill design and optimised special point geometry for the **best possible chip formation and reliable chip breakage** with **higher feed rates at the same time. Advanced micro-geometry, convex** cutting edge and **conical profile grinding** to provide additional stability for the main cutting edge. **Optimised flute geometry and patented face geometry** for **reliable chip evacuation** in steel materials and cast material. **High-performance coating** of the latest generation.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
For process reliability when using the 12×D drill, an initial centre drilling with No. 121068 – 121130 is recommended.
HB and **HE** shanks are available at the same price as HA.
For **HB shanks:** use order **no. 123241**.
For **HE** shanks: use order **No. 123240 + 129100HE**.



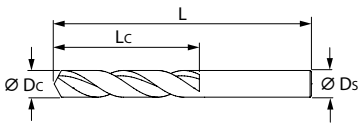
Plain shank DIN 6535 HA 123240



Weldon shank DIN 6535 HB 123241



Whistle-Notch shank DIN 6535 HE 123240+ 129100HE



12

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
123240				130	120	110	100	80									95	●		●	●		●

Ø D_c h7	12 3240	L_2	L	Ø D_s	< 1100 N f
	GARANT Master Steel solid carbide high-performance drill, plain shank DIN 6535 HA TiAlN				
mm		mm	mm	mm	mm/rev.
3	eShop	49.5	92	6	0.11
3,3	eShop	49.1	92	6	0.12
3,4	eShop	48.9	92	6	0.12
3,5	eShop	48.8	92	6	0.13
3,8	eShop	58.3	102	6	0.13
4	eShop	58	102	6	0.14
4,2	eShop	57.7	102	6	0.14
4,5	eShop	57.3	102	6	0.15
4,8	eShop	70.8	116	6	0.16
5	eShop	70.5	116	6	0.16
5,5	eShop	69.8	116	6	0.17
5,8	eShop	69.3	116	6	0.18
6	eShop	69	116	6	0.18
6,3	eShop	98.6	146	8	0.19
6,5	eShop	98.3	146	8	0.19
6,6	eShop	98.1	146	8	0.19
6,8	eShop	97.8	146	8	0.2
7	eShop	97.5	146	8	0.2
7,8	eShop	96.3	146	8	0.22
8	eShop	96	146	8	0.22
8,5	eShop	107.3	162	10	0.23
9	eShop	106.5	162	10	0.24
10	eShop	105	162	10	0.26
10,5	eShop	140.3	204	12	0.27
11	eShop	139.5	204	12	0.28
11,5	eShop	138.8	204	12	0.29
12	eShop	138	204	12	0.29
13	eShop	162.5	230	14	0.31
13,5	eShop	161.8	230	14	0.32
14	eShop	161	230	14	0.33

Solid carbide | Standard | 12×D | h7 | 2 | 135° | h6 DIN 6535 HA | 25 bar | HPC | x

HOLEX Pro Steel solid carbide high-performance drill

Straight major cutting edges and a **special flute profile** ensure good chip evacuation. The robust cutter geometry ensures high-performance drilling with good process reliability. A wide range of applications in steel materials thanks to a combination of tough ultra-fine grain carbide and extremely wear-resistant coating.

Note:
Flute length $L_C = L_2 + 1.5 \times D_C$.
HB and HE shanks are available at the same price as HA.
For **HB shanks:** use order **no. 123304**.
For **HE shanks:** use order **no. 123309**.
For process reliability when using the 12×D drill, an initial centre drilling with NC spotting drills No. 121068 - 121130 or HOLEX Pro Steel No. 122501 is necessary.



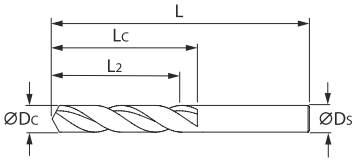
Plain shank DIN 6535 HA 12 3303



Weldon shank DIN 6535 HB 12 3304



Whistle-Notch shank DIN 6535 HE 12 3309



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
12 3303	250	200	160	125	115	95	90	65						35	30	100	65	●		●	●		

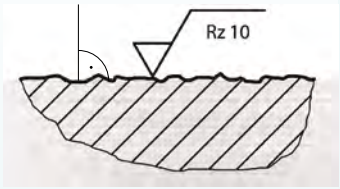
Ø D_C h7	12 3303 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 900 N f
mm		mm	mm	mm	mm/rev.
3	eShop	49.5	92	6	0.13
3,1	eShop	49.4	92	6	0.13
3,3	eShop	49.1	92	6	0.13
3,4	eShop	48.9	92	6	0.13
3,5	eShop	48.8	92	6	0.13
3,6	eShop	48.6	92	6	0.13
3,7	eShop	48.5	92	6	0.13
3,8	eShop	58.3	102	6	0.13
4	eShop	58	102	6	0.13
4,1	eShop	58	102	6	0.13
4,2	eShop	57.7	102	6	0.13
4,3	eShop	57.6	102	6	0.13
4,4	eShop	57.4	102	6	0.13
4,5	eShop	57.3	102	6	0.13
4,6	eShop	57.3	102	6	0.13
4,7	eShop	57.3	102	6	0.13
4,8	eShop	70.8	116	6	0.13
5	eShop	70.5	116	6	0.13
5,1	eShop	70.5	116	6	0.13
5,2	eShop	70.5	116	6	0.13
5,3	eShop	70.5	116	6	0.13
5,5	eShop	69.8	116	6	0.13
5,6	eShop	69.8	116	6	0.13
5,7	eShop	69.8	116	6	0.13
5,8	eShop	69.3	116	6	0.13
5,9	eShop	69.3	116	6	0.13
6	eShop	69	116	6	0.13
6,1	eShop	98.9	146	8	0.16
6,2	eShop	98.7	146	8	0.16
6,3	eShop	98.6	146	8	0.16
6,4	eShop	98.6	146	8	0.16
6,5	eShop	98.3	146	8	0.16
6,6	eShop	98.1	146	8	0.16
6,8	eShop	97.8	146	8	0.16
6,9	eShop	97.8	146	8	0.16
7	eShop	97.5	146	8	0.16
7,2	eShop	97.5	146	8	0.16

Ø D_C h7	12 3303 HOLEX Pro Steel solid carbide drill, plain shank DIN 6535 HA TiAlN	L_2	L	Ø D_s	< 900 N f
mm		mm	mm	mm	mm/rev.
7,4	eShop	97.5	146	8	0.16
7,5	eShop	96.8	146	8	0.16
7,7	eShop	96.3	146	8	0.16
7,8	eShop	96.3	146	8	0.16
8	eShop	96	146	8	0.16
8,1	eShop	107.9	162	10	0.18
8,2	eShop	107.7	162	10	0.18
8,5	eShop	107.3	162	10	0.18
8,6	eShop	107.3	162	10	0.18
9	eShop	107	162	10	0.2
9,1	eShop	107	162	10	0.2
9,5	eShop	105.8	162	10	0.2
9,8	eShop	105.3	162	10	0.2
9,9	eShop	105.3	162	10	0.2
10	eShop	105	162	10	0.2
10,1	eShop	140.9	204	12	0.2
10,2	eShop	140.7	204	12	0.2
10,3	eShop	140.6	204	12	0.2
10,5	eShop	140.3	204	12	0.2
11	eShop	139.5	204	12	0.2
11,2	eShop	139.5	204	12	0.2
11,3	eShop	139.5	204	12	0.2
11,5	eShop	138.8	204	12	0.2
11,8	eShop	138.3	204	12	0.2
12	eShop	138	204	12	0.2
12,5	eShop	163.3	230	14	0.23
13	eShop	162.5	230	14	0.23
13,5	eShop	161.8	230	14	0.23
14	eShop	161	230	14	0.23
14,5	eShop	184.3	260	16	0.23
14,8	eShop	184.3	260	16	0.23
15	eShop	184.3	260	16	0.23
15,8	eShop	184.3	260	16	0.23
16	eShop	184	260	16	0.23
17	eShop	208.5	285	18	0.25
17,5	eShop	207.8	285	18	0.25
18	eShop	207.8	285	18	0.25

Reliable deep hole drilling in 4 working steps

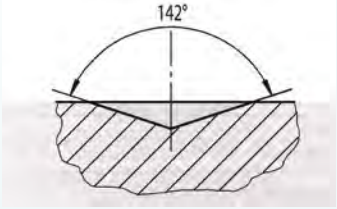
Precondition: Face milling

At a right angle to the hole axis, with the lowest possible **surface roughness.**



1. Centring

NC spotting drill with 142° point angle for **exact pitch or for special applications.**



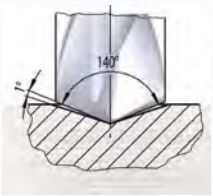


NC spot drilling is advisable for process reliability. (12 1068 – 12 1121)

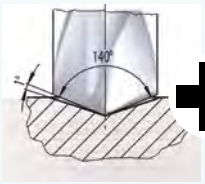
2. Drilling of pilot hole

Necessary for guidance of the deep hole drill in the component. The use of a pilot hole eases the subsequent deep hole drilling operation and improves the tool life of the deep hole drill. The correct generation of a pilot hole is a necessary part of the production technique. It ensures process reliability and reduces the costs.

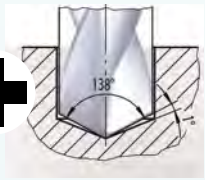
GARANT drilling system:	suitable GARANT pilot drill
Garant MASTER STEEL MICRO 8×D – 30×D (No. 12 1224, 12 1226, 12 1228, 12 1231)	12 1223 For vertical machining and regular and straight surfaces, a pilot hole is not necessary from Ø 1.0 and up to a drilling depth of 12xD.
Garant MASTER STEEL DEEP 16×D – 30×D (No. 12 3888 – 12 3895)	12 2736
Garant HPC deep hole drill ALU 16×D – 30×D (No. 12 3588 – 12 3595) UNI 16×D – 30×D (No. 12 3688 – 12 3695)	12 2606 12 2736
Garant Single-lip drills 500 mm – 1000 mm (No. 12 4002 – 12 4010)	12 2736 23 1605
Garant HPC deep hole drill UNI 40×D – 50×D (No. 12 3740 – 12 3750) Pilot hole and co-pilot hole required!	12 2736 12 3691 Use the co-pilot drill in the same way as a regular deep hole drill (see step 4 – deep hole drilling). Make each hole separately. Ensure chip clearance within the co-pilot hole.



Pilot hole to maximum drilling depth (min. 4×D)



Pilot hole to maximum drilling depth (min. 4×D)

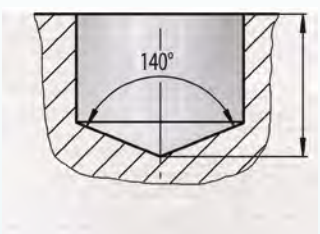


additional co-pilot hole (up to 20×D)

3. Countersinking

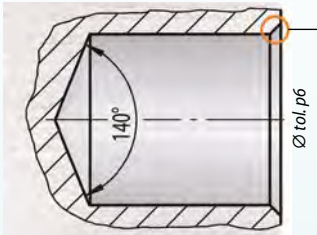
Vertical machining:

Countersink optional, recommended for difficult applications.



Horizontal machining:

After drilling the pilot hole, apply a 90° or 60° countersink.



Countersink necessary

A countersink should be drilled to make the introduction of the deep hole drill easier.



Solid carbide or HSS countersink, green ring or blue ring.

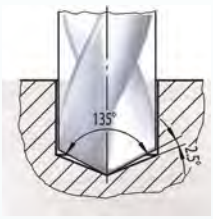
Garant GARANT deep hole drilling

4. Deep hole drilling

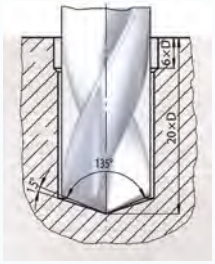
Safety instructions:
No deep hole drills ≥ 16×D may be **operated with max. vc without pilot hole** guidance.

4. a Positioning

Vertical machining:
Introduce the deep hole drill with **anti-clockwise rotation** (optional) and reduced speed (n = 300 rpm) up to 0.5×D before the end of the pilot hole without through-coolant.

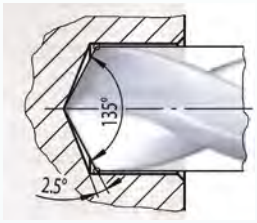


Deep hole drill up to 30×D

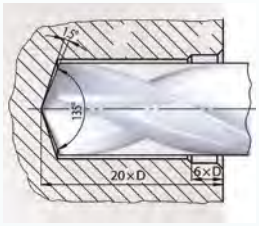


Deep hole drill 40/50×D

Horizontal machining:
Introduce the deep hole drill with **anti-clockwise rotation** and reduced speed (n = 300 rpm) up to 0.5×D before the end of the pilot hole without through-coolant.



Deep hole drill up to 30×D

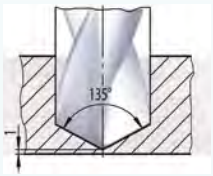


Deep hole drill 40/50×D

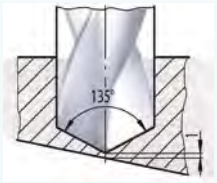
4. b Drilling

Work without a drilling cycle (no chip evacuation necessary). **Switch on the through-coolant and smoothly increase the rotational speed** to the final working value vc. When drilling a through hole, reduce the feed rate approx. 1 mm before the deep hole drill exits the material. In challenging operating conditions and long-chipping material, chip evacuation can increase process reliability. The retraction movement of the deep hole drill should be at pilot hole depth.

Straight material exiting:
Reduce feed rate to 50 %.



Exiting the material at an angle and breaking through into cross holes:
Reduce feed rate to 25 %.



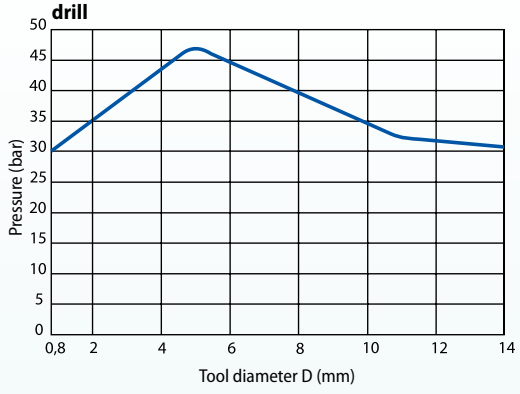
Special features of GARANT single-lip drills (No. 12 4002 – 12 4010)
Single-lip drills **can only be used up to a maximum of 50xD without support**! No reduction in the feed rate required when exiting the material, since the feed rate is always lower during use. **Back out** with reduced speed (n = 100 rpm or less) and reduced feed rate. The appropriate procedure prevents the single-lip drill from vibrating and thus increases the tool life.

4. c Backing out

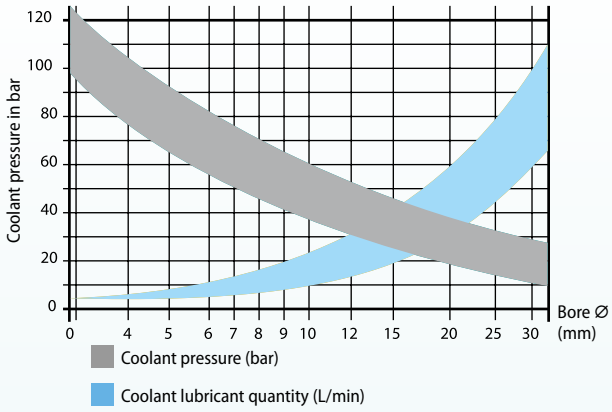
Before backing out the deep hole drill, **switch off the through-coolant, smoothly reduce the rotational speed** (n = 300 rpm) and with **reduced rapid advance** (v_1 = 1000 mm/min) back the drill out of the hole.

Note on cooling

Cooling pressure recommendation for solid carbide jobber drill



Cooling lubricants (guide values)



Garant MASTER STEEL MICRO
(No. 12 1224 – 12 1231)
Ensure there is a coolant pressure **of at least 30 bar** and **sufficiently fine filtration** of the cooling agent (D_c < Ø 2 mm with filter ≤ 0.01 mm, D_c < Ø 3 mm with filter ≤ 0.02 mm).
Work in combination with internal and external cooling to flush chips out of the drilled hole.

Garant Single-lip drills
(No. 12 4002 – 12 4010)
Cooling **is absolutely essential to ensure safe chip evacuation.**
A **minimum pressure of 40 bar** should be maintained.
Higher pressure can stabilise the drill. Emulsion with high oil content (12%) or deep hole drilling oil recommended.

Solid carbide | Standard | h7 | 2 | 135° | h6 DIN 6535 HA | 40 bar | HPC

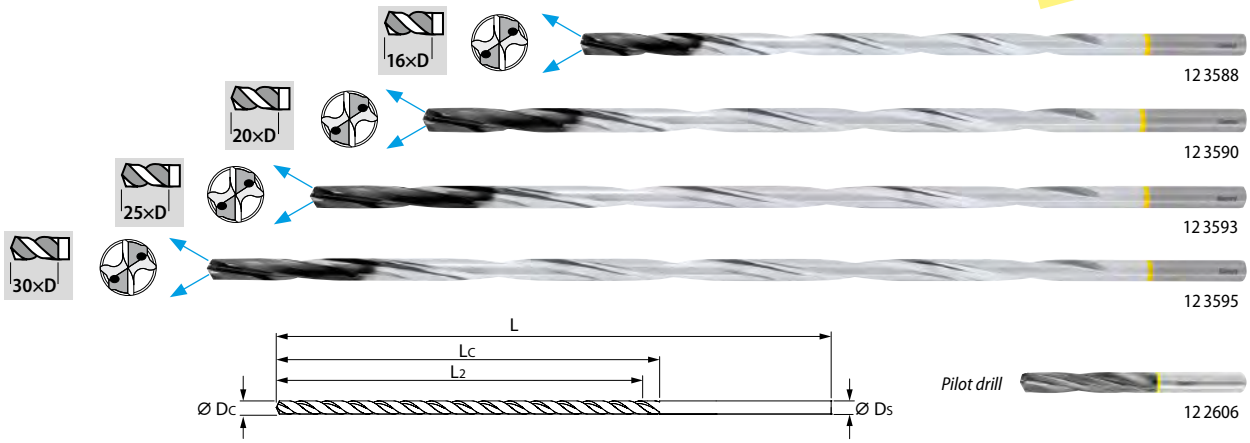
Garant

Solid carbide HPC deep hole drill

Spiral fluted, with **6 guide chamfers** and internal cooling channels. New generation of high performance deep hole drills in the HPC range.
With 135° point angle and special **h7 cutting edge tolerance** for optimum generation of a deep hole.
High roundness and alignment accuracy of the deep hole.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
For process reliability when using the 16×D deep hole drill, prior centring with No. 121068 – 121121 or 4×D pilot drilling operation with pilot drill No. 122606 is necessary. For deep holes greater than 20×D, a pilot hole with maximum drilling depth with pilot drill No. 122606 is absolutely essential.**The generation of a pilot hole improves process reliability.**

See also page 144/145



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	Cu	CuZn	GRP	CRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
12 3588	160	190	140	150			120			90		80	70	80	90	115	80	80		●	●		
12 3590	150	180	130	135			105			80		70	65	70	90	100	70	70		●	●		
12 3593	130	160	120	120			95			70		65	55	65	75	90	65	65		●	●		
12 3595	120	150	110	120			95			70		65	55	65	70	80	65	65		●	●		

Ø D_c h7	11E 12 3588	11E 12 3590	11E 12 3593	11E 12 3595	L_2				L				Ø D_s	Alu f	
	Solid carbide HPC deep hole drill plain shank				12 3588	12 3590	12 3593	12 3595	12 3588	12 3590	12 3593	12 3595		12 3588 12 3590 12 3593	12 3595
	DIN 6535 HA 16×D	DIN 6535 HA 20×D	DIN 6535 HA 25×D	DIN 6535 HA 30×D											
mm	DLC	DLC	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm/rev.	mm/rev.
2	eShop	eShop	eShop	eShop	39	47	57	67	84	92	104	115	4	0.1	0.08
2,2	eShop	eShop	eShop	eShop	38.7	46.7	56.7	66.7	84	92	104	115	4	0.14	0.11
2,3	eShop	eShop	eShop	eShop	38.6	46.6	56.6	66.6	84	92	104	115	4	0.14	0.11
2,4	(eShop)	eShop	eShop	(eShop)	50.4	66.4	76.4	86.4	96	112	125	138	4	0.14	0.11
2,5	eShop	eShop	eShop	eShop	50.3	66.3	76.3	86.3	96	112	125	138	4	0.14	0.11
2,7	eShop	eShop	(eShop)	eShop	50	66	76	86	96	112	125	138	4	0.14	0.11
2,8	eShop	eShop	eShop	eShop	49.8	65.8	75.8	85.8	96	112	125	138	4	0.14	0.11
3	eShop	eShop	eShop	eShop	55.5	75.5	93.5	100.5	100	120	135	150	6	0.14	0.11
3,2	eShop	eShop	eShop	eShop	55.2	75.2	93.2	100.2	100	120	135	150	6	0.18	0.15
3,3	eShop	eShop	eShop	eShop	55.1	75.1	105.1	130.1	100	120	150	185	6	0.18	0.15
3,5	eShop	eShop	eShop	eShop	54.8	74.8	104.8	129.8	100	120	150	185	6	0.18	0.15
3,8	eShop	eShop	eShop	eShop	69.3	84.3	114.3	129.3	115	130	160	185	6	0.18	0.15
4	eShop	eShop	eShop	eShop	69	84	114	129	115	130	160	185	6	0.18	0.15
4,2	eShop	eShop	eShop	eShop	68.7	103.7	113.7	128.7	115	160	160	185	6	0.22	0.19
4,5	eShop	eShop	eShop	eShop	83.3	103.3	128.3	158.3	130	160	180	215	6	0.22	0.19
4,7	eShop	eShop	eShop	eShop	82.9	112.9	127.9	157.9	130	160	180	215	6	0.22	0.19
4,8	eShop	eShop	eShop	eShop	82.8	112.8	127.8	157.8	130	160	180	215	6	0.22	0.19
5	eShop	eShop	eShop	eShop	82.5	112.5	127.5	157.5	130	160	180	215	6	0.22	0.19
5,5	eShop	eShop	eShop	eShop	99.8	131.8	159.8	171.8	150	185	205	230	6	0.25	0.22
5,8	eShop	eShop	(eShop)	(eShop)	99.3	131.3	159.3	171.3	150	185	205	230	6	0.25	0.22
6	eShop	eShop	eShop	eShop	99	131	159	171	150	185	205	230	6	0.25	0.22
6,5	eShop	eShop	eShop	eShop	115.3	150.3	190.3	205.3	165	210	240	280	8	0.28	0.26
6,8	eShop	eShop	(eShop)	eShop	114.8	149.8	189.8	219.8	165	210	240	280	8	0.28	0.26
7	eShop	eShop	eShop	eShop	114.5	149.5	189.5	219.5	165	210	240	280	8	0.28	0.26
7,5	eShop	eShop	eShop	eShop	128.8	168.8	208.8	218.8	180	230	260	280	8	0.28	0.26
7,8	eShop	eShop	eShop	eShop	128.3	168.3	208.3	253.3	180	230	260	315	8	0.28	0.26
8	eShop	eShop	eShop	eShop	128	168	208	253	180	230	260	315	8	0.28	0.26
8,5	eShop	eShop	eShop	eShop	147.3	182.3	227.3	282.3	205	260	285	350	10	0.33	0.3
8,8	eShop	eShop	eShop	eShop	146.8	216.8	254.8	316.8	205	290	310	380	10	0.33	0.3
9	eShop	eShop	eShop	eShop	146.5	216.5	254.5	316.5	205	290	310	380	10	0.33	0.3
9,8	eShop	eShop	(eShop)	(eShop)	165.3	215.3	253.3	315.3	225	290	310	380	10	0.33	0.3
10	eShop	eShop	eShop	eShop	165	215	253	315	225	290	310	380	10	0.33	0.3
10,2	eShop	eShop	eShop	eShop	174.7	252.7	309.7	364.7	240	315	375	430	12	0.37	0.34
10,8	eShop	eShop	(eShop)	eShop	173.8	251.8	308.8	363.8	240	315	375	430	12	0.37	0.34
11,8	eShop	eShop	eShop	eShop	197.3	250.3	307.3	362.3	265	315	375	430	12	0.37	0.34
12	eShop	eShop	eShop	eShop	197	250	307	362	265	315	375	430	12	0.37	0.34

Solid carbide | Standard | h7 | 2 | 135° | h6 DIN 6535 HA | 40 bar | HPC

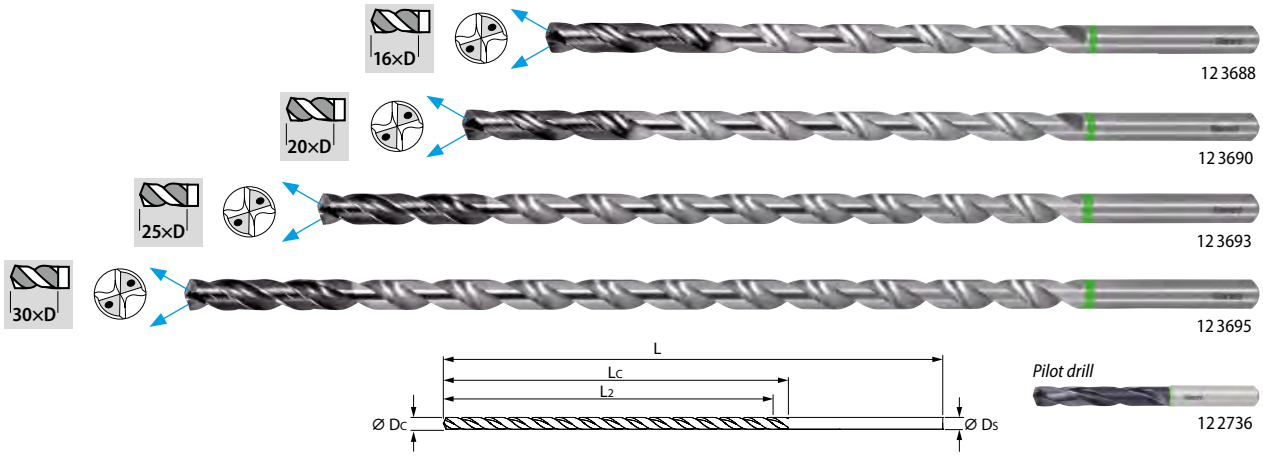
Garant

Solid carbide HPC deep hole drill

Spiral fluted, with **4 guide chamfers** and internal cooling channels. New generation of high performance deep hole drills in the HPC range.
With 135° point angle and special **h7 cutting edge tolerance** for optimum generation of a deep hole.
High roundness and alignment accuracy of the deep hole.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
For process reliability when using the 16×D deep hole drill, an initial centre drilling with No. 121068 – 121121 or 4×D pilot drilling operation with pilot drill No. 122736 is necessary. For deep holes greater than 20×D, a pilot hole to the maximum drilling depth with pilot drill No. 122736 is absolutely essential. **The generation of a pilot hole improves process reliability.**

See also page 144/145.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
12 3688				110	95	95	95	75						55	50		100	●		●			
12 3690				105	90	90	90	70						50	45		95	●		●			
12 3693				95	80	80	80	65						50	45		85	●		●			
12 3695				90	75	75	75	60						45	40		80	●		●			

Ø D_c h7	11E 12 3688	11E 12 3690	11E 12 3693	11E 12 3695	L_2				L				Ø D_s	< 900 N f
	Solid carbide HPC deep hole drill plain shank													
	DIN 6535 HA 16×D	DIN 6535 HA 20×D	DIN 6535 HA 25×D	DIN 6535 HA 30×D	12 3688	12 3690	12 3693	12 3695	12 3688	12 3690	12 3693	12 3695		
	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm/rev.
2	eShop	eShop	eShop	eShop	39	47	57	67	84	92	104	115	4	0.05
2,2	eShop	eShop	eShop	eShop	38.7	46.7	56.7	66.7	84	92	104	115	4	0.06
2,3	eShop	eShop	(eShop)	eShop	38.6	46.6	56.6	66.6	84	92	104	115	4	0.06
2,4	eShop	eShop	eShop	eShop	50.4	66.4	76.4	86.4	96	112	125	138	4	0.06
2,5	eShop	eShop	eShop	eShop	50.3	66.3	76.3	86.3	96	112	125	138	4	0.06
2,7	eShop	eShop	eShop	eShop	50	66	76	86	96	112	125	138	4	0.06
2,8	eShop	eShop	eShop	eShop	49.8	65.8	75.8	85.8	96	112	125	138	4	0.06
3	eShop	eShop	eShop	eShop	55.5	75.5	93.5	100.5	100	120	135	150	6	0.06
3,2	eShop	eShop	–	–	55.2	75.2	–	–	100	120	–	–	6	0.08
3,3	eShop	eShop	eShop	eShop	55.1	75.1	105.1	130.1	100	120	150	185	6	0.08
3,5	eShop	eShop	eShop	eShop	54.8	74.8	104.8	129.8	100	120	150	185	6	0.08
3,8	eShop	eShop	–	–	69.3	84.3	–	–	115	130	–	–	6	0.08
4	eShop	eShop	eShop	eShop	69	84	114	129	115	130	160	185	6	0.08
4,2	eShop	eShop	–	–	68.7	103.7	–	–	115	160	–	–	6	0.1
4,5	eShop	eShop	–	–	83.3	103.3	–	–	130	160	–	–	6	0.1
5	eShop	eShop	eShop	eShop	82.5	112.5	127.5	157.5	130	160	180	215	6	0.1
5,5	eShop	eShop	–	–	99.8	131.8	–	–	150	185	–	–	6	0.12
6	eShop	eShop	eShop	eShop	99	131	159	171	150	185	205	230	6	0.12
6,5	eShop	eShop	–	–	115.3	150.3	–	–	165	210	–	–	8	0.14
6,8	eShop	eShop	–	–	114.8	149.8	–	–	165	210	–	–	8	0.14
7	eShop	eShop	eShop	eShop	114.5	149.5	189.5	219.5	165	210	240	280	8	0.14
8	eShop	eShop	eShop	eShop	128	168	208	253	180	230	260	315	8	0.14
8,5	eShop	eShop	eShop	eShop	147.3	182.3	227.3	282.3	205	260	285	350	10	0.16
9	eShop	eShop	eShop	eShop	146.5	216.5	254.5	316.5	205	290	310	380	10	0.16
10	eShop	eShop	eShop	eShop	165	215	253	315	225	290	310	380	10	0.16
12	eShop	eShop	eShop	eShop	197	250	307	362	265	315	375	430	12	0.18

Solid carbide | Standard | 2 | h6 DIN 6535 HA | 40 bar | HPC

Garant

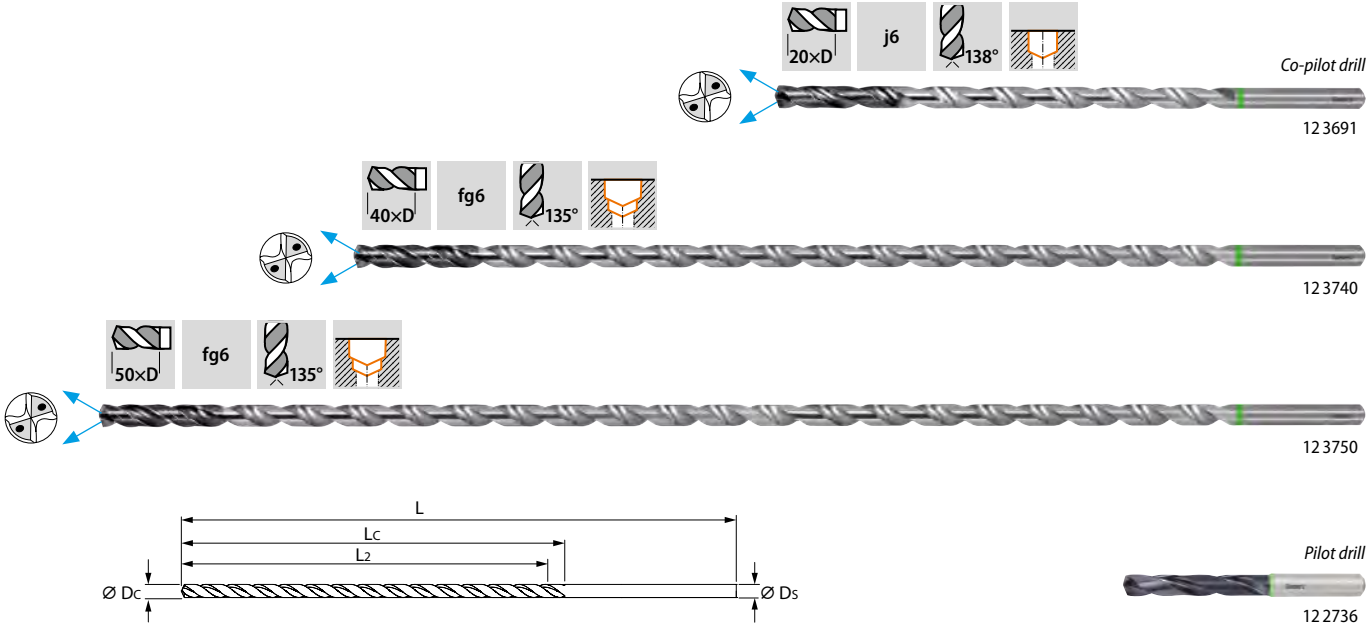
Solid carbide HPC deep hole drill

12 3691 – Helical fluted, with **4 guide chamfers** and internal coolant holes. New generation of high performance co-pilot drills in the HPC range.
With 138° point angle and special **j6 cutting edge tolerance** for optimum generation of a co-pilot hole.
High roundness and alignment accuracy of the co-pilot hole.

12 3740/3750 – Spiral fluted, with **4 guide chamfers** and internal cooling channels. New generation of high performance deep hole drills in the HPC range.
With 135° point angle and special **fg6 cutting edge tolerance** for optimum generation of deep holes.
High roundness and alignment accuracy of the deep hole.

Note: Flute length $L_c = L_2 + 1.5 \times D_c$.
To achieve good process reliability with 40×D and 50×D deep hole drills it is absolutely essential to drill a pilot hole with maximum drilling depth with drill No. 122736 and a 20×D co-pilot hole with a co-pilot drill No. 123691.
The generation of a pilot hole improves process reliability.

See also page 144/145.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
12 3691				105	90	90	90	70						50	45		95	●		●			
12 3740				75	60	60	60	50						40	35		65	●		●			
12 3750				65	50	50	50	45						35	30		55	●		●			

Ø D_c	1E	12 3691	1E	12 3740	1E	12 3750	L_2			L			Ø D_s	< 900 N f
		Solid carbide HPC co-pilot drill, plain shank		Solid carbide HPC deep hole drill plain shank										
		DIN 6535 HA 20×D		DIN 6535 HA 40×D		DIN 6535 HA 50×D	12 3691	12 3740	12 3750	12 3691	12 3740	12 3750		
mm		TiAlN		TiAlN		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm/rev.
3		eShop		eShop		eShop	75.5	145.5	170.5	120	195	220	6	0.05
4		eShop		eShop		eShop	84	169	214	130	220	265	6	0.06
4,2		eShop		eShop		eShop	103.7	193.7	238.7	160	245	290	6	0.08
4,5		eShop		eShop		(eShop)	103.3	193.3	238.3	160	245	290	6	0.08
4,8		eShop		(eShop)		eShop	112.8	222.8	267.8	160	275	320	6	0.08
5		eShop		eShop		eShop	112.5	222.5	267.5	160	275	320	6	0.08
5,5		eShop		eShop		eShop	131.8	251.8	301.8	185	305	355	6	0.1
5,8		eShop		eShop		eShop	131.3	251.3	306.3	185	305	355	6	0.1
6		eShop		eShop		eShop	131	251	306	185	305	355	6	0.1
6,5		eShop		eShop		eShop	150.3	290.3	340.3	210	345	395	8	0.1
6,8		eShop		eShop		eShop	149.8	289.8	369.8	210	345	425	8	0.12
7		eShop		eShop		–	149.5	289.5	–	210	345	–	8	0.12
7,5		eShop		eShop		–	168.8	328.8	–	230	385	–	8	0.12
7,8		(eShop)		eShop		–	168.3	328.3	–	230	385	–	8	0.12
8		eShop		eShop		–	168	328	–	230	385	–	8	0.12
8,5		eShop		eShop		–	182.3	367.3	–	260	430	–	10	0.14
8,8		(eShop)		(eShop)		–	216.8	366.8	–	290	430	–	10	0.14
9		eShop		eShop		–	216.5	366.5	–	290	430	–	10	0.14

Solid carbide | Standard | j6 | 2 | 138° | h6 DIN 6535 HA | 40 bar | HPC

Garant GARANT Master Steel Deep solid carbide deep hole drill and pilot drill

Excellent chip evacuation due to the unequal helical pitch of the flutes, guide rings and additional guide chamfers for very high precision when drilling.
Maximum process reliability due to exactly matching tools within the overall system. Drilling up to the maximum depth without a pilot drill.
Significantly increased tool stability due to the substantially strengthened core.
Increased metal removal rates and **outstanding tool lives** lead to an economical high-end drilling process.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$.
For process reliability when using the 16×D deep-hole drill, initial centre drilling with No. 121068 – 121121 or a pilot hole of at least 4×D with pilot drill No. 122736 is necessary. For deep holes greater than 20×D, a pilot hole to the maximum drilling depth with pilot drill No. 122736 is absolutely essential. The generation of a pilot hole improves process reliability. **The specified L/D ratio gives the minimum achievable depth of hole with the respective deep-hole drill.**

See also page 144/145



12 3888

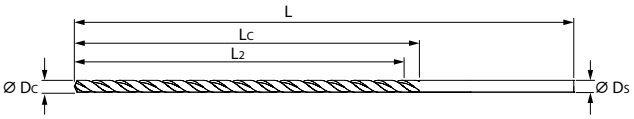


12 3890

Pilot drill



12 2736



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
12 3888				125	115	110	110	90						65	60	30	115	●		●	○		
12 3890				120	110	105	105	85						65	60	25	110	●		●	○		

Ø D_C j6	10E 12 3888	10E 12 3890	L_2		L		Ø D_s	< 900 N f
	GARANT Master Steel Deep solid carbide deep hole drill, plain shank							
	DIN 6535 HA 16×D	DIN 6535 HA 20×D	12 3888	12 3890	12 3888	12 3890		
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm/rev.
3	eShop	eShop	55.5	67.5	103	115	6	0.07
3,2	eShop	eShop	55.2	67.2	103	115	6	0.09
3,3	eShop	eShop	60.1	74.1	108	122	6	0.09
3,5	eShop	eShop	59.8	73.8	108	122	6	0.09
3,8	eShop	eShop	65.3	80.3	114	129	6	0.09
4	eShop	eShop	70	87	118	135	6	0.09
4,2	eShop	eShop	77.7	95.7	126	144	6	0.11
4,3	eShop	eShop	77.6	95.6	126	144	6	0.11
4,5	eShop	eShop	77.3	95.3	126	144	6	0.11
4,8	eShop	eShop	85.8	105.8	135	155	6	0.11
5	eShop	eShop	85.5	105.5	135	155	6	0.11
5,5	eShop	eShop	97.8	119.8	147	169	6	0.14
5,8	eShop	eShop	102.3	126.3	151	175	6	0.14
6	eShop	eShop	102	126	151	175	6	0.14
6,5	eShop	eShop	110.3	136.3	162	188	8	0.16
6,8	eShop	eShop	119.8	147.8	172	200	8	0.16
7	eShop	eShop	119.5	147.5	172	200	8	0.16
7,5	eShop	eShop	127.8	157.8	180	210	8	0.16
7,8	eShop	eShop	136.3	168.3	188	220	8	0.16
8	eShop	eShop	136	168	188	220	8	0.16
8,5	eShop	eShop	144.3	178.3	203	237	10	0.19
8,8	eShop	eShop	153.8	189.8	213	249	10	0.19
9	eShop	eShop	153.5	189.5	213	249	10	0.19
9,8	eShop	eShop	170.3	210.3	229	269	10	0.19
10	eShop	eShop	170	210	229	269	10	0.19
10,2	eShop	eShop	178.7	220.7	245	287	12	0.21
10,5	eShop	eShop	178.3	220.3	245	287	12	0.21
10,8	eShop	eShop	186.8	230.8	254	298	12	0.21
11	eShop	eShop	186.5	230.5	254	298	12	0.21
11,8	eShop	eShop	204.3	252.3	271	319	12	0.21
12	eShop	eShop	204	252	271	319	12	0.21
13	eShop	eShop	220.5	272.5	291	343	14	0.24
14	eShop	eShop	238	294	308	364	14	0.24

Solid carbide | Standard | j6 | 2 | 138° | h6 DIN 6535 HA | 40 bar | HPC

Garant GARANT Master Steel Deep solid carbide deep hole drill

Excellent chip evacuation due to the unequal helical pitch of the flutes, guide rings and additional flute lands for very high precision when drilling.
Maximum process reliability due to exactly matching tools within the overall system. Drilling up to the maximum depth without a pilot drill.
Significantly increased tool stability due to the substantially strengthened core.
Increased metal removal rates and **outstanding tool lives** lead to an economical high-end drilling process.

Note: Flute length $L_C = L_2 + 1.5 \times D_C$. For deep holes greater than 20×D, a pilot hole to the maximum drilling depth with pilot drill No. 122736 is absolutely essential. The generation of a pilot hole improves process reliability. **The specified L/D ratio gives the minimum achievable depth of hole with the respective deep hole drill.**

See also page 144/145.



12 3893

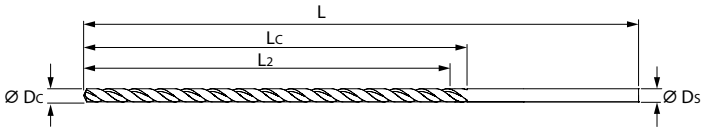


12 3895

Pilot drill



12 2736



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
12 3893				110	100	95	95	75						60	55		100	●		●	○		
12 3895				105	95	85	85	70						55	50		95	●		●	○		

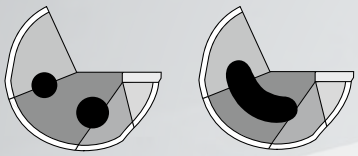
Ø D_C j6	10E 12 3893	10E 12 3895	L_2		L		Ø D_s	< 900 N f
	GARANT Master Steel Deep solid carbide deep hole drill, plain shank							
	DIN 6535 HA 25×D	DIN 6535 HA 30×D	12 3893	12 3895	12 3893	12 3895		
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm/rev.
3	eShop	eShop	83.5	99.5	131	147	6	0.07
3,2	eShop	eShop	83.2	99.2	131	147	6	0.07
3,3	eShop	eShop	92.05	109.05	140	157	6	0.09
3,5	eShop	eShop	91.75	108.75	140	157	6	0.09
3,8	eShop	eShop	99.3	118.3	148	167	6	0.09
4	eShop	eShop	107	128	155	176	6	0.09
4,2	eShop	eShop	117.7	140.7	166	189	6	0.11
4,5	eShop	eShop	117.3	140.3	166	189	6	0.11
4,8	eShop	eShop	130.8	155.8	180	205	6	0.11
5	eShop	eShop	130.5	155.5	180	205	6	0.11
5,5	eShop	eShop	148.8	176.8	198	226	6	0.14
6	eShop	eShop	156	186	205	235	6	0.14
6,5	eShop	eShop	169.3	201.3	221	253	8	0.16
6,8	eShop	eShop	182.8	217.8	235	270	8	0.16
7	eShop	eShop	182.5	217.5	235	270	8	0.16
8	eShop	eShop	208	248	260	300	8	0.16
8,5	eShop	eShop	221.25	263.25	280	322	10	0.19
9	eShop	eShop	234.5	279.5	294	339	10	0.19
10	eShop	eShop	260	310	319	369	10	0.19
10,8	eShop	eShop	285.8	340.8	353	408	12	0.21
11	eShop	eShop	285.5	340.5	353	408	12	0.21
11,8	eShop	eShop	312.3	372.3	379	439	12	0.21
12	eShop	eShop	312	372	379	439	12	0.21
13	eShop	eShop	337.5	402.5	408	473	14	0.24
14	eShop	eShop	364	434	434	504	14	0.24

Garant SINGLE-LIP DRILLS

Ideal for small and medium series. Reliable, cost-effective and universal.

Cooling channel bore

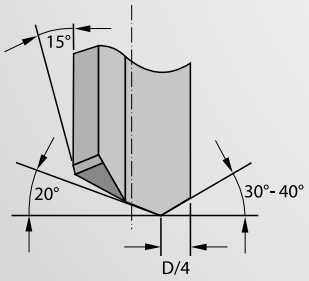
For drill diameters < 7.7 mm, a kidney-shaped cooling channel bore ensures maximum coolant throughput for optimum cooling of the tool and component and for reliable chip evacuation from the bore.



General-purpose use

Due to the universal circumferential shape and special tip geometry on the drill head, close bore tolerances and a small drilling path can be achieved in virtually all suitable materials.

The tools can be used without problems on machining centres up to a drilling depth of 50×D.



Intermediate dimensions

If the respective blank is available, delivery time of approx. 3 weeks for intermediate sizes.

Note

For machining stainless steels, we recommend single-lip drills with chip breaker. These are available on request.

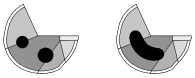
Carbide | Standard | 1 | 125° | DIN 6535 HB | >40 bar | X

Garant

Single-lip drills

Single-edged straight flute deep-hole drill for drilling depths of up to 1000 mm as standard and up to 6000 mm on request. Universally designed circumferential shape of the drilling head enables reliable working in a wide range of materials.

Note: For the reliable use of deep hole drills, a pilot hole of at least 4×D with pilot drill No. 122736 or No. 231605 for larger diameters, or with pilot drill No. 122606 for aluminium, is required. For deep holes > 50×D, the tool must be supported with a rest at intervals of 50×D. The specified L/D ratio gives the minimum achievable depth of hole with the respective deep-hole drill. Flute length $L_C = L_2 + 1.5 \times D_C$. A coolant pressure of > 40 bar is recommended.



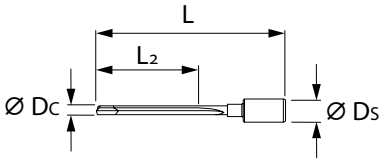
Up to Ø 7.7 mm with kidney-shaped coolant channel

Single-lip drills with a total length of 800 mm or 1000 mm are available in the eShop under No. 12 4008 and No. 12 4010.

See also page 144/145.



12 4005



12

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
12 4002–12 4006	250	200		90	80	70	50										80	

Ø D_C	100	12 4002	100	12 4003	100	12 4004	100	12 4005	100	12 4006		L_2					Ø D_s
		Carbide single-lip drill										12 4002	12 4003	12 4004	12 4005	12 4006	
		Overall length L 200 mm		Overall length L 300 mm		Overall length L 400 mm		Overall length L 500 mm		Overall length L 600 mm							
mm		AlTiN		AlTiN		AlTiN		AlTiN		AlTiN		mm	mm	mm	mm	mm	mm
3		eShop		eShop		–		–		–	1	145	245	–	–	–	10
3-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	3	144	244	344	444	544	10
4		eShop		eShop		eShop		–		–	1	144	244	344	–	–	10
4-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	3	140	240	340	440	540	10
5		eShop		eShop		eShop		eShop		–	1	140	240	340	440	–	10
5-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	3	140	240	340	440	540	10
6		eShop		eShop		eShop		eShop		–	1	140	240	340	440	–	10
6-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	3	139	239	339	439	539	10
7		eShop		eShop		eShop		eShop		–	1	139	239	339	439	–	10
7,1-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	3	125	225	325	425	525	16
8		eShop		eShop		eShop		eShop		eShop	1	125	225	325	425	525	16
8-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	125	225	325	425	525	16
9-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	125	225	325	425	525	16
10		–		eShop		eShop		eShop		eShop	1	–	225	325	425	525	16
10-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	123	223	323	423	523	16
11-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	122	222	322	422	522	16
11,4-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	115	215	315	415	515	25
12		–		eShop		eShop		eShop		eShop	1	–	215	315	415	515	25
12-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	115	215	315	415	515	25
13-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	115	215	315	415	515	25
14-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	110	210	310	410	510	25
15-X		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	1	110	210	310	410	510	25
16-X		–		(eShop)		(eShop)		(eShop)		(eShop)	1	–	205	305	405	505	25
17-X		–		(eShop)		(eShop)		(eShop)		(eShop)	1	–	205	305	405	505	25
18-X		–		(eShop)		(eShop)		(eShop)		(eShop)	1	–	205	305	405	505	25
19-X		–		(eShop)		(eShop)		(eShop)		(eShop)	1	–	205	305	405	505	25
19,8-X		–		(eShop)		(eShop)		(eShop)		(eShop)	1	–	198	298	398	498	32
21-X		–		–		(eShop)		(eShop)		(eShop)	1	–	–	297	397	497	32
22-X		–		–		(eShop)		(eShop)		(eShop)	1	–	–	295	395	495	32
23-X		–		–		(eShop)		(eShop)		(eShop)	1	–	–	290	390	490	32
24-X		–		–		(eShop)		(eShop)		(eShop)	1	–	–	290	390	490	32

Solid carbide | Standard | m7 | 3 | 145° | h6 DIN 6535 HA | 90° | 25 bar | HPC

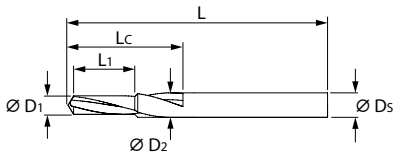
M | MF

GARANT Master Steel Feed solid carbide stepped drill, for tapping holes with 90° countersink

For generation of **optimum tapping holes.**
Creates **ideal machining conditions** for the subsequent tapping tool.
The cutter Ø of the drill is matched to the thread that is to be produced, in order to achieve a threads true to gauge and for **high process reliability of the tapping process.**
The 90° countersink for the thread is produced **in the same operation** as drilling the tapping hole.
3-flute drill, specially developed for **use at very high feed rates**.
Outstandingly suitable for machines with high installed power and stable machining conditions.
Drill tolerance (Ø D_1): m7.
First level tolerance (Ø D_2): h7.



12 5035



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K						
12 5035				160	140	130	110	90	60				60	50	40	130	80	●		●	●		

for threads	1IE	12 5035	$Ø D_1$	$Ø D_2$ h7	L_1	L_c	L	$Ø D_s$	< 1100 N f
		GARANT Master Steel Feed solid carbide stepped drill							
		TiAlN	mm	mm	mm	mm	mm	mm	mm/rev.
M5		eShop	4.25	5.5	13.6	28	66	6	0.28
M6		eShop	5.1	6.6	16.5	41	79	8	0.32
M8		eShop	6.85	8.8	21	47	89	10	0.37
M8×1		eShop	7.1	8.8	21	47	89	10	0.37
M10		eShop	8.6	11	25.5	55	102	12	0.44
M10×1		eShop	9.1	11	25.5	55	102	12	0.44
M12		eShop	10.35	13.2	30	60	107	14	0.5
M16		eShop	14.15	17.6	38.5	73	123	18	0.56

Solid carbide | Standard | m7 | 3 | 145° | h6 DIN 6535 HA | 90° | 25 bar | HPC

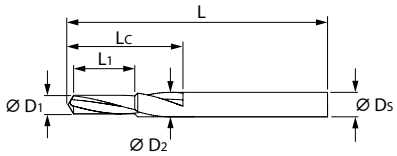
GARANT Master Steel Feed solid carbide stepped drill, non-standard sizes, with 90° countersink

Stepped drill, finish ground to your specifications.
For producing a drilled hole and 90° countersink in a single operation.
3-flute drill, specially developed for **use at very high feed rates**.
Outstandingly suitable for machines with high installed power and stable machining conditions.
Drill tolerance (nominal Ø): m7.
First level tolerance (nominal Ø D_2): h7.

Note: Nominal Ø and step length are configurable (freely selectable within the range stated in the table) and ground to specification.



12 5040 – 5044



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K						
12 5040–12 5044				160	140	130	110	90	60				60	50	40	130	80	●		●	●		

Nominal Ø range from - to	1IE	12 5040	1IE	12 5041	1IE	12 5042	1IE	12 5043	1IE	12 5044	$Ø D_2$ h7	L_1 min - max	L_c	L	$Ø D_s$	< 1100 N f
		GARANT Master Steel Feed solid carbide stepped drill, configurable														
		from a quantity of 3 pieces		from a quantity of 5 pieces		from a quantity of 10 pieces		from a quantity of 15 pieces		from a quantity of 20 pieces						
mm		TiAlN		TiAlN		TiAlN		TiAlN		TiAlN	mm	mm	mm	mm	mm	mm/rev.
3,98-4,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	5	4.5 – 15.4	28	66	6	0.28
4,51-5,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	6	5.5 – 15.4	28	66	6	0.28
5,51-6,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	7	6.5 – 22.55	41	79	8	0.32
6,51-7,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	8	7.5 – 22.55	41	79	8	0.37
7,51-8,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	9	8.5 – 25.85	47	89	10	0.37
8,51-9,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	10	9.5 – 25.85	47	89	10	0.44
9,51-11,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	12	11.5 – 30.25	55	102	12	0.44
11,51-13,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	14	13.5 – 33	60	107	14	0.5
13,51-15,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	16	15.5 – 33.75	65	115	16	0.56
15,51-17,5		(eShop)		(eShop)		(eShop)		(eShop)		(eShop)	18	17.5 – 40.15	73	123	18	0.61

Solid carbide	DIN 8378	Type N	h8	2	140°	h6 DIN 6535 HA	90°

Garant

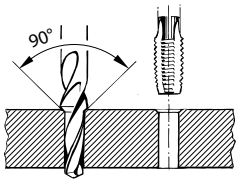
Solid carbide short stepped drill for tapping holes, 90° countersink

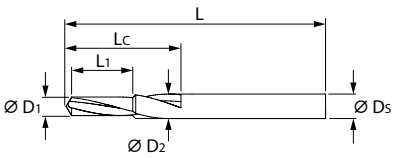
Very sturdy – step length to DIN 8378.
Tight concentricity tolerances between drill and counterbore Ø guarantee exact alignment.

Application: **Particularly suitable for NC machines and automatic machines.**
For drilling tapping holes to DIN 336 sheet 1 with 90° countersinking.
In the following operation, the tap therefore does not have to cut into the sharp edge of the hole.
Sizes **F: Tapping holes** for the following **fluteless taps.**



12 5050





12

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 5050	260	180	180	90	90	90	60	35					35	30	25	110	180	●		●		○	

for threads	11E 12 5050 Solid carbide short stepped drill 90° TiAlN	Ø D_1 h8	Ø D_2 h8	L_1	L_c	L	Ø D_s	< 1100 N f
		mm	mm	mm	mm	mm	mm	mm/rev.
M2F	eShop	1.8	2.5	5.3	20	62	6	0.05
M2,5F	eShop	2.3	3	6.8	20	62	6	0.05
M3	eShop	2.5	3.4	8.8	20	62	6	0.08
M3F	eShop	2.8	3.4	8.8	20	62	6	0.08
M3,5F	eShop	3.25	4	9.6	24	66	6	0.08
M4	eShop	3.3	4.5	11.4	24	66	6	0.08
M4F	eShop	3.7	4.5	11.4	24	66	6	0.08
M5	eShop	4.2	5.5	13.6	28	66	6	0.08
M5F	eShop	4.65	5.5	13.6	28	66	6	0.08
M6	eShop	5	6.6	16.5	34	79	8	0.11
M6F	eShop	5.55	6.6	16.5	34	79	8	0.11
M8	eShop	6.8	9	21	47	89	10	0.11
M8F	eShop	7.45	9	21	47	89	10	0.11
M10	eShop	8.5	11	25.5	55	102	12	0.14
M10F	eShop	9.35	11	25.5	55	102	12	0.14
M12	eShop	10.2	13.5	30	60	107	14	0.18
M12F	eShop	11.2	13.5	30	60	107	14	0.18
M14	eShop	12	16	34.5	65	115	16	0.18
M16	eShop	14	18	38.5	73	123	18	0.18
M16F	eShop	15.1	18	38.5	73	123	18	0.18

Solid carbide | Standard | Type N | h7 | 2 | 140° | h6 DIN 6535 HA | 90°

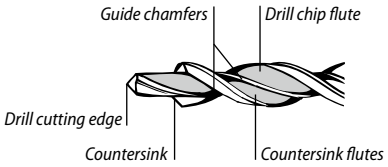
Garant Solid carbide stepped drill for tapping holes, 90° countersink

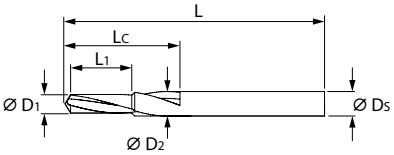
Drill and counterbore each with its own chip flutes and guide chamfers.
This special design permits frequent regrinding without losing the stepped drill profile.
Countersink angle 90°.

Advantage: Precisely aligned **tapping drill hole and countersink** produced **in a single operation**.
For tapping drill holes.



12 5100





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 5100	260	180	180	90	90	90	60	35					35	30	25	110	180	●		●		○	

for threads	11E	12 5100 Solid carbide stepped drill for tapping holes 90° TiAlN	Ø D_1 h7	Ø D_2 h7	L_1	L_c	L	Ø D_s	< 1100 N f
			mm	mm	mm	mm	mm	mm	mm/rev.
M3		eShop	2.5	6	8.8	28	66	6	0.08
M4		eShop	3.3	6	11.4	28	66	6	0.08
M5		eShop	4.2	6	13.6	28	66	6	0.08
M6		eShop	5	8	16.5	41	79	8	0.11
M8		eShop	6.8	10	21	47	89	10	0.11
M10		eShop	8.5	12	25.5	55	102	12	0.14
M12		eShop	10.2	14	30	60	107	14	0.18

Solid carbide | DIN 8376 | Type N | h8 | 140° | 180° | 2

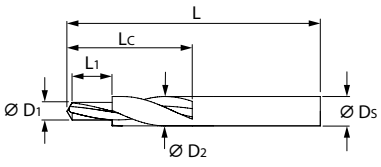
Garant Solid carbide short stepped drill for through holes, 180° (for socket-head screws)

Very sturdy– step length to DIN 8376.
Tight concentricity tolerances between drill and counterbore Ø guarantee exact alignment.

Application: For screw through holes to DIN-ISO 273 and counterbores to DIN 74, sheet 2 form H, J, and K, medium version.
For screws to DIN 912, 6912, and 7984, ISO 1207 (DIN 84).



12 5120



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
12 5120	260	180	180	90	90	90	60	35					35	30	25	110	180	●		●		○	

for screws	11E	12 5120 Solid carbide short stepped drill 180° TiAlN	Ø D_1 h8	Ø D_2 h8	L_1	L_c	L	Ø D_s	< 1100 N f
			mm	mm	mm	mm	mm	mm	mm/rev.
M3		eShop	3.4	6	9	28	64	6	0.08
M4		eShop	4.5	8	11	37	79	8	0.08
M5		eShop	5.5	10	13	43	89	10	0.08
M6		eShop	6.6	11	15	55	102	12	0.11
M8		eShop	9	15	19	65	115	16	0.11
M10		eShop	11	18	23	62	123	18	0.14

Overview – modular drilling

Type >	NC spotting drill	Indexable drill					
Brand >	Garant	Garant HiPer drill	HOLEX Flat drill	SUMOCHAM	Garant MTC	Garant GARANT Power Drill	HOLEX Pro Drill
Article number	231500 – 231502	231600 – 231620	23 2240 – 23 2275	23 1702 – 23 1720	23 2298 – 23 2310	23 4000 – 23 4025	23 5000 – 23 5010
Shank	HA / HB	HB (ISO 9766)	HB / MT	HB (ISO 9766)	Combi	HB (ISO 9766)/ABS	HB (ISO 9766)
Version/length	90° / 120° / 142°	1.5 / 3 / 5 / 8 / 10 / 12×D	1.5 / 3 / 5 / 8 /12×D	1.5 / 3 / 5 / 8 / 12×D	2 / 3 / 4×D	2 / 3 / 4 / 5×D	2 / 3 / 4×D
Size range	10 – 20	9 – 36	12 – 65	6 – 32	14 – 44	14 – 44	14 – 40
Page(s)	158	159 / 160	163	167 – 168	171	173 / 174	176
Suitable Insert							
Insert type / ISO	SOGT	Interchangeable head	HSS-/HSS-E-PM insert	Interchangeable head	WOEX	SOGX	SOMT XOMT
Article number	231515 – 231528	231630 – 231690	23 2282 – 23 2286	23 1740 – 23 1790	23 2400 – 23 2780	23 4030 – 23 4098	23 5030 – 23 5082
		●	●	●	○	●	●
		○	○	○	●	●	●
		●	●●	●●		●	●
					●	○	○

Type >	Indexable drill			Core drill
Brand >	KOMET KUB Pentron®	KOMET KUB Trigon®	KOMET KUB Centron®	Garant Twin-cutter drilling head
Article number	23 6601 – 23 6615	23 6630 – 23 6635	23 6650 – 23 6654	23 7609 – 23 7610
Shank	HB (ISO 9766) / ABS	Combi / ABS	ABS	ER / HW
Version/length	2 / 3 / 4 / 5×D	3×D	4 / 6 / 8×D	
Size range	14 – 46	14 – 44	20 – 81	23.5 – 153
Page(s)	180 – 182	184	185 / 186	189
Suitable Insert				
Insert type / ISO	SOGX	WOEX	WOEX	CC..
Article number	23 6605 – 23 6610	23 6740 – 23 7080	23 6740 – 23 7080	Catalogue part 26
	●	●	○	●●
	●	●	○	●●
	●			○
	○	●		●

Type >	Fine boring		Arbors	Precision boring tools		Arbors
Brand >	Garant Micro-system	Garant Precision boring System	Garant Reducers, Extensions	KOMET B301 / M302 M03 speed	KOMET MicroKom® hi.flex / BluFlex 2	Garant Reducers, Extensions
Article number	23 7490 – 23 7498	23 7501 – 23 7573	23 7626 – 23 7672	23 8301 – 23 8374	23 8380 – 23 8395	23 8420 – 23 8780
Shank	cylindrical	ER / HW / Mono	SK / HSK / BT	ABS	ABS	SK / HSK / ABS
Size range	0.3 – 19.1	9.75 – 320		24.8 – 206	6 – 365	
Page(s)	190	191 – 195	196	197 / 198	199	200 / 201
Suitable Insert						
Insert type / ISO	Cutter insert	CC..		TO.X	TOGX/WOHX	
Article number	23 7621 – 23 7625	23 7695 – 23 7698 Catalogue part 26		Available in the eShop	Available in the eShop	

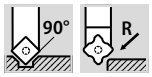
●● = particularly suitable; ● = suitable; ○ = suitable only under restricted conditions

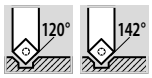
Garant HOLEX KOMET Member IMC Group — Tool materials – drilling/reaming modular

	Grade description	P (Steel) P01	P10	P20	P30	P40	M (Inox) M10	M20	M30	M40	K GG(G) K01	K10	K20	K30	N (Alu) (Alu)	(Alu)	S (Ti) (Ti)	(Ti)	H (HRC) < 55	< 60	< 67
Garant																					
Carbide coated	Grade with very high wear resistance, for steel and very high wear resistance. CVD-TiCN- / Al_2O_3-TiN multi-layer coating.		HB6530																		
	Highly wear-resistant micrograin grade for high vc values. PVD-TiAlN / TiN coating.		HB6535				HB6535														
	Micrograin grade with extremely good edge stability, for use on stainless materials. PVD-TiAlN coating.							HB6640													
	For machining cast iron. CVD-TiC- / Al_2O_3 coating											HB6715									
	Universally applicable wear-resistant and tough grade.		HB630					HB630				HB630									
	For machining non-ferrous metals. PVD-TiB2 coating.															HB6810					
	Machining of cast iron. CVD-TiCN- / Al_2O_3 coating.											HB7305									
	Micro-grain carbide with 10% cobalt. AlTiSiN-PVD coating.				HB7530									HB7530							
	Highly wear-resistant micrograin grade for high vc values with CVD-TiCN- / Al_2O_3-TiN multi-layer coating.			HB7630																	
	Tough grade with 15% cobalt for machining steel. Particularly suitable for machining under unstable conditions. TiAlN coating.				HB3040									HB3040							
	Micro-grain carbide with 10% cobalt. PVD multi-layer coating. Also suitable for aluminium.								HB7630												
	Tough wear-resistant grade, general-purpose use. PVD-TiCN- / TiN coating.			HB7635				HB7635													
	Grade for heavily interrupted cutting with PVD-TiAlN coating.				HB7640				HB7640									HB7640			
	Tool material grade for machining cast iron. Special TiAlSiXN coating.											HB7725									
	Universal grade for wet and dry machining and high cutting speeds. AlCrN multi-layer coating.			HB225				HB225													
	With high wear-resistance, especially for stainless steels. PVD-TiAlN coating.			HB330				HB330													
Carbide, uncoated	Machining of non-ferrous metals (aluminium).															HU7310					
	Polished uncoated carbide substrate for machining non-ferrous metals.															HU7810					
HOLEX																					
Carbide coated	**PVD-TiAlN** general-purpose tool material type				HBD30				HBD30				HBD30					HBD30			
KOMET																					
Carbide coated	**CVD-TiC-TiCN-TiN:** Multi-layered coating on a P25M base substrate.			BK60				BK60													
	TiN-Ti (C,N) -Al2O3-TiN: for W30 inserts. **MT-TiCN -Al2O3-TiN:** for W29 inserts.				BK6425																
	TiN-Ti (C,N) -Al2O3-TiN: for W30 inserts. **MT-TiCN -Al2O3-TiN:** for W29 inserts.					BK6440															
	CVC-TiCN-TiC-Al2O3-TiN: Long tool life even in the upper part of the cutting speed range.			BK72																	
	PVD-TiAlN / TiN / PVD-TiCN / TiN: General-purpose grade for enhanced wear resistance.			BK8425				BK8425						BK8425							
	PVD-TiAlN / TiN / PVD-TiCN / TiN: Suitable for machining tool steels and also stainless steels. Very tough wear-resistant grade.				BK8430				BK8430												
	CVD-TiN-TiCN-Al_2O_3: For higher cutting speeds in cast iron materials.											BK62									
	PVD-TiAlN: For heavily interrupted cutting.				BK7935				BK7935									BK7935			
	CVD-TiCN-TiN-Al2O3: Suitable for high cutting speeds.			BK6115								BK6115									
	PVD-TiB2: For aluminium materials < 10% Si content.															BK7710					
	Combination of carbide and a high performance DBC coating.															DBC					
	TiN-coated general-purpose grade for the best surface quality.			TIN				TIN													
	Combination of carbide and a high performance DBC-P coating.											DBG-P									
CERMET	Cermet high performance cutting material for high cutting speeds. Suitable for spheroidal graphite iron.			DST								DST									
Member IMC Group																					
Carbide coated	Wear-resistant grade. For heat-resistant alloys, austenitic, stainless steel, hard alloys, carbon steel with medium to high cutting speed.			IC908				IC908					IC908				IC908		IC908		

Garant NC spotting drill for indexable inserts No. 231515 – 231528

23 1500 Size 10 – **With plain shank.**
Size 16; 20 – **With Weldon shank.**







23 1500_16



23 1502

Ø D_s	21Y 23 1500	21Y 23 1501	21Y 23 1502	Number of cutting edges Z	maximum hole Ø d_1		maximum drilling depth l_1		Shank length h	L_{tot}	Indexable insert size	Insert screw
	NC spotting drills				23 1500 23 1501	23 1502	23 1500 23 1501	23 1502				
mm	90°	120°	142°		mm	mm	mm	mm	mm	mm		
10	eShop	–	–	1	10	–	4	–	–	90	10; 10G	231540 TX8 (2.0 Nm)
16	eShop	–	–	1	15	–	7	–	70	100	16	231540 TX15 (2.5 Nm)
20	–	eShop	eShop	1	17	18.5	5	3	70	100	16	231540_TX15 (2.5 Nm)

Garant Indexable inserts for NC spotting drills No. 231500 - 231502

Application:

Size 16 – For NC spot drilling and chamfering. Also suitable for stationary use for face turning on the lathe. **Suitable for engraving.**
23 1521 Size 10 – For NC spot drilling and chamfering. Also suitable for stationary use for face turning on the lathe. **Not suitable for engraving.**
Size 10G – **Use only for engraving.**

Note:
23 1521 Size 10G – a_p = max. 0.8 mm, f = 0.008 mm to 0.02 mm.
23 1515 Size 16/1521 Size 10; 16 – a_p = 4 mm, f = 0.03 mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
23 1515	250	250	250													65	110	250		●		○	
23 1521				150	140	130	130	120						90	80					●		○	



23 1515_10



23 1515_10G



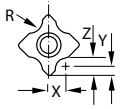
23 1515_16

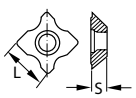
Type			10	10G	16
21Y 23 1515	Indexable insert for NC spotting drill	HB7735	–	–	eShop
21Y 23 1521		HB225	eShop	eShop	eShop
			10	2	10
ISO code (23 1515)			–	–	SOGT 11T303
ISO code (23 1521)			SOGT 080208	SOGT 080201	SOGT 11T308

Garant Radius indexable inserts for NC spotting drills No. 231500

2-cutter radius indexable inserts.
Suitable for: No. 231500 size 16
Application: For convex radii on external Ø or in holes.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
23 1527/1528	250	250	250	200	150	150	150	150						90	80	65	110	250		●		○	















Type / Radius R			16/1	16/1,5	16/2	16/2,5	16/3	
21Y 23 1527	Radius indexable insert	HB225	eShop	eShop	eShop	eShop	eShop	10
X		mm	2.75	3.25	3.75	4.25	4.75	
Y		mm	1.5	1.5	1.5	1.5	1.4	
Z		mm	2.51	3	3.5	4	4.4	

Type / Radius R			16/1-3
21Y 23 1528	Radius indexable insert set	HB225	eShop
Content: 1× each radiussed indexable insert No. 231527			Size 16/1; 16/1.5; 16/2; 16/2.5; 16/3



23 1528

ISO 9766

1.5×D 3×D 5×D

Garant

HiPer drill high-performance drill, right-hand cutting

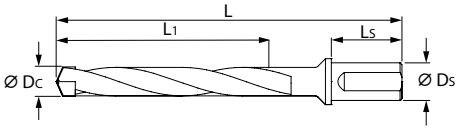
- Very high feed rates and maximum performance due to optimally matched geometries and materials.
- Precise positioning of the cutter insert due to Vee insert seating and secure clamping by the centre bore.
- High concentricity when assembled. (For holes up to IT9 accuracy)
- Shank support for optimum stability in operation.
  Size 9–12,5 – Created by an additive procedure.

Note: The insert screw must be replaced after every fifth change of cutter insert.
Further sizes up to Ø 50.99 mm available on request.

Further sizes up to Ø 50.99 mm available in the eShop.



23 1605



Ø D_c	21S 23 1600	21S 23 1605	21S 23 1610	Dia. range D_c	L_1			Ø D_s	L_s	Clamping screw
	HiPer-Drill base body				23 1600	23 1605	23 1610			
mm	1.5×D	3×D	5×D	mm	mm	mm	mm	mm	mm	
9	–	eShop	eShop	9 – 9.49	–	29	48	12	45	231999 5IP1 (0.2 Nm)
9,5	–	eShop	eShop	9.5 – 9.99	–	30	50	12	45	231999 5IP1 (0.2 Nm)
10	–	eShop	eShop	10 – 10.49	–	32	53	16	48	231999 5IP1 (0.2 Nm)
10,5	–	eShop	eShop	10.5 – 10.99	–	33	55	16	48	231999 5IP1 (0.2 Nm)
11	–	eShop	eShop	11 – 11.49	–	35	58	16	48	231999 6IP (0.4 Nm)
11,5	–	eShop	eShop	11.5 – 11.99	–	36	60	16	48	231999 6IP (0.4 Nm)
12	–	eShop	eShop	12 – 12.49	–	38	63	16	48	231999 6IP (0.4 Nm)
12,5	–	eShop	eShop	12.5 – 12.99	–	39	65	16	48	231999 6IP (0.4 Nm)
13	eShop	eShop	eShop	13 – 13.49	21	41	68	16	48	231999 7IP (0.6 Nm)
13,5	eShop	eShop	eShop	13.5 – 13.99	21	42	70	16	48	231999 7IP (0.6 Nm)
14	eShop	eShop	eShop	14 – 14.49	22	44	73	16	48	231999 8IP (0.9 Nm)
14,5	eShop	eShop	eShop	14.5 – 14.99	23	45	75	16	48	231999 8IP (0.9 Nm)
15	eShop	eShop	eShop	15 – 15.99	24	48	80	20	50	231999 8IP (0.9 Nm)
16	eShop	eShop	eShop	16 – 16.99	26	51	85	20	50	231999 8IP1 (1.2 Nm)
17	eShop	eShop	eShop	17 – 17.99	27	54	90	20	50	231999 8IP1 (1.2 Nm)
18	eShop	eShop	eShop	18 – 18.99	29	57	95	25	56	231999 8IP1 (1.2 Nm)
19	eShop	eShop	eShop	19 – 19.99	30	60	100	25	56	231999 9IP (2.2 Nm)
20	eShop	eShop	eShop	20 – 20.99	32	63	105	25	56	231999 9IP (2.2 Nm)
21	eShop	eShop	eShop	21 – 21.99	33	66	110	25	56	231999 9IP (2.2 Nm)
22	eShop	eShop	eShop	22 – 22.99	35	69	115	25	56	231999 10IP (3.3 Nm)
23	eShop	eShop	eShop	23 – 23.99	36	72	120	25	56	231999 10IP (3.3 Nm)
24	eShop	eShop	eShop	24 – 24.99	38	75	125	32	60	231999 10IP (3.3 Nm)
25	eShop	eShop	eShop	25 – 25.99	39	78	130	32	60	231999 15IP (5.0 Nm)
26	eShop	eShop	eShop	26 – 26.99	41	81	135	32	60	231999 15IP (5.0 Nm)
27	eShop	eShop	eShop	27 – 27.99	42	84	140	32	60	231999 15IP (5.0 Nm)
28	eShop	eShop	eShop	28 – 28.99	44	87	145	32	60	231999 15IP1 (5.7 Nm)
29	eShop	eShop	eShop	29 – 29.99	45	90	150	32	60	231999 15IP1 (5.7 Nm)
30	eShop	eShop	eShop	30 – 30.99	47	93	155	32	60	231999 15IP1 (5.7 Nm)
31	eShop	eShop	eShop	31 – 31.99	48	96	160	32	60	231999 20IP (7.5 Nm)
32	eShop	eShop	eShop	32 – 32.99	50	99	165	32	60	231999 20IP (7.5 Nm)
33	eShop	eShop	eShop	33 – 33.99	51	102	170	32	60	231999 20IP (7.5 Nm)
34	eShop	eShop	eShop	34 – 34.99	53	105	175	32	60	231999 20IP1 (7.5 Nm)
35	eShop	eShop	eShop	35 – 35.99	54	106	180	32	60	231999 20IP1 (7.5 Nm)
36	eShop	eShop	eShop	36 – 36.99	56	111	185	32	60	231999 20IP1 (7.5 Nm)

ISO 9766 | 8×D | 10×D | 12×D

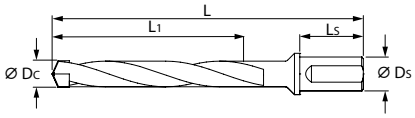
Garant HiPer drill high-performance drill, right-hand cutting

- Very high feed rates and maximum performance due to optimally matched geometries and materials.
- Precise positioning of the cutter insert due to Vee insert seating and secure clamping by the centre bore.
- High concentricity when assembled.
- Shank support for optimum stability in operation.

23 1615 Size 9–12,5 – Created by an additive procedure.
23 1617/1620 – Polished flutes.


23 1620

Further sizes up to Ø 50.99 mm available in the eShop.



Note:
Further sizes up to Ø 50.99 mm available on request.
The insert screw must be replaced after every fifth change of cutter insert.
For process reliability when using the drill, initial pilot drilling to 1.5×D with the drill No. 231600 with the same cutter insert size and type is necessary. **The generation of a pilot hole improves process reliability.**
23 1615 – reduce v_f values by 20 %.
23 1617 – Reduce feed rates f by 10 % and v_c values by 30 %.
23 1620 – Reduce feed rates f by 10 % and v_c values by 40 %.

Ø D_c	215 23 1615	215 23 1617	215 23 1620	Dia. range D_c	L_1			Ø D_s	L_s	Clamping screw
	HiPer-Drill base body				23 1615	23 1617	23 1620			
mm	8×D	10×D	12×D	mm	mm	mm	mm	mm	mm	
9	eShop	–	–	9 – 9.49	76	–	–	12	45	231999 5IP1 (0.2 Nm)
9,5	eShop	–	–	9.5 – 9.99	80	–	–	12	45	231999 5IP1 (0.2 Nm)
10	eShop	–	–	10 – 10.49	84	–	–	16	48	231999 5IP1 (0.2 Nm)
10,5	eShop	–	–	10.5 – 10.99	88	–	–	16	48	231999 5IP1 (0.2 Nm)
11	eShop	–	–	11 – 11.49	92	–	–	16	48	231999 6IP (0.4 Nm)
11,5	eShop	–	–	11.5 – 11.99	96	–	–	16	48	231999 6IP (0.4 Nm)
12	eShop	–	–	12 – 12.49	100	–	–	16	48	231999 6IP (0.4 Nm)
12,5	eShop	–	–	12.5 – 12.99	104	–	–	16	48	231999 6IP (0.4 Nm)
13	eShop	eShop	eShop	13 – 13.49	108	135	162	16	48	231999 7IP (0.6 Nm)
13,5	eShop	eShop	eShop	13.5 – 13.99	112	140	168	16	48	231999 7IP (0.6 Nm)
14	eShop	eShop	eShop	14 – 14.49	116	145	174	16	48	231999 8IP (0.9 Nm)
14,5	eShop	eShop	eShop	14.5 – 14.99	120	150	180	16	48	231999 8IP (0.9 Nm)
15	eShop	eShop	eShop	15 – 15.99	128	160	192	20	50	231999 8IP (0.9 Nm)
16	eShop	eShop	eShop	16 – 16.99	136	170	204	20	50	231999 8IP1 (1.2 Nm)
17	eShop	eShop	eShop	17 – 17.99	144	180	216	20	50	231999 8IP1 (1.2 Nm)
18	eShop	eShop	eShop	18 – 18.99	152	190	228	25	56	231999 8IP1 (1.2 Nm)
19	eShop	eShop	eShop	19 – 19.99	160	200	240	25	56	231999 9IP (2.2 Nm)
20	eShop	eShop	eShop	20 – 20.99	168	210	252	25	56	231999 9IP (2.2 Nm)
21	eShop	eShop	eShop	21 – 21.99	176	220	264	25	56	231999 9IP (2.2 Nm)
22	eShop	eShop	eShop	22 – 22.99	184	230	276	25	56	231999 10IP (3.3 Nm)
23	eShop	eShop	eShop	23 – 23.99	192	240	288	25	56	231999 10IP (3.3 Nm)
24	eShop	eShop	eShop	24 – 24.99	200	250	300	32	60	231999 10IP (3.3 Nm)
25	eShop	eShop	eShop	25 – 25.99	208	260	312	32	60	231999 15IP (5.0 Nm)
26	eShop	eShop	eShop	26 – 26.99	216	270	324	32	60	231999 15IP (5.0 Nm)
27	eShop	eShop	eShop	27 – 27.99	224	280	336	32	60	231999 15IP (5.0 Nm)
28	eShop	eShop	eShop	28 – 28.99	232	290	348	32	60	231999 15IP1 (5.7 Nm)
29	eShop	eShop	eShop	29 – 29.99	240	300	360	32	60	231999 15IP1 (5.7 Nm)
30	eShop	eShop	eShop	30 – 30.99	248	310	372	32	60	231999 15IP1 (5.7 Nm)
31	eShop	eShop	eShop	31 – 31.99	256	320	384	32	60	231999 20IP (7.5 Nm)
32	eShop	eShop	eShop	32 – 32.99	264	330	396	32	60	231999 20IP (7.5 Nm)
33	eShop	eShop	eShop	33 – 33.99	272	340	408	32	60	231999 20IP (7.5 Nm)
34	eShop	eShop	eShop	34 – 34.99	280	350	420	32	60	231999 20IP1 (7.5 Nm)
35	eShop	eShop	eShop	35 – 35.99	288	360	432	32	60	231999 20IP1 (7.5 Nm)
36	eShop	eShop	eShop	36 – 36.99	296	370	444	32	60	231999 20IP1 (7.5 Nm)

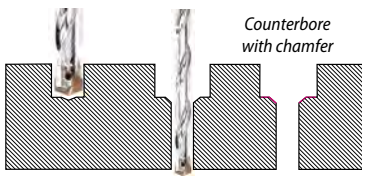
Garant Cutter inserts for HiPer drill high-performance drill, Form E 180°

180°

Vee ground cutter inserts for precise positioning and stable seating.
Form E 180° cutter with 142° centre point and 0.5 mm protective chamfer

Application: For through holes for screws to DIN-ISO 273 and countersinking to DIN 74, sheet 2 form H, J and K, medium version.
For screws to DIN 912, 6912 and 7984, ISO 1207 (DIN 84).

Note: Further sizes available on request. Cutting data apply for drilling bodies 5×D.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	GG(G)
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	K
23 1690				130	110	100	90	75						40	35	30		80

Counterbore Ø	mm	10	11	15	18	20	24	26	30	33
21M 23 1690 HiPer-Drill cutter insert **Form E** HB7530		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
for DIN cylinder head screws		M5	M6	M8	M10	M12	M14	M16	M18	M20
suitable for through hole Ø	mm	5.5	6.6	9	11	13.5	15	17	19	21



Carbide

apart from 23 1645 — only 23 1645

Garant

Cutter inserts for HiPer drill high-performance drill, right-hand cutting

Vee ground cutter inserts for precise positioning and stable seating.
Concentricity when assembled ≤ 20 µm. For holes up to IT9 accuracy.

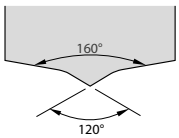
23 1645 – **Special pyramidal point geometry,** optimal spot drilling – even with unstable conditions and long tool overhangs. Such as when processing sheet metal and steel girders. Also suitable for stack drilling.

Note: Cutting data applies for the base body 5×D.
Drill pilot holes exclusively with cutter insert of the same type.
23 1645 – 1×D maximum drilling depth without through-coolant.

Further sizes up to Ø 50.99 mm available in the eShop as configurable material.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
23 1630	250	200	150															180
23 1640				130	110	100	90	75			40	35	30				80	
23 1645				140	120	100											80	
23 1650	200	200	150											65	55	30		
23 1660						100	90	70									100	





23 1645

Ø D	21M 23 1630	21M 23 1640	21M 23 1645	21M 23 1650	21M 23 1660	for base body size	Alu f	< 750 N f	< 900 N f	INOX > 900 N f	GG(G) f
	HiPer-Drill cutter insert										
	n7	m7	m7	h7	m7						
mm	HU7810	HB7530	HB3040	HB7630	HB7725	mm	23 1630 mm/rev.	23 1645 mm/rev.	23 1640 mm/rev.	23 1650 mm/rev.	23 1660 mm/rev.
9	eShop	eShop	–	eShop	–	9	0.23	–	0.17	0.11	–
9,2	eShop	–	–	–	–	9	0.23	–	–	–	–
9,5	eShop	eShop	–	eShop	–	9.5	0.23	–	0.17	0.11	–
9,7	eShop	eShop	–	eShop	–	9.5	0.23	–	0.17	0.11	–
9,9	eShop	eShop	–	eShop	–	9.5	0.23	–	0.17	0.11	–
10	eShop	eShop	–	eShop	eShop	10	0.25	–	0.18	0.12	0.23
10,2	eShop	eShop	–	eShop	–	10	0.25	–	0.18	0.12	–
10,5	–	eShop	–	eShop	eShop	10.5	–	–	0.18	0.12	0.23
10,7	–	eShop	–	eShop	–	10.5	–	–	0.18	0.12	–
11	eShop	eShop	–	eShop	eShop	11	0.26	–	0.19	0.13	0.23
11,1	eShop	eShop	–	–	–	11	0.26	–	0.19	–	–
11,5	eShop	eShop	–	eShop	eShop	11.5	0.26	–	0.19	0.13	0.23
11,7	–	eShop	–	eShop	–	11.5	–	–	0.19	0.13	–
12	eShop	eShop	–	eShop	eShop	12	0.27	–	0.2	0.14	0.24
12,5	eShop	eShop	–	eShop	eShop	12.5	0.27	–	0.2	0.14	0.24
12,7	–	eShop	–	eShop	–	12.5	–	–	0.2	0.14	–
12,8	–	eShop	–	eShop	–	12.5	–	–	0.2	0.14	–
13	eShop	eShop	–	eShop	eShop	13	0.29	–	0.2	0.14	0.26
13,1	–	eShop	–	eShop	–	13	–	–	0.2	0.14	–
13,2	–	eShop	–	eShop	–	13	–	–	0.2	0.14	–
13,3	–	–	–	eShop	–	13	–	–	–	0.14	–
13,4	–	eShop	–	–	–	13	–	–	0.2	–	–
13,5	eShop	eShop	–	eShop	eShop	13.5	0.29	–	0.21	0.15	0.26
13,6	–	eShop	–	eShop	–	13.5	–	–	0.21	0.15	–
13,7	–	eShop	–	eShop	–	13.5	–	–	0.21	0.15	–
13,8	–	eShop	–	eShop	–	13.5	–	–	0.21	0.15	–
13,9	–	eShop	–	eShop	–	13.5	–	–	0.21	0.15	–
14	eShop	eShop	eShop	eShop	eShop	14	0.31	0.26	0.22	0.15	0.28
14,1	–	eShop	eShop	eShop	–	14	–	0.26	0.22	0.15	–
14,2	–	eShop	eShop	eShop	–	14	–	0.26	0.22	0.15	–
14,3	–	eShop	–	eShop	–	14	–	–	0.22	0.15	–
14,5	eShop	eShop	eShop	eShop	–	14.5	0.31	0.26	0.23	0.16	–
14,6	–	eShop	–	eShop	–	14.5	–	–	0.23	0.16	–
14,7	eShop	eShop	–	eShop	–	14.5	0.31	–	0.23	0.16	–
14,75	eShop	–	–	eShop	–	14.5	0.31	–	–	0.16	–
14,8	–	eShop	–	–	–	14.5	–	–	0.23	–	–
14,9	–	eShop	–	–	–	14.5	–	–	0.23	–	–
15	eShop	eShop	eShop	eShop	eShop	15	0.34	0.26	0.23	0.16	0.31
15,1	eShop	eShop	eShop	eShop	–	15	0.34	0.26	0.23	0.16	–
15,2	–	eShop	eShop	eShop	–	15	–	0.26	0.23	0.16	–
15,25	–	eShop	–	eShop	–	15	–	–	0.23	0.16	–
15,3	–	eShop	–	eShop	–	15	–	–	0.23	0.16	–
15,4	–	eShop	–	eShop	–	15	–	–	0.23	0.16	–
15,5	eShop	eShop	eShop	eShop	–	15	0.34	0.26	0.24	0.17	–
15,6	–	–	–	eShop	–	15	–	–	–	0.17	–
15,7	eShop	eShop	–	eShop	–	15	0.34	–	0.24	0.17	–
15,8	–	eShop	eShop	eShop	–	15	–	0.26	0.24	0.17	–
15,9	–	eShop	–	eShop	–	15	–	–	0.24	0.17	–
16	eShop	eShop	eShop	eShop	eShop	16	0.37	0.26	0.25	0.17	0.33
16,1	–	eShop	eShop	eShop	–	16	–	0.26	0.25	0.17	–
16,2	–	eShop	eShop	eShop	–	16	–	0.26	0.25	0.17	–

Ø D	21M 23 1630	21M 23 1640	21M 23 1645	21M 23 1650	21M 23 1660	for base body size	Alu	< 750 N	< 900 N	INOX > 900 N	GG(G)
	HiPer-Drill cutter insert						f	f	f	f	f
	n7	m7	m7	h7	m7		23 1630	23 1645	23 1640	23 1650	23 1660
mm	HU7810	HB7530	HB3040	HB7630	HB7725	mm	mm/rev.	mm/rev.	mm/rev.	mm/rev.	mm/rev.
16,25	eShop	eShop	–	eShop	–	16	0.37	–	0.25	0.18	–
16,3	–	eShop	–	eShop	–	16	–	–	0.25	0.18	–
16,4	–	eShop	–	eShop	–	16	–	–	0.25	0.18	–
16,5	eShop	eShop	eShop	eShop	eShop	16	0.37	0.26	0.26	0.18	0.33
16,6	–	eShop	–	eShop	–	16	–	–	0.26	0.18	–
16,7	–	eShop	–	eShop	–	16	–	–	0.26	0.18	–
16,75	eShop	eShop	–	eShop	–	16	0.37	–	0.26	0.18	–
16,8	–	eShop	–	eShop	–	16	–	–	0.26	0.18	–
16,9	–	eShop	–	eShop	–	16	–	–	0.26	0.18	–
17	eShop	eShop	eShop	eShop	eShop	17	0.38	0.26	0.27	0.19	0.34
17,1	–	eShop	–	eShop	–	17	–	–	0.27	0.19	–
17,2	–	eShop	–	eShop	–	17	–	–	0.27	0.19	–
17,3	–	eShop	–	eShop	–	17	–	–	0.27	0.19	–
17,4	–	–	–	eShop	–	17	–	–	–	0.19	–
17,5	eShop	eShop	eShop	eShop	eShop	17	0.38	0.26	0.27	0.19	0.34
17,6	–	eShop	–	eShop	–	17	–	–	0.27	0.19	–
17,7	eShop	eShop	–	eShop	–	17	0.38	–	0.28	0.19	–
17,8	–	eShop	eShop	eShop	–	17	–	0.26	0.28	0.19	–
17,9	–	eShop	–	eShop	–	17	–	–	0.28	0.19	–
18	eShop	eShop	eShop	eShop	eShop ■	18	0.4	0.3	0.28	0.2	0.36
18,1	–	eShop	–	eShop	–	18	–	–	0.28	0.2	–
18,2	–	eShop	–	eShop	–	18	–	–	0.28	0.2	–
18,25	eShop	eShop	–	–	–	18	0.4	–	0.28	–	–
18,3	eShop	–	–	eShop	–	18	0.4	–	–	0.2	–
18,4	–	eShop	–	–	–	18	–	–	0.28	–	–
18,5	eShop	eShop	eShop	eShop	–	18	0.4	0.3	0.29	0.2	–
18,7	eShop	eShop	–	eShop	–	18	0.4	–	0.29	0.2	–
18,8	–	eShop	–	eShop	–	18	–	–	0.29	0.2	–
18,9	–	eShop	–	eShop	–	18	–	–	0.29	0.2	–
19	eShop	eShop	eShop	eShop	eShop	19	0.4	0.3	0.3	0.21	0.36
19,1	–	eShop	–	eShop	–	19	–	–	0.3	0.21	–
19,2	–	eShop	–	eShop	–	19	–	–	0.3	0.21	–
19,25	–	eShop	–	eShop	–	19	–	–	0.3	0.21	–
19,3	–	eShop	–	eShop	–	19	–	–	0.3	0.21	–
19,4	–	eShop	–	eShop	–	19	–	–	0.3	0.21	–
19,5	eShop	eShop	eShop	eShop	eShop	19	0.41	0.3	0.3	0.21	0.37
19,6	–	eShop	–	–	–	19	–	–	0.3	–	–
19,7	–	eShop	–	eShop	–	19	–	–	0.3	0.21	–
19,75	eShop	eShop	–	eShop	–	19	0.41	–	0.3	0.21	–
19,8	–	eShop	eShop	eShop	–	19	–	0.3	0.3	0.21	–
19,9	–	eShop	–	eShop	–	19	–	–	0.3	0.21	–
20	eShop	eShop	eShop	eShop	eShop	20	0.42	0.3	0.31	0.22	0.38
20,4	eShop	eShop	–	eShop	–	20	0.42	–	0.31	0.22	–
20,5	eShop	eShop	eShop	eShop	eShop	20	0.42	0.3	0.32	0.22	0.38
20,7	–	eShop	–	eShop	–	20	–	–	0.32	0.22	–
20,75	eShop	eShop	–	–	–	20	0.42	–	0.32	–	–
21	eShop	eShop	eShop	eShop	eShop	21	0.42	0.3	0.32	0.23	0.38
21,5	eShop	eShop ■	eShop	eShop	eShop ■	21	0.42	0.3	0.33	0.23	0.38
21,7	eShop	eShop	–	eShop	–	21	0.42	–	0.33	0.23	–
22	eShop	eShop	eShop	eShop	eShop ■	22	0.43	0.33	0.33	0.23	0.39
22,25	–	eShop	–	eShop	–	22	–	–	0.34	0.24	–
22,5	eShop	eShop	eShop	eShop	eShop	22	0.43	0.33	0.34	0.24	0.39
22,7	–	eShop	–	eShop	–	22	–	–	0.34	0.24	–
22,75	eShop	eShop	–	eShop	–	22	0.43	–	0.34	0.24	–
23	eShop	eShop	eShop	eShop	eShop	23	0.44	0.33	0.35	0.24	0.4
23,25	–	eShop	–	eShop	–	23	–	–	0.35	0.24	–
23,5	eShop	eShop	–	eShop	–	23	0.44	–	0.35	0.25	–
23,7	–	eShop	–	eShop	–	23	–	–	0.36	0.25	–
23,75	–	eShop	–	eShop	–	23	–	–	0.36	0.25	–
24	eShop	eShop	eShop	eShop	eShop ■	24	0.45	0.33	0.36	0.25	0.41
24,5	eShop	eShop	eShop	eShop	eShop	24	0.45	0.33	0.37	0.26	0.41
24,7	eShop	eShop	–	eShop	–	24	0.45	–	0.37	0.26	–
24,75	eShop	eShop	–	eShop	–	24	0.45	–	0.37	0.26	–
25	eShop	eShop	eShop	eShop	eShop	25	0.46	0.33	0.38	0.26	0.41
25,4	eShop	eShop	–	eShop	–	25	0.46	–	0.38	0.27	–
25,5	–	eShop	eShop	eShop	–	25	–	0.33	0.38	0.27	–
25,7	eShop	eShop	–	eShop	–	25	0.46	–	0.38	0.27	–
26	eShop	eShop	eShop	eShop	eShop ■	26	0.47	0.33	0.38	0.27	0.42
26,5	eShop	eShop	eShop	eShop	eShop	26	0.47	0.33	0.39	0.27	0.42
27	eShop	eShop	eShop	eShop	–	27	0.47	0.35	0.4	0.28	–
27,5	–	eShop	–	–	–	27	–	–	0.4	–	–
27,75	–	eShop	–	–	–	27	–	–	0.4	–	–
28	eShop	eShop	eShop	eShop	eShop	28	0.48	0.35	0.41	0.29	0.43
28,25	–	eShop	–	eShop	–	28	–	–	0.41	0.29	–
28,5	–	eShop	–	eShop	–	28	–	–	0.42	0.29	–
29	eShop	eShop	eShop	eShop	eShop	29	0.49	0.35	0.42	0.3	0.44
29,5	eShop	eShop	–	eShop	–	29	0.49	–	0.43	0.3	–
30	eShop	eShop	eShop	eShop	eShop	30	0.5	0.35	0.44	0.31	0.45
30,25	–	eShop	–	–	–	30	–	–	0.44	–	–
30,5	–	eShop	–	eShop	eShop	30	–	–	0.44	0.31	0.45
30,75	–	eShop	–	–	–	30	–	–	0.44	–	–
31	eShop	eShop	eShop	eShop	eShop	31	0.51	0.35	0.45	0.31	0.46
31,5	eShop	eShop	–	eShop	–	31	0.51	–	0.45	0.31	–
32	eShop	eShop	eShop	eShop	–	32	0.52	0.35	0.45	0.32	–
32,75	eShop	eShop	–	eShop	–	32	0.53	–	0.46	0.32	–
33	eShop	eShop	–	eShop	eShop	33	0.54	–	0.46	0.32	0.49
34	eShop	eShop	–	eShop	eShop	34	0.55	–	0.47	0.33	0.5
35	eShop	eShop	–	eShop	eShop	35	0.56	–	0.47	0.33	0.5
36	eShop	eShop	–	eShop	eShop	36	0.57	–	0.48	0.33	0.51

HOLEX Spade drill tips



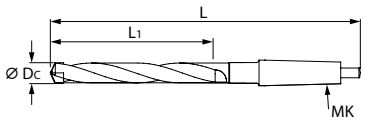
For holes up to IT10 accuracy.
23 2240/2245/2257/2258/2271/2272 – **Straight fluted.**
23 2255/2256/2265/2270/2274/2275 Size 36/48 – **Straight fluted.**

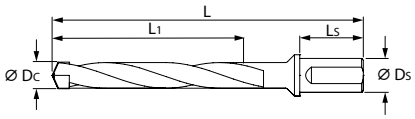
Note: Further sizes available on request.
23 2255/2265/2274 – Reduce feed rates f by 5% and v_c values by 10%.
23 2256/2270/2275 – Reduce feed rates f by 10% and v_c values by 30%.


23 2255


23 2265


23 2274



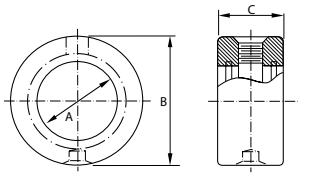


Type	23 2240	23 2245	23 2250	23 2255	23 2256	Dia. range D_c	L_1					Ø D_s	L_s	Clamping screws
	Base body													
	Parallel shank, with through-coolant						23 2240	23 2245	23 2250	23 2255	23 2256			
	1.5×D	3×D	5×D	8×D	12×D	mm	mm	mm	mm	mm	mm	mm	mm	
12	eShop	eShop	eShop	eShop	eShop	12 – 12.5	18.8	31.8	60.3	111.1	144	20	50	232990 TX7
13	eShop	eShop	eShop	eShop	eShop	13 – 17.5	26	34.9	63.5	114.3	156	20	50	232990 TX8
18	eShop	eShop	eShop	eShop	eShop	18 – 24	36	66.7	168.3	269.9	288	25	56	232990 TX9
25	eShop	eShop	eShop	eShop	eShop	25 – 35	52.5	85.7	187.3	288.9	300	32	60	232990 TX15
36	eShop	eShop	eShop	eShop	eShop	36 – 47	70.5	120.7	209.6	349.3	432	40	70	232990 TX20
48	eShop	eShop	eShop	eShop	eShop	48 – 65	97.5	130.2	231.8	422.3	576	40	70	232990 TX20

Type	23 2257	23 2258	23 2260	23 2265	23 2270	Dia. range D_c	L_1					MT	Clamping screws
	Base body												
	MT shank, without through-coolant						23 2257	23 2258	23 2260	23 2265	23 2270		
	1.5×D	3×D	5×D	8×D	12×D	mm	mm	mm	mm	mm	mm		
12	eShop	eShop	eShop	eShop	eShop	12 – 12.5	18.8	31.8	60.3	111.1	144	2	232990 TX7
13	eShop	eShop	eShop	eShop	eShop	13 – 17.5	26	35	63.5	114.3	156	2	232990 TX8
18	eShop	eShop	eShop	eShop	eShop	18 – 24	36	69.8	171.5	273.1	288	3	232990 TX9
25	eShop	eShop	eShop	eShop	eShop	25 – 35	52.5	85.7	187.3	289	300	4	232990 TX15
36	eShop	eShop	eShop	eShop	eShop	36 – 47	70.5	120.6	209.5	349.3	432	4	232990 TX20
48	eShop	eShop	eShop	eShop	eShop	48 – 65	97.5	130.1	231.8	422.3	576	5	232990 TX20

Type	23 2271	23 2272	23 2273	23 2274	23 2275	Dia. range D_c	L_1					MT	Clamping screws
	Base body												
	MT shank, with through-coolant						23 2271	23 2272	23 2273	23 2274	23 2275		
	1.5×D	3×D	5×D	8×D	12×D	mm	mm	mm	mm	mm	mm		
12	eShop	eShop	eShop	eShop	eShop	12 – 12.5	18.8	31.8	60.3	111.1	144	2	232990 TX7
13	eShop	eShop	eShop	eShop	eShop	13 – 17.5	26	35	63.5	114.3	156	2	232990 TX8
18	eShop	eShop	eShop	eShop	eShop	18 – 24	36	69.8	171.5	273.1	288	3	232990 TX9
25	eShop	eShop	eShop	eShop	eShop	25 – 35	52.5	85.7	187.3	289	300	4	232990 TX15
36	eShop	eShop	eShop	eShop	eShop	36 – 47	70.5	120.6	209.5	349.3	432	4	232990 TX20
48	eShop	eShop	eShop	eShop	eShop	48 – 65	97.5	130.1	231.8	422.3	576	5	232990 TX20

Coolant supply ring for MT flat drills with through-coolant.
The coolant supply ring is mounted on the drill. The coolant can be fed from outside via the coolant hose connections through the ring and into the cooling channels.
Suitable for:
23 2277 – **HOLEX flat drills No. 232271 - 232275.**
23 2278/2279 – **Coolant supply ring No. 232277.**




23 2277

Size	23 2277 Coolant supply ring for flat drills	for flat drill size	Internal Ø A	External Ø B	Height C	Coolant hose port
			mm	mm	mm	in
1	eShop	12; 13	19.05	44.45	22.23	R 1/8
2	eShop	18; 25	25.4	53.97	28.57	R 1/8
3	eShop	36	31.75	63.5	34.92	R 1/4
4	eShop	48	44.45	76.2	34.92	R 1/4


23 2278

Size	23 2278 Hose coupling for coolant	for coolant ring size	suitable for hose outer Ø	Connection thread
			mm	in
1	eShop	1; 2	10	R1/8
2	eShop	1; 2	12	R1/8
3	eShop	3; 4	10	R1/4
4	eShop	3; 4	12	R1/4


23 2279

Size	23 2279 Hose coupling for coolant	for coolant ring size	suitable for hose inner Ø	Connection thread
			mm	in
1	eShop	1; 2	9	R1/8
2	eShop	3; 4	9	R1/4

132°

HOLEX

Drill inserts for flat drills

Exchangeable HSS cutter for universal application. Cannot be reground.
With chip breaker. Pointed tip for high stability and self-centring.
For holes up to IT10 accuracy.

Note: Other sizes, version with solid carbide cutting edges and 180° cutting edges, available on request.

HSS

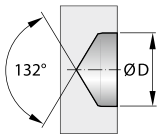


23 2282

HSS E-PM



23 2286



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
23 2282	180	130	100	45	45	30	25							22	22		45	90		●			
23 2286	200	200	120	65	60	55	50	30						30	20	15	60	140		●			

Ø D mm	22F 23 2282 Drill insert with pointed tip HSS TiN	22F 23 2286 Drill insert with pointed tip HSS-E-PM TiAlN	for base body type	< 900 N f 23 2282 mm/rev.	< 900 N f 23 2286 mm/rev.	INOX > 900 N f 23 2282 mm/rev.	INOX > 900 N f 23 2286 mm/rev.
12	eShop	eShop	12	0.08	0.13	0.12	0.12
12,5	eShop	eShop	12	0.08	0.13	0.12	0.12
13	eShop	eShop	13	0.14	0.19	0.17	0.18
13,5	eShop	eShop	13	0.14	0.19	0.17	0.18
14	eShop	eShop	13	0.14	0.19	0.17	0.18
14,5	eShop	eShop	13	0.14	0.19	0.17	0.18
15	eShop	eShop	13	0.14	0.19	0.17	0.18
15,5	eShop	eShop	13	0.14	0.19	0.17	0.18
16	eShop	eShop	13	0.14	0.19	0.17	0.18
16,5	eShop	eShop	13	0.14	0.19	0.17	0.18
17	eShop	eShop	13	0.14	0.19	0.17	0.18
17,5	eShop	eShop	13	0.14	0.19	0.17	0.18
18	eShop	eShop	18	0.18	0.23	0.19	0.2
18,5	eShop	eShop	18	0.18	0.23	0.19	0.2
19	eShop	eShop	18	0.18	0.23	0.19	0.2
19,5	eShop	eShop	18	0.18	0.23	0.19	0.2
20	eShop	eShop	18	0.18	0.23	0.19	0.2
20,5	eShop	eShop	18	0.18	0.23	0.19	0.2
21	eShop	eShop	18	0.18	0.23	0.19	0.2
22	eShop	eShop	18	0.18	0.23	0.19	0.2
23	eShop	eShop	18	0.18	0.23	0.19	0.2
24	eShop	eShop	18	0.18	0.23	0.19	0.2
25	eShop	eShop	25	0.25	0.34	0.24	0.24
26	eShop	eShop	25	0.25	0.34	0.24	0.24
26,5	eShop	eShop	25	0.25	0.34	0.24	0.24
27	eShop	eShop	25	0.25	0.34	0.24	0.24
28	eShop	eShop	25	0.25	0.34	0.24	0.24
29	eShop	eShop	25	0.25	0.34	0.24	0.24
30	eShop	eShop	25	0.25	0.34	0.24	0.24
31	eShop	eShop	25	0.25	0.34	0.24	0.24
32	eShop	eShop	25	0.25	0.34	0.24	0.24
33	eShop	eShop	25	0.25	0.34	0.24	0.24

Ø D mm	22F 23 2282 Drill insert with pointed tip HSS TiN	22F 23 2286 Drill insert with pointed tip HSS-E-PM TiAlN	for base body type	< 900 N f 23 2282 mm/rev.	< 900 N f 23 2286 mm/rev.	INOX > 900 N f 23 2282 mm/rev.	INOX > 900 N f 23 2286 mm/rev.
34	eShop	eShop	25	0.25	0.34	0.24	0.24
35	eShop	eShop	25	0.25	0.34	0.24	0.24
36	eShop	eShop	36	0.25	0.43	0.28	0.3
37	eShop	eShop	36	0.25	0.43	0.28	0.3
38	eShop	eShop	36	0.25	0.43	0.28	0.3
39	eShop	eShop	36	0.25	0.43	0.28	0.3
40	eShop	eShop	36	0.25	0.43	0.28	0.3
41	eShop	eShop	36	0.25	0.43	0.28	0.3
42	eShop	eShop	36	0.25	0.43	0.28	0.3
43	eShop	eShop	36	0.25	0.43	0.28	0.3
44	eShop	eShop	36	0.25	0.43	0.28	0.3
45	eShop	eShop	36	0.25	0.43	0.28	0.3
46	eShop	eShop	36	0.25	0.43	0.28	0.3
47	eShop	eShop	36	0.25	0.43	0.28	0.3
48	eShop	eShop	48	0.25	0.43	0.28	0.3
49	eShop	eShop	48	0.25	0.43	0.28	0.3
50	eShop	eShop	48	0.29	0.5	0.35	0.36
51	eShop	eShop	48	0.29	0.5	0.35	0.36
52	eShop	eShop	48	0.29	0.5	0.35	0.36
53	eShop	eShop	48	0.29	0.5	0.35	0.36
54	eShop	eShop	48	0.29	0.5	0.35	0.36
55	eShop	eShop	48	0.29	0.5	0.35	0.36
56	eShop	eShop	48	0.29	0.5	0.35	0.36
57	eShop	eShop	48	0.29	0.5	0.35	0.36
58	eShop	eShop	48	0.29	0.5	0.35	0.36
59	eShop	eShop	48	0.29	0.5	0.35	0.36
60	eShop	eShop	48	0.29	0.5	0.35	0.36
61	eShop	eShop	48	0.29	0.5	0.35	0.36
62	eShop	eShop	48	0.29	0.5	0.35	0.36
63	eShop	eShop	48	0.29	0.5	0.35	0.36
64	eShop	eShop	48	0.29	0.5	0.35	0.36
65	eShop	eShop	48	0.29	0.5	0.35	0.36

SUMOCHAM CHAMDRILL LINE

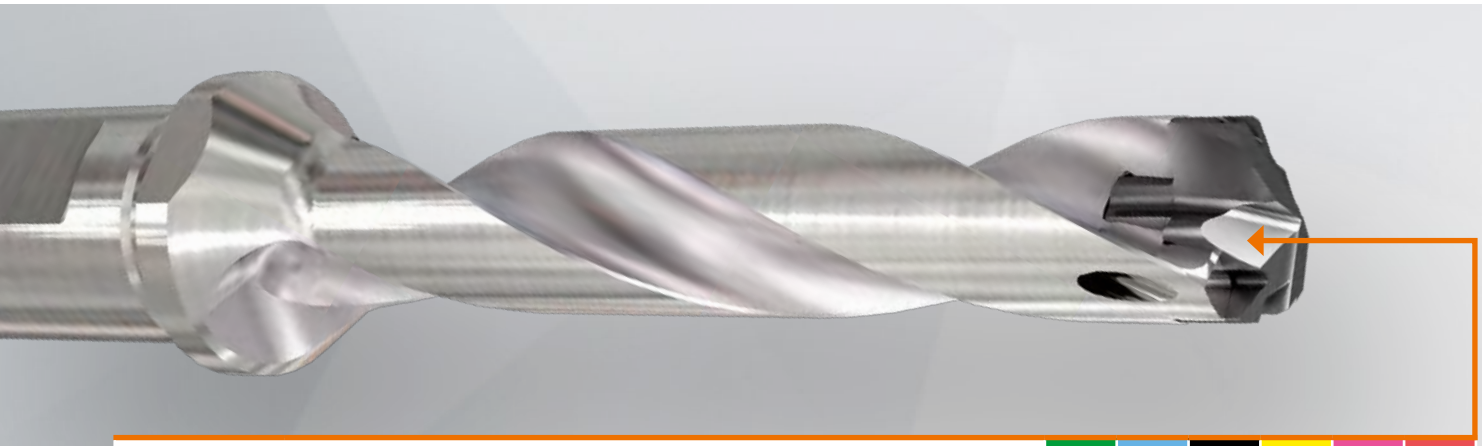
TECHNICALLY OUTSTANDING LEVEL IN INTERCHANGEABLE HEAD DRILLING.

- **Optimised design** of the globally established CHAMDRILL line.
- **Revolutionary clamping system** for convenient drilling head replacement without screw connections or tool removal.
- **Direct conversion of cutting forces** into clamping forces – without plastic deformation of the joint.
- **Significant increase in productivity and cost-effectiveness** due to drastically extended tool life.
- **Optimal stability** of the drill body with twisted cooling channels.
- **Application-specific drilling heads** in four standard geometries and a wide range of special geometries.



DRILL BODY

 *	**DCN...A –** drill body with drive flat Length range: 1.5 / 3 / 5 / 8×D Diameter range: 6 – 32.9 mm
 *12×D	**DCN...R** – drill body with round shank Length range: 1.5 / 3 / 5 / 12×D Diameter range: 6 – 32.9 mm
	**DCN...C** – drill body with round shank Specifically for lathes Length range: 3 / 5 / 8 / 12×D Diameter range: 4 – 9.9 mm
	**DCNM** – FLEXFIT connection – modular Length range: 3×D Diameter range: 6 – 20.9 mm
	**MNSNT** – deep hole drill body Length range: 200 – 400 mm Diameter range: 10 – 25.9 mm
 + 	**DCNS** – drill body for chamfer application Length range: 3 / 5×D Diameter range: 7.5 – 25.9 mm **CHAMRING –** chamfer attachment or chamfering ring Diameter range: 8 – 25 mm



DRILLING HEADS

		N	P	H	M	S	O
	* **ICP** – steel geometry Diameter range: 4 – 32.9 mm		●	●	○		●
	* **ICP-2M** – steel geometry with 2 guide chamfers Diameter range: 6 – 25.9 mm		●	○			○
	**ICK** – cast geometry Diameter range: 5 – 32.9 mm		○				●
	**ICK-2M** – cast geometry with 4 guide chamfers Diameter range: 6 – 25.9 mm		○				●
	* **FCP** – steel flat head geometry Diameter range: 4 – 32.5 mm		●	○	○		●
	* **HCP-IQ** – self-centering steel geometry Diameter range: 4 – 32.9 mm		●				○
	**ICG** – chip splitting geometry Diameter range: 14 – 25.9 mm	○	●		●	○	○
	**QCP-2M –** self-centering steel geometry with 4 guide chamfers Diameter range: 4.5 – 25.9 mm		●				○
	* **ICM** – stainless geometry Diameter range: 5 – 32.9 mm	○	○		●	●	
	**ICN –** aluminium geometry Diameter range: 5.1 – 32.9 mm	●					

*** Drill bodies and drilling heads are available directly from the Hoffmann Group warehouse.**

ISO 9766

1.5×D 3×D 5×D

SUMOCHAM high-performance drill, right-hand cutting

SUMOCHAM interchangeable head drilling system for **highly efficient drilling** with interchangeable cutting edges. **Unique clamping mechanism** for convenient fixing of the cutter insert without additional clamping screw. **Versatile material use** due to comprehensive cutter insert range. **Optimum tool stability** with simultaneously helical coolant channels for **high concentricity** and **lowest possible axial run-out** of the bore.

Other available versions:
base body with round shank, base body for machining chamfers on bores when a chamfer ring is attached, base body especially for use in multi-spindle, sliding headstock and production lathes.

Tolerance class: IT8-IT9, concentricity: 0.03 mm.

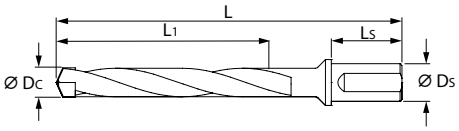


Delivery of drill body without drilling head. 23 1705

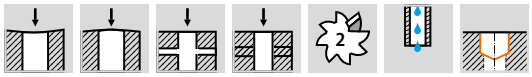
Application: With drilling heads **No. 231740 – 231790.**

Supplied with: Drill body incl. assembly key for drilling heads.

Note:
- Always select a **strategy** with medium cutting speeds and high feed rates.
- **No rapid traverse and no spindle anti-clockwise rotation during retraction.**
- **Drilling convex / concave surfaces:** Radius of curvature > 15 × D_C required, reduce feed rate by up to 50%.
- For **cross holes**, the maximum permissible diameter is 1/4 of the nominal diameter D_C.
- **Stack drilling** requires stable conditions, reduce gaps between workpiece elements.
- **Oblique drill entry and exit** up to 7° inclination possible with reduced feed rate (approx. 20 - 30%).
- Designation convention: **DCN** [size]-[L_1]-[ØD_S]**A**-[L/D]
  Examples:
  No. 231702 6 DCN 060-009-12A-1.5D
  No. 231705 6 DCN 060-018-12A-3D



Size	23K 23 1702	23K 23 1705	23K 23 1710	Dia. range D_c	L_1			Ø D_s	L_s
	SUMOCHAM drill body Weldon shank DCN A								
	1.5×D	3×D	5×D	mm	23 1702 mm	23 1705 mm	23 1710 mm	mm	mm
6	–	–	–	6 – 6.4	9	18	30	12	45
6,5	–	–	–	6.5 – 6.9	10	20	33	12	45
7	–	–	–	7 – 7.4	11	21	35	12	45
7,5	–	–	–	7.5 – 7.9	11	23	38	12	45
8	–	–	–	8 – 8.4	12	24	40	12	45
8,5	–	–	–	8.5 – 8.9	13	25	42	12	45
9	–	–	–	9 – 9.4	14	27	45	12	45
9,5	–	–	–	9.5 – 9.9	14	29	48	12	45
10	–	–	–	10 – 10.4	15	30	50	16	48
10,5	–	–	–	10.5 – 10.9	16	32	53	16	48
11	–	–	–	11 – 11.4	17	33	55	16	48
11,5	–	–	–	11.5 – 11.9	17	35	58	16	48
12	–	–	–	12 – 12.4	18	36	60	16	48
12,5	–	–	–	12.5 – 12.9	19	37	62	16	48
13	–	–	–	13 – 13.4	20	39	65	16	48
13,5	–	–	–	13.5 – 13.9	20	41	68	16	48
14	–	–	–	14 – 14.4	21	42	70	16	48
14,5	–	–	–	14.5 – 14.9	22	44	73	16	48
15	–	–	–	15 – 15.9	23	45	75	20	50
16	–	–	–	16 – 16.9	24	48	80	20	50
17	–	–	–	17 – 17.9	26	51	85	20	50
18	–	–	–	18 – 18.9	27	54	90	25	56
19	–	–	–	19 – 19.9	29	57	95	25	56
20	–	–	–	20 – 20.9	30	60	100	25	56
21	–	–	–	21 – 21.9	32	63	105	25	56
22	–	–	–	22 – 22.9	33	66	110	25	56
23	–	–	–	23 – 23.9	35	69	115	32	60
24	–	–	–	24 – 24.9	36	72	120	32	60
25	–	–	–	25 – 25.9	38	75	125	32	60
26	–	–	–	26 – 26.9	39	78	130	32	60
27	–	–	–	27 – 27.9	41	81	135	32	60
28	–	–	–	28 – 28.9	42	84	140	32	60
29	–	–	–	29 – 29.9	44	87	145	32	60
30	–	–	–	30 – 30.9	45	90	150	32	60
31	–	–	–	31 – 31.9	47	93	155	32	60
32	–	–	–	32 – 32.9	48	96	160	32	60



ISO 9766 | h6 | 8×D | 12×D

23 1715 | 23 1720

SUMOCHAM high-performance drill, right-hand cutting

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Versatile material use due to comprehensive cutter insert range.
Optimum tool stability with simultaneously helical coolant channels for **high concentricity** and **lowest possible axial run-out** of the bore.
Other available versions: base body with round shank, base body for machining chamfers on bores when a chamfer ring is attached, base body especially for use in multi-spindle, sliding headstock and production lathes.
Tolerance class: IT8-IT9, concentricity: 0.03 mm.



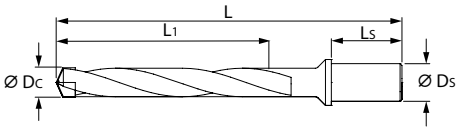
Delivery of drill body without drilling head. 23 1715



Delivery of drill body without drilling head. 23 1720

Application: With drilling heads **No. 231740 – 231790.**
Supplied with: Drill body incl. assembly key for drilling heads.

Note:
- Always select a **strategy** with medium cutting speeds and high feed rates.
- **No rapid traverse and no spindle anti-clockwise rotation during retraction.**
- **For drilling depths of 8×D and more, piloting of at least 1.5 × D_C with same cutter insert required.**
- **Drilling convex / concave surfaces:** Radius of curvature > 15 × D_C required, reduce feed rate by up to 50%.
- For **cross holes**, the maximum permissible diameter is 1/4 of the nominal diameter D_C.
- **Stack drilling** requires stable conditions, reduce gaps between workpiece elements.
- **Oblique drill entry and exit** up to 7° inclination possible with reduced feed rate (approx. 20 - 30%).
- Designation convention 8×D: **DCN** [size]-[L_1]-[ØD_S]A-[L/D]
- Designation convention 12×D: **DCN** [size]-[L_1]-[ØD_S]R-[L/D]
- Examples:
  No. 231715 6 DCN 060-048-12A-8D
  No. 231720 8 DCN 080-096-12R-12D



Size	23K 23 1715	23K 23 1720	Dia. range D_c	L_1		Ø D_s	L_s
	SUMOCHAM drill body						
	Weldon shank DCN A 8×D	Parallel shank DCN R 12×D	mm	23 1715 mm	23 1720 mm	mm	mm
6	–	–	6 – 6.4	48	–	12	45
6,5	–	–	6.5 – 6.9	52	–	12	45
7	–	–	7 – 7.4	56	–	12	45
7,5	–	–	7.5 – 7.9	60	–	12	45
8	–	–	8 – 8.4	64	96	12	45
8,5	–	–	8.5 – 8.9	68	102	12	45
9	–	–	9 – 9.4	72	108	12	45
9,5	–	–	9.5 – 9.9	76	114	12	45
10	–	–	10 – 10.4	80	120	16	48
10,5	–	–	10.5 – 10.9	84	126	16	48
11	–	–	11 – 11.4	88	132	16	48
11,5	–	–	11.5 – 11.9	92	138	16	48
12	–	–	12 – 12.4	96	144	16	48
12,5	–	–	12.5 – 12.9	100	150	16	48
13	–	–	13 – 13.4	104	156	16	48
13,5	–	–	13.5 – 13.9	108	162	16	48
14	–	–	14 – 14.4	112	168	16	48
14,5	–	–	14.5 – 14.9	116	174	16	48
15	–	–	15 – 15.9	120	180	20	50
16	–	–	16 – 16.9	128	192	20	50
17	–	–	17 – 17.9	136	204	20	50
18	–	–	18 – 18.9	144	216	25	56
19	–	–	19 – 19.9	152	228	25	56
20	–	–	20 – 20.9	160	240	25	56
21	–	–	21 – 21.9	168	252	25	56
22	–	–	22 – 22.9	176	264	25	56
23	–	–	23 – 23.9	184	276	32	60
24	–	–	24 – 24.9	192	288	32	60
25	–	–	25 – 25.9	200	300	32	60
26	–	–	26 – 26.9	208	312	32	60
27	–	–	27 – 27.9	216	324	32	60
28	–	–	28 – 28.9	224	336	32	60
29	–	–	29 – 29.9	232	348	32	60
30	–	–	30 – 30.9	240	360	32	60
31	–	–	31 – 31.9	248	372	32	60
32	–	–	32 – 32.9	256	384	32	60

Carbide

SUMOCHAM drilling heads for high-performance drill, right-hand cutting

Vee ground drilling head for precise positioning and stable seating. Angled, **radial stop surfaces** for a significant increase in clamping force due to the cutting forces acting during machining. For productive drilling with **high feed rates.**

23 1740 – **ICP**
Main area of application **ISO P, ISO M** (especially duplex) as well as **ISO H**.
Unique cutting edge preparation for the best possible compromise between cutting edge stability and cutting sharpness.

23 1742 – **ICP-2M**
Main area of application **ISO P**. Higher accuracy and better surface quality due to **4 guide chamfers**.
Optimum roundness of the bore, low axial forces, increased stability, increased metal removal rate.

23 1745 – **HCP-IQ**
Main area of application **ISO P** and **ISO K**. **Best possible centring capability**, machining of curved surfaces.
Not for use in ductile materials.

23 1750 – **ICM**
Main area of application **ISO M, ISO S** (especially Inconel and titanium) as well as ISO N.
Cutting edge with negative chamfer and special rounding – especially for stainless steel machining.

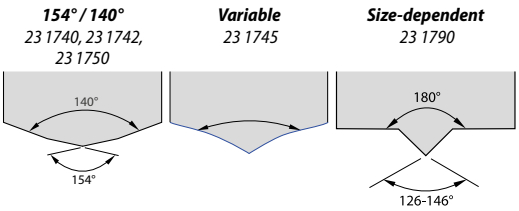
23 1790 – **FCP**
Main application **ISO P** and **ISO K**, secondary application ISO M. **Flat head geometry** with centring point.
Advantageous for radial displacement and oblique material exit.

Note: Cutting data applies for the base body 5×D. Drill pilot holes exclusively with drilling head of the same type – in particular for drilling heads FCP and QCP-2M. Please observe the application instructions for the base body.
Cutting tolerance of the inserts: **k7** (positive toleranced cutting edge diameter).
Designation convention: [type] [Ø D_c]-[addition] [cutting material]
Examples:
No. 231740 6.5 ICP 065 IC908
No. 231742 18.5 ICP 185-2M IC908
No. 231745 18.5 HCP 185-IQ IC908

Size 6–19,5 – **The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.**

Suitable for/ v_c [m/min]	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	GG(G)	CuZn					
ISO code	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	K	N					
23 1740			**100**	**90**	**100**	**70**	**55**	**35**	**35**	**70**	**60**	**35**	50	50	35	35	**120**	155	○	●			
23 1742			**100**	**90**	**100**	**70**	**55**	35	35								120	155	○	●			
23 1745			**100**	**90**	**100**	**70**	**55**			70	**60**						120	155	○	●			
23 1750	155	120	100	90	100	70	55			70	**60**		**50**	**50**	**35**	**35**	120	**155**	○	●			
23 1790			**100**	**90**	**100**	**70**	**55**	35	**35**	70	**60**		50	50		35	**120**	155	○	●			





Ø D_c	23 1740	23 1742	23 1745	23 1750	23 1790		for base body size	< 900 N f 23 1740 23 1742 23 1745 23 1790	INOX > 900 N f 23 1750	< 55 HRC f 23 1740 23 1790	Inconel® f 23 1750
	SUMOCHAM drilling head										
	ICP k7	ICP-2M k7	HCP-IQ k7	ICM k7	FCP k7						
mm	IC908	IC908	IC908	IC908	IC908			mm/rev.	mm/rev.	mm/rev.	mm/rev.
6	–	–	–	–	–	1	6	0.1	0.09	0.06	0.06
6,5	–	–	–	–	–	1	6.5	0.1	0.09	0.06	0.06
6,8	–	–	–	–	–	1	6.5	0.1	0.09	0.06	0.06
7	–	–	–	–	–	1	7	0.1	0.09	0.06	0.06
7,5	–	–	–	–	–	1	7	0.1	0.09	0.06	0.06
8	–	–	–	–	–	1	8	0.16	0.12	0.09	0.08
8,5	–	–	–	–	–	1	8	0.16	0.12	0.09	0.08
9	–	–	–	–	–	1	9	0.16	0.12	0.09	0.08
9,5	–	–	–	–	–	1	9	0.16	0.12	0.09	0.08
10	–	–	–	–	–	1	10	0.2	0.15	0.11	0.1
10,2	–	–	–	–	–	1	10	0.2	0.15	0.11	0.1
10,5	–	–	–	–	–	1	10	0.2	0.15	0.11	0.1
11	–	–	–	–	–	1	11	0.2	0.15	0.11	0.1
11,5	–	–	–	–	–	1	11	0.2	0.15	0.11	0.1

Ø D_c	23 1740	23 1742	23 1745	23 1750	23 1790		for base body size	< 900 N f	INOX > 900 N f	< 55 HRC f	Inconel® f
	SUMOCHAM drilling head										
	ICP k7	ICP-2M k7	HCP-IQ k7	ICM k7	FCP k7			23 1740 23 1742 23 1745 23 1790	23 1750	23 1740 23 1790	23 1750
mm	IC908	IC908	IC908	IC908	IC908			mm/rev.	mm/rev.	mm/rev.	mm/rev.
12	–	–	–	–	–	1	12	0.24	0.17	0.14	0.12
12,5	–	–	–	–	–	1	12	0.24	0.17	0.14	0.12
13	–	–	–	–	–	1	13	0.24	0.17	0.14	0.12
13,5	–	–	–	–	–	1	13	0.24	0.17	0.14	0.12
13,8	–	–	–	–	–	1	13	0.24	–	0.14	–
14	–	–	–	–	–	1	14	0.26	0.2	0.16	0.15
14,2	–	–	–	–	–	1	14	0.26	–	0.16	–
14,5	–	–	–	–	–	1	14	0.26	0.2	0.16	0.15
15	–	–	–	–	–	1	15	0.26	0.2	0.16	0.15
15,5	–	–	–	–	–	1	15	0.26	0.2	0.16	0.15
16	–	–	–	–	–	1	16	0.31	0.21	0.18	0.16
16,5	–	–	–	–	–	1	16	0.31	0.21	0.18	0.16
17	–	–	–	–	–	1	17	0.31	0.21	0.18	0.16
17,5	–	–	–	–	–	1	17	0.31	0.21	0.18	0.16
17,8	–	–	–	–	–	1	17	0.31	–	0.18	–
18	–	–	–	–	–	1	18	0.31	0.21	0.18	0.16
18,5	–	–	–	–	–	1	18	0.31	0.21	0.18	0.16
19	–	–	–	–	–	1	19	0.31	0.21	0.18	0.16
19,5	–	–	–	–	–	1	19	0.31	0.21	0.18	0.16
20	–	–	–	–	–	1	20	0.35	0.24	0.2	0.18
20,5	–	–	–	–	–	1	20	0.35	0.24	0.2	0.18
21	–	–	–	–	–	1	21	0.35	0.24	0.2	0.18
21,5	–	–	–	–	–	1	21	0.35	0.24	0.2	0.18
22	–	–	–	–	–	1	22	0.35	0.24	0.2	0.18
22,5	–	–	–	–	–	1	22	0.35	0.24	0.2	0.18
23	–	–	–	–	–	1	23	0.35	0.24	0.2	0.18
23,5	–	–	–	–	–	1	23	0.35	0.24	0.2	0.18
24	–	–	–	–	–	1	24	0.35	0.24	0.2	0.18
24,5	–	–	–	–	–	1	24	0.35	0.24	0.2	0.18
25	–	–	–	–	–	1	25	0.35	0.24	0.2	0.18
25,5	–	–	–	–	–	1	25	0.35	0.24	0.2	0.18
25,9	–	–	–	–	–	1	–	0.35	–	–	–
26	–	–	–	–	–	1	26	0.4	0.27	0.22	0.2
26,5	–	–	–	–	–	1	26	0.4	0.27	0.22	0.2
27	–	–	–	–	–	1	27	0.4	0.27	0.22	0.2
27,5	–	–	–	–	–	1	27	0.4	0.27	0.22	0.2
28	–	–	–	–	–	1	28	0.4	0.27	0.22	0.2
28,5	–	–	–	–	–	1	28	0.4	0.27	0.22	0.2
29	–	–	–	–	–	1	29	0.4	0.27	0.22	0.2
29,5	–	–	–	–	–	1	29	0.4	0.27	0.22	0.2
30	–	–	–	–	–	1	30	0.4	0.27	0.22	0.2
30,5	–	–	–	–	–	1	30	0.4	0.27	0.22	0.2
31	–	–	–	–	–	1	31	0.4	0.27	0.22	0.2
31,5	–	–	–	–	–	1	31	0.4	0.27	0.22	0.2
32	–	–	–	–	–	1	32	0.4	0.27	0.22	0.2
32,5	–	–	–	–	–	1	32	0.4	0.27	0.22	0.2

Please also see our extended SUMOCHAM drilling head range.
Available via the Hoffmann Group eShop under the ISCAR item designation*.

STEEL AND CAST IRON — P K

154° / 140°



ICK

154° / 140°



ICK-2*M*

4 guide chamfers

ALUMINIUM AND NON-FERROUS METALS — N

154° / 140°



ICN

STEEL AND STAINLESS / UNI — P M

130°



ICG

STEEL — P

136° / 120°



QCP-2*M*

4 guide chamfers

*** ISCAR item designation:**
[Type] [Ø Dc]-***[Addition]*** *[Tool material]*

Example: ICK-2M Ø 6.5 mm

ICK	065-	***2M***	*IC908*
Type	Ø Dc	***Addition***	*Tool material*

DIN 6535 HE 6595 | MTC | 2×D | 3×D | 4×D

Garant

Universal indexable drill MTC right-hand cutting, with combination shank

High stability and very high process reliability.

23 2302 – With **shank Ø 20 mm,** particularly suitable for **driven tools** (see Group 31).

Application: **For stationary** and **rotating application.**
For holes free of withdrawal scoring and exact dimensional accuracy (approx. ± 0.1 mm).
Also suitable for machines with low drive power.
Especially for **MTC (Multi Task Cutting)** use on the new generation of turning/milling centres **(MTM).**

Note: **CAUTION!**
A disc falls off when the drill exits.
Risk of injury if the component is rotating.
Please take safety precautions.
Counterboring tools with up to 2 steps to your specification available on request.
(Minimum order quantity: 2 pieces).

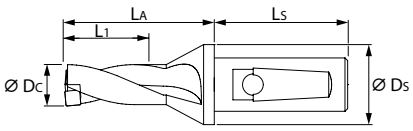


23 2300



23 2302

The enquiry form can be found in the eShop on the product page under "Downloads & Documents".



Ø D_C	21S 23 2298	21S 23 2300	21S 23 2302	21S 23 2310	L_A			Ø D_s			L_s			ISO code indexable insert	Set of insert screws
	Indexable drill combination shank														
			Shank Ø 20 mm		23 2298	23 2300 23 2302	23 2310	23 2298 23 2310	23 2300	23 2302	23 2298 23 2310	23 2300	23 2302		
mm	2×D	3×D	3×D	4×D	mm	mm	mm	mm	mm	mm	mm	mm	mm		
14	eShop	eShop	eShop	eShop	52	66	80	20	25	20	50	56	50	WOEX 030204	239700 6IP (0.6 Nm)
15	eShop	eShop	eShop	eShop	54	69	84	20	25	20	50	56	50	WOEX 030204	239700 6IP (0.6 Nm)
16	eShop	eShop	eShop	eShop	56	72	88	20	25	20	50	56	50	WOEX 030204	239700 6IP (0.6 Nm)
17	eShop	eShop	eShop	eShop	58	75	92	20	25	20	50	56	50	WOEX 030204	239700 6IP (0.6 Nm)
17,5	–	eShop	eShop	–	–	78	–	–	25	20	–	56	50	WOEX 030204	239700 6IP (0.6 Nm)
18	eShop	eShop	eShop	eShop	60	78	96	20	25	20	50	56	50	WOEX 030204	239700 6IP (0.6 Nm)
18,5	–	eShop	eShop	–	–	81	–	–	25	20	–	56	50	WOEX 030204	239700 6IP (0.6 Nm)
19	eShop	eShop	eShop	eShop	62	81	100	20	25	20	50	56	50	WOEX 030204	239700 6IP (0.6 Nm)
19,5	–	eShop	eShop	–	–	84	–	–	25	20	–	56	50	WOEX 030204	239700 6IP (0.6 Nm)
20	eShop	eShop	eShop	eShop	64	84	104	25	25	20	56	56	50	WOEX 040304	239700 6IP1 (1.0 Nm)
21	eShop	eShop	eShop	eShop	66	87	108	25	25	20	56	56	50	WOEX 040304	239700 6IP1 (1.0 Nm)
22	eShop	eShop	eShop	eShop	68	90	112	25	25	20	56	56	50	WOEX 040304	239700 6IP1 (1.0 Nm)
22,5	–	eShop	eShop	–	–	93	–	–	25	20	–	56	50	WOEX 040304	239700 6IP1 (1.0 Nm)
23	eShop	eShop	eShop	eShop	70	93	116	25	25	20	56	56	50	WOEX 040304	239700 6IP1 (1.0 Nm)
24	eShop	eShop	eShop	eShop	72	96	120	25	25	20	56	56	50	WOEX 040304	239700 6IP1 (1.0 Nm)
24,5	eShop	eShop	eShop	–	74	99	–	25	25	20	56	56	50	WOEX 040304	239700 6IP1 (1.0 Nm)
25	eShop	eShop	–	eShop	74	99	124	32	25	–	60	56	–	WOEX 05T304	239700 8IP (1.3 Nm)
26	eShop	eShop	–	eShop	76	102	128	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
26,5	eShop	eShop	–	–	78	105	–	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
27	eShop	eShop	–	eShop	78	105	132	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
28	eShop	eShop	–	eShop	80	108	136	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
29	eShop	eShop	–	eShop	82	111	140	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
29,5	–	eShop	–	–	–	114	–	–	32	–	–	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
30	eShop	eShop	–	eShop	89	119	149	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
31	eShop	eShop	–	eShop	91	122	153	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
32	eShop	eShop	–	eShop	93	125	157	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
33	eShop	eShop	–	eShop	95	128	161	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
34	eShop	eShop	–	eShop	97	131	165	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
35	eShop	eShop	–	eShop	99	134	169	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
36	eShop	eShop	–	eShop	101	137	173	32	32	–	60	60	–	WOEX 05T304	239700 8IP (1.3 Nm)
37	eShop	eShop	–	–	113	150	–	32	32	–	60	60	–	WOEX 06T304	239700 10IP (2.8 Nm)
38	eShop	eShop	–	–	115	153	–	32	32	–	60	60	–	WOEX 06T304	239700 10IP (2.8 Nm)
39	eShop	eShop	–	–	117	156	–	32	32	–	60	60	–	WOEX 06T304	239700 10IP (2.8 Nm)
39,5	–	eShop	–	–	–	159	–	–	32	–	–	60	–	WOEX 06T304	239700 10IP (2.8 Nm)
40	eShop	eShop	–	–	119	159	–	32	32	–	60	60	–	WOEX 06T304	239700 10IP (2.8 Nm)
41	eShop	eShop	–	–	121	162	–	32	32	–	60	60	–	WOEX 06T304	239700 10IP (2.8 Nm)
42	eShop	eShop	–	–	123	165	–	32	32	–	60	60	–	WOEX 06T304	239700 10IP (2.8 Nm)
43	eShop	eShop	–	–	125	168	–	32	32	–	60	60	–	WOEX 06T304	239700 10IP (2.8 Nm)
44	eShop	eShop	–	–	127	171	–	32	32	–	60	60	–	WOEX 06T304	239700 10IP (2.8 Nm)

MTC

Garant Indexable inserts WOEX.. for universal indexable drill MTC

Suitable for: GARANT indexable drills No. 232298; 232300; 232302; 232310.

Note:
23 2440/2540/2640/2740 – **Do not use in the centre pocket of indexable drills!**

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
HB 7305															**175**			
HB 7630				275	275	215	**125**	**125**							175			
HB 7635				**275**	**275**	**215**						**165**	165	80				
HB 330				**275**	**275**	**275**						**165**	165	80				●
HU 7310	**350**	**200**	**200**											**80**				
HB 7310	**350**	**200**	**200**													**300**	150	
HB 7640				275	275	215						**165**	**165**	**80**				



Slightly honed | *honed* | *chamfered and honed* | *chamfered and honed* | *honed* | *chamfered and honed* | *chamfered and honed*

Type			ALU	ST500	ST900	ST1400	INOX	GG	UNI	
21E 23 2400	WOEX 030204 S	HB7305	–	–	–	–	–	eShop	–	10
21E 23 2410		HB7630	–	–	–	eShop	–	–	–	10
21E 23 2420		HB7635	–	–	eShop	–	–	–	–	10
21E 23 2435	WOEX 030204 T	HB330	–	–	–	–	–	–	eShop	10
21E 23 2440	WOEX 030204 E	HB7635	–	eShop	–	–	–	–	–	10
21E 23 2450	WOEX 030204 F	HU7310	eShop	–	–	–	–	–	–	10
21E 23 2460		HB7310	eShop	–	–	–	–	–	–	10
21E 23 2470	WOEX 030204 E	HB7635	–	–	–	–	eShop	–	–	10
21E 23 2480		HB7640	–	–	–	–	eShop	–	–	10
f		mm/rev.	0.05	0.08	0.08	0.05	0.06	0.08	0.06	

Type			ALU	ST500	ST900	ST1400	INOX	GG	UNI	
21E 23 2500	WOEX 040304 S	HB7305	–	–	–	–	–	eShop	–	10
21E 23 2510		HB7630	–	–	–	eShop	–	–	–	10
21E 23 2520		HB7635	–	–	eShop	–	–	–	–	10
21E 23 2535	WOEX 040304 T	HB330	–	–	–	–	–	–	eShop	10
21E 23 2540	WOEX 040304 E	HB7635	–	eShop	–	–	–	–	–	10
21E 23 2550	WOEX 040304 F	HU7310	eShop	–	–	–	–	–	–	10
21E 23 2560		HB7310	eShop	–	–	–	–	–	–	10
21E 23 2570	WOEX 040304 E	HB7635	–	–	–	–	eShop	–	–	10
21E 23 2580		HB7640	–	–	–	–	eShop	–	–	10
f		mm/rev.	0.08	0.1	0.13	0.1	0.08	0.14	0.08	

Type			ALU	ST500	ST900	ST1400	INOX	GG	UNI	
21E 23 2600	WOEX 05T304 S	HB7305	–	–	–	–	–	eShop	–	10
21E 23 2610		HB7630	–	–	–	eShop	–	–	–	10
21E 23 2620		HB7635	–	–	eShop	–	–	–	–	10
21E 23 2635	WOEX 05T304 T	HB330	–	–	–	–	–	–	eShop	10
21E 23 2640	WOEX 05T304 E	HB7635	–	eShop	–	–	–	–	–	10
21E 23 2650	WOEX 05T304 F	HU7310	eShop	–	–	–	–	–	–	10
21E 23 2660		HB7310	eShop	–	–	–	–	–	–	10
21E 23 2670	WOEX 05T304 E	HB7635	–	–	–	–	eShop	–	–	10
21E 23 2680		HB7640	–	–	–	–	eShop	–	–	10
f		mm/rev.	0.1	0.12	0.14	0.1	0.12	0.2	0.1	

Type			ALU	ST500	ST900	ST1400	INOX	GG	UNI	
21E 23 2700	WOEX 06T304 S	HB7305	–	–	–	–	–	eShop	–	10
21E 23 2710		HB7630	–	–	–	eShop	–	–	–	10
21E 23 2720		HB7635	–	–	eShop	–	–	–	–	10
21E 23 2735	WOEX 06T304 T	HB330	–	–	–	–	–	–	eShop	10
21E 23 2740	WOEX 06T304 E	HB7635	–	eShop	–	–	–	–	–	10
21E 23 2750	WOEX 06T304 F	HU7310	eShop	–	–	–	–	–	–	10
21E 23 2760		HB7310	eShop	–	–	–	–	–	–	10
21E 23 2770	WOEX 06T304 E	HB7635	–	–	–	–	eShop	–	–	10
21E 23 2780		HB7640	–	–	–	–	eShop	–	–	10
f		mm/rev.	0.1	0.12	0.14	0.12	0.12	0.2	0.12	

ISO 9766 | HPC | 2×D | 3×D | 4×D | 5×D

Garant GARANT Power Drill indexable drill for right-hand cutting, plain shank with drive flats

The helical coolant ducts ensure very high stability, since they do not weaken the core of the drill.

23 4000/4005 – **Bore tolerance:** –0.1 / +0.3 mm

23 4010/4015 – **Bore tolerance:** –0.1 / +0.35 mm

Description: For maximum performance and dimensional accuracy. Even for very difficult drilling situations up to 5×D.

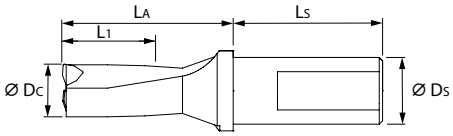
Recommendation:

23 4015 – **When spot-drilling** reduce the feed rate to 70%.

Note: Other intermediate sizes in 1/10 increments available on request.



23 4010



Ø D_C	21S 23 4000	21S 23 4005	21S 23 4010	21S 23 4015	for inch Ø	L_A				Ø D_s	L_s	ISO code indexable insert	Set of insert screws
	GARANT Power Drill indexable drill Combination shank					23 4000	23 4005	23 4010	23 4015				
mm	2×D	3×D	4×D	5×D	in	mm	mm	mm	mm	mm	mm		
14	eShop	eShop	eShop	eShop	–	41	55	69	83	20	50	SOGX 050204	239700 5IP (0.38 Nm)
14,5	eShop	eShop	eShop	eShop	–	44	59	74	89	20	50	SOGX 050204	239700 5IP (0.38 Nm)
15	eShop	eShop	eShop	eShop	19/32	44	59	74	89	20	50	SOGX 050204	239700 5IP (0.38 Nm)
15,5	eShop	eShop	eShop	eShop	–	48	64	80	96	20	50	SOGX 050204	239700 5IP (0.38 Nm)
16	eShop	eShop	eShop	eShop	–	48	64	80	96	20	50	SOGX 050204	239700 5IP (0.38 Nm)
16,5	eShop	eShop	eShop	eShop	–	51	68	85	102	20	50	SOGX 060305	239700 6IP2 (0.6 Nm)
17	eShop	eShop	eShop	eShop	–	51	68	85	102	20	50	SOGX 060305	239700 6IP2 (0.6 Nm)
17,5	eShop	eShop	eShop	eShop	11/16	53	71	89	107	25	56	SOGX 060305	239700 6IP2 (0.6 Nm)
18	eShop	eShop	eShop	eShop	–	53	71	89	107	25	56	SOGX 060305	239700 6IP2 (0.6 Nm)
18,5	eShop	eShop	eShop	eShop	–	56	75	94	113	25	56	SOGX 060305	239700 6IP2 (0.6 Nm)
19	eShop	eShop	eShop	eShop	3/4	56	75	94	113	25	56	SOGX 060305	239700 6IP2 (0.6 Nm)
19,5	eShop	eShop	eShop	eShop	–	58	78	98	118	25	56	SOGX 070306	239700 6IP1 (1.0 Nm)
20	eShop	eShop	eShop	eShop	–	58	78	98	118	25	56	SOGX 070306	239700 6IP1 (1.0 Nm)
20,5	eShop	eShop	eShop	eShop	–	61	82	103	124	25	56	SOGX 070306	239700 6IP1 (1.0 Nm)
21	eShop	eShop	eShop	eShop	–	61	82	103	124	25	56	SOGX 070306	239700 6IP1 (1.0 Nm)
21,5	eShop	eShop	eShop	eShop	27/32	63	85	107	129	25	56	SOGX 070306	239700 6IP1 (1.0 Nm)
22	eShop	eShop	eShop	eShop	–	63	85	107	129	25	56	SOGX 070306	239700 6IP1 (1.0 Nm)
22,5	eShop	eShop	eShop	eShop	–	66	89	112	135	25	56	SOGX 070306	239700 6IP1 (1.0 Nm)
23	eShop	eShop	eShop	eShop	–	66	89	112	135	25	56	SOGX 080407	239700 8IP (1.3 Nm)
23,5	eShop	eShop	eShop	eShop	–	68	92	116	140	32	60	SOGX 080407	239700 8IP (1.3 Nm)
24	eShop	eShop	eShop	eShop	–	68	92	116	140	32	60	SOGX 080407	239700 8IP (1.3 Nm)
24,5	eShop	eShop	eShop	eShop	–	71	96	121	146	32	60	SOGX 080407	239700 8IP (1.3 Nm)
25	eShop	eShop	eShop	eShop	–	71	96	121	146	32	60	SOGX 080407	239700 8IP (1.3 Nm)
25,5	eShop	eShop	eShop	eShop	1	73	99	125	151	32	60	SOGX 080407	239700 8IP (1.3 Nm)
26	eShop	eShop	eShop	eShop	–	73	99	125	151	32	60	SOGX 080407	239700 8IP (1.3 Nm)
26,5	eShop	eShop	eShop	eShop	–	76	103	130	157	32	60	SOGX 080407	239700 8IP (1.3 Nm)
27	eShop	eShop	eShop	eShop	1 1/16	76	103	130	157	32	60	SOGX 100408	239700 10IP (2.8 Nm)
27,5	eShop	eShop	eShop	eShop	–	78	106	134	162	32	60	SOGX 100408	239700 10IP (2.8 Nm)
28	eShop	eShop	eShop	eShop	–	78	106	134	162	32	60	SOGX 100408	239700 10IP (2.8 Nm)
28,5	eShop	eShop	eShop	eShop	1 1/8	81	110	139	168	32	60	SOGX 100408	239700 10IP (2.8 Nm)
29	eShop	eShop	eShop	eShop	–	81	110	139	168	32	60	SOGX 100408	239700 10IP (2.8 Nm)
29,5	eShop	eShop	eShop	eShop	–	83	113	143	173	32	60	SOGX 100408	239700 10IP (2.8 Nm)
30	eShop	eShop	eShop	eShop	–	83	113	143	173	32	60	SOGX 100408	239700 10IP (2.8 Nm)
30,5	eShop	eShop	eShop	eShop	–	86	117	148	179	40	68	SOGX 100408	239700 10IP (2.8 Nm)
31	eShop	eShop	eShop	eShop	1 7/32	86	117	148	179	40	68	SOGX 100408	239700 10IP (2.8 Nm)
31,5	eShop	eShop	eShop	eShop	–	88	120	152	184	40	68	SOGX 100408	239700 10IP (2.8 Nm)
32	eShop	eShop	eShop	eShop	–	88	120	152	184	40	68	SOGX 110509	239700 15IP (2.8 Nm)
32,5	eShop	eShop	eShop	eShop	1 9/32	91	124	157	190	40	68	SOGX 110509	239700 15IP (2.8 Nm)
33	eShop	eShop	eShop	eShop	–	91	124	157	190	40	68	SOGX 110509	239700 15IP (2.8 Nm)
33,5	eShop	eShop	eShop	eShop	–	93	127	161	195	40	68	SOGX 110509	239700 15IP (2.8 Nm)
34	eShop	eShop	eShop	eShop	–	93	127	161	195	40	68	SOGX 110509	239700 15IP (2.8 Nm)
34,5	eShop	eShop	eShop	eShop	–	96	131	166	201	40	68	SOGX 110509	239700 15IP (2.8 Nm)
35	eShop	eShop	eShop	eShop	1 3/8	96	131	166	201	40	68	SOGX 110509	239700 15IP (2.8 Nm)
35,5	eShop	eShop	eShop	eShop	–	98	134	170	206	40	68	SOGX 110509	239700 15IP (2.8 Nm)
36	eShop	eShop	eShop	eShop	–	98	134	170	206	40	68	SOGX 110509	239700 15IP (2.8 Nm)
36,5	eShop	eShop	eShop	eShop	1 7/16	101	138	175	212	40	68	SOGX 110509	239700 15IP (2.8 Nm)
37	eShop	eShop	eShop	eShop	–	101	138	175	212	40	68	SOGX 110509	239700 15IP (2.8 Nm)
37,5	eShop	eShop	eShop	eShop	–	103	141	179	217	40	68	SOGX 130511	239700 20IP (6.3 Nm)
38	eShop	eShop	eShop	eShop	1 1/2	103	141	179	217	40	68	SOGX 130511	239700 20IP (6.3 Nm)
38,5	eShop	eShop	eShop	eShop	–	106	145	184	223	40	68	SOGX 130511	239700 20IP (6.3 Nm)
39	eShop	eShop	eShop	eShop	–	106	145	184	223	40	68	SOGX 130511	239700 20IP (6.3 Nm)
39,5	eShop	eShop	eShop	eShop	–	108	148	188	228	40	68	SOGX 130511	239700 20IP (6.3 Nm)
40	eShop	eShop	eShop	eShop	–	108	148	188	228	40	68	SOGX 130511	239700 20IP (6.3 Nm)
40,5	eShop	eShop	eShop	eShop	1 19/32	111	152	193	234	40	68	SOGX 130511	239700 20IP (6.3 Nm)
41	eShop	eShop	eShop	eShop	–	111	152	193	234	40	68	SOGX 130511	239700 20IP (6.3 Nm)
41,5	eShop	eShop	eShop	eShop	–	113	155	197	239	40	68	SOGX 130511	239700 20IP (6.3 Nm)
42	eShop	eShop	eShop	eShop	1 21/32	113	155	197	239	40	68	SOGX 130511	239700 20IP (6.3 Nm)
42,5	eShop	eShop	eShop	eShop	–	116	159	202	245	40	68	SOGX 130511	239700 20IP (6.3 Nm)
43	eShop	eShop	eShop	eShop	–	116	159	202	245	40	68	SOGX 130511	239700 20IP (6.3 Nm)
43,5	eShop	eShop	eShop	eShop	–	118	162	206	250	40	68	SOGX 130511	239700 20IP (6.3 Nm)
44	eShop	eShop	eShop	eShop	–	118	162	206	250	40	68	SOGX 130511	239700 20IP (6.3 Nm)

ABS HPC

Garant GARANT Power Drill indexable drill for right-hand cutting, with ABS® shank

The helical coolant ducts ensure very high stability, since they do not weaken the core of the drill.

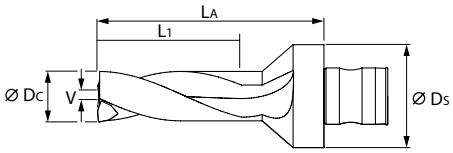
23 4020 – **Bore tolerance:** –0.1 / +0.3 mm
23 4025 – **Bore tolerance:** –0.1 / +0.35 mm

Description: For maximum performance and dimensional accuracy. Even for difficult drilling situations up to 5×D.

Application: With indexable inserts No. 234030 - 234098.

Recommendation:
23 4025 – **When spot-drilling** reduce the feed rate to 70%.


23 4025



Ø D_c	21S 23 4020	21S 23 4025	for inch Ø	L_A		ABS® Ø D_s	ISO code ndexable insert	Set of insert screws
	GARANT Power Drill indexable drill ABS® shank							
mm	3×D	5×D	in	23 4020 mm	23 4025 mm	mm		
14	eShop	eShop	–	69	97	50	SOGX 050204	239700 5IP (0.38 Nm)
15	eShop	eShop	19/32	73	103	50	SOGX 050204	239700 5IP (0.38 Nm)
16	eShop	eShop	–	78	110	50	SOGX 050204	239700 5IP (0.38 Nm)
17	eShop	eShop	–	82	116	50	SOGX 060305	239700 6IP2 (0.6 Nm)
17,5	eShop	eShop	11/16	85	121	50	SOGX 060305	239700 6IP2 (0.6 Nm)
18	eShop	eShop	–	85	121	50	SOGX 060305	239700 6IP2 (0.6 Nm)
19	eShop	eShop	3/4	89	127	50	SOGX 060305	239700 6IP2 (0.6 Nm)
20	eShop	eShop	–	92	132	50	SOGX 070306	239700 6IP1 (1.0 Nm)
21	eShop	eShop	–	95	137	50	SOGX 070306	239700 6IP1 (1.0 Nm)
22	eShop	eShop	–	98	142	50	SOGX 070306	239700 6IP1 (1.0 Nm)
23	eShop	eShop	–	101	147	50	SOGX 080407	239700 8IP (1.3 Nm)
24	eShop	eShop	–	104	152	50	SOGX 080407	239700 8IP (1.3 Nm)
25	eShop	eShop	–	108	158	50	SOGX 080407	239700 8IP (1.3 Nm)
26	eShop	eShop	–	111	163	50	SOGX 080407	239700 8IP (1.3 Nm)
30	eShop	eShop	–	125	185	50	SOGX 100408	239700 10IP (2.8 Nm)
32	eShop	eShop	–	135	199	63	SOGX 110509	239700 15IP (2.8 Nm)
35	eShop	eShop	1 3/8	146	216	63	SOGX 110509	239700 15IP (2.8 Nm)
40	eShop	eShop	–	163	243	63	SOGX 130511	239700 20IP (6.3 Nm)

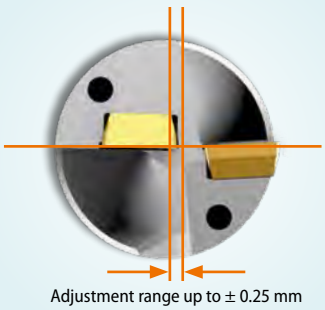
Garant Power Drill – the entire range

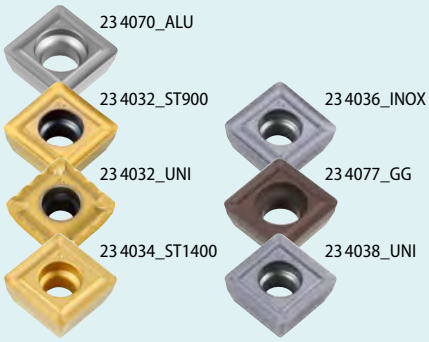
Now also with ABS shank, for more stable machining!

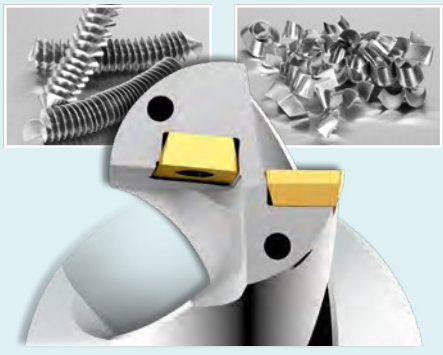
Individual adjustment range
The GARANT Power Drill has an adjustment range of up to ± 0.25 mm from the centre to cover various diameter ranges.

Scope of range:
- Diameter range: 14 – 40 mm
- Length ratio 3×D and 5×D
- ABS50 up to diameter 30 mm
- ABS63 up to diameter 50 mm

Chip evacuation
Due to the larger flutes and the positioning of the cooling channels at the edges of the drill, chip evacuation and stability are significantly increased.


Adjustment range up to ± 0.25 mm





Close bore tolerances:
- 3×D drill: -0.1 / +0.3 mm
- 5×D drill: -0.1 / +0.35 mm

Choice of insert
Suitable inserts and sizes are available for the different machining challenges.

Excellently formed chips for good chip evacuation.

GARANT Power Drill indexable inserts SOGX.. for indexable drill

Suitable for: GARANT Power Drill No. 234000 – 234025.
Recommendation: When spot drilling with holder No. 234015 and No. 234025, reduce the feed rate to 70%.

Note:
23 4034/4037/4044/4047/4054/4057/4064/4067/4074/4077/4084/4087/4094/4097 –
Not for use as an internal cutter (it is essential that an internal cutter be of material grade HB630).

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
HB 6810	500	300	220															
HB 6535				270	250	220	180						170	150			250	
HB 6530						230	190	160										
HB 6640													180	160	75			
HB 6715																200		
HB 630				260	240	210	170	140					160	140		140		●







HB630

HB6535

Type			ALU	ST900	ST1400	INOX	GG	UNI		f mm/rev.
21E 23 4030	SOGX 050204	HB6810	eShop	–	–	–	–	–	10	0.06 - 0.18
21E 23 4032		HB6535	–	eShop	–	–	–	eShop	10	0.05 - 0.1
21E 23 4034		HB6530	–	–	eShop	–	–	–	10	0.06 - 0.12
21E 23 4036		HB6640	–	–	–	eShop	–	–	10	0.05 - 0.1
21E 23 4037		HB6715	–	–	–	–	eShop	–	10	0.04 - 0.18
21E 23 4038		HB630	–	–	–	–	–	eShop	10	0.04 – 0.16
21E 23 4040	SOGX 060305	HB6810	eShop	–	–	–	–	–	10	0.06 - 0.18
21E 23 4042		HB6535	–	eShop	–	–	–	eShop	10	0.06 - 0.12
21E 23 4044		HB6530	–	–	eShop	–	–	–	10	0.06 - 0.12
21E 23 4046		HB6640	–	–	–	eShop	–	–	10	0.05 - 0.1
21E 23 4047		HB6715	–	–	–	–	eShop	–	10	0.05 - 0.18
21E 23 4048		HB630	–	–	–	–	–	eShop	10	0.05 – 0.16
21E 23 4050	SOGX 070306	HB6810	eShop	–	–	–	–	–	10	0.06 - 0.21
21E 23 4052		HB6535	–	eShop	–	–	–	eShop	10	0.08 - 0.14
21E 23 4054		HB6530	–	–	eShop	–	–	–	10	0.08 - 0.14
21E 23 4056		HB6640	–	–	–	eShop	–	–	10	0.06 - 0.12
21E 23 4057		HB6715	–	–	–	–	eShop	–	10	0.05 - 0.22
21E 23 4058		HB630	–	–	–	–	–	eShop	10	0.05 – 0.2
21E 23 4060	SOGX 080407	HB6810	eShop	–	–	–	–	–	10	0.08 - 0.21
21E 23 4062		HB6535	–	eShop	–	–	–	eShop	10	0.08 - 0.16
21E 23 4064		HB6530	–	–	eShop	–	–	–	10	0.08 - 0.16
21E 23 4066		HB6640	–	–	–	eShop	–	–	10	0.07 - 0.14
21E 23 4067		HB6715	–	–	–	–	eShop	–	10	0.09 - 0.28
21E 23 4068		HB630	–	–	–	–	–	eShop	10	0.07 – 0.2
21E 23 4070	SOGX 100408	HB6810	eShop	–	–	–	–	–	10	0.08 - 0.21
21E 23 4072		HB6535	–	eShop	–	–	–	eShop	10	0.08 - 0.16
21E 23 4074		HB6530	–	–	eShop	–	–	–	10	0.08 - 0.16
21E 23 4076		HB6640	–	–	–	eShop	–	–	10	0.07 - 0.14
21E 23 4077		HB6715	–	–	–	–	eShop	–	10	0.13 - 0.3
21E 23 4078		HB630	–	–	–	–	–	eShop	10	0.07 – 0.2
21E 23 4080	SOGX 110509	HB6810	eShop	–	–	–	–	–	10	0.08 - 0.21
21E 23 4082		HB6535	–	eShop	–	–	–	eShop	10	0.08 - 0.18
21E 23 4084		HB6530	–	–	eShop	–	–	–	10	0.08 - 0.18
21E 23 4086		HB6640	–	–	–	eShop	–	–	10	0.07 - 0.16
21E 23 4087		HB6715	–	–	–	–	eShop	–	10	0.13 - 0.3
21E 23 4088		HB630	–	–	–	–	–	eShop	10	0.08 – 0.2
21E 23 4090	SOGX 130511	HB6810	eShop	–	–	–	–	–	10	0.08 - 0.21
21E 23 4092		HB6535	–	eShop	–	–	–	eShop	10	0.09 - 0.2
21E 23 4094		HB6530	–	–	eShop	–	–	–	10	0.09 - 0.2
21E 23 4096		HB6640	–	–	–	eShop	–	–	10	0.08 - 0.18
21E 23 4097		HB6715	–	–	–	–	eShop	–	10	0.13 - 0.3
21E 23 4098		HB630	–	–	–	–	–	eShop	10	0.08 – 0.2

ISO 9766 | HPC | 2×D | 3×D | 4×D

HOLEX Pro Drill indexable drill for right-hand cutting, plain shank with drive flat

HOLEX Pro Drill indexable drills combine cost efficiency with technically fully developed capability.
For use up to 4×D in challenging drilling applications.

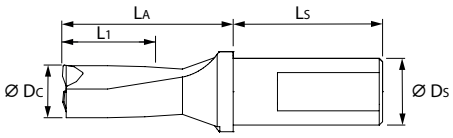
23 5010 – **Bore tolerance:** -0.05 / +0.3 mm
23 5000/5005 – **Bore tolerance:** -0.1 / +0.25 mm

Application: With indexable inserts No. 235030 – 235082.
Both SOMT inserts for the outer insert seat and also XOMT inserts for the inner insert seat are required.

Supplied with: With insert screws (supplied without indexable inserts).

Recommendation:
23 5010 – When spot-drilling reduce the feed rate to 70%.

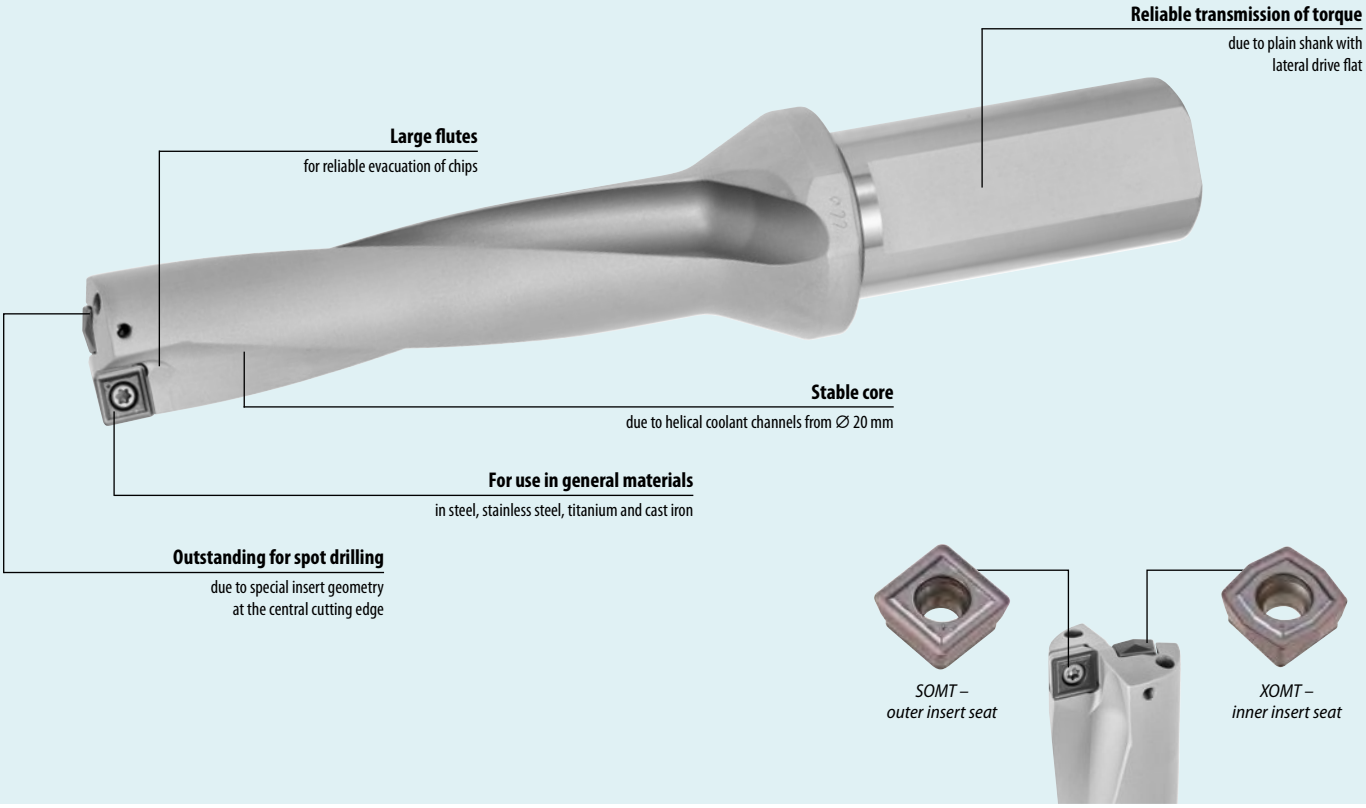

23 5010



Ø D_C	22L 23 5000	22L 23 5005	22L 23 5010	for inch Ø	L_A			Ø D_S	L_S	ISO code indexable insert	Set of insert screws
	HOLEX Pro Drill indexable drill										
	Combination shank				23 5000	23 5005	23 5010				
mm	2×D	3×D	4×D	in	mm	mm	mm	mm	mm		
14	eShop	eShop	eShop	–	46	60	74	20	50	SOMT05T204 / XOMT05T204	232980 1 (TX6;0.4Nm)
15	eShop	eShop	eShop	19/32	49	64	79	20	50	SOMT05T204 / XOMT05T204	232980 1 (TX6;0.4Nm)
16	eShop	eShop	eShop	–	51	67	83	20	50	SOMT05T204 / XOMT05T204	232980 1 (TX6;0.4Nm)
17	eShop	eShop	eShop	–	53	70	87	25	56	SOMT06T205 / XOMT06T204	232980 2 (TX7;0.8Nm)
17,5	–	eShop	eShop	11/16	–	70	87	25	56	SOMT06T205 / XOMT06T204	232980 2 (TX7;0.8Nm)
18	eShop	eShop	eShop	–	56	74	92	25	56	SOMT06T205 / XOMT06T204	232980 2 (TX7;0.8Nm)
18,5	eShop	eShop	eShop	–	56	74	92	25	56	SOMT06T205 / XOMT06T204	232980 2 (TX7;0.8Nm)
19	eShop	eShop	eShop	3/4	58	77	96	25	56	SOMT06T205 / XOMT06T204	232980 2 (TX7;0.8Nm)
19,5	–	eShop	eShop	–	–	77	96	25	56	SOMT06T205 / XOMT06T204	232980 2 (TX7;0.8Nm)
20	eShop	eShop	eShop	–	62	82	102	25	56	SOMT070308 / XOMT070305	232980 3 (TX7; 0.8Nm)
21	eShop	eShop	eShop	–	64	85	106	25	56	SOMT070308 / XOMT070305	232980 3 (TX7; 0.8Nm)
22	eShop	eShop	eShop	–	66	88	110	25	56	SOMT070308 / XOMT070305	232980 3 (TX7; 0.8Nm)
22,5	–	eShop	eShop	–	–	88	110	25	56	SOMT070308 / XOMT070305	232980 3 (TX7; 0.8Nm)
23	eShop	eShop	eShop	–	70	93	116	25	56	SOMT070308 / XOMT070305	232980 3 (TX7; 0.8Nm)
24	eShop	eShop	eShop	–	73	97	121	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
24,5	eShop	eShop	eShop	–	73	97	121	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
25	eShop	eShop	eShop	–	75	100	125	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
26	eShop	eShop	eShop	–	77	103	129	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
26,5	eShop	eShop	eShop	–	77	103	129	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
27	eShop	eShop	eShop	11/16	80	107	134	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
28	eShop	eShop	eShop	–	83	111	139	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
29	eShop	eShop	eShop	–	85	114	143	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
29,5	–	eShop	eShop	–	–	114	143	32	60	SOMT093608 / XOMT093605	232980 4 (TX9;1.2Nm)
30	eShop	eShop	eShop	–	90	120	150	32	60	SOMT110408 / XOMT110406	232980 5 (TX15;3Nm)
31	eShop	eShop	eShop	1 7/32	92	123	154	32	60	SOMT110408 / XOMT110406	232980 5 (TX15;3Nm)
32	eShop	eShop	eShop	–	94	126	158	32	60	SOMT110408 / XOMT110406	232980 5 (TX15;3Nm)
33	eShop	eShop	eShop	–	97	130	163	32	60	SOMT110408 / XOMT110406	232980 5 (TX15;3Nm)
34	eShop	eShop	eShop	–	99	133	167	32	60	SOMT110408 / XOMT110406	232980 5 (TX15;3Nm)
35	eShop	eShop	eShop	1 3/8	101	136	171	32	60	SOMT110408 / XOMT110406	232980 5 (TX15;3Nm)
36	eShop	eShop	eShop	–	106	142	178	40	70	SOMT13M510 / XOMT13M506	232980 6 (TX15;3Nm)
37	eShop	eShop	eShop	–	108	145	182	40	70	SOMT13M510 / XOMT13M506	232980 6 (TX15;3Nm)
38	eShop	eShop	eShop	1 1/2	111	149	187	40	70	SOMT13M510 / XOMT13M506	232980 6 (TX15;3Nm)
39	eShop	eShop	eShop	–	113	152	191	40	70	SOMT13M510 / XOMT13M506	232980 6 (TX15;3Nm)
39,5	–	eShop	eShop	–	–	152	191	40	70	SOMT13M510 / XOMT13M506	232980 6 (TX15;3Nm)
40	eShop	eShop	eShop	–	116	156	196	40	70	SOMT13M510 / XOMT13M506	232980 6 (TX15;3Nm)

HOLEX Pro Drill – indexable drill

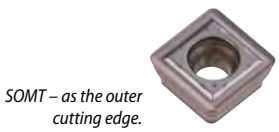
Robust. Reliable. Economical.



HOLEX Pro Drill indexable inserts SOMT.... / XOMT..... for indexable drills

The central cutting edge centres the drill quickly and reliably. The outer cutting edge offers outstanding chip clearance.
Suitable for: HOLEX Pro Drill No. 235000 – 235010.
Application: SOMT inserts exclusively as the outer cutting edges. XOMT inserts exclusively as the centre cutting edge.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
23 5030–23 5082				160	150	140	120	100					110	90	50	130	220	●


SOMT – as the outer cutting edge.


XOMT – as the inner cutting edge.

Type			UNI		< 900 N f
22K 23 5030	SOMT05T204	HBD30	eShop	10	0.05 – 0.1
22K 23 5032	XOMT05T204	HBD30	eShop	10	0.05 – 0.1
22K 23 5040	SOMT06T205	HBD30	eShop	10	0.06 – 0.12
22K 23 5042	XOMT06T204	HBD30	eShop	10	0.06 – 0.12
22K 23 5050	SOMT070308	HBD30	eShop	10	0.06 – 0.12
22K 23 5052	XOMT070305	HBD30	eShop	10	0.06 – 0.12
22K 23 5060	SOMT093608	HBD30	eShop	10	0.06 – 0.14
22K 23 5062	XOMT093605	HBD30	eShop	10	0.06 – 0.14
22K 23 5070	SOMT110408	HBD30	eShop	10	0.06 – 0.16
22K 23 5072	XOMT110406	HBD30	eShop	10	0.06 – 0.16
22K 23 5080	SOMT13M510	HBD30	eShop	10	0.06 – 0.16
22K 23 5082	XOMT13M506	HBD30	eShop	10	0.06 – 0.16

KOMET Indexable inserts SOEX.. Type W83 for KUB Quatron® / TwinKom® G01 / KUB Centron® Powerline

Ground on the circumference, with rounded cutting edge and sintered chip breaker.

Note: **Application values refer to the KUB Quatron®.**
23 6535 – When using the KUB Quatron® please halve the feed rate values.
Size 39-210 – **Only for KUB Centron Powerline.**
23 6553–6560 – **Do not use in the centre pocket of indexable drills!**

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
23 6520	600	300	250	**300**	**250**	**200**	**160**	**130**				160	160	80	200			●		●			
23 6535–23 6537				**300**	**250**	**200**	**160**	**130**				160	160							●			
23 6541	600	300	250	**300**	**250**	**200**	160	130				160	160	**80**				●		●			
23 6553				300	250	200						**160**	**160**	**80**						●			
23 6554	**600**	**300**	**250**											80		**300**	150			●		○	
23 6560							160	130	60						**200**					●		○	
23 6573				**300**	**250**	**200**	**160**	**130**				160	160	80						●			
23 6576				**300**	**250**	**200**						**160**	160	**80**						●			






Designation type W83			13-000	13-010	13-030	13-130	13-210		Type
24Q 23 6520	KOMET® indexable insert	BK8425	–	eShop	–	–	–	–	Uni
24Q 23 6535		BK8430	–	–	eShop	–	–	–	ST1400
24Q 23 6537		BK8430	–	–	–	–	eShop	–	ST1400
24Q 23 6541		BK7935	–	eShop	–	–	–	–	ST900; Ti
24Q 23 6553		BK7935	–	–	–	–	eShop	–	Inox
24Q 23 6554		BK7710	–	–	–	–	(eShop)	–	Alu
24Q 23 6560		BK6115	eShop	–	–	–	–	–	GG(G)
24Q 23 6573		BK8425	–	–	–	eShop	–	–	ST1400
24Q 23 6576		BK7935	–	–	–	eShop	–	–	Inox
ISO code indexable insert			SOEX 050204						
Feed f in steel < 900 N/mm²		mm/rev.	0.12						

Designation type W83			18-000	18-010	18-030	18-130	18-210		Type
24Q 23 6520	KOMET® indexable insert	BK8425	–	eShop	–	–	–	–	Uni
24Q 23 6535		BK8430	–	–	eShop	–	–	–	ST1400
24Q 23 6537		BK8430	–	–	–	–	eShop	–	ST1400
24Q 23 6541		BK7935	–	eShop	–	–	–	–	ST900; Ti
24Q 23 6553		BK7935	–	–	–	–	eShop	–	Inox
24Q 23 6554		BK7710	–	–	–	–	(eShop)	–	Alu
24Q 23 6560		BK6115	eShop	–	–	–	–	–	GG(G)
24Q 23 6573		BK8425	–	–	–	eShop	–	–	ST1400
24Q 23 6576		BK7935	–	–	–	eShop	–	–	Inox
ISO code indexable insert			SOEX 060306						
Feed f in steel < 900 N/mm²		mm/rev.	0.16						






Designation type W83			23-000	23-010	23-030	23-130	23-210		Type
24Q 23 6520	KOMET® indexable insert	BK8425	–	eShop	–	–	–	–	Uni
24Q 23 6535		BK8430	–	–	eShop	–	–	–	ST1400
24Q 23 6537		BK8430	–	–	–	–	eShop	–	ST1400
24Q 23 6541		BK7935	–	eShop	–	–	–	–	ST900; Ti
24Q 23 6553		BK7935	–	–	–	–	eShop	–	Inox
24Q 23 6554		BK7710	–	–	–	–	(eShop)	–	Alu
24Q 23 6560		BK6115	eShop	–	–	–	–	–	GG(G)
24Q 23 6573		BK8425	–	–	–	eShop	–	–	ST1400
24Q 23 6576		BK7935	–	–	–	eShop	–	–	Inox
ISO code indexable insert			SOEX 07T308						
Feed f in steel < 900 N/mm²		mm/rev.	0.16						

Designation type W83			32-000	32-010	32-030	32-130	32-210		Type
24Q 23 6520	KOMET® indexable insert	BK8425	–	eShop	–	–	–	–	Uni
24Q 23 6535		BK8430	–	–	eShop	–	–	–	ST1400
24Q 23 6537		BK8430	–	–	–	–	eShop	–	ST1400
24Q 23 6541		BK7935	–	eShop	–	–	–	–	ST900; Ti
24Q 23 6553		BK7935	–	–	–	–	eShop	–	Inox
24Q 23 6554		BK7710	–	–	–	–	(eShop)	–	Alu
24Q 23 6560		BK6115	eShop	–	–	–	–	–	GG(G)
24Q 23 6573		BK8425	–	–	–	eShop	–	–	ST1400
24Q 23 6576		BK7935	–	–	–	eShop	–	–	Inox
ISO code indexable insert			SOEX 090408						
Feed f in steel < 900 N/mm²		mm/rev.	0.2						

Designation type W83			39-210		Type
24Q 23 6537	KOMET® indexable insert	BK8430	eShop	–	ST1400
24Q 23 6553		BK7935	eShop	–	Inox
ISO code indexable insert			SOEX 110508		
Feed f in steel < 900 N/mm²		mm/rev.	0.22		

Designation type W83			44-000	44-010	44-030	44-130	44-210		Type
24Q 23 6520	KOMET® indexable insert	BK8425	–	eShop	–	–	–	–	Uni
24Q 23 6535		BK8430	–	–	eShop	–	–	–	ST1400
24Q 23 6537		BK8430	–	–	–	–	eShop	–	ST1400
24Q 23 6541		BK7935	–	eShop	–	–	–	–	ST900; Ti
24Q 23 6553		BK7935	–	–	–	–	eShop	–	Inox
24Q 23 6554		BK7710	–	–	–	–	(eShop)	–	Alu
24Q 23 6560		BK6115	eShop	–	–	–	–	–	GG(G)
24Q 23 6573		BK8425	–	–	–	eShop	–	–	ST1400
24Q 23 6576		BK7935	–	–	–	eShop	–	–	Inox
ISO code indexable insert			SOEX 120508						
Feed f in steel < 900 N/mm²		mm/rev.	0.25						

ISO 9766 | HPC | 2×D | 3×D | 4×D | 5×D

KOMET HPC indexable drill KUB Pentron® right-hand cutting, plain shank with drive flats

- **Very high performance** and long tool life thanks to optimised base body strength and special surface treatment.
- Best dimensional accuracy under **very difficult drilling conditions.**
- Stock costs reduced because internal and external inserts are identical.
- Offset-axis drilling is possible up to V_{max} = 0.25 mm. Maximum Ø = D + 0.5 mm achievable by offsetting.

23 6601 – **Bore tolerance:** ØD – 0.1 / + 0.3
23 6602 – **Bore tolerance:** ØD – 0.1 / + 0.35
23 6614/6615 – **Bore tolerance:** ØD – 0.1 / + 0.2

Application: ■ **Under extreme machining conditions.**
With indexable inserts No. 236605 – 236610.

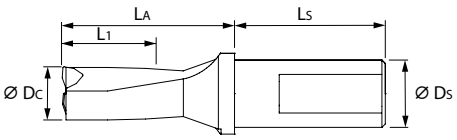
Supplied with: Clamp screws (without indexable inserts).

Recommendation:
23 6602 – **When spot-drilling** reduce the feed rate by 70 %.

Note: Version 2×D and 3×D with ABS® also available on request in imperial sizes. Version with PSC shank available on request.



23 6602



23

Ø D_c	24P 23 6614	24P 23 6615	24P 23 6601	24P 23 6602	for inch Ø	L_A				Ø D_s	L_s	ISO code indexable insert	Set of insert screws
	KUB Pentron® indexable drill Plain shank					23 6614	23 6615	23 6601	23 6602				
mm	2×D	3×D	4×D	5×D	in	mm	mm	mm	mm	mm	mm		
14	(eShop)	(eShop)	eShop	(eShop)	–	41	55	69	83	20	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
14,3	(eShop)	(eShop)	–	–	–	44	59	–	–	20	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
14,5	eShop	(eShop)	(eShop)	(eShop)	–	44	59	74	89	20	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
15	(eShop)	(eShop)	(eShop)	(eShop)	19/32	44	59	74	89	20	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
15,1	(eShop)	(eShop)	–	–	–	48	64	–	–	20	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
15,5	eShop	eShop	(eShop)	(eShop)	–	48	64	80	96	20	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
15,9	(eShop)	(eShop)	–	–	–	48	64	–	–	20	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
16	(eShop)	eShop	(eShop)	(eShop)	–	48	64	80	96	20	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
16,5	(eShop)	(eShop)	(eShop)	(eShop)	–	51	68	85	102	20	50	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
16,7	(eShop)	(eShop)	–	–	–	51	68	–	–	20	50	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
17	(eShop)	(eShop)	(eShop)	(eShop)	–	51	68	85	102	20	50	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
17,5	(eShop)	(eShop)	eShop	(eShop)	11/16	53	71	89	107	25	56	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
17,9	(eShop)	(eShop)	–	–	–	53	71	–	–	25	56	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
18	(eShop)	(eShop)	eShop	eShop	–	53	71	89	107	25	56	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
18,5	(eShop)	(eShop)	(eShop)	(eShop)	–	56	75	94	113	25	56	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
19	(eShop)	eShop	(eShop)	(eShop)	3/4	56	75	94	113	25	56	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
19,1	(eShop)	(eShop)	–	–	–	58	78	–	–	25	56	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
19,4	(eShop)	(eShop)	–	–	–	58	78	–	–	25	56	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
19,5	eShop	(eShop)	(eShop)	(eShop)	–	58	78	98	118	25	56	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
19,8	(eShop)	(eShop)	–	–	–	58	78	–	–	25	56	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
20	(eShop)	eShop	(eShop)	eShop	–	58	78	98	118	25	56	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
20,5	(eShop)	(eShop)	(eShop)	(eShop)	–	61	82	103	124	25	56	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
21	(eShop)	(eShop)	(eShop)	eShop	–	63	82	103	124	25	56	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
21,5	(eShop)	(eShop)	(eShop)	(eShop)	27/32	63	85	107	129	25	56	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
21,6	(eShop)	(eShop)	–	–	–	63	85	–	–	25	56	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
22	(eShop)	eShop	(eShop)	(eShop)	–	63	85	107	129	25	56	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
22,2	(eShop)	(eShop)	–	–	–	66	89	–	–	25	56	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
22,5	(eShop)	eShop	(eShop)	(eShop)	–	66	89	112	135	25	56	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
23	(eShop)	(eShop)	(eShop)	(eShop)	29/32	66	89	112	135	25	56	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
23,5	eShop	(eShop)	(eShop)	(eShop)	–	68	92	116	140	32	60	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
23,8	(eShop)	(eShop)	–	–	–	68	92	–	–	32	60	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
24	(eShop)	(eShop)	(eShop)	(eShop)	–	68	92	116	140	32	60	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
24,5	(eShop)	(eShop)	(eShop)	eShop	–	71	96	121	146	32	60	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
25	(eShop)	(eShop)	(eShop)	(eShop)	–	71	96	121	146	32	60	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)

∅ D_c	24P 23 6614	24P 23 6615	24P 23 6601	24P 23 6602	for inch ∅	L_A				∅ D_s	L_s	ISO code indexable insert	Set of insert screws
	KUB Pentron® indexable drill					23 6614	23 6615	23 6601	23 6602				
	Plain shank												
mm	2×D	3×D	4×D	5×D	in	mm	mm	mm	mm	mm	mm		
25,4	(eShop)	(eShop)	–	–	–	73	99	–	–	32	60	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
25,5	(eShop)	(eShop)	(eShop)	(eShop)	1	73	99	125	151	32	60	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
26	(eShop)	(eShop)	(eShop)	(eShop)	–	73	99	125	151	32	60	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
26,2	(eShop)	(eShop)	–	–	–	76	103	–	–	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
26,5	(eShop)	(eShop)	(eShop)	(eShop)	–	76	103	130	157	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
27	(eShop)	(eShop)	(eShop)	(eShop)	1 1/16	76	103	130	157	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
27,5	(eShop)	(eShop)	(eShop)	(eShop)	–	78	106	134	162	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
28	(eShop)	(eShop)	(eShop)	(eShop)	–	78	106	134	162	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
28,2	(eShop)	(eShop)	–	–	–	81	110	–	–	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
28,5	(eShop)	(eShop)	(eShop)	(eShop)	1 1/8	81	110	139	168	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
28,6	(eShop)	(eShop)	–	–	–	81	110	–	–	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
29	eShop	(eShop)	(eShop)	(eShop)	–	81	110	139	168	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
29,4	(eShop)	(eShop)	–	–	–	83	113	–	–	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
29,5	(eShop)	(eShop)	(eShop)	(eShop)	–	83	113	143	173	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
30	(eShop)	(eShop)	(eShop)	(eShop)	–	83	113	143	173	32	60	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
30,2	(eShop)	(eShop)	–	–	–	86	117	–	–	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
30,5	(eShop)	(eShop)	(eShop)	(eShop)	–	86	117	148	179	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
30,9	(eShop)	(eShop)	–	–	–	86	117	–	–	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
31	(eShop)	(eShop)	(eShop)	(eShop)	1 7/32	86	117	148	179	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
31,5	eShop	(eShop)	(eShop)	(eShop)	–	88	120	152	184	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
31,8	(eShop)	(eShop)	–	–	–	88	120	–	–	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
32	(eShop)	(eShop)	(eShop)	(eShop)	–	88	120	152	184	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
32,5	eShop	(eShop)	(eShop)	(eShop)	1 9/32	91	124	157	190	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
33	(eShop)	(eShop)	(eShop)	(eShop)	–	91	124	157	190	40	68	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
33,2	eShop	eShop	eShop	eShop	–	93	127	161	195	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
33,3	(eShop)	(eShop)	–	–	–	93	127	–	–	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
33,5	eShop	(eShop)	(eShop)	eShop	–	93	127	161	195	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
33,7	(eShop)	(eShop)	–	–	–	93	127	–	–	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
34	(eShop)	(eShop)	(eShop)	(eShop)	–	93	127	161	195	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
34,5	eShop	eShop	(eShop)	(eShop)	–	96	131	166	201	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
34,9	(eShop)	(eShop)	–	–	–	96	131	–	–	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
35	(eShop)	(eShop)	(eShop)	(eShop)	1 3/8	96	131	166	201	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
35,5	eShop	eShop	(eShop)	(eShop)	–	98	134	170	206	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
36	eShop	(eShop)	(eShop)	(eShop)	–	98	134	170	206	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
36,5	(eShop)	eShop	(eShop)	eShop	1 7/16	101	138	175	212	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
37	(eShop)	(eShop)	(eShop)	(eShop)	–	101	138	175	212	40	68	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
37,3	(eShop)	(eShop)	–	–	–	103	141	–	–	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
37,5	(eShop)	eShop	(eShop)	(eShop)	–	103	141	179	217	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
38	(eShop)	(eShop)	(eShop)	(eShop)	1 1/2	103	141	179	217	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
38,1	(eShop)	(eShop)	–	–	–	106	145	–	–	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
38,5	eShop	(eShop)	eShop	(eShop)	–	106	145	184	223	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
39	eShop	(eShop)	(eShop)	(eShop)	–	106	145	184	223	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
39,2	(eShop)	eShop	eShop	eShop	–	108	148	188	228	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
39,5	(eShop)	(eShop)	(eShop)	(eShop)	–	108	148	188	228	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
39,7	(eShop)	(eShop)	–	–	–	108	148	–	–	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
40	(eShop)	(eShop)	(eShop)	(eShop)	–	108	148	188	228	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
40,5	eShop	(eShop)	(eShop)	(eShop)	1 19/32	111	152	193	234	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
41	(eShop)	eShop	(eShop)	(eShop)	–	111	152	193	234	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
41,3	(eShop)	(eShop)	–	–	–	113	155	–	–	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
41,5	(eShop)	(eShop)	(eShop)	(eShop)	–	113	155	197	239	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
42	eShop	(eShop)	(eShop)	(eShop)	1 21/32	113	155	197	239	40	68	SOGX 120408 42-...	239652 20IP (6.3 Nm)
42,1	(eShop)	(eShop)	–	–	–	116	159	–	–	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
42,5	eShop	eShop	eShop	eShop	–	116	159	202	245	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
42,9	(eShop)	(eShop)	–	–	–	116	159	–	–	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
43	eShop	(eShop)	(eShop)	(eShop)	–	116	159	202	245	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
43,5	(eShop)	(eShop)	(eShop)	(eShop)	–	118	162	206	250	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
44	eShop	eShop	(eShop)	(eShop)	–	118	162	206	250	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
44,5	(eShop)	(eShop)	(eShop)	(eShop)	1 3/4	121	166	211	256	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
45	(eShop)	(eShop)	(eShop)	(eShop)	–	121	166	211	256	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
45,5	eShop	(eShop)	(eShop)	(eShop)	–	123	169	215	261	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)
46	(eShop)	(eShop)	(eShop)	(eShop)	1 13/16	123	169	215	261	40	68	SOGX 130508 46-...	239652 20IP (6.3 Nm)

ABS HPC

KOMET KUB Pentron® indexable drill right-hand cutting, with ABS® shank

23 6603 – **Bore tolerance:** D – 0.1 / + 0.3

23 6604 – **Bore tolerance:** D – 0.1 / + 0.35

Application: With indexable inserts No. 236605 – 236610.

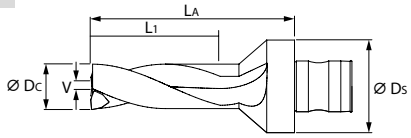
Recommendation:

23 6604 – **When spot-drilling** reduce the feed rate to 70%.

Note:
- For use only under **stable** machining conditions.
- Version 2×D and 3×D with ABS® shank available on request.
- **Offset-axis drilling up to V_{max} = 0.25 mm.**
- Maximum Ø = D + 0.5 mm achievable by offsetting.
- Version with PSC shank available on request.







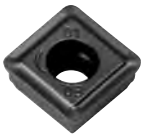
Ø D_c	24P 23 6603	24P 23 6604	for inch Ø	L_A		ABS® Ø D_s	ISO code indexable insert	Set of insert screws
	KUB Pentron® indexable drill ABS® shank			23 6603	23 6604			
mm	4×D	5×D	in	mm	mm	mm		
14	(eShop)	(eShop)	–	83	97	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
14,5	(eShop)	(eShop)	–	88	103	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
15	(eShop)	(eShop)	19/32	88	103	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
15,5	(eShop)	(eShop)	–	94	110	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
16	(eShop)	(eShop)	–	94	110	50	SOGX 040204 10-...	239652 5IP1 (0.38 Nm)
16,5	(eShop)	(eShop)	–	99	116	50	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
17	(eShop)	(eShop)	–	99	116	50	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
17,5	(eShop)	eShop	11/16	103	121	50	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
18	(eShop)	(eShop)	–	103	121	50	SOGX 050204 12-...	239652 6IP1 (0.6 Nm)
18,5	(eShop)	(eShop)	–	108	127	50	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
19	(eShop)	(eShop)	3/4	108	127	50	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
19,5	(eShop)	(eShop)	–	112	132	50	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
20	(eShop)	(eShop)	–	112	132	50	SOGX 060206 18-...	239652 6IP2 (1.0 Nm)
20,5	(eShop)	(eShop)	–	116	137	50	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
21	(eShop)	eShop	–	116	137	50	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
21,5	eShop	(eShop)	27/32	120	142	50	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
22	(eShop)	eShop	–	120	142	50	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
22,5	(eShop)	(eShop)	–	124	147	50	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
23	(eShop)	(eShop)	29/32	124	147	50	SOGX 07T208 20-...	239652 6IP2 (1.0 Nm)
23,5	(eShop)	(eShop)	–	128	152	50	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
24	(eShop)	(eShop)	–	128	152	50	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
24,5	(eShop)	(eShop)	–	133	158	50	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
25	(eShop)	(eShop)	–	133	158	50	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
25,5	(eShop)	(eShop)	1	137	163	50	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
26	(eShop)	eShop	–	137	163	50	SOGX 080308 24-...	239652 8IP1 (1.3 Nm)
26,5	(eShop)	(eShop)	–	142	169	50	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
27	(eShop)	(eShop)	1 1/16	142	169	50	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
27,5	(eShop)	(eShop)	–	146	174	50	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
28	(eShop)	(eShop)	–	146	174	50	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
28,5	(eShop)	(eShop)	1 1/8	151	180	50	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
29	(eShop)	eShop	–	151	180	50	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
29,5	(eShop)	(eShop)	–	155	185	50	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
30	(eShop)	(eShop)	–	155	185	50	SOGX 09T308 28-...	239652 8IP6 (2.2 Nm)
30,5	(eShop)	(eShop)	–	163	194	63	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
31	(eShop)	(eShop)	1 7/32	163	194	63	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
31,5	(eShop)	(eShop)	–	167	199	63	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
32	(eShop)	(eShop)	–	167	199	63	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
32,5	(eShop)	(eShop)	1 9/32	172	205	63	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
33	(eShop)	(eShop)	–	172	205	63	SOGX 100408 32-...	239652 15IP1 (2.8 Nm)
33,5	(eShop)	(eShop)	–	176	210	63	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
34	(eShop)	(eShop)	–	176	210	63	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
34,5	(eShop)	(eShop)	–	181	216	63	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
35	(eShop)	(eShop)	1 3/8	181	216	63	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
35,5	(eShop)	(eShop)	–	185	221	63	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
36	(eShop)	(eShop)	–	185	221	63	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
36,5	(eShop)	(eShop)	1 7/16	190	227	63	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
37	(eShop)	(eShop)	–	190	227	63	SOGX 110408 38-...	239652 15IP1 (2.8 Nm)
37,5	(eShop)	(eShop)	–	194	232	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
38	(eShop)	(eShop)	1 12	194	232	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
38,5	(eShop)	(eShop)	–	199	238	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
39	(eShop)	(eShop)	–	199	238	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
39,2	(eShop)	(eShop)	–	203	243	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
39,5	(eShop)	(eShop)	–	203	243	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
40	(eShop)	(eShop)	–	203	243	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
40,5	(eShop)	(eShop)	1 19/32	208	249	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
41	(eShop)	(eShop)	–	208	249	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
41,5	(eShop)	(eShop)	–	212	254	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
42	(eShop)	(eShop)	1 21/32	212	254	63	SOGX 120408 42-...	239652 20IP (6.3 Nm)
42,5	(eShop)	(eShop)	–	217	260	63	SOGX 130508 46-...	239652 20IP (6.3 Nm)
43	(eShop)	(eShop)	–	217	260	63	SOGX 130508 46-...	239652 20IP (6.3 Nm)
43,5	(eShop)	(eShop)	–	221	265	63	SOGX 130508 46-...	239652 20IP (6.3 Nm)
44	(eShop)	(eShop)	–	221	265	63	SOGX 130508 46-...	239652 20IP (6.3 Nm)
44,5	(eShop)	(eShop)	1 3/4	226	271	63	SOGX 130508 46-...	239652 20IP (6.3 Nm)
45	(eShop)	(eShop)	–	226	271	63	SOGX 130508 46-...	239652 20IP (6.3 Nm)
45,5	(eShop)	(eShop)	–	230	276	63	SOGX 130508 46-...	239652 20IP (6.3 Nm)
46	(eShop)	(eShop)	1 13/16	230	276	63	SOGX 130508 46-...	239652 20IP (6.3 Nm)

KOMET Carbide indexable inserts SOGX.. for KUB Pentron® type W80

Note:
23 6607 – Do not use in the centre pocket of indexable drills!

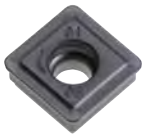
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
23 6605/23 6609	400	250	200	**260**	**240**	**220**	**180**	**160**						**150**	**150**		140	●
23 6607																	**120**	●
23 6608	**500**	**280**	**220**															●
23 6610														**160**	**160**	75		●


23 6605


23 6607


23 6608


23 6609


23 6610

Designation type W80			10-010	10-030	12-010	12-030	18-010	18-030	20-010	20-030		Type
24R 23 6605	KOMET® indexable insert	BK8425	eShop	–	eShop	–	eShop	–	eShop	–	–	Uni
24R 23 6607		BK6115	eShop	–	eShop	–	eShop	–	eShop	–	–	GG(G)
24R 23 6608		BK7710	eShop	–	eShop	–	eShop	–	eShop	–	–	Alu
24R 23 6609		BK8430	–	eShop	–	eShop	–	eShop	–	eShop	–	Uni
24R 23 6610		BK7935	eShop	–	eShop	–	eShop	–	eShop	–	–	Inox
ISO code indexable insert			SOGX 040204-01	SOGX 040204-03	SOGX 050204-01	SOGX 050204-03	SOGX 060206-01	SOGX 060206-03	SOGX 07T208-01	SOGX 07T208-03		
Feed f in steel < 900 N/mm²		mm/rev.	0.07	0.07	0.1	0.1	0.1	0.1	0.12	0.12		

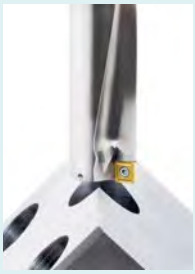
Designation type W80			24-010	24-030	28-010	28-030	32-010	32-030	38-010	38-030		Type
24R 23 6605	KOMET® indexable insert	BK8425	eShop	–	eShop	–	eShop	–	eShop	–	–	Uni
24R 23 6607		BK6115	eShop	–	eShop	–	eShop	–	eShop	–	–	GG(G)
24R 23 6608		BK7710	eShop	–	eShop	–	eShop	–	eShop	–	–	Alu
24R 23 6609		BK8430	–	eShop	–	eShop	–	eShop	–	eShop	–	Uni
24R 23 6610		BK7935	eShop	–	eShop	–	eShop	–	eShop	–	–	Inox
ISO code indexable insert			SOGX 080308-01	SOGX 080308-03	SOGX 09T308-01	SOGX 09T308-03	SOGX 100408-01	SOGX 100408-03	SOGX 110408-01	SOGX 110408-03		
Feed f in steel < 900 N/mm²		mm/rev.	0.13									

Designation type W80			42-010	42-030	46-010	46-030		Type
24R 23 6605	KOMET® indexable insert	BK8425	eShop	–	eShop	–	–	Uni
24R 23 6607		BK6115	eShop	–	eShop	–	–	GG(G)
24R 23 6608		BK7710	eShop	–	eShop	–	–	Alu
24R 23 6609		BK8430	–	eShop	–	eShop	–	Uni
24R 23 6610		BK7935	eShop	–	eShop	–	–	Inox
ISO code indexable insert			SOGX 120408-01	SOGX 120408-03	SOGX 130508-01	SOGX 130508-03		
Feed f in steel < 900 N/mm²		mm/rev.	0.13					

KOMET KUB Pentron® ideal for extreme machining situations


Spot-facing on a weld seam or corrugated surface.


Spot-facing on a step.


Spot-facing on a sharp corner.


Drilling through stacked components.



KOMET Indexable drill KUB Trigon® 3×D right-hand cutting

- Special manufacturing procedure for extremely large flutes with very high rigidity.
- Specific positioning of the indexable inserts for bores free of withdrawal marks and with precise dimensional stability(± 0.1 mm as a rule).
- Internal coolant supply is directed to the cutting edges (sophisticated geometry, ideal for minimum lubrication).
- 3 – 10 bar coolant pressure is sufficient.
- For stationary and rotating applications.
- Offset-axis drilling: dependent on Ø up to 1.5 mm.

Application: With indexable inserts No. 236740 – 237080.

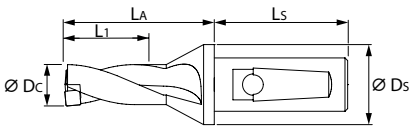
Supplied with: Clamp screws (without indexable inserts).

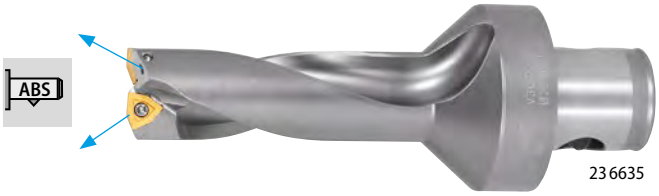
Note:
- Note! A disc falls off when the drill exits. Risk of injury if the component is rotating! Please take safety precautions.
- **On request** – left-hand cutting; – 2×D, – other Ø; – special types – torsional vibration damper for ABS giving low-vibration machining, with maximum tool life and minimum noise level.



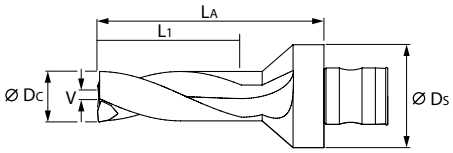
Combination shank

23 6630

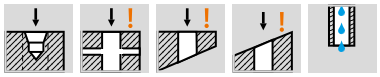




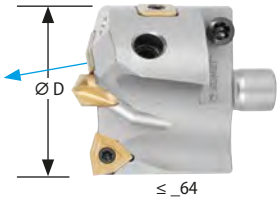
23 6635



Ø D_c	24P 23 6630	24P 23 6635	for inch Ø	L_A		Ø D_s	ABS® Ø D_s	L_s	achievable maximum Ø offset	Maximum adjustment limit V_{max}	ISO code indexable insert	Set of insert screws
	KOMET KUB Trigon® indexable drill											
	Combination shank	ABS 50		23 6630	23 6635	23 6630	23 6635	23 6630				
mm	3×D	3×D	in	mm	mm	mm	mm	mm	mm	mm		
14	eShop	eShop	–	66	77	25	50	56	15	0.5	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
15	eShop	eShop	19/32	69	80	25	50	56	16	0.5	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
16	eShop	eShop	–	72	83	25	50	56	17	0.5	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
17	eShop	(eShop)	–	75	86	25	50	56	18	0.5	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
17,5	eShop	eShop	11/16	78	89	25	50	56	18.5	0.5	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
18	eShop	eShop	–	78	89	25	50	56	19	0.5	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
18,5	eShop	(eShop)	–	81	92	25	50	56	19.5	0.5	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
19	eShop	eShop	3/4	81	92	25	50	56	20	0.5	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
19,5	eShop	(eShop)	–	84	95	25	50	56	20	0.25	WOEX 030204 10-...	239652 6IP1 (0.6 Nm)
20	eShop	eShop	–	84	95	25	50	56	21	0.5	WOEX 040304 18-...	239652 6IP2 (1.0 Nm)
21	eShop	eShop	–	87	98	25	50	56	22	0.5	WOEX 040304 18-...	239652 6IP2 (1.0 Nm)
22	eShop	eShop	–	90	101	25	50	56	23	0.5	WOEX 040304 18-...	239652 6IP2 (1.0 Nm)
22,5	eShop	–	–	93	–	25	–	56	23.5	0.5	WOEX 040304 18-...	239652 6IP2 (1.0 Nm)
23	eShop	eShop	29/32	93	104	25	50	56	24	0.5	WOEX 040304 18-...	239652 6IP2 (1.0 Nm)
24	eShop	eShop	–	96	107	25	50	56	25	0.5	WOEX 040304 18-...	239652 6IP2 (1.0 Nm)
24,5	eShop	eShop	–	99	110	25	50	56	25.5	0.5	WOEX 040304 18-...	239652 6IP2 (1.0 Nm)
25	eShop	eShop	–	99	110	25	50	56	26	0.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
26	eShop	eShop	–	102	113	32	50	60	28	1	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
26,5	(eShop)	eShop	–	105	116	32	50	60	28.5	1	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
27	eShop	(eShop)	1 1/16	105	116	32	50	60	30	1.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
28	eShop	eShop	–	108	119	32	50	60	31	1.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
29	eShop	eShop	–	111	122	32	50	60	32	1.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
29,5	eShop	(eShop)	–	114	125	32	50	60	32.5	1.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
30	eShop	eShop	–	119	130	32	50	60	32.5	1.25	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
31	(eShop)	eShop	1 7/32	122	133	32	50	60	33.5	1.25	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
32	eShop	eShop	–	125	136	32	50	60	34	1	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
33	eShop	eShop	–	128	139	32	50	60	34	0.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
34	eShop	eShop	–	131	142	32	50	60	35	0.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
35	eShop	eShop	1 3/8	134	145	32	50	60	36	0.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
36	eShop	eShop	–	137	148	32	50	60	37	0.5	WOEX 05T304 24-...	239652 8IP2 (1.3 Nm)
37	–	(eShop)	–	–	161	–	50	–	40	1.5	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)
38	eShop	eShop	1 1/12	153	164	32	50	60	41	1.5	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)
39	eShop	eShop	–	156	167	32	50	60	42	1.5	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)
39,5	–	(eShop)	–	–	170	–	50	–	42.5	1.5	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)
40	eShop	eShop	–	159	170	32	50	60	43	1.5	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)
41	–	eShop	–	–	173	–	50	–	44	1.5	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)
42	eShop	eShop	1 21/32	165	176	32	50	60	45	1.5	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)
43	–	eShop	–	–	179	–	50	–	45	1	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)
44	eShop	eShop	–	171	182	32	50	60	45	0.5	WOEX 06T304 34-...	239652 10IP1 (2.8 Nm)



KOMET KUB Centron® indexable drill



≤ _64


≥ _65

- Process reliable up to 8 (9)×D.
- Centring by centring point and slide bars.
- Stiff joint between base body and drill head.
- Ø of the slide bars is matched to indexable inserts with 0.4 mm edge radii. For through holes the Ø of the slide bars can be adjusted by means of shims.

Suitable for: Base body No. 236652 – 236654.

Application:
- For rotating and stationary as well as vertical and horizontal use in all materials.
- With centring tips No. 236655 – 236657.
- With indexable inserts No. 236740 – 237080.

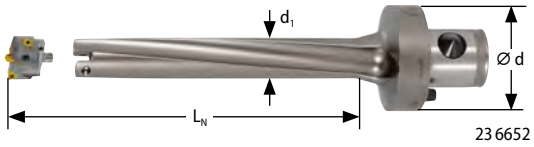
Supplied with: Drill head including slide bars (spare slide bars No. 236658).
From Ø 65 mm with indexable insert cartridges (cartridge for the outer indexable insert adjustable + 1 mm on the Ø).

Ø D_c mm	24L 23 6650 KOMET KUB Centron® drill head	for inch Ø in	Base body size	Screw for base body	Centring tip size	ISO code indexable insert	Set of insert screws
20	eShop	–	20	239655 8IP	20	WOEX 030204	239655 6IP (0.6 Nm)
21	eShop	–	20	239655 8IP	20	WOEX 030204	239655 6IP (0.6 Nm)
22	eShop	–	20	239655 8IP	20	WOEX 030204	239655 6IP (0.6 Nm)
23	eShop	29/32	20	239655 8IP	20	WOEX 030204	239655 6IP (0.6 Nm)
24	eShop	–	20	239655 8IP	20	WOEX 030204	239655 6IP (0.6 Nm)
25	eShop	–	20	239655 8IP	20	WOEX 030204	239655 6IP (0.6 Nm)
26	eShop	–	26	239652 6IP2	26	WOEX 040304	239655 6IP (0.6 Nm)
27	eShop	1 1/16	26	239652 6IP2	26	WOEX 040304	239655 6IP (0.6 Nm)
28	eShop	–	26	239652 6IP2	26	WOEX 040304	239655 6IP (0.6 Nm)
29	eShop	–	26	239652 6IP2	26	WOEX 040304	239655 6IP (0.6 Nm)
30	eShop	–	26	239652 6IP2	26	WOEX 040304	239655 6IP (0.6 Nm)
31	eShop	1 7/32	26	239652 6IP2	26	WOEX 040304	239655 6IP (0.6 Nm)
32	eShop	–	26	239652 6IP2	26	WOEX 040304	239655 6IP (0.6 Nm)
33	eShop	–	33	239655 15IP1	26	WOEX 05T304	239655 8IP2 (1.3 Nm)
34	eShop	–	33	239655 15IP1	26	WOEX 05T304	239655 8IP2 (1.3 Nm)
35	eShop	1 3/8	33	239655 15IP1	26	WOEX 05T304	239655 8IP2 (1.3 Nm)
36	eShop	–	33	239655 15IP1	26	WOEX 05T304	239655 8IP2 (1.3 Nm)
37	(eShop)	–	33	239655 15IP1	26	WOEX 05T304	239655 8IP2 (1.3 Nm)
38	eShop	1 1/2	33	239655 15IP1	26	WOEX 05T304	239655 8IP2 (1.3 Nm)
39	eShop	–	33	239655 15IP1	26	WOEX 05T304	239655 8IP2 (1.3 Nm)
40	eShop	–	40	239655 20IP1	40	WOEX 05T304	239655 8IP2 (1.3 Nm)
41	(eShop)	–	40	239655 20IP1	40	WOEX 05T304	239655 8IP2 (1.3 Nm)
42	eShop	1 21/32	40	239655 20IP1	40	WOEX 05T304	239655 8IP2 (1.3 Nm)
43	(eShop)	–	40	239655 20IP1	40	WOEX 05T304	239655 8IP2 (1.3 Nm)
44	eShop	–	40	239655 20IP1	40	WOEX 05T304	239655 8IP2 (1.3 Nm)
45	eShop	–	40	239655 20IP1	40	WOEX 05T304	239655 8IP2 (1.3 Nm)
46	eShop	1 13/16	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
47	(eShop)	–	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
48	eShop	–	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
49	(eShop)	–	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
50	eShop	1 31/32	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
51	eShop	–	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
52	eShop	–	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
53	(eShop)	–	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
54	(eShop)	2 1/8	46	239655 20IP	46	WOEX 06T304	239655 10IP (2.8 Nm)
55	(eShop)	–	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
56	eShop	–	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
57	(eShop)	–	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
58	eShop	2 9/32	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
59	eShop	–	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
60	eShop	–	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
61	(eShop)	–	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
62	eShop	2 7/16	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
63	(eShop)	–	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
64	(eShop)	–	55	239655 20IP2	46	WOEX 080404	239655 15IP (6.3 Nm)
65	eShop	2 9/16	65	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
66	(eShop)	–	65	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
67	(eShop)	–	65	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
68	(eShop)	–	65	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
69	(eShop)	2 23/32	65	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
70	eShop	–	65	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
71	(eShop)	–	65	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
72	(eShop)	–	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
73	(eShop)	2 7/8	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
74	(eShop)	–	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
75	(eShop)	–	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
76	(eShop)	–	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
77	(eShop)	3 1/32	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
78	(eShop)	–	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
79	(eShop)	–	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
80	(eShop)	–	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)
81	(eShop)	3 3/16	72	239655 20IP3	65	WOEX 05T304	239655 8IP2 (1.3 Nm)

ABS

KOMET KUB Centron® base body

- Process reliable up to 4×D.
- Stiff joint between base body and drill head.
  - 23 6652 – ■ Shank type ABS.
  - 23 6653 – ■ Shank type ABS.
  - 23 6654 – ■ Shank type ABS.



23 6652

Application: For rotating and stationary as well as vertical and horizontal use in all materials.

Note: Further sizes and spare parts on request.

Ø D_c		mm	20	26	33	40	46	55	65	72
24K 23 6653	KOMET® base body	4×D	eShop	eShop	eShop	(eShop)	eShop	eShop	eShop	(eShop)
24K 23 6652		6×D	eShop	eShop	eShop	(eShop)	eShop	eShop	(eShop)	(eShop)
24K 23 6654		8×D	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
suitable for drilling head		mm	20 – 25	26 – 32	33 – 39.2	40 – 45	46 – 54	55 – 64	65 – 71	72 – 81
L_1 (23 6653)		mm	113	130	160	185	215	260	295	325
L_1 (23 6652)		mm	150	175	215	260	310	370	420	460
L_1 (23 6654)		mm	200	230	290	340	415	495	560	610
Ø d_1		mm	19	25	32	38.5	44.5	53.5	63.5	70.5
L_{tot} (23 6653)		mm	145	160	195	235	280	325	375	405
L_{tot} (23 6652)		mm	185	210	255	310	375	435	500	540
L_{tot} (23 6654)		mm	235	260	330	390	480	560	640	690
ABS® Ø D_s		mm	50	50	50	63	80	80	80	100

KOMET KUB Centron® centring point

Suitable for: Centron No. 236650.

Type			20	26	40	46	65	Suitability
24M 23 6655	KOMET KUB Centron® centring point, HSS	TiAlN	eShop	eShop	eShop	eShop	eShop	Inox / cast iron
24M 23 6656		TiN	eShop	eShop	eShop	eShop	eShop	Steel / alu
24M 23 6657	KOMET KUB Centron® centring point, carbide	TiN	eShop	eShop	eShop	eShop	–	Steel / stainless steel
Ø d_2		mm	5	6	8	10	12	
suitable for drilling head		mm	20 – 25	26 – 39	40 – 45	46 – 64	65 – 81	


23 6655

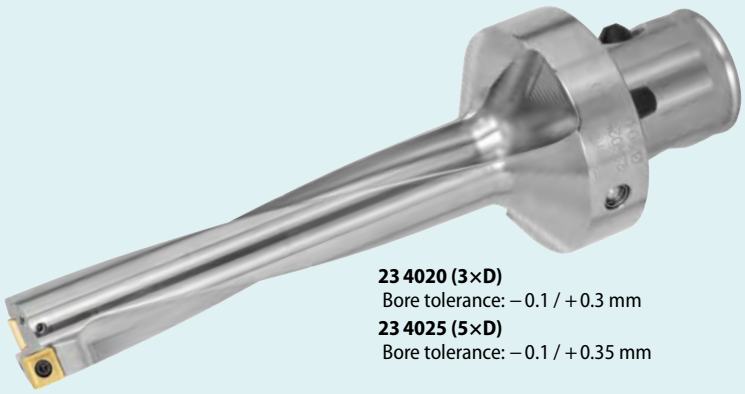

23 6656


23 6657

Garant Power Drill – the entire range

GARANT Power Drill indexable drill for right-hand cutting, with ABS interface.

- Optimum torque transmission.
- Low volume in production.
  Helical coolant holes also ensure very high stability, since they do not weaken the core of the drill.

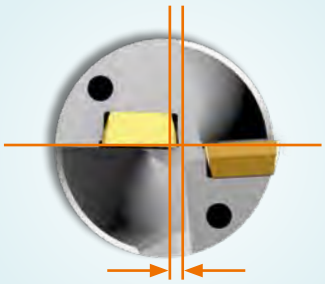


23 4020 (3×D)
Bore tolerance: – 0.1 / + 0.3 mm
23 4025 (5×D)
Bore tolerance: – 0.1 / + 0.35 mm

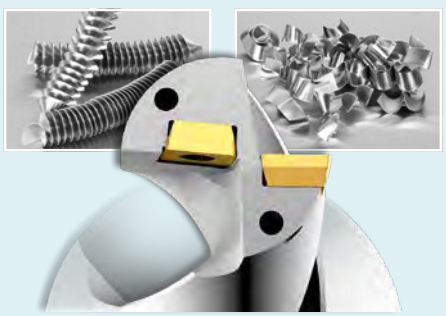
Scope of range:

- Covers diameters of 14 – 40 mm.
- Length ratio 3×D and 5×D.
- ABS50 up to diameter 30 mm.
- ABS63 up to diameter 50 mm.

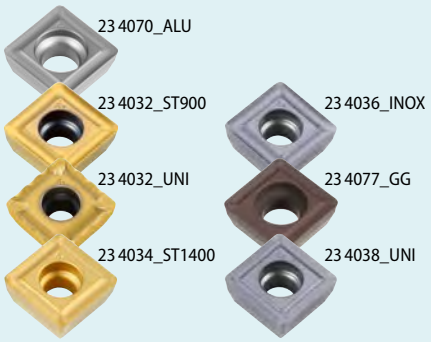
Individual adjustment range
The GARANT Power Drill has an adjustment range of up to ± 0.25 mm from the centre to cover various diameter ranges.


Adjustment range up to ± 0.25 mm

Chip evacuation
Due to the larger flutes and the positioning of the cooling channels at the edges of the drill, chip evacuation and stability are significantly increased.


Excellently formed chips for good chip evacuation.

Choice of insert
Suitable inserts and sizes are available for the different machining challenges.



KOMET Unisix® carbide indexable inserts WOEX.. Type W29

Note: **The standard application values refer to the KUB Trigon®.**
23 6860/6930 – Do not use in the centre pocket of indexable drills!
23 7000/7050 – Due to the special cutter geometry, the inserts can be used only for right-hand cutting KOMET KUB® indexable drill.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	N					
23 6740				300	250	200	160	130											●				
23 6760/6930				300	250	200													●				
23 6771				300	250	225	200	120					180	120					●				
23 6780																200			●				
23 6791				220	185	165	150	100					160	100					●				
23 6830				300	250	200	160	130								200			●				
23 6840–23 6841				300	250	200	160	130					160	160	80				●			○	
23 6860				300	250	200							160	160	80	200			●				
23 6910													160						●			○	
23 6980	600	300	250														300	150	●			○	
23 7000–23 7050				300	250	200							160	160	80				●				
23 7080													160	160	80				●				


chamfered and honed


honed


slightly honed


honed


honed

Designation type W29		10-010	10-030	10-110	10-130	10-200		Type
24T 23 6760	P40	(eShop)	–	–	–	–	–	ST900
24T 23 6780	BK62	eShop	–	–	–	–	–	GG(G)
24T 23 6830	BK72	eShop	–	–	–	–	–	ST1400
24T 23 6840	BK8425	eShop	–	–	–	–	–	ST1400
24T 23 6910	BK7935	eShop	–	–	–	–	–	INOX
24T 23 6930	BK8425	–	eShop	–	–	–	–	ST900
24T 23 6980	BK7710	–	–	eShop	–	–	–	Alu; CuZn
24T 23 7000	BK8425	–	–	–	eShop	–	–	INOX
24T 23 7050	BK79	–	–	–	eShop	–	–	INOX
24T 23 7080	BK2730	–	–	–	–	eShop	–	INOX
ISO code indexable insert		WOEX 030204						
Feed f in steel < 900 N/mm²	mm/rev.	0.08						
Suitable for:		No. 236630; 236635; 236650						

KOMET® Unisix® indexable insert

Designation type W29		18-010	18-030	18-110	18-130	18-200		Type
24T 23 6760	P40	(eShop)	–	–	–	–	–	ST900
24T 23 6780	BK62	eShop	–	–	–	–	–	GG(G)
24T 23 6830	BK72	eShop	–	–	–	–	–	ST1400
24T 23 6840	BK8425	eShop	–	–	–	–	–	ST1400
24T 23 6910	BK7935	eShop	–	–	–	–	–	INOX
24T 23 6930	BK8425	–	eShop	–	–	–	–	ST900
24T 23 6980	BK7710	–	–	eShop	–	–	–	Alu; CuZn
24T 23 7000	BK8425	–	–	–	eShop	–	–	INOX
24T 23 7050	BK79	–	–	–	eShop	–	–	INOX
24T 23 7080	BK2730	–	–	–	–	eShop	–	INOX
ISO code indexable insert		WOEX 040304						
Feed f in steel < 900 N/mm²	mm/rev.	0.13						
Suitable for:		No. 236630; 236635; 236650; 236685; 236686						

KOMET® Unisix® indexable insert


honed


chamfered and honed


honed


slightly honed


honed


honed

Designation type W29			24-000	24-010	24-030	24-110	24-130	24-200		Type
24T 23 6740	KOMET® Unisix® indexable insert	P25M	eShop	eShop	–	–	–	–	–	ST900
24T 23 6760		P40	–	(eShop)	–	–	–	–	–	ST900
24T 23 6771		BK6425	eShop	–	–	–	–	–	–	ST900; INOX
24T 23 6780		BK62	–	eShop	–	–	–	–	–	GG(G)
24T 23 6791		BK6440	eShop	–	–	–	–	–	–	ST900
24T 23 6830		BK72	–	eShop	–	–	–	–	–	ST1400
24T 23 6840		BK8425	–	eShop	–	–	–	–	–	ST1400
24T 23 6841		BK8425	eShop	–	–	–	–	–	–	ST1400
24T 23 6860		BK6115	–	(eShop)	–	–	–	–	–	GG(G) / ST900
24T 23 6910		BK7935	–	eShop	–	–	–	–	–	INOX
24T 23 6930		BK8425	–	–	eShop	–	–	–	–	ST900
24T 23 6980		BK7710	–	–	–	eShop	–	–	–	Alu; CuZn
24T 23 7000		BK8425	–	–	–	–	eShop	–	–	INOX
24T 23 7050		BK79	–	–	–	–	eShop	–	–	INOX
24T 23 7080		BK2730	–	–	–	–	–	eShop	–	INOX
ISO code indexable insert			WOEX 05T304							
Feed f in steel < 900 N/mm²		mm/rev.	0.14							
Suitable for:			No. 236630; 236635; 236650; 236660; 236685; 236686							

Designation type W29			34-000	34-010	34-030	34-110	34-130	34-200		Type
24T 23 6740	KOMET® Unisix® indexable insert	P25M	eShop	eShop	–	–	–	–	–	ST900
24T 23 6760		P40	–	(eShop)	–	–	–	–	–	ST900
24T 23 6771		BK6425	eShop	–	–	–	–	–	–	ST900; INOX
24T 23 6780		BK62	–	eShop	–	–	–	–	–	GG(G)
24T 23 6791		BK6440	eShop	–	–	–	–	–	–	ST900
24T 23 6830		BK72	–	eShop	–	–	–	–	–	ST1400
24T 23 6840		BK8425	–	eShop	–	–	–	–	–	ST1400
24T 23 6841		BK8425	eShop	–	–	–	–	–	–	ST1400
24T 23 6860		BK6115	–	(eShop)	–	–	–	–	–	GG(G) / ST900
24T 23 6910		BK7935	–	eShop	–	–	–	–	–	INOX
24T 23 6930		BK8425	–	–	eShop	–	–	–	–	ST900
24T 23 6980		BK7710	–	–	–	eShop	–	–	–	Alu; CuZn
24T 23 7000		BK8425	–	–	–	–	eShop	–	–	INOX
24T 23 7050		BK79	–	–	–	–	eShop	–	–	INOX
24T 23 7080		BK2730	–	–	–	–	–	eShop	–	INOX
ISO code indexable insert			WOEX 06T304							
Feed f in steel < 900 N/mm²		mm/rev.	0.15							
Suitable for:			No. 236650; 236660; 236685; 236686							

Designation type W29			42-000	42-010	42-030	42-110	42-130	42-200		Type
24T 23 6740	KOMET® Unisix® indexable insert	P25M	eShop	eShop	–	–	–	–	–	ST900
24T 23 6760		P40	–	(eShop)	–	–	–	–	–	ST900
24T 23 6771		BK6425	eShop	–	–	–	–	–	–	ST900; INOX
24T 23 6780		BK62	–	eShop	–	–	–	–	–	GG(G)
24T 23 6791		BK6440	eShop	–	–	–	–	–	–	ST900
24T 23 6830		BK72	–	eShop	–	–	–	–	–	ST1400
24T 23 6840		BK8425	–	eShop	–	–	–	–	–	ST1400
24T 23 6841		BK8425	eShop	–	–	–	–	–	–	ST1400
24T 23 6860		BK6115	–	(eShop)	–	–	–	–	–	GG(G) / ST900
24T 23 6910		BK7935	–	eShop	–	–	–	–	–	INOX
24T 23 6930		BK8425	–	–	eShop	–	–	–	–	ST900
24T 23 6980		BK7710	–	–	–	eShop	–	–	–	Alu; CuZn
24T 23 7000		BK8425	–	–	–	–	eShop	–	–	INOX
24T 23 7050		BK79	–	–	–	–	eShop	–	–	INOX
24T 23 7080		BK2730	–	–	–	–	–	eShop	–	INOX
ISO code indexable insert			WOEX 080404							
Feed f in steel < 900 N/mm²		mm/rev.	0.16							
Suitable for:			No. 236650; 236660; 236685; 236686							


honed


chamfered and honed


honed


slightly honed


honed


honed

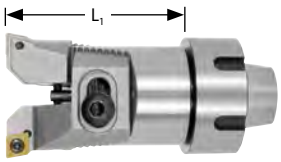
Designation type W29			50-000	50-010	50-030	50-110	50-130	50-200		Type
24T 23 6740	KOMET® Unisix® indexable insert	P25M	eShop	eShop	–	–	–	–	–	ST900
24T 23 6760		P40	–	(eShop)	–	–	–	–	–	ST900
24T 23 6771		BK6425	eShop	–	–	–	–	–	–	ST900; INOX
24T 23 6780		BK62	–	eShop	–	–	–	–	–	GG(G)
24T 23 6791		BK6440	eShop	–	–	–	–	–	–	ST900
24T 23 6830		BK72	–	eShop	–	–	–	–	–	ST1400
24T 23 6840		BK8425	–	eShop	–	–	–	–	–	ST1400
24T 23 6841		BK8425	eShop	–	–	–	–	–	–	ST1400
24T 23 6860		BK6115	–	(eShop)	–	–	–	–	–	GG(G) / ST900
24T 23 6910		BK7935	–	eShop	–	–	–	–	–	INOX
24T 23 6930		BK8425	–	–	eShop	–	–	–	–	ST900
24T 23 6980		BK7710	–	–	–	eShop	–	–	–	Alu; CuZn
24T 23 7000		BK8425	–	–	–	–	eShop	–	–	INOX
24T 23 7050		BK79	–	–	–	–	eShop	–	–	INOX
24T 23 7080		BK2730	–	–	–	–	–	eShop	–	INOX
ISO code indexable insert			WOEX 100504							
Feed f in steel < 900 N/mm²		mm/rev.	0.2							
Suitable for:			No. 236685; 236686							

Designation type W29			58-000	58-010	58-030		Type
24T 23 6740	KOMET® Unisix® indexable insert	P25M	–	eShop	–	–	ST900
24T 23 6760		P40	–	(eShop)	–	–	ST900
24T 23 6780		BK62	–	eShop	–	–	GG(G)
24T 23 6791		BK6440	eShop	–	–	–	ST900
24T 23 6830		BK72	–	eShop	–	–	ST1400
24T 23 6840		BK8425	–	eShop	–	–	ST1400
24T 23 6841		BK8425	eShop	–	–	–	ST1400
24T 23 6860		BK6115	–	(eShop)	–	–	GG(G) / ST900
24T 23 6910		BK7935	–	eShop	–	–	INOX
24T 23 6930		BK8425	–	–	eShop	–	ST900
ISO code indexable insert			WOEX 120608				
Feed f in steel < 900 N/mm²		mm/rev.	0.2				
Suitable for:			No. 236685; 236686				

Garant Twin cutter heads Ø 23.5 – 153.0 mm.

The dual toolholder head consists of a base body and indexable insert holder.
Cutters individually adjustable.

Application: For boring out exiting holes.



23 7609

Twin cutter head ER

Integral taper allows simple connection to ER collet chucks.

Connection		ER25	ER32	ER40
29W 23 7609	Twin cutter head ER	eShop	eShop	eShop
suitable indexable insert		CC..09T3..	CC..09T3..	CC..1204..
L_1	mm	65	75	85
Boring range Ø	mm	39.5 – 51.1	49.5 – 67.1	65.5 – 87.1
Insert screw		219805	219805	219864

Twin cutter head HW

Connection to the HW port.
With synchronised spindle on request.



23 7610

Connection		HW20	HW25	HW32	HW40	HW50	HW63	HW80
20N 23 7610	Twin cutter head HW	eShop	eShop	eShop	eShop	eShop	eShop	eShop
suitable indexable insert		CC..0602..	CC..0602..	CC..09T3..	CC..09T3..	CC..1204..	CC..1204..	CC..1204..
L_1	mm	45	56	66	75	90	110	140
Boring range Ø	mm	23.5 – 30.5	29.5 – 40.1	39.5 – 50.5	49.5 – 66.5	65.5 – 87.5	86.5 – 115.5	114.5 – 153
Insert screw		219830	219830	219805	219805	219864	219864	219864

Garant Micro-boring systems for Ø 0.3 - 7.1 mm / 19.1 mm

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
23 7621	240	240	240	180	210	170	100	90	80	70	60	110	90	40	150	290	100	●	●	●	○		

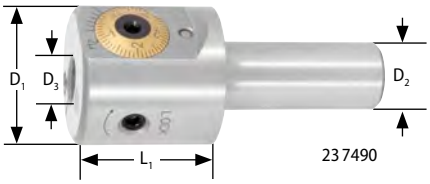
Micro-boring heads with plain shank

Adjustment accuracy 0.01 mm per graduation / with vernier 0.002 mm on the Ø.

23 7493/7498 – **Digital** boring heads with **additional precise reading facility** on **0.001 mm in Ø** via **digital display unit No. 237601** (order separately).
Ø adjustment with minimum backlash thanks to direct measuring system.

Application: With cutting insert No. 237621, adapter No. 237624 and insert No. 237625.

29W	**23 7490**	Micro-boring head **Ø 0.3 - 7.1 mm:**	eShop
29W	**23 7493**	Micro-boring head **Digital Ø 0.3 - 7.1 mm**	eShop
Ø D_1		mm	25
Ø D_3		mm	4
L_1		mm	25
Ø D_2		mm	10



23 7490

29W	**23 7495**	Micro-boring head **Ø 0.3 - 19.1 mm:**	eShop
29W	**23 7498**	Micro-boring head **Digital Ø 0.3 - 19.1 mm**	eShop
Ø D_1		mm	32
Ø D_3		mm	7
L_1		mm	32
Ø D_2		mm	16



23 7493

Cutter insert / reducer sleeve

Size 16-7 – Shank Ø 16 mm

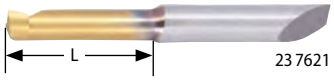
Application: For micro-boring heads.

Size 7-4 – For micro-boring heads No. 237495 and No. 237598. Reduction of the arbor **from 7 mm to 4 mm**, for use of cutter inserts No. 237621 size 0.3 – 3.9.

Size 16-7 – For indexable inserts and adapters in Ø 7 mm. In connection with boring heads No. 237513; 237546; 237568 and 237591.

Size 0,3–3,9 – **Shank - Ø 4 mm** for direct fitting in head No. 237490 and 237493.

Size 5,2–6,9 – **Shank - Ø 7 mm** for direct fitting in head No. 237495 and 237498.



23 7621

Ø		mm	0,3	0,6	1,0	2,2	3,2	3,9	5,2	6,2	6,9
29W	**23 7621**	Cutter insert	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shank Ø		mm	4	4	4	4	4	4	7	7	7
Length L		mm	1.2	2.5	4	6	10.2	15.2	20.3	20.3	25.4
Boring range Ø		mm	0.3 – 0.7	0.6 – 1.1	1 – 2.3	2.2 – 3.3	3.2 – 4.3	3.9 – 7.1	5.2 – 6.3	6.2 – 7.3	6.9 – 12.1

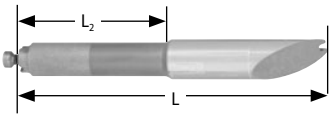
Type		7-4	16-7
29W	**23 7626**	Reducer sleeve	eShop	eShop


23 7626

Adapter / insert

Application: For micro-boring heads No. 237495 and No. 237498.
With adaptor allows inserts No. 237625.
Boring range Ø 6.9 – 19.1 mm.

Ø D_{min}		mm	6,9	9,9
29W	**23 7624**	Adapter	eShop	eShop
Type			D07	D10
Shank Ø		mm	7	
L_2		mm	30	35
Length L		mm	56	61
Boring range Ø		mm	6.9 – 10.1	9.9 – 19.1



23 7624

Ø D_{min}		mm	6,9	7,9	8,9	9,9	11,9	13,9
29W	**23 7625**	Insert	eShop	eShop	eShop	eShop	eShop	eShop
for type			D07	D07	D07	D10	D10	D10
maximum bore depth		mm	30	30	30	35	35	35
Boring range Ø		mm	6.9 – 8.1	7.9 – 9.1	8.9 – 10.1	9.9 – 12.1	11.9 – 14.1	13.9 – 19.1


23 7625

Garant Fine boring head ER Ø 39.9 - 70.1 mm (100.1 mm)

23 7501 – The Monoblock System consists of a **boring tool with an integral taper** which is simply screwed on to the existing **ER25 collet chuck.** Quick rough adjustment. **Can be extended with the bridge** No. 237508 to Ø 100.1 mm.

Application:

23 7501 – Adjustment accuracy 0.01 mm on the Ø. Spindle nose with suitable standard ISO insert type **CC..0602.**

Supplied with:

23 7501 – With indexable insert No. 260052 size CU7010.

Spare part:

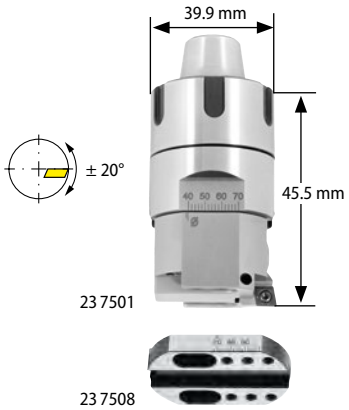
23 7501 – Insert screw No. 237606 size 1.

Recommendation:

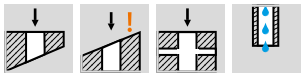
23 7501 – Best with indexable inserts No. 237695 and 237696.

Note:
23 7501 – During the extraction cycle ensure cutting edge orientation ±20°!





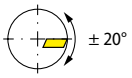
29W **23 7501**	Fine boring head ER25 **Ø 39.9 – 70.1 mm**	eShop
29W **23 7508**	Bridge **Ø 69.9 – 100.1 mm**	eShop



Garant Precision boring sets ER

- **Adjustment accuracy: 0.01 mm per graduation. Adjustment accuracy 0.002 mm on the Ø via vernier.**
- At the 0 position, without tool, balanced to Q2.5 / 6000 rpm.
- Max. speed 10,000 rpm.
- Cooling using a coolant nozzle, optimum coolant pressure 10 – 20 bar, minimum 5 bar.
- Slides radially adjustable with clamp.

Note: During the extraction cycle ensure cutting edge orientation ±20°!



ER25 Ø 39.9–100.1 mm

For Ø range 39.9 - 100.1 mm. **The modular ER precision boring tool can be adapted directly on to the ER25 collet chuck.** Supplied in an ABS plastic case.

Spare part: Insert screw No. 239653 (8IP; 1.28 Nm) for tool cartridge No. 237517 size 1 and size 2.

Note: Suitable indexable insert **CCGT0602..** (for instance No. 237695 / 237696) please order these separately.

Connection	ER25
21F **23 7502** Precision boring set **Ø 39.9 – 100.1 mm**	eShop
Supplied with: 1 precision boring head	ER25
1 each cartridge	No. 237517 size 1 for Ø 39.9 – 57 mm No. 237517 size 2 for Ø 57 – 100.1 mm
1 bridge	No. 237518 size 1 for Ø 70.1 – 100.1 mm
1 flag wrench	No. 625920 size 8IP
1 hexagon L-wrench	No. 627310 size 4
2 socket-head screws	No. 237522 size M5 × 12
2 plain washers	No. 237523
2 disc springs	No. 237524



23 7502

ER40 Ø 9.75–152.1 mm

For Ø range 9.75 - 152.1 mm. **The modular ER precision boring tool can be adapted directly on to the ER40 collet chuck.** Supplied in an ABS plastic case.

Note: Suitable indexable insert **CCGT0602..** and **CCGT09T3..** (for instance No. 237695 / 237698) please order these separately.

Connection	ER40
21F **23 7509** Precision boring set **Ø 9.75 – 152.1 mm**	eShop
Supplied with: 1 fine boring head	ER40
1 each cartridge	No. 237517 size 1 for Ø 25 – 37 mm No. 237517 size 2 for Ø 37 – 89 mm No. 237517 size 3 for Ø 89 – 152.1 mm
1 bridge	No. 237518 size 2 for Ø 101.1 – 152.1 mm
1 carrier for cartridge (max. boring length)	No. 237519 for Ø 25 – 63 mm (90 mm)
1 packing piece	No. 237520 for Ø 63 – 152.1 mm
1 each boring bar (max. boring length)	No. 237521 size 1 for Ø 9.75 – 18 mm (50 mm) No. 237521 size 2 for Ø 18 – 25 mm (77 mm)
1 each flag wrench	No. 625920 size 8IP No. 625920 size 10IP
1 hexagon L-wrench	No. 627424 size 4
2 socket-head screws	No. 237522 size M5×12
2 plain washers	No. 237523
2 disc springs	No. 237524



23 7509

Garant Micro-adjustable heads for ∅ 23.9 – 153.1 mm

Micro-adjustable head ER

With integral taper. **Simple connection to ER collet chucks.**
Adjustment accuracy 0.002 mm on the ∅.

Application: Best with insert No. 237695 – 237698.

Note: During the extraction cycle ensure cutting edge orientation ±20°!



23 7548

Connection		ER25	ER32	ER40
29W 23 7548	Micro-adjustable head ER	eShop	eShop	eShop
suitable indexable insert		CC..0602..	CC..0602..	CC..09T3
Boring range ∅	mm	39.9 – 51.1	50.9 – 67.1	66.9 – 87.1
L_1	mm	65	75	85
Insert screw		237606 size 1	237606 size 1	237606 size 2

Micro-adjustable head HW

23 7600 – **Adjustment accuracy 0.002 mm** on the ∅ **via vernier.**
23 7602 – **Adjustment accuracy 0.001 mm** on the ∅ **using display unit** No. 237601.

Application: Best with insert No. 237695 – 237698.
With arbor No. 237651 – 237656.



23 7600



23 7602

Connection		HW20	HW25	HW32	HW40	HW50	HW63	HW80
29W 23 7600	Micro-adjustable head HW	eShop	eShop	eShop	eShop	eShop	eShop	eShop
29W 23 7602	Digital micro-adjustable head HW	eShop	eShop	eShop	eShop	eShop	eShop	eShop
suitable indexable insert		CC..0602..	CC..0602..	CC..0602..	CC..0602..	CC..09T3..	CC..09T3..	CC..09T3..
Boring range ∅	mm	23.9 – 31.1	30.9 – 40.1	39.9 – 51.1	50.9 – 67.1	66.9 – 87.1	86.9 – 116.1	115.9 – 153.1
L_1	mm	45	56	66	75	90	110	140
Insert screw		237606 size 1	237606 size 1	237606 size 1	237606 size 1	237606 size 2	237606 size 2	237606 size 2

Garant Precision boring system ER HW63 ∅ 9.75–101.1 mm (152.1 mm)

23 7512 – **The ER precision boring tool can be adapted directly on to the ER40 collet chuck.**

Application:

23 7512 – For boring bars with shank ∅ 16 mm and insert toolholder.
Can be extended with adapter and insert toolholder to ∅ 152.1 mm.
Adjustment accuracy 0.01 mm / with vernier 0.002 mm on the ∅.
Boring bars with suitable standard ISO insert type **CC..0602.**
Insert toolholders with suitable standard ISO insert type **CC..09T3.**

Spare part:

23 7512 – For No. 237630 – 237642: Insert screw No. 219830.
For No. 237645; 237531; 237532: Insert screw No. 219805.

Recommendation:

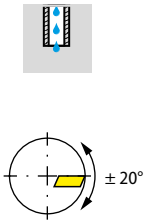
23 7512 – Best with inserts No. 237695 – 237698.

Note:
23 7512 Size ER40 – During the extraction cycle, ensure cutting edge orientation ±20°!



23 7512

Connection		ER40	HW63
29W 23 7512	Precision boring set **∅ 9.75 – 101.1 mm**	eShop	eShop
Supplied with: 1 fine boring head		No. 237513 ER40	No. 237513 HW63
1 pc. each boring bar (max. boring length)		No. 237630 boring bar ∅ 9.75 – 20.1 mm (30 mm); No. 237634 boring bar ∅ 19.75 – 30.1 mm (72 mm); No. 237640 boring bar ∅ 29.75 – 48.1 mm (85 mm); No. 237642 boring bar ∅ 47.75 – 88.1 mm (85 mm).	
1 insert toolholder		No. 237645 for ∅ 87.75 – 101.1 mm (with adapter No. 237534 up to ∅ 114.1 mm).	
1 each of insert		No. 260052 size CU7010 (or use CC..0602); No. 260058 size CU7010 (or use CC..09T3).	





23 7513

Connection		ER40	HW63
29W 23 7513	Fine boring head **∅ 9.75 – 152.1 mm**	eShop	eShop
∅ D_1	mm	63	
L_1	mm	50.5	

29W 23 7531	Insert holder for CC..09T3 **∅ 105.75 - 119.1 mm (up to 132.1 mm with adapter)**	eShop
29W 23 7532	Insert holder **∅ 125.75 - 139.1 mm (up to 152.1 mm with adapter)**	eShop
29W 23 7534	Adapter **F = 6.5 mm**	eShop



23 7531



23 7532



23 7534

Garant Digital precision boring system HW63 ∅ 9.75 – 101.1 mm (152.1 mm)



23 7515

23 7515 – With **digital fine boring head** No. 237516,
digital display unit No. 237601, boring bars and accessories in the case.
For boring bars with shank ∅ 16 mm and insert toolholder.
Can be extended with adapter and insert toolholder to ∅ 152.1mm.
Adjustment accuracy 0.01 mm / with vernier 0.002 mm on the ∅.
With digital display unit, 0.001 mm on the ∅.
Boring bars with suitable standard ISO insert type **CC..0602.**
Insert holder with suitable standard ISO insert type **CC..09T3.**

Spare part:

23 7515 – For No. 237630 – 237642: Insert screw No. 219830.
For No. 237645; 237531; 237532: Insert screw No. 219805.

Recommendation:

23 7515 – Best with inserts no. 237695 - 237698.

Note:

23 7515 – Insert toolholder with adapter (No. 237531; 237532; 237534)
for expansion to 152.1 mm on the ∅: for individual products see precision boring set 237512.



Connection		HW63
29W **23 7515**	Precision boring set **∅ 9.75 – 101.1 mm**	eShop
Supplied with: 1 fine boring head		237516 HW63
1 pc. each boring bar (max. boring length)		No. 237630 boring bar ∅ 9.75 – 20.1 mm (30 mm); No. 237634 boring bar ∅ 19.75 – 30.1 mm (72 mm); No. 237640 boring bar ∅ 29.75 – 48.1 mm (85 mm); No. 237642 boring bar ∅ 47.75 – 88.1 mm (85 mm)
1 insert holder		No. 237645 for ∅ 87.75 – 101.1 mm (with adapter No. 237534 up to ∅ 114.1 mm)
1 each of insert		No. 260052 CU7010 (or use CC..0602); No. 260058 CU7010 (or use CC..09T3)

Connection			HW63
29W **23 7516**	Fine boring head **∅ 9.75 – 152.1 mm**		eShop
∅ D_1		mm	63
L_1		mm	50.5

Garant Precision boring systems for ∅ 9.75 – 164 mm (320 mm)



23 7541

23 7541 – For **∅ 9.75 – 164 mm**, with fine boring head No. 237546, boring bar and accessories in a case.
Can be extended with the bridge No. 237560 to **∅ 320 mm**.
Adjustment accuracy 0.01 mm per graduation / with vernier 0.002 mm on the ∅.

Application:

23 7541 – For boring bars with shank ∅ 16 mm and precision boring bridges.
Boring bars / insert toolholder with suitable standard ISO insert type **CC..0602.**

Spare part:

23 7541/7546 – Insert screw No. 219830.

Recommendation:

23 7541 – Best with indexable inserts No. 237695 and No. 237696.





Connection		HW63	SK40
29W **23 7541**	Precision boring set **∅ 9.75 – 164 mm**	eShop	eShop
Supplied with: 1 fine boring head		No. 237546 HW63	No. 237546 SK40
1 each boring bar (max. boring length)		No. 237630 ∅ 9.75 – 15.1 mm (30 mm), No. 237632 ∅ 14.75 - 20.1 mm (51 mm); No. 237634 ∅ 19.75 – 25.1 mm (72 mm), No. 237636 ∅ 24.75 - 30.1 mm (82 mm); No. 237640 ∅ 29.75 – 48.1 mm (85 mm), No. 237642 ∅ 47.75 – 88.1 mm (85 mm).	
1 bridge		No. 237647 for ∅ extension of 86 – 164 mm.	
1 insert holder for the bridge		No. 237564 06	
1 insert		No. 260052 size CU7010 (CCMT 060204)	

Connection			HW63	SK40
29W **23 7546**	Fine boring head **∅ 9.75 – 320 mm**		eShop	eShop
∅ D_1		mm	63	
L_1		mm	–	81
A		mm	60	91

29W **23 7560**	Bridge for boring range **∅ 162 – 320 mm**	eShop



23 7560

23 7564



Type		06	09
29W **23 7564**	Insert holder for bridges	eShop	eShop

Garant Precision boring systems for Ø 9.75 – 30.1 mm and 88.1 mm



23 7586

23 7581 – **For Ø 9.75 – 30.1 mm**
23 7586 – **For Ø 9.75 – 88.1 mm**
23 7581/7586 – With fine boring head No. 237591, boring bars and accessories in a case.
Adjustment accuracy 0.01 mm per graduation / with vernier 0.002 mm on the Ø.
Ø adjustment with minimum backlash.

Application: For boring bars with shank Ø 16 mm and precision boring bridges.
With ISO indexable inserts **type CC..0602..**

Spare part:
23 7581/7586 – Insert screw No. 219830.

Recommendation: Best with indexable inserts No. 237695 and No. 237696.





Connection		HW63	SK40
29W 23 7581	Precision boring set Ø 9.75 – 30.1 mm	eShop	eShop
29W 23 7586	Precision boring set Ø 9.75 – 88.1 mm	eShop	eShop
Supplied with: 1 fine boring head		No. 237591 HW63	No. 237591 SK40
1 each boring bar (max. boring length)		No. 237630 Ø 9.75 – 15.1 mm (30 mm), No. 237632 Ø 14.75 - 20.1 mm (51 mm); No. 237634 Ø 19.75 – 25.1 mm (72 mm), No. 237636 Ø 24.75 - 30.1 mm (82 mm).	
1 each boring bar (max. boring length) (23 7586)		No. 237640 Ø 29.75 – 48.1 mm (85 mm), No. 237642 Ø 47.75 – 88.1 mm (85 mm).	
1 insert holder for the bridge		No. 237564 06	
1 insert		No. 260052 size CU7010 (CCMT 060204)	

Connection		HW63	SK40
29W 23 7591	Fine boring head Ø 9.75 – 88.1 mm	eShop	eShop
Ø D_1	mm	55	
L_1	mm	–	69
A	mm	50	90

Garant Digital precision boring systems for Ø 9.75 – 30.1 mm and 88.1 mm



23 7601

23 7567

23 7566 – **For Ø 9.75 – 30.1 mm**
23 7567 – **For Ø 9.75 – 88.1 mm**
23 7566/7567 – With **digital fine boring head** No. 237568,
digital display unit No. 237601, boring bars and accessories in a case.
Adjustment accuracy 0.01mm per graduation / with vernier 0.002mm on the Ø.
With additional precise reading facility to 0.001mm in Ø.
Ø adjustment with minimum backlash thanks to direct measuring system.

Application:
23 7566/7567 – For boring bars with shank Ø 16 mm and precision boring bridges.
With ISO indexable inserts **type CC..0602..**

Spare part:
23 7566/7567 – Insert screw No. 219830.

Recommendation:
23 7566/7567 – Best with indexable inserts No. 237695 and No. 237696.





Connection		HW63	SK40
29W 23 7566	Digital precision boring set with fine boring head Ø 9.75 – 30.1 mm	eShop	eShop
29W 23 7567	Digital precision boring set with fine boring head Ø 9.75 – 88.1 mm	eShop	eShop
Supplied with: 1 fine boring head		No. 237568 HW63	No. 237568 SK40
1 each boring bar (max. boring length)		No. 237630 Ø 9.75 – 15.1 mm (30 mm), No. 237632 Ø 14.75 - 20.1 mm (51 mm); No. 237634 Ø 19.75 – 25.1 mm (72 mm), No. 237636 Ø 24.75 - 30.1 mm (82 mm).	
1 each boring bar (max. boring length) (23 7567)		No. 237640 Ø 29.75 – 48.1 mm (85 mm), No. 237642 Ø 47.75 – 88.1 mm (85 mm).	
1 insert holder for the bridge		No. 237564 06	
1 insert		No. 260052 size CU7010 (CCMT 060204)	

Connection		HW63	SK40
29W 23 7568	Fine boring head Ø 9.75 – 88.1 mm	eShop	eShop
Ø D_1	mm	55	
L_1	mm	–	70
A	mm	50	90

Garant Precision boring system HW63 for Ø 86 – 302 mm (402 mm)

23 7570 – Complete precision boring set for **Ø 86 - 302 mm**, with fine boring head no. 237571, insert holder and accessories in a case.
Can be extended with indexable insert holder no. 237573 242-402 **up to Ø 402 mm.**
Adjustment accuracy 0.01 mm per graduation/with vernier 0.002 mm on the Ø.

Application:
23 7570/7573 – Insert holders with suitable standard ISO insert type CC..09T3..

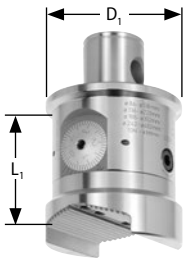
Spare part:
23 7570/7573 – Insert screw No. 219805.

Recommendation:
23 7570/7573 – Best with indexable inserts No. 237697 and No. 237698.



23 7570_HW63

Connection		HW63
29W **23 7570**	Precision boring set **Ø 86 – 302 mm**	eShop
Supplied with: 1 fine boring head		237571 HW63
1 each insert holder		No. 237573 86-138 for Ø 86– 138 No. 237573 136-220 for Ø 136– 220 No. 237573 188-302 for Ø 188– 302
1 each support		No. 237574 86 for No. 237573 86-138 No. 237574 136 for No. 237573 136-220, 188-302 and 242-402
1 each pressure pad		No. 237575 86 for No. 237573 86-138 No. 237575 136 for No. 237573 136-220, 188-302 and 242-402
1 insert		No. 260058 CU7010 (or use CC.. 09T3)



23 7571_HW63

Connection			HW63
29W **23 7571**	Fine boring head **Ø 86 – 402 mm**		eShop
Ø D_1		mm	80
L_1		mm	89.5



23 7573_242-402

		242-402
29W **23 7573**	Insert holder for boring range **Ø 242 – 402 mm**	eShop

Garant Digital display unit for precision boring heads

External digital measuring instrument for GARANT fine boring heads. Electronics and power supply are contained within the display unit, so it can be installed in a **protected area outside** the machining centre.
Simple and secure attachment with permanent magnet.

Advantage: **Suitable for all** GARANT digital boring heads.
No electronics or battery in the boring heads, therefore compact installation can be performed.

Application: **To 0.001 mm (inch)** precise reading **on the Ø.**
Very high repetition accuracy and zero-play fine adjustment due to the **direct travel measurement system** guarantee **optimum measurement reliability and process reliability.**

Supplied with: With spare battery.



23 7601

29W **23 7601**	Display unit **digital**	eShop

Garant Indexable insert for precision boring systems

Polished inserts for **controlled chip breakage** during precision boring work with small oversize.
Size CU3515 – General purpose for a broad range of applications.
Size HB3010 – Especially for hardened steels, even for stainless.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
CU3515	**600**	**350**	**250**	**250**	**250**	**220**	**200**	**180**						**120**	**120**		**160**	●		●	○		○
HB3010	400	300	220	200	185	**185**	**160**	**150**	**125**	**100**	**80**			**120**	**120**		160			●	○		○
HB7015	400	300	220	200	185	**185**	**160**	**150**						**120**	120		160			●	○		○





Grade		CU3515	HB3010	HB7015	
21F **23 7695**	CCGT 060202L	eShop	eShop	eShop	**10**
21F **23 7696**	CCGT 060204L	eShop	eShop	–	**10**
21F **23 7697**	CCGT 09T302L	eShop	eShop	eShop	**10**
21F **23 7698**	CCGT 09T304L	eShop	eShop	–	**10**
Chip breaker		US	SS	SS	
f	mm/rev.	0.05 – 0.2			

Garant Arbors, extensions and reducers for HW interface

Reducer sleeve Ø 16 mm to 7 mm

Size 16-7 – Shank Ø 16 mm

Application: For micro-boring heads.

Size 16-7 – For indexable inserts and adapters in Ø 7 mm. In connection with boring heads No. 237513; 237546; 237568 and 237591.



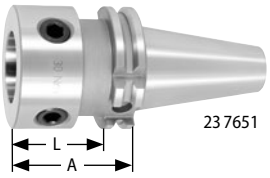
23 7626

Type		16-7
29W 23 7626	Reducer sleeve	eShop

Arbors HW

Form ADB | DIN 69871

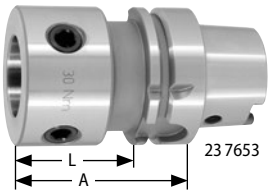
23 7653/7654 – With Balluff/RFID chip bore.



23 7651

Connection			HW20	HW25	HW32	HW40	HW50	HW63	HW80
21F 23 7651	Arbor	SK 40	eShop	eShop	eShop	eShop	eShop	eShop	–
21F 23 7652		SK 50	–	–	–	–	eShop	eShop	eShop
L		mm	27	27	27	27	27	47	27
Dimension A		mm	46	46	46	46	46	66	46

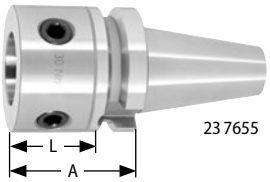
Form A | DIN 69893



23 7653

Connection			HW20	HW25	HW32	HW40	HW50	HW63	HW80
21F 23 7653	Arbor	HSK-A 63	eShop	eShop	eShop	eShop	eShop	eShop	–
21F 23 7654		HSK-A 100	–	–	–	–	eShop	eShop	eShop
L (23 7653)		mm	16	16	22	29	39	54	–
L (23 7654)		mm	–	–	–	–	36	51	51
Dimension A		mm	42	42	48	55	65	80	80

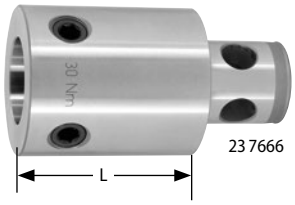
Form ADB | JIS B6339



23 7655

Connection			HW20	HW25	HW32	HW40	HW50	HW63	HW80
21F 23 7655	Arbor	BT 40	eShop	eShop	eShop	eShop	eShop	eShop	–
21F 23 7656		BT 50	–	–	–	–	eShop	eShop	eShop
L		mm	27	27	27	27	27	37	37
Dimension A (23 7655)		mm	54	54	54	54	54	64	–
Dimension A (23 7656)		mm	–	–	–	–	65	75	75

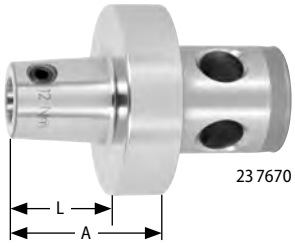
Extensions HW



23 7666

Connection		HW20	HW25	HW32	HW40	HW50	HW63	HW80
29W 23 7666	Extension short	eShop	eShop	eShop	eShop	eShop	eShop	eShop
29W 23 7668	Extension long	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L (23 7666)	mm	25	30	40	50	50	75	100
L (23 7668)	mm	35	45	60	80	70	135	180

Reducers HW

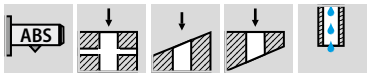


23 7670

Connection		HW20	HW25	HW32	HW40	HW50
29W 23 7670	Reducer HW50	eShop	eShop	eShop	eShop	–
29W 23 7672	Reducer HW63	eShop	eShop	eShop	eShop	eShop
L (23 7670)	mm	28	28	28	28	–
L (23 7672)	mm			32		
Dimension A (23 7670)	mm	44	44	44	44	–
Dimension A (23 7672)	mm			50		

KOMET Micro-adjustable head system B301 and precision boring cartridge M302

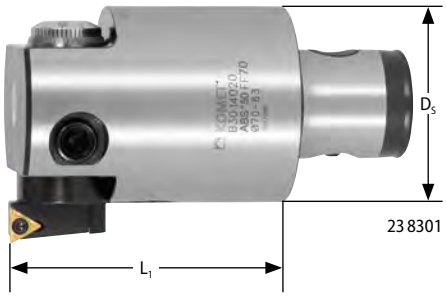
Micro-adjustable head



With ABS® connection B301 and accepts M302 precision turning cartridge.
The smallest adjustment is 0.002 mm on the ∅ using the vernier.
Central coolant supply to the cutting edge.

Application: **For bores from ∅ 29.5 to 121 mm.**
For high precision setting, turning cartridge can be adjusted after clamping.

Note:	Please order the suitable precision cartridge No. 238310 (M302) and indexable inserts separately.



∅ D_{min} mm	24B 23 8301 KOMET® micro-adjustable boring head **B301**	Boring range ∅ mm	L_1 mm	ABS® ∅ D_s	Application	Insert screw set
29,5	eShop	29.5 – 36	50	25	238310 10	249900 SW3
35,5	eShop	35.5 – 42	50	25	238310 10	249900 SW3
39	eShop	39 – 45	60	32	238310 20	249900 SW4
44	(eShop)	44 – 50	60	32	238310 20	249900 SW4/10
47	eShop	47 – 57	60	40	238310 30	249900 SW5
56	(eShop)	56 – 66	60	40	238310 30	249900 SW5
58	eShop	58 – 71	70	50	238310 40	249900 SW6
70	eShop	70 – 83	70	50	238310 40	249900 SW6
79	(eShop)	79 – 94	70	63	238310 50	249900 SW8
93	eShop	93 – 108	70	63	238310 50	249900 SW8
100	(eShop)	100 – 121	90	80	238310 60	249900 SW10

Precision boring cartridge

Size 10; 20 – The following are compatible:
No. 268879 K10, 268877 BK6425, 268878 BK6425, 268878 P25M and 268878 BK8425.

Size 30; 40 – The following are compatible:
No. 268880 BK6425, 268881 BK6425, 268881 BK8425, 268887 P25M, 268887 BK8425 and 268887 K10.

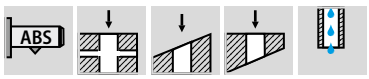
Size 50; 60 – The following are compatible:
No. 268883 BK6425, 268884 BK8425, 268888 P25M and 268888 BK8425.



Type	24J 23 8310 KOMET® precision cartridge **M302**	Suitable for micro-adjustable boring head No. 238301	S mm	L_1 mm	∅ D_1 mm	ISO code indexable insert	Set of insert screws
10	eShop	29.5; 35.5	3.5	28.5	10	TO. X 06T1..	239653 6IP
20	eShop	39; 44	3.5	37.5	12	TO. X 06T1..	239653 6IP
30	eShop	47; 56	5	45	16	TO. X 0902..	239653 8IP3
40	eShop	58; 70	7	56	20	TO. X 0902..	239653 8IP7
50	eShop	79; 93	8	77.5	25	TO. X 1403..	239653 10IP
60	eShop	100; 120	11	97	32	TO. X 1403..	239653 10IP

KOMET Micro-adjustable head system M03Speed µm-accurate with balancing ∅ 24.8 to 206.0 mm

Micro-adjustable head

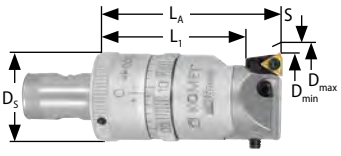


- Dynamic balance in the slide for highest speeds.
- Modular system structure.
- Fine adjustment without additional clamping.
- With ABS® connection for highest changeover accuracy.
- Quick rough adjustment by adjusting the lathe tool.
- Internal coolant supply directed to the cutting edge.
- Smallest adjustment steps in the µm range, within a fine adjustment range of 0.25 - 0.6 mm on the ∅, depending on the turning range.
- Fine adjustment steps of 0.002 mm per graduation in ∅.
- High resolution ensures problem-free adjustment / readability **without** a vernier.

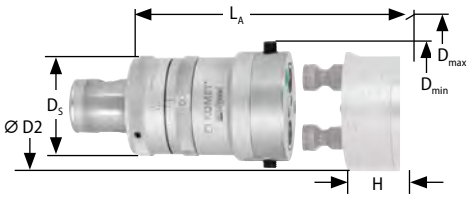
Application:

Size 38–100 – In combination with replaceable bridge No. 238372.

Note: Additional insert holders, e.g. for reverse machining and with other angles = 15°, 30°, 45° etc. available on short lead times.
Please order change-over adapters, cartridges, and indexable inserts separately.



23 8370_24.8–29



23 8370_38–100

∅ D_{min}	24l 23 8370 KOMET® M03Speed micro-adjustable boring head	Boring range ∅	L_1	ABS® ∅ D_S	Cutter circle ∅ D2 forwards machining	S	Fine adjustment in ∅	maximum speed	Cartridge	Change-over adapter
mm		mm	mm		mm	mm	mm	min^{-1}		
24,8	eShop	24.8 – 33	39.9	25	24.5	4.5	0.25	40000	238355 24,8	–
29	eShop	29 – 39	39.9	25	26	5	0.4	40000	238355 29	–
38	(eShop)	38 – 63	–	32	∅ 3.2	–	0.4	31000	238374 38-50	238372 38; 50
62	(eShop)	62 – 103	–	50	55	–	0.6	18500	238374 62-82	238372 62; 82
100	eShop	100 – 206	–	63	85	–	0.6	11500	238374 100-166	238372 100; 128; 166

Replaceable bridge



23 8372

∅ D_{min}	24l 23 8372 KOMET® replaceable bridge for M03Speed	Boring range ∅	H	Cutter circle ∅ D2 forwards machining	S	maximum speed	Cartridge	Micro-adjustable boring head
mm		mm	mm	mm	mm	min^{-1}		
38	eShop	38 – 51	17.5	∅ 3.2	6.5	31000	238374 38-50	238370 38
50	(eShop)	50 – 63	17.5	∅ 3.5	6.5	24000	238374 38-50	238370 38
62	(eShop)	62 – 83	23	55	10	18500	238374 62-82	238370 62
82	(eShop)	82 – 103	23	71	10.5	15000	238374 62-82	238370 62
100	(eShop)	100 – 130	26	85	15	11500	238374 100-166	238370 100
128	(eShop)	128 – 169	26	109	20	10000	238374 100-166	238370 100
166	(eShop)	166 – 206	26	166	20.5	8000	238374 100-166	238370 100

Cartridges

Note:

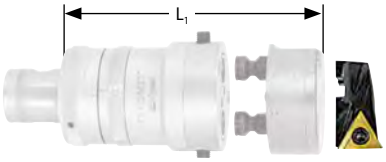
23 8374 – Only for use in conjunction with replaceable bridge No. 238372.

suitable for M03 Size	24l 23 8355 KOMET® cartridge 90° for M03Speed **Forwards**	L_1	ISO code indexable insert	Set of insert screws	Micro-adjustable boring head
		mm			
24,8	eShop	50	TOHX 06T1..	239653 6IP1	238370 24,8
29	eShop	50	TOHX 06T1..	239653 6IP1	238370 29



23 8355

suitable for M03 Size	24l 23 8374 KOMET® cartridge 90° for M03Speed **Forwards**	L_1	ISO code indexable insert	Set of insert screws	Change-over adapter
		mm			
38-50	(eShop)	81	TOHX 06T1..	239653 6IP1	238372 38; 50
62-82	(eShop)	103	TOHX 0902..	239653 8IP4	238372 62; 82
100-166	(eShop)	106	TOHX 0902..	239653 8IP4	238372 100; 128; 166



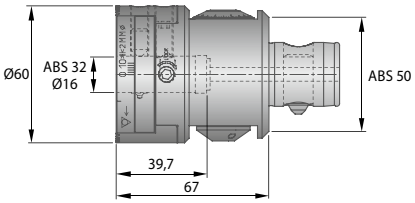
23 8374

KOMET MicroKom® hi.flex precision boring system Ø 6 – 125 mm

- Adjustment accuracy: 0.01 mm per graduation.
  Adjustment accuracy 0.002 mm Ø using the vernier for adjustments up to 5 mm radial.
- Balanced at the 0-position.

Boring range Ø	mm	6-125
240 **23 8380**	KOMET MicroKom® hi.flex precision boring set	eShop
240 **23 8391**	KOMET MicroKom® hi.flex precision boring head	eShop
Boring range Ø	mm	6 – 125
Supplied with: 1 fine boring head (23 8380)		No. 238391 ABS50® Ø 6 – 125 mm
1 each cartridge (23 8380)		KOMET No. 62863 04400 Ø 25 – 44 mm KOMET No. 62863 12500 Ø 44 – 125 mm
1 bridge (23 8380)		KOMET No. 62860 12500 Ø 90 – 125 mm
1 serrated body (23 8380)		KOMET No. 62861 06300 Ø 25 – 63 mm
1 packing piece (23 8380)		KOMET No. 62862 09300
1 each boring bar (23 8380)		KOMET No. 62850 00600 Ø 6 – 10 mm KOMET No. 62850 01000 Ø 10 – 14 mm KOMET No. 62850 01400 Ø 14 – 18 mm KOMET No. 62850 01800 Ø 18 – 22 mm KOMET No. 62850 02200 Ø 22 – 26 mm
4 each indexable inserts (23 8380)		TOGX06T102EN-14 BK60 - KOMET No. 62601 90206 TOGX090204EN-14 BK60 - KOMET No. 62601 70409
2 indexable inserts (23 8380)		WOHX02T2001EL-G12 BK8440 - KOMET No. 62600 00102
5 socket-head screws (23 8380)		KOMET No. 62950 00000 - M5×16 mm
1 each hexagon key L-wrench (23 8380)		5IP; 6IP; 8IP; SW3; SW4


23 8380



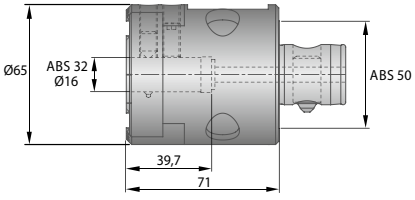
KOMET MicroKom BluFlex® 2 precision boring system with Bluetooth® technology Ø 6 – 125 mm

- Linearity range: -0.2 to +4.4 mm (-0.0079 to 0.1732 inch) on the Ø.
- µ-precise display resolution: 0.001 mm on the Ø.
- Internal hexagon wrench allows radial adjustment and clamping of the micro-adjustable drilling head.
- Modern high-contrast OLED display directly at the micro-adjustable drilling head.
- The display can be rotated through 180°.
- Easy to operate directly at the touch display.
- Additional Bluetooth® low energy interface for easy display on a commercially-available smartphone with Android™ or IOS 7.
- Higher speeds thanks to integral partial balancing.
- Very sensitive adjustment permits precise infeed.
- Absolute travel measuring system – the absolute and relative slide position is output every time the device is switched on.
- Universal ABS® port.
- Battery easily replaceable.
- 1: 1 compatible with the available variations of the previous system.


23 8398

Boring range Ø	mm	6-125
276 **23 8398**	KOMET MicroKom® BluFlex® 2 precision boring set	eShop
Boring range Ø	mm	6 – 125
Supplied with: 1 fine boring head		No. 238392
1 each cartridge		KOMET No. 62863 04400 Ø 25 – 44 mm KOMET No. 62863 12500 Ø 44 – 125 mm
1 bridge		KOMET No. 62860 12500 Ø 90 – 125 mm
1 serrated body		KOMET No. 62861 06300 Ø 25 – 63 mm
1 packing piece		KOMET No. 62862 09300
1 each boring bar		KOMET No. 62850 00600 Ø 6 – 10 mm KOMET No. 62850 01000 Ø 10 – 14 mm KOMET No. 62850 01400 Ø 14 – 18 mm KOMET No. 62850 01800 Ø 18 – 22 mm KOMET No. 62850 02200 Ø 22 – 26 mm
4 each indexable inserts		TOGX06T102EN-14 BK60 - KOMET-No. 62601 90206 TOGX090204EN-14 BK60 - KOMET-No. 62601 70409
2 indexable inserts		WOHX02T2001EL-G12 BK8440 - KOMET-No. 62600 00102
5 socket-head screws		KOMET No. 62950 00000 - M5×16 mm
1 each hexagon key L-wrench		5IP; 6IP; 8IP; SW3; SW4


23 8398



Boring range Ø	mm	(eShop)
276 **23 8392**	Fine boring head MicroKom® BluFlex® 2	(eShop)
Boring range Ø	mm	6 – 125

KOMET Bridges for Ø extension 120 - 365 mm

Suitable for: MicroKom® hi.flex No. 238380 6 – 125 and No. 238391 6 - 125 as well as MicroKom BluFlex® 2 No. 238398 6 – 125 and No. 238392.


23 8395

Boring range Ø	mm	90-125	120-155	150-185	180-215	210-245	240-275	270-305	300-335	330-365
24Z **23 8395**	Bridge for MicroKom® hi.flex and MicroKom BluFlex® 2	(eShop)	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)

ABS

Garant

Arbors with ABS® connection

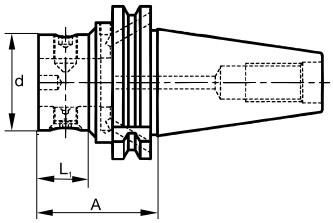
Note: Further arbors with ABS® connection on request.

Arbors SK 40 / 50

DIN 69871 | Form ADB | G 6.3 8000 min^{-1}

Supplied with: Complete with sealing washer and conversion set for form AD.


23 8420

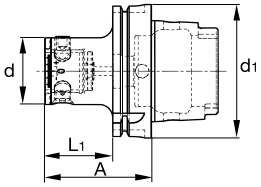


ABS® Ø d		mm	32	40	50	63	80	100
29W 23 8420	Arbor	SK 40	eShop	eShop	eShop	eShop	–	–
29W 23 8440		SK 50	–	eShop	eShop	eShop	eShop	eShop
A (23 8420)		mm	50	50	50	90	–	–
A (23 8440)		mm	–	60	60	60	70	115
L_1 (23 8420)		mm	19	19	30	70	–	–
L_1 (23 8440)		mm	–	20	22	29	50	95

Arbors HSK A63 / 100

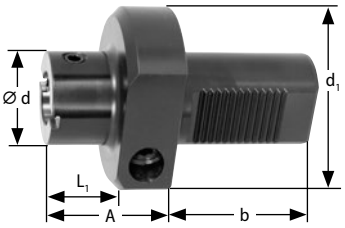
DIN 69893


23 8500



ABS® Ø d		mm	25	32	40	50	63	80	Ø d_1 mm
29W 23 8500	Arbor	HSK-A 63	eShop	eShop	eShop	eShop	eShop	–	63
29W 23 8520		HSK-A 100	–	–	eShop	eShop	eShop	eShop	100
A (23 8500)		mm	50	50	60	70	80	–	
A (23 8520)		mm	–	–	80	80	80	90	
L_1 (23 8500)		mm	24	24	34	44	–	–	
L_1 (23 8520)		mm	–	–	51	51	51	61	

Arbor VDI 40



23 8560

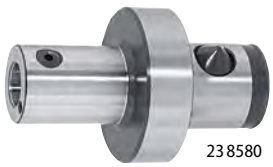
ABS® Ø d		mm	50	Ø d_1 mm
23B 23 8560	Arbor	VDI 40	eShop	83
A		mm	60	
L_1		mm	38	
b		mm	63	

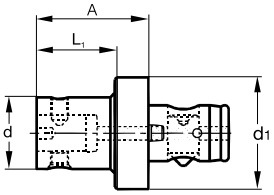
ABS

Garant

Reducers with ABS® connection

Application: For reducing of nominal arbor ABS 50 to ABS Ø d.

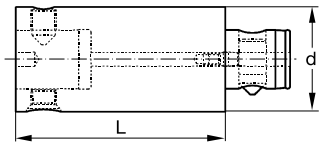

23 8580



ABS® Ø d		mm	25	32	40
23B 23 8580	Reducer ABS 50		eShop	eShop	eShop
Ø d_1		mm		50	
A		mm		50	
L_1		mm		35	

Garant Extensions with ABS® connection

Note: Other lengths and reduced weight extensions as well as torsional vibration dampers for ABS® are available on request.





23 8660

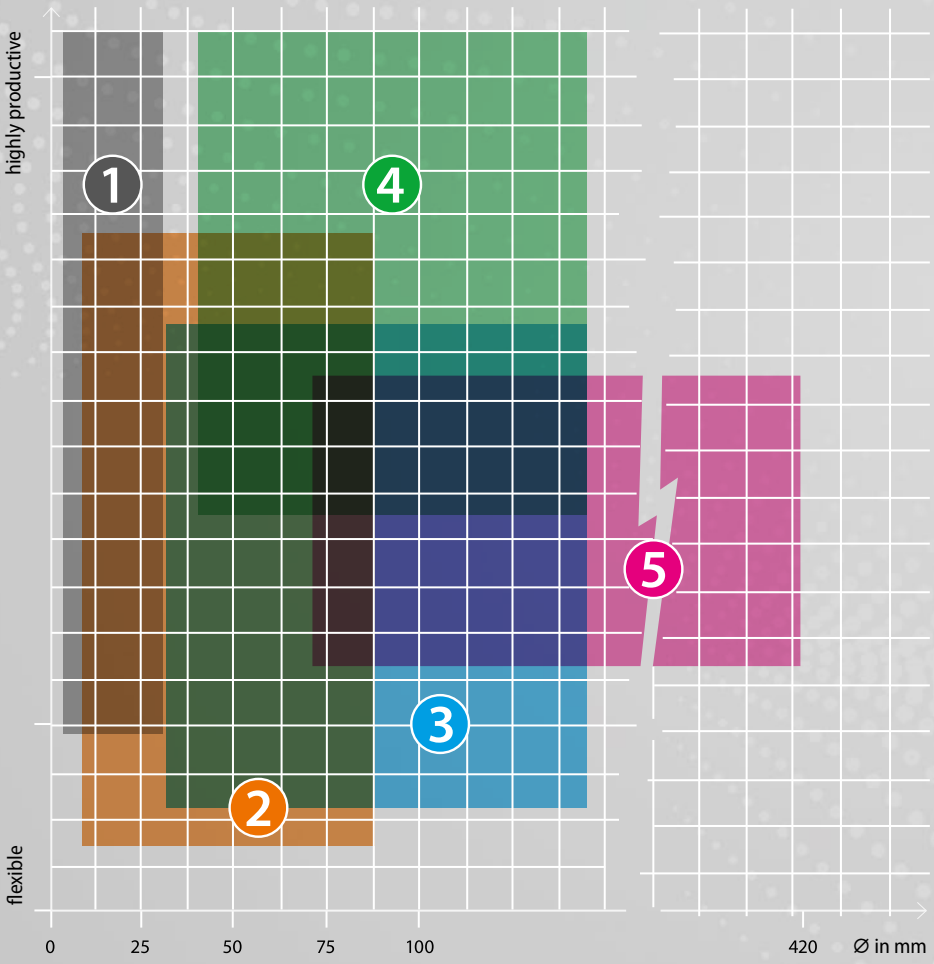
ABS® ∅ d	mm	25	40	50	63	80	Length L mm
23B 23 8600	Extension	–	eShop	–	–	–	40
23B 23 8620		eShop	–	–	–	–	45
23B 23 8640		–	–	eShop	–	–	50
23B 23 8660		eShop	–	–	eShop	–	60
23B 23 8680		–	–	eShop	–	–	65
23B 23 8700		–	–	–	–	eShop	70
23B 23 8720		–	–	eShop	–	–	100
23B 23 8740		–	–	–	eShop	eShop	125
23B 23 8760		–	–	eShop	–	–	150

Garant FLEXIBLE ON BOTH SIDES: VARIABLE TO THE MACHINE, TAILORED TO THE APPLICATION.

23

The GARANT boring system offers you the variability that you need for your production – with the essential machine connections and boring diameters ranging from 0.3 mm to 420 mm.

Whether flexible or highly productive, small or large holes – the GARANT solutions at a glance:



1 237490



2 237586_HW63



3 237515_HW63



4 237600_HW50



5 237570_HW63



Standard | h9

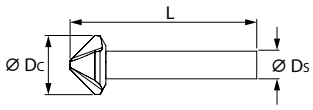
Garant

Countersink 120° and 100°

Easy and chatter-free deburring and countersinking.

15 0025 – Very **sturdy version** with **solid carbide head,** for heavy-duty use. Specially for **materials that are difficult to machine.**

15 0020/0023 – Flutes ground from solid.



120° | HSS | 3



15 0020

100° | HSS | 3



15 0023

100° | Solid carbide | 5



15 0025

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	Ti > 850 N	Inconel®	GRP	CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	S	S	N	N					
15 0020/0023	70	33		28	27	27															●	○	
15 0025															6	5	5	5			●	○	

External Ø D_c mm	11M 15 0020 Countersink HSS 120°	11M 15 0023 Countersink HSS 100°	11M 15 0025 Countersink solid carbide 100°	Number of cutting edges Z 15 0020 15 0023	Number of cutting edges Z 15 0025	smallest countersink Ø for holes from 15 0020 15 0025 mm	smallest countersink Ø for holes from 15 0023 mm	L 15 0020 15 0025 mm	L 15 0023 mm	Ø D_s mm	< 500 N f 15 0020 15 0023 mm/rev.	Inconel® f 15 0025 mm/rev.
8	eShop	eShop	–	3	–	2	2	49	49	6	0.09	–
10,4	–	eShop	–	3	–	–	2.5	–	49	6	0.12	–
12,4	–	eShop	eShop	3	5	4	3	55	55	8	0.12	0.05
12,5	eShop	–	–	3	–	2.8	–	54	–	8	0.12	–
16	eShop	–	–	3	–	3.2	–	57	–	10	0.14	–
16,5	–	eShop	eShop	3	5	4.5	3.5	58	59	10	0.14	0.07
20	eShop	–	–	3	–	3.5	–	59	–	10	0.16	–
20,5	–	eShop	eShop	3	5	5	4	61	62	10	0.16	0.08
25	eShop	eShop	–	3	–	3.8	5	63	65	10	0.2	–

15

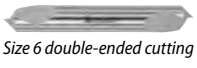
90° | HSS | 1 | h9

Garant

Countersink 90°

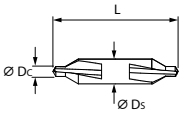
Axial-radial relief ground conical profile for chatter-free deburring and countersinking. This delivers a high-quality countersinking surface. Generous-sized flutes for very good chip clearance. Can be reground easily on the inner flat faces of the flutes.

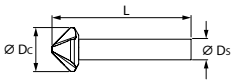
Size 6 double-ended cutting





15 0050





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
15 0050		33		28	27									7						●	○	○	

External Ø D_c	mm	6	8	12,5	16	20	25	31,5
11M 15 0050	Countersink single flute 90°	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	45	50	50	56	60	75	80
Shank Ø D_s	mm	6	8	8	10	10	12	12

90° | HSS | h9

Garant

Deburring countersink 90°

Special cutter geometry for an easy peeling cut. The swarf is evacuated via the oblique hole towards the shank.



15 0065

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
15 0065		33		28	17									7						●		○	

Type		5	10	15	20	25
11M 15 0065	Deburring countersink 90°	eShop	eShop	eShop	eShop	eShop
for hole Ø	mm	2 – 5	5 – 10	10 – 15	15 – 20	20 – 25
Head Ø	mm	10	14	20	28	30
L	mm	46	55	65	85	95
Ø D_s	mm	6	8	10	12	15

Deburring countersink set

11M 15 0070	Deburring countersink set No. 150065 in a case 90°	eShop



15 0070

Garant High-precision countersink 90° with unequal spacing

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
15 0130/0132	75	75	50	65	50	30	18	8	8			16	10	12	25	60	○	● ● ○

High-precision countersink 90° with unequal spacing

90° | HSS | ≠ | 3 | DIN 335 C

All countersinks have 3 cutting edges. Special geometry with extremely unequal spacing and matching cutting edge preparation. Radially relief ground. Flutes ground from solid. Newly developed **special TiAlN coating** for long service life.
High-precision countersink, produced with tight manufacturing tolerances similar to DIN 335-C.

15 0132 – Three **drive flats on the shank** for use in a 3-jaw chuck.

Advantage: Very smooth cutting throughout the entire countersinking operation. Chatter-free running for perfect results and **optimum tool service life.**

Application: High-precision countersinks for production of **exactly round 90° countersunk surfaces.**

h9



15 0130

h9

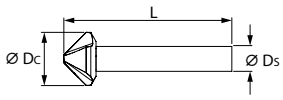


15 0132

Shank with 3 drive flats.



Extremely unequal spacing (cutting edges arranged at unequal intervals).



External Ø D_c	11M 15 0130 Precision countersink with unequal spacing 90° TiAlN	11M 15 0132 High-precision countersink with unequal spacing and 3 drive flats 90° TiAlN	smallest countersink Ø for holes from	L	Ø D_s	for countersunk screws ISO 2009, 2010, 7046, 7047	for countersunk screws DIN 7991	< 500 N f
mm			mm	mm	mm			mm/rev.
4,3	eShop	eShop	1.3	40	4	M2	–	0.08
6	eShop	eShop	1.5	45	5	M3	–	0.1
6,3	eShop	eShop	1.5	45	5	–	M3	0.1
8	eShop	eShop	2	50	6	M4	–	0.1
8,3	eShop	eShop	2	50	6	–	M4	0.1
10	eShop	eShop	2.5	50	6	M5	–	0.13
10,4	eShop	eShop	2.5	50	6	–	M5	0.13
11,5	eShop	eShop	2.8	56	8	M6	–	0.13
12,4	eShop	eShop	2.8	56	8	–	M6	0.13
15	eShop	eShop	3.2	60	10	M8	–	0.13
16,5	eShop	eShop	3.2	60	10	–	M8	0.18
19	eShop	eShop	3.5	63	10	M10	–	0.18
20,5	eShop	eShop	3.5	63	10	–	M10	0.22
23	eShop	eShop	3.8	67	10	M12	–	0.22
25	eShop	eShop	3.8	67	10	–	M12	0.25
31	eShop	eShop	4.2	71	12	–	M16	0.25

Sets of high-precision 90° countersinks

90° | HSS | ≠ | 3 | DIN 335 C

15 0301/0305 – High-precision countersink No. 150130.
15 0303/ 0307 – High-precision countersink No. 150132. All countersinks **also have 3 drive flats** on the shank for use in a 3-jaw chuck.

Advantage: Very smooth cutting throughout the entire countersinking operation. Chatter-free running for perfect results and **optimum tool service life.**

Application: High-precision countersinks for production of **precise, round 90° countersunk surfaces.**

Supplied with:
15 0301/0303 – 5-piece precision countersink set in a **round box.**
15 0305/0307 – 5-piece precision countersink set in a **case.**

h9 | h9

150301 150305 | 150303 150307



15 0301
15 0303

Number of countersinks			5
11M 15 0301	High-precision countersink set No. 150130 in a box 90°	TiAlN	eShop
11M 15 0303	High-precision countersink set with 3 drive flats No. 150132 in a box 90°	TiAlN	eShop
Content: 1 pc. each countersink			Size 6.3; 10.4; 12.4; 16.5; 20.5

Number of countersinks			5
11M 15 0305	High-precision countersink set No. 150130 in a case 90°	TiAlN	eShop ■
11M 15 0307	High-precision countersink set with 3 drive flats No. 150132 in a case 90°	TiAlN	eShop
Content: 1 pc. each countersink			Size 6.3; 10.4; 16.5; 20.5; 25



15 0305
15 0307

Case

for number of countersinks		5
11M 15 0368	Empty case	eShop

Garant Countersink 90°

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
15 0150/0152	70	33		28	27	27														●		○	
15 0170			25	34	32	32								9	8		80	●		●		○	

Countersink 90°

90° | HSS | 3 | DIN 335 C

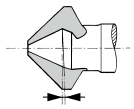
All countersinks have 3 cutting edges, radially relieved.
Flutes are ground from solid.

15 0152 – Three **drive flats on the shank** for use in a 3-jaw chuck.

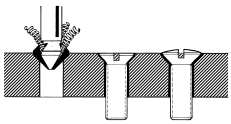
15 0170 – Precision countersink for considerable performance improvement.

15 0150/0152 – High-precision countersink, produced with tight manufacturing tolerances similar to DIN 335-C.

Application: High precision countersinks for chatter-free countersinking.



Relief ground



Three-flute countersinks for accurately centred countersinking

h9



15 0150

h9

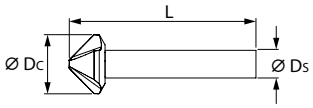


15 0152

h9



15 0170



External Ø D_c	11M 15 0150	11M 15 0152	11M 15 0170	smallest countersink Ø for holes from	L	Ø D_s	for countersunk screws ISO 2009, 2010, 7046, 7047	for countersunk screws DIN 7991	< 500 N f
	High-precision countersink 90°								
			TiAlN						
mm				mm	mm	mm			mm/rev.
4,3	eShop	–	eShop	1.3	40	4	M2	–	0.07
5	eShop	–	eShop	1.5	40	4	M2.5	–	0.07
6	eShop	eShop	eShop	1.5	45	5	M3	–	0.09
6,3	eShop	eShop	eShop	1.5	45	5	–	M3	0.09
7	eShop	eShop	eShop	1.8	50	6	M3.5	–	0.09
8	eShop ■	eShop	eShop	2	50	6	M4	–	0.09
8,3	eShop	eShop	eShop	2	50	6	–	M4	0.09
10	eShop ■	eShop	eShop	2.5	50	6	M5	–	0.12
10,4	eShop	eShop	eShop	2.5	50	6	–	M5	0.12
11,5	eShop	eShop	eShop	2.8	56	8	M6	–	0.12
12,4	eShop ■	eShop	eShop	2.8	56	8	–	M6	0.12
15	eShop ■	eShop	eShop	3.2	60	10	M8	–	0.12
16,5	eShop	eShop	eShop	3.2	60	10	–	M8	0.14
19	eShop ■	eShop	eShop	3.5	63	10	M10	–	0.14
20,5	eShop ■	eShop	eShop	3.5	63	10	–	M10	0.16
23	eShop	eShop	eShop	3.8	67	10	M12	–	0.16
25	eShop ■	eShop	eShop	3.8	67	10	–	M12	0.2
31	eShop	eShop	eShop	4.2	71	12	–	M16	0.2
40	eShop	eShop	eShop	10	75	12	–	–	0.25

Countersink sets 90°

90° | HSS | 3 | DIN 335 C

h9 | h9

Countersink sets, **in a case.**
Practical set for assembly and workshop use.

Number of countersinks			6	7	17
11M 15 0310	Countersink set No. 150150 in a case 90°		eShop ■	eShop	eShop
11M 15 0312	Countersink set No. 150152 in a case 90°		eShop	eShop	–
11M 15 0315	Countersink set No. 150170 in a case 90°	TiAlN	eShop	eShop	eShop
Content: 1× each countersink			Size 6; 8; 10; 11.5; 15; 19	Size 6; 8; 10; 11.5; 15; 19; 25	Size 4.3; 5; 6; 6.3; 7; 8; 8.3; 10; 10.4; 11.5; 12.4; 15; 16.5; 19; 20.5; 23; 25



15 0310

Case

for number of countersinks		6
11M 15 0370	Empty case for 6 or 7 countersinks	eShop



15 0370

90° | HSS | 3 | DIN 335 C

HOLEX Countersink 90°

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
15 0175	70	33		28	27	27	8											●
15 0182/0184	75	70			50	40	20	15	8				18	15	12	20	20	●

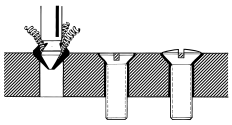
Countersink 90°

All countersinks have 3 cutting edges, radially relieved.
Flutes are ground from solid.

15 0175 – Economy countersink version.
15 0184 – Three drive flats on the shank for use in a 3-jaw chuck.
15 0182/0184 – **HOLEX Pro Steel:**

- Exact machining results in **manual** and **machine use.**
- **Chatter-free running** through **extremely unequal spacing** of the cutting edges for high-quality surfaces.
- Optimum tool life thanks to **TiALN high-performance coating.**
- High **process reliability** due to optimised **chip evacuation**.
- Attractive cost/benefit ratio.

Application: High-precision countersink for chatter-free 90° countersinking.

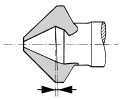


Three-flute countersinks for accurate centring.

h9



15 0175



Relief ground

≠ | h9



15 0182

L | Ø Dc | Ø Ds

≠ | h9



15 0184

External Ø D_c	12M 15 0175 Countersink	12M 15 0182 HOLEX Pro Steel high-precision countersink with unequal spacing 90° TiAlN	12M 15 0184 HOLEX Pro Steel high-precision countersink with unequal spacing and 3 drive flats TiAlN	smallest countersink Ø for holes from	L	Ø D_s	for countersunk screws ISO 2009, 2010, 7046, 7047	for countersunk screws DIN 7991	< 500 N f
mm				mm	mm	mm			mm/rev.
4,3	eShop	eShop	eShop	1.3	40	4	M2	–	0.07
5	eShop	–	–	1.5	40	4	M2.5	–	0.07
6	eShop	eShop	eShop	1.5	45	5	M3	–	0.09
6,3	eShop	eShop	eShop	1.5	45	5	–	M3	0.09
7	eShop	–	–	1.8	50	6	M3.5	–	0.09
8	eShop	eShop	eShop	2	50	6	M4	–	0.09
8,3	eShop	eShop	eShop	2	50	6	–	M4	0.09
10	eShop	eShop	eShop	2.5	50	6	M5	–	0.12
10,4	eShop	eShop	eShop	2.5	50	6	–	M5	0.12
11,5	eShop	eShop	eShop	2.8	56	8	M6	–	0.12
12,4	eShop	eShop	eShop	2.8	56	8	–	M6	0.12
15	eShop	eShop	eShop	3.2	60	10	M8	–	0.12
16,5	eShop	eShop	eShop	3.2	60	10	–	M8	0.14
19	eShop	eShop	eShop	3.5	63	10	M10	–	0.14
20,5	eShop	eShop	eShop	3.5	63	10	–	M10	0.16
23	eShop	eShop	eShop	3.8	67	10	M12	–	0.16
25	eShop	eShop	eShop	3.8	67	10	–	M12	0.2
31	eShop	eShop	eShop	4.2	71	12	–	M16	0.2

Countersink sets 90°

Countersink sets **in a case.** Handy for assembly and workshop use.

Note: Empty case for 6 or 7 countersinks, see No. 150370.

Catalogue page 204

Number of countersinks			5	6	7	17
12M 15 0320	Countersink set No. 150175 in a case 90°		–	eShop	eShop	eShop
12M 15 0342	HOLEX Pro Steel countersink set No. 150182 in a case 90°	TiAlN	–	eShop	eShop	–
12M 15 0343	HOLEX Pro Steel countersink set No. 150182 in a round box 90°	TiAlN	eShop	–	–	–
12M 15 0344	HOLEX Pro Steel countersink set with 3 drive flats No. 150184 in a case 90°	TiAlN	–	eShop	eShop	–
12M 15 0345	HOLEX Pro Steel countersink set with 3 drive flats No. 150184 in a round box 90°	TiAlN	eShop	–	–	–
Content: 1× each countersink			Sizes 6.3; 10.4; 12.4; 16.5; 20.5	Size 6; 8; 10; 11.5; 15; 19	Size 6; 8; 10; 11.5; 15; 19; 25	Size 4.3; 5; 6; 6.3; 7; 8; 8.3; 10; 10.4; 11.5; 12.4; 15; 16.5; 19; 20.5; 23; 25

≠



15 0320



15 0343

90° | HSS | 3 | Standard

Garant

Countersink 90°

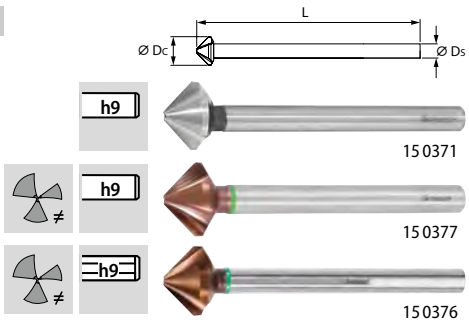
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
15 0371/0372	70	33	20	28	27	27														●		○	
15 0376/0377	75	75	50	65	50	30	18	8	8			16	10	12	25	60	○	●		●		○	

Countersink 90°, long

All countersinks have 3 cutting edges, radially relief ground. Flutes ground from solid.
High-precision countersink, produced to tight manufacturing tolerances similar to DIN 335-C **with long plain shank.**

15 0376 – Three **drive flats on the shank** for use in a 3-jaw chuck.
15 0377/0376 – **Special geometry with extremely unequal spacing** and matching cutting edge preparation.
Newly developed, **special TiAlN coating** for long tool life.

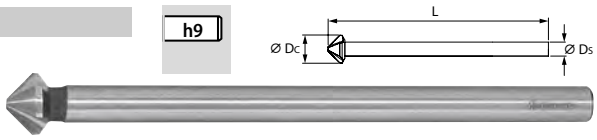
Application:
15 0377/0376 – High-precision countersinks for chatter-free production of **precise, round 90° countersunk surfaces.**



External Ø D_c	11M 15 0371	11M 15 0377	11M 15 0376	smallest countersink Ø for holes from	L	Ø D_s	for counter-sunk screws DIN 7991	< 500 N f	
	High-precision countersink, long		High-precision countersink, long, with 3 drive flats					15 0371	15 0377 15 0376
	90°								
mm		TiAlN	TiAlN	mm	mm	mm		mm/rev.	mm/rev.
6,3	eShop	eShop	eShop	1.5	104	5	M3	0.09	0.1
8,3	eShop	eShop	eShop	2	105	6	M4	0.09	0.1
10,4	eShop	eShop	eShop	2.5	107	6	M5	0.12	0.13
12,4	eShop	eShop	eShop	2.8	108	8	M6	0.12	0.13
16,5	eShop	eShop	eShop	3.2	111	10	M8	0.14	0.18
20,5	eShop	eShop	eShop	3.5	114	10	M10	0.16	0.22
25	eShop	eShop	eShop	3.8	118	10	M12	0.2	0.25
31	eShop	eShop	eShop	4.2	140	12	M16	0.2	0.25

Countersink 90°, extra long

All countersinks have 3 cutting edges, radially relief ground. Flutes ground from solid.
High-precision countersink, produced to tight manufacturing tolerances similar to DIN 335-C **with extra long plain shank.**



External Ø D_c	11M 15 0372	smallest countersink Ø for holes from	L	Ø D_s	for counter-sunk screws DIN 7991	< 500 N f
	High-precision countersink, extra long					
mm	90°	mm	mm	mm		mm/rev.
6,3	eShop	1.5	154	5	M3	0.09
8,3	eShop	2	155	6	M4	0.09
10,4	eShop	2.5	157	6	M5	0.12
12,4	eShop	2.8	158	8	M6	0.12
16,5	eShop	3.2	161	10	M8	0.14
20,5	eShop	3.5	164	10	M10	0.16
25	eShop	3.8	168	10	M12	0.2
31	eShop	4.2	190	12	M16	0.2

Countersink sets 90°

Handy for assembly and workshop use.

15 0369 – High-precision countersink No. 150376, **with long shank with 3 drive flats.**
15 0373 – Countersink No. 150371, **with long shank.**
15 0374 – Countersink No. 150372, **with extra-long shank.**
15 0375 – High-precision countersink No. 150377, **with long shank.**

Application:
15 0375/0369 – High-precision countersinks for chatter-free production of **precise, round 90° countersunk surfaces.**

Supplied with: 6-piece countersink set in a case.

Number of countersinks			6
11M 15 0373	Countersink set, long No. 150371 in a case 90°		eShop
11M 15 0374	Countersink set, extra long, No. 150372 in a case 90°		eShop
11M 15 0375	High-precision countersink set, long No. 150377 in a case 90°	TiAlN	eShop
11M 15 0369	High-precision countersink set with 3 drive flats, long, No. 150376 in a case 90°	TiAlN	eShop
Content: 1× each countersink			Size 6.3; 8.3; 10.4; 12.4; 16.5; 20.5

≠



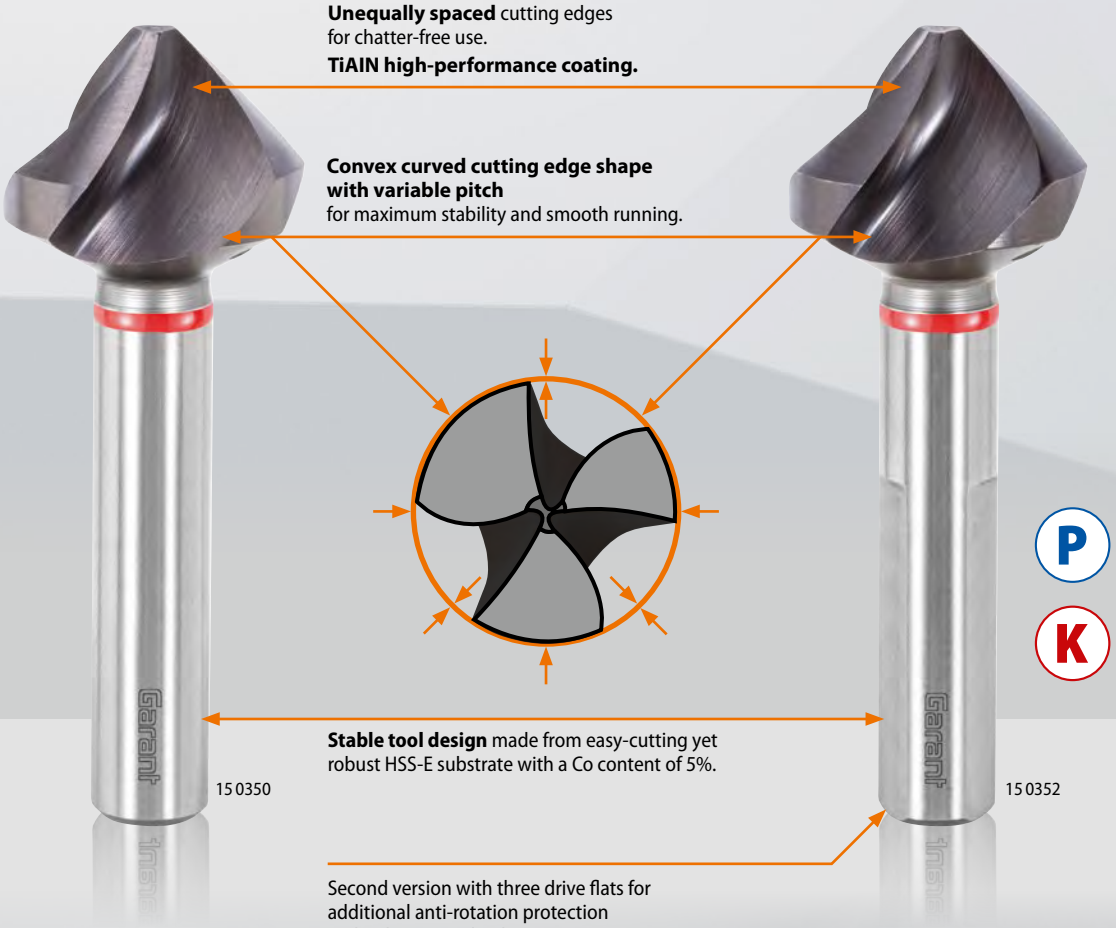
15 0375

Garant MASTER STEEL HT

MASTERFUL COUNTERSINKS IN STEEL AND CAST MATERIALS.

Up to 1400 N/mm² tensile strength.

- **Impressive performance in Toolox 44 and HARDOX 500.**
- Conditional use in stainless steels, non-ferrous metals and titanium.
- **A wide range of applications in manual mode and in the machining centre.**



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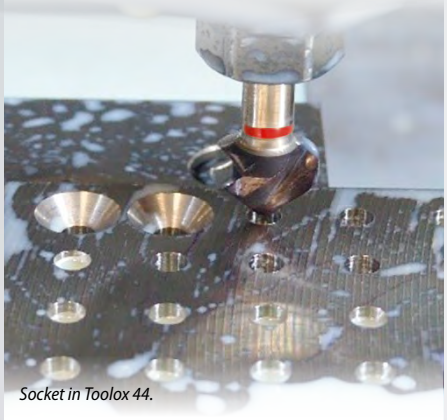
P

K

Excellent countersinking results in Toolox 44 and HARDOX 500.



Socket in Toolox 44.

Available in the diameter range from 6.3 mm to 40 mm.

Two set versions with parallel shank and 3 drive flats – each in sizes 5 and 6.
Individual tools included:

Size 5	6.3	10.4	16.5	20.5	25	
Size 6	6.3	8.3	10.4	12.4	16.5	20.5



150354_5

150354_6

90° | HSS E | ≠ | 3 | DIN 335 C

Garant

Master Steel HT high-precision countersink 90° with unequal spacing

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	K					
15 0350–15 0356		72	58	42	35	31	19	15				14	13	10	17	13	10	29	○	●		○	

GARANT MasterSteel[HT] high-precision countersink 90° with unequal spacing

Countersinks with 3 convex unequally spaced cutting edges for chatter-free countersinking and deburring. Robust design and special geometry with variable pitch of the spiral cutting edges for the highest demands – even in difficult-to-machine materials such as Toolox 44 and Hardox 500. Significantly reduced radial and axial forces. Manufactured with narrower production tolerances than specified by DIN335-C.

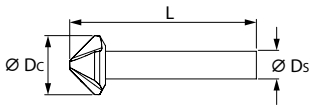
Advantage: High self-guidance and stability due to the convex cutting edge geometry. Chatter-free running for excellent results with long tool life at the same time.

Application: High-precision countersinks for production of exactly round 90° countersunk surfaces in steel, cast iron and materials that are challenging to machine. Exceptionally well suited for use on hand-held power drills and single-pillar drilling machines.

h9



15 0350



h9



15 0352

External Ø D_c	15B 15 0350 GARANT MasterSteel[HT] high-precision countersink with unequal spacing 90°	15B 15 0352 GARANT MasterSteel[HT] high-precision countersink with unequal spacing and 3 drive flats 90°	smallest countersink Ø for holes from	L	Ø D_s	for countersunk screws ISO 2009, 2010, 7046, 7047	for countersunk screws DIN 7991	< 1400 N f
mm	TiAlN	TiAlN	mm	mm	mm			mm/rev.
6,3	eShop	eShop	2	45	5	–	M3	0.08
8	eShop	eShop	2.5	50	6	M4	–	0.08
8,3	eShop	eShop	2.5	50	6	–	M4	0.08
10	eShop	eShop	3	50	6	M5	–	0.08
10,4	eShop	eShop	3	50	6	–	M5	0.09
11,5	eShop	eShop	3.3	56	8	M6	–	0.09
12,4	eShop	eShop	3.3	56	8	–	M6	0.1
15	eShop	eShop	3.7	60	10	M8	–	0.1
16,5	eShop	eShop	3.7	60	10	–	M8	0.1
19	eShop	eShop	4.5	63	10	M10	–	0.1
20,5	eShop	eShop	4.5	63	10	–	M10	0.12
23	eShop	eShop	4.8	67	10	M12	–	0.12
25	eShop	eShop	4.8	67	10	–	M12	0.13
31	eShop	eShop	5.2	71	12	–	M16	0.13
40	eShop	eShop	12	75	12	–	M24	0.13

GARANT MasterSteel[HT] high-precision countersink sets 90°

Countersink sets **in a case.** Handy for assembly and workshop use.

Note: Empty case for 5 countersinks, see No. 150368 5 commodity group 15.

h9



15 0354_5

h9



15 0354_6

Number of countersinks			5	6
15B 15 0354	GARANT MasterSteel[HT] countersink set No. 150350 in a case 90°	TiAlN	eShop	eShop
15B 15 0356	GARANT MasterSteel[HT] countersink set with 3 drive flats No. 150352 in a case 90°	TiAlN	eShop	eShop
Content: 1 pc. each countersink			Sizes 6.3; 10.4; 16.5; 20.5; 25	Size 6.3; 8.3; 10.4; 12.4; 16.5; 20.5

90° | HSS E | 3 | DIN 335 C

Garant

Countersink 90°, for stainless and acid-resistant steels

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
15 0378	70	33	25	28	27	27	8	4						7	7	7	12	65
15 0389/0393	53	40	35	55	30	25	15	12						18	13	13	30	42

Countersink 90°, for stainless and acid-resistant steels

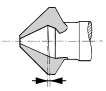
All countersinks have 3 cutting edges, radially relieved.
Flutes are ground from solid.
High-precision countersink, produced with tight manufacturing tolerances similar to DIN 335-C.

15 0393 – Three **drive flats on the shank** for use in a 3-jaw chuck.

15 0389/0393 – Special geometry with **unequal spacing** and matching cutting edge preparation. Newly developed AlTiCN coating especially **for stainless steels.**

Application:

15 0389/0393 – High-precision countersinks for chatter-free production of **precise, round 90° countersunk surfaces.**

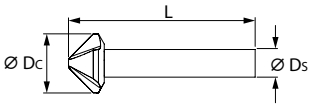

Relief ground

h9


15 0378

h9 | ≠


15 0389



h9 | ≠


15 0393

External ∅ D_c	11M 15 0378	11M 15 0389	11M 15 0393	smallest countersink ∅ for holes from	L	∅ D_s	for countersunk screws ISO 2009, 2010, 7046, 7047	for countersunk screws DIN 7991	INOX < 900 N f	
	High-precision countersink	High-precision countersink with unequal spacing	High-precision countersink with unequal spacing and 3 drive flats						15 0378	15 0389 15 0393
		90°								
mm		AlTiCN	AlTiCN	mm	mm	mm			mm/rev.	mm/rev.
4,3	eShop	eShop	eShop	1.3	40	4	M2	–	0.08	0.1
5	eShop	–	–	1.5	40	4	M2.5	–	0.08	–
6	eShop	eShop	eShop	1.5	45	5	M3	–	0.1	0.1
6,3	eShop	eShop	eShop	1.5	45	5	–	M3	0.1	0.1
7	eShop	–	–	1.8	50	6	M3.5	–	0.1	–
8	eShop	eShop	eShop	2	50	6	M4	–	0.1	0.1
8,3	eShop	eShop	eShop	2	50	6	–	M4	0.1	0.1
10	eShop	eShop	eShop	2.5	50	6	M5	–	0.12	0.1
10,4	eShop	eShop	eShop	2.5	50	6	–	M5	0.12	0.1
11,5	eShop	eShop	eShop	2.8	56	8	M6	–	0.12	0.1
12,4	eShop	eShop	eShop	2.8	56	8	–	M6	0.12	0.1
15	eShop	eShop	eShop	3.2	60	10	M8	–	0.12	0.12
16,5	eShop	eShop	eShop	3.2	60	10	–	M8	0.14	0.12
19	eShop	eShop	eShop	3.5	63	10	M10	–	0.14	0.12
20,5	eShop	eShop	eShop	3.5	63	10	–	M10	0.16	0.14
23	eShop	–	–	3.8	67	10	M12	–	0.16	–
25	eShop	eShop	eShop	3.8	67	10	–	M12	0.18	0.2
31	eShop	eShop	eShop	4.2	71	12	–	M16	0.18	0.24

Countersink sets 90°, for stainless and acid-resistant steels

h9

Countersink sets, **in a case.**
Practical set for assembly and workshop use.

Application:

15 0391/0394 – High-precision countersinks for chatter-free production of **precise, round 90° countersunk surfaces.**

Note:

Size 7 – Supplied in a case No. 150370 **size 6.**


15 0391

≠

Number of countersinks			6	7	17
11M 15 0381	Countersink set No. 150378 in a case 90°		eShop	eShop	eShop
11M 15 0391	Countersink set No. 150389 in a case 90°	AlTiCN	eShop	eShop	–
11M 15 0394	Countersink set No. 150393 with 3 drive flats, in a case 90°	AlTiCN	eShop	eShop	–
Content: 1× each precision countersink			Size 6; 8; 10; 11.5; 15; 19	Size 6; 8; 10; 11.5; 15; 19; 25	Size 4.3; 5; 6; 6.3; 7; 8; 8.3; 10; 10.4; 11.5; 12.4; 15; 16.5; 19; 20.5; 23; 25

90° | Solid carbide | h9

Garant

Countersink 90°

15 0382 – Similar to DIN 335-C. All countersinks have 3 cutting edges, radially relieved.
For chatter-free countersinking and deburring. Ø 6 and 8 as solid carbide version, from Ø 10 solid carbide head with brazed shank.

15 0386 – Very **sturdy version,** multi-flute, **special geometry** for **very heavy duty use.** For **chatter-free countersinking** and **deburring.**
For difficult to machine materials.
Solid carbide head with brazed shank.
Suitable even for Hardox 500.

Type H | 4 | 5 | Standard



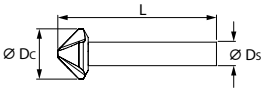
15 0386

3 | DIN 335 C



15 0382

Note:
15 0386 – Ensure stable conditions during operation!



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
15 0382		75	**50**	65	**60**	**30**	**18**	8	8					**16**	**10**	16	25	○		●			●
15 0386						30	18	**8**	**8**	**8**	**8**	**8**	**6**			**6**		**5**		●			●

External Ø D_c	11M 15 0386	11M 15 0382	Number of cutting edges Z		smallest countersink Ø for holes from		L	Ø D_s	for countersinking to DIN 74 AF	for countersinking to DIN 74 BF	< 60 HRC f	INOX < 900 N f
	Countersink solid carbide 90°		15 0386	15 0382	15 0386	15 0382				15 0382	15 0386	15 0382
mm					mm	mm	mm	mm			mm/rev.	mm/rev.
6	–	eShop	–	3	–	2	40	5	M3	–	–	0.1
8	–	eShop	–	3	–	2	45	6	M4	–	–	0.1
10	–	eShop	–	3	–	2.5	46	8	M5	–	–	0.12
10,4	eShop	eShop	4	3	4	2.5	46	8	–	M5	0.04	0.12
11,5	–	eShop	–	3	–	2.8	56	8	M6	–	–	0.14
12,4	eShop	eShop	5	3	4	2.8	56	8	–	M6	0.05	0.14
15	–	eShop	–	3	–	3.2	60	10	M8	–	–	0.14
16,5	eShop	eShop	5	3	4.5	3.2	60	10	–	M8	0.05	0.14
20,5	eShop	eShop	5	3	5	3.5	63	10	–	M10	0.06	0.16
25	eShop	eShop	5	3	5.5	3.8	67	10	–	M12	0.08	0.2
31	eShop	eShop	5	3	6	4.2	71	12	–	M16	0.1	0.24

90° | Solid carbide | ≠ | 3 | DIN 335 C | h6

Garant

High-precision countersink 90° with unequal spacing



15 0388

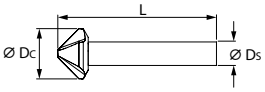
All countersinks have 3 cutting edges. Special geometry with extremely unequal spacing and matching cutting edge preparation. Radially relief ground. Flutes ground from solid.
Newly developed **special TiAlN coating** for long service life.
High-precision countersink, produced with tight manufacturing tolerances similar to DIN 335-C.

Advantage: Very smooth cutting throughout the entire countersinking operation.
Chatter-free running for perfect results and **optimum tool service life.**

Application: High-precision countersinks for production of exactly round 90° countersunk surfaces.
Very well suited to virtually all materials. Advantage in comparison to HSS countersinks especially in the field of high-tensile steels and because the working life is several times longer.
Shank tolerance h6 - suitable for mounting in hydraulic chucks or shrink-fit chucks.



Extremely unequal spacing (cutting edges arranged at unequal intervals).



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
15 0388	**80**	**80**	**60**	**65**	**60**	**50**	**40**	**10**	**12**			**25**	**20**	**15**	**35**	**70**	○	●		●	●		○

External Ø D_c	11M 15 0388	smallest countersink Ø for holes from	L	Ø D_s	for countersunk screws DIN 7991	< 1100 N f
	High-precision solid carbide countersink with unequal spacing 90°					
mm	TiAlN	mm	mm	mm		mm/rev.
6,3	eShop	1.5	45	5	M3	0.08
8,3	eShop	2	50	6	M4	0.1
10,4	eShop	2.5	50	6	M5	0.1
12,4	eShop	2.8	56	8	M6	0.12
16,5	eShop	3.2	60	10	M8	0.16
20,5	eShop	3.5	63	10	M10	0.2
25	eShop	3.8	67	10	M12	0.24
31	eShop	4.2	71	12	M16	0.24

90° | HSS | 3 | DIN 335 D

Countersink 90°

Countersinks radially relief ground. Chip flutes are ground from solid up to size 31.
Chip angle varies with the countersink ∅ for optimum chip formation.
Countersink point and circumference are relief ground and cut easily.

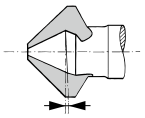
- 15 0390 – High-precision countersink, produced with tight manufacturing tolerances similar to DIN 335-D.
- 15 0395 – Economy countersink version.
- 15 0396 – High-precision countersink for considerable performance improvement.

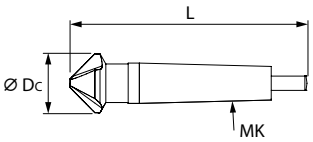
Note: For countersink bits with shank 6.3 mm (1/4 inch) see Group 67.


15 0390


15 0395


15 0396


Relief ground



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
15 0390/0395	70	33		28	27	27														●		○	
15 0396			25	34	32	32											80			●		○	

External ∅ D_c	11M 15 0390 Garant High-precision countersink	12M 15 0395 HOLEX Countersink 90°	11M 15 0396 Garant High-precision countersink TiN	smallest countersink ∅ for holes from	L	MT	for countersunk screws ISO 2009, 2010, 7046, 7047	for countersunk screws DIN 7991	< 500 N f
mm				mm	mm				mm/rev.
16,5	eShop	eShop	–	3.2	85	1	–	M8	0.14
19	eShop	–	–	3.5	100	2	M10	–	0.14
20,5	eShop	eShop	–	3.5	100	2	–	M10	0.16
23	eShop	–	–	3.8	106	2	M12	–	0.16
25	eShop	eShop	eShop	3.8	106	2	–	M12	0.2
26	eShop	–	–	4	106	2	M14	–	0.2
28	eShop	–	–	4	112	2	–	M14	0.2
30	eShop	eShop	–	4.2	112	2	M16	–	0.2
31	eShop	eShop	eShop	4.2	112	2	–	M16	0.25
34	eShop	eShop	–	4.5	118	2	M18	M18	0.25
37	eShop	eShop	eShop	4.8	118	2	M20	M20	0.25
40	eShop	eShop	eShop	10	140	3	–	–	0.25
50	eShop	eShop	eShop	14	150	3	–	–	0.25
63	eShop	eShop	eShop	16	180	4	–	–	0.35
80	eShop	eShop	–	22	190	4	–	–	0.35
100	eShop	eShop	–	28	200	4	–	–	0.35

90° HSS 3

Garant Hand deburrer/countersink 90°

Three-flute countersink with ergonomic plastic handle. Handy power grip made of particularly tough and impact-resistant polypropylene. Due to its special surface structure, the **grip is non-slip even with oily or wet hands.**

Note:	For clean deburring and chamfering of holes. Especially useful for assembly work. For other hand deburrers, see Group 83.



15 0400

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	S	K	N						
15 0400	●	●	●	●	●	○								○	○	○	●	●				●	

External ∅	mm	12,4	16,5	20,5	25
11M 15 0400 Hand deburrer 90°		eShop ■	eShop ■	eShop ■	eShop
smallest countersink ∅ for holes from	mm	2.8	3.2	3.5	3.8
Overall length	mm	134	138	141	145
Length of handle	mm	100	105	110	110

Hand deburrer set 90°



15 0405

11M 15 0405	Hand deburrer set 90°	eShop ■
Supplied with: 1 each hand deburrer		No. 150400 size 12.4; 16.5; 20.5; 25.

15

Garant Handle for countersink with 3 drive flats

To accept GARANT high-precision countersinks with unequal spacing and **3 drive flats** on the shank. One handle can accept various different sizes of countersink, all with the same shank diameter.
Handy power grip made of particularly tough and impact-resistant polypropylene. Due to its special surface structure, the **grip is non-slip even with oily or wet hands.**





15 0409

Shank ∅	mm	6	8	10
11M 15 0409 Handle for countersink with 3 drive flats		eShop	eShop	eShop
Length of handle	mm	106	112	120

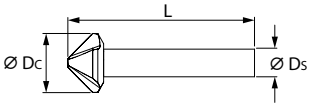
75° HSS 3 Standard h9

Garant Countersink 75°

The chip flutes are ground from solid. Countersink point and circumference are relief ground and cut easily. This results in easy and **chatter-free cutting** for deep countersinking, as well as for deburring or countersinking.



15 0425



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
15 0425		33		28	27	27														●		○	

External ∅ D_c	11M 15 0425 Countersink 75°	smallest countersink ∅ for holes from	L	∅ D_s	< 500 N f
mm		mm	mm	mm	mm/rev.
8	eShop	2	50	6	0.09
10,4	eShop	2.5	51	6	0.12
12,5	eShop	2.8	54	8	0.12
16,5	eShop	3.5	61	10	0.14
20	eShop	3.5	63	10	0.16
25	eShop	3.8	71	10	0.2

60° | HSS | 3 | DIN 334

Garant Countersink 60°

15 0817 – Three **drive flats on the shank** for use in a 3-jaw chuck.

15 0815/0817 – **High-precision 60° countersink with unequal spacing.** **Special geometry with extremely unequal spacing** and matching cutting edge preparation. Radially relief ground. Flutes ground from solid. Newly developed **special TiAlN coating** for long service life.

15 0820/0840 – The chip flutes are ground from solid. Countersink point and circumference are relief ground and cut easily. This results in easy and **chatter-free cutting** for deep countersinking, as well as for deburring or countersinking.

Advantage:

15 0815/0817 – Very smooth cutting throughout the entire countersinking operation. Chatter-free running for perfect results and **optimum tool service life.**

Application:

15 0815/0817 – High-precision countersinks for production of **exactly round 60° countersunk surfaces.**

15 0820/0840 – For chatter-free countersinking and deburring. **Especially suitable for chamfering tapped holes and for countersinking in jig and tool making.**

≠ | h9



15 0815

≠ | h9



15 0817

h9

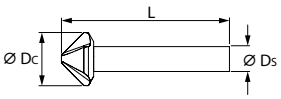


15 0820

h9



15 0840



15 0815
15 0817



Extremely unequal spacing (cutting edges arranged at unequal intervals)

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N					
15 0815/0817	75	75	50	65	50	30	18	8	8			16	10	12	25	60	○	●		●		○
15 0820	70	33		28	27	27												●		●		○
15 0840	85	40	25	34	32	32						9						●		●		○

External Ø D_c	11M 15 0815	11M 15 0817	11M 15 0820	11M 15 0840	smallest countersink Ø for holes from	L	Ø D_s	< 500 N f	
	High-precision countersink with unequal spacing	High-precision countersink with unequal spacing with 3 drive flats	Countersink Form C					15 0815 15 0817	15 0820 15 0840
	60°								
mm	TiAlN	TiAlN		TiN	mm	mm	mm	mm/rev.	mm/rev.
6,3	eShop	eShop	eShop	eShop	1.6	45	5	0.1	0.09
8	eShop	eShop	eShop	eShop	2	50	6	0.1	0.09
10	eShop	eShop	eShop	eShop	2.5	50	6	0.13	0.12
12,5	eShop	eShop	eShop	eShop	3.2	56	8	0.13	0.12
16	eShop	eShop	eShop	eShop	4	63	10	0.18	0.14
20	eShop	eShop	eShop	eShop	5	67	10	0.22	0.16
25	eShop	eShop	eShop	eShop	6.3	71	10	0.25	0.2

60° | Solid carbide | 3 | Standard | h9

Garant Countersink 60° for stainless and acid-resistant steel

Very **sturdy design, special geometry** for **heavy-duty use,** with **chatter-free countersinking and deburring**.

Tool material: Size 8 – of solid carbide.
Size. 10 – 25 – solid carbide head with brazed shank. Design similar to DIN 344-C.



15 0855

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
15 0855				65	60	30	18	8	8					16	10	16	25			●			

External Ø D_c	11M 15 0855	smallest countersink Ø for holes from	L	Ø D_s	INOX < 900 N f
	Countersink solid carbide				
	60°				
mm		mm	mm	mm	mm/rev.
8	eShop	2	50	6	0.1
10	eShop	2.5	50	8	0.12
12,5	eShop	3.2	56	8	0.14
16	eShop	4	63	10	0.14
20	eShop	5	67	10	0.16
25	eShop	6.3	71	10	0.2

60° | HSS | 3 | DIN 334

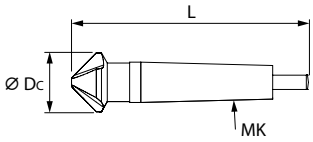
Garant Countersink 60°

The chip flutes are ground from solid up to size 31.5.
Countersink point and circumference are relief ground and cut easily.
This results in easy and **chatter-free cutting** for deep countersinking, as well as for deburring or countersinking.

Application: For chatter-free countersinking and deburring.
Especially suitable for chamfering tapped holes and for countersinking in jig and tool making.



15 0860



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
15 0860		33		28	27												65			●		○	

Ø D_c mm	11M 15 0860 Countersink, form D 60°	smallest countersink Ø for holes from mm	L mm	MT	< 500 N f mm/rev.
16	eShop	4	90	1	0.14
25	eShop	6.3	112	2	0.2
31,5	eShop	10	118	2	0.2
40	eShop	12.5	150	3	0.25
50	eShop	16	160	3	0.25
63	eShop	20	190	4	0.35
80	eShop	25	200	4	0.35

15

HSS E | 3

Garant Mini-counterbore with pilot for screws from M1

Spiral fluted counterbore with fixed pilot.
15 5600 – DIN 1866-A / ISO 4205.
15 5700 – DIN 373 / ISO 4206.

Application: **For through hole** quality **fine** (ISO values) to DIN 69.
15 5600 – For countersunk screws to ISO 2009, 2010, 7046, 7047 (DIN 963, 964, 965, 966).
15 5700 – For socket-head screws to DIN 912, 6912, 7984, and cheese-head screws to ISO 1207 (DIN 84).

Note: Size 4.6 × 2.4 is not defined in DIN.

DIN 1866 A | 90°

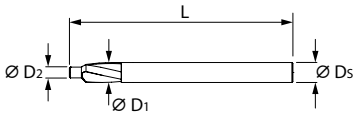


15 5600

DIN 373 | 180°



15 5700



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
15 5600/5700		33		28	27	27								8	5				●				

Counterbore Ø D_1 ×pin Ø D_2 mm	11M 15 5600 Mini counterbore for through holes 90°	11M 15 5700 Mini counterbore for through holes 180°	for screw size	L mm	Ø D_s mm	< 500 N f mm/rev.
2×1,1	eShop	–	M1	45	2	0.07
2,2×1,1	–	eShop	M1	45	2.2	0.07
2,5×1,3	eShop	eShop	M1.2	45	2.5	0.07
2,8×1,5	eShop	eShop	M1.4	45	2.8	0.07
3,3×1,7	eShop	eShop	M1.6	56	3.3	0.07
4,3×2,2	eShop	eShop	M2	56	4.3	0.07
4,6×2,4	eShop	eShop	M2.2	56	4.6	0.07
5×2,7	eShop	eShop	M2.5	56	5	0.07
6×3,2	eShop	–	M3	71	6	0.09
8×4,3	eShop	–	M4	71	8	0.09
10×5,3	eShop	–	M5	80	10	0.12
11,5×6,4	eShop	–	M6	80	11.5	0.12

HSS 3

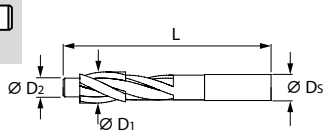
Garant

DIN counterbore with pilot for through holes



15 6020

DIN 373 h9

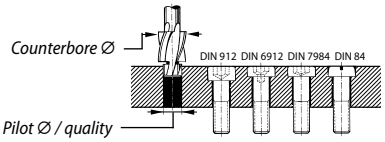


Spiral fluted counterbore. The pilot Ø matches the intended purpose:
f – for through holes **fine** quality to DIN ISO 273.
m for through holes **medium** quality to DIN ISO 273.

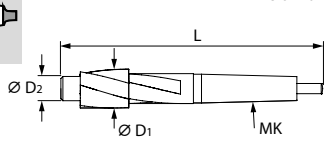
Application: For counterboring socket head screws DIN 912, 6912, 7984, and cheese head screws ISO 1207 (DIN 84).



15 6120



Standard



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
15 6020/6120		33		28	27													

Counterbore Ø D_1 ×pin Ø D_2 mm	11M 15 6020 DIN counterbore for through holes	11M 15 6120 DIN counterbore for through holes	for screw size	for quality of the hole	L 15 6020 mm	L 15 6120 mm	Ø D_s 15 6020 mm	MT 15 6120	< 500 N f mm/rev.
6,5×3,2	eShop	–	M3	f	71	–	5	–	0.09
6,5×3,4	eShop	–	M3	m	71	–	5	–	0.09
6,5×3,9	(eShop)	–	M3.5	m	71	–	5	–	0.09
8×4,3	eShop	–	M4	f	71	–	5	–	0.09
8×4,5	eShop	–	M4	m	71	–	5	–	0.09
10×5,3	eShop	–	M5	f	80	–	8	–	0.12
10×5,5	eShop	–	M5	m	80	–	8	–	0.12
11×6,4	eShop	–	M6	f	80	–	8	–	0.12
11×6,6	eShop	–	M6	m	80	–	8	–	0.12
15×8,4	eShop	–	M8	f	100	–	12.5	–	0.12
15×9	eShop	–	M8	m	100	–	12.5	–	0.12
18×10,5	eShop	eShop	M10	f	100	150	12.5	2	0.14
18×11	eShop	eShop	M10	m	100	150	12.5	2	0.14
20×13	eShop	eShop	M12	f	100	150	12.5	2	0.16
20×13,5	eShop	eShop	M12	m	100	150	12.5	2	0.16
24×15	–	eShop	M14	f	–	162	–	2	0.16
24×15,5	–	eShop	M14	m	–	162	–	2	0.16
26×17	–	eShop	M16	f	–	192	–	3	0.2
26×17,5	–	eShop	M16	m	–	192	–	3	0.2

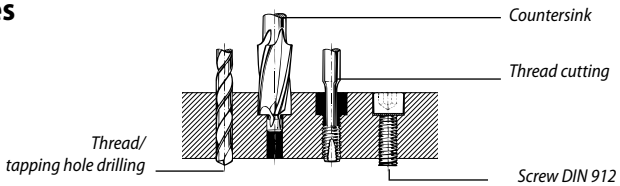
HSS 3 DIN 373 h9

Garant

DIN counterbore with pilot for tapping drill holes

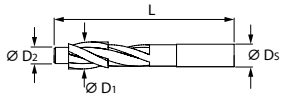


15 6220



Three edged, spiral fluted counterbore with fixed pilot for tapping drill holes.

Application: For counterboring socket head screws DIN 912, 6912, 7984 and slotted cheese head screws ISO 1207 (DIN 84). The pilot diameter matches the tapping hole diameter.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
15 6220		33		28	27	27												

Counterbore Ø D_1 ×pin Ø D_2 mm	11M 15 6220 DIN counterbore for tapping drill holes	for screw size	L mm	Ø D_s mm	< 500 N f mm/rev.
6,5×2,5	eShop	M3	71	5	0.09
6,5×2,9	eShop	M3.5	71	5	0.09
8×3,3	eShop	M4	71	5	0.09
10×4,2	eShop	M5	80	8	0.12
11×5	eShop	M6	80	8	0.12
15×6,8	eShop	M8	100	12.5	0.12
18×8,5	eShop	M10	100	12.5	0.14
20×10,2	eShop	M12	100	12.5	0.16

Garant Counterbore sets in a case

HSS | DIN 373 | h9

15 6420 – Set of the most commonly used counterbores **for screws M3 – M4 – M5 – M6 – M8 – M10.**
Size DF – Counterbore 156020 **DF** = through hole **fine** quality

Size DM – Counterbore 156020 **DM** = through hole **medium** quality

Size K – Counterbore 156220 **K** = tapping hole


15 6420

Type		DF	DM	K
11M 15 6420	Counterbore set, 6 pieces, in a case	eShop ■	eShop ■	eShop
Content: Counterbore Ø×pilot Ø		1× each size 6.5×3.2; 8×4.3; 10×5.3; 11×6.4; 15×8.4; 18×10.5	1× each size 6.5×3.4; 8×4.5; 10×5.5; 11×6.6; 15×9; 18×11	1× each size 6.5×2.5; 8×3.3; 10×4.2; 11×5; 15×6.8; 18×8.5
11M 15 6450	Empty case for 6 counterbores	eShop		

Garant DIN counterbore for interchangeable pilots

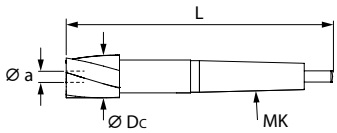
HSS | DIN 375

Multi-edged, spiral fluted counterbore with recess in face for fitting various pilots. Pilot is clamped with a screw in the counterbore.

Application: **One** counterbore can be used for **several** pilot holes of different diameters due to the interchangeable pilots.

Note: The dimensions relate to screws DIN 912, 6912, 7984 and ISO 1207. However, with an appropriate pilot, a counterbore can be used for other screw sizes or counterbore / pilot diameter combinations.


15 6520



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
15 6520		33		28	27	27													●				

Countersink Ø D_c mm	11M 15 6520 Counterbore without pilot	for screw size	Hole Ø a mm	L mm	MT	< 500 N f mm/rev.
15	eShop	M8	4	132	2	0.12
18	eShop	M10	5	140	2	0.14
20	eShop	M12	5	140	2	0.16
24	eShop	M14	6	150	2	0.16
26	eShop	M16	8	180	3	0.2
30	eShop	M18	8	180	3	0.2
33	eShop	M20	10	190	3	0.2
36	eShop	M22	10	190	3	0.2
40	eShop	M24	10	190	3	0.25

Pilot pin

DIN 1868



15 6620

Ø a×Ø d mm	11M 15 6620 Pilot for counterbore	for screw size	for hole	suitable for counterbore Ø mm
4×6,8	eShop	M8	Core hole	15
5×6,8	eShop	–	–	18; 20
5×8,4	(eShop)	–	–	18; 20
5×8,5	eShop	M10	Core hole	18; 20
5×9	eShop	–	–	18; 20
5×10,2	eShop	M12	Core hole	18; 20
5×11	eShop	M10	Through hole medium	18; 20
5×13	eShop	M12	Through hole fine	18; 20
6×8,5	eShop	–	–	24
6×12	eShop	M14	Core hole	24
8×10,2	(eShop)	–	–	26; 30
8×12	eShop	–	–	26; 30
8×14	eShop	M16	core hole	26; 30

Ø a×Ø d mm	11M 15 6620 Pilot for counterbore	for screw size	for hole	suitable for counterbore Ø mm
8×17	eShop	M16	Through hole fine	26; 30
8×17,5	eShop	M16	Through hole medium	26; 30
8×19	eShop	M18	Through hole fine	26; 30
10×14	eShop	–	–	33; 36; 40
10×17,5	eShop	M20	Core hole	33; 36; 40
10×21	eShop	M20	Through hole fine	33; 36; 40
10×22	eShop	M20	Through hole medium	33; 36; 40
10×26	eShop	M24	Through hole medium	33; 36; 40

Modular counterboring system with internal coolant supply



Complete counterboring tool

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
15 6730	40	60	20	25	20	15	10	5						5				

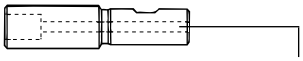
Modular counterboring system holder

Just 4 holder sizes cover a range from 5 mm to 66 mm (up to 85 mm available on request). Counterbores and solid pilots can be **combined as required** within **one size,** the solid pilot can be changed without removing the counterbore. Hardened and ground. Counterbore and pilot are clamped by one screw each, the counterbore is additionally protected against turning by means of a pin.

Size 1/20; 2/25 – Plain Weldon shank to DIN 1835 B, with internal coolant supply.

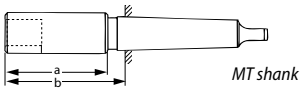
Application: **For DIN counterbores,** as well as with appropriate pilot / counterbore combinations for stepped holes or non-standard counterbores.
For stepped through holes pilots are available ex works in 2 lengths so that these holes can be produced without a separate pilot hole drilling operation.


15 6720_1/20_2/25


Coolant transfer hole

Size / shank size	16C 15 6720 Modular counterboring system holder	Counterbore range	Bore ∅ H7	Hole length	External ∅	Length a	Length b
		mm	mm	mm	mm	mm	mm
01/10	eShop	5 – 9	7	12	14	45	–
0/10	eShop	8 – 16.5	10	18	18	42	–
0MK1	eShop	8 – 16.5	10	18	18	42	49.5
1/12	eShop	14 – 27.5	14	20	24	55	–
1/20	eShop	14 – 27.5	14	20	24	55	–
1MK2	eShop	14 – 27.5	14	20	24	55	61
2/25	eShop	24 – 66	22	28	34.5	75	–
2MK2	eShop	24 – 66	22	28	34.5	75	81
2MK3	eShop	24 – 66	22	28	34.5	75	81


Parallel shank



MT shank

Modular counterboring system





Very good machining and ideal chip evacuation due to spiral flutes. **Easy to regrind.**
Counterbore is protected against turning in the holder.

Application: For counterboring screw heads to DIN or **by means of an appropriate combination of counterbore and pilot to produce stepped holes or non-standard counterbores.**

Note: Counterbores available on request also in HSS with optional TIN coating and brazed-on carbide tips with form "T" ISO inserts.


15 6730

Size / counterbore ∅	16C 15 6730 Modular counterbore	Z	Cutter length	Shank ∅
mm			mm	mm
01/5	eShop	2	8	7
01/5,5	eShop	2	8	7
01/6	eShop	2	8	7
01/6,5	eShop	2	8	7
01/7	eShop	2	8	7
01/8	eShop	2	8	7
0/8	eShop	3	14	10
0/8,5	eShop	3	14	10
0/9	eShop	3	14	10
0/9,5	eShop	3	14	10
0/10	eShop	3	14	10
0/10,5	eShop	3	14	10
0/11	eShop	3	14	10
0/11,5	eShop	3	14	10
0/12	eShop	3	14	10
0/12,5	eShop	3	14	10
0/13	eShop	3	14	10
0/13,5	eShop	3	14	10
0/14	eShop	3	14	10
0/14,5	eShop	3	14	10
0/15	eShop	3	14	10
0/15,5	eShop	3	14	10
0/16	eShop	3	14	10
0/16,5	eShop	3	14	10
1/14	eShop	3	22	14
1/14,5	eShop	3	22	14
1/15	eShop	3	22	14

Size / counterbore ∅	16C 15 6730 Modular counterbore	Z	Cutter length	Shank ∅
mm			mm	mm
1/15,5	eShop	3	22	14
1/16	eShop	3	22	14
1/16,5	eShop	3	22	14
1/17	eShop	3	22	14
1/17,5	eShop	3	22	14
1/18	eShop	3	22	14
1/18,5	eShop	3	22	14
1/19	eShop	3	22	14
1/19,5	eShop	3	22	14
1/20	eShop	3	22	14
1/20,5	eShop	3	22	14
1/21	eShop	3	22	14
1/21,5	(eShop)	3	22	14
1/22	eShop	3	22	14
1/22,5	eShop	3	22	14
1/23	eShop	3	22	14
1/24	eShop	3	22	14
1/24,5	eShop	3	22	14
1/25	eShop	3	22	14
1/25,5	(eShop)	3	22	14
1/26	eShop	3	22	14
1/27	eShop	3	22	14
1/27,5	eShop	3	22	14
2/24	eShop	4	24	22
2/25	eShop	4	24	22
2/26	eShop	4	24	22
2/27	eShop	4	24	22

Size / counterbore ∅	16C 15 6730 Modular counterbore	Z	Cutter length	Shank ∅
mm			mm	mm
2/28	eShop	4	24	22
2/29	eShop	4	24	22
2/30	eShop	4	24	22
2/31	eShop	4	24	22
2/32	eShop	4	24	22
2/33	eShop	4	24	22
2/34	eShop	4	24	22
2/35	eShop	4	24	22
2/36	eShop	4	24	22
2/38	eShop	4	24	22
2/39	(eShop)	4	24	22
2/40	eShop	4	24	22
2/42	eShop	4	24	22
2/43	(eShop)	4	24	22
2/44	(eShop)	4	24	22
2/45	eShop	4	24	22
2/46	eShop	4	24	22
2/48	(eShop)	4	24	22
2/50	eShop	4	24	22
2/52	(eShop)	4	24	22
2/55	(eShop)	4	24	22
2/56	(eShop)	4	24	22
2/58	(eShop)	4	24	22
2/60	(eShop)	4	24	22
2/66	(eShop)	4	24	22

Pilot pin

Fixed guide pin: gas nitrided, precision turned
Rotating pin: surface hardened and ground.
Size 01/2.4 to 1/8.4 – **fixed pilot.**
Size 1/8.5 to 1/18 – **rotating pilot with coolant bore.**
Size 2/11.5 to 2/13 – **fixed pilot.**
Size 2/14 to 2/32 – **rotating pilot with coolant bore.**

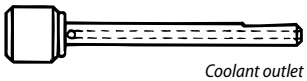
Application: When using the rotating pilot (with coolant bore) size 1 and 2 in holder No. 156720 size 1/20 the coolant is fed directly to the cutting edges for optimum chip evacuation.



Fixed pilot



Rotating pilot



Coolant outlet

Size / pin ∅	16C 15 6750 Pilot	overall length mm	Shank ∅ mm
01/2,4	(eShop)	41	2.4
01/3	(eShop)	41	2.4
01/3,3	(eShop)	41	2.4
01/3,5	(eShop)	41	2.4
01/4	eShop	41	2.4
01/4,5	(eShop)	41	2.4
0/4	eShop	59	4
0/4,2	eShop	59	4
0/4,5	eShop	59	4
0/4,9	eShop	59	4
0/5	eShop	59	4
0/5,3	eShop	59	4
0/5,5	eShop	59	4
0/5,8	eShop	59	4
0/6	eShop	59	4
0/6,4	eShop	59	4
0/6,5	eShop	59	4
0/6,6	eShop	59	4
0/6,7	eShop	59	4
0/6,9	eShop	59	4
0/7	eShop	59	4
0/7,5	eShop	59	4
0/7,9	eShop	59	4
0/8	eShop	59	4
0/8,4	eShop	59	4
0/8,5	eShop	59	4

Size / pin ∅	16C 15 6750 Pilot	overall length mm	Shank ∅ mm
0/9	eShop	59	4
0/9,5	eShop	59	4
0/10	eShop	59	4
0/10,5	eShop	59	4
0/11	(eShop)	59	4
1/6,6	eShop	79	6
1/6,7	eShop	79	6
1/7	eShop	79	6
1/7,5	(eShop)	79	6
1/7,9	(eShop)	79	6
1/8	eShop	79	6
1/8,4	eShop	79	6
1/8,5	eShop	79	6
1/9	eShop	79	6
1/9,5	eShop	79	6
1/9,9	eShop	79	6
1/10	eShop	79	6
1/10,5	eShop	79	6
1/11	eShop	79	6
1/11,5	eShop	79	6
1/12	eShop	79	6
1/12,5	eShop	79	6
1/13	eShop	79	6
1/13,5	eShop	79	6
1/14	eShop	79	6
1/14,5	eShop	79	6

Size / pin ∅	16C 15 6750 Pilot	overall length mm	Shank ∅ mm
1/15	eShop	79	6
1/16	eShop	79	6
1/17	eShop	79	6
1/18	eShop	79	6
2/11,5	eShop	105	10
2/12	eShop	105	10
2/13	eShop	105	10
2/14	eShop	105	10
2/14,5	(eShop)	105	10
2/15	eShop	105	10
2/16	eShop	105	10
2/17	eShop	105	10
2/17,5	eShop	105	10
2/18	eShop	105	10
2/19	(eShop)	105	10
2/20	eShop	105	10
2/21	eShop	105	10
2/22	eShop	105	10
2/24	(eShop)	105	10
2/25	(eShop)	105	10
2/26	eShop	105	10
2/28	(eShop)	105	10
2/30	eShop	105	10
2/32	(eShop)	105	10

HSS

Modular counterboring sets in wooden stand

Set of holders, counterbores, and pilots for machining the most common bore ∅.

Application: **For DIN counterbores,** as well as appropriate pilot / counterbore combinations for stepped holes or non-standard counterbores.

Note: Modular counterboring sets also available in HSS with optional TIN coating and brazed-on carbide tips with form "T" ISO inserts.



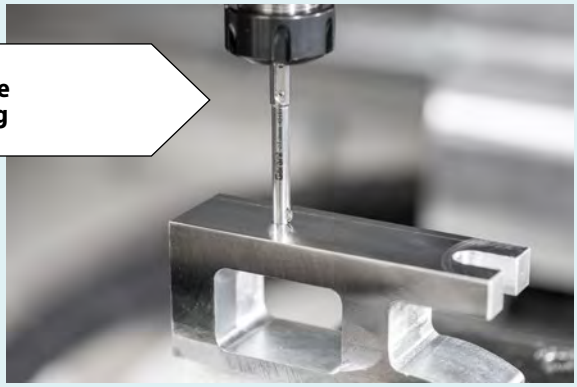
15 6700

Size / shank size		01/10	0/10	0MK1	1/12	1MK2	2MK2	2MK3
16C 15 6700	Modular counterboring set in a wooden stand	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Number of cutting edges Z		2	2	2	3	3	3; 4	3; 4
Counterbore range	mm	5 – 9	8.5 – 16.5	8.5 – 16.5	14.5 – 24.5	14.5 – 24.5	26 – 36	26 – 36
Content: 1× each counterbore No. 156730		5; 5.5; 6; 6.5; 7; 8; 9	8.5; 9.5; 10.5; 11.5; 13.5; 16.5	8.5; 9.5; 10.5; 11.5; 13.5; 16.5	14.5; 16.5; 18.5; 20.5; 22.5; 24.5	14.5; 16.5; 18.5; 20.5; 22.5; 24.5	26; 28; 30; 32; 33; 34; 36	26; 28; 30; 32; 33; 34; 36
1× each pilot No. 156750		2.4; 2.5; 2.7; 3; 3.3; 3.5; 4; 4.5	4; 4.5; 5; 5.5; 6; 6.5; 7; 7.5; 8; 8.5; 9; 9.5; 10; 10.5	4; 4.5; 5; 5.5; 6; 6.5; 7; 7.5; 8; 8.5; 9; 9.5; 10; 10.5	7; 7.5; 8; 8.5; 9; 9.5; 10; 10.5; 11; 11.5; 12; 13; 14; 15	7; 7.5; 8; 8.5; 9; 9.5; 10; 10.5; 11; 11.5; 12; 13; 14; 15	12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25	12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25
1× each holder No. 156720 with shank		∅ 10 mm	∅ 10 mm	MT1	∅ 12 mm	MT2	MT2	MT3

Garant Universal deburring tool

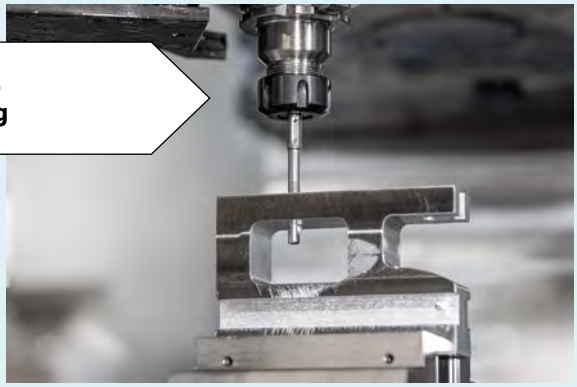
The efficient solution for forward and reverse deburring of holes with a machine.

Front-side deburring



Technical performance:
- Effective and reliable deburring.
- Front and rear machining in a single operation.
- No rotation of the workpiece required.
- Sustainable product concept for series production.
- High process stability and repetition accuracy.
- Special blade geometry protects the bore wall.

Rear-side deburring

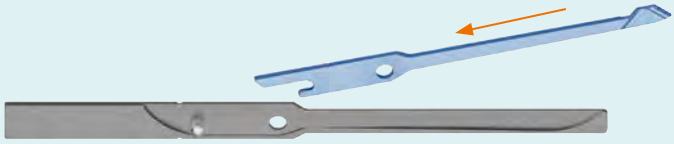


Flexible use:
- Only **two blade sizes** for a standard diameter range from 3 mm to 20 mm and an extended special diameter range from 20.5 mm to 25 mm.
- Deburring of varying bore diameters with spring-mounted blades.
- Deburring of aligned holes in a single operation.

Easy to use and low-maintenance version:
- Spring mechanism for convenient insertion and removal of the blade.
- One screw size for all toolholders.
- No separate tension spring.

Installing the blade

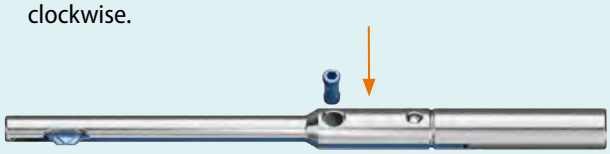
1. Insert the blade into the slot provided until it reaches the stop pin.



2. Push the blade down into the guide pocket.

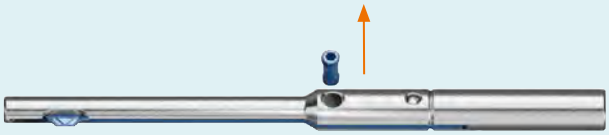


3. Lock the blade by turning the fastening screw clockwise.

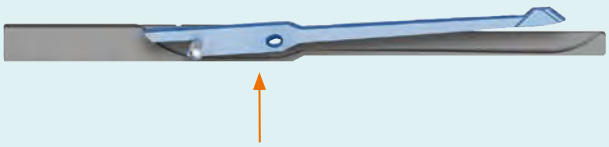


Removing the blade

1. Release the blade by turning the fastening screw anti-clockwise.



2. Press the blade out of the base body through the hole.



3. Pull the blade out of the base body.



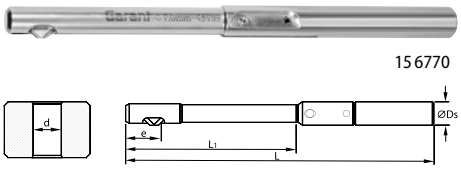
Garant Universal deburring tool for holes

Universal deburring tool base body for hole diameters of 3 - 20 mm

For **front and rear deburring** of holes in **one operation. Easy handling** on all machines and **quick changing** of the deburring blades. The deburring tool consists of **a base body, deburring blade and fastening screw.**

Application: Suitable for **table, box column or pillar drilling machines, conventional milling machines** and **CNC machining centres.** Ensure stable clamping conditions. **Not suitable for hand-held machines.**

Note: **Blade not included.** Please order matching blade No. 156775 separately. Fastening screw included. Spare fastening screw can be found under No. 156780.



15 6770

for hole Ø d	15A 15 6770 Universal deburring tool base body	e	L_1	L	Ø D_s	suitable blade size	< 750 N f
mm		mm	mm	mm	mm		mm/rev.
3	eShop	10	29	85	8	3	0.05
3,5	eShop	10	29	85	8	3	0.05
4	eShop	10	29	85	8	3	0.07
4,5	eShop	10	29	85	8	3	0.07
5	eShop	12	53	115	8	5	0.08
5,5	eShop	12	53	115	8	5	0.08
6	eShop	12	53	115	8	5	0.09
6,5	eShop	12	53	115	8	5	0.09
7	eShop	12	53	115	8	5	0.09
7,5	eShop	12	53	115	8	5	0.09
8	eShop	12	53	115	10	5	0.09
8,5	eShop	12	53	115	10	5	0.1
9	eShop	12	53	115	10	5	0.1
9,5	eShop	12	53	115	10	5	0.1
10	eShop	12	80	125	10	5	0.1
10,5	eShop	12	80	125	10	5	0.1
11	eShop	12	80	125	10	5	0.1
11,5	eShop	12	80	125	12	5	0.1

for hole Ø d	15A 15 6770 Universal deburring tool base body	e	L_1	L	Ø D_s	suitable blade size	< 750 N f
mm		mm	mm	mm	mm		mm/rev.
12	eShop	12	80	125	12	5	0.1
12,5	eShop	12	80	125	12	5	0.1
13	eShop	12	80	125	12	5	0.1
13,5	eShop	12	80	125	12	5	0.1
14	eShop	12	80	125	12	5	0.1
14,5	eShop	12	80	125	12	5	0.1
15	eShop	12	80	125	12	5	0.1
15,5	eShop	12	80	125	12	5	0.1
16	eShop	12	80	125	16	5	0.1
16,5	eShop	12	80	125	16	5	0.1
17	eShop	12	80	125	16	5	0.1
17,5	eShop	12	80	125	16	5	0.1
18	eShop	12	80	125	16	5	0.1
18,5	eShop	12	80	125	16	5	0.1
19	eShop	12	80	125	16	5	0.1
19,5	eShop	12	80	125	20	5	0.1
20	eShop	12	80	125	20	5	0.1

Blade for GARANT universal deburring tool

HSS

Blade for base body No. 156770.



15 6775

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
15 6775	50	50	50	40	35	30	25	25	20	15				20	15	10	25	●

Size	3	5
15A 15 6775 Blade HSS for universal deburring tool	eShop	eShop
For base bodies	3 – 4.5	5 – 20

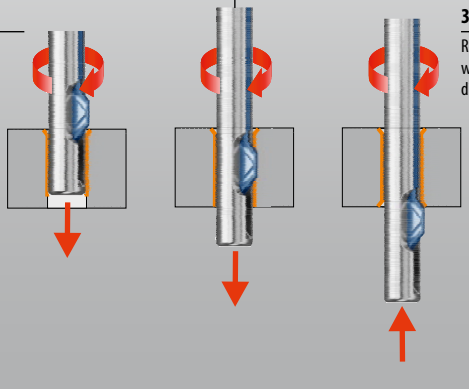
Application notes:

Universal use in the deburring process, efficient and reliable.

1. Forward deburring of the borehole during insertion.

2. Blade moves out of the way through radial pressure on the bore wall. The special cutter geometry prevents damage to the bore wall.

3. Reverse deburring of the borehole when withdrawing under the same direction of spindle rotation.



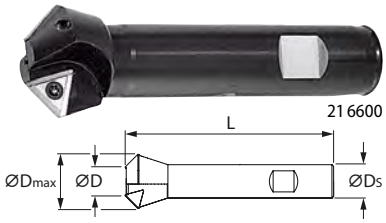


Blade with spring mechanism

KOMET Countersinks 45° KWS for TOH.0902.. / 1403..

Application: For **deburring** round and long holes and for milling trapezoidal slots.
For countersinking to DIN fine for DIN screws M10 – M20.
Rigid mounting is required (not suitable for power drills).

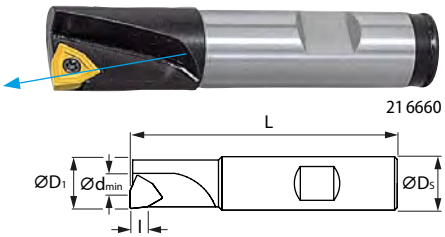
Note: For suitable triangular indexable inserts see 216700; 216740; 216770.



for DIN countersunk screws	24D 21 6600 KOMET® countersink 45° Weldon shank	Ø D mm	Number of cutting edges Z	Number of indexable inserts	Ø D_{max} mm	L_{tot} mm	Ø D_s h6 mm	suitable indexable insert	Indexable insert No. 216700; No. 216740; No. 216770	Set of insert screws
M10	eShop	7	2	2	19	100	16	TO.. 0902	14-6603	239653 8IP7 (1.3 Nm)
M12	eShop	11	2	2	23	100	16	TO.. 0902	14-6603	239653 8IP7 (1.3 Nm)
M14	eShop	11	1	2	26	100	16	TO.. 0902	14-660	239653 8IP7 (1.3 Nm)
M16	eShop	12	2	2	30	100	20	TO.. 1403	26-660	239653 10IP (2.8 Nm)
M18	eShop	16	2	2	34	100	20	TO.. 1403	26-660	239653 10IP (2.8 Nm)
M20	eShop	19	2	2	37	100	20	TO.. 1403	26-660	239653 10IP (2.8 Nm)

KOMET Indexable countersinking mill KWZ for WOEX 0302.. / 05T3.. / 06T3.. / 0804..

Application: For producing counterbores for cylinder head screws to DIN 74 sheet 2, from M8 with through coolant feed.



Type	24D 21 6660 KOMET® countersinking mill Weldon shank	for DIN cylinder head screws	Number of cutting edges Z	Number of indexable inserts	Ø D_1 H13 mm	Ø d_{min} mm	maximum counter-bore depth l mm	L_{tot} mm	Ø D_s h6 mm	Indexable insert No. 216780 – 216910; No. 216950	Set of insert screws
M5N	eShop	M5	1	1	10	5.3	10	80	16	10-010 / 110	239652 6IP1 (1.0 Nm)
M6N	eShop	M6	1	1	11	6.4	10	80	16	10-010 / 110	239652 6IP1 (1.0 Nm)
M8	eShop	M8	1	1	15	8.4	14	80	16	24-010 / 110	239652 8IP2 (1.3 Nm)
M10	eShop	M10	1	1	18	10.4	16	80	16	24-010 / 110	239652 8IP2 (1.3 Nm)
M12	eShop	M12	1	1	20	13	20	100	25	24-010 / 110	239652 8IP2 (1.3 Nm)
M14	eShop	M14	2	2	24	15	19	100	25	24-010 / 110	239652 8IP2 (1.3 Nm)
M16	eShop	M16	2	2	26	17	21	100	25	24-010 / 110	239652 8IP2 (1.3 Nm)
M18	eShop	M18	2	2	30	19	23	100	25	34-010 / 110	239652 10IP1 (2.8 Nm)
M20	eShop	M20	2	2	33	21	25	100	25	42-010 / 110	239653 15IP3 (6.3 Nm)

KOMET Unisix® carbide indexable inserts WOEX.. Type W28 / W29

Suitable for: Indexable countersinking mill No. 216660.

Note:
21 6811 Size 17-010 – For indexable countersinks M5, M6 series up to March 2010.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
21 6780																	**160**			●		○	
21 6811	300	300	200	**200**	**200**	**200**	**140**	**120**						**120**	100	30	160			●		○	
21 6850				200	200	200	**140**	**120**						**120**	**100**	**30**				●		○	
21 6910				**200**	**200**	**200**								**120**	**100**	30				●			
21 6950	**350**	**200**	**200**															150		●		○	

Cutter geometry:
- Cutting edge chamfered and honed
- Precision sintered, with double chip breaker



Designation type W28			10-010	10-110	17-010	24-010	24-110	34-010	34-110	42-010	42-110	
24T 21 6811	KOMET Unisix® indexable insert	BK6440	–	–	eShop	–	–	–	–	–	–	10
24T 21 6780		BK62	eShop	–	–	eShop	–	–	–	–	–	10
24T 21 6850		BK8425	eShop	–	–	eShop	–	eShop	–	eShop	–	10
24T 21 6910		BK7935	eShop	–	–	eShop	–	–	–	eShop	–	10
24T 21 6950		BK7710	–	eShop	–	–	eShop	–	eShop	–	eShop	10
ISO code indexable insert			WOEX 030204	WOEX 030204	WOEX 040204	WOEX 05T304	WOEX 05T304	WOEX 06T304	WOEX 06T304	WOEX 080404	WOEX 080404	

POWER CARD Garant

Garant

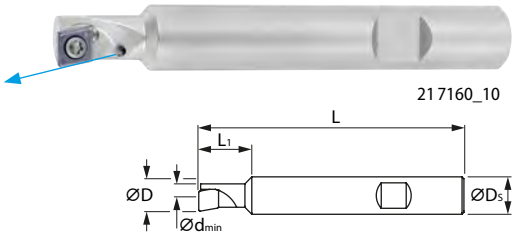
Forwards countersinking mill 180° for CCMT 060204 / 09T304 DIN 974-1 series 1 (for DIN hexagon socket screws)

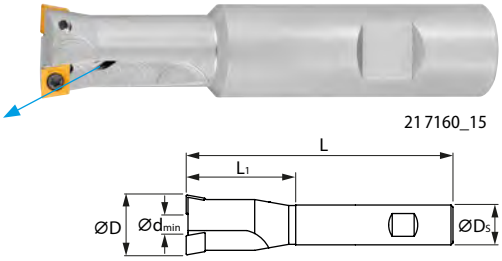
Standard: DIN 974-1 series 1 (for DIN cylinder-head bolts).

Note: The recommended indexable inserts have a corner radius of 0.4 mm. If indexable inserts with a different larger corner radius are used, the dimension Ø d_{min} (see table) will not be achieved!

Size 10–24 – Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.

Size 25–42 – Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.





21

Countersink Ø D	210 21 7160 Forwards countersinking mill 180° Weldon shank	for DIN cylinder head screws	Number of cutting edges Z	Ø d_{min}	L_1	L_{tot}	Ø D_s h6	suitable indexable insert	Insert screw
mm				mm	mm	mm	mm		
10	eShop	M5	1	4	15	85	12	260142	219795 1 (8IP; 1.2 Nm)
11	eShop	M6	1	4	15	85	12	260142	219795 1 (8IP; 1.2 Nm)
15	eShop	M8	2	5	30	92	12	260142	219795 1 (8IP; 1.2 Nm)
16	eShop	–	2	5	30	92	12	260142	219795 1 (8IP; 1.2 Nm)
17	eShop	–	2	6	32	94	16	260142	219795 1 (8IP; 1.2 Nm)
17,5	eShop	–	2	6.5	40	96	16	260142	219795 1 (8IP; 1.2 Nm)
18	eShop	M10	2	7	41	97	16	260142	219795 1 (8IP; 1.2 Nm)
19	eShop	–	2	8	41	100	16	260142	219795 1 (8IP; 1.2 Nm)
20	eShop	M12	2	9	41	102	16	260142	219795 1 (8IP; 1.2 Nm)
21	eShop	–	2	10	41	105	16	260142	219795 1 (8IP; 1.2 Nm)
22	eShop	–	2	11	41	110	16	260142	219795 1 (8IP; 1.2 Nm)
23	eShop	–	2	12	41	112	16	260142	219795 1 (8IP; 1.2 Nm)
24	eShop	M14	2	13	41	115	16	260142	219795 1 (8IP; 1.2 Nm)
25	eShop	–	2	8	40	120	16	260150	219844 (15IP; 3.0 Nm)
26	eShop	M16	2	9	55	125	20	260150	219844 (15IP; 3.0 Nm)
27	eShop	–	2	10	55	128	20	260150	219844 (15IP; 3.0 Nm)
28	eShop	–	2	11	55	130	20	260150	219844 (15IP; 3.0 Nm)
29	eShop	–	2	12	55	132	20	260150	219844 (15IP; 3.0 Nm)
30	eShop	M18	2	13	55	134	20	260150	219844 (15IP; 3.0 Nm)
31	eShop	–	2	14	55	136	20	260150	219844 (15IP; 3.0 Nm)
32	eShop	–	2	15	55	138	20	260150	219844 (15IP; 3.0 Nm)
33	eShop	M20	2	16	55	140	20	260150	219844 (15IP; 3.0 Nm)
34	eShop	–	2	16	60	140	25	260150	219844 (15IP; 3.0 Nm)
35	eShop	–	2	17	60	140	25	260150	219844 (15IP; 3.0 Nm)
36	eShop	–	2	18	60	140	25	260150	219844 (15IP; 3.0 Nm)
37	eShop	–	2	19	60	140	25	260150	219844 (15IP; 3.0 Nm)
38	eShop	–	2	20	60	140	25	260150	219844 (15IP; 3.0 Nm)
39	eShop	–	2	21	60	140	25	260150	219844 (15IP; 3.0 Nm)
40	eShop	M24	2	22	60	140	25	260150	219844 (15IP; 3.0 Nm)
41	eShop	–	2	23	60	140	25	260150	219844 (15IP; 3.0 Nm)
42	eShop	–	2	24	60	140	25	260150	219844 (15IP; 3.0 Nm)

POWER CARD Garant

Garant Reverse countersinking mill 180° for CPMT 05T1.. / CCMT 0602.. / 09T3.. / 1204..

With just one cutter (z = 1).

Size 15; 18 – Without internal cooling.

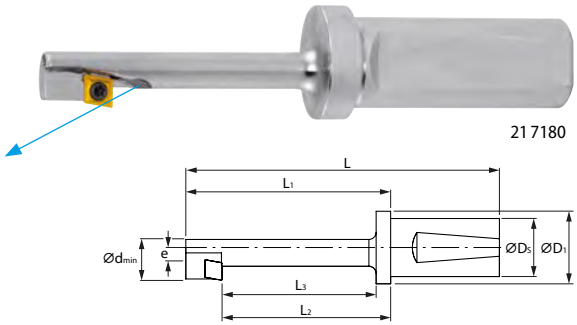
Note: Dimension e = programming dimension (information on the end face).

Size 15 – Use GARANT torque screwdriver TQ No. **211750 size 0.9** with bit No. **674248 size TX7**.

Size 18–30 – Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.

Size 33–48 – Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.

Size 53–76 – Use GARANT torque screwdriver TQ No. **211750 size 5.5** with bit No. **674252 size 20IP**.



maximum countersink Ø D mm	210 21 7180 180° reverse countersinking mill	Ø d_{min} mm	L_1 mm	L_2 mm	L_3 mm	Ø D_1 mm	e mm	L mm	Ø D_s h6 mm	Shank type	suitable indexable insert	Insert screw	Set of insert screws
15	eShop	8.5	55	42	35	25	3.55	105	20	Whistle Notch	217185 UNI	219947 (TX7; 0.9 Nm)	–
18	eShop	10.5	62	47	40	25	4.05	112	20	Whistle Notch	260142	219795 1 (8IP; 1.2 Nm)	–
20	eShop	13	67	52	45	25	3.8	117	20	Whistle Notch	260142	219795 1 (8IP; 1.2 Nm)	–
24	eShop	15	72	57	50	25	4.8	122	20	Whistle Notch	260142	219795 1 (8IP; 1.2 Nm)	–
26	eShop	17	82	67	60	25	5.05	132	20	Whistle Notch	260142	219795 1 (8IP; 1.2 Nm)	–
30	eShop	19	92	77	65	25	6.05	142	20	Whistle Notch	260142	219795 1 (8IP; 1.2 Nm)	–
33	eShop	21	102	82	75	25	6.65	152	20	Whistle Notch	260150	219844 (15IP; 3.0 Nm)	–
36	eShop	23	113	93	85	40	7.05	173	32	Whistle Notch	260150	219844 (15IP; 3.0 Nm)	–
40	eShop	25	123	103	95	40	8.05	183	32	Whistle Notch	260150	219844 (15IP; 3.0 Nm)	–
43	eShop	30	123	103	95	40	7.05	183	32	Whistle Notch	260150	219844 (15IP; 3.0 Nm)	–
48	eShop	33	163	143	135	40	8.05	223	32	Whistle Notch	260150	219844 (15IP; 3.0 Nm)	–
53	eShop	36	140	–	110	–	9.05	210	40	Weldon	260158	–	219848 (20IP; 5.5 Nm)
57	eShop	39	150	–	120	–	9.55	220	40	Weldon	260158	–	219848 (20IP; 5.5 Nm)
66	eShop	45	165	–	135	–	11.05	245	50	Weldon	260158	–	219848 (20IP; 5.5 Nm)
76	eShop	52	185	–	155	–	12.55	265	50	Weldon	260158	–	219848 (20IP; 5.5 Nm)

21

Garant Insert for reverse countersinking mill No. 217180 size 15

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
21 7185		100	80	75	75	75	65	65					40	40	40	100	90	●		●	○		



Type			UNI	
21A 21 7185	CPMT 05T104 T	HB7035	eShop	10
f		mm/rev.	0.1	

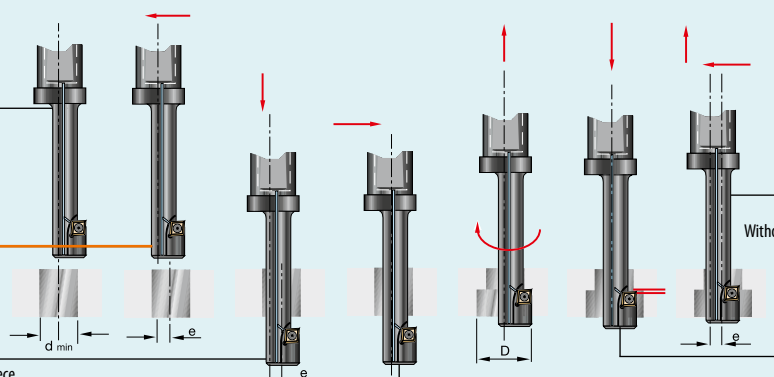
Reverse countersinking mill No. 21 7180 in use – programming amount (e)

1. Position
the tool at the centre of the hole, spindle orientation 0°.

2. Offset
the tool by the programmed amount (e).

3. Plunge
to the position below the lower edge of the workpiece, plus safety clearance. Spindle not rotating!

4. Return
to the centre of the hole by amount (e), then start the spindle.



5. Countersink
to the desired depth.

6. Position
Pull back approx. -0.5 mm in the Z axis. Spindle orientation to 0°.

7. Offset
the tool by the programmed amount (e). Withdraw the milling cutter out through the component.

Garant HOLEX Reaming overview

Hand reamers

Colour ring								
							
Brand	HOLEX	Garant	Garant	HOLEX	HOLEX	HOLEX	Garant
Tool material	HSS	HSS	HSS	HSS	HSS	HSS	HSS
Coating							
Standard / DIN	206 B	859	Man. std	Man. std	9	204	Man. std
Version		adjustable	adjustable	Taper 1:10	Taper 1:50	Morse taper	NPT 1:16
Item number	16 0150	16 0500	16 0600	16 1000	16 1200	16 2500	16 2650
Catalogue page	226	227	227	228	228	229	229
Size range ∅ mm	2 – 40	4 – 30	6.4 – 67	3 – 35	1.1 – 30.7	MT0 – MT4	1/16" – 1"
Hole tolerance H7	●						
∅ dimension 1/100							
Configurability	16 0200						
conf. nominal ∅ mm	0.95 – 60.2						
ISO 513							
Aluminium N	○	○	○	○	○	○	○
Steel < 500 N/mm² P	●	●	●	●	●	●	●
Steel < 900 N/mm² P	○	○	○	○	○	○	○
Steel < 1400 N/mm² P							
Steel > 45 HRC H							
INOX M							
Ti S							
GG (G) K							
CuZn N							
Graphite, GRP, CRP N							
UNI							

Machine reamers

Colour ring												
												
Brand	HOLEX	HOLEX	HOLEX	Garant	Garant	Garant	Garant	Garant	Garant	Garant	Garant	Garant
Tool material	HSS	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	Sol. carb./Carb.	Solid carbide	Solid carbide
Coating					TiN							TiAlN
Standard / DIN	311	2179	208 B	212 B	212 B	Man. std	Man. std	Man. std	Man. std	8093	Man. std	Man. std
Version	Rivet hole	Taper 1:50				extra long	extra long	Face	NC shank	Carbide–tipped		
Item number	16 2800	16 1600	16 4000	16 3000	16 3500	16 2961	16 2971	16 2826	16 2900	16 4500	16 4340	16 4341
Catalogue page	230	229	236	235	235	234	234	230	231 – 234	237	238 – 240	238 – 240
Size range ∅ mm	6.4 – 40	1.9 – 16	5 – 50	1.5 – 20	4 – 20	2 – 12	2 – 12	3 – 12	1 – 20	1 – 16	0.6 – 20	0.98 – 20
Hole tolerance H7			●	●	●	●	●	●	●	●	●	●
∅ dimension 1/100									16 2902		●	●
Configurability			16 4180						16 2951		16 4345	16 4344
conf. nominal ∅ mm			2.81 – 50						0.95 – 20		0.95 – 20.2	0.95 – 20.2
ISO 513												
Aluminium N	●	●	●	●		●	●	●	●	○	●	●
Steel < 500 N/mm² P	●	●	●	●	●	●	●	●	●	○	●	●
Steel < 900 N/mm² P	○	○	●	●	●	●	●	●	●	●	●	●
Steel < 1400 N/mm² P			○	○	○	○	○	○	○	●	●	●
Steel > 45 HRC H												
INOX M			○	○		●	●		●	○	○	●
Ti S			○	○	○	○	○		○		●	○
GG (G) K			○	○	○	○	○	○	○		●	●
CuZn N			○	○	○	○	○	○	○	●	●	●
Graphite, GRP, CRP N												
UNI			●	●		●	●	●	●		●	●

● = highly suitable; ○ = suitable only under restricted conditions
The areas of application are starting points for pre-selection.

Garant Reaming overview

		HPC reamers			
Colour ring					
			 GARANT Master Alu	 GARANT Master Titan	 GARANT Master Steel
Brand		Garant	Garant	Garant	Garant
Tool material		HSS	Solid carbide	Solid carbide	Solid carbide
Coating		TiAlN	DLC	TiAlN	TiAlN
Standard / DIN		Man. std	Man. std	Man. std	Man. std
Through hole		164358	164400	164310	164420
Blind hole		164359	164405	164315	164425
Catalogue page		241	244	245	246
Size range ∅	mm	6 – 40	4 – 20	4 – 20	4 – 20
Through-coolant supply		IC	IC	IC	IC
Hole tolerance H7		●	●		●
∅ dimension 1/100					
Configurability		○	○	○	○
conf. nominal ∅	mm	6 – 40.2	3.7 – 20.2	3.7 – 20.2	3.7 – 20.2
ISO 513					
Aluminium, plastics	N		●		
Steel < 500 N/mm²	P	●			●
Steel < 900 N/mm²	P	●			●
Steel < 1400 N/mm²	P	●			●
Steel > 45 HRC	H				●
INOX	M				●
Ti	S			●	
GG (G)	K	●			●
CuZn	N	○			○
Graphite, GRP, CRP	N				
UNI		●			●

		TopCut REAM interchangeable head reamers	
Colour ring			
			
Brand		Garant	Garant
Tool material		Solid carbide	Cermet
Coating		TiAlN	
Standard / DIN		Man. std	Man. std
Through hole		239720	239710
Blind hole			239715
Catalogue page		247	247
Size range ∅	mm	10 – 26*	10 – 50*
Through-coolant supply		IC	IC
Hole tolerance H7		●	●
ISO 513		*Blind holes from ∅ 15 mm	
Aluminium	N		
Steel < 500 N/mm²	P		●
Steel < 900 N/mm²	P	●	●
Steel < 1400 N/mm²	P	○	
Steel > 45 HRC	H		
INOX	M		
Ti	S		
GG (G)	K	●	○
CuZn	N		
Graphite, GRP, CRP	N		
UNI			

Garant TOPCUT REAM

Modular reaming for precise and sustainable process design.

- Finish ground for fit IT7.
- System concentricity ≤ 5 µm (when mounted).
- Solid carbide and cermet heads.



239710 239715 239720

● = highly suitable; ○ = suitable only under restricted conditions
The areas of application are starting points for pre-selection.

H7 | HSS | DIN 206 B | 7-8°

HOLEX Hand reamers

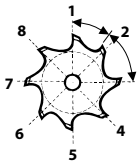
With **left-hand helix** 7 – 8° and long taper lead, more than 1/5 of the cutting length. An even number of teeth with irregular spacing for accurately round holes, free of chatter. The cylindrical ground chamfer on the plain cutting section smooths the hole and guides the reamer.

Application: For through holes (not for blind holes). Also very suitable for interrupted holes.

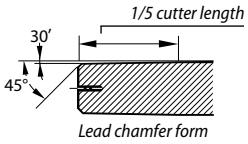
Note: Hand reamers **finish ground to match your specifications** can be ordered as **No. 160200**.
For suitable tap wrenches see No. 148350; 148200; 148410 and extensions No.149400.

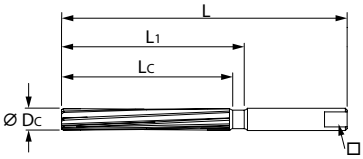


160150



Even number of teeth with uneven spacing – pairs of teeth are exactly opposite each other; e.g. teeth 1 and 5.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
160150		●		●	●	○													●			○	

Nominal Ø D_C mm	120 160150 Hand reamer H7	L_c mm	L_1 mm	L mm	Number of cutting edges Z	□ mm
2	eShop	25	33	50	4	1.6
2,5	eShop	29	37	58	4	2
3	eShop	31	40	62	6	2.24
3,5	eShop	35	45	71	6	2.8
4	eShop	38	48	76	6	3.15
4,5	eShop	41	51	81	6	3.55
5	eShop	44	54	87	6	4
5,5	eShop	47	57	93	6	4.5
6	eShop	47	57	93	6	4.5
6,5	eShop	50	60	100	6	5
7	eShop	54	68	107	6	5.6
8	eShop	58	72	115	6	6.3
8,5	eShop	58	72	115	6	6.3
9	eShop	62	77	124	6	7.1
10	eShop	66	86	133	6	8
11	eShop	71	91	142	6	9
12	eShop	76	96	152	6	10

Nominal Ø D_C mm	120 160150 Hand reamer H7	L_c mm	L_1 mm	L mm	Number of cutting edges Z	□ mm
13	eShop	76	96	152	8	10
14	eShop	81	101	163	8	11.2
15	eShop	81	101	163	8	11.2
16	eShop	87	107	175	8	12.5
17	eShop	87	107	175	8	12.5
18	eShop	93	113	188	8	14
19	eShop	93	113	188	8	14
20	eShop	100	120	201	8	16
22	eShop	107	132	215	8	18
24	eShop	115	140	231	8	20
25	eShop	115	140	231	8	20
26	eShop	115	140	231	8	20
28	eShop	124	150	247	10	22.4
30	eShop	124	150	247	10	22.4
32	eShop	133	165	265	10	25
35	eShop	142	175	284	10	28
40	eShop	152	190	305	10	31.5

H7 | HSS | DIN 206 B | 7-8°

HOLEX Hand reamer set

With **left-hand helix** 7 – 8° and long taper lead, more than 1/5 of the cutting length. An even number of teeth with irregular spacing for accurately round holes, free of chatter. The cylindrical ground land on the plain cutting section smooths the hole and guides the reamer.

Application: For through holes (not for blind holes). Also very suitable for interrupted holes.

Supplied with: 6-piece hand reamer set in a box.



160175

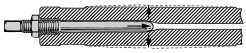
Number of reamers	6
120 160175 Hand reamer set No. 160150 in a box H7	eShop
Content: 1 pc. each hand reamer	Size 3; 4; 5; 6; 8; 10

HSS | DIN 859 | 7–8°



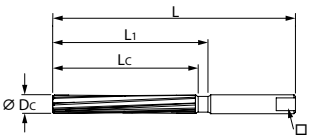
160500

Garant Re-adjustable hand reamers



Up to 5 mm with straight flutes; from 6 mm with **left hand helix** 7 – 8°. The reamer body is slit and can be adjusted by approx. 1/100 of the reamer Ø using the expansion screw (e.g. 20 mm Ø = 0.2 mm).

Application: For opening through holes to a slight oversize. Use the straight fluted reamers only in holes which are not interrupted. Make sure that the screw is not left tightened when stored.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
160500		●		●	●	○													●			○	

Nominal Ø D_c mm	110 160500 Re-adjustable hand reamer	L_c mm	L_1 mm	L mm	□ mm
4	eShop	24	48	76	3.15
5	eShop	30	54	87	4
6	eShop	33	59	93	4.5
7	(eShop)	38	66	107	5.6
8	eShop	42	70	115	6.3
9	(eShop)	46	75	124	7.1
10	eShop	50	80	133	8

Nominal Ø D_c mm	110 160500 Re-adjustable hand reamer	L_c mm	L_1 mm	L mm	□ mm
11	(eShop)	51	86	142	9
12	eShop	56	91	152	10
14	eShop	61	97	163	11.2
15	eShop	61	97	163	11.2
16	eShop	67	105	175	12.5
17	(eShop)	67	105	175	12.5
18	(eShop)	68	112	188	14

Nominal Ø D_c mm	110 160500 Re-adjustable hand reamer	L_c mm	L_1 mm	L mm	□ mm
19	(eShop)	68	112	188	14
20	eShop	75	119	201	16
22	(eShop)	82	129	215	18
24	(eShop)	85	137	231	20
25	(eShop)	85	137	231	20
28	(eShop)	94	149	247	22.4
30	eShop	94	149	247	22.4

Garant Adjustable hand reamers

HSS | Standard

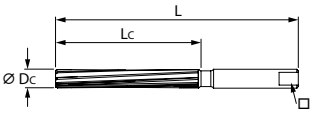
160600 – Large adjustment range. Fine adjustment using ring gauges or micrometers. Tools with taper lead; the flutes are relieved and cylindrically ground.

Suitable for:

160700/0750 – Hand reamer No. 160600



160600



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
160600		●		●	●	○													●			○	

Ø D_c mm	110 160600 Adjustable hand reamer	110 160700 Spare blade set	110 160750 Spare nut	Adjustment range Ø 160600 mm	L_c 160600 mm	L 160600 mm	□ 160600 mm
6,4	eShop	(eShop)	(eShop)	6.4 – 7.2	32	110	3
7,2	eShop	(eShop)	(eShop)	7.2 – 8	32	110	3.4
8	eShop	(eShop)	(eShop)	8 – 9	34	115	3.8
9	eShop	(eShop)	(eShop)	9 – 10	34	115	4.3
10	eShop	(eShop)	(eShop)	10 – 11	34	115	4.9
11	eShop	(eShop)	(eShop)	11 – 12	35	125	4.9
12	eShop	(eShop)	(eShop)	12 – 13.5	41	135	6.2
13,5	eShop	(eShop)	(eShop)	13.5 – 15.5	50	146	7
15,5	eShop	(eShop)	eShop	15.5 – 18	60	166	8
18	eShop	(eShop)	(eShop)	18 – 21	65	178	9
21	eShop	(eShop)	eShop	21 – 24	76	195	11
24	eShop	(eShop)	(eShop)	24 – 27.5	82	218	12
27,5	eShop	(eShop)	(eShop)	27.5 – 31.5	86	245	14.5
31,5	eShop	(eShop)	(eShop)	31.5 – 37	98	280	18
37	eShop	(eShop)	(eShop)	37 – 45	108	325	20
45	eShop	(eShop)	(eShop)	45 – 55	118	370	26
55	eShop	(eShop)	(eShop)	55 – 67	125	400	32

HSS | Standard

Garant Adjustable hand reamer sets in a wooden box

Assortment of hand reamers No. 160600.

Number of reamers		11	13
110 160800	Adjustable hand reamer set, in a wooden box	eShop	eShop
Ø range	mm	8 – 31.5	8 – 45



160800

HSS | Standard | 1:10

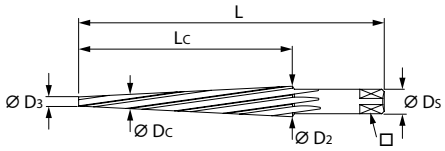
Taper reamers

Straight fluted hand reamer with conically increasing cutting edges (1 mm over 10 mm length).

Application: For reaming conical holes or uninterrupted holes prepared in steps. Not for parallel holes.



16 1000



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
16 1000		●		●	●	○													●			○	

small × large Ø	120	16 1000	Ø D_3	Ø D_2	L_c	L	□
		Taper reamer 1:10					
mm			mm	mm	mm	mm	mm
3×10		eShop	3	10	70	100	6.3
5×15		eShop	5	15	100	140	10

small × large Ø	120	16 1000	Ø D_3	Ø D_2	L_c	L	□
		Taper reamer 1:10					
mm			mm	mm	mm	mm	mm
10×25		eShop	10	25	150	195	16
15×35		(eShop)	15	35	200	250	22.4

16

HSS | DIN 9 | 1:50

Taper pin hand reamers

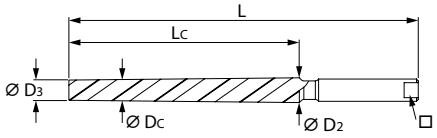
Conically increasing cutting edges (1 mm over 50 mm length).
Size1.2 – 2.5 – **straight flutes. Form A.**
Size3 – 25 – **helical flutes. Form B.**

Application: For reaming tapered holes by hand for taper pins to ISO 2339 (DIN 1), DIN 258, 1447, ISO 8736, 8737 (DIN 7977, 7978).

Recommendation: The pre-drilled hole is best produced using a straight shank taper pin drill No. 116310.



16 1200



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
16 1200		●		●	●	○													○			○	

Nominal Ø D_c	120	16 1200	Ø D_3	Ø D_2	L_c	L	□
		Taper pin hand reamer 1:50					
mm			mm	mm	mm	mm	mm
1,2		eShop	1.1	1.74	32	50	2.5
1,5		eShop	1.4	2.14	37	57	2.5
2		eShop	1.9	2.86	48	68	2.5
2,5		eShop	2.4	3.36	48	68	2.5
3		eShop	2.9	4.06	58	80	3.15
4		eShop	3.9	5.26	68	93	4
5		eShop	4.9	6.36	73	100	5
6		eShop	5.9	8	105	135	6.3

Nominal Ø D_c	120	16 1200	Ø D_3	Ø D_2	L_c	L	□
		Taper pin hand reamer 1:50					
mm			mm	mm	mm	mm	mm
8		eShop	7.9	10.8	145	180	8
10		eShop	9.9	13.4	175	215	10
12		eShop	11.8	16	210	255	11.2
14		eShop	13.8	18	210	255	12.5
16		eShop	15.8	20.4	230	280	14
20		eShop	19.8	24.8	250	310	18
25		(eShop)	24.7	30.7	300	370	22.4

HSS | DIN 204

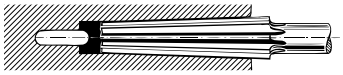
HOLEX Morse taper hand reamers

Straight flutes, with plain shank and square drive.

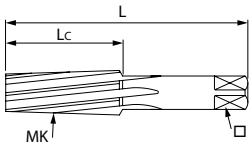
Application: For reaming Morse taper sockets from taper holes or stepped holes.



16 2500



Reaming a Morse taper with the Morse taper reamer No. 16 2500



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
16 2500		●		●	●	○												○

MT	120 16 2500 Morse taper reamer	L_c mm	L mm	□ mm
MK0	eShop	61	93	6.2
MK1	eShop	66	102	8
MK2	eShop	79	121	11

MT	120 16 2500 Morse taper reamer	L_c mm	L mm	□ mm
MK3	eShop	96	146	16
MK4	eShop	119	179	20

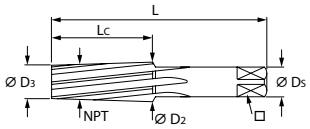
HSS | Standard | 1:16

Garant NPT hand reamers

For preparing conical NPT threads.
Spiral version, with plain shank and square drive.



16 2650



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
16 2650		●		●	●	○												○

NPT	110 16 2650 NPT reamer 1:16	Ø D_3 mm	Ø D_2 mm	L_c mm	L mm	□ mm	Ø D_s mm
1/16	eShop	5.95	7	17	70	4.9	6
1/8	eShop	8.05	9.1	17	70	5.5	7
1/4	eShop	10.3	12	27	80	9	11
3/8	eShop	13.75	15.4	27	85	9	12

NPT	110 16 2650 NPT reamer 1:16	Ø D_3 mm	Ø D_2 mm	L_c mm	L mm	□ mm	Ø D_s mm
1/2	eShop	16.95	19.1	35	95	12	16
3/4	eShop	22.25	24.5	35	105	16	20
1	eShop	28	30.7	43	130	20	25

HSS E | DIN 2179 | 45° | 1:50 | h9

HOLEX Machine taper pin reamers

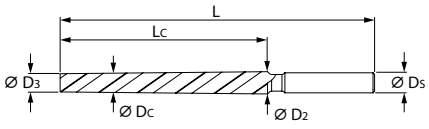
With 45° **left hand helix,** evacuates swarf in cutting direction.

Application: **On machines** for tapered through holes.
The peeling twist requires removal of a thick chip (pre-drilled hole must not be too large).
For taper pins to ISO 2339, 8736, 8737 (DIN 1, 7977, 7978), DIN 258 and 1447.

Recommendation: The pre-drilled hole is best produced using a straight shank taper pin drill No. 116310.



16 1600



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N
16 1600		20	20		15	10	7											

Nominal Ø D_c mm	120 16 1600 Machine taper pin reamer	Ø D_3 mm	Ø D_2 mm	L_c mm	L mm	Ø D_s mm	< 500 N f mm/rev.
2	eShop	1.9	2.86	48	86	3.15	0.1
2,5	eShop	2.4	3.36	48	86	3.15	0.1
3	eShop	2.9	4.06	58	100	4	0.1
4	eShop	3.9	5.26	68	112	5	0.1
5	eShop	4.9	6.36	73	122	6.3	0.1

Nominal Ø D_c mm	120 16 1600 Machine taper pin reamer	Ø D_3 mm	Ø D_2 mm	L_c mm	L mm	Ø D_s mm	< 500 N f mm/rev.
6	eShop	5.9	8	105	160	8	0.1
8	eShop	7.9	10.8	145	207	10	0.13
10	eShop	9.9	13.4	175	245	12.5	0.15
12	eShop	11.8	16	210	290	16	0.15

HSS | DIN 311 | 25° | k11

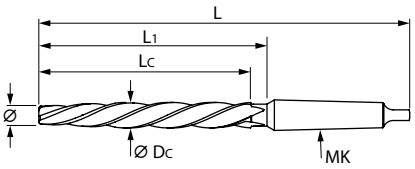
HOLEX Bridge reamers with Morse taper shank

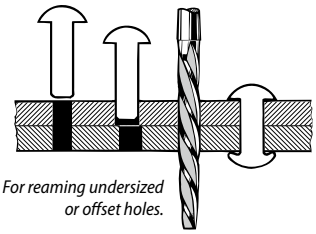
Tapering flute form with a length of approx. 3×nominal Ø. Very sturdy due to strong core and radius heel of flutes. Easy, peeling cut by spiral flutes; number of flutes varies according to the size.

Application: Particularly useful for the installation of components; for reaming offset holes or enlarging rivet holes. Bridge reamers are used on pneumatic hand-held drills in boiler construction.



16 2800





For reaming undersized or offset holes.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
16 2800		20	20		15	10	7												●	●			

Nominal Ø D_c k11	120 16 2800 Bridge reamer	Minor Ø	L_c	L_1	L	Number of cutting edges Z	MT	< 500 N f
mm		mm	mm	mm	mm			mm/rev.
6,4	(eShop)	4.5	75	85.5	151	3	1	0.12
7,4	(eShop)	5.2	80	90.5	156	3	1	0.12
8,4	(eShop)	5.9	85	95.5	161	3	1	0.12
9,5	(eShop)	6.8	90	100.5	166	4	1	0.15
10	(eShop)	7	95	105.5	171	4	1	0.15
11	(eShop)	7.7	100	110.5	176	4	1	0.15
12	(eShop)	8.1	105	119	199	4	2	0.15
13	eShop	9.1	105	119	199	4	2	0.15
14	eShop	9.8	115	129	209	4	2	0.15
15	(eShop)	10.5	125	139	219	4	2	0.2
16	eShop	11.2	135	149	229	4	2	0.2
17	eShop	11.9	135	152	251	4	3	0.2
18	eShop	12.2	145	162	261	4	3	0.2
19	(eShop)	13.2	145	162	261	4	3	0.2
20	eShop	13.8	155	172	271	4	3	0.25

Nominal Ø D_c k11	120 16 2800 Bridge reamer	Minor Ø	L_c	L_1	L	Number of cutting edges Z	MT	< 500 N f
mm		mm	mm	mm	mm			mm/rev.
21	eShop	14.8	155	172	271	4	3	0.25
22	eShop	15.4	165	182	281	4	3	0.25
23	(eShop)	16.4	165	182	281	4	3	0.25
24	(eShop)	16.8	180	197	296	4	3	0.25
25	eShop	17.8	180	197	296	4	3	0.25
26	eShop	18.8	180	197	296	4	3	0.25
27	(eShop)	19.2	195	212	311	4	3	0.25
28	eShop	20.2	195	212	311	4	3	0.25
30	(eShop)	22.2	195	212	311	5	3	0.3
31	(eShop)	22.6	210	227	326	5	3	0.3
32	(eShop)	23.6	210	230	354	5	4	0.3
33	(eShop)	24.6	210	230	354	5	4	0.3
34	(eShop)	25.2	220	240	364	5	4	0.3
37	(eShop)	28.2	220	240	364	5	4	0.35
40	(eShop)	30.8	230	250	374	5	4	0.35

H7 | HSS E | Standard | h6 | 6

Garant Machine face reamers

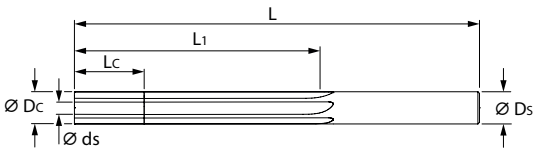
Chucking reamer cutting on the end face to achieve the most **accurate size possible.** The **optimised end face cutting** enables a **precise alignment fit** of the hole that is produced. Straight flute machine chucking reamers with **long flutes** for optimum chip evacuation.

Application: For production of sequential holes with alignments that exactly match. For the highest demands for straightness of holes. For reaming of through holes and right to the bottom of blind holes.

Note: Note the new shank tolerance h6. No. 162830 Configurable reamers are available in the diameter range from 2.200 to 12.220 mm and for any choice of fit.



16 2826



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	K	N						
16 2826		20	20		15	12	12	10	10							10	20	●	●	●	●	○	

Nominal Ø D_c	110 16 2826 Face reamer H7	d_s	L_c	L_1	L	Number of cutting edges Z	Ø D_s	< 900 N f	Reaming oversize in Ø reference value
mm		mm	mm	mm	mm		mm	mm/rev.	mm
3	eShop	1.5	12	33	61	6	3	0.1	0.1
4	eShop	1.7	16	44	75	6	4	0.1	0.1
5	eShop	1.7	20	53	86	6	5	0.1	0.1
6	eShop	2	20	59	93	6	6	0.15	0.1 – 0.2
7	eShop	2.5	22	69	109	6	7	0.15	0.1 – 0.2

Nominal Ø D_c	110 16 2826 Face reamer H7	d_s	L_c	L_1	L	Number of cutting edges Z	Ø D_s	< 900 N f	Reaming oversize in Ø reference value
mm		mm	mm	mm	mm		mm	mm/rev.	mm
8	eShop	3	24	71	117	6	8	0.15	0.1 – 0.2
9	eShop	3.5	24	77	125	6	9	0.2	0.1 – 0.2
10	eShop	4.5	26	84	133	6	10	0.2	0.1 – 0.2
11	eShop	4.5	26	89	142	6	11	0.2	0.1 – 0.2
12	eShop	4.5	26	96.5	151	6	12	0.2	0.1 – 0.2

H7 | HSS E | Standard | h6 DIN 1835 A

Garant

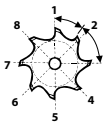
NC machine reamers with whole-number shank Ø

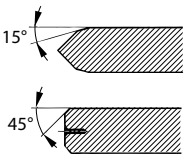
Version suitable for NC similar to DIN 212 **with straight shank Ø** for **standard chucking** especially in **hydraulic chucks** or **high precision collet chucks.**
For **highest concentricity** and **process reliability.**
No need to order special collets.
With long flutes and left-hand helix.
≤ Ø size 1.7 with 3 teeth; ≥ Ø size 1.8 even number of teeth and irregular spacing.
≤ Ø size 3.7 both ends with centre points; ≥ Ø size 3.8 both ends with centre holes.
Reamer manufacturing or cutting edge tolerance to DIN1420 for **H7 bore tolerance.**

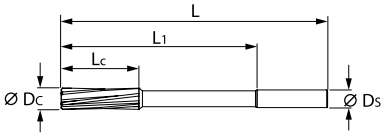
Note: For reamers in **1/100 sizes** see **No. 162902.**
For reamers with **diameters and fits to specification** see **No. 162951**



Even number of teeth with uneven spacing – pairs of teeth are exactly opposite each other; e.g. teeth 1 and 5.







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N						
16 2900		20	20		15	10	7	5	4				5	5	5	5	13	●	●	●			

Nominal Ø D_C mm or inch	110 16 2900 NC reamer H7	Inch Ø ≙	L_c	L_1	L	Number of cutting edges Z	Ø D_s	< 750 N f	Reaming oversize in Ø reference value
		mm	mm	mm	mm		mm	mm/rev.	mm
1	eShop	–	5.5	15	34	3	1	0.1	0.05 – 0.1
1,1	eShop	–	6.5	14	36	3	1	0.1	0.05 – 0.1
1,2	eShop	–	7.5	13	38	3	2	0.1	0.05 – 0.1
1,3	eShop	–	7.5	13	38	3	2	0.1	0.05 – 0.1
1,4	eShop	–	8	15	40	3	2	0.1	0.05 – 0.1
1,5	eShop	–	8	18	40	3	2	0.1	0.05 – 0.1
1/16	eShop ■	1.59	9	20	43	3	2	0.1	0.05 – 0.1
1,6	eShop	–	9	20	43	3	2	0.1	0.05 – 0.1
1,7	eShop	–	9	20	43	3	2	0.1	0.05 – 0.1
1,8	eShop	–	10	22	46	4	2	0.15	0.05 – 0.1
1,9	eShop	–	10	22	46	4	2	0.15	0.05 – 0.1
2	eShop	–	11	24	49	4	2	0.15	0.05 – 0.1
2,1	eShop	–	11	24	49	4	2	0.15	0.05 – 0.1
2,2	eShop	–	12	25	53	4	3	0.15	0.05 – 0.1
2,3	eShop	–	12	25	53	4	3	0.15	0.05 – 0.1
3/32	eShop ■	2.38	14	29	57	4	3	0.15	0.05 – 0.1
2,4	eShop	–	14	29	57	4	3	0.15	0.05 – 0.1
2,5	eShop	–	14	29	57	4	3	0.15	0.05 – 0.1
2,6	eShop	–	14	29	57	4	3	0.15	0.05 – 0.1
2,7	eShop	–	15	33	61	6	3	0.2	0.05 – 0.1
2,8	eShop	–	15	33	61	6	3	0.2	0.05 – 0.1
2,9	eShop	–	15	33	61	6	3	0.2	0.05 – 0.1
3	eShop	–	15	33	61	6	3	0.2	0.1
3,1	eShop	–	16	37	65	6	4	0.2	0.1
1/8	eShop ■	3.18	16	37	65	6	4	0.2	0.1
3,2	eShop	–	16	37	65	6	4	0.2	0.1
3,3	eShop	–	16	37	65	6	4	0.2	0.1
3,4	eShop	–	18	42	70	6	4	0.2	0.1
3,5	eShop	–	18	42	70	6	4	0.2	0.1
3,6	eShop	–	18	42	70	6	4	0.2	0.1
3,7	eShop	–	18	42	70	6	4	0.2	0.1
3,8	eShop	–	19	46	75	6	4	0.15	0.1
3,9	eShop	–	19	46	75	6	4	0.15	0.1
5/32	eShop ■	3.97	19	46	75	6	4	0.15	0.1
4	eShop ■	–	19	46	75	6	4	0.15	0.1
4,1	eShop	–	19	46	75	6	4	0.15	0.1
4,2	eShop	–	19	46	75	6	4	0.15	0.1
4,3	eShop	–	21	51	80	6	5	0.15	0.1
4,4	eShop	–	21	51	80	6	5	0.15	0.1
4,5	eShop	–	21	51	80	6	5	0.15	0.1
4,6	eShop	–	21	51	80	6	5	0.15	0.1
4,7	eShop	–	21	51	80	6	5	0.15	0.1
3/16	eShop ■	4.76	23	57	86	6	5	0.15	0.1
4,8	eShop	–	23	57	86	6	5	0.15	0.1
4,9	eShop	–	23	57	86	6	5	0.15	0.1
5	eShop ■	–	23	57	86	6	5	0.2	0.1
5,1	eShop	–	23	57	86	6	5	0.2	0.1
5,2	eShop	–	23	57	86	6	5	0.2	0.1
5,3	eShop	–	23	57	86	6	5	0.2	0.1
5,4	eShop	–	26	56	93	6	6	0.2	0.1
5,5	eShop	–	26	56	93	6	6	0.2	0.1
7/32	eShop ■	5.556	26	56	93	8	6	0.2	0.1 – 0.2
5,6	eShop	–	26	56	93	6	6	0.2	0.1 – 0.2
5,7	eShop	–	26	56	93	6	6	0.2	0.1 – 0.2
5,8	eShop	–	26	56	93	6	6	0.2	0.1 – 0.2
5,9	eShop	–	26	56	93	6	6	0.2	0.1 – 0.2
6	eShop ■	–	26	56	93	6	6	0.2	0.1 – 0.2
6,1	eShop	–	28	64	101	6	6	0.2	0.1 – 0.2
6,2	eShop	–	28	64	101	6	6	0.2	0.1 – 0.2
6,3	eShop	–	28	64	101	6	6	0.2	0.1 – 0.2
1/4	eShop ■	6.35	28	64	101	6	6	0.2	0.1 – 0.2
6,4	eShop	–	28	64	101	6	6	0.2	0.1 – 0.2
6,5	eShop	–	28	64	101	6	6	0.2	0.1 – 0.2

Nominal Ø D_C mm or inch	110 16 2900 NC reamer H7	Inch Ø ≙	L_c	L_1	L	Number of cutting edges Z	Ø D_s	< 750 N f	Reaming oversize in Ø reference value
		mm	mm	mm	mm		mm	mm/rev.	mm
6,6	eShop	–	28	64	101	6	6	0.2	0.1 – 0.2
6,7	eShop	–	28	64	101	6	6	0.2	0.1 – 0.2
6,8	eShop	–	31	72	109	6	8	0.2	0.1 – 0.2
6,9	eShop	–	31	72	109	6	8	0.2	0.1 – 0.2
7	eShop	–	31	72	109	6	8	0.2	0.1 – 0.2
7,1	eShop	–	31	72	109	6	8	0.2	0.1 – 0.2
9/32	eShop ■	7.14	31	72	109	6	8	0.2	0.1 – 0.2
7,2	eShop	–	31	72	109	6	8	0.2	0.1 – 0.2
7,3	eShop	–	31	72	109	6	8	0.2	0.1 – 0.2
7,4	eShop	–	31	72	109	6	8	0.2	0.1 – 0.2
7,5	eShop	–	31	72	109	6	8	0.2	0.1 – 0.2
7,6	eShop	–	33	80	117	6	8	0.2	0.1 – 0.2
7,7	eShop	–	33	80	117	6	8	0.2	0.1 – 0.2
7,8	eShop	–	33	80	117	6	8	0.2	0.1 – 0.2
7,9	eShop	–	33	80	117	6	8	0.2	0.1 – 0.2
5/16	eShop ■	7.94	33	80	117	6	8	0.25	0.1 – 0.2
8	eShop ■	–	33	80	117	6	8	0.25	0.1 – 0.2
8,1	eShop	–	33	80	117	6	8	0.25	0.1 – 0.2
8,2	eShop	–	33	80	117	6	8	0.25	0.1 – 0.2
8,3	eShop	–	33	80	117	6	8	0.25	0.1 – 0.2
8,4	eShop	–	33	80	117	6	8	0.25	0.1 – 0.2
8,5	eShop	–	33	80	117	6	8	0.25	0.1 – 0.2
8,6	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
8,7	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
11/32	eShop ■	8.73	36	83	125	6	10	0.25	0.1 – 0.2
8,8	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
8,9	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
9	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
9,1	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
9,2	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
9,3	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
9,4	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
9,5	eShop	–	36	83	125	6	10	0.25	0.1 – 0.2
3/8	eShop ■	9.53	38	92	133	6	10	0.25	0.1 – 0.2
9,6	eShop	–	38	92	133	6	10	0.25	0.1 – 0.2
9,7	eShop	–	38	92	133	6	10	0.25	0.1 – 0.2
9,8	eShop	–	38	92	133	6	10	0.25	0.1 – 0.2
9,9	eShop	–	38	92	133	6	10	0.25	0.1 – 0.2
10	eShop ■	–	38	92	133	6	10	0.25	0.1 – 0.2
10,1	eShop	–	38	92	133	6	10	0.25	0.1 – 0.2
10,2	eShop	–	38	92	133	6	10	0.25	0.1 – 0.2
13/32	eShop ■	10.32	38	92	133	6	10	0.25	0.1 – 0.2
10,5	eShop	–	38	92	133	6	10	0.25	0.1 – 0.2
11	eShop	–	41	101	142	6	10	0.25	0.1 – 0.2
7/16	eShop ■	11.113	41	101	142	6	10	0.25	0.1 – 0.2
11,5	eShop	–	41	101	142	6	10	0.25	0.1 – 0.2
12	eShop ■	–	44	110	151	6	10	0.25	0.1 – 0.2
12,1	eShop	–	44	110	151	6	10	0.25	0.1 – 0.3
12,2	eShop	–	44	110	151	6	10	0.25	0.1 – 0.3
12,5	eShop	–	44	110	151	6	10	0.25	0.1 – 0.3
1/2	eShop ■	12.7	44	110	151	6	10	0.25	0.1 – 0.3
12,7	eShop	–	44	110	151	6	10	0.25	0.1 – 0.3
13	eShop ■	–	44	110	151	6	10	0.25	0.1 – 0.3
14	eShop	–	47	112	160	8	14	0.3	0.1 – 0.3
9/16	eShop ■	14.29	50	112	160	8	14	0.3	0.1 – 0.3
15	eShop	–	50	114	162	8	14	0.3	0.1 – 0.3
5/8	eShop ■	15.88	52	123	170	8	14	0.3	0.1 – 0.3
16	eShop ■	–	52	123	170	8	14	0.3	0.1 – 0.3
17	eShop	–	54	128	175	8	14	0.3	0.1 – 0.3
18	eShop	–	56	135	182	8	14	0.3	0.1 – 0.3
19	eShop	–	58	139	189	8	16	0.3	0.1 – 0.3
20	eShop ■	–	60	145	195	8	16	0.3	0.1 – 0.3

H7 | HSS E | Standard | h6 DIN 1835 A

Garant

NC machine reamer set with whole-number shank ∅

Version suitable for NC similar to DIN 212 **with straight shank ∅** for **standard chucking** especially in **hydraulic chucks** or **high precision collet chucks.** For **highest concentricity** and **process reliability.**
No need to order special collets. With long flutes and left-hand helix.
Even number of teeth with irregular spacing.
Size 3 with centring tip, from size 4 with centre holes at both ends.
Reamer manufacturing tolerance to DIN 1420 for H7 hole tolerance field.
Supplied with: 6-piece NC reamer set in a box.


16 2925

Number of reamers		6
110 16 2925	NC reamer set No. 162900 in a box **H7**	eShop ■
Content: 1 pc. each NC reamer		Size 3; 4; 5; 6; 8; 10

HSS E | Standard | h6 DIN 1835 A

0 +0.004 | 0 +0.005

Garant

NC machine reamers, whole-number shank ∅ in 1/100 sizes with defined tolerance

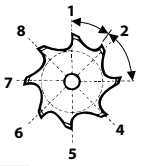
Version suitable for NC similar to DIN 212 **with straight shank ∅** for **standard chucking** especially in **hydraulic chucks** or **high precision collet chucks.** For **highest concentricity** and **process reliability.**
No need to order special collets.
With long flutes and left-hand helix.
Reamers such as 162900, but in 1/100 sizes.
Tolerance specifications:
Size 1.01 – 5.5: Manufacturing or cutting edge tolerance **0 / +0.004 mm**.
Size 5.51 – 12.05: Manufacturing or cutting edge tolerance **0 / +0.005 mm**.
Ordering example:
Desired dia. 6.24 mm – ordering particulars: article number 162902 6.24.
The 6.24 mm reamer with tolerance 0 / +0.005 mm is supplied.
Depending on availability, delivery time is from stock or max. 1 working week.

To determine which diameter you need for your desired fit, please see the following table.
Often one reamer also covers further fits, since the tolerance bands overlap.

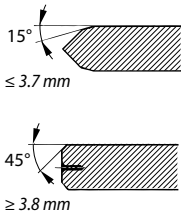
Note:	Reamers in whole number sizes and 1/10 sizes for **H7 fit** see **No. 162900.** For reamers with diameters and **fits to specification** see **No. 162951.**

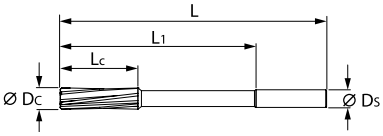

≤ 3.7 mm 16 2902


≥ 3.8 mm 16 2902



Even number of teeth with uneven spacing – pairs of teeth are exactly opposite each other; e.g. teeth 1 and 5.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N						
16 2902		20	20		15	10	7	5	4				5	5	5	5	13	●	●	●			

Nominal ∅ D_C mm	110 16 2902 NC reamer	Tolerance	L_c mm	L_1 mm	L mm	∅ D_s mm	< 750 N f mm/rev.	Reaming oversize in ∅ reference value mm
1,01	eShop	0 / 0.004	5.5	15	34	1	0.1	0.05 – 0.1
1,02	eShop	0 / 0.004	5.5	15	34	1	0.1	0.05 – 0.1
1,03	eShop	0 / 0.004	5.5	15	34	1	0.1	0.05 – 0.1
1,51	eShop	0 / 0.004	9	20	43	2	0.1	0.05 – 0.1
1,52	eShop	0 / 0.004	9	20	43	2	0.1	0.05 – 0.1
1,53	eShop	0 / 0.004	9	20	43	2	0.1	0.05 – 0.1
1,65	eShop	0 / 0.004	9	20	43	2	0.1	0.05 – 0.1
1,68	eShop	0 / 0.004	9	20	43	2	0.1	0.05 – 0.1
1,97	eShop	0 / 0.004	11	24	49	2	0.15	0.05 – 0.1
1,98	eShop	0 / 0.004	11	24	49	2	0.15	0.05 – 0.1
1,99	eShop	0 / 0.004	11	24	49	2	0.15	0.05 – 0.1
2,01	eShop	0 / 0.004	11	24	49	2	0.15	0.05 – 0.1
2,02	eShop	0 / 0.004	11	24	49	2	0.15	0.05 – 0.1
2,03	eShop	0 / 0.004	11	24	49	2	0.15	0.05 – 0.1
2,35	eShop	0 / 0.004	14	29	57	3	0.15	0.05 – 0.1
2,47	eShop	0 / 0.004	14	29	57	3	0.15	0.05 – 0.1
2,48	eShop	0 / 0.004	14	29	57	3	0.15	0.05 – 0.1
2,49	eShop	0 / 0.004	14	29	57	3	0.15	0.05 – 0.1
2,51	eShop	0 / 0.004	14	29	57	3	0.15	0.05 – 0.1
2,52	eShop	0 / 0.004	14	29	57	3	0.15	0.05 – 0.1
2,53	eShop	0 / 0.004	14	29	57	3	0.15	0.05 – 0.1

Nominal ∅ D_C mm	110 16 2902 NC reamer	Tolerance	L_c mm	L_1 mm	L mm	∅ D_s mm	< 750 N f mm/rev.	Reaming oversize in ∅ reference value mm
2,55	eShop	0 / 0.004	14	29	57	3	0.15	0.05 – 0.1
2,62	eShop	0 / 0.004	15	33	61	3	0.15	0.05 – 0.1
2,83	eShop	0 / 0.004	15	33	61	3	0.2	0.05 – 0.1
2,97	eShop	0 / 0.004	15	33	61	3	0.2	0.05 – 0.1
2,98	eShop	0 / 0.004	15	33	61	3	0.2	0.05 – 0.1
2,99	eShop	0 / 0.004	15	33	61	3	0.2	0.05 – 0.1
3,00	eShop	0 / 0.004	15	33	61	3	0.2	0.1
3,01... 3,30	eShop	0 / 0.004	16	37	65	4	0.2	0.1
3,31... 3,75	eShop	0 / 0.004	18	42	70	4	0.2	0.1
3,76... 4,20	eShop	0 / 0.004	19	46	75	4	0.15	0.1
4,21... 4,75	eShop	0 / 0.004	21	51	80	5	0.15	0.1
4,76... 5,30	eShop	0 / 0.004	23	57	86	5	0.15	0.1
5,31... 5,50	eShop	0 / 0.004	26	56	93	6	0.2	0.1
5,51... 6,00	eShop	0 / 0,005	26	56	93	6	0.2	0.1 – 0.2
6,01... 6,70	eShop	0 / 0,005	28	64	101	6	0.2	0.1 – 0.2
6,71... 7,50	eShop	0 / 0,005	31	72	109	8	0.2	0.1 – 0.2
7,51... 8,50	eShop	0 / 0,005	33	80	117	8	0.25	0.1 – 0.2
8,51... 9,50	eShop	0 / 0,005	36	83	125	10	0.25	0.1 – 0.2
9,51... 10,60	eShop	0 / 0,005	38	92	133	10	0.25	0.1 – 0.2
10,61... 11,80	eShop	0 / 0,005	41	101	142	10	0.25	0.1 – 0.2
11,81... 12,05	eShop	0 / 0,005	44	110	151	10	0.25	0.1 – 0.2

The quick way to suitable reamers

Article number	Tolerance	orderable nominal ∅	Application	Advantage
16 2900	H7	whole number and 1/10 sizes	For H7 fit tolerances.	Optimally matched to H7 fit tolerances, guaranteed to achieve a long tool life and maintain high accuracy.
16 2902	0 / + 0.004 or 0/ + 0.005	1/100 sizes	For a large number of fit sizes, even outside H7. For a selection of suitable diameters see the table of fits below.	Attractively-priced reamers and quick availability.
16 2951	Configurable (freely selectable)	Configurable (freely selectable)	For any combination of diameter and fit.	The reamers are ground to specification. They are optimally matched to the desired fit tolerance. This results in longer tool life than for 1/100 reamers.

Example for fit 11F7:
Reamers 16 2951 (size 11F7) that are ground for a specific fit lie in the upper part of the range and thus have a larger play for wear before they reach the wear limit.

In comparison to these the new reamer 16 2902 (size 11.02) has a somewhat smaller lower play.

Advantage: Attractive price and short lead times



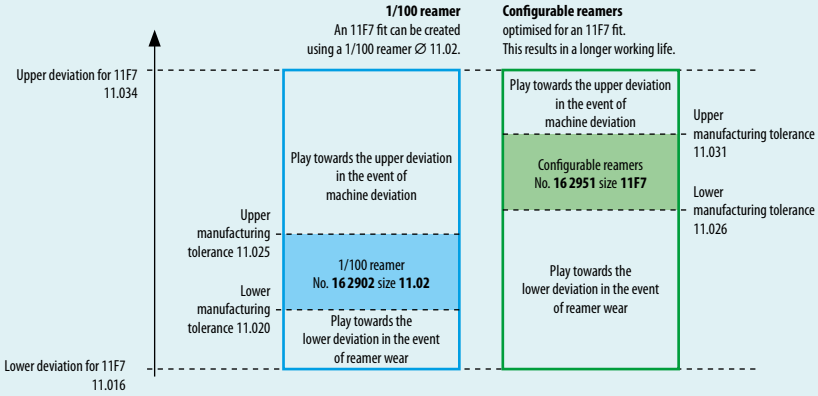


Table of fits for 1/100 machine reamers 16 2902

Fit	Hole diameter ∅																								
	1	1,5	2	2,5	3	3,5	3,7	4	4,5	5	5,5	6	6,5	7	7,5	7,8	8	8,5	9	9,5	10	10,2	10,5	11	11,5	12
D7	1.02	1.52	2.02	2.52	3.02	3.53	3.73	4.03	4.53	5.03	5.53	6.03	6.55	7.05	7.55	7.85	8.05	8.55	9.05	9.55	10.05	10.26	10.56	11.06	11.56	12.06
D8	1.03	1.53	2.03	2.53	3.03	3.54	3.74	4.04	4.54	5.04	5.54	6.04	6.55	7.05	7.55	7.85	8.05	8.55	9.05	9.55	10.05	10.27	10.57	11.07	11.57	12.07
D9	1.04	1.54	2.04	2.54	3.04	3.55	3.75	4.05	4.55	5.05	5.55	6.05	6.57	7.07	7.57	7.87	8.07	8.57	9.07	9.57	10.07	10.28	10.58	11.08	11.58	12.08
D10	1.05	1.55	2.05	2.55	3.05	3.57	3.77	4.07	4.57	5.07	5.57	6.07	6.58	7.08	7.58	7.88	8.08	8.58	9.08	9.58	10.08	10.30	10.60	11.10	11.60	12.10
D11	1.07	1.57	2.07	2.57	3.07	3.59	3.79	4.09	4.59	5.09	5.59	6.09	6.61	7.11	7.61	7.91	8.11	8.61	9.11	9.61	10.11	10.34	10.64	11.14	11.64	12.14
E7	1.02	1.52	2.02	2.52	3.02	3.52	3.72	4.02	4.52	5.02	5.52	6.02	6.53	7.03	7.53	7.83	8.03	8.53	9.03	9.53	10.03	10.24	10.54	11.04	11.54	12.04
E8	1.02	1.52	2.02	2.52	3.02	3.53	3.73	4.03	4.53	5.03	5.53	6.03	6.54	7.04	7.54	7.84	8.04	8.54	9.04	9.54	10.04	10.25	10.55	11.05	11.55	12.05
E9	1.03	1.53	2.03	2.53	3.03	3.54	3.74	4.04	4.54	5.04	5.54	6.04	6.55	7.05	7.55	7.85	8.05	8.55	9.05	9.55	10.05	10.26	10.56	11.06	11.56	12.06
E10	1.04	1.54	2.04	2.54	3.04	3.56	3.76	4.06	4.56	5.06	5.56	6.06	6.57	7.07	7.57	7.87	8.07	8.57	9.07	9.57	10.07	10.29	10.59	11.09	11.59	12.09
F6	-	-	-	-	-	3.51	3.71	4.01	4.51	5.01	5.51	6.01	-	-	-	-	-	-	-	-	-	10.22	10.52	11.02	11.52	12.02
F7	1.01	1.51	2.01	2.51	3.01	3.51	3.71	4.01	4.51	5.01	5.51	6.01	6.52	7.02	7.52	7.82	8.02	8.52	9.02	9.52	10.02	10.22	10.52	**11.02**	11.52	12.02
F8	1.01	1.51	2.01	2.51	3.01	3.52	3.72	4.02	4.52	5.02	5.52	6.02	6.53	7.03	7.53	7.83	8.03	8.53	9.03	9.53	10.03	10.23	10.53	11.03	11.53	12.03
F9	1.02	1.52	2.02	2.52	3.02	3.53	3.73	4.03	4.53	5.03	5.53	6.03	6.54	7.04	7.54	7.84	8.04	8.54	9.04	9.54	10.04	10.25	10.55	11.05	11.55	12.05
G7	-	-	-	-	-	3.51	3.71	4.01	4.51	5.01	5.51	6.01	6.51	7.01	7.51	7.81	8.01	8.51	9.01	9.51	10.01	10.21	10.51	11.01	11.51	12.01
H5	1.00	1.50	2.00	2.50	3.00	3.50	3.70	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	7.80	8.00	8.50	9.00	9.50	10.00	10.20	10.50	11.00	11.50	12.00
H6	1.00	1.50	2.00	2.50	3.00	3.50	3.70	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	7.80	8.00	8.50	9.00	9.50	10.00	10.20	10.50	11.00	11.50	12.00
H7	1.00	1.50	2.00	2.50	3.00	3.50	3.70	4.00	4.50	5.00	5.50	6.00	6.51	7.01	7.51	7.81	8.01	8.51	9.01	9.51	10.01	10.21	10.51	11.01	11.51	12.01
H8	1.01	1.51	2.01	2.51	3.01	3.51	3.71	4.01	4.51	5.01	5.51	6.01	6.51	7.01	7.51	7.81	8.01	8.51	9.01	9.51	10.01	10.22	10.52	11.02	11.52	12.02
H9	1.02	1.52	2.02	2.52	3.02	3.52	3.72	4.02	4.52	5.02	5.52	6.02	6.53	7.03	7.53	7.83	8.03	8.53	9.03	9.53	10.03	10.23	10.53	11.03	11.53	12.03
H10	1.03	1.53	2.03	2.53	3.03	3.54	3.74	4.04	4.54	5.04	5.54	6.04	6.54	7.04	7.54	7.84	8.04	8.54	9.04	9.54	10.04	10.25	10.55	11.05	11.55	12.05
H11	1.05	1.55	2.05	2.55	3.05	3.56	3.76	4.06	4.56	5.06	5.56	6.06	6.57	7.07	7.57	7.87	8.07	8.57	9.07	9.57	10.07	10.29	10.59	11.09	11.59	12.09
H12	1.08	1.58	2.08	2.58	3.08	3.60	3.80	4.10	4.60	5.10	5.60	6.10	6.62	7.12	7.62	7.92	8.12	8.62	9.12	9.62	10.12	10.35	10.65	11.15	11.65	12.15
J6	-	-	-	-	-	3.50	3.70	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	7.80	8.00	8.50	9.00	9.50	10.00	10.20	10.50	11.00	11.50	12.00
J7	1.00	1.50	2.00	2.50	3.00	3.50	3.70	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	7.80	8.00	8.50	9.00	9.50	10.00	10.20	10.50	11.00	11.50	12.00
JS6	-	-	-	-	-	3.50	3.70	4.00	4.50	5.00	-	-	-	-	-	-	-	-	-	-	-	10.20	10.50	11.00	11.50	12.00
JS7	1.00	1.50	2.00	2.50	3.00	3.50	3.70	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50	7.80	8.00	8.50	9.00	9.50	10.00	10.20	10.50	11.00	11.50	12.00
K7	0.99	1.49	1.99	2.49	2.99	-	-	-	-	-	-	-	6.50	7.00	7.50	7.80	8.00	8.50	9.00	9.50	10.00	10.20	10.50	11.00	11.50	12.00
M6	-	-	-	-	-	-	-	-	-	-	-	-	6.49	6.99	7.49	7.79	7.99	8.49	8.99	9.49	9.99	10.19	10.49	10.99	11.49	11.99
M7	0.99	1.49	1.99	2.49	2.99	3.49	3.69	3.99	4.49	4.99	5.49	5.99	6.49	6.99	7.49	7.79	7.99	8.49	8.99	9.49	9.99	10.19	10.49	10.99	11.49	11.99
N6	0.99	1.49	1.99	2.49	2.99	3.49	3.69	3.99	4.49	4.99	5.49	5.99	-	-	-	-	-	-	-	-	-	10.18	10.48	10.98	11.48	11.98
N7	0.99	1.49	1.99	2.49	2.99	3.49	3.69	3.99	4.49	4.99	5.49	5.99	6.49	6.99	7.49	7.79	7.99	8.49	8.99	9.49	9.99	10.19	10.49	10.99	11.49	11.99
P6	0.99	1.49	1.99	2.49	2.99	-	-	-	-	-	-	-	6.48	6.98	7.48	7.78	7.98	8.48	8.98	9.48	9.98	10.18	10.48	10.98	11.48	11.98
P7	0.99	1.49	1.99	2.49	2.99	3.48	3.68	3.98	4.48	4.98	5.48	5.98	6.48	6.98	7.48	7.78	7.98	8.48	8.98	9.48	9.98	10.18	10.48	10.98	11.48	11.98
P8	0.99	1.49	1.99	2.49	2.99	3.48	3.68	3.98	4.48	4.98	5.48	5.98	6.48	6.98	7.48	7.78	7.98	8.48	8.98	9.48	9.98	10.17	10.47	10.97	11.47	11.97
P9	0.99	1.49	1.99	2.49	2.99	3.48	3.68	3.98	4.48	4.98	5.48	5.98	6.47	6.97	7.47	7.77	7.97	8.47	8.97	9.47	9.97	10.17	10.47	10.97	11.47	11.97
R6	-	-	-	-	-	3.48	3.68	3.98	4.48	4.98	5.48	5.98	-	-	-	-	-	-	-	-	-	10.17	10.47	10.97	11.47	11.97
R7	0.98	1.48	1.98	2.48	2.98	3.48	3.68	3.98	4.48	4.98	5.48	5.98	6.48	6.98	7.48	7.78	7.98	8.48	8.98	9.48	9.98	10.17	10.47	10.97	11.47	11.97
S7	0.98	1.48	1.98	2.48	2.98	3.48	3.68	3.98	4.48	4.98	5.48	5.98	6.47	6.97	7.47	7.77	7.97	8.47	8.97	9.47	9.97	10.17	10.47	10.97	11.47	11.97
S8	0.98	1.48	1.98	2.48	2.98	3.47	3.67	3.97	4.47	4.97	5.47	5.97	6.47	6.97	7.47	7.77	7.97	8.47	8.97	9.47	9.97	10.16	10.46	10.96	11.46	11.96
U7	-	-	-	-	-	3.47	3.67	3.97	4.47	4.97	5.47	5.97	6.47	6.97	7.47	7.77	7.97	8.47	8.97	9.47	9.97	10.16	10.46	10.96	11.46	11.96
X7	0.97	1.47	1.97	2.47	2.97	3.47	3.67	3.97	4.47	4.97	5.47	5.97	6.46	6.96	7.46	7.76	7.96	8.46	8.96	9.46	9.96	10.16	10.46	10.96	11.46	11.96
X8	0.97	1.47	1.97	2.47	2.97	3.46	3.66	3.96	4.46	4.96	5.46	5.96	6.46	6.96	7.46	7.76	7.96	8.46	8.96	9.46	9.96	10.15	10.45	10.95	11.45	11.95
Z8	0.97	1.47	1.97	2.47	2.97	3.46	3.66	3.96	4.46	4.96	5.46	5.96	6.45	6.95	7.45	7.75	7.95	8.45	8.95	9.45	9.95	10.14	10.44	10.94	11.44	11.94

HSS E | Standard | h6 DIN 1835 A



≤ 3.7 mm 16 2951

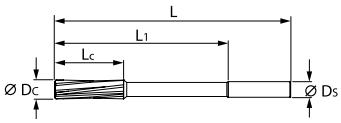


≥ 4 mm 16 2951

Garant NC machine reamers with whole-number shank Ø, non-standard sizes and fits

Reamers finish ground to match your specification.

Note: For **fit H7** see No. 162900 and 163000.
For reamers in 1/100 - sizes see No. 162902.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	
16 2951		20	20		15	10	7	5	4				5	5	5	5	13	●

Nominal Ø D_c	110 16 2951 NC reamer Configurable	Ø range	L_c	L_1	L	Number of cutting edges Z	Ø D_s	< 750 N f
mm		mm	mm	mm	mm		mm	mm/rev.
1	(eShop)	0.95 – 1.06	5	13	34	3	1	0.1
1,1	(eShop)	1.07 – 1.18	6.5	14	36	3	1	0.1
1,2	(eShop)	1.19 – 1.32	7.5	13	38	3	2	0.1
1,4	(eShop)	1.33 – 1.41	8	15	40	3	2	0.1
1,5	(eShop)	1.42 – 1.5	8	15	40	3	2	0.1
1,6	(eShop)	1.51 – 1.7	9	17	43	3	2	0.1
1,8	(eShop)	1.71 – 1.9	10	20	46	3	2	0.15
2	(eShop)	1.91 – 2.12	11	22	49	4	2	0.15
2,2	(eShop)	2.13 – 2.36	12	21	53	4	3	0.15
2,5	(eShop)	2.37 – 2.65	14	26	57	4	3	0.15
2,8	(eShop)	2.66 – 2.8	15	30	61	4	3	0.2
3	(eShop)	2.81 – 3	15	30	61	6	3	0.2
3,2	(eShop)	3.01 – 3.35	16	33	65	6	4	0.2
3,5	(eShop)	3.36 – 3.75	18	39	75	6	4	0.2
4	(eShop)	3.76 – 4.05	19	46	75	6	4	0.15
4,3	(eShop)	4.06 – 4.25	19	46	75	6	4	0.15
4,5	(eShop)	4.26 – 4.75	21	51	80	6	5	0.15
5	(eShop)	4.76 – 5.05	23	57	86	6	5	0.2
5,3	(eShop)	5.06 – 5.3	23	57	86	6	5	0.2
5,5	(eShop)	5.31 – 5.6	26	56	93	6	6	0.2
6	(eShop)	5.61 – 6	26	56	93	6	6	0.2
6,5	(eShop)	6.01 – 6.7	28	64	101	6	6	0.2
7	(eShop)	6.71 – 7.05	31	72	109	6	8	0.2
7,5	(eShop)	7.06 – 7.5	31	72	109	6	8	0.2
8	(eShop)	7.51 – 8.05	33	80	117	6	8	0.25

Nominal Ø D_c	110 16 2951 NC reamer Configurable	Ø range	L_c	L_1	L	Number of cutting edges Z	Ø D_s	< 750 N f
mm		mm	mm	mm	mm		mm	mm/rev.
8,5	(eShop)	8.06 – 8.5	33	80	117	6	8	0.25
9	(eShop)	8.51 – 9.05	36	84	125	6	10	0.25
9,5	(eShop)	9.06 – 9.5	36	84	125	6	10	0.25
10	(eShop)	9.51 – 10.05	38	92	133	6	10	0.25
10,5	(eShop)	10.06 – 10.6	38	92	133	6	10	0.25
11	(eShop)	10.61 – 11.05	41	101	142	6	10	0.25
11,5	(eShop)	11.06 – 11.8	41	101	142	6	10	0.25
12	(eShop)	11.81 – 12.05	44	110	151	6	10	0.25
12,5	(eShop)	12.06 – 12.6	44	110	151	6	10	0.25
13	(eShop)	12.61 – 13.2	44	110	151	6	10	0.25
13,5	(eShop)	13.21 – 13.55	47	113	160	8	14	0.3
14	(eShop)	13.56 – 14	47	113	160	8	14	0.3
14,5	(eShop)	14.01 – 14.5	50	115	162	8	14	0.3
15	(eShop)	14.51 – 15	50	115	162	8	14	0.3
15,5	(eShop)	15.01 – 15.5	52	123	170	8	14	0.3
16	(eShop)	15.51 – 16	52	123	170	8	14	0.3
16,5	(eShop)	16.01 – 16.5	54	129	175	8	14	0.3
17	(eShop)	16.51 – 17	54	129	175	8	14	0.3
17,5	(eShop)	17.01 – 17.5	56	136	182	8	14	0.3
18	(eShop)	17.51 – 18	56	136	182	8	14	0.3
18,5	(eShop)	18.01 – 18.5	58	140	189	8	16	0.3
19	(eShop)	18.51 – 19	58	140	189	8	16	0.3
19,5	(eShop)	19.01 – 19.5	60	146	195	8	16	0.3
20	(eShop)	19.51 – 20	60	146	195	8	16	0.3

H7 | HSS E | Standard | h6 DIN 1835 A



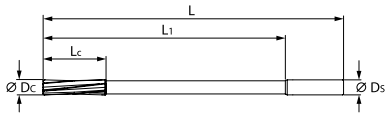
16 2961



16 2971

Garant NC machine reamers, whole-number shank Ø

With long flutes and left-hand helix.
Reamers finish ground for fit H7.
Application: Especially for deeper holes.
Also suitable for blind holes.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	
16 2961/2971		20	20		15	10	7	5	4				5	5	5	5	13	●

Nominal Ø D_c	110 16 2961 NC reamer long H7	110 16 2971 NC reamer extra long H7	L_c	L_1 16 2961	L_1 16 2971	L 16 2961	L 16 2971	Number of cutting edges Z	Ø D_s	< 750 N f	Reaming oversize in Ø reference value
mm			mm	mm	mm	mm	mm		mm	mm/rev.	mm
2	eShop	eShop	11	44	64	65	85	4	2	0.1	0.05 – 0.1
3	eShop	eShop	15	69	99	90	120	6	3	0.1	0.1
4	eShop	eShop	19	79	134	105	160	6	4	0.1	0.1
5	eShop	eShop	23	89	174	115	200	6	5	0.1	0.1
6	eShop	eShop	26	99	219	130	250	6	6	0.1	0.1 – 0.2
8	eShop	eShop	33	129	219	160	250	6	8	0.13	0.1 – 0.2
10	eShop	eShop	38	148	219	175	250	6	10	0.15	0.1 – 0.2
12	eShop	eShop	44	159	249	210	300	6	12	0.15	0.1 – 0.2

H7 | HSS E | DIN 212 B | h9





16 3000 ≤ 3.7 mm



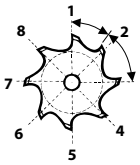
16 3000 ≥ 3.9 mm

Garant Machine reamers plain shank

With long flutes and left-hand helix.
From size 1.8 even number of teeth and uneven spacing.
Up to size 3.7 both ends with external centres;
from size 3.9 both ends with internal centres.
Reamers finish ground for fit H7.

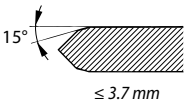
Application: For reaming through holes.
Also suitable for blind holes (from 3.9 mm Ø) due to short chamfer lead.

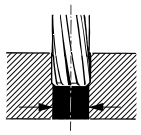
Note:
- Straight flute machine chucking reamers – available ex-stock.
- **For reamers with other diameters and fits see No. 162951.**



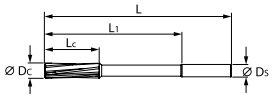
Even number of teeth with irregular spacing – pairs of teeth are exactly opposite each other; e. g. teeth 1 and 5.

Chamfer lead forms:





Correct undersize for pre-drilled holes can be found in the machining handbook.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	
16 3000		20	20		15	10	7	5	4				5	5	5	5	13	●

Nominal Ø D_c mm	110 16 3000 Machine reamer H7	L_1 mm	L mm	Ø D_s mm	< 750 N f mm/rev.	Reaming oversize in Ø reference value mm
1,5	eShop	16	40	1.5	0.1	0.05 – 0.1
1,6	eShop	18	43	1.6	0.1	0.05 – 0.1
1,7	eShop	18	43	1.6	0.1	0.05 – 0.1
1,8	eShop	20	46	1.8	0.15	0.05 – 0.1
1,9	eShop	20	46	1.8	0.15	0.05 – 0.1
2	eShop	22	49	2	0.15	0.05 – 0.1
2,1	eShop	22	49	2	0.15	0.05 – 0.1
2,2	eShop	24	53	2.2	0.15	0.05 – 0.1
2,3	eShop	24	53	2.2	0.15	0.05 – 0.1
2,4	(eShop)	26	57	2.5	0.15	0.05 – 0.1
2,5	eShop	26	57	2.5	0.15	0.05 – 0.1
2,6	eShop	26	57	2.5	0.15	0.05 – 0.1
2,7	eShop	30	61	2.8	0.2	0.05 – 0.1
2,8	eShop	30	61	2.8	0.2	0.05 – 0.1
2,9	(eShop)	29	61	3	0.2	0.05 – 0.1
3	eShop	29	61	3	0.2	0.1
3,1	eShop	33	65	3.2	0.2	0.1
3,2	eShop	33	65	3.2	0.2	0.1
3,3	(eShop)	33	65	3.2	0.2	0.1
3,4	eShop	38	70	3.5	0.2	0.1
3,5	eShop	38	70	3.5	0.2	0.1
3,6	(eShop)	38	70	3.5	0.2	0.1
3,7	eShop	38	70	3.5	0.2	0.1
3,9	(eShop)	46	75	4	0.15	0.1
4	eShop	46	75	4	0.15	0.1
4,1	eShop	46	75	4	0.15	0.1
4,2	eShop	46	75	4	0.15	0.1
4,3	(eShop)	51	80	4.5	0.15	0.1
4,4	(eShop)	51	80	4.5	0.15	0.1
4,5	eShop	51	80	4.5	0.15	0.1
4,6	(eShop)	51	80	4.5	0.15	0.1
4,7	(eShop)	51	80	4.5	0.15	0.1
5	eShop	57	86	5	0.2	0.1
5,1	eShop	57	86	5	0.2	0.1
5,2	eShop	57	86	5	0.2	0.1
5,5	eShop	56	93	5.6	0.2	0.1
5,6	(eShop)	56	93	5.6	0.2	0.1 – 0.2
5,7	(eShop)	56	93	5.6	0.2	0.1 – 0.2
5,8	(eShop)	56	93	5.6	0.2	0.1 – 0.2
6	eShop	56	93	5.6	0.2	0.1 – 0.2
6,1	eShop	64	101	6.3	0.2	0.1 – 0.2
6,2	eShop	64	101	6.3	0.2	0.1 – 0.2
6,4	(eShop)	64	101	6.3	0.2	0.1 – 0.2
6,5	eShop	64	101	6.3	0.2	0.1 – 0.2
6,6	(eShop)	64	101	6.3	0.2	0.1 – 0.2
7	eShop	72	109	7.1	0.2	0.1 – 0.2
7,3	(eShop)	72	109	7.1	0.2	0.1 – 0.2
7,5	eShop	72	109	7.1	0.2	0.1 – 0.2
8	eShop	80	117	8	0.25	0.1 – 0.2
8,1	eShop	80	117	8	0.25	0.1 – 0.2
8,2	eShop	80	117	8	0.25	0.1 – 0.2
8,5	eShop	80	117	8	0.25	0.1 – 0.2
9	eShop	84	125	9	0.25	0.1 – 0.2
9,5	eShop	84	125	9	0.25	0.1 – 0.2
10	eShop	92	133	10	0.25	0.1 – 0.2
11	eShop	101	142	10	0.25	0.1 – 0.2
12	eShop	110	151	10	0.25	0.1 – 0.2
13	eShop	110	151	10	0.25	0.2 – 0.3
14	eShop	114	160	12.5	0.3	0.2 – 0.3
15	eShop	116	162	12.5	0.3	0.2 – 0.3
16	eShop	124	170	12.5	0.3	0.2 – 0.3
17	eShop	129	175	14	0.3	0.2 – 0.3
18	eShop	136	182	14	0.3	0.2 – 0.3
19	eShop	140	189	16	0.3	0.2 – 0.3
20	eShop	146	195	16	0.3	0.2 – 0.3

H7 | HSS E | DIN 212 B | h9

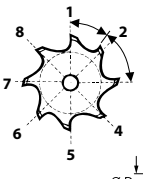


16 3500

Garant Machine reamers plain shank

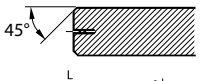
With long flutes and left-hand helix. Even number of teeth with irregular spacing.

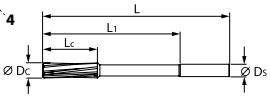
Application: For reaming through holes, as the swarf is evacuated in the direction of cutting.



Even number of teeth with irregular spacing – pairs of teeth are exactly opposite each other, z. g. teeth 1 and 5.

Chamfer lead forms:





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
16 3500				15	10	9	7	5								7	7	18

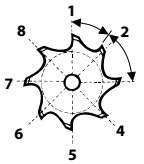
Nominal Ø D_c mm	110 16 3500 Machine reamer H7 TiN	L_c mm	L_1 mm	L mm	Ø D_s mm	< 750 N f mm/rev.	Reaming oversize in Ø reference value mm
4	eShop	19	44	75	4	0.15	0.1
5	eShop	23	54	86	5	0.15	0.1
6	eShop	26	53	93	5.6	0.2	0.1 – 0.2
7	eShop	31	69	109	7.1	0.2	0.1 – 0.2
8	eShop	33	77	117	8	0.2	0.1 – 0.2
9	(eShop)	36	81	125	9	0.2	0.1 – 0.2
10	eShop	38	89	133	10	0.23	0.1 – 0.2
11	(eShop)	41	98	142	10	0.23	0.1 – 0.2
12	eShop	44	106	151	10	0.23	0.1 – 0.2
14	eShop	47	110	160	12.5	0.23	0.2 – 0.3
16	eShop	52	120	170	12.5	0.3	0.2 – 0.3
20	(eShop)	60	142	195	16	0.38	0.2 – 0.3

HSS E | DIN 208 B | 7–8°

HOLEX Machine reamers with Morse taper shank

Even number of teeth with irregular spacing. The hole is accurately round and free of chatter marks. The cylindrical ground land on the plain cutting section smooths the hole and guides the reamer. With Morse taper shank.

Application: For reaming through holes, as the chips are evacuated in the cutting direction. Also suitable for blind holes due to the short chamfer lead.



Even number of teeth with uneven spacing; two teeth are exactly opposite each other, e.g. 1 and 5.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Cu
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N
16 4000/4180		20	20		15	10	7	5	4					5	5	5	5	13

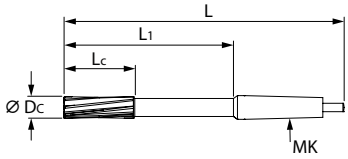
Reamers for fit H7

H7

Reamers finish ground for fit H7.



16 4000



Nominal Ø D_c	120 16 4000 Machine reamer	L_c	L_1	L	MT	< 750 N f	Reaming oversize in Ø reference value
mm	H7	mm	mm	mm		mm/rev.	mm
5	eShop	23	63	133	1	0.1	0.1
6	eShop	26	68	138	1	0.1	0.1 – 0.2
7	eShop	31	81	150	1	0.1	0.1 – 0.2
8	eShop	33	88	156	1	0.13	0.1 – 0.2
9	eShop	36	94	162	1	0.13	0.1 – 0.2
10	eShop	38	100	168	1	0.15	0.1 – 0.2
11	eShop	41	108	175	1	0.15	0.1 – 0.2
12	eShop	44	115	182	1	0.15	0.1 – 0.2
13	eShop	44	115	182	1	0.15	0.2 – 0.3
14	eShop	47	122	189	1	0.15	0.2 – 0.3
15	eShop	50	121	204	2	0.2	0.2 – 0.3
16	eShop	52	127	210	2	0.2	0.2 – 0.3
17	eShop	54	132	214	2	0.2	0.2 – 0.3
18	eShop	56	137	219	2	0.2	0.2 – 0.3
19	eShop	58	142	223	2	0.2	0.2 – 0.3
20	eShop	60	147	228	2	0.25	0.2 – 0.3
22	eShop	64	156	237	2	0.25	0.2 – 0.3

Nominal Ø D_c	120 16 4000 Machine reamer	L_c	L_1	L	MT	< 750 N f	Reaming oversize in Ø reference value
mm	H7	mm	mm	mm		mm/rev.	mm
23	eShop	66	160	241	2	0.25	0.2 – 0.3
24	eShop	68	167	268	3	0.25	0.2 – 0.3
25	eShop	68	174	268	3	0.25	0.3 – 0.5
26	eShop	70	172	273	3	0.25	0.3 – 0.5
28	eShop	71	177	277	3	0.25	0.3 – 0.5
30	eShop	73	181	281	3	0.3	0.3 – 0.5
32	eShop	77	190	317	4	0.3	0.3 – 0.5
34	eShop	78	194	321	4	0.3	0.3 – 0.5
35	eShop	78	195	321	4	0.3	0.3 – 0.5
36	(eShop)	79	200	325	4	0.3	0.3 – 0.5
38	eShop	81	204	329	4	0.3	0.3 – 0.5
40	eShop	81	204	329	4	0.35	0.3 – 0.5
42	eShop	82	211	333	4	0.35	0.3 – 0.5
44	(eShop)	83	215	336	4	0.35	0.3 – 0.5
45	eShop	83	215	336	4	0.35	0.3 – 0.5
50	eShop	86	224	344	4	0.4	0.3 – 0.5

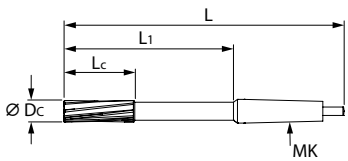
Reamers similar to No. 164000, non-standard sizes and fits

Reamers finish ground to match your specification.

Note: For **H7 fits** see No. 164000.



16 4180



Nominal Ø D_c	120 16 4180 Machine reamer	Ø range	L_c	L_1	L	MT	< 750 N f
mm	configurable	mm	mm	mm	mm		mm/rev.
3	(eShop)	2.81 – 3.35	15	42	114.5	1	0.08
3,5	(eShop)	3.36 – 3.75	18	42	114.8	1	0.08
4	(eShop)	3.76 – 4.05	19	54	124	1	0.1
4,5	(eShop)	4.06 – 4.75	23	63	133	1	0.1
5	(eShop)	4.76 – 5.05	23	63	133	1	0.1
5,5	(eShop)	5.06 – 5.6	26	68	138	1	0.1
6	(eShop)	5.61 – 6	26	72	138	1	0.1
6,5	(eShop)	6.01 – 6.7	31	81	150	1	0.1
7	(eShop)	6.71 – 7.05	31	81	150	1	0.1
7,5	(eShop)	7.06 – 7.5	33	88	156	1	0.1

Nominal Ø D_c	120 16 4180 Machine reamer	Ø range	L_c	L_1	L	MT	< 750 N f
mm	configurable	mm	mm	mm	mm		mm/rev.
8	(eShop)	7.51 – 8.05	33	88	156	1	0.13
8,5	(eShop)	8.06 – 8.5	36	94	162	1	0.13
9	(eShop)	8.51 – 9.05	36	94	162	1	0.13
9,5	(eShop)	9.06 – 9.5	38	100	168	1	0.13
10	(eShop)	9.51 – 10.05	38	100	168	1	0.15
10,5	(eShop)	10.06 – 10.6	41	108	175	1	0.15
11	(eShop)	10.61 – 11.05	41	108	175	1	0.15
11,5	(eShop)	11.06 – 11.8	44	115	182	1	0.15
12	(eShop)	11.81 – 12.05	44	115	182	1	0.15
12,5	(eShop)	12.06 – 12.6	44	115	182	1	0.15

Nominal ∅ D_c	120 16 4180 Machine reamer configurable	∅ range	L_c	L_1	L	MT	< 750 N f
mm		mm	mm	mm	mm		mm/rev.
13	(eShop)	12.61 – 13.2	44	115	182	1	0.15
13,5	(eShop)	13.21 – 13.55	47	122	189	1	0.15
14	(eShop)	13.56 – 14	47	122	189	1	0.15
14,5	(eShop)	14.01 – 14.5	50	121	204	2	0.15
15	(eShop)	14.51 – 15.05	50	121	204	2	0.2
15,5	(eShop)	15.06 – 15.5	52	127	210	2	0.2
16	(eShop)	15.51 – 16	52	127	210	2	0.2
16,5	(eShop)	16.01 – 16.5	54	132	214	2	0.2
17	(eShop)	16.51 – 17	54	132	214	2	0.2
17,5	(eShop)	17.01 – 17.5	56	137	219	2	0.2
18	(eShop)	17.51 – 18	56	137	219	2	0.2
18,5	(eShop)	18.01 – 18.5	58	142	223	2	0.2
19	(eShop)	18.51 – 19	58	142	223	2	0.2
19,5	(eShop)	19.01 – 19.5	60	147	228	2	0.2
20	(eShop)	19.51 – 20	60	147	228	2	0.25
21	(eShop)	20.01 – 21.2	62	151	232	2	0.25
22	(eShop)	21.21 – 22.4	64	156	237	2	0.25
23	(eShop)	22.41 – 23.05	66	160	241	2	0.25
24	(eShop)	23.06 – 24.05	68	167	268	3	0.25
25	(eShop)	24.06 – 25	68	167	268	3	0.25
26	(eShop)	25.01 – 26.05	70	172	273	3	0.25
27	(eShop)	26.06 – 27.05	71	177	277	3	0.25
28	(eShop)	27.06 – 28	71	177	277	3	0.25

Nominal ∅ D_c	120 16 4180 Machine reamer configurable	∅ range	L_c	L_1	L	MT	< 750 N f
mm		mm	mm	mm	mm		mm/rev.
29	(eShop)	28.01 – 29.05	73	181	281	3	0.25
30	(eShop)	29.06 – 30	73	181	281	3	0.3
31	(eShop)	30.01 – 31.05	75	185	285	3	0.3
32	(eShop)	31.06 – 32.05	77	190	317	4	0.3
33	(eShop)	32.06 – 33.05	77	190	317	4	0.3
34	(eShop)	33.06 – 34.05	78	194	321	4	0.3
35	(eShop)	34.06 – 35.05	78	195	321	4	0.3
36	(eShop)	35.06 – 36.05	79	200	325	4	0.3
37	(eShop)	36.06 – 37.05	79	200	325	4	0.3
38	(eShop)	37.06 – 38.05	81	204	329	4	0.3
39	(eShop)	38.06 – 39.05	81	204	329	4	0.3
40	(eShop)	39.06 – 40	81	204	329	4	0.35
41	(eShop)	40.01 – 41.05	82	211	333	4	0.35
42	(eShop)	41.06 – 42.05	82	211	333	4	0.35
43	(eShop)	42.51 – 43.05	83	215	336	4	0.35
44	(eShop)	43.06 – 44.05	83	215	336	4	0.35
45	(eShop)	44.06 – 45	83	215	336	4	0.35
46	(eShop)	45.01 – 46.05	84	219	340	4	0.35
47	(eShop)	46.06 – 47.05	84	219	340	4	0.35
48	(eShop)	47.06 – 48.05	86	224	344	4	0.35
49	(eShop)	48.06 – 49.05	86	224	344	4	0.35
50	(eShop)	49.06 – 50	86	224	344	4	0.4

H7 | Carbide K10 | DIN 8093 | h6

Garant Carbide machine reamers

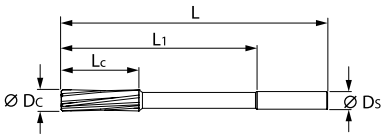
Long flutes, left-hand helix.
Extremely irregular spacing (EU) from size 2.
This ensures that the reamed bore is absolutely round and free from chatter marks.
Size 1–3,5 – With centring tip.

Tool material: Sizes 1 – 13 **solid carbide.**
Sizes 14 – 16 with **carbide inserts,**
supported by hard nitrided steel guide chamfers.

Application: On stable, low vibration machines.
Longer tool life and better dimensional accuracy than HSS reamers.



16 4500



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
16 4500		35	30		20	13	10	8	6						10			20	●	●			

Nominal ∅ D_c	110 16 4500 Carbide machine reamer H7	L_c	L_1	L	Number of cutting edges Z	∅ D_s	< 1100 N f	Reaming oversize in ∅ reference value
mm		mm	mm	mm		mm	mm/rev.	mm
1	eShop	5.5	14	34	3	1	0.12	0.05 – 0.1
1,2	eShop	7.5	16	38	3	1.2	0.12	0.05 – 0.1
1,5	eShop	8	17	40	3	1.5	0.12	0.05 – 0.1
2	eShop	11	23	49	4	2	0.12	0.05 – 0.1
2,5	eShop	14	27	57	4	2.5	0.12	0.05 – 0.1
3	eShop	15	29	61	6	3	0.12	0.1 – 0.2
3,5	eShop	18	32	70	6	3.5	0.12	0.1 – 0.2
4	eShop	19	43	75	6	4	0.12	0.1 – 0.2
4,5	eShop	21	45	80	6	4.5	0.12	0.1 – 0.2
5	eShop	23	52	86	6	5	0.12	0.1 – 0.2
5,5	(eShop)	26	55	93	6	5.6	0.12	0.1 – 0.2
6	eShop	26	55	93	6	5.6	0.12	0.1 – 0.2
6,5	(eShop)	28	62	101	6	6.3	0.12	0.1 – 0.2
7	eShop	31	68	109	6	7.1	0.12	0.1 – 0.2
8	eShop	33	74	117	6	8	0.15	0.1 – 0.2
9	eShop	36	80	125	6	9	0.15	0.1 – 0.2
9,5	(eShop)	36	80	125	6	9	0.15	0.1 – 0.2
10	eShop	38	86	133	6	10	0.15	0.1 – 0.2
11	(eShop)	41	95	142	6	10	0.15	0.1 – 0.2
12	eShop	44	102	151	6	10	0.15	0.1 – 0.2
13	(eShop)	44	104	151	6	10	0.15	0.2
14	eShop	47	109	160	6	12.5	0.15	0.2
15	eShop	50	111	162	6	12.5	0.18	0.2
16	eShop	52	119	170	6	12.5	0.18	0.2

Solid carbide | Standard | h6 DIN 6535 HA

H7 | 0 +0.004

Ø ≤ 0,9

Garant Universal solid carbide NC machine reamers

Version suitable for NC similar to DIN 8093 **with straight shank Ø** for **standard chucking** especially in **hydraulic chucks** or **high precision collet chucks.**
This ensures **the highest concentricity**.
Tolerance specifications:
Size 0.6 – 0.9: Manufacturing or cutting edge tolerance **0/+0.004 mm.**
Size 0.98 – 20: Reamer manufacturing or cutting edge tolerance to DIN1420 for **H7 bore tolerance.**
No need to procure special collets when using GARANT-NC reamers.
With long flutes and left-hand helix.

Application: For reaming through holes, as the chips are evacuated in the cutting direction. Lead taper is suitable also for blind holes.

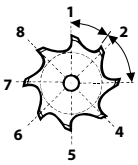
Note: For reamers like No. 164340 and 164341 but with other diameters and fits see No. 164344 and 164345.



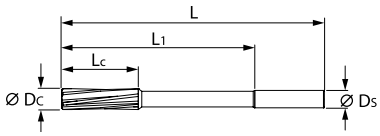
164340



164341



Even number of teeth with uneven spacing – pairs of teeth are exactly opposite each other; e.g. teeth 1 and 5.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N						
164340		35	30		20	13	10	8	6				10	8	8	8	20	●		●			
164341		35	30	25	30	25	20	15	10				15	12	10	10	25	●		●			

Nominal Ø D_c	11P 16 4340	11P 16 4341	Tolerance	L_c	L_1	L	Number of cutting edges Z	Ø D_s	< 1100 N f	Reaming oversize in Ø reference value
	Solid carbide NC machine reamer									
		TiAlN								
mm				mm	mm	mm		mm	mm/rev.	mm
0,60	eShop	–	0 / 0.004	5	7.5	45	4	3	0.08	0.05 – 0.1
0,70	eShop	–	0 / 0.004	5	7.5	45	4	3	0.08	0.05 – 0.1
0,80	eShop	–	0 / 0.004	6	8	45	4	3	0.08	0.05 – 0.1
0,90	eShop	–	0 / 0.004	6	8	45	4	3	0.08	0.05 – 0.1
0,98	eShop	eShop	H7	6	16	50	3	4	0.08	0.05 – 0.1
0,99	eShop	eShop	H7	6	16	50	3	4	0.08	0.05 – 0.1
1	eShop	eShop	H7	6	16	50	3	4	0.08	0.05 – 0.1
1,01	eShop	eShop	H7	6	16	50	3	4	0.08	0.05 – 0.1
1,02	eShop	eShop	H7	6	16	50	3	4	0.08	0.05 – 0.1
1,03	eShop	–	H7	6	16	50	3	4	0.08	0.05 – 0.1
1,48	eShop	eShop	H7	9	16	50	3	4	0.08	0.05 – 0.1
1,49	eShop	eShop	H7	9	16	50	3	4	0.08	0.05 – 0.1
1,5	eShop	eShop	H7	9	16	50	3	4	0.08	0.05 – 0.1
1,51	eShop	eShop	H7	9	16	50	3	4	0.08	0.05 – 0.1
1,52	eShop	eShop	H7	9	16	50	3	4	0.08	0.05 – 0.1
1,6	eShop	eShop	H7	10	16	50	3	4	0.08	0.05 – 0.1
1,7	eShop	eShop	H7	10	16	50	3	4	0.08	0.05 – 0.1
1,8	eShop	eShop	H7	11	16	50	3	4	0.08	0.05 – 0.1
1,9	–	eShop	H7	11	16	50	3	4	0.08	0.05 – 0.1
1,98	eShop	eShop	H7	12	16	50	4	4	0.08	0.05 – 0.1
1,99	eShop	eShop	H7	12	16	50	4	4	0.08	0.05 – 0.1
2	eShop	eShop	H7	12	16	50	4	4	0.1	0.05 – 0.1
2,01	eShop	eShop	H7	12	16	50	4	4	0.1	0.05 – 0.1
2,02	eShop	eShop	H7	12	16	50	4	4	0.1	0.05 – 0.1
2,03	eShop	eShop	H7	12	16	50	4	4	0.1	0.05 – 0.1
2,4	–	eShop	H7	16	26	60	4	4	0.1	0.05 – 0.1
2,5	eShop	eShop	H7	16	26	60	4	4	0.1	0.05 – 0.1
2,6	eShop	eShop	H7	16	26	60	4	4	0.1	0.05 – 0.1
2,7	–	eShop	H7	17	30	64	4	4	0.1	0.05 – 0.1
2,8	–	eShop	H7	17	30	64	4	4	0.1	0.05 – 0.1
2,9	–	eShop	H7	17	30	64	4	4	0.1	0.05 – 0.1
2,97	eShop	eShop	H7	17	30	64	4	4	0.1	0.05 – 0.1
2,98	eShop	eShop	H7	17	30	64	4	4	0.1	0.05 – 0.1
2,99	eShop	eShop	H7	17	30	64	4	4	0.1	0.05 – 0.1
3	eShop	eShop	H7	17	30	64	4	4	0.12	0.1 – 0.2
3,01	eShop	eShop	H7	17	30	64	4	4	0.12	0.1 – 0.2
3,02	eShop	eShop	H7	17	30	64	4	4	0.12	0.1 – 0.2
3,03	eShop	eShop	H7	17	30	64	4	4	0.12	0.1 – 0.2
3,1	eShop	eShop	H7	18	34	68	4	4	0.12	0.1 – 0.2
3,2	eShop	eShop	H7	18	34	68	4	4	0.12	0.1 – 0.2
3,3	eShop	eShop	H7	18	34	68	4	4	0.12	0.1 – 0.2
3,4	–	eShop	H7	20	40	74	4	4	0.12	0.1 – 0.2
3,5	eShop	eShop	H7	20	40	74	4	4	0.12	0.1 – 0.2
3,6	eShop	eShop	H7	20	40	74	4	4	0.12	0.1 – 0.2
3,7	–	eShop	H7	20	40	74	4	4	0.12	0.1 – 0.2
3,8	–	eShop	H7	21	43	77	4	4	0.12	0.1 – 0.2
3,97	eShop	eShop	H7	21	43	77	4	4	0.12	0.1 – 0.2
3,98	eShop	eShop	H7	21	43	77	4	4	0.12	0.1 – 0.2
3,99	eShop	eShop	H7	21	43	77	4	4	0.12	0.1 – 0.2
4	eShop	eShop	H7	21	43	77	4	4	0.12	0.1 – 0.2
4,01	eShop	eShop	H7	21	43	77	4	4	0.12	0.1 – 0.2
4,02	eShop	eShop	H7	21	43	77	4	4	0.12	0.1 – 0.2
4,03	eShop	eShop	H7	21	43	77	4	4	0.12	0.1 – 0.2
4,1	eShop	eShop	H7	21	40	82	6	6	0.12	0.1 – 0.2

Nominal ∅ D_c	11P 16 4340	11P 16 4341	Tolerance	L_c	L_1	L	Number of cutting edges Z	∅ D_s	< 1100 N f	Reaming oversize in ∅ reference value
	Solid carbide NC machine reamer									
mm		TiAlN		mm	mm	mm		mm	mm/rev.	mm
4,2	eShop	eShop	H7	21	40	82	6	6	0.12	0.1 – 0.2
4,3	eShop	eShop	H7	23	40	82	6	6	0.12	0.1 – 0.2
4,4	eShop	eShop	H7	23	40	82	6	6	0.12	0.1 – 0.2
4,5	eShop	eShop	H7	23	40	82	6	6	0.12	0.1 – 0.2
4,6	–	eShop	H7	23	40	82	6	6	0.12	0.1 – 0.2
4,8	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
4,9	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
4,97	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
4,98	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
4,99	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,01	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,02	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,03	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,1	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,2	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,3	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,5	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,6	–	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,7	–	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,8	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,98	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
5,99	eShop	eShop	H7	26	51	93	6	6	0.12	0.1 – 0.2
6	eShop	eShop	H7	26	51	93	6	6	0.14	0.1 – 0.2
6,01	eShop	eShop	H7	26	51	93	6	6	0.14	0.1 – 0.2
6,02	eShop	eShop	H7	26	51	93	6	6	0.14	0.1 – 0.2
6,03	eShop	eShop	H7	26	51	93	6	6	0.14	0.1 – 0.2
6,1	eShop	eShop	H7	26	59	101	6	8	0.14	0.1 – 0.2
6,2	eShop	eShop	H7	26	59	101	6	8	0.14	0.1 – 0.2
6,3	eShop	eShop	H7	26	59	101	6	8	0.14	0.1 – 0.2
6,4	eShop	eShop	H7	26	59	101	6	8	0.14	0.1 – 0.2
6,5	eShop	eShop	H7	26	59	101	6	8	0.14	0.1 – 0.2
6,6	eShop	eShop	H7	26	59	101	6	8	0.14	0.1 – 0.2
6,7	eShop	eShop	H7	26	59	101	6	8	0.14	0.1 – 0.2
6,9	eShop	–	H7	31	67	109	6	8	0.14	0.1 – 0.2
7	eShop	eShop	H7	31	67	109	6	8	0.14	0.1 – 0.2
7,2	eShop	eShop	H7	31	67	109	6	8	0.14	0.1 – 0.2
7,5	eShop	eShop	H7	31	67	109	6	8	0.14	0.1 – 0.2
7,6	eShop	eShop	H7	31	67	109	6	8	0.14	0.1 – 0.2
7,7	–	eShop	H7	33	75	117	6	8	0.14	0.1 – 0.2
7,97	eShop	eShop	H7	33	75	117	6	8	0.14	0.1 – 0.2
7,98	eShop	eShop	H7	33	75	117	6	8	0.14	0.1 – 0.2
7,99	eShop	eShop	H7	33	75	117	6	8	0.14	0.1 – 0.2
8	eShop	eShop	H7	33	75	117	6	8	0.15	0.1 – 0.2
8,01	eShop	eShop	H7	33	75	117	6	8	0.15	0.1 – 0.2
8,02	eShop	eShop	H7	33	75	117	6	8	0.15	0.1 – 0.2
8,03	eShop	eShop	H7	33	75	117	6	8	0.15	0.1 – 0.2
8,1	eShop	eShop	H7	33	71	117	6	10	0.15	0.1 – 0.2
8,2	eShop	eShop	H7	33	71	117	6	10	0.15	0.1 – 0.2
8,3	–	eShop	H7	33	71	117	6	10	0.15	0.1 – 0.2
8,5	eShop	eShop	H7	33	71	117	6	10	0.15	0.1 – 0.2
8,7	–	eShop	H7	36	79	125	6	10	0.15	0.1 – 0.2
9	eShop	eShop	H7	36	79	125	6	10	0.15	0.1 – 0.2
9,5	eShop	eShop	H7	36	79	125	6	10	0.15	0.1 – 0.2
9,6	eShop	–	H7	36	79	125	6	10	0.15	0.1 – 0.2
9,97	eShop	eShop	H7	41	87	133	6	10	0.15	0.1 – 0.2
9,98	eShop	eShop	H7	41	87	133	6	10	0.15	0.1 – 0.2
9,99	eShop	eShop	H7	41	87	133	6	10	0.15	0.1 – 0.2
10	eShop	eShop	H7	41	87	133	6	10	0.18	0.1 – 0.2
10,01	eShop	eShop	H7	41	87	133	6	10	0.18	0.1 – 0.2
10,02	eShop	eShop	H7	41	87	133	6	10	0.18	0.1 – 0.2
10,03	eShop	eShop	H7	41	87	133	6	10	0.18	0.1 – 0.2
11	eShop	eShop	H7	41	91	142	6	12	0.18	0.1 – 0.2
11,97	eShop	eShop	H7	44	99	150	6	12	0.18	0.1 – 0.2
11,98	eShop	eShop	H7	44	99	150	6	12	0.18	0.1 – 0.2
11,99	eShop	eShop	H7	44	99	150	6	12	0.18	0.1 – 0.2
12	eShop	eShop	H7	44	99	150	6	12	0.18	0.1 – 0.2
12,01	eShop	eShop	H7	44	99	150	6	12	0.18	0.1 – 0.2
12,02	eShop	eShop	H7	44	99	150	6	12	0.18	0.1 – 0.2
12,03	eShop	eShop	H7	44	99	150	6	12	0.18	0.1 – 0.2
13	eShop	eShop	H7	44	99	150	8	14	0.18	0.2 – 0.3
14	eShop	eShop	H7	47	110	162	8	14	0.18	0.2 – 0.3
15	eShop	eShop	H7	50	110	162	8	16	0.18	0.2 – 0.3
16	eShop	eShop	H7	52	115	170	8	16	0.2	0.2 – 0.3
17	eShop	eShop	H7	54	120	175	8	18	0.2	0.2 – 0.3
18	eShop	eShop	H7	56	126	182	8	18	0.2	0.2 – 0.3
19	eShop	eShop	H7	58	131	189	8	20	0.2	0.2 – 0.3
20	eShop	eShop	H7	60	136	195	8	20	0.2	0.2 – 0.3

Solid carbide | DIN 8093 | h6 DIN 6535 HA

Garant

Universal solid carbide machine reamers, non-standard sizes and fits

Version suitable for NC DIN 8093-2 **with straight shank** Ø for **standard chucking** especially in **hydraulic chucks** or **high precision collet chucks.**
This ensures **very high concentricity** and **process reliability**,
The use of GARANT-NC reamers eliminates the need to procure special collets.
With long flutes and left-hand helix.
Reamers finish ground to match your specification.

Application: For reaming through holes, as the chips are evacuated in the cutting direction. Lead taper is suitable also for blind holes.

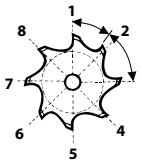
Note: For H7 fit see No. 164340 and 164341.



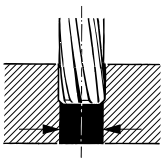
164345



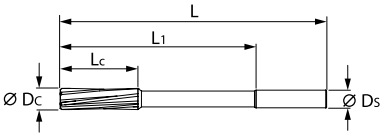
164344



Even number of teeth with irregular spacing – teeth are exactly opposite each other; e. g. teeth 1 and 5.



The correct undersize for pre-drilled holes can be found in the machining handbook.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N						
164344		35	30	25	30	25	20	15	10				15	12	10	10	25	●		●			
164345		35	30		20	13	10	8	6				10	8	8	8	20	●		●			

Nominal Ø D_c	10N 164345	10N 164344	Ø range	L_c	L_1	L	Number of cutting edges Z	Ø D_s	< 1100 N f	Reaming oversize in Ø reference value
	Solid carbide NC machine reamer Configurable									
		TiAlN								
mm			mm	mm	mm	mm		mm	mm/rev.	mm
1	(eShop)	(eShop)	0.95 – 1.06	6	19	50	3	4	0.08	0.05 – 0.1
1,1	(eShop)	(eShop)	1.07 – 1.18	9	19	50	3	4	0.08	0.05 – 0.1
1,2	(eShop)	(eShop)	1.19 – 1.32	9	19	50	3	4	0.08	0.05 – 0.1
1,4	(eShop)	(eShop)	1.33 – 1.42	9	19	50	3	4	0.08	0.05 – 0.1
1,5	(eShop)	(eShop)	1.43 – 1.5	9	19	50	3	4	0.08	0.05 – 0.1
1,6	(eShop)	(eShop)	1.51 – 1.7	10	19	50	3	4	0.08	0.05 – 0.1
1,8	(eShop)	(eShop)	1.71 – 1.9	11	19	50	4	4	0.08	0.05 – 0.1
2	(eShop)	(eShop)	1.91 – 2.12	12	19	50	4	4	0.1	0.05 – 0.1
2,2	(eShop)	(eShop)	2.13 – 2.36	12	19	50	4	4	0.1	0.05 – 0.1
2,5	(eShop)	(eShop)	2.37 – 2.65	16	29	60	4	4	0.1	0.05 – 0.1
2,8	(eShop)	(eShop)	2.66 – 2.8	17	33	65	6	4	0.1	0.05 – 0.1
3	(eShop)	(eShop)	2.81 – 3	17	33	65	6	4	0.12	0.05 – 0.1
3,2	(eShop)	(eShop)	3.01 – 3.35	18	37	65	6	4	0.12	0.05 – 0.1
3,5	(eShop)	(eShop)	3.36 – 3.75	18	43	75	6	4	0.12	0.05 – 0.1
4	(eShop)	(eShop)	3.76 – 4.09	19	45	75	6	4	0.12	0.05 – 0.1
4,5	(eShop)	(eShop)	4.1 – 4.79	21	42	80	6	6	0.12	0.05 – 0.1
5	(eShop)	(eShop)	4.8 – 5.3	23	55	93	6	6	0.12	0.05 – 0.1
5,5	(eShop)	(eShop)	5.31 – 5.6	26	55	93	6	6	0.12	0.1 – 0.2
6	(eShop)	(eShop)	5.61 – 6.03	26	55	93	6	6	0.14	0.1 – 0.2
6,5	(eShop)	(eShop)	6.04 – 6.7	28	63	101	6	8	0.14	0.1 – 0.2
7	(eShop)	(eShop)	6.71 – 7.1	31	71	109	6	8	0.14	0.1 – 0.2
7,5	(eShop)	(eShop)	7.11 – 7.6	31	71	109	6	8	0.14	0.1 – 0.2
8	(eShop)	(eShop)	7.61 – 8.09	33	79	117	6	8	0.15	0.1 – 0.2
8,5	(eShop)	(eShop)	8.1 – 8.6	33	79	117	6	8	0.15	0.1 – 0.2
9	(eShop)	(eShop)	8.61 – 9.1	36	83	125	6	10	0.15	0.1 – 0.2
9,5	(eShop)	(eShop)	9.11 – 9.69	36	83	125	6	10	0.15	0.1 – 0.2
10	(eShop)	(eShop)	9.7 – 10.05	38	91	133	6	10	0.18	0.1 – 0.2
10,5	(eShop)	(eShop)	10.06 – 10.6	38	91	133	6	10	0.18	0.1 – 0.2
11	(eShop)	(eShop)	10.61 – 11.05	41	100	142	6	10	0.18	0.1 – 0.2
11,5	(eShop)	(eShop)	11.06 – 11.8	41	100	142	6	10	0.18	0.1 – 0.2
12	(eShop)	(eShop)	11.81 – 12.2	44	104	151	6	12	0.18	0.1 – 0.2
13	(eShop)	(eShop)	12.21 – 13.2	44	104	151	8	12	0.18	0.2 – 0.3
14	(eShop)	(eShop)	13.21 – 14	47	110	160	8	16	0.18	0.2 – 0.3
15	(eShop)	(eShop)	14.01 – 15.2	50	112	162	8	16	0.18	0.2 – 0.3
16	(eShop)	(eShop)	15.21 – 16.2	52	120	170	8	16	0.2	0.2 – 0.3
17	(eShop)	(eShop)	16.21 – 17.2	52	125	175	8	18	0.2	0.2 – 0.3
18	(eShop)	(eShop)	17.21 – 18.2	52	132	182	8	18	0.2	0.2 – 0.3
19	(eShop)	(eShop)	18.21 – 19.2	52	137	189	8	20	0.2	0.2 – 0.3
20	(eShop)	(eShop)	19.21 – 20.2	52	143	195	8	20	0.2	0.2 – 0.3

HSS | Standard | 25 bar | h6 DIN 6535 HA | HPC | H7

Garant

Through hole / blind hole HSS high-performance reamers, non-standard sizes and fits

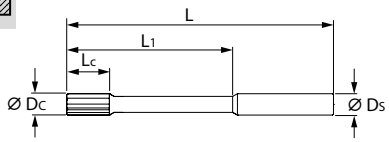
Version suitable for NC with straight shank Ø for the standardised toolholder, specially in **hydraulic chucks** or **high-accuracy chucks.**
This ensures **very high concentricity** and **process reliability**.
It is no longer necessary to procure special arbors.
With internal coolant feed for **HPC use** to reduce production costs.
With short, straight flutes.
Tolerance specifications:
Configurable: Reamers finish ground to match your specification.
H7: Version to DIN1420 for H7 bore tolerance.

Application:

16 4358 – For **HPC/HSC reaming** of **through holes.**
16 4359 – For **HPC/HSC reaming** of **blind holes.**


16 4358


16 4359



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
16 4358/4359					45	45	35	35								40	30	●		●	○		

Nominal Ø D_c	10N 16 4358	10N 16 4359	Tolerance	Ø range	L_c	L_1		L	Number of cutting edges Z		Ø D_s	< 1100 N f	Reaming oversize in Ø reference value
	HSS high-performance reamer					16 4358	16 4359		16 4358	16 4359			
	HPC through hole	HPC blind hole											
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm			mm	mm/rev.	mm
6	(eShop)	(eShop)	Configurable	6 – 6.7	16	58	39	100	6	6	8	0.12	0.1
6H7	eShop	eShop	H7	–	16	58	39	100	6	6	8	0.12	0.1
7	(eShop)	(eShop)	Configurable	6.71 – 7.2	16	58	42	100	6	6	8	0.12	0.1
7H7	eShop	eShop	H7	–	16	58	42	100	6	6	8	0.12	0.1
7,5	(eShop)	(eShop)	Configurable	7.21 – 7.7	16	59	44	100	6	6	8	0.12	0.1
8	(eShop)	(eShop)	Configurable	7.71 – 8.2	16	59	46	100	6	6	8	0.12	0.1
8H7	eShop	eShop	H7	–	16	59	46	100	6	6	8	0.12	0.1 – 0.15
8,5	(eShop)	(eShop)	Configurable	8.21 – 8.7	20	54	38	100	6	6	10	0.15	0.1 – 0.15
9	(eShop)	(eShop)	Configurable	8.71 – 9.2	20	54	40	100	6	6	10	0.15	0.1 – 0.15
9H7	eShop	eShop	H7	–	20	54	40	100	6	6	10	0.15	0.1 – 0.15
9,5	(eShop)	(eShop)	Configurable	9.21 – 9.7	20	75	60	120	6	6	10	0.15	0.1 – 0.15
10	(eShop)	(eShop)	Configurable	9.71 – 10.2	20	75	60	120	6	6	10	0.15	0.1 – 0.15
10H7	eShop	eShop	H7	–	20	75	60	120	6	6	10	0.15	0.1 – 0.15
10,5	(eShop)	(eShop)	Configurable	10.21 – 10.7	20	69	51	120	6	6	12	0.18	0.1 – 0.15
11	(eShop)	(eShop)	Configurable	10.71 – 11.2	20	69	52	120	6	6	12	0.18	0.1 – 0.15
11H7	eShop	eShop	H7	–	20	69	52	120	6	6	12	0.18	0.1 – 0.15
11,5	(eShop)	(eShop)	Configurable	11.21 – 11.7	20	70	53	120	6	6	12	0.18	0.1 – 0.15
12	(eShop)	(eShop)	Configurable	11.71 – 12.2	20	70	54	120	6	6	12	0.18	0.1 – 0.15
12H7	eShop	eShop	H7	–	20	70	54	120	6	6	12	0.18	0.1 – 0.15
13	(eShop)	(eShop)	Configurable	12.21 – 13.2	22	79	59	130	6	6	14	0.18	0.1 – 0.15
13H7	eShop	eShop	H7	–	22	79	59	130	6	6	14	0.18	0.1 – 0.15
14	(eShop)	(eShop)	Configurable	13.21 – 14.2	22	80	63	130	6	6	14	0.18	0.1 – 0.15
14H7	eShop	eShop	H7	–	22	80	63	130	6	6	14	0.18	0.1 – 0.15
15	(eShop)	(eShop)	Configurable	14.21 – 15.2	22	76	58	130	6	6	16	0.18	0.2
15H7	eShop	eShop	H7	–	22	76	58	130	6	6	16	0.18	0.2
16	(eShop)	(eShop)	Configurable	15.21 – 16.2	25	97	78	150	6	6	16	0.18	0.2
16H7	eShop	eShop	H7	–	25	97	78	150	6	6	16	0.18	0.2
17	(eShop)	(eShop)	Configurable	16.21 – 17.2	25	96	78	150	8	6	18	0.23	0.2
17H7	eShop	eShop	H7	–	25	96	78	150	8	6	18	0.23	0.2
18	(eShop)	(eShop)	Configurable	17.21 – 18.2	25	97	80	150	8	6	18	0.23	0.2
18H7	eShop	eShop	H7	–	25	97	80	150	8	6	18	0.23	0.2
19	(eShop)	(eShop)	Configurable	18.21 – 19.2	25	94	80	150	8	6	20	0.23	0.2
19H7	eShop	eShop	H7	–	25	94	80	150	8	6	20	0.23	0.2
20	(eShop)	(eShop)	Configurable	19.21 – 20.2	25	95	82	150	8	6	20	0.23	0.2
20H7	eShop	eShop	H7	–	25	95	82	150	8	6	20	0.23	0.2
21	(eShop)	(eShop)	Configurable	20.21 – 21.2	25	105	93	160	8	8	20	0.3	0.3
22	(eShop)	(eShop)	Configurable	21.21 – 22.2	25	105	95	160	8	8	20	0.3	0.3
23	(eShop)	(eShop)	Configurable	22.21 – 23.2	25	125	115	180	8	8	20	0.3	0.3
24	(eShop)	(eShop)	Configurable	23.21 – 24.2	25	125	115	180	8	8	20	0.3	0.3
25	(eShop)	(eShop)	Configurable	24.21 – 25.2	25	125	125	180	8	8	20	0.3	0.3
25H7	eShop	eShop	H7	–	25	125	125	180	8	8	20	0.3	0.3
26	(eShop)	(eShop)	Configurable	25.21 – 26.2	25	125	125	180	8	8	20	0.4	0.3
27	(eShop)	(eShop)	Configurable	26.21 – 27.2	25	125	125	180	8	8	20	0.4	0.3
28	(eShop)	(eShop)	Configurable	27.21 – 28.2	25	119	119	180	8	8	25	0.4	0.3
29	(eShop)	(eShop)	Configurable	28.21 – 29.2	25	119	119	180	8	8	25	0.4	0.3
30	(eShop)	(eShop)	Configurable	29.21 – 30.2	25	139	139	200	8	8	25	0.4	0.3
30H7	eShop	eShop	H7	–	25	139	139	200	8	8	25	0.4	0.3
31	(eShop)	(eShop)	Configurable	30.21 – 31.2	25	139	139	200	8	8	25	0.45	0.3
32	(eShop)	(eShop)	Configurable	31.21 – 32.2	25	139	139	200	8	8	25	0.45	0.3
32H7	eShop	eShop	H7	–	25	139	139	200	8	8	25	0.45	0.3
33	(eShop)	(eShop)	Configurable	32.21 – 33.2	25	139	139	200	8	8	25	0.45	0.3
34	(eShop)	(eShop)	Configurable	33.21 – 34.2	25	139	139	200	8	8	25	0.45	0.3
35	(eShop)	(eShop)	Configurable	34.21 – 35.2	25	139	139	200	8	8	25	0.45	0.3
36	(eShop)	(eShop)	Configurable	35.21 – 36.2	25	139	139	200	8	8	25	0.45	0.3
36H7	eShop	eShop	H7	–	25	139	139	200	8	8	25	0.45	0.3
37	(eShop)	(eShop)	Configurable	36.21 – 37.2	25	139	139	200	8	8	25	0.45	0.3
38	(eShop)	(eShop)	Configurable	37.21 – 38.2	25	139	139	200	8	8	25	0.45	0.3
39	(eShop)	(eShop)	Configurable	38.21 – 39.2	25	139	139	200	8	8	25	0.45	0.3
40	(eShop)	(eShop)	Configurable	39.21 – 40.2	25	139	139	200	8	8	25	0.45	0.3

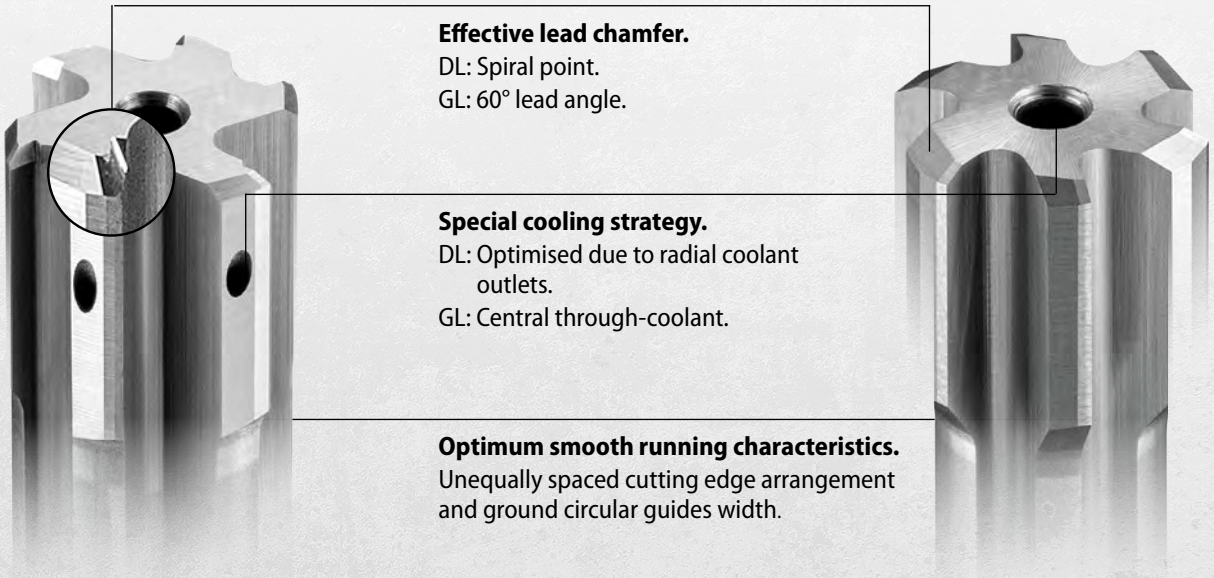
The GARANT Master families in high-performance reaming.

Increase efficiency and experience process reliability.

The comprehensive tool selection from the Hoffmann Group enables very high cutting performance – even in materials that are difficult to machine and hardened. The high-performance reamers GARANT Master Steel, GARANT Master Alu and GARANT Master Titan are setting new benchmarks in terms of performance and pricing. The respective variants for machining through holes and blind holes are available for optimum machining results.

Through hole (DL)

Blind hole (GL)



Effective lead chamfer.
DL: Spiral point.
GL: 60° lead angle.

Special cooling strategy.
DL: Optimised due to radial coolant outlets.
GL: Central through-coolant.

Optimum smooth running characteristics.
Unequally spaced cutting edge arrangement and ground circular guides width.

Garant MASTER ALU

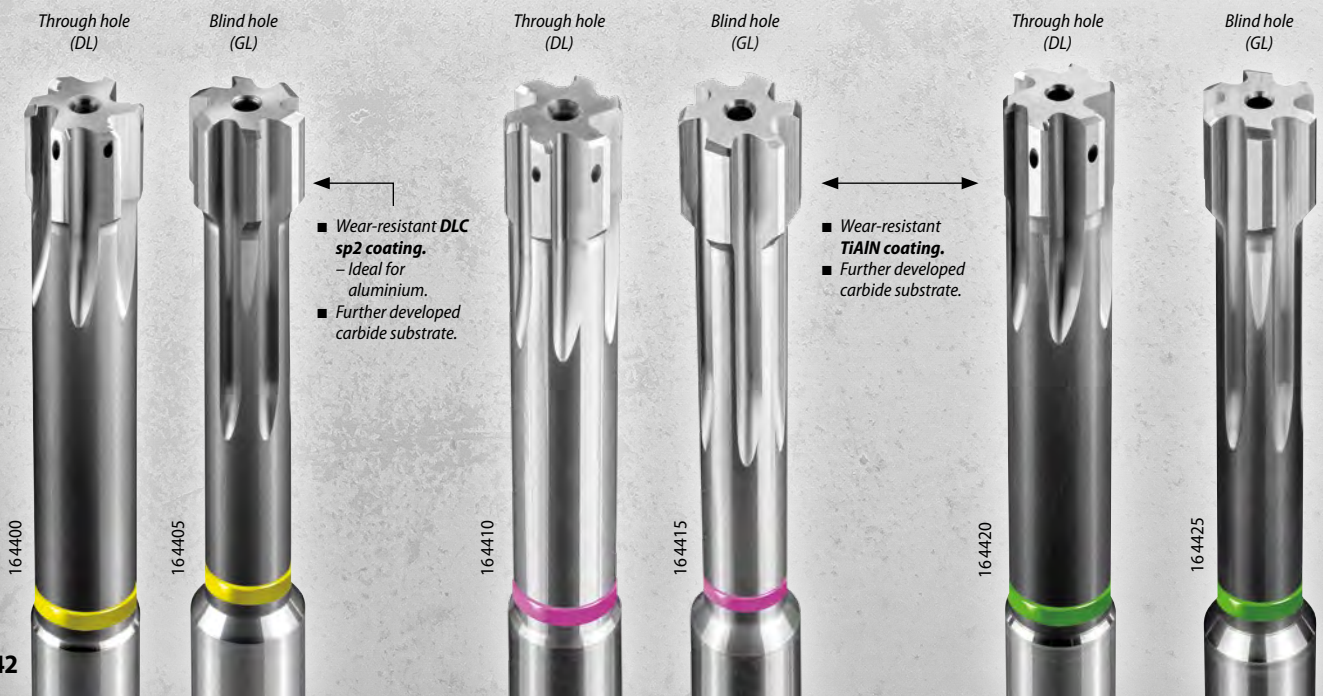
Our solution for aluminium.

Garant MASTER TITAN

The master for titanium and titanium alloys.

Garant MASTER STEEL

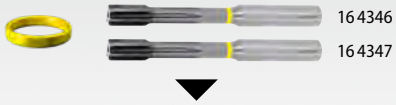
The universal solution for machining steel and stainless materials.

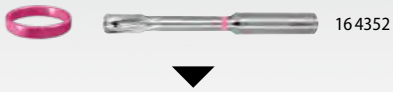


- *Wear-resistant **DLC sp2 coating.** – Ideal for aluminium.*
- *Further developed carbide substrate.*

- *Wear-resistant **TiAlN coating.***
- *Further developed carbide substrate.*

No longer in the portfolio.







Current portfolio.



- Patented cooling strategy.
- Innovative geometry.
- Universal, configurable and delivered quickly.
- Best price-performance ratio.

= Master Performance in high-performance reaming.

Impressive test results:

Test in 42CrMo4, v_c = 180 m/min, f = 1.7 mm/rev, machining depth = 3×D

Competitor 1

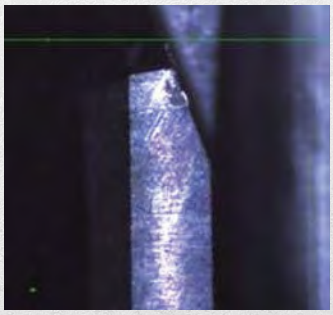


Competitors with aggressive pricing policy – after **84** through holes.

Competitor 2



Garant MASTER STEEL



840 through holes.

Garant MASTER STEEL



840 blind holes.

Tool	Material	Cutting data	Reaming oversize in Ø (mm)	The result
164425 8H7	1.2379 / X155 CrVMo 12	v_c = 150 m/min f = 1.4 mm/rev	0.2	Tool life ends after 2000 fits.
164420/25 12H7	1.7131 case hardened to 60 HRC	v_c = 10 m/min f = 0.12 mm/rev	0.1	Tool life ends after 40 fits.
164420/25 10H7	1.7131 16 MnCr5	v_c = 180 m/min f = 1.2 mm/rev	0.2	Test ends at 400 fits.
164410/15 12	3.7164 / TI6 AL4V	v_c = 20–30 m/min f = 0.2–0.6 mm/rev	0.1	Good R_z values of around 2µm, very low wear in the µm range. Tool has an optimised geometry to prevent heat generation.
164400/05 12	3.3547 / AlMg 4.5 Mn 3.4365 / AlZn 5.5 MgCu	v_c = 250 m/min f = 1.5–2.4 mm/rev	0.2	R_z values of 1.3–1.7 with good chip formation and chip evacuation.

Hoffmann Group Tool Tip:

- Uncompromising machining of steel and stainless steel with the GARANT Master Steel high-performance reamer.
- When performing high-performance machining, pay attention to the tool run-out in the machine (not greater than 5 µm) in order to achieve attractive machining results.
- If necessary, reduce the retraction speed to avoid the formation of grooves on the wall of the hole.
- If necessary, you can adapt the cutting data to the capabilities of your machine.
- For convenient and quick removal of chip buildup on the reaming tool (e.g. in 1.7131and 1.4301), please note our extensive range of hand tools!

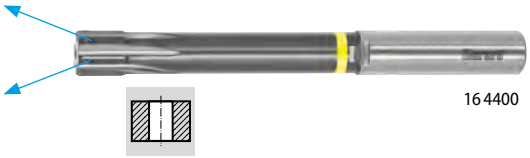
Solid carbide | Standard | Type W | 25 bar | h6 DIN 6535 HA | HPC

GARANT Master Alu solid carbide high-performance reamers for through / blind hole, non-standard sizes and fits

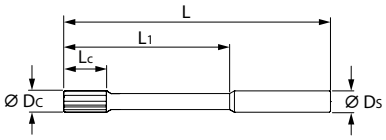
Special HPC reamers of the latest generation, **for machining aluminium**, with improved tooth geometry and further developed carbide substrate. Extra-short teeth for increased cutting performance values. Optimised cooling strategy with radially arrangedcoolant outlets aligned directly to the teeth.
Version suitable for NC with straight shank ∅ for standard arbors especially in **hydraulic chucks** or **high precision collet chucks**. Very high concentricity and process reliability due to unequal spacing of the teeth and special profile of the round chamfer width.
Version with DLC coating ta-C.
Tolerance specifications:
Configurable: Reamers finish ground to match your specification.
H7: Version to DIN1420 for H7 bore tolerance.

Application:

16 4400 – Special version for through holes.
16 4405 – Special version for blind holes.


16 4400


16 4405



16

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
16 4400/4405		250	250	250																●	●		

Nominal ∅ D_c	10P 16 4400	10P 16 4405	Tolerance	∅ range	L_c	L_1	L	Number of cutting edges Z	∅ D_s	Alu cast > 10 % Si f	Reaming oversize in ∅ reference value
	GARANT Master Alu solid carbide high-performance reamer										
	HPC through hole	HPC blind hole									
mm	DLC	DLC		mm	mm	mm	mm		mm	mm/rev.	mm
4	(eShop)	(eShop)	configurable	3.701 – 4.2	8	39	75	4	6	0.6	0.1
4H7	eShop	eShop	H7	–	8	39	75	4	6	0.6	0.1
4,5	(eShop)	(eShop)	configurable	4.201 – 4.7	8	39	75	4	6	0.6	0.1
5	(eShop)	(eShop)	configurable	4.701 – 5.2	8	39	75	4	6	0.6	0.1
5H7	eShop	eShop	H7	–	8	39	75	4	6	0.6	0.1
5,5	(eShop)	(eShop)	configurable	5.201 – 5.7	8	39	75	4	6	0.6	0.1
6	(eShop)	(eShop)	configurable	5.701 – 6.2	8	39	75	6	6	1	0.1
6H7	eShop	eShop	H7	–	8	39	75	6	6	1	0.1
6,5	(eShop)	(eShop)	configurable	6.201 – 6.7	10	64	100	6	8	1	0.1
7	(eShop)	(eShop)	configurable	6.701 – 7.2	10	64	100	6	8	1	0.1
7,5	(eShop)	(eShop)	configurable	7.201 – 7.7	10	64	100	6	8	1	0.1
8	(eShop)	(eShop)	configurable	7.701 – 8.2	10	64	100	6	8	1.5	0.1
8H7	eShop	eShop	H7	–	10	64	100	6	8	1.5	0.1
8,5	(eShop)	(eShop)	configurable	8.201 – 8.7	10	60	100	6	10	1.5	0.1
9	(eShop)	(eShop)	configurable	8.701 – 9.2	10	60	100	6	10	1.5	0.1
9,5	(eShop)	(eShop)	configurable	9.201 – 9.7	12	80	120	6	10	1.5	0.1
10	(eShop)	(eShop)	configurable	9.701 – 10.2	12	80	120	6	10	1.8	0.1
10H7	eShop	eShop	H7	–	12	80	120	6	10	1.8	0.1
10,5	(eShop)	(eShop)	configurable	10.201 – 10.7	12	75	120	6	12	1.8	0.2
11	(eShop)	(eShop)	configurable	10.701 – 11.2	12	75	120	6	12	1.8	0.2
11,5	(eShop)	(eShop)	configurable	11.201 – 11.7	12	75	120	6	12	1.8	0.2
12	(eShop)	(eShop)	configurable	11.701 – 12.2	12	75	120	6	12	2.1	0.2
12H7	eShop	eShop	H7	–	12	75	120	6	12	2.1	0.2
13	(eShop)	(eShop)	configurable	12.201 – 13.2	15	85	130	6	14	2.1	0.2
14	(eShop)	(eShop)	configurable	13.201 – 14.2	15	85	130	6	14	2.1	0.2
15	(eShop)	(eShop)	configurable	14.201 – 15.2	15	82	130	6	16	2.1	0.2
15H7	eShop	eShop	H7	–	15	82	130	6	16	2.1	0.2
16	(eShop)	(eShop)	configurable	15.201 – 16.2	15	102	150	6	16	2.1	0.2
16H7	eShop	eShop	H7	–	15	102	150	6	16	2.1	0.2
17	(eShop)	(eShop)	configurable	16.201 – 17.2	15	102	150	6	18	2.4	0.2
18	(eShop)	(eShop)	configurable	17.201 – 18.2	15	102	150	6	18	2.4	0.2
19	(eShop)	(eShop)	configurable	18.201 – 19.2	15	100	150	6	20	2.4	0.2
20	(eShop)	(eShop)	configurable	19.201 – 20.2	15	100	150	6	20	2.4	0.2

Solid carbide | Standard | 25 bar | h6 DIN 6535 HA | HPC

Garant GARANT Master Titan solid carbide high-performance reamers for through / blind hole, non-standard sizes and fits

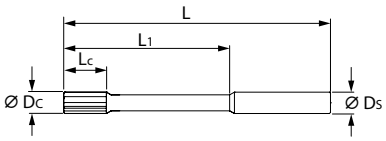
Special HPC reamers of the latest generation, for **machining titanium,** with improved tooth geometry and further developed carbide substrate. Extra-short cutting edge for increased cutting performance values. Optimised cooling strategy with radially arranged coolant outlets aligned directly to the teeth.
Version suitable for NC with straight shank dia. for standard arbors especially in **hydraulic chucks** or **high precision collet chucks.** Very high concentricity and process reliability thanks to unequal spacing of the teeth and special profile of the round chamfer width.
Tolerance specifications:
Configurable: Reamers finish ground to match your specification.
Application:

16 4410 – Special version for through holes.
16 4415 – Special version for blind holes.

Note:	Delivery time: 4 weeks.







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
16 4410/4415																30		

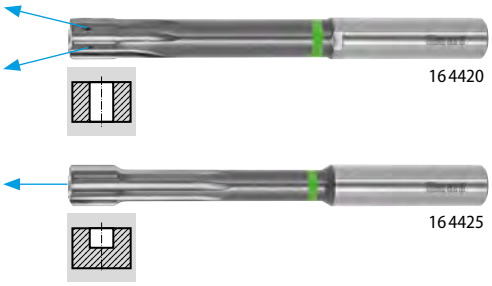
Nominal Ø D_c	10P 16 4410	10P 16 4415	Tolerance	Ø range	L_c	L_1	L	Number of cutting edges Z	Ø D_s	Ti > 850 N f	Reaming oversize in Ø reference value
	GARANT Master Titan solid carbide high-performance reamer										
	HPC through hole	HPC blind hole									
mm	TiAlN	TiAlN		mm	mm	mm	mm		mm	mm/rev.	mm
4	(eShop)	(eShop)	Configurable	3.701 – 4.2	8	39	75	4	6	0.24	0.1
4,5	(eShop)	(eShop)	Configurable	4.201 – 4.7	8	39	75	4	6	0.24	0.1
5	(eShop)	(eShop)	Configurable	4.701 – 5.2	8	39	75	4	6	0.24	0.1
5,5	(eShop)	(eShop)	Configurable	5.201 – 5.7	8	39	75	4	6	0.28	0.1
6	(eShop)	(eShop)	Configurable	5.701 – 6.2	8	39	75	6	6	0.36	0.1
6,5	(eShop)	(eShop)	Configurable	6.201 – 6.7	10	64	100	6	8	0.36	0.1
7	(eShop)	(eShop)	Configurable	6.701 – 7.2	10	64	100	6	8	0.36	0.1
7,5	(eShop)	(eShop)	Configurable	7.201 – 7.7	10	64	100	6	8	0.36	0.1
8	(eShop)	(eShop)	Configurable	7.701 – 8.2	10	64	100	6	8	0.36	0.1
8,5	(eShop)	(eShop)	Configurable	8.201 – 8.7	10	60	100	6	10	0.42	0.1
9	(eShop)	(eShop)	Configurable	8.701 – 9.2	10	60	100	6	10	0.42	0.1
9,5	(eShop)	(eShop)	Configurable	9.201 – 9.7	12	80	120	6	10	0.42	0.1
10	(eShop)	(eShop)	Configurable	9.701 – 10.2	12	80	120	6	10	0.42	0.1
10,5	(eShop)	(eShop)	Configurable	10.201 – 10.7	12	75	120	6	12	0.42	0.1
11	(eShop)	(eShop)	Configurable	10.701 – 11.2	12	75	120	6	12	0.42	0.1
11,5	(eShop)	(eShop)	Configurable	11.201 – 11.7	12	75	120	6	12	0.42	0.1
12	(eShop)	(eShop)	Configurable	11.701 – 12.2	12	75	120	6	12	0.48	0.1
13	(eShop)	(eShop)	Configurable	12.201 – 13.2	15	85	130	6	14	0.48	0.1
14	(eShop)	(eShop)	Configurable	13.201 – 14.2	15	85	130	6	14	0.48	0.1
15	(eShop)	(eShop)	Configurable	14.201 – 15.2	15	82	130	6	16	0.48	0.2
16	(eShop)	(eShop)	Configurable	15.201 – 16.2	15	102	150	6	16	0.48	0.2
17	(eShop)	(eShop)	Configurable	16.201 – 17.2	15	102	150	6	18	0.48	0.2
18	(eShop)	(eShop)	Configurable	17.201 – 18.2	15	102	150	6	18	0.6	0.2
19	(eShop)	(eShop)	Configurable	18.201 – 19.2	15	100	150	6	20	0.6	0.2
20	(eShop)	(eShop)	Configurable	19.201 – 20.2	15	100	150	6	20	0.6	0.2

Solid carbide | Standard | 25 bar | h6 DIN 6535 HA | HPC

GARANT Master Steel solid carbide high-performance reamers for through / blind hole, non-standard sizes and fits

The latest generation of **universal** HPC reamers. Extra-short teeth for increased cutting performance values. Optimised cooling strategy with radially arranged coolant outlets aligned directly to the teeth.
For uncompromising applications in steel and stainless steel. Reliable machining of high-tensile steels **up to 60 HRC. Version suitable for NC** with straight shank ∅ for standard arbors especially in **hydraulic chucks** or **high precision collet chucks.**
Very high concentricity and process reliability due to unequal spacing.
Tolerance specifications:
Configurable: Reamers finish ground to match your specification.
H7: Version for H7 bore tolerance.
0/0.005 mm: Manufacturing or cutting tolerance of nominal ∅ D_C.
Application:

16 4420 – Special version for through holes.
16 4425 – Special version for blind holes.

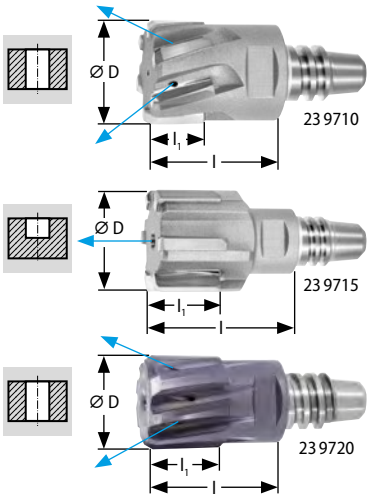


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	K						
16 4420/4425				180	180	180	150	100	12	8				50	30	110	90	●		●	●		

Nominal ∅ D_C	10P 16 4420 HPC through hole	10P 16 4425 HPC blind hole	Tolerance	∅ range	L_c	L_1	L	Number of cutting edges Z	∅ D_s	< 1100 N f	INOX < 900 N f	Reaming oversize in ∅ reference value
	GARANT Master Steel solid carbide high-performance reamer											
mm	TiAlN	TiAlN		mm	mm	mm	mm		mm	mm/rev.	mm/rev.	mm
4	(eShop)	(eShop)	Configurable	3.701 – 4.2	8	39	75	4	6	0.6	0.2	0.1
4H7	eShop	eShop	H7	–	8	39	75	4	6	0.6	0.2	0.1
4,01	eShop	–	0 / 0.005	–	8	39	75	4	6	0.6	0.2	0.1
4,02	eShop	–	0 / 0.005	–	8	39	75	4	6	0.6	0.2	0.1
4,03	eShop	–	0 / 0.005	–	8	39	75	4	6	0.6	0.2	0.1
4,5	(eShop)	(eShop)	Configurable	4.201 – 4.7	8	39	75	4	6	0.6	0.2	0.1
4,97	eShop	–	0 / 0.005	–	8	39	75	4	6	0.6	0.2	0.1
4,98	eShop	–	0 / 0.005	–	8	39	75	4	6	0.6	0.2	0.1
4,99	eShop	–	0 / 0.005	–	8	39	75	4	6	0.6	0.2	0.1
5	(eShop)	(eShop)	Configurable	4.701 – 5.2	8	39	75	4	6	0.6	0.2	0.1
5H7	eShop	eShop	H7	–	8	39	75	4	6	0.6	0.2	0.1
5,02	eShop	–	0 / 0.005	–	8	39	75	4	6	0.6	0.2	0.1
5,5	(eShop)	(eShop)	Configurable	5.201 – 5.7	8	39	75	4	6	0.6	0.2	0.1
5,97	eShop	–	0 / 0.005	–	8	39	75	6	6	1	0.3	0.1
5,99	eShop	–	0 / 0.005	–	8	39	75	6	6	1	0.3	0.1
6	(eShop)	(eShop)	Configurable	5.701 – 6.2	8	39	75	6	6	1	0.3	0.1
6H7	eShop	eShop	H7	–	8	39	75	6	6	1	0.3	0.1
6,01	eShop	–	0 / 0.005	–	8	39	75	6	6	1	0.3	0.1
6,02	eShop	–	0 / 0.005	–	8	39	75	6	6	1	0.3	0.1
6,03	eShop	–	0 / 0.005	–	8	39	75	6	6	1	0.3	0.1
6,5	(eShop)	(eShop)	Configurable	6.201 – 6.7	10	64	100	6	8	1	0.3	0.1
7	(eShop)	(eShop)	Configurable	6.701 – 7.2	10	64	100	6	8	1	0.3	0.1
7,5	(eShop)	(eShop)	Configurable	7.201 – 7.7	10	64	100	6	8	1	0.3	0.1
7,99	eShop	–	0 / 0.005	–	10	64	100	6	8	1.2	0.3	0.1
8	(eShop)	(eShop)	Configurable	7.701 – 8.2	10	64	100	6	8	1.2	0.3	0.1
8H7	eShop	eShop	H7	–	10	64	100	6	8	1.2	0.3	0.1
8,01	eShop	–	0 / 0.005	–	10	64	100	6	8	1.2	0.3	0.1
8,02	eShop	–	0 / 0.005	–	10	64	100	6	8	1.2	0.3	0.1
8,03	eShop	–	0 / 0.005	–	10	64	100	6	8	1.2	0.3	0.1
8,5	(eShop)	(eShop)	Configurable	8.201 – 8.7	10	60	100	6	10	1.2	0.3	0.1
9	(eShop)	(eShop)	Configurable	8.701 – 9.2	10	60	100	6	10	1.2	0.3	0.1
9,5	(eShop)	(eShop)	Configurable	9.201 – 9.7	12	80	120	6	10	1.2	0.3	0.1
9,97	eShop	–	0 / 0.005	–	12	80	120	6	10	1.4	0.4	0.1
9,98	eShop	–	0 / 0.005	–	12	80	120	6	10	1.4	0.4	0.1
9,99	eShop	–	0 / 0.005	–	12	80	120	6	10	1.4	0.4	0.1
10	(eShop)	(eShop)	Configurable	9.701 – 10.2	12	80	120	6	10	1.4	0.4	0.1
10H7	eShop	eShop	H7	–	12	80	120	6	10	1.4	0.4	0.1
10,01	eShop	–	0 / 0.005	–	12	80	120	6	10	1.4	0.4	0.1
10,02	eShop	–	0 / 0.005	–	12	80	120	6	10	1.4	0.4	0.1
10,03	eShop	–	0 / 0.005	–	12	80	120	6	10	1.4	0.4	0.1
10,5	(eShop)	(eShop)	Configurable	10.201 – 10.7	12	75	120	6	12	1.4	0.4	0.2
11	(eShop)	(eShop)	Configurable	10.701 – 11.2	12	75	120	6	12	1.4	0.4	0.2
11,5	(eShop)	(eShop)	Configurable	11.201 – 11.7	12	75	120	6	12	1.4	0.4	0.2
11,98	eShop	–	0 / 0.005	–	12	75	120	6	12	1.4	0.5	0.2
12	(eShop)	(eShop)	Configurable	11.701 – 12.2	12	75	120	6	12	1.7	0.5	0.2
12H7	eShop	eShop	H7	–	12	75	120	6	12	1.7	0.5	0.2
12,01	eShop	–	0 / 0.005	–	12	75	120	6	12	1.7	0.5	0.2
12,02	eShop	–	0 / 0.005	–	12	75	120	6	12	1.7	0.5	0.2
13	(eShop)	(eShop)	Configurable	12.201 – 13.2	15	85	130	6	14	1.7	0.5	0.2
14	(eShop)	(eShop)	Configurable	13.201 – 14.2	15	85	130	6	14	1.7	0.5	0.2
15	(eShop)	(eShop)	Configurable	14.201 – 15.2	15	82	130	6	16	1.7	0.5	0.2
15H7	eShop	eShop	H7	–	15	82	130	6	16	1.7	0.5	0.2
16	(eShop)	(eShop)	Configurable	15.201 – 16.2	15	102	150	6	16	1.7	0.5	0.2
16H7	eShop	eShop	H7	–	15	102	150	6	16	1.7	0.5	0.2
17	(eShop)	(eShop)	Configurable	16.201 – 17.2	15	102	150	6	18	2	0.6	0.2
18	(eShop)	(eShop)	Configurable	17.201 – 18.2	15	102	150	6	18	2	0.6	0.2
19	(eShop)	(eShop)	Configurable	18.201 – 19.2	15	100	150	6	20	2	0.6	0.2
20	(eShop)	(eShop)	Configurable	19.201 – 20.2	15	100	150	6	20	2	0.6	0.2

Standard | H7 | HPC

Remaining stock available via e-shop – only while stocks last. Solid carbide reaming heads for steel (blind hole No. 23 9725) and INOX (through hole No. 23 9730, blind hole No. 23 9735).



Garant TopCut REAM reaming heads

Interchangeable head reamer system **finish ground for fit IT7.**
Cutter geometry matched to the application.
System concentricity ≤ 5 µm (depending on the head and holder) when mounted.

23 9715 – With short, straight flutes.
23 9710/9720 – With short flutes and left-hand helix.

Application: For HPC/HSC reaming.
23 9715 – **For blind holes.**
23 9710/9720 – **For through holes.**

Note: **Total usable length** = L_1 (arbor No. 239740 / 239745) + l (interchangeable head No. 239710 to 239720).
Suitable assembly wrench No. 219987. Insert for torque wrench No. 219986.
Further sizes available on request.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	K
23 9710/9715				140	140	140	120										160	140
23 9720					120	120	120										80	60

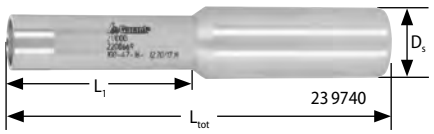
Nominal Ø D	23 9710 Cermet reaming head HPC H7 steel Through hole	23 9715 Cermet reaming head HPC H7 steel Blind hole	23 9720 Solid carbide reaming head HPC H7 steel Through hole TiAlN	Arbor size 23 9710 23 9720	Arbor size 23 9715	l_1 23 9710 23 9715	l_1 23 9720	l	Z 23 9710 23 9715	Z 23 9720	f < 1100 N 23 9710 23 9715	f < 1100 N 23 9720
mm				mm	mm	mm	mm	mm			mm/rev.	mm/rev.
10	eShop	–	eShop	10	–	8	10	18	6	6	0.36	0.6
11	eShop	–	(eShop)	10	–	8	10	20	6	6	0.36	0.6
12	eShop	–	eShop	10	–	8	10	20	6	6	0.36	0.6
13	eShop	–	eShop	12	–	8	10	22	6	6	0.36	0.7
14	eShop	–	eShop	12	–	8	12	22	6	6	0.36	0.7
15	eShop	eShop	eShop	12	10	8	12	22	6	6	0.6	0.8
16	eShop	eShop	eShop	12	10	8	12	22	6	6	0.6	0.8
17	eShop	eShop	eShop	12	12	8	12	22	6	8	0.6	1.1
18	eShop	eShop	eShop	16	12	12	14	26	6	8	0.6	1.1
19	eShop	eShop	eShop	16	12	12	14	26	6	8	0.6	1.1
20	eShop	eShop	eShop	16	12	12	14	26	6	8	0.6	1.1
21	eShop	eShop	eShop	16	12	12	14	26	6	8	0.6	1.2
22	eShop	eShop	eShop	20	16	12	14	26	6	8	0.6	1.2
23	eShop	eShop	eShop	20	16	12	14	26	6	8	0.6	1.2
24	eShop	eShop	eShop	20	16	12	14	26	6	8	0.6	1.4
25	eShop	eShop	eShop	20	16	12	14	26	6	8	0.6	1.4
26	eShop	eShop	eShop	20	20	12	14	26	6	8	0.6	1.4
28	eShop	eShop	–	24	20	12	–	26	6	–	0.6	–
30	eShop	eShop	–	24	20	12	–	26	8	–	0.8	–
32	eShop	eShop	–	24	24	12	–	30	8	–	0.8	–
34	eShop	eShop	–	29	24	12	–	30	8	–	0.8	–
36	eShop	eShop	–	29	24	12	–	30	8	–	0.8	–
38	eShop	eShop	–	29	24	12	–	30	8	–	0.8	–
40	eShop	eShop	–	29	24	12	–	30	8	–	0.8	–
42	eShop	eShop	–	29	29	12	–	30	8	–	0.8	–
44	eShop	eShop	–	29	29	12	–	30	8	–	0.8	–
46	eShop	eShop	–	29	29	12	–	30	8	–	0.8	–
48	eShop	eShop	–	29	29	12	–	30	8	–	0.8	–
50	eShop	eShop	–	29	29	12	–	30	8	–	0.8	–

h6 DIN 6535 HA

Garant TopCut REAM reaming head arbors

Version suitable for NC with straight shank Ø for standard arbors especially in **hydraulic chucks** or **high precision collet chucks**for very high accuracy and process reliability.

Note: Observe the mounting size of the holder and reaming heads.
For further arbors see No. 210550 – 210582 and No. 212000.



Type	23 9740 Arbor 90°, cylindrical with IC short	23 9745 Arbor 90°, cylindrical with IC long	suitable for through hole Ø	suitable for blind hole Ø	L 23 9740	L 23 9745	L_1 23 9740	L_1 23 9745	Ø D_s h6	recommended tightening torque
			mm	mm	mm	mm	mm	mm	mm	Nm
10	eShop	eShop	10 – 12.7	14 – 16.2	90	120	35	65	16	5
12	eShop	eShop	12.71 – 17.2	16.21 – 21.2	100	140	47	87	16	10
16	eShop	eShop	17.21 – 21.2	21.21 – 25.2	108	160	65	105	20	15
20	eShop	eShop	21.21 – 26.2	25.21 – 30.2	140	200	78	138	25	20
24	eShop	eShop	26.21 – 32.2	30.21 – 40.2	142	202	84	144	25	25
29	eShop	eShop	32.21 – 50	40.21 – 50	146	216	82.5	152.5	32	35

New products – Thread machining

NEW

We use this symbol to tag new items in our range of catalogue products

Garant VAP TAP



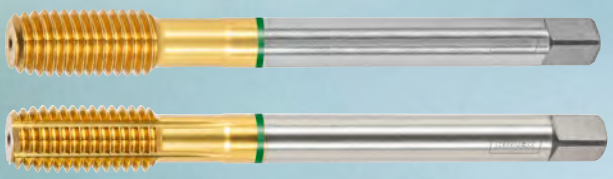
Page **280 / 283 / 288 / 293 / 310 / 313 / 317 / 323**
GARANT Vap Tap – universal taps for a wide range of materials.
Surface vaporized M / M-LH / MF / G for blind and through holes

Garant VAP TAP



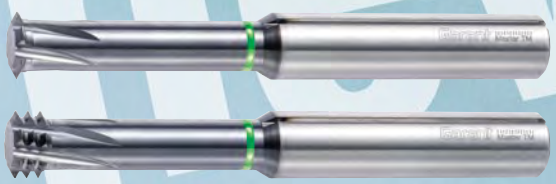
Page **365 / 366**
GARANT Vap Tap – Machine tap sets with and without core drill.
M for blind and through holes; M3-12

HOLEX Pro Form



Page **332 / 333 / 336 / 337**
HOLEX Pro Form machine taps –
powerful taps for use in a wide range of materials.
Models with and without oil grooves M / MF / G

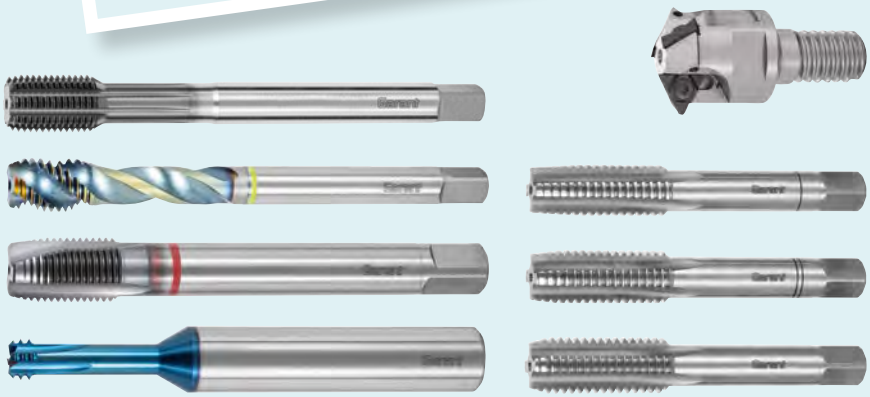
Garant MASTER TM



Pages **341 – 343**
GARANT Master TM single and three-profile thread mills.
Newly developed universal geometry and high-performance coating for use in a wide range of applications.
M / M-LH / UN / UN-LH / MF / MF-LH / EG-M / EG-M-LH / G / G-LH / EG-G / EG-G-LH

Machining – Threads

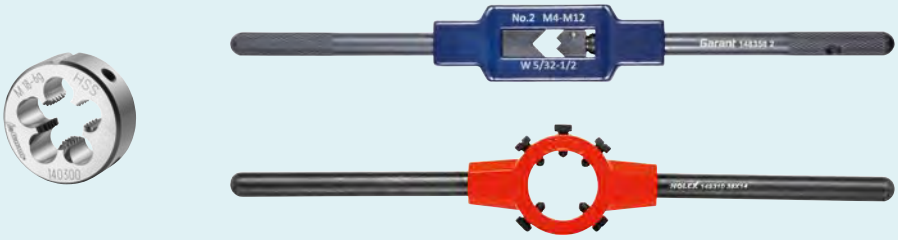
Machining/clamping technology for optimal processes.
Now sorted by **application**
drilling, tapping, milling, turning and clamping.



Garant HOLEX

Taps, fluteless taps, thread milling cutters
Overview pages 250 – 255

13 250 – 356





Garant HOLEX

Dies, thread cutting tool sets, holders, holder set

14 357 – 369



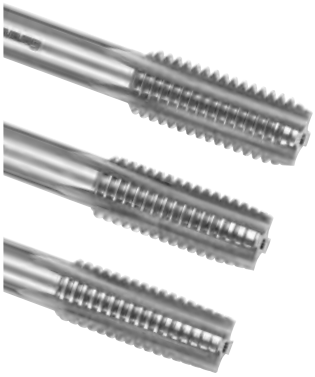
Further thread-cutting tools in the chapter Turning, pages 831 – 855



Garant **Overview of taps**

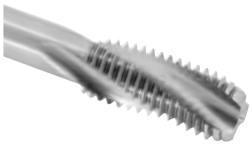
Which tap is suitable for your application?

Discover at a glance which tap is suitable for your application.
Whether you are tapping by hand, or a single pillar drilling machine or on your modern machining centre, the range of taps from the Hoffmann Group will always offer you the right tool.



Hand tap

For tapping or cleaning existing threads by hand.
Set of three, consisting of taper, second and plug tap, or set of two, consisting of taper and plug tap.
Mounting in an adjustable **tap wrench** or **toolholder.**



Conventional

For use on conventional machines such as drilling machines, lathes and milling machines. A high degree of self-guidance and a distinct guide thread section are the features of these tools, which permit their use under unstable machine conditions.
Mounting in the **axial tapping head** or **tapping chuck with compensation.**



Dynamic

Cost-effective machining for highly demanding work.
High-performance tool materials and modern coatings permit long tool lives and a high degree of process reliability.
Particularly suitable for CNC machines.
Mounting in the **tapping chuck with length compensation** or **minimum length compensation (MLA).**



Synchronous

Very high performance, for use on machines with synchronised spindles.
Reduced self-guiding and a high-performance tool material coating combination permit extremely high cutting speeds combined with very long tool life.
Mounting in the **tapping chuck with minimum length compensation** or **rigid clamping.**

		Hand tap sets							
Colour ring									
Application									
Tool material		HSS		HSS-E		HSS-E		HSS	
Coating						nitrided		vaporised	
		Product number	Page	Product number	Page	Product number	Page	Product number	Page
M	ISO2/6H(X)	**13 0150**	258	**13 0400**	259	**13 0450**	259	**13 0992**	264
	ISO3/6G(X)								
M-LH	ISO2/6H	**13 0460**	260						
MF	ISO2/6H(X)	**13 0470**	261						
MF-LH	ISO2/6H								
G	DIN228	**13 0550**	261						
BSW	BS84	**13 0670**	262						
UNC	2B	**13 0700**	262						
UNF	2B	**13 0750**	263						
NPT	ANSI B1 20.1								
Rc	EN 10226								
Tr	7H	**13 0760**	263						
Pg	DIN40432								
EC-...	6H mod								
Application									
Tool material									
Coating									
M	ISO2/6H(X)								
M	ISO3/6G(X)								
M-LH	ISO2/6H								
MF	ISO2/6H(X)								
MF-LH	ISO2/6H								
G	DIN228								
G	Oversize								
BSW	BS84								
UNC	2B								
UNF	2B								
NPT	ANSI B1 20.1								
Tr	7H								
Pg	DIN40432								
EC-...	6H mod								

ISO 513					
Aluminium, plastics	N	○	○	○	●
Steel < 500 N/mm²	P	●			●
Steel < 900 N/mm²	P	●	●		○
Steel < 1400 N/mm²	P		○	●	
Steel > 45 HRC	H				
INOX	M		●		○
Ti	S		●		
GG (G)	K	○	○	○	○
CuZn	N	○			○
Graphite, GRP, CRP	N				
UNI		●	●		

The areas of application are starting points for pre-selection,

● highly suitable; ○ suitable for only under restricted conditions

Conventional






HSS-E		HSS-E / PM		HSS / HSS-E		HSS-E / -PM TiN	
Product number	Page	Product number	Page	Product number	Page	Product number	Page
13 1450	269	**13 1150**	267	**13 1760**	267	**131250**	267
		13 1200	267	**13 1800**	270		
		13 1280	268				
		13 1290	268				
		13 1650	269				
		13 1700	270				
		13 1850	271				
		13 1300	268				
		13 1350	268				
		13 2830	285			**13 2835**	285
		13 3350	295				
		13 3400	297				
13 8120	330						
		13 3450	298				





HSS-E		HSS-E / PM		HSS-E	
Product number	Page	Product number	Page	Product number	Page
13 4650	304	**13 4600**	303	**13 4660**	303
		13 4620	303		
		13 6250	315		
		13 7860	325		
		13 8000	327		

Dynamic





Carbide		HSS-E-PM DLC		HSS-E-PM DLC	
Product number	Page	Product number	Page	Product number	Page
13 1140	266	**13 1110**	265	**13 1115**	265
		13 2810	284		
		13 3260	291		
		13 3555	299		





HSS-E		HSS-E-PM DLC		HSS-E-PM DLC	
Product number	Page	Product number	Page	Product number	Page
134200	300	**13 4260**	301	**13 4265**	301
		13 6230	314		
		13 7310	320		
		13 8205	331		

○	○	○	○	●	●	●	●
●	●	●	●		○	●	●
●	●	○	●				
	○		○				
	○						
○		○	○				
○	○		○		○	●	●
	○				●		

Garant **Overview of taps**

Dynamic

Colour ring																	
Application																	
Tool material		HSS-E		HSS-E-PM		Solid carbide		HSS-E-PM		HSS-E		HSS-E		HSS-E-PM		HSS-E-PM	
Coating				TiCN		TiAlN		TiCN		vaporised		TiAlN		TiAlN		TiAlN	
		Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page
M	ISO2/6H (X)	**13 1900** **13 1950**	271 272	**13 2055**	274	**13 2080**	275	**13 1940**	273	**13 2150** **13 2155**	275 275			**13 2180** **13 2190**	276 276	**13 2195**	276
	ISO2/6H + 0.1																
	ISO3/6G (X)							**13 1946**	273					**13 2193**	276		
	7GX																
M-LH	ISO2/6H																
MF	ISO2/6H (X)			**13 2861**	287	**13 2862**	287	**13 2855**	286	**13 2870**	288			**13 2875**	288		
	ISO3/6G(X)																
MF-LH	ISO2/6H																
G	DIN228					**13 3320**	292	**13 3312**	292	**13 3325**	293			**13 3327**	293		
BSW	BS84																
UNC	2B													**13 3356**	295		
UNF	2B													**13 3406**	297		
NPT	ANSI B1 20.1											**13 8110**	329				
Rc	EN 10226																
Tr	7H																
Pg	DIN40432																
EC-...	6H mod																

Application																	
Tool material				HSS-E-PM				HSS-E-PM		HSS-E				HSS-E-PM		HSS-E-PM	
Coating				TiAlN				TiAlN		vaporised				TiAlN		TiAlN	
		Product number	Page	Product number	Page			Product number	Page	Product number	Page			Product number	Page	Product number	Page
M	ISO2/6H (X)							**13 5371**	305	**13 5450** **13 5550** **13 5650**	307 307 307			**13 5732** **13 5734** **13 5736**	308 308 308	**13 5739**	308
	ISO2/6H + 0.1																
	ISO3/6G (X)							**13 5374**	305	**13 5600**	307			**13 5737**	308		
	7GX																
M-LH	ISO2/6H																
MF	ISO2/6H (X)							**13 6350**	316	**13 7050**	317			**13 7053**	317		
	ISO3/6G(X)																
MF-LH	ISO2/6H																
G	DIN228							**13 7425**	321	**13 7450**	322			**13 7750** **13 7752**	322 322		
G	Oversize																
BSW	BS84																
UNC	2B													**13 7857**	326		
UNF	2B													**13 8007**	327		
NPT	ANSI B1 20.1			**13 8100**	329												
Tr	7H																
Pg	DIN40432																
EC-...	6H mod																

ISO 513																	
Aluminium, plastics	N									○		○		○		○	
Steel < 500 N/mm²	P									●		●		○		○	
Steel < 900 N/mm²	P	○						●		○		●		○		○	
Steel < 1400 N/mm²	P	●		●				●									
Steel > 45 HRC	H	○		●		●		○									
INOX	M							●		●		○		●		●	
Ti	S							○									
GG (G)	O											○					
CuZn	N									○		○		○		○	
Graphite, GRP, CRP	N																
UNI														●		●	

● highly suitable; ○ suitable for only under restricted conditions

The areas of application are starting points for pre-selection,













HSS-E-PM nitrided + vaporised		HSS-E-PM		HSS-E TiCN		HSS-E nitrided		HSS-E TiCN		Carbide		HSS-E vaporised		HSS-E-PM AlTiX		HSS-E-PM AlTiX	
Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page
13 2420	278	**132400**	277	**132450**	278	**13 2500**	278	**13 2550**	278	**13 2570**	279	**13 2642** **13 2643**	280	**13 2721** **13 2723** **13 2726**	281 281 281	**13 1770** **13 2738**	282 282
														13 2735	282		
														13 2724	282		
														13 2728	282		
												13 2802	283	**13 2805**	283		
						13 2880	288					**13 2885**	288	**13 2905**	289	**13 2907**	289
														13 2906	289		
														13 3015	290		
												13 3328	293	**13 3330**	294	**13 3333**	294
														13 3360	296		
														13 3410	298		
														13 3560	300		









HSS-E-PM nitrided + vaporised				HSS-E-PM TiCN				HSS-E vaporised		HSS-E-PM AlTiX		HSS-E-PM AlTiX	
Product number	Page			Product number	Page			Product number	Page	Product number	Page	Product number	Page
13 5750	309			**13 5760**	309			**13 5805**	310	**13 5960**	311		
								13 5810	310	**135962**	311	**13 4680**	312
								13 5815	310	**13 5965**	311	**13 6168**	312
										13 6152	311		
										13 6164	312		
										13 6158	312		
								13 7110	317	**13 6162**	312		
								13 6185	313	**13 6190**	313		
13 7055	317							**13 7755**	323	**13 7160**	318	**13 7162**	318
								13 7765	323	**13 7161**	318		
										13 7190	319		
										13 7805	324	**13 7807**	324
										13 7808	324		
										13 7870	326		
										13 8010	328		
										13 8105	330		
										13 8210	331		

○		○		○								●		●		●	
				●								●		●		●	
○		○		○								●		●		●	
●		●		●										●		●	
				●								●		●		●	
●		●		●													
						●		●		●		○		●		●	
				○						●		○		●		●	
												●		●		●	

Garant **Overview of taps**

		Synchronous tap			
Colour ring					
Application					
Tool material		HSS-E-PM	HSS-E-PM	HSS-E-PM	HSS-E-PM
Coating		DLC	TiAlN	TiAlN	TiAlN
		Product number / Page	Product number / Page	Product number / Page	Product number / Page
M	ISO2/6H	**13 1125** 266	**13 2065** 274	**13 2280** 277	**13 2741** 283
	ISO3/6G				
M-LH	ISO2/6H				
MF	ISO2/6H				**13 2950** 290
MF-LH	ISO2/6H				
G	DIN228				
BSW	BS84				
UNC	2B				
UNF	2B				
NPT	ANSI B1 20.1				
Rc	EN 10226				
Tr	7H				**13 3490** 299
Pg	DIN40432				
EC-...	6H mod				
Application					
Tool material		HSS-E-PM	HSS-E-PM	HSS-E-PM	HSS-E-PM
Coating		DLC	TiAlN	TiAlN	TiAlN
		Product number / Page	Product number / Page	Product number / Page	Product number / Page
M	ISO2/6H ISO3/6G	**13 4275** 302 **13 4280** 302 **13 4285** 302	**13 5410** 306 **13 5415** 306 **13 5420** 306	**13 5740** 309 **13 5743** 309 **13 5746** 309	**13 6171** 313 **13 6173** 313 **13 6176** 313
M-LH	ISO2/6H				
MF	ISO2/6H				**13 7180** 319 **13 7183** 319 **13 7186** 319
MF-LH	ISO2/6H				
G	DIN228	**13 7344** 320 **13 7345** 320 **13 7346** 320			**13 7810** 325 **13 7813** 325 **13 7816** 325
BSW	BS84				
UNC	2B				
UNF	2B				
NPT	ANSI B1 20.1				
Rc	EN 10226				
Tr	7H				
Pg	DIN40432				
EC-...	6H mod				
	ISO 513				
Aluminium, plastics	N	●		○	○
Steel < 500 N/mm²	P		●	●	●
Steel < 900 N/mm²	P		●	●	●
Steel < 1400 N/mm²	P		●		●
Steel > 45 HRC	H		●		
INOX	M			●	●
Ti	S				
GG (G)	O				●
CuZn	N	●		○	●
Graphite, GRP, CRP	N	○			
UNI					●

● highly suitable; ○ suitable for only under restricted conditions

The areas of application are starting points for pre-selection,

Garant Overview of fluteless taps / thread milling cutters

		Fluteless tap										Synchronous fluteless taps			
Colour ring															
Application															
Tool material		HSS-E-PM		HSS-E-PM		HSS-E-PM		HSS-E-PM		HSS-E-PM		Solid carbide		HSS-E-PM	
Coating		TiAlN		TiN		TiN		TiAlN		TiAlN		TiAlN		TiN	
		Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page
M	ISO2/6H	13 9171	333	13 9115 13 9175	332 333	13 9125	332	13 9194 13 9198 13 9202	334 334 334	13 9208	334	13 4242 13 9243 13 9244	335 335 335	13 9210 13 9215 13 9230	335 335 335
	ISO3/6GX					13 9135	332	13 9205	334						
	7GX							13 9207	334						
M-LH	ISO2/6H							13 9255	336						
MF	ISO2/6H			13 9260	336			13 9280 13 9290	336 336						
G	DIN228	13 9395	337	13 9400	337			13 9415 13 9425	337 337						
UNC	2BX							13 9485	338						
UNF	2BX							13 9495	338						
ISO 513															
Aluminium, plastics	N	●				○						●		●	
Steel < 500 N/mm²	P	●		●		●		●		●		●		●	
Steel < 900 N/mm²	P			●		●		●		●		●		●	
Steel < 1400 N/mm²	P					○		●		●		●		○	
Steel > 45 HRC	H														
INOX	M			●		○		○		○				○	
Ti	S														
GG (G)	O														
CuZn	N			○		○		○		○				○	
Graphite, GRP, CRP	N														
UNI						●								●	

		Drill thread milling cutter		End cutting thread mill		End cutting thread mill		Single-profile thread mill		Three-profile thread mill		Thread mill		Thread mill with countersinking step	
Colour ring															
Application															
Tool material		Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide		Solid carbide	
Coating		TiAlN		TiAlN		AlCrN		AlTiN		AlTiN		AlTiN		AlTiN	
		Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page	Product number	Page
M / M-LH		13 9511 13 9516	339 339	13 9524	340	13 9526	339	13 9620 13 9625	341 342	13 9630	343	13 9642 13 9643	344 344	13 9666 13 9663 13 9664	345 345 345
MF / MF-LH												13 9675	346	13 9686 13 9687	347 347
G / G-LH				13 9527	340					13 9631	343	13 9706	348	13 9716	349
UNC / UNC-LH												13 9732	349	13 9733	350
UNF / UNF-LH												13 9737	350	13 9738	351
NPT												13 9739	351		
ISO 513															
Aluminium, plastics	N	●				●		●		●		●		●	
Steel < 500 N/mm²	P					●		●		●		●		●	
Steel < 900 N/mm²	P					●		●		●		●		●	
Steel < 1400 N/mm²	P			●		●		●		●		●		●	
Steel > 45 HRC	H			●		○		○		○		○		○	
INOX	M			●		●		●		●		●		●	
Ti	S			●		●		●		●		●		●	
GG (G)	O	○				●		●		●		●		●	
CuZn	N	●				●		●		●		●		●	
Graphite, GRP, CRP	N														
UNI						●		●		●		●		●	

for detailed cutting data see the individual products

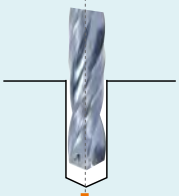
Thread generation to good process reliability

The steps to a thread that satisfies the gauge.

The generation of a correct thread requires not only the cutting of the thread itself but also several preparatory and subsequent operations. This begins with selection of the correct core hole diameter and ends with the checking of the finished thread.

Core hole

Pre-drilling
The twist drill creates the core hole for the thread-cutting tool.

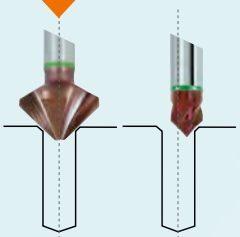


Pre-drilling and countersinking in a single operation
The new GARANT Master Steel FEED stepped drill creates the 90° countersink for the thread in a single operation together with drilling the core hole.



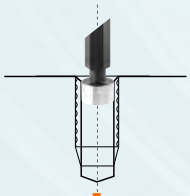
Countersinking
The protective countersink facilitates the entry of the following thread-cutting tool. It can also increase tool life.

Chamfer
The threaded chamfer facilitates the entry of the following thread-cutting tool. It can also increase tool life.



Check the core hole drilling

Check the tapping diameter.
Check the surface quality.
Check for machining residues.



End cutting thread milling

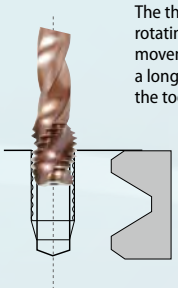
End cutting thread milling
There is no need for pre-machining. The core hole, protective chamfer and thread are generated in one machining step.



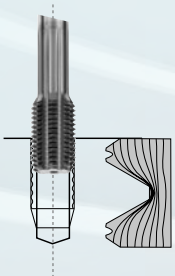
Generating threads

Tapping

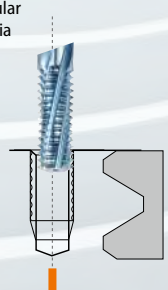
The thread is generated by a rotating movement of the spindle and a longitudinal movement of the tool axis.



Thread forming

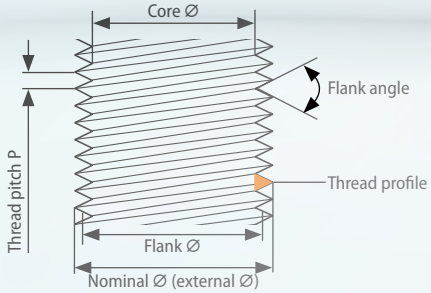


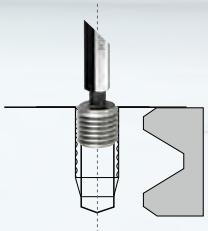
Thread milling
The tool executes a circular movement performed via the CNC machine, generating the desired thread pitch.



Gauging the thread

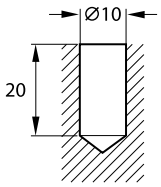
The thread plug gauge tests the cut internal thread for the effective diameter, pitch deviation, part flank deviations and form profile, as well as for the minimum external diameter.





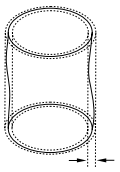
Core hole drilling – important component of a thread.

Core hole drilling is not just part of a thread, it also enormously influences the thread machining process and the service life of the thread-cutting tool.
Taps and fluteless taps can only work reliably if certain important rules are adhered to during the preparatory work stage.

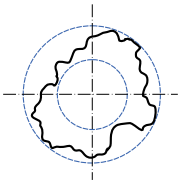


Core hole diameter / length

Straightness

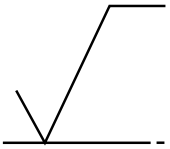


Key criteria for the core hole for thread generation to good process reliability



Roundness

Surface



Tolerance situation

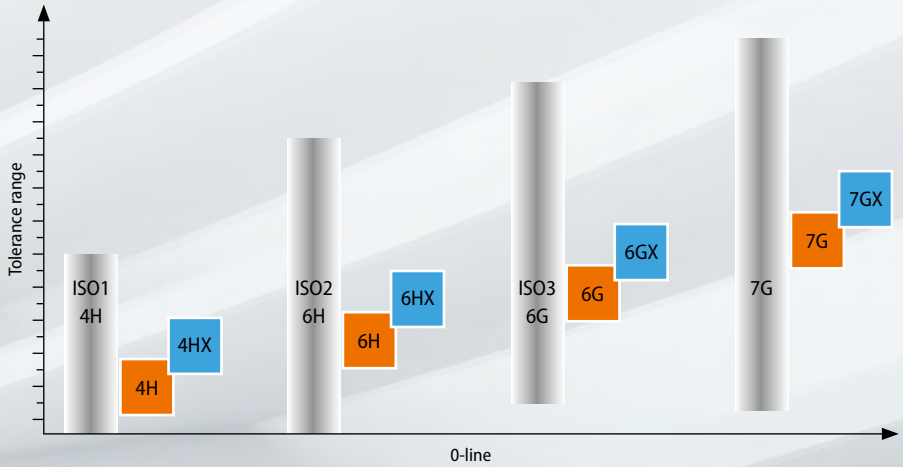
Taps/fluteless taps

The tolerance band of a tap or fluteless tap is significantly narrower than the permissible tolerance range of the finished thread.
The tolerance is designed so that a correct thread is generated from the start. The tool wears in service and eventually reaches the point where the correct thread profile can no longer be produced: The thread is now smaller than the lower tolerance of the "Go" gauge.
The tolerance for the tap or fluteless tap could then be positioned at the upper part of the internal thread area. Here there is, however, the risk of producing an oversized thread which is above the upper limit of the "No Go" gauge.
Taps or fluteless taps with "X" tolerance used on materials that have no problem with oversize are positioned higher in the tolerance zone. The result is longer tool life as a result of higher wear tolerance.

Thread mill

The tolerance of the thread mill has no effect on the tolerance situation of the thread to be produced. The required tolerance is governed by the machine tool and is generated by a circular movement of the tool. Tool wear can be compensated by programming.

Schematic diagram of common metric production tolerances



Permissible effective diameter tolerance range of the internal thread.

Permitted effective diameter tolerance range of a tap/fluteless tap made to **DIN EN standard.**

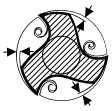
Permissible effective diameter tolerance range of a tap/fluteless tap produced to the **Factory standard.**

M | 60° | HSS | DIN 352 | DIN 13 | h9 | ≤3×D | ≤3×D

Hand tap sets

Size M2.3 and M2.6 to old DIN profile.

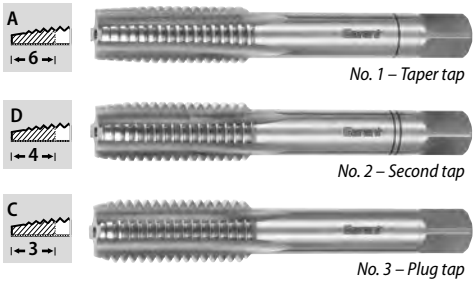
13 0250/0150 – Set of three, **consisting of taper, second, and plug tap.**

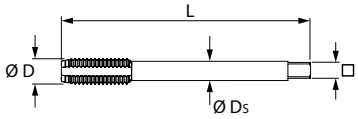


Flanks relief ground.

ISO 1 4H ≤ M1.4 | ISO 2 6H ≥ M1.6

3-piece set





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
13 0150–13 0250	○	○	○	●	●	●											○	●	●			○	

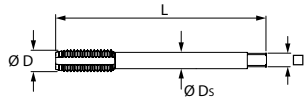
M	11G 13 0150	11G 13 0160	11G 13 0170	11G 13 0180	12G 13 0250	Thread pitch	L		Ø D_s	□	Tapping hole Ø
	Garant				HOLEX						
	Hand tap set	Hand tap, single			Hand tap set		13 0150 13 0160 13 0170 13 0180	13 0250			
		Taper tap	Second tap	Plug tap		mm	mm	mm	mm	mm	mm
M1	eShop	–	–	–	–	0.25	25	–	2.5	2.1	0.75
M1,2	eShop	–	–	–	–	0.25	25	–	2.5	2.1	0.95
M1,4	eShop	–	–	–	–	0.3	28	–	2.5	2.1	1.1
M1,6	eShop	–	–	–	–	0.35	32	–	2.5	2.1	1.25
M2	eShop	eShop	eShop	eShop	–	0.4	32	–	2.8	2.1	1.6
M2,2	eShop	–	–	–	–	0.45	32	–	2.8	2.1	1.75
M2,3	eShop	–	–	–	–	0.4	32	–	2.8	2.1	1.9
M2,5	eShop	eShop	eShop	eShop	–	0.45	36	–	2.8	2.1	2.05
M2,6	eShop	eShop	eShop	eShop	–	0.45	36	–	2.8	2.1	2.1
M3	eShop	eShop	eShop	eShop	eShop	0.5	36	40	3.5	2.7	2.5
M3,5	eShop	eShop	eShop	eShop	–	0.6	40	–	4	3	2.9
M4	eShop	eShop	eShop	eShop	eShop	0.7	40	45	4.5	3.4	3.3
M4,5	eShop	–	–	–	–	0.75	45	–	6	4.9	3.7
M5	eShop ■	eShop	eShop	eShop	eShop	0.8	45	50	6	4.9	4.2
M6	eShop ■	eShop	eShop	eShop	eShop	1	50	50	6	4.9	5
M7	eShop	–	–	–	–	1	50	–	6	4.9	6
M8	eShop ■	eShop	eShop	eShop	eShop	1.25	56	63	6	4.9	6.8
M9	eShop	–	–	–	–	1.25	56	–	7	5.5	7.8
M10	eShop ■	eShop	eShop	eShop	eShop	1.5	63	70	7	5.5	8.5
M12	eShop	eShop	eShop	eShop	eShop	1.75	70	75	9	7	10.2
M14	eShop	eShop	eShop	eShop	eShop	2	70	80	11	9	12
M16	eShop	eShop	eShop	eShop	eShop	2	70	80	12	9	14
M18	eShop	eShop	eShop	–	eShop	2.5	80	95	14	11	15.5
M20	eShop	eShop	eShop	eShop	eShop	2.5	95	95	16	12	17.5
M22	eShop	eShop	eShop	eShop	–	2.5	100	–	18	14.5	19.5
M24	eShop ■	eShop	eShop	eShop	–	3	110	–	18	14.5	21
M27	eShop	eShop	eShop	eShop	–	3	110	–	20	16	24
M30	eShop	eShop	eShop	eShop	–	3.5	125	–	22	18	26.5

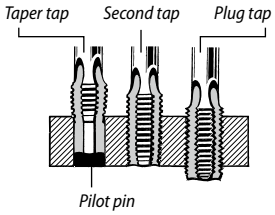
M | 60° | HSS E | DIN 352 | DIN 13 | ISO 2 6H | h9 | ≤3×D | ≤3×D

Garant

Hand tap sets

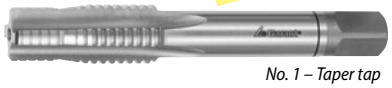
13 0400 – Set of three, **consisting of taper, second, and plug tap. Taper tap with long pilot.**





3-piece set

A ⊢6→|



No. 1 – Taper tap

D ⊢4→|



No. 2 – Second tap

C ⊢3→|



No. 3 – Plug tap

13 0400

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
13 0400–13 0430			○		●	●	○							●	○	●	○	●

M	11G 13 0400 Hand tap set	11G 13 0410 Hand tap, single Taper tap	11G 13 0420 Hand tap, single Second tap	11G 13 0430 Hand tap, single Plug tap	Thread pitch mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
M2	eShop	–	–	–	0.4	36	2.8	2.1	1.6
M2,5	eShop	–	–	–	0.45	40	2.8	2.1	2.05
M3	eShop	eShop	eShop	eShop	0.5	40	3.5	2.7	2.5
M3,5	eShop	–	–	–	0.6	45	4	3	2.9
M4	eShop	eShop	eShop	eShop	0.7	45	4.5	3.4	3.3
M5	eShop	eShop	eShop	eShop	0.8	50	6	4.9	4.2
M6	eShop	eShop	eShop	eShop	1	50	6	4.9	5
M8	eShop	eShop	eShop	eShop	1.25	56	6	4.9	6.8
M10	eShop	eShop	eShop	eShop	1.5	70	7	5.5	8.5
M12	eShop	eShop	eShop	eShop	1.75	75	9	7	10.2
M16	eShop	eShop	eShop	eShop	2	80	12	9	14
M20	eShop	eShop	eShop	eShop	2.5	95	16	12	17.5
M22	eShop	eShop	eShop	eShop	2.5	100	18	14.5	19.5
M24	eShop	eShop	eShop	eShop	3	110	18	14.5	21
M27	eShop	eShop	eShop	eShop	3	110	20	16	24
M30	eShop	eShop	eShop	eShop	3.5	125	22	18	26.5

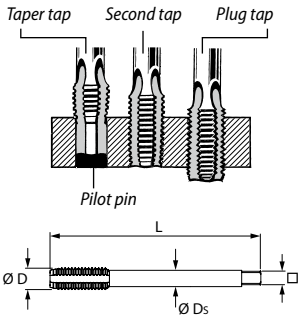
M | 60° | HSS E | DIN 352 | DIN 13 | ISO 2X 6HX | A ⊢6→| | D ⊢4→| | C ⊢3→| | h9 | ≤3×D | ≤3×D

Garant

Hand tap sets

Set of three, **consisting of taper, second, and plug tap. Taper tap with long pilot.**
Surface nitrided, more resistant to wear.

Recommendation: For **TOOLOX materials** we recommend **deviating from the DIN** data (see table) by drilling the tapping hole **0.05** to **0.3 mm** larger.



3-piece set

A ⊢6→|



No. 1 – Taper tap

D ⊢4→|



No. 2 – Second tap

C ⊢3→|



No. 3 – Plug tap

13 0450

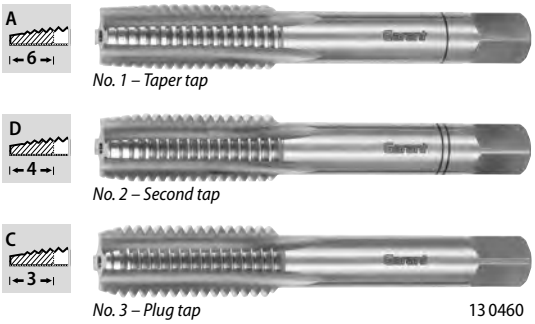
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	K
13 0450			○				●	●						●				○

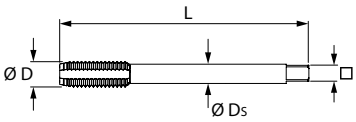
M	11G 13 0450 Hand tap set nitrided	Thread pitch mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
M2	eShop	0.4	36	2.8	2.1	1.6
M2,5	eShop	0.45	40	2.8	2.1	2.05
M3	eShop	0.5	40	3.5	2.7	2.5
M4	eShop	0.7	45	4.5	3.4	3.3
M5	eShop	0.8	50	6	4.9	4.2
M6	eShop	1	50	6	4.9	5
M8	eShop	1.25	56	6	4.9	6.8
M10	eShop	1.5	70	7	5.5	8.5
M12	eShop	1.75	75	9	7	10.2
M14	eShop	2	80	11	9	12
M16	eShop	2	80	12	9	14
M20	eShop	2.5	95	16	12	17.5

M-LH | 60° | HSS | DIN 352 | DIN 13 | ISO 2 6H | A ⊢6⊣ | D ⊢4⊣ | C ⊢3⊣ | h9 | ≤3×D | ≤3×D

Garant Hand tap sets, left-hand thread

Set of three, **consisting of taper, second, and plug tap.**
Application: For metric left-hand thread to DIN13.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
13 0460	○	○	○	●	●	●											○	●	●				○

M-LH	11G 13 0460 Hand tap set, left-hand thread	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
M2	eShop	0.4	36	2.8	2.1	1.6
M3	eShop	0.5	40	3.5	2.7	2.5
M4	eShop	0.7	45	4.5	3.4	3.3
M5	eShop	0.8	50	6	4.9	4.2
M6	eShop	1	50	6	4.9	5
M8	eShop	1.25	56	6	4.9	6.8
M10	eShop	1.5	70	7	5.5	8.5
M12	eShop	1.75	75	9	7	10.2
M14	eShop	2	80	11	9	12
M16	eShop	2	80	12	9	14
M20	eShop	2.5	95	16	12	17.5

Avoid incorrect cutting, especially with small threads!

Our adjustable GARANT micro tap wrench with round vial permits exact axial guidance when cutting by hand, even for the smallest threads.



Garant

GARANT micro tap wrench, adjustable

- Permits precise perpendicular guidance.
- Removable round vial with magnetic fastener for visual alignment.
- Can also be used for direct mounting in a die stock 14 9310_25×9.
- Suitable for hand taps size M1–M3.

All further product information can be found in our product group Retaining Tools Group 14 or in the e-shop.

MF | 60° | HSS | DIN 2181 | DIN 13 | h9 | ≤3×D | ≤3×D

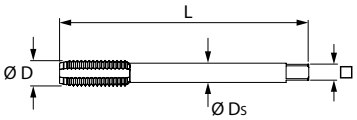
ISO 1 4H | ISO 2 6H

2 × 0,25 | ≥ 3 × 0,35

2-piece set

Hand tap sets

2-piece set **comprising taper and plug tap.**
Thread ground from solid and relief ground.





No. 1 – Taper tap



No. 2 – Plug tap

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
13 0470/0500	○	○	○	●	●	●											○	●	●				○

MF	11G 13 0470 Garant	12G 13 0500 HOLEX	L		Ø D_s	□	Tapping hole Ø
	Hand tap set		13 0470 mm	13 0500 mm	mm	mm	mm
2×0,25	eShop	–	36	–	2.8	2.1	1.75
3×0,35	eShop	–	40	–	3.5	2.7	2.65
4×0,35	eShop	–	45	–	4.5	3.4	3.65
4×0,5	eShop	–	45	–	4.5	3.4	3.5
5×0,5	eShop	eShop	50	50	6	4.9	4.5
6×0,5	eShop	–	50	–	6	4.9	5.5
6×0,75	eShop	eShop	50	56	6	4.9	5.2
7×0,75	eShop	–	50	–	6	4.9	6.2
8×0,5	eShop	–	50	–	6	4.9	7.5
8×0,75	eShop	eShop	50	56	6	4.9	7.2
8×1	eShop	eShop	56	63	6	4.9	7
9×1	eShop	–	63	–	7	5.5	8
10×0,75	eShop	–	63	–	7	5.5	9.2
10×1	eShop	eShop	63	63	7	5.5	9
10×1,25	eShop	–	70	–	7	5.5	8.8
11×1	eShop	–	63	–	8	6.2	10
12×1	eShop	eShop	70	70	9	7	11
12×1,25	eShop	eShop	70	70	9	7	10.8
12×1,5	eShop	eShop	70	70	9	7	10.5
14×1	eShop	–	70	–	11	9	13
14×1,25	eShop	–	70	–	11	9	12.8
14×1,5	eShop	eShop	70	70	11	9	12.5

MF	11G 13 0470 Garant	12G 13 0500 HOLEX	L		Ø D_s	□	Tapping hole Ø
	Hand tap set		13 0470 mm	13 0500 mm	mm	mm	mm
15×1	eShop	–	70	–	12	9	14
15×1,5	eShop	–	70	–	12	9	13.5
16×1	eShop	–	70	–	12	9	15
16×1,5	eShop	eShop	70	70	12	9	14.5
18×1	eShop	–	80	–	14	11	17
18×1,5	eShop	eShop	80	80	14	11	16.5
18×2	eShop	–	80	–	14	11	16
20×1	eShop	–	80	–	16	12	19
20×1,5	eShop	eShop	80	80	16	12	18.5
20×2	eShop	–	80	–	16	12	18
22×1	eShop	–	80	–	18	14.5	21
22×1,5	eShop	–	80	–	18	14.5	20.5
24×1,5	eShop	eShop	90	90	18	14.5	22.5
24×2	eShop	–	90	–	18	14.5	22
25×1,5	eShop	–	90	–	18	14.5	23.5
26×1,5	eShop	–	90	–	18	14.5	24.5
27×1,5	eShop	–	90	–	20	16	25.5
27×2	eShop	–	90	–	20	16	25
30×1,5	eShop	–	90	–	22	18	28.5
30×2	eShop	–	90	–	22	18	28
32×1,5	eShop	–	90	–	22	18	30.5

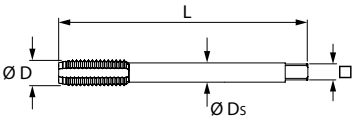
G | 55° | HSS | DIN 5157 | h9 | ≤3×D | ≤3×D

2-piece set

Hand tap sets

13 0550/0660 – 2-piece set **comprising taper and plug tap.**

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).





No. 1 – Taper tap



No. 2 – Plug tap

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
13 0550–13 0660	○	○	○	●	●	●											○	●	●				○

G	11G 13 0550 Garant	11G 13 0560	12G 13 0660 HOLEX	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
	Hand tap set	Hand tap **Plug tap**	Hand tap set		mm	mm	mm	mm	mm
G1/8	eShop	eShop	eShop	28	9.73	63	7	5.5	8.8
G1/4	eShop	eShop	eShop	19	13.16	70	11	9	11.8
G3/8	eShop	eShop	eShop	19	16.66	70	12	9	15.25
G1/2	eShop	eShop	eShop	14	20.96	80	16	12	19
G5/8	eShop	–	–	14	22.91	80	18	14.5	21
G3/4	eShop	eShop	eShop	14	26.44	90	20	16	24.5
G1	eShop	eShop	eShop	11	33.25	100	25	20	30.75
G1.1/4	eShop	–	–	11	41.91	125	32	24	39.5
G1.1/2	eShop	–	–	11	47.8	140	36	29	45.25
G2	eShop	–	–	11	59.61	160	45	35	57

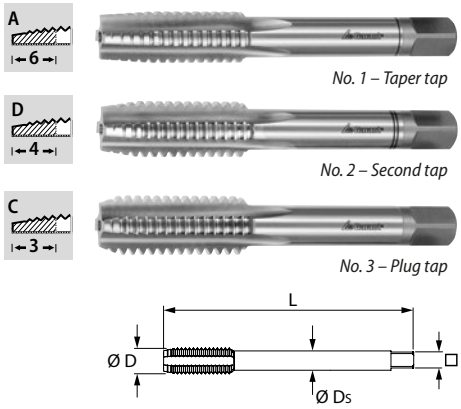
BSW | 55° | HSS | DIN 351 | h9 | ≤3×D | ≤3×D

3-piece set

Garant Hand tap sets

Set of three, **consisting of taper, second and plug tap.**

Application: **For Whitworth threads** to BSW standard BS84 in the tolerance field "medium".



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
13 0670	○	○	○	●	●	●											○	●	●			○	

BSW	11G	13 0670 Hand tap set	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
W1/8		eShop	40	3.18	40	3.5	2.7	2.5
W5/32		eShop	32	3.97	45	4.5	3.4	3.1
W3/16		eShop	24	4.76	50	5.5	4.3	3.6
W7/32		eShop	24	5.56	50	6	4.9	4.4
W1/4		eShop	20	6.35	56	6	4.9	5.1
W5/16		eShop	18	7.94	63	6	4.9	6.5
W3/8		eShop	16	9.53	70	7	5.5	7.9
W1/2		eShop	12	12.7	80	9	7	10.5
W5/8		eShop	11	15.88	90	12	9	13.5
W3/4		eShop	10	19.05	105	14	11	16.5
W7/8		eShop	9	22.23	110	18	14.5	19.25
W1		eShop	8	25.4	110	20	16	22

13

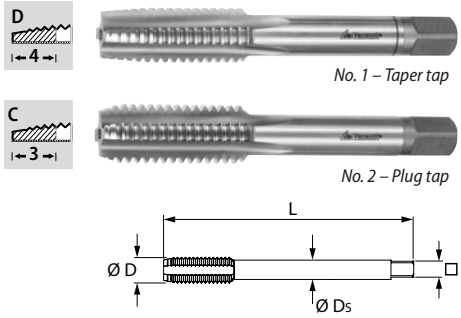
UNC | 60° | HSS | DIN 351 | 2B | h9 | ≤3×D | ≤3×D

2-piece set

Garant Hand tap sets

2-piece set **comprising taper and plug tap.**

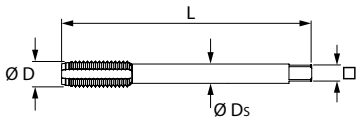
Application: **For UNC uniform coarse threads** ASME – B1.1.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
13 0700	○	○	○	●	●	●											○	●	●			○	

UNC	11G	13 0700 Hand tap set	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
2-56		eShop	56	2.18	36	2.8	2.1	1.85
3-48		eShop	48	2.51	40	2.8	2.1	2.1
4-40		eShop	40	2.84	40	3.5	2.7	2.35
6-32		eShop	32	3.51	45	4	3	2.85
8-32		eShop ■	32	4.16	45	4.5	3.4	3.5
10-24		eShop	24	4.83	50	5.5	4.3	3.9
12-24		eShop	24	5.49	50	6	4.9	4.5
1/4-20		eShop ■	20	6.35	56	6	4.9	5.1
5/16-18		eShop ■	18	7.94	63	6	4.9	6.6
3/8-16		eShop	16	9.53	70	7	5.5	8
7/16-14		eShop	14	11.11	75	8	6.2	9.4
1/2-13		eShop	13	12.7	80	9	7	10.8
5/8-11		eShop	11	15.88	90	12	9	13.5
3/4-10		eShop	10	19.05	105	14	11	16.5

UNF | 60° | HSS | DIN 2181 | 2B | D ⊢4⊣ | C ⊢3⊣ | h9 | ≤3×D | ≤3×D



Garant Hand tap sets

2-piece set **comprising taper and plug tab.**

Application: **For UNF uniform fine threads** ASME – B1.1.

2-piece set



No. 1 – Taper tap

No. 2 – Plug tap

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
13 0750	○	○	○	●	●	●											○	●	●			○	

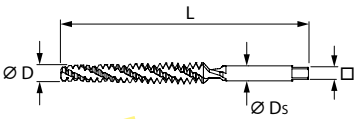
UNF	11G 13 0750 Hand tap set	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
10-32	eShop	32	4.83	50	5.5	4.3	4.1
1/4-28	eShop	28	6.35	50	6	4.9	5.5
5/16-24	eShop	24	7.94	56	6	4.9	6.9
3/8-24	eShop	24	9.53	63	7	5.5	8.5
7/16-20	eShop	20	11.11	63	8	6.2	9.9
1/2-20	eShop	20	12.7	63	9	7	11.5
9/16-18	eShop	18	14.29	70	11	9	12.9
5/8-18	eShop	18	15.88	70	12	9	14.5

TR | 30° | HSS E | Standard | DIN 103 7H | h9 | ≤1.5×D

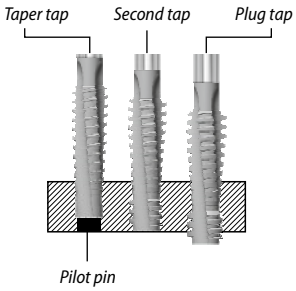
Garant Trapezoidal hand tap sets

13 0760 – ■ **Taper tap with long pilot pin**
■ **Plug tap tolerance 7H**
3-piece set, **consisting of taper, second, and plug tap.**
13 0790 – ■ **Plug tap tolerance 7H**

Note: **Tool unsuitable for reversing out.**



3-piece set





No. 1 – Taper tap

No. 2 – Second tap

No. 3 – Plug tap

13 0760

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 0760–13 0790	○	○	○	●	●	●								●	○	○	●	●	●				

Tr	11G 13 0760 Trapezoidal hand tap set	11G 13 0790 Individual trapezoidal hand tap **Plug tap**	Thread pitch mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
TR8×1,5	eShop	eShop	1.5	80	6	4.9	6.6
TR10×2	eShop	eShop	2	90	7	5.5	8.2
TR10×3	eShop	eShop	3	100	7	5.5	7.25
TR12×3	eShop	eShop	3	110	8	6.2	9.25
TR14×3	eShop	eShop	3	130	10	8	11.25
TR14×4	eShop	eShop	4	130	9	7	10.25
TR16×4	eShop	eShop	4	140	11	9	12.25
TR18×4	eShop	eShop	4	150	12	9	14.25
TR20×4	eShop	eShop	4	160	15	12	16.25
TR22×5	eShop	eShop	5	180	16	12	17.25
TR24×5	eShop	eShop	5	190	18	14.5	19.25

M | HSS | Standard | DIN 13 | ISO 2 6H | 60° | B 4 | ≤1.5×D

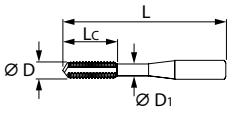
HOLEX Tap bit with a spiral point

With 1/4 inch hexagon shank to DIN 3126 C 6.3.

Application: Ideal for repair and assembly work in mobile situations.



13 0992



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 0992	○	●		●	●	○								○					●				

M	12H 13 0992 Tap bit vaporised	Thread pitch mm	L mm	L_c mm	Ø D_1 mm	Tapping hole Ø mm
M3	eShop	0.5	33	10	2.2	2.5
M4	eShop	0.7	35	11	2.9	3.3
M5	eShop	0.8	36	16	3.8	4.2
M6	eShop	1	39	16	4.5	5
M8	eShop	1.25	40	18	6	6.8
M10	eShop	1.5	41	21	7	8.5
M12	eShop	1.75	52	22	10	10.2

Tap bit set



13 0996

for metric threads	M3-10
12K 13 0996 Tap bit set with coupling shank	eShop
Content: 1 each tap bit 130992	Size M3; M4; M5; M6; M8; M10
1 coupling piece No. 675025	Size 6.3

Vision is our most valuable sense. Protect it! Safety glasses – VOLUME 4

Around 85% of the impressions perceived by your senses are received by our eyes.
So it is more important than ever to protect our eyes against any sort of negative influences.

Safety glasses for every challenge.
We offer the right safety glasses for every situation. Our range includes a wide range of models that meet the highest safety standards while being very comfortable to wear – whether you need safety glasses with side arms, over-specs, safety goggles or prescription safety glasses.

All further product information can be found in our **eye protection** product group in **Volume 4** or in the **eShop**.



M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | B 4 | h9 | ≤4×D

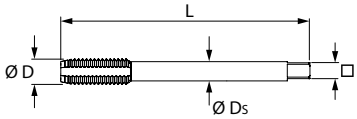
Garant GARANT Master Tap Alu through hole machine tap

High-performance tap, specially developed for **aluminium and non-ferrous alloys. Extra-long clamping slots** and neck length for usable **thread depth up to 4×D.**

- **HSS-E-PM tool material** for high cutting edge stability.
- Ultra-smooth **DLC coating** for wear resistance and avoidance of edge build-up.
- **Extra-long flute geometry.**
  13 1115 – With extra long shank.


13 1110


13 1115



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
13 1110/1115	35	32	20	20		18	18										18	25	●	●	●		

M	13 1110	13 1115	Thread pitch	L		Ø D_s	□	Tapping hole Ø
	GARANT Master Tap Alu machine tap							
	DLC	extra long DLC	mm	13 1110 mm	13 1115 mm	mm	mm	mm
M1,6	eShop	–	0.35	40	–	2.5	2.1	1.25
M2	eShop	–	0.4	47	–	2.8	2.1	1.6
M2,5	eShop	–	0.45	55	–	2.8	2.1	2.05
M3	eShop	eShop	0.5	56	100	3.5	2.7	2.5
M4	eShop	eShop	0.7	65	125	4.5	3.4	3.3
M5	eShop	eShop	0.8	72	160	6	4.9	4.2
M6	eShop	eShop	1	85	160	6	4.9	5
M8	eShop	eShop	1.25	105	180	8	6.2	6.8
M10	eShop	eShop	1.5	115	200	10	8	8.5
M12	eShop	eShop	1.75	115	200	9	7	10.2
M14	eShop	–	2	125	–	11	9	12
M16	eShop	eShop	2	135	200	12	9	14
M20	eShop	eShop	2.5	160	200	16	12	17.5

13

Garant GARANT MASTER TAP ALU

Developed for the highest performance in non-ferrous metals.

- **Dynamic flute geometry**
  which has been perfectly adapted to non-ferrous metals.
- **Outstanding tool life**
  thanks to special DLC coating.
- **High wear resistance**
  thanks to high-quality HSS-E-PM tool material.
- **Developed for maximum thread depths**
  up to 4XD for through-hole tapped bores.



Garant MASTER TAP ALU

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | B 4 | h6 DIN 1835 B | ≤2.5×D

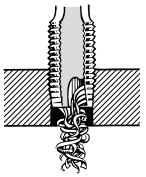
Garant Synchronised through hole machine taps

Sturdy design with spiral point and shank to DIN 1835-B. Special geometry for use on machines with **synchronised spindle drives.** Guidance is provided by the synchronising spindle of the machine.
With the latest generation of special **DLC coating sp²** for optimum tool life.
For use with **emulsion** (fat content minimum 8%).

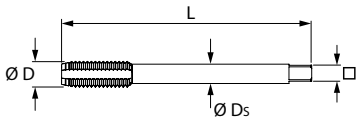
Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.



13 1125



The spiral point evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	Cu	CuZn	GRP	CRP
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13 1125	30	30	25	25					5			15		25	55	35	6	4

M	11H	13 1125	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		Machine tap for synchronised spindles HSS-E-PM DLC	mm	mm	mm	mm	mm
M2,5		eShop	0.45	70	6	4.9	2.05
M3		eShop	0.5	70	6	4.9	2.5
M4		eShop	0.7	70	6	4.9	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	12	9	10.2
M16		eShop	2	110	12	9	14

M | 60° | Carbide | DIN 13 | ISO 2X 6HX | C 3 | h6 | ≤3×D | ≤3×D

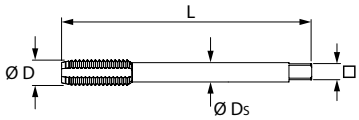
DIN 371 ≤ M10 | DIN 376 M12

Garant Carbide through hole and blind hole machine tap, for GRP/CRP

For use with **emulsion** (fat content minimum 8%).
Size M12 – **Carbide inserts.**
Size M3–M10 – **Solid carbide version.**
Advantage: **Particularly strong, optimal self-guidance.**



13 1140



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N
13 1140	18	35	28	30													24	10

M	11H	13 1140	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		Carbide machine tap	mm	mm	mm	mm	mm
M3		eShop	0.5	56	3.5	2.7	2.5
M4		eShop	0.7	63	4.5	3.4	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	9	7	10.2

M | 60° | DIN 13 | h9

HSS E ≤ M24 | HSS ≥ M27 | ISO 1 4H ≤ M1.4 | ISO 2 6H ≥ M1.6

Through hole machine tap

With spiral point.

13 1150 – Size M2.3 and M2.6 to old DIN profile.

13 1200 – **All sizes:** Shank **to DIN 376(= shank Ø tapered),** thus suitable for greater operating depths Sizes M2; M2.5; M3 **without square.**

13 1250 – (Form C) 2–3 turns chamfer lead – **without spiral point.** Can also be used for blind holes.

With TiN coating for:

- Improved wear properties.
- Lower tendency to edge build-up.
- Higher cutting speeds possible.

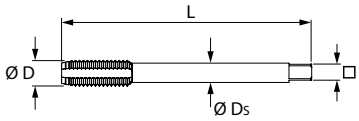
For use with **emulsion** (fat content minimum 8%).

13 1265 – **HOLEX Clever Tap:**
Sturdy tap for conventional standard applications. High-quality HSS-E tool material and geometry for steels. Surface: Bronze-coloured tempered thread profile.

13 1760 – **With extra long shank.**
≤ M10: Shank **to DIN 371;**
≥ M12: Shank **to DIN 376.**

Advantage:

13 1760 – Designed **for tapping threads where access is difficult.**



DIN 371 | B | ≤3×D


13 1150

DIN 376 | B | ≤3×D


13 1200

DIN 371 | DIN 376 | C | ≤2×D

≤ M10 | ≥ M12


13 1250

DIN 371 | DIN 376 | B | ≤3×D

≤ M10 | ≥ M12


13 1265

Standard | B | ≤3×D


13 1760

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
13 1150/1200/1760			13		15	15													●	○			
13 1250		16			20	19													●	●			
13 1265		13	13		12	12	6												●	●			

M	1TH 13 1150 Garant Machine tap Form B DIN 371	1TH 13 1200 Garant Machine tap Form B DIN 376	1TH 13 1250 Machine tap Form C DIN 371/376 TiN	12H 13 1265 HOLEX HOLEX Clever Tap machine tap Form B DIN 371/376	1TH 13 1760 Garant Machine tap Form B, extra long	Thread pitch	L		Ø D_s		□		Tapping hole Ø
							13 1150 13 1200 13 1250 13 1265	13 1760	13 1150 13 1250 13 1265 13 1760	13 1200	13 1150 13 1250 13 1265 13 1760	13 1200	
						mm	mm	mm	mm	mm	mm	mm	mm
M1	eShop	–	–	–	–	0.25	40	–	2.5	–	2.1	–	0.75
M1,2	eShop	–	–	–	–	0.25	40	–	2.5	–	2.1	–	0.95
M1,4	eShop	–	–	–	–	0.3	40	–	2.5	–	2.1	–	1.1
M1,6	eShop	–	–	–	–	0.35	40	–	2.5	–	2.1	–	1.25
M1,7	eShop	–	–	–	–	0.35	40	–	2.5	–	2.1	–	1.3
M1,8	eShop	–	–	–	–	0.35	40	–	2.5	–	2.1	–	1.45
M2	eShop	eShop	–	–	–	0.4	45	–	2.8	1.4	2.1	–	1.6
M2,2	eShop	–	–	–	–	0.45	45	–	2.8	–	2.1	–	1.75
M2,3	eShop	–	–	–	–	0.4	45	–	2.8	–	2.1	–	1.9
M2,5	eShop	eShop	–	–	–	0.45	50	–	2.8	1.8	2.1	–	2.05
M2,6	eShop	–	–	–	–	0.45	50	–	2.8	–	2.1	–	2.1
M3	eShop	eShop	eShop	eShop	eShop	0.5	56	112	3.5	2.2	2.7	–	2.5
M3,5	eShop	–	–	–	–	0.6	56	–	4	–	3	–	2.9
M4	eShop	eShop	eShop	eShop	eShop	0.7	63	112	4.5	2.8	3.4	2.1	3.3
M5	eShop	eShop	eShop	eShop	eShop	0.8	70	125	6	3.5	4.9	2.7	4.2
M6	eShop	eShop	eShop	eShop	eShop	1	80	125	6	4.5	4.9	3.4	5
M7	eShop	–	–	–	–	1	80	–	7	–	5.5	–	6
M8	eShop	eShop	eShop	eShop	eShop	1.25	90	140	8	6	6.2	4.9	6.8
M10	eShop	eShop	eShop	eShop	eShop	1.5	100	160	10	7	8	5.5	8.5
M12	–	eShop	eShop	eShop	eShop	1.75	110	180	9	9	7	7	10.2
M14	–	eShop	eShop	–	–	2	110	–	11	11	9	9	12
M16	–	eShop	eShop	eShop	eShop	2	110	220	12	12	9	9	14
M18	–	eShop	–	–	–	2.5	125	–	–	14	–	11	15.5
M20	–	eShop	eShop	eShop	eShop	2.5	140	280	16	16	12	12	17.5
M22	–	eShop	–	–	–	2.5	140	–	–	18	–	14.5	19.5
M24	–	eShop	eShop	eShop	–	3	160	–	18	18	14.5	14.5	21
M27	–	eShop	–	–	–	3	160	–	–	20	–	16	24
M30	–	eShop	eShop	–	–	3.5	180	–	22	22	18	18	26.5
M33	–	eShop	–	–	–	3.5	180	–	–	25	–	20	29.5
M36	–	eShop	eShop	–	–	4	200	–	28	28	22	22	32

M | 60° | HSS E-PM | DIN 13 | ISO 2 6H | h9 | ≤3×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant

Through hole machine tap

With spiral point.

13 1290 – (Form CS) 2 – -3 turns chamfer lead – **with spiral point.**

Advantage: Greater wear resistance.

B 4

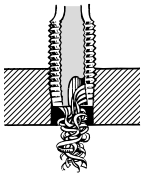


13 1280

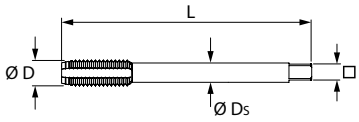
CS 3



13 1290



The spiral point evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 1280/1290		15		18	18	18	9												●	○			

M	11H 13 1280 Machine tap HSS-E-PM Form B	11H 13 1290 Machine tap HSS-E-PM Form CS	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M3	eShop	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	1.75	110	9	7	10.2
M16	eShop	eShop	2	110	12	9	14
M20	eShop	eShop	2.5	140	16	12	17.5

M | 60° | HSS E | DIN 13 | ISO 3 6G | B 4 | h9 | ≤3×D

Garant

Through hole machine tap

With spiral point.

Tolerance class ISO 3 / 6G = oversize 0.02 – 0.04 mm.

13 1350 – **All sizes:** Shank **to DIN 376 (= shank Ø relieved);** thus suitable for greater operating depths.

Application: For components which are **galvanised** after threading or shrink slightly when hardened.

DIN 371

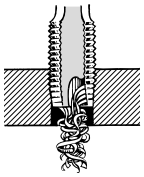


13 1300

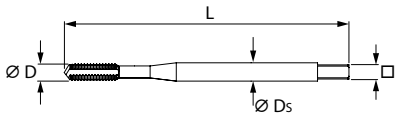
DIN 376



13 1350



The spiral point evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 1300/1350		13		15	15														●	○			

M	11H 13 1300 Machine tap 6G DIN 371	11H 13 1350 Machine tap 6G DIN 376	Thread pitch	L	Ø D_s		□		Tapping hole Ø
					13 1300	13 1350	13 1300	13 1350	
			mm	mm	mm	mm	mm	mm	mm
M2	eShop	–	0.4	45	2.8	–	2.1	–	1.6
M2,5	eShop	–	0.45	50	2.8	–	2.1	–	2.05
M3	eShop	–	0.5	56	3.5	–	2.7	–	2.5
M3,5	eShop	–	0.6	56	4	–	3	–	2.9
M4	eShop	–	0.7	63	4.5	–	3.4	–	3.3
M5	eShop	–	0.8	70	6	–	4.9	–	4.2
M6	eShop	–	1	80	6	–	4.9	–	5
M8	eShop	eShop	1.25	90	8	6	6.2	4.9	6.8
M10	eShop	eShop	1.5	100	10	7	8	5.5	8.5
M12	–	eShop	1.75	110	–	9	–	7	10.2
M14	–	eShop	2	110	–	11	–	9	12
M16	–	eShop	2	110	–	12	–	9	14
M20	–	eShop	2.5	140	–	16	–	12	17.5

M | 60° | HSS E | DIN 352 | DIN 13 | ISO 2 6H | B 4 | h9 | ≤3×D

Garant

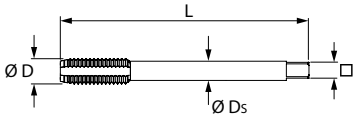
Spiral point tap for through holes, short

With spiral point.

Application: **As hand or machine tap.**



13 1450



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 1450		13		15	15													

M	11H	13 1450 Spiral point tap **short**	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M2		eShop	0.4	36	2.8	2.1	1.6
M2,5		eShop	0.45	40	2.8	2.1	2.05
M3		eShop	0.5	40	3.5	2.7	2.5
M4		eShop	0.7	45	4.5	3.4	3.3
M5		eShop	0.8	50	6	4.9	4.2
M6		eShop	1	50	6	4.9	5
M8		eShop	1.25	56	6	4.9	6.8
M10		eShop	1.5	70	7	5.5	8.5
M12		eShop	1.75	75	9	7	10.2
M16		eShop	2	80	12	9	14

M | 60° | HSS E | DIN 13 | ISO 2 6H | B 4 | h9 | ≤3×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant

Through hole machine tap with interrupted thread

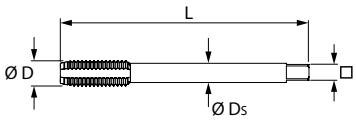
Spiral point.

With interrupted thread, this **reduces torque** and **improves distribution of the lubricant.**

Advantage: **Ideally suited for use on resilient materials and thin-walled components.**
Low frictional resistance, thus no material deformation is caused.



13 1650



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
13 1650		13		15	15												9	

M	11H	13 1650 Machine tap **with interrupted thread**	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M2		eShop	0.4	45	2.8	2.1	1.6
M3		eShop	0.5	56	3.5	2.7	2.5
M4		eShop	0.7	63	4.5	3.4	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	9	7	10.2
M16		eShop	2	110	12	9	14
M20		eShop	2.5	140	16	12	17.5

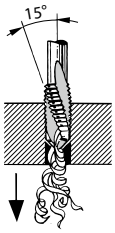
M | 60° | DIN 13 | ISO 2 6H | D ↔4↔ | 15-20° | h9 | ≤3×D

HSS E	HSS	DIN 371	DIN 376
≤ M24	M30	≤ M10	≥ M12

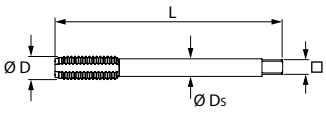
Garant Through hole machine tap

Sturdy design with 15° left-hand spiral.
Advantage: **Particularly suitable for interrupted cuts** (e.g. longitudinal groove in the hole).


13 1700



The left hand spiral evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
13 1700		13		15	15												9		●	○			

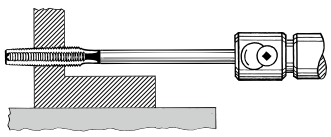
M	11H	13 1700 Garant Machine tap	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M2		eShop	0.4	45	2.8	2.1	1.6
M2,5		eShop	0.45	50	2.8	2.1	2.05
M3		eShop	0.5	56	3.5	2.7	2.5
M3,5		eShop	0.6	56	4	3	2.9
M4		eShop	0.7	63	4.5	3.4	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	9	7	10.2
M14		eShop	2	110	11	9	12
M16		eShop	2	110	12	9	14
M18		eShop	2.5	125	14	11	15.5
M20		eShop	2.5	140	16	12	17.5
M24		eShop	3	160	18	14.5	21
M30		eShop	3.5	180	22	18	26.5

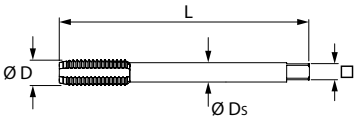
M | 60° | HSS | DIN 357 | DIN 13 | ISO 2 6H | A ↔6↔ | h9 | ≤2×D

Garant Through hole machine tap long

Long shank (with tapered shank Ø for greater operating depths).
Advantage: Particularly suitable **for tapping holes where access is difficult.**


13 1800





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
13 1800		13		15	15												9		●	○			

M	11H	13 1800 Machine tap long	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M2		eShop	0.4	70	1.4	–	1.6
M2,5		eShop	0.45	70	1.8	–	2.05
M3		eShop	0.5	70	2.2	–	2.5
M4		eShop	0.7	90	2.8	2.1	3.3
M5		eShop	0.8	100	3.5	2.7	4.2

M	11H	13 1800 Machine tap long	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M6		eShop	1	110	4.5	3.4	5
M8		eShop	1.25	125	6	4.9	6.8
M10		eShop	1.5	140	7	5.5	8.5
M12		eShop	1.75	180	9	7	10.2
M16		eShop	2	200	12	9	14

M | 60° | HSS E | DIN 13 | ISO 2 6H | B 4 | h9 | ≤3×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

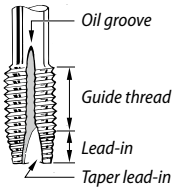
Garant

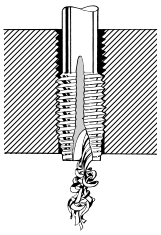
Through hole machine tap

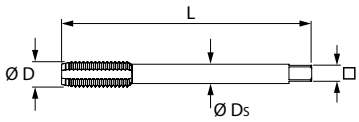
Strong spiral point. Guide section with oil grooves, but without chip flutes.
Advantage: **Particularly strong, optimum self-guidance** and **no recutting** when reversed.



13 1850







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
13 1850		13		**15**	**15**	**15**											9	13	●	○			

M	11H 13 1850 Machine tap	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
M2	eShop	0.4	45	2.8	2.1	1.6
M2,5	eShop	0.45	50	2.8	2.1	2.05
M3	eShop	0.5	56	3.5	2.7	2.5
M3,5	eShop	0.6	56	4	3	2.9
M4	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	0.8	70	6	4.9	4.2

M	11H 13 1850 Machine tap	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
M6	eShop	1	80	6	4.9	5
M8	eShop	1.25	90	8	6.2	6.8
M10	eShop	1.5	100	10	8	8.5
M12	eShop	1.75	110	9	7	10.2
M16	eShop	2	110	12	9	14
M20	eShop	2.5	140	16	12	17.5

M | 60° | HSS E | DIN 13 | ISO 2 6H | B 4 | h9 | ≤2×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

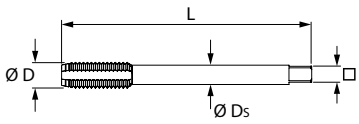
Garant

Through hole machine tap with interrupted thread

Spiral point.
With interrupted thread, this **reduces torque** and **improves distribution of the lubricant.**
Advantage: **Particularly suitable for thin-walled components.** Low frictional resistance, thus no material deformation is caused.
Recommendation: For **TOOLOX materials** we recommend **deviating from the DIN data** (see table) by drilling the tapping hole Ø **0.05** to **0.3 mm** larger.



13 1900



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
13 1900		13	**13**	15	15	**15**	**6**							**3**				**13**	●	○			

M	11H 13 1900 Machine tap **with interrupted thread**	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
M3	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	0.8	70	6	4.9	4.2
M6	eShop	1	80	6	4.9	5
M8	eShop	1.25	90	8	6.2	6.8
M10	eShop	1.5	100	10	8	8.5
M12	eShop	1.75	110	9	7	10.2
M16	eShop	2	110	12	9	14
M20	eShop	2.5	140	16	12	17.5

M | 60° | HSS E | DIN 13 | ISO 2X 6HX | C 3 | h9 | ≤1.5×D | ≤1.5×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant

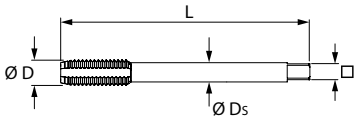
Through and blind hole machine taps

Sturdy version.

Recommendation: For **TOOLOX** and **HARDOX materials** we recommend **deviating from the DIN data** (see table) by drilling the tapping hole ∅ **0.05** to **0.3 mm** larger.



13 1950



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	M					
13 1950					15	**15**	**6**	**3**						**4**	3	3			●	○			

M	11H 13 1950 Machine tap	Thread pitch mm	L mm	∅ D_s mm	□ mm	Tapping hole ∅ mm
M2,5	eShop	0.45	50	2.8	2.1	2.05
M3	eShop	0.5	56	3.5	2.7	2.5
M3,5	eShop	0.6	56	4	3	2.9
M4	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	0.8	70	6	4.9	4.2
M6	eShop	1	80	6	4.9	5
M8	eShop	1.25	90	8	6.2	6.8
M10	eShop	1.5	100	10	8	8.5
M12	eShop	1.75	110	9	7	10.2
M14	eShop	2	110	11	9	12
M16	eShop	2	110	12	9	14
M20	eShop	2.5	140	16	12	17.5

13

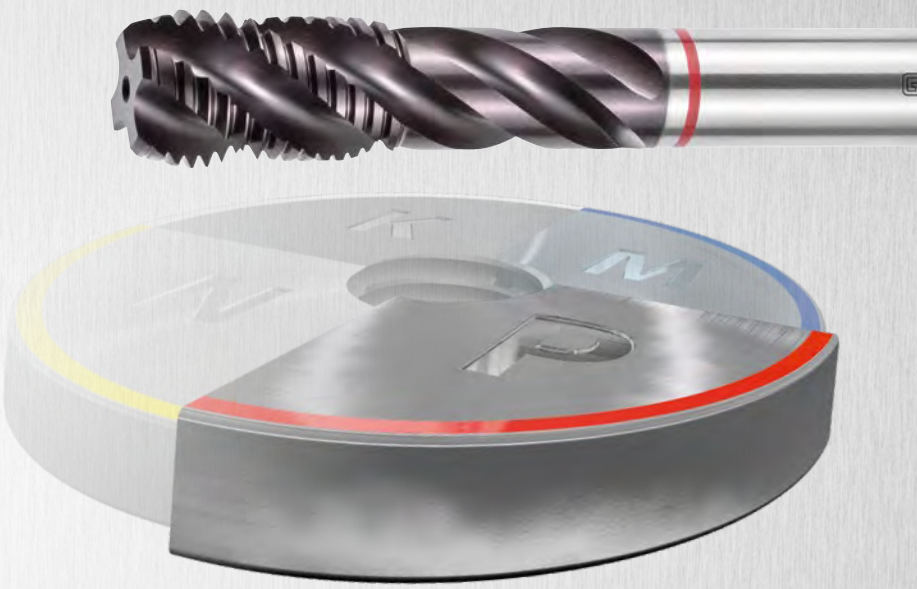
Garant

THE PROBLEM SOLVER – DEVELOPED FOR HIGH-STRENGTH STEELS.

The GARANT Master Tap STEEL^{HT}: Developed for difficult-to-machine steels and materials with high tensile strength.

Garant MASTER TAP STEEL^{HT}

- Maximum performance.
- Outstanding for high-strength steels.
- Reliable.



Find out more:
The GARANT Master Tap range for reliable, economical production
https://hog.tools/GARANT-Master-Tap

M | 60° | HSS E-PM | DIN 13 | B 4 | h9 | ≤3×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant GARANT Master Tap Steel^{HT} through hole machine tap

High-performance tap, specially developed for use in **steels with high tensile strength** and for **difficult-to-machine materials. Strong spiral point,** for process stability at high cutting forces.

- **HSS-E-PM tool material** – for **very high cutting edge stability.**
- **Optimised honed cutting edges.**
- **TiCN coating –** for **maximum wear protection.**

13 1946 – **Tolerance class: ISO 3X/6GX.**

Application:

13 1946 – For components which are galvanised or shrink slightly when hardened.

Recommendation: For **TOOLOX and HARDOX materials we recommend deviating from the DIN data** (see table) by **selecting a larger tapping hole ∅.**



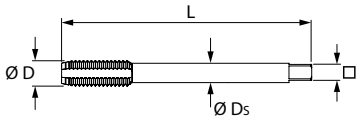
13 1940

ISO 2X 6HX



13 1946

ISO 3X 6GX



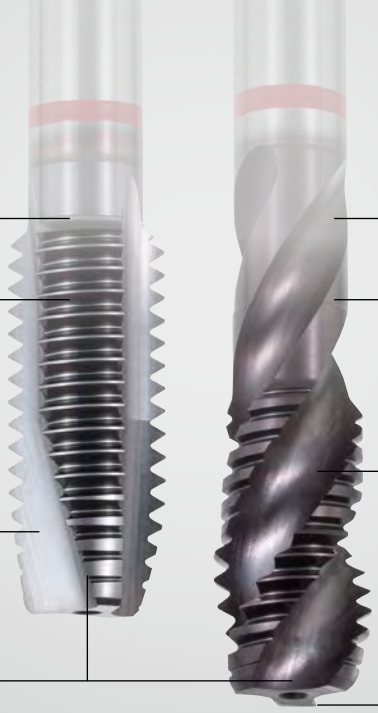
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	S					
13 1940/1946					30	20	15	12	5						15	5	7	5	●	●			

M	13 1940	13 1946	Thread pitch	L	Ø D_s	□	Tapping hole ∅
	GARANT Master Tap Steel^{HT} machine tap						
	HSS-E-PM Form B 6HX TiCN	HSS-E-PM Form B 6GX TiCN	mm	mm	mm	mm	mm
M3	eShop	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	1.75	110	9	7	10.2
M14	eShop	eShop	2	110	11	9	12
M16	eShop	eShop	2	110	12	9	14
M20	eShop	eShop	2.5	140	16	12	17.5
M24	eShop	eShop	3	160	18	14.5	21
M27	eShop	–	3	160	20	16	24
M30	eShop	–	3.5	180	22	18	26.5

13

Garant GARANT MASTER TAP STEEL^{HT} – THE PROBLEM-SOLVER FOR HIGH-STRENGTH STEELS

Discover the outstanding characteristics of the GARANT Master Tap Steel^{HT}



Through hole

TiCN coating.
Very smooth coating surface. Reduction of cutting resistance in the push direction.

Special spiral point.
High stability.

HSS-E-PM substrate.
High cutting edge stability and wear resistance.

Blind hole

TiAlN coating.
High heat resistance.
Low frictional resistance.

Optimised guide thread.
High process reliability due to avoidance of chip jamming.

Without interference contours.
Threads can be tapped almost to the bottom of the hole.

M | 60° | HSS E-PM | DIN 13 | ISO 2X 6HX | C ⟷3⟷ | h9 | ≤1.5×D | ≤1.5×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

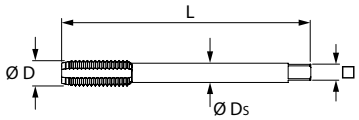
Garant Through and blind hole machine taps

Sturdy version.

Recommendation: For **very hard steels, TOOLOX** and **HARDOX materials** we recommend **deviating from the DIN data** (see table) by drilling the tapping hole ∅ **0.05** to **0.3 mm** larger. For use only with a length compensation chuck – even on machines with synchronised spindle drives.



13 2055



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	N					
13 2055							12	7	2					4	3	2		15	●				

M	11H	13 2055 Machine tap HSS-E-PM TiCN	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M4		eShop	0.7	63	4.5	3.4	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	9	7	10.2
M16		eShop	2	110	12	9	14
M20		eShop	2.5	140	16	12	17.5

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | B ⟷4⟷ | h6 DIN 1835 B | ≤2.5×D

Garant Synchronised through hole machine taps

Sturdy design with spiral point and shank to DIN 1835-B. Special geometry for use on machines with **synchronised spindle drives.** The tap is controlled by the synchronising spindle of the machine.

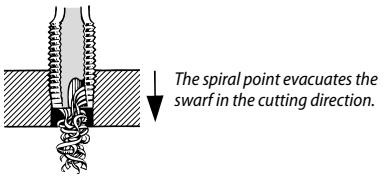
Special **TiAlN coating** for optimum tool life. For use with **emulsion** (fat content minimum 8%).

Recommendation: For **TOOLOX materials** we recommend **deviating from the DIN data** (see table) by drilling the tapping hole ∅ **0.05** to **0.3 mm** larger.

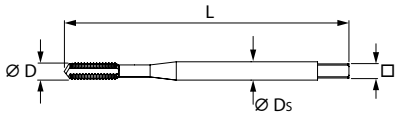
Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.



13 2065



The spiral point evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M	S					
13 2065				37	35	22	12	7						7	6				●	●	●		

M	11H	13 2065 Machine tap for synchronised spindles HSS-E-PM TiAlN	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M3		eShop	0.5	70	6	4.9	2.5
M4		eShop	0.7	70	6	4.9	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	12	9	10.2
M16		eShop	2	110	12	9	14

M | 60° | Solid carbide | DIN 371 | DIN 13 | ISO 2X 6HX | D ⊢4⊣ | h6 | ≤1.5×D | ≤2×D

Garant

Solid carbide machine tap for through and blind holes

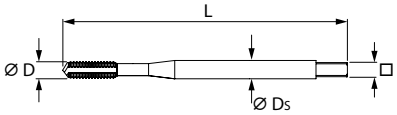


13 2080

Particularly **sturdy version.** For the highest performance demands.

Application: For use only with a length compensation chuck – even on machines with synchronised spindle drives.

Recommendation: For **very hard steels, TOOLOX** and **HARDOX materials** we recommend **deviating from the DIN data** (see table) by drilling the tapping hole Ø **0.05** to **0.3 mm** larger.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	N					
13 2080									3	2	1	1		5	4	3		18	●				

M	11H	13 2080	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		Solid carbide machine tap					
		TiAlN	mm	mm	mm	mm	mm
M3		eShop	0.5	63	4.5	3.4	2.5
M4		eShop	0.7	63	4.5	3.4	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	12	9	10.2

M | 60° | HSS E | DIN 13 | ISO 2X 6HX | h9 | ≤3×D

Garant

Through hole machine tap for stainless steels

DIN 371 ≤ M10 | DIN 376 ≥ M12



13 2150

B ⊢4⊣



13 2155

D ⊢4⊣ | 15°

Particularly sturdy design.

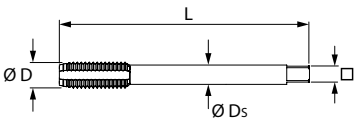
13 2150 – **Guide section with oil grooves,** but without chip flutes. **Lead chamfer form B, with strong spiral point.** Size M2.6 to the old DIN profile.

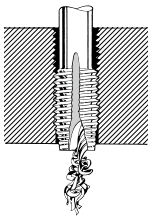
13 2155 – **Taper lead form D with 15° left-hand spiral.**

Advantage:

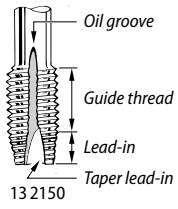
13 2150 – **Optimum self-guidance** and **no recutting** when reversed.

13 2155 – Special geometry enables **higher cutting speeds and long tool life in stainless steel.**





Swarf evacuation in cutting direction.



13 2150

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 2150		13		**15**	**15**	15								**6**			13		●	○			
13 2155		13		**15**	**15**	15								**13**			13		●	○			

M	11H	13 2150	11H	13 2155	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		Machine tap							
		Form B		Form D					
		vaporised		vaporised	mm	mm	mm	mm	mm
M2		eShop		–	0.4	45	2.8	2.1	1.6
M2,5		eShop		–	0.45	50	2.8	2.1	2.05
M2,6		eShop		–	0.45	50	2.8	2.1	2.1
M3		eShop		eShop	0.5	56	3.5	2.7	2.5
M4		eShop		eShop	0.7	63	4.5	3.4	3.3
M5		eShop		eShop	0.8	70	6	4.9	4.2
M6		eShop		eShop	1	80	6	4.9	5
M8		eShop		eShop	1.25	90	8	6.2	6.8
M10		eShop		eShop	1.5	100	10	8	8.5
M12		eShop		eShop	1.75	110	9	7	10.2
M14		eShop		–	2	110	11	9	12
M16		eShop		–	2	110	12	9	14
M20		eShop		–	2.5	140	16	12	17.5
M24		eShop		–	3	160	18	14.5	21

M | 60° | HSS E-PM | DIN 13 | B 4 | h9 | ≤3×D

Garant

GARANT Master Tap INOX through hole machine tap for stainless and acid-resistant steels

High-performance tap, specially developed for **good process reliability in stainless and acid-resistant steels** and **duplex materials.**

- **HSS-E-PM tool material** for maximum wear resistance
- The latest generation of **TiALN multi-layer coating**
- **Parameterised flute geometry** for optimum chip formation and **torsional rigidity**

13 2190 – With internal coolant supply

13 2193 – **Tolerance class: ISO 3X/6GX**. For components which are **galvanised** or shrink slightly when hardened.

13 2195 – **With extra long shank.**

13 2195 Size M3–M10 – Shank to DIN371.

13 2195 Size M12–M24 – Shank to DIN376.

Advantage:

13 2195 – Designed for tapping threads where access is difficult.



13 2180

DIN 371 | DIN 376 | ISO 2X 6HX

≤ M10 | ≥ M12



13 2190

DIN 371 | DIN 376 | ISO 2X 6HX

≤ M10 | ≥ M12



13 2193

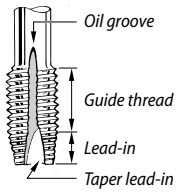
DIN 371 | DIN 376 | ISO 3X 6GX

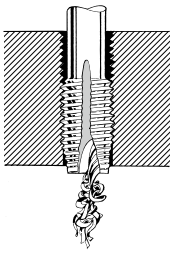
≤ M10 | ≥ M12



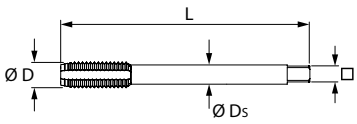
13 2195

Standard | ISO 2X 6HX





Chip evacuation in the direction of cutting.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 2180–13 2193		28			23	23	12							11	9				●	●			
13 2195		20			16	16	8							7	6				●	●			

M	13 2180	13 2190	13 2193	13 2195	Thread pitch	L		Ø D_s	□	Tapping hole Ø
	GARANT Master Tap INOX machine tap					13 2180 13 2190 13 2193	13 2195			
	HSS-E-PM Form B 6HX	HSS-E-PM IC / Form B 6HX	HSS-E-PM Form B 6GX	extra long HSS-E-PM Form B 6HX						
	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
M1,6	eShop	–	–	–	0.35	40	–	2.5	2.1	1.25
M2	eShop	–	eShop	–	0.4	45	–	2.8	2.1	1.6
M2,5	eShop	–	–	–	0.45	50	–	2.8	2.1	2.05
M2,6	eShop	–	–	–	0.45	50	–	2.8	2.1	2.1
M3	eShop	–	eShop	eShop	0.5	56	112	3.5	2.7	2.5
M4	eShop	–	eShop	eShop	0.7	63	126	4.5	3.4	3.3
M5	eShop	–	eShop	eShop	0.8	70	140	6	4.9	4.2
M6	eShop	eShop	eShop	eShop	1	80	160	6	4.9	5
M8	eShop	eShop	eShop	eShop	1.25	90	180	8	6.2	6.8
M10	eShop	eShop	eShop	eShop	1.5	100	200	10	8	8.5
M12	eShop	eShop	eShop	eShop	1.75	110	220	9	7	10.2
M14	eShop	eShop	eShop	eShop	2	110	220	11	9	12
M16	eShop	eShop	eShop	eShop	2	110	220	12	9	14
M20	eShop	eShop	eShop	eShop	2.5	140	280	16	12	17.5
M24	eShop	–	eShop	eShop	3	160	300	18	14.5	21

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | B 4 | h6 DIN 1835 B | ≤2.5×D

Garant

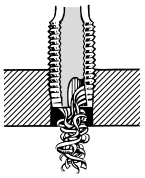
Synchronised through hole machine taps

Sturdy design with spiral point and shank to DIN 1835-B. Special geometry for use on machines with **synchronised spindle drives.** The tap is controlled by the synchronising spindle of the machine. Special **TiAlN-S coating** for optimum tool life. For use with **emulsion** (fat content minimum 8%).

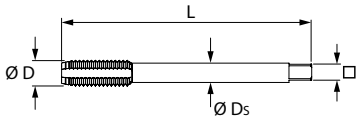
Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures maximum process reliability.



13 2280



The spiral point evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N
13 2280		40		37	35	22								12	10		35	

M	11H	13 2280	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		Machine tap for synchronised spindles HSS-E-PM TiAlN	mm	mm	mm	mm	mm
M2,5		eShop	0.45	70	6	4.9	2.05
M3		eShop	0.5	70	6	4.9	2.5
M4		eShop	0.7	70	6	4.9	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	12	9	10.2
M16		eShop	2	110	12	9	14

M | 60° | HSS E-PM | DIN 13 | ISO 2X 6HX | D 4 | 15° | h9 | ≤2×D

DIN 371 ≤ M12 | DIN 376 M16

Garant

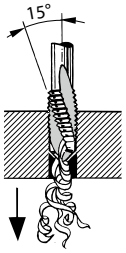
Through hole machine tap with interrupted thread

Sturdy design with 15° left-hand spiral. With interrupted thread, this **reduces torque** and **improves distribution of the lubricant.**
Particularly suitable for **titanium alloys** and **pure titanium.**

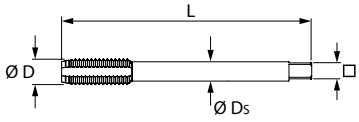
Advantage: **Ideally suited for use on resilient materials and thin-walled components.** Low frictional resistance, thus no material deformation is caused.



13 2400



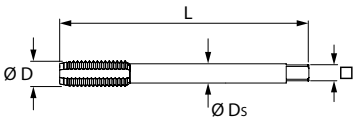
The left hand spiral evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 2400		15	15			18	9	3								4		

M	11H	13 2400	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		Through hole machine tap with interrupted thread HSS-E-PM	mm	mm	mm	mm	mm
M2,5		eShop	0.45	50	2.8	2.1	2.05
M3		eShop	0.5	56	3.5	2.7	2.5
M4		eShop	0.7	63	4.5	3.4	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	12	9	10.2
M16		eShop	2	110	12	9	14

M | 60° | DIN 13 | ISO 2X 6HX | B 4 | h9 | ≤2×D



Garant

Through hole machine tap for Ti-based and Ni-based alloys

Strong spiral point. Guide section with oil grooves, but without chip flutes.

13 2450 – Particularly suitable for **difficult to machine steels up to 850 N/mm²**. For use with **emulsion** (fat content minimum 8%).

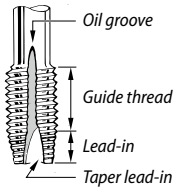
Advantage: **Particularly strong, optimum self-guidance** and **no recutting** when reversed.

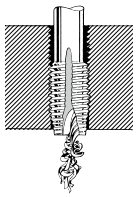


13 2420

HSS E-PM | DIN 371 | DIN 376

≤ M10 | ≥ M14





Chip clearance in the direction of cutting



13 2450

HSS E | DIN 371 | DIN 376

≤ M10 | ≥ M12

Suitable for/ v_c [m/min]	Alu	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	Hybrid	< 500 N	< 750 N	< 900 N	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	CuZn	MMC					
ISO code	N	N	N	N	N	N	N	N	N	P	P	P	M	M	S	S	N	N					
13 2420									●						6	2		○	●	●			
13 2450	16									20	19	19	8	6	4	2	16		●	●			

M	13 2420 Machine tap HSS-E-PM nitrided + vaporised	13 2450 Machine tap HSS-E TiCN	Thread pitch	L	Ø D_s 13 2420	Ø D_s 13 2450	□ 13 2420	□ 13 2450	Tapping hole Ø
			mm	mm	mm	mm	mm	mm	mm
M2	eShop	–	0.4	45	2.8	–	2.1	–	1.6
M2,5	eShop	–	0.45	50	2.8	–	2.1	–	2.05
M3	eShop	eShop	0.5	56	3.5	3.5	2.7	2.7	2.5
M4	eShop	eShop	0.7	63	4.5	4.5	3.4	3.4	3.3
M5	eShop	eShop	0.8	70	6	6	4.9	4.9	4.2
M6	eShop	eShop	1	80	6	6	4.9	4.9	5
M8	eShop	eShop	1.25	90	8	8	6.2	6.2	6.8

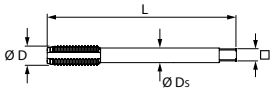
M	13 2420 Machine tap HSS-E-PM nitrided + vaporised	13 2450 Machine tap HSS-E TiCN	Thread pitch	L	Ø D_s 13 2420	Ø D_s 13 2450	□ 13 2420	□ 13 2450	Tapping hole Ø
			mm	mm	mm	mm	mm	mm	mm
M10	eShop	eShop	1.5	100	10	10	8	8	8.5
M12	eShop	eShop	1.75	110	12	9	9	7	10.2
M14	eShop	–	2	110	11	–	9	–	12
M16	eShop	eShop	2	110	12	12	9	9	14
M20	eShop	eShop	2.5	140	16	16	12	12	17.5
M24	eShop	eShop	3	160	18	18	14.5	14.5	21

13

M | 60° | HSS E | DIN 13 | ISO 2X 6HX | C 3 | h9 | ≤3×D | ≤3×D

DIN 371 | DIN 376

≤ M10 | ≥ M12



Garant

Through hole and blind hole machine tap for cast iron

With straight flutes and short chamfer lead (2 – 3 turns).

Advantage:

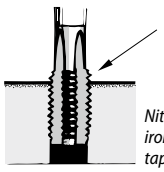
13 2550 –
- **Improved wear properties** due to hard coating.
- **Higher cutting speeds** due to reduction of thermal load on cutting edges.
- **Dry machining possible** on cast iron – cooling lubricant not necessary.



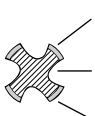
13 2500



13 2550



Nitrided surface – the abrasive cast iron material would heavily abrade taps which were not nitrided.



4 cutting edges (from size M5).

4 flutes (from size M5).

Particularly wear resistant due to nitrided surface (13 2500).

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	K					
13 2500																	13	9		●		○	
13 2550																	16	14		●		○	

M	13 2500 Machine tap for cast iron nitrided	13 2550 Machine tap for cast iron TiCN	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M2	eShop	eShop	0.4	45	2.8	2.1	1.6
M3	eShop	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	1.25	90	8	6.2	6.8

M	13 2500 Machine tap for cast iron nitrided	13 2550 Machine tap for cast iron TiCN	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
M10	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	1.75	110	9	7	10.2
M14	eShop	eShop	2	110	11	9	12
M16	eShop	eShop	2	110	12	9	14
M18	eShop	–	2.5	125	14	11	15.5
M20	eShop	eShop	2.5	140	16	12	17.5

M | 60° | Carbide | DIN 13 | ISO 2X 6HX | C 3 | h6 | ≤3×D | ≤3×D

DIN 371 ≤ M10 | DIN 376 ≤ M12

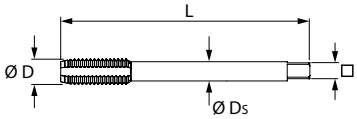
Garant

Carbide through and blind hole machine tap

Very sturdy, with short chamfer lead (2 – 3 turns).
Size M3–M10 – **Solid carbide version.**
Size M12; M16 – **Carbide inserts.**
Advantage: **Optimum self-guidance.**



13 2570



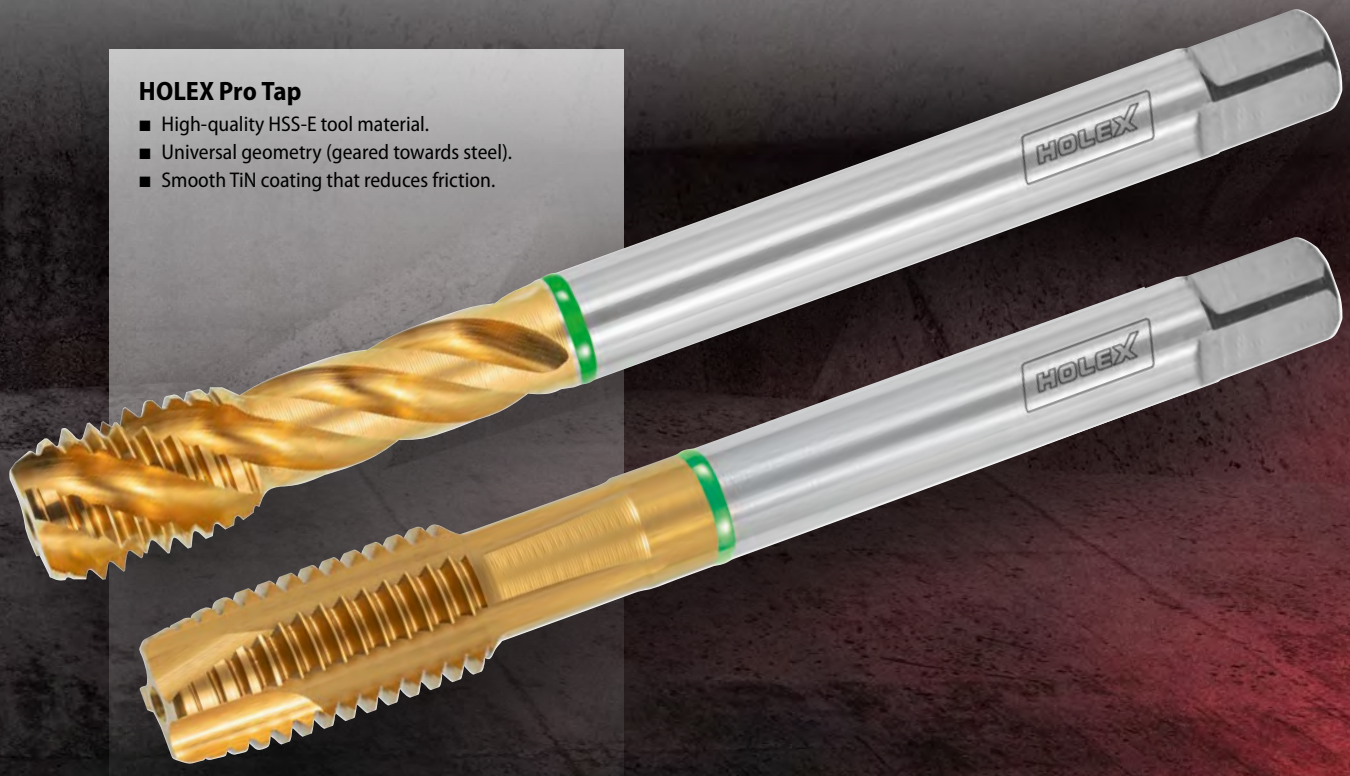
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
13 2570																	16	20		●		○	

M	11H 13 2570 Carbide machine tap	Thread pitch mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
M3	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	0.8	70	6	4.9	4.2
M6	eShop	1	80	6	4.9	5
M8	eShop	1.25	90	8	6.2	6.8
M10	eShop	1.5	100	10	8	8.5
M12	eShop	1.75	110	9	7	10.2
M16	eShop	2	110	12	9	14

HOLEX

ROBUST TAP
FOR A WIDE RANGE OF APPLICATIONS.

HOLEX Pro Tap
- High-quality HSS-E tool material.
- Universal geometry (geared towards steel).
- Smooth TiN coating that reduces friction.



M | 60° | HSS E | DIN 13 | ISO 2 6H | B ⟷4⟷ | h9 | ≤3×D

Through hole machine tap

13 2643 – Shank **to DIN 376 (shank Ø relieved)**; thus suitable for greater operating depths.

13 2680 – **HOLEX Pro Tap general-purpose tap.**
Sturdy design suitable for a wide spectrum of materials.
Improved HSS-E tool material with **low-friction TiN coating.**

13 2642/2643 – **GARANT Vap Tap general-purpose tap.**
Can be used **reliably** in a **wide range of materials.**
Optimised **neck and flute length** for **improved chip evacuation** when working on **deep** threads.
High-performance **HSS-E tool material** with higher vanadium content for improved **wear resistance.**
Surface vaporised for reduced edge build-up.

NEW



13 2642

DIN 371 ≤ M10 | DIN 376 ≥ M12

NEW



13 2643

DIN 376 ≥ M12



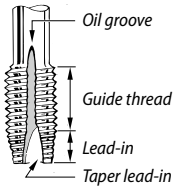
13 2645

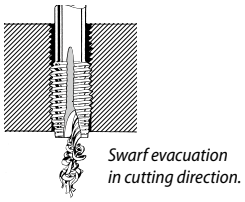
DIN 371 ≤ M10 | DIN 376 ≥ M12

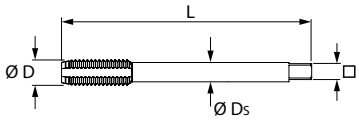


13 2680

DIN 371 ≤ M10 | DIN 376 ≥ M12







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 2642/2643	18	13		18	15	15	6							6			15	●	●	●			
13 2645		11		12	8	7	4							4			12	●	●				
13 2680	24	25	10	24	20	15	8							8			15	●	●	●			

M	13 2642 GARANT HSS-E vaporised	13 2643 GARANT HSS-E DIN 376 vaporised	13 2645 Machine tap HSS-E vaporised	13 2680 HOLEX Pro Tap machine tap HSS-E TiN	Thread pitch mm	L mm	Ø D_s 13 2642 13 2645 13 2680 mm	Ø D_s 13 2643 mm	□ 13 2642 13 2645 13 2680 mm	□ 13 2643 mm	Tapping hole Ø mm
M1,6	eShop	–	–	–	0.35	40	2.5	–	2.1	–	1.25
M1,7	eShop	–	–	–	0.35	40	2.5	–	2.1	–	1.3
M1,8	eShop	–	–	–	0.35	40	2.5	–	2.1	–	1.45
M2	eShop	–	–	eShop	0.4	45	2.8	–	2.1	–	1.6
M2,2	eShop	–	–	–	0.45	45	2.8	–	2.1	–	1.75
M2,3	eShop	–	–	–	0.4	45	2.8	–	2.1	–	1.9
M2,5	eShop	–	–	eShop	0.45	50	2.8	–	2.1	–	2.05
M3	eShop	eShop	eShop	eShop	0.5	56	3.5	2.2	2.7	–	2.5
M3,5	eShop	–	–	–	0.6	56	4	–	3	–	2.9
M4	eShop	eShop	eShop ■	eShop	0.7	63	4.5	2.8	3.4	2.1	3.3
M5	eShop	eShop	eShop ■	eShop	0.8	70	6	3.5	4.9	2.7	4.2
M6	eShop	eShop	eShop ■	eShop	1	80	6	4.5	4.9	3.4	5
M7	eShop	–	–	–	1	80	7	–	5.5	–	6
M8	eShop	eShop	eShop ■	eShop	1.25	90	8	6	6.2	4.9	6.8
M10	eShop	eShop	eShop ■	eShop	1.5	100	10	7	8	5.5	8.5
M12	eShop	–	eShop ■	eShop	1.75	110	9	–	7	–	10.2
M14	eShop	–	eShop	eShop	2	110	11	–	9	–	12
M16	eShop	–	eShop ■	eShop	2	110	12	–	9	–	14
M18	eShop	–	–	–	2.5	125	14	–	11	–	15.5
M20	eShop	–	eShop	eShop	2.5	140	16	–	12	–	17.5
M22	eShop	–	–	–	2.5	140	18	–	14.5	–	19.5
M24	eShop	–	eShop	eShop	3	160	18	–	14.5	–	21
M27	eShop	–	–	–	3	160	20	–	16	–	24
M30	eShop	–	–	eShop	3.5	180	22	–	18	–	26.5
M33	eShop	–	–	–	3.5	180	25	–	20	–	29.5
M36	eShop	–	–	–	4	200	28	–	22	–	32

M | 60° | HSS E-PM | DIN 13 | B | h9 | ≤3×D

Garant GARANT Master Tap through hole machine tap

Universal taps, designed for use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for a high degree of wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

13 2723 – **With internal coolant feed.**

13 2726 Size M3 – **Without square.**

13 2726 – **All sizes:** shank **to DIN 376 (= shank Ø relieved);** thus suitable for greater operating depths.

13 2721 Size M1–M1,4 – Corresponds to **ISO 1X/4HX**.

13 2721 Size M1,6–M30 – Corresponds to **ISO 2X/6HX**.



13 2721

DIN 371 | DIN 376 | ISO 1X 4HX | ISO 2X 6HX

≤ M10 | ≥ M12 | ≤ M1.4 | ≥ M1.6



13 2726

DIN 371 | DIN 376 | ISO 2X 6HX

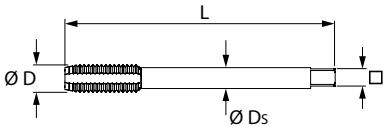
≤ M10 | ≥ M12



13 2723

DIN 371 | DIN 376 | ISO 2X 6HX

≤ M10 | ≥ M12



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 2721–13 2726	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			

M	13 2721	13 2726	13 2723	Thread pitch	L	Ø D_s		□		Tapping hole Ø
	Form B	Form B 6HX DIN 376	IC / Form B 6HX			13 2721 13 2723	13 2726	13 2721 13 2723	13 2726	
	AlTiX	AlTiX	AlTiX	mm	mm	mm	mm	mm	mm	mm
M1	eShop	–	–	0.25	40	2.5	–	2.1	–	0.75
M1,1	eShop	–	–	0.25	40	2.5	–	2.1	–	0.85
M1,2	eShop	–	–	0.25	40	2.5	–	2.1	–	0.95
M1,4	eShop	–	–	0.3	40	2.5	–	2.1	–	1.1
M1,6	eShop	–	–	0.35	40	2.5	–	2.1	–	1.25
M1,7	eShop	–	–	0.35	40	2.5	–	2.1	–	1.35
M1,8	eShop	–	–	0.35	40	2.5	–	2.1	–	1.45
M2	eShop ■	–	–	0.4	45	2.8	–	2.1	–	1.6
M2,2	eShop	–	–	0.45	45	2.8	–	2.1	–	1.75
M2,3	eShop	–	–	0.4	45	2.8	–	2.1	–	1.9
M2,5	eShop	–	–	0.45	50	2.8	–	2.1	–	2.05
M2,6	eShop	–	–	0.45	50	2.8	–	2.1	–	2.15
M3	eShop ■	eShop	–	0.5	56	3.5	2.2	2.7	–	2.5
M3,5	eShop	–	–	0.6	56	4	–	3	–	2.9
M4	eShop	eShop	–	0.7	63	4.5	2.8	3.4	2.1	3.3
M4,5	eShop	–	–	0.75	70	6	–	4.9	–	3.7
M5	eShop ■	eShop	–	0.8	70	6	3.5	4.9	2.7	4.2
M6	eShop	eShop	eShop	1	80	6	4.5	4.9	3.4	5
M7	eShop	–	–	1	80	7	–	5.5	–	6
M8	eShop ■	eShop	eShop	1.25	90	8	6	6.2	4.9	6.8
M10	eShop	eShop	eShop	1.5	100	10	7	8	5.5	8.5
M12	eShop	–	eShop	1.75	110	9	–	7	–	10.2
M14	eShop	–	eShop	2	110	11	–	9	–	12
M16	eShop	–	eShop	2	110	12	–	9	–	14
M18	eShop	–	–	2.5	125	14	–	11	–	15.5
M20	eShop	–	eShop	2.5	140	16	–	12	–	17.5
M22	eShop	–	–	2.5	140	18	–	14.5	–	19.5
M24	eShop	–	–	3	160	18	–	14.5	–	21
M27	eShop	–	–	3	160	20	–	16	–	24
M30	eShop	–	–	3.5	180	22	–	18	–	26.5

M | 60° | HSS E-PM | DIN 13 | B 4 | h9 | ≤3×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant GARANT Master Tap through hole machine tap

Universal taps, designed for use in a wide spectrum of materials with high process reliability.
- HSS-E-PM tool material for a high degree of wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

13 2724 – **Tolerance class: ISO 3X/6GX**
13 2728 – **Tolerance class: 7GX**
13 2735 – **Tolerance class: ISO2/6H + 0.1**

Application: For components which are galvanised or shrink slightly when hardened.

Recommendation: We recommend increasing the size of the tapping hole Ø by the tolerance allowance.

ISO 3X 6GX



13 2724

7GX

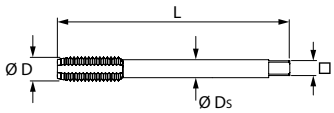


13 2728

ISO 2 6H +0.1



13 2735



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 2724–13 2735	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			

M	13 2724	13 2728	13 2735	Thread pitch	L	Ø D_s	□	Tapping hole Ø
	GARANT Master Tap machine tap							
	HSS-E-PM Form B 6GX	HSS-E-PM Form B 7GX	HSS-E-PM Form B 6H+0.1					
	AlTiX	AlTiX	AlTiX	mm	mm	mm	mm	mm
M2	eShop	eShop	–	0.4	45	2.8	2.1	1.6
M3	eShop	eShop	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	eShop	1.75	110	9	7	10.2
M14	eShop	–	–	2	110	11	9	12
M16	eShop	eShop	eShop	2	110	12	9	14
M20	eShop	–	–	2.5	140	16	12	17.5
M24	eShop	–	–	3	160	18	14.5	21

13

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | B 4 | h9 | ≤3×D

Garant GARANT Master Tap through hole machine tap, extra-long shank

Universal taps, designed for use in a wide spectrum of materials with high process reliability.
- HSS-E-PM tool material for a high degree of wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

13 2738 – **All sizes** with shank to DIN 376 (**= shank Ø tapered**). Therefore suitable for greater operating depths.

13 1770 Size M3–M10 – Shank to DIN 371.
Size M12–M20 – Shank to DIN 376.

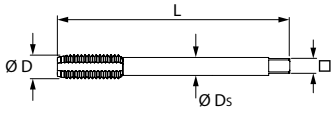
Advantage: Designed for tapping threads where access is difficult.



13 1770



13 2738



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 1770/2738	24	28	16	24	24	20	10	6						8	6	16	16	●	●	●			

M	13 1770	13 2738	Thread pitch	L	Ø D_s		□		Tapping hole Ø
	GARANT Master Tap machine tap								
	HSS-E-PM extra long Form B 6HX	HSS-E-PM extra long Form B 6HX DIN 376			13 1770	13 2738	13 1770	13 2738	
	AlTiX	AlTiX	mm	mm	mm	mm	mm	mm	mm
M3	eShop	–	0.5	100	3.5	–	2.7	–	2.5
M4	eShop	eShop	0.7	125	4.5	2.8	3.4	2.1	3.3
M5	eShop	eShop	0.8	160	6	3.5	4.9	2.7	4.2
M6	eShop	eShop	1	160	6	4.5	4.9	3.4	5
M8	eShop	eShop	1.25	180	8	6	6.2	4.9	6.8
M10	eShop	eShop	1.5	200	10	7	8	5.5	8.5
M12	eShop	–	1.75	200	9	–	7	–	10.2
M14	eShop	–	2	200	11	–	9	–	12
M16	eShop	–	2	200	12	–	9	–	14
M20	eShop	–	2.5	200	16	–	12	–	17.5

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | B 4 | h6 DIN 1835 B | ≤3×D

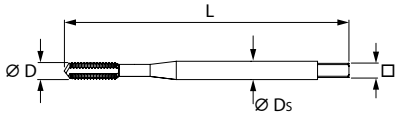
Garant Synchronised through hole machine taps

Sturdy version with lead-in taper and **shank to DIN 1835-B.**
Special geometry for **general-purpose use** on machines with **synchronised spindle drive.**
The tap is controlled by the synchronising spindle of the machine.
Special TiAlN coating for optimum tool life.
Can be used with **emulsion** (fat content minimum 8%).

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.



13 2741



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 2741	40	40		37	35	22	12	7						12	10		35	●	●	●	●		

M	11H	13 2741	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		Machine tap for synchronised spindles **HSS-E-PM** **Form B** **6HX** **TiAlN**	mm	mm	mm	mm	mm
M2,5		eShop	0.45	70	6	4.9	2.05
M3		eShop	0.5	70	6	4.9	2.5
M4		eShop	0.7	70	6	4.9	3.3
M5		eShop	0.8	70	6	4.9	4.2
M6		eShop	1	80	6	4.9	5
M8		eShop	1.25	90	8	6.2	6.8
M10		eShop	1.5	100	10	8	8.5
M12		eShop	1.75	110	12	9	10.2
M14		eShop	2	110	12	9	12
M16		eShop	2	110	12	9	14
M20		eShop	2.5	140	16	12	17.5

M-LH | 60° | DIN 13 | B 4 | h9 | ≤3×D

DIN 371 ≤ *M10* | DIN 376 ≥ *M12*

Garant Through hole machine tap left-hand thread

13 2802 – **GARANT Vap Tap universal tap** – **left-hand thread can be used reliably** in a **wide range of materials**.
Optimised **neck and flute length** for **improved chip evacuation** when working on **deep** threads.
High-performance **HSS-E tool material** with higher vanadium content for improved **wear resistance**.
Surface vaporised for reduced edge build-up.

13 2805 – **GARANT Master Tap Universal taps**, designed for use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

NEW



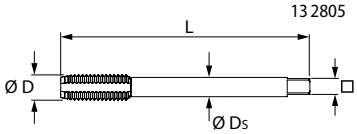
13 2802

HSS E | ISO 2 6H



13 2805

HSS E-PM | ISO 2X 6HX



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 2802	18	13		18	15	15	6							6			15	●	●	●			
13 2805	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			

M-LH	13V	13 2802	11I	13 2805	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		GARANT Vap Tap machine tap left-hand thread **HSS-E** **6H**		GARANT Master Tap machine tap left-hand thread **HSS-E-PM** **6HX**					
		vaporised		**AlTiX**	mm	mm	mm	mm	mm
M3		eShop		eShop	0.5	56	3.5	2.7	2.5
M4		eShop		eShop	0.7	63	4.5	3.4	3.3
M5		eShop		eShop	0.8	70	6	4.9	4.2
M6		eShop		eShop	1	80	6	4.9	5
M8		eShop		eShop	1.25	90	8	6.2	6.8
M10		eShop		eShop	1.5	100	10	8	8.5
M12		eShop		eShop	1.75	110	9	7	10.2
M14		–		eShop	2	110	11	9	12
M16		eShop		eShop	2	110	12	9	14
M20		eShop		eShop	2.5	140	16	12	17.5
M24		eShop		eShop	3	160	18	14.5	21

MF | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | B 4 | h9 | ≤4×D

Garant

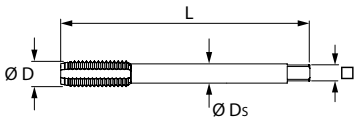
GARANT Master Tap Alu through hole machine tap

High-performance tap, specially developed for **aluminium and non-ferrous alloys. Extra long flutes** and neck length for usable **thread depths up to 4×D.**

- **HSS-E-PM tool material** for high cutting edge stability.
- Ultra-smooth **DLC coating** for wear resistance and avoidance of edge build-up.
- **Extra long flute geometry.**



13 2810



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
13 2810	**35**	**32**	**20**	20		18	**18**										**18**	**25**	●	●	●		

MF	13 2810 GARANT Master Tap Alu machine tap DLC	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
4×0,5	eShop	63	2.8	2.1	3.5
5×0,5	eShop	70	3.5	2.7	4.5
6×0,5	eShop	80	4.5	3.4	5.5
6×0,75	eShop	80	4.5	3.4	5.2
8×0,75	eShop	80	6	4.9	7.2
8×1	eShop	90	6	4.9	7
10×1	eShop	100	7	5.5	9
12×1	eShop	110	9	7	11
12×1,5	eShop	110	9	7	10.5
14×1,5	eShop	125	11	9	12.5
16×1,5	eShop	130	12	9	14.5

13

HOLEX

THE CLEVER DUO



Clever Drill
No. 11 4031

Clever Tap
No. 13 5255

Outstanding quality:

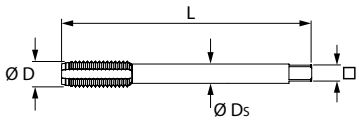
- At an excellent price-performance ratio.
- With a broad product range for most standard applications.
- Practical geometry and clever design.



Even better – together in the convenient case.

For the blind hole application No. 14 6924.
For the through hole application No. 14 6724.

MF | 60° | DIN 374 | DIN 13 | ISO 2 6H | h9 | ≤3×D



Through hole machine tap

With spiral point.

13 2835 – (Form CS) 2 – 3 – start chamfer lead – with spiral point.
TiN coated.
Can be used with **soluble coolant** (fat content min. 8 %).

13 2845 – **HOLEX Clever Tap:**
Sturdy tap for conventional standard applications.
High-quality HSS-E tool material and geometry for steels.
Surface: Bronze-coloured tempered thread profile.

HSS E | B | 4



13 2830

HSS E-PM | CS | 3



13 2835

HSS E | B | 4



13 2845

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
13 2830			13		15	15													●	○			
13 2835			28		27	23	17	7											●	●			
13 2845		13	13		12	12	6												●	●			

MF	11H 13 2830 Garant Machine tap HSS-E Form B	11H 13 2835 Garant Machine tap HSS-E-PM Form CS TiN	12H 13 2845 HOLEX HOLEX Clever Tap machine tap HSS-E Form B	L	∅ D_s	□	Tapping hole ∅
				mm	mm	mm	mm
2×0,25	eShop	–	–	45	1.4	–	1.75
2,5×0,35	eShop	–	–	50	1.8	–	2.15
3×0,35	eShop	–	–	56	2.2	–	2.65
4×0,35	eShop	–	–	63	2.8	2.1	3.65
4×0,5	eShop	–	–	63	2.8	2.1	3.5
5×0,5	eShop	eShop	eShop	70	3.5	2.7	4.5
6×0,5	eShop	–	eShop	80	4.5	3.4	5.5
6×0,75	eShop	eShop	eShop	80	4.5	3.4	5.2
7×0,75	eShop	–	–	80	5.5	4.3	6.2
8×0,5	eShop	–	eShop	80	6	4.9	7.5
8×0,75	eShop	eShop	eShop	80	6	4.9	7.2
8×1	eShop	eShop	eShop	90	6	4.9	7
9×1	eShop	–	–	90	7	5.5	8
10×0,75	eShop	–	–	90	7	5.5	9.2
10×1	eShop	eShop	eShop	90	7	5.5	9
10×1,25	eShop	eShop	eShop	100	7	5.5	8.8
11×1	eShop	–	–	90	8	6.2	10
12×1	eShop	eShop	eShop	100	9	7	11
12×1,25	eShop	eShop	eShop	100	9	7	10.8
12×1,5	eShop	eShop	eShop	100	9	7	10.5
14×1	eShop	–	eShop	100	11	9	13
14×1,25	eShop	–	eShop	100	11	9	12.8
14×1,5	eShop	eShop	eShop	100	11	9	12.5
15×1	eShop	–	–	100	12	9	14
15×1,5	eShop	–	–	100	12	9	13.5
16×1	eShop	–	eShop	100	12	9	15
16×1,5	eShop	eShop	eShop	100	12	9	14.5
18×1	eShop	–	eShop	110	14	11	17
18×1,5	eShop	eShop	eShop	110	14	11	16.5
18×2	eShop	–	–	125	14	11	16
20×1	eShop	–	–	125	16	12	19
20×1,5	eShop	eShop	eShop	125	16	12	18.5
22×1	eShop	–	–	125	18	14.5	21
22×1,5	eShop	eShop	eShop	125	18	14.5	20.5
22×2	eShop	–	–	140	18	14.5	20
24×1	eShop	–	–	140	18	14.5	23
24×1,5	eShop	eShop	eShop	140	18	14.5	22.5
25×1,5	eShop	–	eShop	140	18	14.5	23.5
26×1,5	eShop	–	–	140	18	14.5	24.5
27×1,5	eShop	–	–	140	20	16	25.5
27×2	eShop	–	–	140	20	16	25
30×1	eShop	–	–	150	22	18	29
30×1,5	eShop	–	–	150	22	18	28.5
30×2	eShop	–	–	150	22	18	28
32×1,5	eShop	–	–	150	22	18	30.5
33×1,5	eShop	–	–	160	25	20	31.5
33×2	eShop	–	–	160	25	20	31
35×1,5	eShop	–	–	170	28	22	33.5
36×1,5	eShop	–	–	170	28	22	34.5
36×2	eShop	–	–	170	28	22	34
38×1,5	eShop	–	–	170	28	22	36.5
40×1,5	eShop	–	–	170	32	24	38.5
50×1,5	eShop	–	–	190	36	29	48.5
63×1,5	eShop	–	–	220	45	35	61.5

MF | 60° | HSS E-PM | DIN 374 | DIN 13 | ISO 2X 6HX | B 4 | h9 | ≤3×D

Garant

GARANT Master Tap Steel^{HT} through hole machine tap

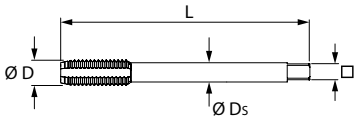
High-performance tap, specially developed for use in **steels with high tensile strength** and for **difficult-to-machine materials. Strong spiral point,** for process stability at high cutting forces.

- **HSS-E-PM tool material** – for **very high cutting edge stability.**
- **Optimised honed cutting edges.**
- **TiCN coating –** for **maximum wear protection.**

Recommendation: For **TOOLOX and HARDOX materials we recommenddeviating from the DIN data** (see table) **by selecting a larger tapping hole** ∅.



13 2855



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	S					
13 2855					30	20	15	12	5					15	5	3	7	5	●	●			

MF	13 2855 GARANT Master Tap Steel^{HT} machine tap HSS-E-PM Form B 6HX TiCN	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
3×0,35	eShop	56	2.2	–	2.65
4×0,5	eShop	63	2.8	2.1	3.5
5×0,5	eShop	70	3.5	2.7	4.5
6×0,5	eShop	80	4.5	3.4	5.5
6×0,75	eShop	80	4.5	3.4	5.2
8×0,75	eShop	80	6	4.9	7.2
8×1	eShop	90	6	4.9	7
10×1	eShop	90	7	5.5	9
10×1,25	eShop	100	7	5.5	8.8
12×1	eShop	100	9	7	11

MF	13 2855 GARANT Master Tap Steel^{HT} machine tap HSS-E-PM Form B 6HX TiCN	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
12×1,25	eShop	100	9	7	10.8
12×1,5	eShop	100	9	7	10.5
14×1,5	eShop	100	11	9	12.5
16×1,5	eShop	100	12	9	14.5
18×1,5	eShop	110	14	11	16.5
20×1,5	eShop	125	16	12	18.5
24×1,5	eShop	140	18	14.5	22.5
26×1,5	eShop	140	18	14.5	24.5
30×1,5	eShop	150	22	18	28.5

13

MF | 60° | HSS E-PM | DIN 13 | ISO 2X 6HX | C 3 | h9 | ≤1.5×D | ≤1.5×D

DIN 371 ≤ 10×1 | DIN 374 ≥ 12×1,5

Garant

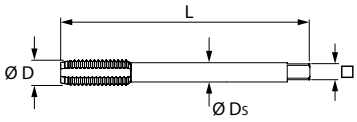
Through and blind hole machine taps

Sturdy version.

Recommendation: For **very hard steels, TOOLOX** and **HARDOX materials** we recommend **deviating from the DIN data** (see table) by **drilling the core hole ∅ 0.05** to **0.3 mm** larger. For use only with a length compensation chuck – even on machines with synchronised spindle drives.



13 2861



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	Graphite					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	N					
13 2861							12	7	2					4	3	2		15	●				

MF	13 2861 Machine tap TiCN	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
8×1	eShop	90	8	6.2	7
10×1	eShop	90	10	8	9
12×1,5	eShop	100	9	7	10.5
14×1,5	eShop	100	11	9	12.5
16×1,5	eShop	100	12	9	14.5

MF | 60° | Solid carbide | DIN 371 | DIN 13 | ISO 2X 6HX | D ↔4↔ | h6 | ≤1.5×D | ≤2×D

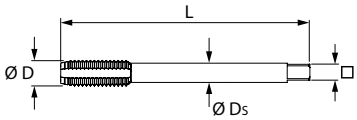
Garant Solid carbide machine tap for through and blind holes

Particularly sturdy version. For the highest performance demands.

Recommendation: For **very hard steels, TOOLOX** and **HARDOX materials** we recommend **deviating from the DIN data** (see table) by drilling the tapping hole Ø **0.05** to **0.3mm** larger.
For use only with a length compensation chuck – even on machines with synchronised spindle drives.



13 2862



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	N					
13 2862									3	2	1	1		5	4	3		18	●				

MF	11H	13 2862	L	Ø D_s	□	Tapping hole Ø
		Solid carbide machine tap				
		TiAlN	mm	mm	mm	mm
8×1		eShop	90	8	6.2	7
10×1		eShop	100	10	8	9
12×1,5		eShop	110	12	9	10.5

MF | 60° | DIN 374 | DIN 13 | ISO 2X 6HX | B ↔4↔ | h9 | ≤3×D

Garant Through hole machine tap for stainless steels

HSS E



13 2870

HSS E-PM

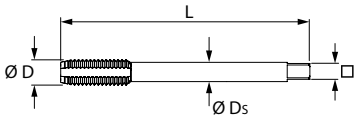


13 2875

13 2870 – **Strong spiral point.**
Guide section **with oil grooves.**

13 2875 – **GARANT Master Tap INOX**:
Powerful tap, specially developed for **tapping to high process reliability in stainless and acid-resistant steels** and also **duplex materials**.

- **HSS-E-PM tool material** for maximum wear resistance
- The latest generation of **TiALN multi-layer coating**
- **Parameterised flute geometry** for optimum chip formation and **torsional rigidity**



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 2870		13		15	15	15								6			13		●	●			
13 2875		28			23	23	12							11	9				●	●			

MF	11H	13 2870	11	13 2875	L	Ø D_s	□	Tapping hole Ø
		Machine tap		GARANT Master Tap INOX machine tap				
		HSS-E		HSS-E-PM				
		vaporised		TiAlN	mm	mm	mm	mm
4×0,5		eShop		eShop	63	2.8	2.1	3.5
5×0,5		eShop		eShop	70	3.5	2.7	4.5
6×0,5		–		eShop	80	4.5	3.4	5.5
6×0,75		eShop		eShop	80	4.5	3.4	5.2
8×0,75		eShop		eShop	80	6	4.9	7.2
8×1		eShop		eShop	90	6	4.9	7
10×1		eShop		eShop	90	7	5.5	9
10×1,25		eShop		eShop	100	7	5.5	8.8
12×1		eShop		eShop	100	9	7	11
12×1,25		eShop		eShop	100	9	7	10.8
12×1,5		eShop		eShop	100	9	7	10.5
14×1,5		eShop		eShop	100	11	9	12.5
16×1,5		eShop		eShop	100	12	9	14.5
18×1,5		eShop		eShop	110	14	11	16.5
20×1,5		eShop		eShop	125	16	12	18.5
22×1,5		eShop		eShop	125	18	14.5	20.5
24×1,5		eShop		eShop	140	18	14.5	22.5
26×1,5		–		eShop	140	18	14.5	24.5
30×1,5		–		eShop	150	22	18	28.5

MF | 60° | HSS E | DIN 374 | DIN 13 | ISO 2X 6HX | C | 3 | h9 | ≤3×D | ≤3×D

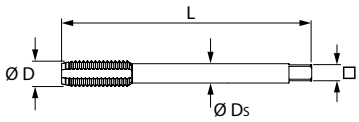
Garant

Through and blind hole machine taps

Advantage: **Dry machining** of cast iron – cooling lubricant not necessary. Particularly wear-resistant due to nitrided surfaces.



13 2880



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	K
13 2880																	13	9

MF	11H	13 2880 Machine tap nitrided	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm
4×0,5		eShop	63	2.8	2.1	3.5
5×0,5		eShop	70	3.5	2.7	4.5
6×0,75		eShop	80	4.5	3.4	5.2
8×0,75		eShop	80	6	4.9	7.2
8×1		eShop	90	6	4.9	7
10×1		eShop	90	7	5.5	9
10×1,25		eShop	90	7	5.5	8.8
12×1		eShop	100	9	7	11
12×1,25		eShop	100	9	7	10.8
12×1,5		eShop	100	9	7	10.5
14×1,5		eShop	100	11	9	12.5
16×1,5		eShop	100	12	9	14.5
18×1,5		eShop	110	14	11	16.5
20×1,5		eShop	125	16	12	18.5
22×1,5		eShop	125	18	14.5	20.5

MF | 60° | HSS E | DIN 374 | DIN 13 | ISO 2 6H | B | 4 | h9 | ≤3×D

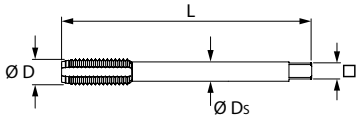
Garant

GARANT Vap Tap through hole machine tap

Can be used **reliably** in a **wide range of materials**. Optimised **neck and flute length** for **improved chip evacuation** when working on **deep** threads. High-performance **HSS-E tool material with** higher vanadium content for improved **wear resistance. Surface vaporised,** for reduced edge build-up.



13 2885



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 2885	18	13		18	15	15	6							6			15	●

MF	13V	13 2885 GARANT Vap Tap machine tap HSS-E vaporised	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm
3×0,35		eShop	56	2.2	–	2.65
4×0,5		eShop	63	2.8	2.1	3.5
5×0,5		eShop	70	3.5	2.7	4.5
6×0,5		eShop	80	4.5	3.4	5.5
6×0,75		eShop	80	4.5	3.4	5.2
8×0,75		eShop	80	6	4.9	7.2
8×1		eShop	90	6	4.9	7
10×1		eShop	90	7	5.5	9
12×1		eShop	100	9	7	11
12×1,5		eShop	100	9	7	10.5
14×1,5		eShop	100	11	9	12.5
16×1,5		eShop	100	12	9	14.5
18×1,5		eShop	110	14	11	16.5
20×1,5		eShop	125	16	12	18.5
22×1,5		eShop	125	18	14.5	20.5
24×1,5		eShop	140	18	14.5	22.5
26×1,5		eShop	140	18	14.5	24.5
28×1,5		eShop	140	20	16	26.5
30×1,5		eShop	150	22	18	28.5

MF | 60° | DIN 13 | B 4 | h9 | ≤3×D

Through hole machine tap



13 2905

HSS E-PM | DIN 374 | ISO 2X 6HX



13 2906

HSS E-PM | DIN 374 | ISO 3X 6GX



13 2907

HSS E-PM | Standard | ISO 2X 6HX



13 2925

HSS E | DIN 374 | ISO 2 6H

13 2906 – **Tolerance class ISO3X/6GX**. For components which are **galvanised** or shrink slightly when hardened.

13 2907 – With extra-long shank

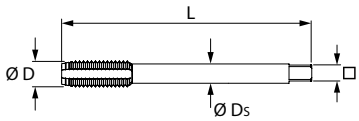
13 2925 – **HOLEX Pro Tap general-purpose tap.**
Sturdy design suitable for a wide spectrum of materials.
Improved HSS-E tool material with **low-friction TiN coating.**

13 2905–2907 – **GARANT Master Tap Universal taps,** designed for use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

Advantage:

13 2907 – Designed for tapping threads where access is difficult.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 2905/2906	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 2907	24	28	16	24	24	20	10	6						8	6	16	16	●	●	●			
13 2925	24	25	10	24	20	15	8							8			15	●	●	●			

MF	13 2905	13 2906	13 2907	13 2925	L		Ø D_s	□	Tapping hole Ø
		Garant		HOLEX					
		GARANT Master Tap machine tap		HOLEX Pro Tap machine tap					
	HSS-E-PM 6HX	HSS-E-PM 6GX	extra long HSS-E-PM 6HX	HSS-E 6H	13 2905 13 2906 13 2925	13 2907			
	AlTiX	AlTiX	AlTiX	TiN	mm	mm	mm	mm	mm
2,5×0,35	eShop	–	–	–	50	–	1.8	–	2.15
2,6×0,35	eShop	–	–	–	50	–	1.8	–	2.25
3×0,35	eShop	–	–	eShop	56	–	2.2	–	2.65
3,5×0,35	eShop	–	–	–	56	–	2.2	–	3.15
4×0,35	eShop	–	–	–	63	–	2.8	2.1	3.65
4×0,5	eShop	–	–	eShop	63	–	2.8	2.1	3.5
4,5×0,5	eShop	–	–	–	70	–	3.5	2.7	4
5×0,5	eShop	eShop	–	eShop	70	–	3.5	2.7	4.5
6×0,5	eShop	–	–	eShop	80	–	4.5	3.4	5.5
6×0,75	eShop	eShop	–	eShop	80	–	4.5	3.4	5.2
6,5×0,75	eShop	–	–	–	80	–	5.5	4.3	5.8
7×0,5	eShop	–	–	–	80	–	5.5	4.3	6.5
8×0,75	eShop ■	–	–	eShop	80	–	6	4.9	7.2
8×1	eShop	eShop	eShop	eShop	90	180	6	4.9	7
9×1	eShop	–	–	–	90	–	6	5.5	8
10×0,75	eShop	–	–	–	90	–	7	5.5	9.25
10×1	eShop	eShop	eShop	eShop	90	180	7	5.5	9
10×1,25	eShop	–	eShop	eShop	100	200	7	5.5	8.8
11×1	eShop	–	–	–	90	–	8	6.2	10
12×0,5	eShop	–	–	–	100	–	9	7	11.5
12×0,75	eShop	–	–	–	100	–	9	7	11.25
12×1	eShop	eShop	–	eShop	100	–	9	7	11
12×1,25	eShop	–	eShop	eShop	100	200	9	7	10.8
12×1,5	eShop	eShop	eShop	eShop	100	200	9	7	10.5
13×1	eShop	–	–	–	100	–	11	9	12
14×1,5	eShop	eShop	–	eShop	100	–	11	9	12.5
16×1,5	eShop ■	eShop	eShop	eShop	100	200	12	9	14.5
18×1	eShop	–	–	–	110	–	14	11	17
18×1,5	eShop	–	–	eShop	110	–	14	11	16.5
20×1,5	eShop	–	eShop	eShop	125	250	16	12	18.5
20×2	eShop	–	–	–	140	–	16	12	18
22×1,5	eShop	–	–	eShop	125	–	18	14.5	20.5
24×1,5	eShop	–	–	eShop	140	–	18	14.5	22.5
24×2	eShop	–	–	–	140	–	18	14.5	22
26×1,5	eShop ■	–	–	eShop	140	–	18	14.5	24.5
30×1,5	eShop	–	–	eShop	150	–	22	18	28.5

MF | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | B 4 | h6 DIN 1835 B | ≤3×D

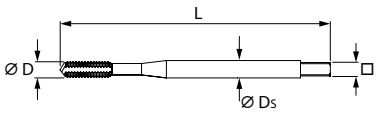
Garant Synchronised through hole machine taps

Sturdy design with spiral point and shank to DIN 1835-B.
Special geometry for use on machines with **synchronised spindle drives.**
The tap is controlled by the synchronising spindle of the machine.
Special **TiAlN-S coating** for optimum tool life.
For use with **emulsion** (fat content minimum 8%).

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures maximum process reliability.



13 2950



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 2950	40	40		37	35	22	12	7						12	10		35	●

MF	11H	13 2950	L	Ø D_s	□	Tapping hole Ø
		Machine tap for synchronised spindles HSS-E-PM TiAlN	mm	mm	mm	mm
8×1		eShop	90	8	6.2	7
10×1		eShop	90	10	8	9
10×1,25		eShop	100	10	8	8.8
12×1		eShop	100	12	9	11
12×1,25		eShop	100	12	9	10.8
12×1,5		eShop	100	12	9	10.5
14×1,5		eShop	100	12	9	12.5
16×1,5		eShop	100	12	9	14.5
20×1,5		eShop	125	16	12	18.5

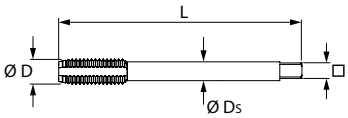
MF-LH | 60° | HSS E-PM | DIN 374 | DIN 13 | ISO 2X 6HX | B 4 | h9 | ≤3×D

Garant GARANT Master Tap through hole machine tap, left-hand thread

Universal taps, designed for use in a wide spectrum of materials with high process reliability.
- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.



13 3015



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
13 3015	30	35	20	30	30	25	12	8						10	8	20	20	●

MF-LH	11l	13 3015	L	Ø D_s	□	Tapping hole Ø
		GARANT Master Tap machine tap HSS-E-PM Form B 6HX left-hand thread AlTiX	mm	mm	mm	mm
8×1		eShop	90	6	4.9	7
10×1		eShop	90	7	5.5	9
10×1,25		eShop	100	7	5.5	8.8
12×1,25		eShop	100	9	7	10.8
12×1,5		eShop	100	9	7	10.5
16×1,5		eShop	100	12	9	14.5
20×1,5		eShop	125	16	12	18.5
24×1,5		eShop	140	18	14.5	22.5

G | 55° | HSS E-PM | DIN 5156 | B | h9 | ≤3×D

GARANT Master Tap Alu through hole machine tap

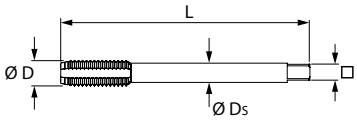
High-performance tap, specially developed for **aluminium and non-ferrous alloys.**

- **HSS-E-PM cutting medium** for high cutting edge stability.
- Ultra-smooth **DLC coating** for wear resistance and preventing galling.

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).



13 3260



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
13 3260	**35**	**32**	**20**	20		18	**18**										**18**	**25**	●	●	●		

G	13 3260 GARANT Master Tap Alu machine tap DLC	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
G1/8	eShop	28	9.73	90	7	5.5	8.8
G1/4	eShop	19	13.16	100	11	9	11.8
G3/8	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	14	20.96	125	16	12	19
G3/4	eShop	14	26.44	140	20	16	24.5
G1	eShop	11	33.25	160	25	20	30.75

G | 55° | HSS E-PM | DIN 5156 | B | h9 | ≤3×D

GARANT Master Tap Steel^{HT} through hole machine tap

High-performance tap, specially developed for use in **steels with high tensile strength** and for **difficult-to-machine materials. Strong spiral point,** for process stability at high cutting forces**.**

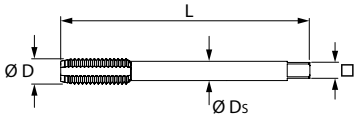
- **HSS-E-PM tool material** – for **very high cutting edge stability.**
- **Optimised honed cutting edges.**
- **TiCN coating** – for **maximum wear protection.**

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).

Recommendation: For **TOOLOX and HARDOX materials we recommend deviating from the DIN data** (see table) **by selecting a larger tapping hole diameter.**



13 3312



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	S					
13 3312					30	**20**	**15**	**12**	5						**15**	**5**	**7**	5	●	●			

G	13 3312 GARANT Master Tap Steel^{HT} machine tap HSS-E-PM Form B TiCN	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
G1/8	eShop	28	9.73	90	7	5.5	8.8
G1/4	eShop	19	13.16	100	11	9	11.8
G3/8	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	14	20.96	125	16	12	19
G3/4	eShop	14	26.44	140	20	16	24.5
G1	eShop	11	33.25	160	25	20	30.75

G | 55° | Solid carbide | DIN 371 | D ⟷4⟷ | h6 | ≤1.5×D | ≤2×D

Garant Solid carbide machine tap for through and blind holes

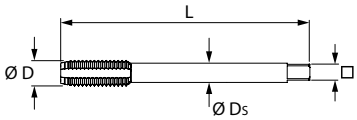
Especially sturdy design.
For use in heavy duty applications.

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).

Recommendation: For **very hard steels, TOOLOX** and **HARDOX materials we recommend deviating from the DIN data** (see table) by drilling the tapping hole Ø **0.05** to **0.3mm** larger. For use only with a length compensation chuck – even on machines with synchronised spindle drives.



13 3320



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	N
13 3320									3	2	1	1		5	4	3		18

G	11H 13 3320 Solid carbide machine tap TiAlN	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
G1/8	eShop	28	9.73	100	10	8	8.8
G1/4	eShop	19	13.16	110	14	11	11.8

G | 55° | DIN 5156 | B ⟷4⟷ | h9 | ≤3×D

Garant Through hole machine tap for stainless steels

13 3325 – **Strong spiral point.** Guide part with oil grooves.

13 3327 – **GARANT Master Tap INOX**:
Powerful tap, specially developed for **tapping to high process reliability in stainless and acid-resistant steels** and also **duplex materials.**

- **HSS-E-PM tool material** for maximum wear resistance
- The latest generation of **TiAlN multi-layer coating**
- **Parameterised flute geometry** for optimum chip formation and **torsional rigidity**

Advantage: **Particularly strong, optimum self-guidance** and **no recutting** when reversed.

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).



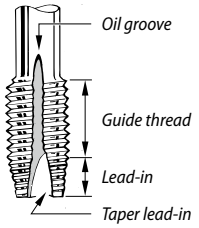
13 3325

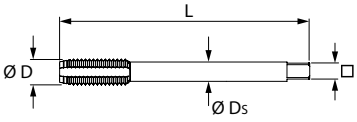
HSS E ≤ 5/8″ | HSS ≥ 3/4″



13 3327

HSS E-PM





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N
13 3325		13		15	15	15								6			13	
13 3327		28			23	23	12							11	9			

G	11H 13 3325 Machine tap HSS-E vaporised	11 13 3327 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
				mm	mm	mm	mm	mm
G1/8	eShop	eShop	28	9.73	90	7	5.5	8.8
G1/4	eShop	eShop	19	13.16	100	11	9	11.8
G3/8	eShop	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	eShop	14	20.96	125	16	12	19
G5/8	eShop	eShop	14	22.91	125	18	14.5	21
G3/4	eShop	eShop	14	26.44	140	20	16	24.5
G1	eShop	eShop	11	33.25	160	25	20	30.75

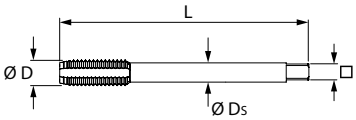
G | 55° | HSS E | DIN 5156 | B 4 | h9 | ≤3×D

Garant GARANT Vap Tap through hole machine tap

Can be used reliably in a **wide range of materials.**
Optimised **neck and flute length** for improved **chip evacuation** when working on **deep threads.**
High-performance **HSS-E tool material** with higher vanadium content for improved **wear resistance.**
Surface vaporised for reduced edge build-up..
Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1
(threads that do not form a seal within the connection).



13 3328_G1/4



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 3328	18	13		18	15	15	6							6			15	●	●	●			

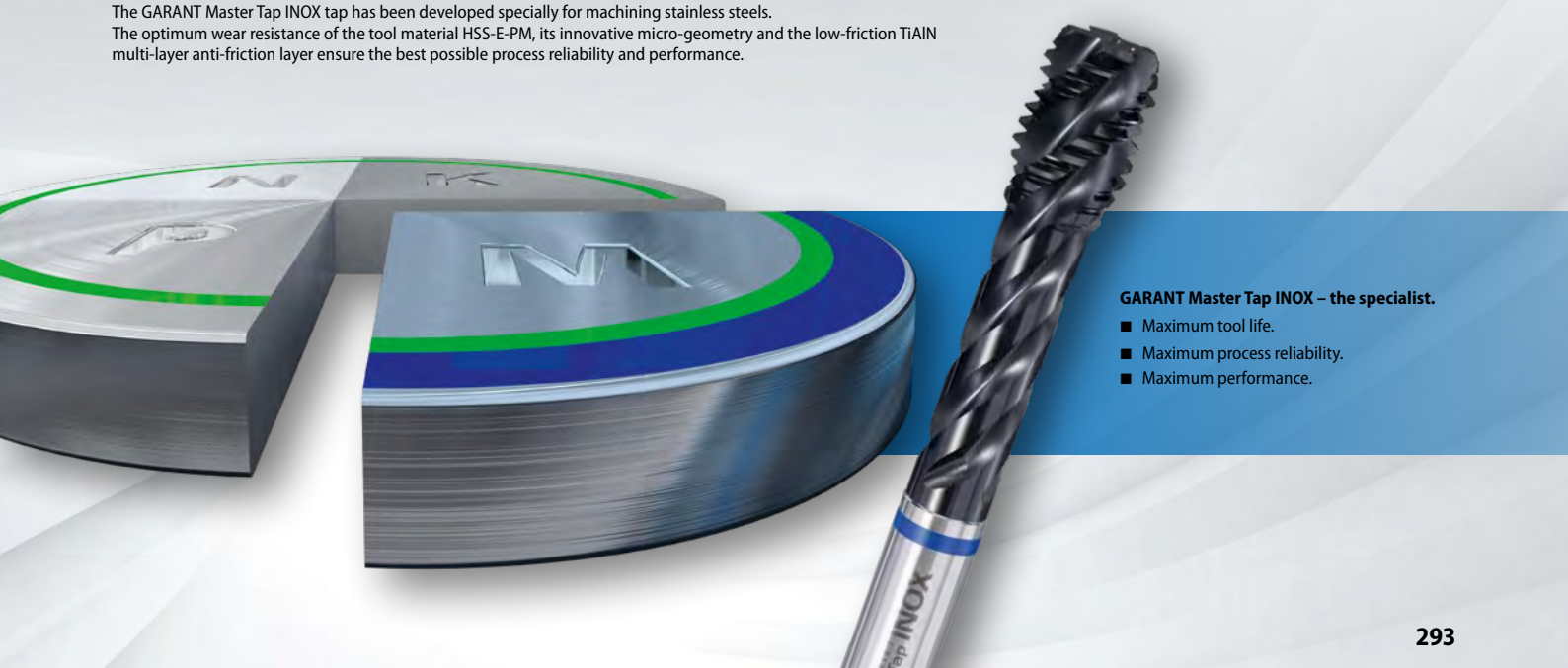
G	13V 13 3328 GARANT Vap Tap machine tap vaporised	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
G1/8	eShop	28	9.73	90	7	5.5	8.8
G1/4	eShop	19	13.16	100	11	9	11.8
G3/8	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	14	20.96	125	16	12	19
G3/4	eShop	14	26.44	140	20	16	24.5
G1	eShop	11	33.25	160	25	20	30.75

Garant GARANT Master Tap INOX

Absolute process reliability in particularly challenging VA stainless steel grades

Garant MASTER TAP INOX

The GARANT Master Tap INOX tap has been developed specially for machining stainless steels.
The optimum wear resistance of the tool material HSS-E-PM, its innovative micro-geometry and the low-friction TiAlN multi-layer anti-friction layer ensure the best possible process reliability and performance.



GARANT Master Tap INOX – the specialist.
- Maximum tool life.
- Maximum process reliability.
- Maximum performance.



Through hole machine tap

13 3332 – **HOLEX Pro Tap general-purpose tap.** Sturdy design suitable for a wide spectrum of materials. **Improved HSS-E tool material** with **low-friction TiN coating.**

13 3333 – With extra-long shank

13 3330/3333 – **GARANT Master Tap Universal taps,** designed for use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

Advantage:

13 3333 – Designed for tapping threads where access is difficult.

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).



13 3330

HSS E-PM | DIN 5156



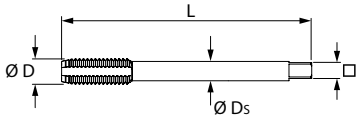
13 3333

HSS E-PM | Standard



13 3332

HSS E | DIN 5156



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 3330	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 3332	24	25	10	24	20	15	8							8			15	●	●	●			
13 3333	24	28	16	24	24	20	10	6						8	6	16	20	●	●	●			

G	111 13 3330 Garant GARANT Master Tap machine tap HSS-E-PM AlTiX	111 13 3333 GARANT Master Tap machine tap extra long HSS-E-PM AlTiX	121 13 3332 HOLEX HOLEX Pro Tap machine tap HSS-E TiN	Threads per inch	Thread Ø mm	L 13 3330 13 3332 mm	L 13 3333 mm	Ø D_s mm	□ mm	Tapping hole Ø mm
G1/16	eShop	–	–	28	7.72	90	–	6	4.9	6.8
G1/8	eShop	eShop	eShop	28	9.73	90	180	7	5.5	8.8
G1/4	eShop	eShop	eShop	19	13.16	100	200	11	9	11.8
G3/8	eShop	eShop	eShop	19	16.66	100	200	12	9	15.25
G1/2	eShop	eShop	eShop	14	20.96	125	250	16	12	19
G5/8	eShop	–	eShop	14	22.91	125	–	18	14.5	21
G3/4	eShop	eShop	eShop	14	26.44	140	280	20	16	24.5
G1	eShop	eShop	eShop	11	33.25	160	280	25	20	30.75

UNC | 60° | 2B | B 4 | h9 | ≤3×D

DIN 371 ≤ 3/8″ | DIN 376 ≥ 7/16″

Through hole machine tap

With spiral point.

13 3353 – **HOLEX Clever Tap:**
Sturdy tap for conventional standard applications.
High-quality HSS-E tool material and geometry for steels.
Surface: Bronze-coloured tempered thread profile.

Application: **For UNC uniform coarse threads** ASME – B1.1.

HSS E ≤ 7/8″ | HSS 1″

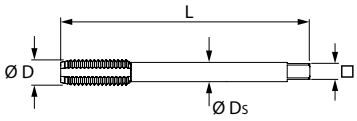


13 3350

HSS E



13 3353



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
13 3350			13		15	15													●	○			
13 3353		13	13		12	12	6												●	●			

UNC	11H 13 3350 Garant Machine tap	12H 13 3353 HOLEX HOLEX Clever Tap machine tap	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
4-40	eShop	eShop	40	2.84	56	3.5	2.7	2.35
5-40	eShop	–	40	3.17	56	3.5	2.7	2.65
6-32	eShop	eShop	32	3.51	56	4	3	2.85
8-32	eShop	eShop	32	4.16	63	4.5	3.4	3.5
10-24	eShop	eShop	24	4.83	70	6	4.9	3.9
12-24	eShop	–	24	5.49	80	6	4.9	4.5
1/4-20	eShop	eShop	20	6.35	80	7	5.5	5.1
5/16-18	eShop	eShop	18	7.94	90	8	6.2	6.6
3/8-16	eShop	eShop	16	9.53	100	9	7	8
7/16-14	eShop	eShop	14	11.11	100	8	6.2	9.4
1/2-13	eShop	eShop	13	12.7	110	9	7	10.8
5/8-11	eShop	eShop	11	15.88	110	12	9	13.5
3/4-10	eShop	eShop	10	19.05	125	14	11	16.5
7/8-9	eShop	–	9	22.23	140	18	14.5	19.5
1-8	eShop	–	8	25.4	160	20	16	22.25

UNC | 60° | HSS E-PM | 2BX | B 4 | h9 | ≤3×D

DIN 371 ≤ 3/8″ | DIN 376 ≥ 7/16″

Garant GARANT Master Tap INOX through hole machine tap for stainless and acid-resistant steels

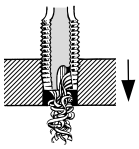
High-performance tap, specially developed for **good process reliability in stainless and acid-resistant steels** and **duplex materials.**

- **HSS-E-PM tool material** for maximum wear resistance
- The latest generation of **TiAlN multi-layer** coating
- **Parameterised flute geometry** for optimum chip formation and **torsional rigidity**

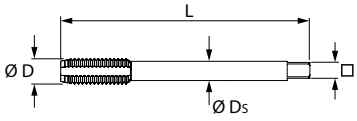
Application: **For UNC uniform coarse threads** ASME – B1.1.



13 3356



The spiral point evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 3356		28			23	23	12							11	9				●	●			

UNC	11l 13 3356 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
2-56	eShop ■	56	2.18	45	2.8	2.1	1.85
4-40	eShop ■	40	2.84	56	3.5	2.7	2.35
5-40	eShop ■	40	3.17	56	3.5	2.7	2.65
6-32	eShop ■	32	3.51	56	4	3	2.85
8-32	eShop ■	32	4.16	63	4.5	3.4	3.5
10-24	eShop ■	24	4.83	70	6	4.9	3.9
12-24	eShop ■	24	5.49	80	6	4.9	4.5
1/4-20	eShop ■	20	6.35	80	7	5.5	5.1

UNC	11l 13 3356 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
5/16-18	eShop ■	18	7.94	90	8	6.2	6.6
3/8-16	eShop ■	16	9.53	100	9	7	8
7/16-14	eShop ■	14	11.11	100	8	6.2	9.4
1/2-13	eShop ■	13	12.7	110	9	7	10.8
5/8-11	eShop ■	11	15.88	110	12	9	13.5
3/4-10	eShop ■	10	19.05	125	14	11	16.5
7/8-9	eShop ■	9	22.23	140	18	14.5	19.5
1-8	eShop ■	8	25.4	160	18	14.5	22.25



Through hole machine tap

13 3360 – **GARANT Master Tap universal taps**, designed for use in a wide spectrum of materials with high process reliability.
- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

13 3375 – **HOLEX Pro Tap general-purpose tap.** Sturdy design suitable for a wide spectrum of materials. **Improved HSS-E tool material** with **low-friction TiN coating.**

Application: **For UNC uniform coarse threads** ASME – B1.1.



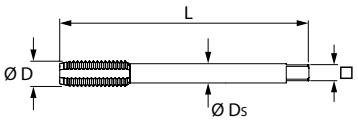
13 3360

HSS E-PM	2BX	DIN 371	DIN 376
		≤ 3/8″	≥ 1/2″



13 3375

HSS E	2B	DIN 371	DIN 376
		≤ 1/4″	≥ 5/16″



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 3360	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 3375	24	25	10	24	20	15	8							8			15	●	●	●			

UNC	11 13 3360 Garant GARANT Master Tap machine tap HSS-E-PM AlTiX	12 13 3375 HOLEX HOLEX Pro Tap machine tap HSS-E TiN	Threads per inch	Thread Ø mm	L mm	Ø D_s 13 3360 mm	Ø D_s 13 3375 mm	□ 13 3360 mm	□ 13 3375 mm	Tapping hole Ø mm
2-56	eShop ■	eShop ■	56	2.18	45	2.8	2.8	2.1	2.1	1.85
4-40	eShop ■	eShop ■	40	2.84	56	3.5	3.5	2.7	2.7	2.35
5-40	eShop	–	40	3.17	56	3.5	–	2.7	–	2.65
6-32	eShop ■	eShop ■	32	3.51	56	4	4	3	3	2.85
8-32	eShop ■	eShop ■	32	4.16	63	4.5	4.5	3.4	3.4	3.5
10-24	eShop ■	eShop ■	24	4.83	70	6	6	4.9	4.9	3.9
12-24	eShop ■	eShop ■	24	5.49	80	6	6	4.9	4.9	4.5
1/4-20	eShop ■	eShop ■	20	6.35	80	7	7	5.5	5.5	5.1
5/16-18	eShop ■	eShop ■	18	7.94	90	8	6	6.2	4.8	6.6
3/8-16	eShop ■	eShop ■	16	9.53	100	10	7	8	5.5	8
1/2-13	eShop ■	eShop ■	13	12.7	110	9	9	7	7	10.8
5/8-11	eShop ■	eShop ■	11	15.88	110	12	12	9	9	13.5
3/4-10	eShop ■	eShop ■	10	19.05	125	14	14	11	11	16.5
7/8-9	eShop ■	eShop ■	9	22.23	140	18	18	14.5	14.5	19.5
1-8	eShop	–	8	25.4	160	18	–	14.5	–	22.25

Garant

GARANT MASTER TAP – THE MULTI-TALENTED ONE FOR GENERAL-PURPOSE USE.



- **Special flute geometry** ensures optimum chip evacuation.
- **Innovative AlTiX coating** for significantly reduced cutting forces.
- **Very high process reliability** in a wide range of materials.
- **For use across a wide spectrum of materials,** thus reducing the variety of tools that have to be stocked.



146435 146735

GARANT Master Tap

available as a set (M3; M4; M5; M6; M8; M10; M12) in a handy plastic case.
For through hole: No. 146435 M3-12,
for blind hole No. 146735 M3-12.

UNF | 60° | 2B | B 4 | h9 | ≤3×D

Through hole machine tap

With spiral point.

13 3404 – **HOLEX Clever Tap:**
Sturdy tap for conventional standard applications. High-quality HSS-E tool material and geometry for steels. Surface: Bronze-coloured tempered thread profile.

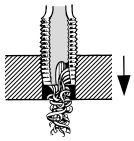
Application: **For UNF uniform fine threads** ASME – B1.1.

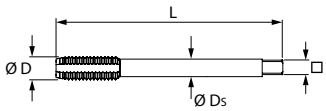
HSS E	HSS	DIN 371	DIN 374
≤ 7/8"	1"	≤ 1/4"	≥ 5/16"


13 3400

HSS E	DIN 371	DIN 374
	≤ 3/8"	≥ 7/16"


13 3404


The spiral point evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
13 3400			13		15	15													●	○			
13 3404		13	13		12	12	6												●	●			

UNF	11H 13 3400 Garant Machine tap	12H 13 3404 HOLEX HOLEX Clever Tap machine tap	Threads per inch	Thread Ø	L	Ø D_s		□		Tapping hole Ø
						13 3400	13 3404	13 3400	13 3404	
				mm	mm	mm	mm	mm	mm	mm
10-32	eShop	eShop	32	4.83	70	6	6	4.9	4.9	4.1
12-28	eShop	–	28	5.49	80	6	–	4.9	–	4.7
1/4-28	eShop	eShop	28	6.35	80	7	7	5.5	5.5	5.5
5/16-24	eShop	eShop	24	7.94	90	6	8	4.9	6.2	6.9
3/8-24	eShop	eShop	24	9.53	100	7	9	5.5	7	8.5
7/16-20	eShop	eShop	20	11.11	100	8	8	6.2	6.2	9.9
1/2-20	eShop	eShop	20	12.7	100	9	9	7	7	11.5
9/16-18	–	eShop	18	14.29	100	–	11	–	9	12.9
5/8-18	eShop	eShop	18	15.88	100	12	12	9	9	14.5
3/4-16	eShop	eShop	16	19.05	110	14	14	11	11	17.5
7/8-14	eShop	eShop	14	22.23	125	18	18	14.5	14.5	20.4
1-12	eShop	–	12	25.4	140	20	–	16	–	23.25

UNF | 60° | HSS E-PM | 2BX | B 4 | h9 | ≤3×D

DIN 371	DIN 374
≤ 3/8"	≥ 7/16"

Garant GARANT Master Tap INOX through hole machine tap for stainless and acid-resistant steels

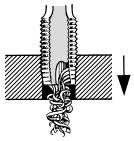
High-performance tap, specially developed for **good process reliability in stainless and acid-resistant steels** and **duplex materials.**

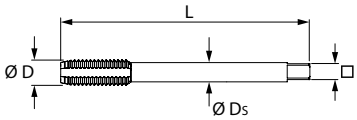
- **HSS-E-PM tool material** for maximum wear resistance
- The latest generation of **TiAlN multi-layer** coating
- **Parameterised flute geometry** for optimum chip formation and **torsional rigidity.**

Application: **For UNF uniform fine threads** ASME – B1.1.



13 3406


The spiral point evacuates the swarf in the cutting direction.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 3406		28			23	23	12							11	9				●	●			

UNF	11l 13 3406 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
2-64	eShop ■	64	2.18	45	2.8	2.1	1.85
4-48	eShop ■	48	2.84	56	3.5	2.7	2.4
5-44	eShop ■	44	3.17	56	3.5	2.7	2.7
6-40	eShop ■	40	3.51	56	4	3	2.95
8-36	eShop ■	36	4.16	63	4.5	3.4	3.5
10-32	eShop ■	32	4.83	70	6	4.9	4.1
12-28	eShop ■	28	5.49	80	6	4.9	4.7
1/4-28	eShop ■	28	6.35	80	7	5.5	5.5

UNF	11l 13 3406 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
5/16-24	eShop ■	24	7.94	90	8	6.2	6.9
3/8-24	eShop ■	24	9.53	100	9	7	8.5
7/16-20	eShop ■	20	11.11	100	8	6.2	9.9
1/2-20	eShop ■	20	12.7	100	9	7	11.5
5/8-18	eShop ■	18	15.88	100	12	9	14.5
3/4-16	eShop ■	16	19.05	110	14	11	17.5
7/8-14	eShop ■	14	22.23	125	18	14.5	20.4
1-12	eShop ■	12	25.4	140	18	14.5	23.25

UNF | 60° | B 4 | h9 | ≤3×D

Through hole machine tap



13 3410

HSS E-PM | 2BX | DIN 371 ≤3/8" | DIN 374 ≥7/16"

13 3410 – **GARANT Master Tap general-purpose tap,** designed for use on a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

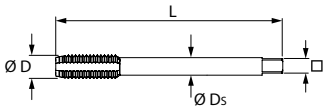


13 3425

HSS E | 2B | DIN 371 ≤1/4" | DIN 374 ≥5/16"

13 3425 – **HOLEX Pro Tap general-purpose tap.** Sturdy design suitable for a wide spectrum of materials. **Improved HSS-E tool material** with **low-friction TiN coating.**

Application: **For UNF unified fine threads** ASME – B1.1.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 3410	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 3425	24	25	10	24	20	15	8							8			15	●	●	●			

UNF	11l 13 3410 Garant GARANT Master Tap machine tap HSS-E-PM AlTiX	12l 13 3425 HOLEX HOLEX Pro Tap machine tap HSS-E TiN	Threads per inch	Thread Ø mm	L mm	Ø D_s 13 3410 mm	Ø D_s 13 3425 mm	□ 13 3410 mm	□ 13 3425 mm	Tapping hole Ø mm
2-64	eShop	–	64	2.18	45	2.8	–	2.1	–	1.85
3-56	eShop	–	56	2.51	50	2.8	–	2.1	–	2.15
4-48	eShop	–	48	2.84	56	3.5	–	2.7	–	2.4
5-44	eShop	–	44	3.17	56	3.5	–	2.7	–	2.7
6-40	eShop	–	40	3.51	56	4	–	3	–	2.95
8-36	eShop	–	36	4.16	63	4.5	–	3.4	–	3.5
10-32	eShop	eShop	32	4.83	70	6	6	4.9	4.9	4.1
1/4-28	eShop	eShop	28	6.35	80	7	7	5.5	5.5	5.5
5/16-24	eShop	eShop	24	7.94	90	8	6	6.2	4.9	6.9
3/8-24	eShop	eShop	24	9.53	90	10	7	8	5.5	8.5
7/16-20	eShop	eShop	20	11.11	100	8	8	6.2	6.2	9.9
1/2-20	eShop	eShop	20	12.7	100	9	9	7	7	11.5
9/16-18	eShop	eShop	18	14.29	100	11	11	9	9	12.9
5/8-18	eShop	eShop	18	15.88	100	12	12	9	9	14.5
3/4-16	eShop	eShop	16	19.05	110	14	14	11	11	17.5
7/8-14	eShop	eShop	14	22.23	125	18	18	14.5	14.5	20.4
1-12	eShop	–	12	25.4	140	18	–	14.5	–	23.25

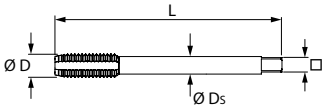
Pg | 80° | DIN 40432 | DIN 40430 | D 4 | h9 | ≤3×D | ≤3×D

HSS E ≤PG16 | HSS PG21

Garant Steel conduits tap

Application: For use as machine tap or for cleaning existing threads by hand.
For steel conduit threads DIN 40430.

Note: Shank produced according to DIN 40432.





13 3450

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 3450		13		15	15									6			13		●	○			

PG	11H 13 3450 Steel conduit tap	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
PG7	eShop	20	12.5	70	9	7	11.4
PG9	eShop	18	15.2	70	12	9	14
PG11	eShop	18	18.6	80	14	11	17.25
PG13,5	eShop	18	20.4	80	16	12	19
PG16	eShop	18	22.5	80	18	14.5	21.25
PG21	eShop	16	28.3	90	20	16	27

TR | 30° | HSS E | Standard | DIN 103 7H | h9 | ≤1.5×D

Garant Synchronous trapezoidal spiral point machine tap

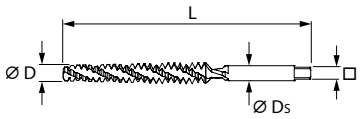
Profile correct for NC, with divided envelope cut.
Lead chamfer: ≈ 20 turns. **With 25° left-hand flutes**, right-hand cutting.

Advantage: **Suitable for reversing.**

Note: **For use on synchronised spindles.**
The lead must be machine driven.



13 3490



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
13 3490		7		7	5	3								3		7	7	●

Tr	1H	13 3490 Trapezoidal spiral point machine tap nitrided	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm
TR8×1,5		eShop	90	6	4.9	6.6
TR10×2		eShop	110	7	5.5	8.2
TR10×3		eShop	130	7	5.5	7.25
TR12×3		eShop	140	9	7	9.25
TR14×3		eShop	145	10	8	11.25

Tr	1H	13 3490 Trapezoidal spiral point machine tap nitrided	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm
TR14×4		eShop	165	10	8	10.25
TR16×4		eShop	190	12	9	12.25
TR18×4		eShop	195	14	11	14.25
TR20×4		eShop	195	16	12	16.25
TR24×5		eShop	245	18	14.5	19.25

EG-M | 60° | HSS E-PM | Standard | 6HX mod. | B | h9 | ≤4×D

Garant GARANT Master Tap Alu through hole machine tap for wire inserts

High-performance tap, specially developed for **aluminium and non-ferrous alloys. Extra-long flutes** and neck length for usable **thread depths up to 4×D.**

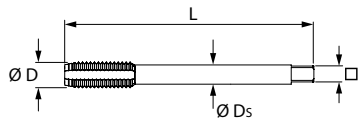
- **HSS-E-PM tool material** for high cutting edge stability.
- Ultra-smooth **DLC coating** for wear resistance and avoidance of edge build-up.
- **Extra-long flute geometry.**

Application: For production of EG mounting thread according to metric ISO thread **DIN 8140** for **STI wire thread inserts** (Screw Thread Insert).

Note: Please be sure to observe the correct **tapping hole Ø (see table)!**



13 3555



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13 3555	35	32	20	20		18	18										18	25

EG-M	1H	13 3555 GARANT Master Tap Alu machine tap for wire thread inserts DLC	Thread pitch	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
EG-M2		eShop	0.4	55	2.8	2.1	2.15
EG-M2,5		eShop	0.45	56	3.5	2.7	2.65
EG-M3		eShop	0.5	63	4.5	3.4	3.15
EG-M4		eShop	0.7	70	6	4.9	4.2
EG-M5		eShop	0.8	80	6	4.9	5.25
EG-M6		eShop	1	90	8	6.2	6.3
EG-M8		eShop	1.25	105	10	8	8.4
EG-M10		eShop	1.5	110	9	7	10.5
EG-M12		eShop	1.75	125	11	9	12.5
EG-M16		eShop	2	150	14	11	16.5

EG-M | 60° | HSS E-PM | DIN 40435 | 6HX mod. | B 4 | h9 | ≤3×D

Garant GARANT Master Tap through hole machine tap for wire inserts

Tap to **DIN 40435 (similar to DIN 371 / DIN 376).**
GARANT Master Tap Universal taps, designed for use in a wide spectrum of materials with high process reliability.

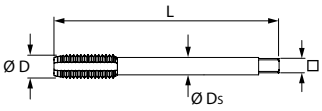
- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

Application: For production of EG mounting thread according to metric ISO thread **DIN 8140** for **STI wire thread inserts** (Screw Thread Insert).

Note: Please ensure without fail the correct **tapping drill Ø** (see table)**!**



13 3560



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 3560	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			

EG-M	11l 13 3560 GARANT Master Tap machine tap for wire thread inserts HSS-E-PM AlTiX	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
EG-M2	eShop	0.4	50	2.8	2.1	2.15
EG-M2,5	eShop	0.45	56	3.5	2.7	2.65
EG-M3	eShop	0.5	63	4.5	3.4	3.15
EG-M4	eShop	0.7	70	6	4.9	4.2
EG-M5	eShop	0.8	80	6	4.9	5.25
EG-M6	eShop	1	90	8	6.2	6.3

EG-M	11l 13 3560 GARANT Master Tap machine tap for wire thread inserts HSS-E-PM AlTiX	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
EG-M8	eShop	1.25	100	10	8	8.4
EG-M10	eShop	1.5	100	9	7	10.5
EG-M12	eShop	1.75	110	11	9	12.5
EG-M16	eShop	2	125	14	11	16.5
EG-M20	eShop	2.5	125	18	14.5	20.75

Garant Thread inserts and thread repairs





Wire thread inserts allow high-security fastenings even in low-strength metallic materials. HELICOIL PLUS thread inserts are highly precise, corrosion-resistant and extremely capable of withstanding high temperatures.



Thread inserts and tools for thread repairs can be found in the Hoffmann Group Catalogue „Hand Tools and Metrology" from No. 08 2800.

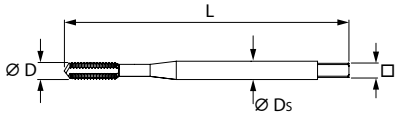
M | 60° | HSS E | DIN 371 | DIN 13 | ISO 2 6H | C 3 | 40° | h9 | ≤3×D

Garant Blind hole machine tap



13 4200

Two spiral flutes with **polished** chip space.
Advantage: Reliable swarf evacuation, due to the high helix angle and wide flutes.
Application: **Suitable for tensile strength up to maximum 300 N/mm².**



Suitable for/ v_c [m/min]	Alu	Alu	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
13 4200	13	13	30			30													●	○			

M	11H 13 4200 Machine tap	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
M2	eShop	0.4	45	2.8	2.1	1.6
M2,5	eShop	0.45	50	2.8	2.1	2.05
M3	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	0.8	70	6	4.9	4.2
M6	eShop	1	80	6	4.9	5
M8	eShop	1.25	90	8	6.2	6.8
M10	eShop	1.5	100	10	8	8.5

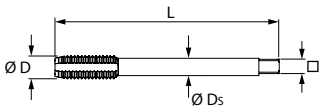
M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | E | 1 ⟷ 1½ | 45° | h9 | ≤3×D | ≠

Garant GARANT Master Tap Alu blind hole machine tap

High-performance tap, specially developed for **aluminium and non-ferrous alloys.**
Dynamic helical pitch of the clamping slots ensure **optimum chip evacuation** and **process reliability.**

- **HSS-E-PM tool material** – for high cutting edge stability.
- Ultra-smooth **DLC coating** for wear resistance and avoidance of edge build-up.
- **Dynamic helical pitch of the flutes.**
- **Short lead chamfer form E.**
  13 4265 – With extra long shank.

Note:
13 4260 Size M1,6–M2,5 – Suitable up to thread depth 2.5×D.




13 4260


13 4265

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
13 4260/4265	35	32	20	20		18	18										18	25	●	●	●		

M	13 4260 GARANT Master Tap Alu machine tap DLC	13 4265 GARANT Master Tap Alu machine tap extra long DLC	Thread pitch mm	L 13 4260 mm	L 13 4265 mm	Ø D_s mm	□ mm	Tapping hole Ø mm
M1,6	eShop	–	0.35	40	–	2.5	2.1	1.25
M2	eShop	–	0.4	45	–	2.8	2.1	1.6
M2,5	eShop	–	0.45	50	–	2.8	2.1	2.05
M3	eShop	eShop	0.5	56	100	3.5	2.7	2.5
M4	eShop	eShop	0.7	63	125	4.5	3.4	3.3
M5	eShop	eShop	0.8	70	160	6	4.9	4.2
M6	eShop	eShop	1	80	160	6	4.9	5
M8	eShop	eShop	1.25	95	180	8	6.2	6.8
M10	eShop	eShop	1.5	110	200	10	8	8.5
M12	eShop	eShop	1.75	115	200	9	7	10.2
M14	eShop	–	2	120	–	11	9	12
M16	eShop	eShop	2	125	200	12	9	14
M20	eShop	eShop	2.5	155	200	16	12	17.5

13

Garant THE GARANT MASTER TAP FAMILY

Garant MASTER TAP ALU



N

The performer
No. 13 4260

Garant MASTER TAP INOX



M

The specialist
No. 13 5732

Garant MASTER TAP STEEL HT



P

The problem solver
No. 13 5371

Garant MASTER TAP



N M P K

The all-rounder
No. 13 5960

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | 40° | h6 DIN 1835 B | ≤2.5×D

Garant Synchronised blind hole machine tap with internal coolant supply

Sturdy version with right-hand helix and shank to DIN 1835-B. Special geometry for use on machines with **synchronised spindle drives.** The tap is controlled by the synchronising spindle of the machine. With the latest generation of special **DLC coating sp²** for optimum tool life. For use with **emulsion** (fat content minimum 8%).

13 4280 – **Form E** (lead chamfer: 1.5 - 2 turns) for the deepest possible thread depths.

13 4285 – With **internal coolant supply** for maximum tool life.

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures maximum process reliability.

C 3



13 4275

E 1½

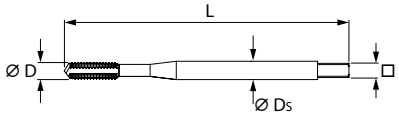


13 4280

C 3



13 4285



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
13 4275–13 4285	30	35	20	25								20		25			55	35		●	●		●

M	11H 13 4275	11H 13 4280	11H 13 4285	Thread pitch	L	Ø D_s	□	Tapping hole Ø
	Machine tap for synchronised spindles							
	HSS-E-PM Form C	HSS-E-PM Form E	HSS-E-PM IC / Form C					
	DLC	DLC	DLC	mm	mm	mm	mm	mm
M2,5	eShop	eShop	–	0.45	70	6	4.9	2.05
M3	eShop	eShop	–	0.5	70	6	4.9	2.5
M4	eShop	eShop	–	0.7	70	6	4.9	3.3
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	eShop	1.75	110	12	9	10.2
M16	eShop	eShop	eShop	2	110	12	9	14

13

Garant Synchronous tap

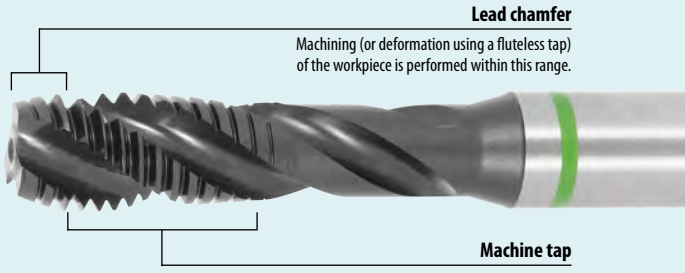
Process reliability in thread production

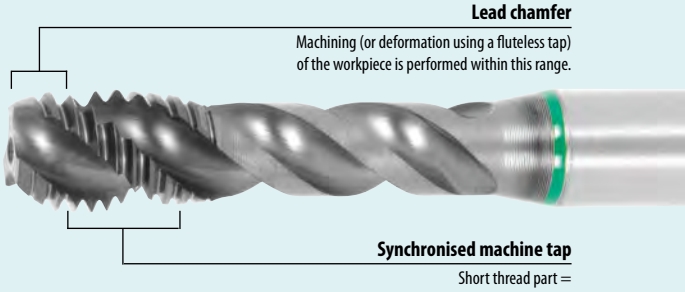
Tapping often takes place at the end of a production process.
This operation is thus critical for the quality of the workpiece.
Defective threads generally give rise to significant additional costs.
Process reliability thus takes absolute priority. However **short cycle times** and **economic production processes** must also be considered.

Special features of a synchronous tap:
Due to the short guide part of the synchronous machine tap the frictional resistance between tool and workpiece is reduced.
This significantly increases the **process reliability** for thread tapping.

The axial guidance is therefore provided by the machine.
This assumes rigid clamping of the tool or **the use of our GARANT** quick-change tapping chuck **No. 33 8100 – 33 8121 with minimum length compensation (MLA)** .

Caution:
Because the tool is rigidly clamped using a Weldon arbor, shrink-fit chuck or collet chuck, the **spindle speed** must be synchronised with the **advance of the axis.**





M | 60° | DIN 13 | ISO 2 6H | D ←4→ | 15-20° | h9 | ≤2×D

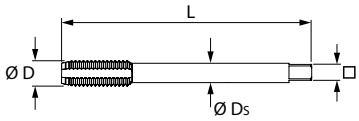
HSS E ≤ M24 | HSS ≥ M27 | DIN 371 ≤ M11 | DIN 376 ≥ M12

Garant Blind hole machine tap

Sturdy design, with 15 – 20° right-hand helix.
Size M2.6 has the old DIN profile.



13 4600



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 4600		13		15	15													

M	11H 13 4600 Machine tap	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
M2	eShop	0.4	45	2.8	2.1	1.6
M2,2	eShop	0.45	45	2.8	2.1	1.75
M2,5	eShop	0.45	50	2.8	2.1	2.05
M2,6	eShop	0.45	50	2.8	2.1	2.1
M3	eShop	0.5	56	3.5	2.7	2.5
M3,5	eShop	0.6	56	4	3	2.9
M4	eShop	0.7	63	4.5	3.4	3.3
M4,5	eShop	0.75	70	6	4.9	3.7
M5	eShop	0.8	70	6	4.9	4.2
M6	eShop	1	80	6	4.9	5
M7	eShop	1	80	7	5.5	6
M8	eShop	1.25	90	8	6.2	6.8

M	11H 13 4600 Machine tap	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
M9	eShop	1.25	90	9	7	7.8
M10	eShop	1.5	100	10	8	8.5
M11	eShop	1.5	100	11	9	9.5
M12	eShop	1.75	110	9	7	10.2
M14	eShop	2	110	11	9	12
M16	eShop	2	110	12	9	14
M18	eShop	2.5	125	14	11	15.5
M20	eShop	2.5	140	16	12	17.5
M24	eShop	3	160	18	14.5	21
M27	eShop	3	160	20	16	24
M30	eShop	3.5	180	22	18	26.5

M | 60° | DIN 13 | ISO 2 6H | C ←3→ | 40° | h9 | ≤3×D

Garant Blind hole machine tap

13 4620 – **HSS-E-PM steel for high wear resistance** and **strong right-hand chip flutes,** for optimum chip evacuation.

13 4660 – **With extra long shank.**
≤ M10: Shank **to DIN 371;**
≥ M12: Shank **to DIN 376.**

Advantage:

13 4660 – Designed **for tapping threads where access is difficult.**



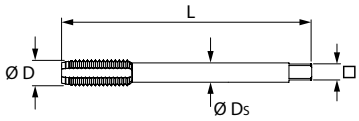
13 4620

HSS E-PM | DIN 371 ≤ M10 | DIN 376 ≥ M12



134660

HSS E | Standard



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
13 4620		15		18	18	18	9											
13 4660		13		15	15												9	

M	11H 13 4620 11H 13 4660 Machine tap HSS-E-PM	extra long HSS-E	Thread pitch	L 13 4620	L 13 4660	Ø D_s	□	Tapping hole Ø
M3	eShop	eShop	0.5	56	112	3.5	2.7	2.5
M4	eShop	eShop	0.7	63	112	4.5	3.4	3.3
M5	eShop	eShop	0.8	70	125	6	4.9	4.2
M6	eShop	eShop	1	80	125	6	4.9	5
M8	eShop	eShop	1.25	90	140	8	6.2	6.8

M	11H 13 4620 11H 13 4660 Machine tap HSS-E-PM	extra long HSS-E	Thread pitch	L 13 4620	L 13 4660	Ø D_s	□	Tapping hole Ø
M10	eShop	eShop	1.5	100	160	10	8	8.5
M12	eShop	eShop	1.75	110	180	9	7	10.2
M16	eShop	eShop	2	110	220	12	9	14
M20	eShop	eShop	2.5	140	280	16	12	17.5

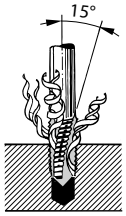
M | 60° | HSS E | DIN 352 | DIN 13 | ISO 2 6H | C 3 | 15-20° | h9 | ≤2×D

Garant Blind hole machine tap short

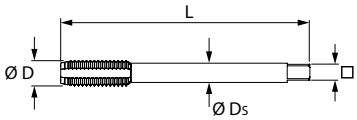
The **short shank projects less and hence is more stable.**



13 4650



The right-hand flutes evacuate the swarf upwards out of the blind hole.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 4650		13		15	15														●	○			

M	11H 13 4650 Machine tap short	Thread pitch mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
M3	eShop	0.5	40	3.5	2.7	2.5
M4	eShop	0.7	45	4.5	3.4	3.3
M5	eShop	0.8	50	6	4.9	4.2
M6	eShop	1	50	6	4.9	5
M8	eShop	1.25	56	6	4.9	6.8
M10	eShop	1.5	70	7	5.5	8.5
M12	eShop	1.75	75	9	7	10.2

13

M | 60° | HSS E | DIN 13 | ISO 2 6H | C 3 | 40° | h9 | ≤2.5×D

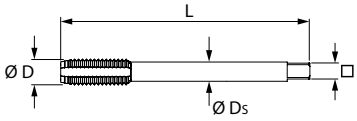
DIN 371 ≤ M10 | DIN 376 ≥ M12

HOLEX Clever Tap blind hole machine tap

Sturdy tap for conventional standard applications. High-quality HSS-E tool material and geometry for steels. Surface: Bronze-coloured tempered thread profile.



13 5255



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
13 5255		13	13		12	12	6												●	●			

M	12H 13 5255 HOLEX Clever Tap machine tap	Thread pitch	L	Ø D_s	□	Tapping hole Ø
M3	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	0.8	70	6	4.9	4.2
M6	eShop	1	80	6	4.9	5
M8	eShop	1.25	90	8	6.2	6.8
M10	eShop	1.5	100	10	8	8.5
M12	eShop	1.75	110	9	7	10.2
M16	eShop	2	110	12	9	14
M20	eShop	2.5	140	16	12	17.5
M24	eShop	3	160	18	14.5	21

M | 60° | HSS E-PM | DIN 13 | C ↔3↔ | 40° | h9 | ≤2.5×D | DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant GARANT Master Tap Steel^{HT} blind hole machine tap

High-performance tap, specially developed for use in **steels with high tensile strength** and for **difficult-to-machine materials.**
Sturdy design with **optimised guide thread to avoid chips jamming.**

- **HSS-E-PM tool material** – for **very high cutting edge stability.**
- **Optimised honed cutting edges.**
- **TiAlN coating** – for **maximum wear protection.**

13 5374 – **Tolerance class: ISO 3X/6GX.**

Application:

13 5374 – For components which are galvanised or shrink slightly when hardened.

Recommendation: For **TOOLOX and HARDOX materials we recommend deviating from the DIN data** (see table) by **selecting a larger tapping hole ∅.**

Note:	For **TOOLOX** and **HARDOX materials:** do not exceed the maximum thread depth 2×D!



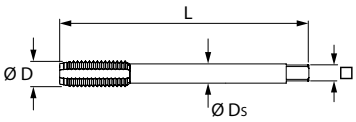
13 5371

ISO 2X 6HX



13 5374

ISO 3X 6GX



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	S					
13 5371/5374					30	20	15	12	5						15	5	7	5	●	●			

M	13 5371	13 5374	Thread pitch	L	∅ D_s	□	Tapping hole ∅
	GARANT Master Tap Steel^{HT} machine tap						
	HSS-E-PM Form C 6HX TiAlN	**HSS-E-PM Form C 6GX TiAlN**	mm	mm	mm	mm	mm
M3	eShop	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	1.75	110	9	7	10.2
M14	eShop	eShop	2	110	11	9	12
M16	eShop	eShop	2	110	12	9	14
M20	eShop	eShop	2.5	140	16	12	17.5
M24	eShop	eShop	3	160	18	14.5	21
M27	eShop	–	3	160	20	16	24
M30	eShop	–	3.5	180	22	18	26.5

Garant GARANT MASTER TAP STEEL^{HT} – THE PROBLEM-SOLVER – DEVELOPED FOR STEELS THAT ARE DIFFICULT TO MACHINE



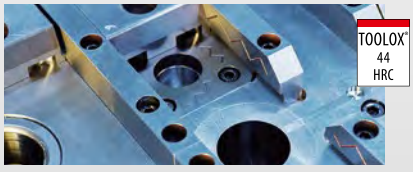
1.2379 (X 153 CrMoV 12)

High-alloy cold-working steel with high toughness and wear resistance.
Application:
Cutting punches, pressure plates and cutter inserts, general mould making.



1.7225 (42CrMo4+QT)

Alloyed heat treatable steel with high strength.
Application:
General mechanical engineering, automotive industry, steering knuckles, connecting rods and gear wheels.



Toolox44

Pre-hardened machinery steel and tool steel.
Application:
Extrusion moulds and machine building components, injection mould making.



HARDOX400

Abrasion-resistant steel with a nominal hardness of 400 HBW.
Application:
Conveyor systems, excavators, gear wheels and chain wheels.

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | 40° | h6 DIN 1835 B | ≤2.5×D

Garant Synchronised blind hole machine tap with internal coolant supply

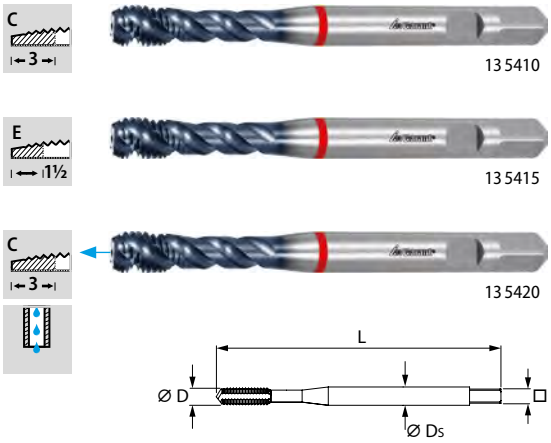
Sturdy version with right-hand helix and shank to DIN 1835-B. Special geometry for use on machines with **synchronised spindle drives.** The tap is guided by the synchronised spindle on the machine. Special **TiAlN-S coating** for optimum tool life. For use with **emulsion** (fat content minimum 8%).

13 5415 – **Form E** (lead chamfer: 1.5 - 2 turns) for the deepest possible thread depths.

13 5420 – With **internal coolant supply** for maximum tool life.

Recommendation: For **TOOLOX materials** we recommend **deviating from the DIN** data (see table) by drilling the tapping hole ∅ **0.05 to 0.3mm** larger.

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M	S					
13 5410–13 5420					32	20	12	7						7	3				●	●	●		

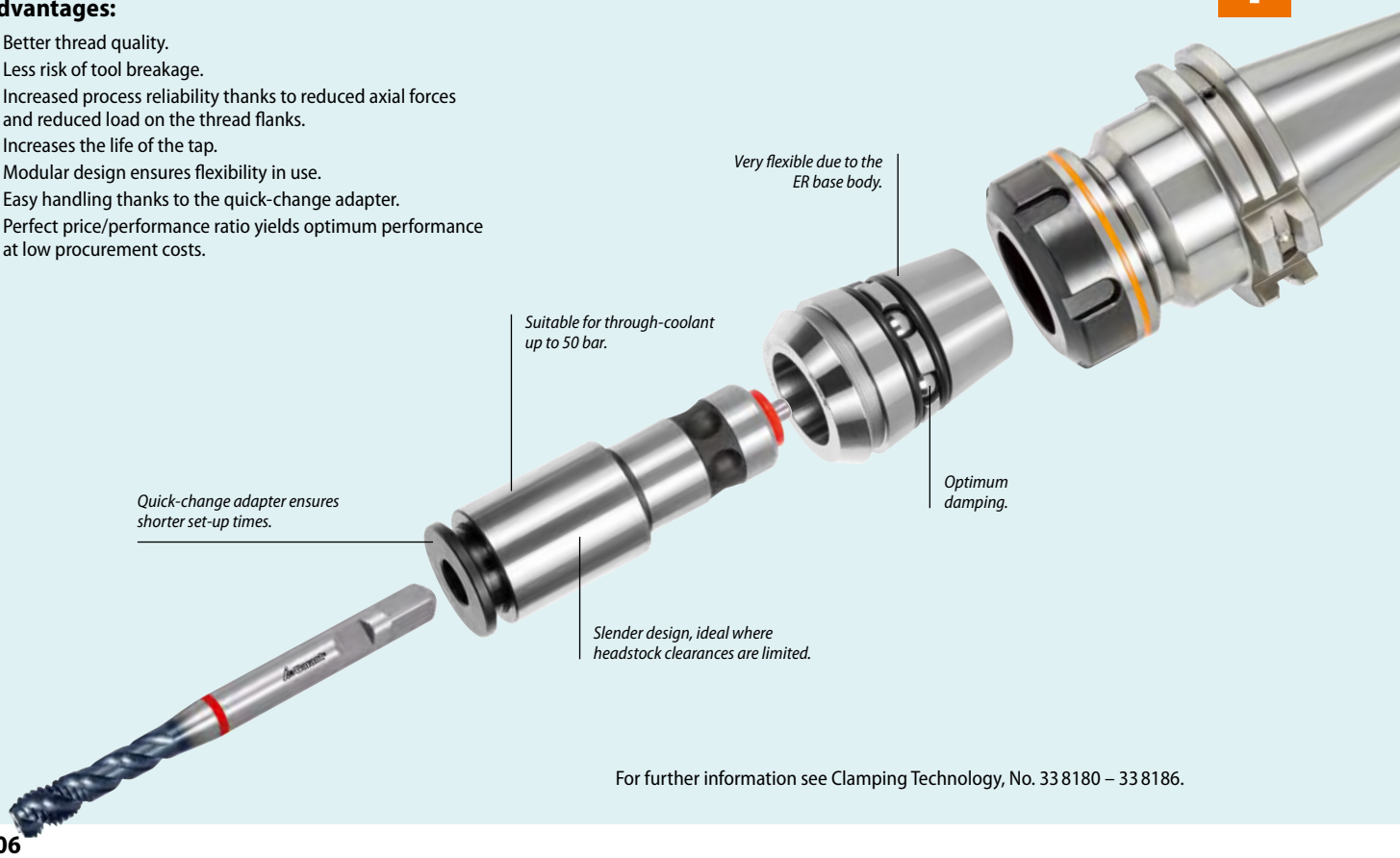
M	13 5410	13 5415	13 5420	Thread pitch	L	∅ D_s	□	Tapping hole ∅
	Machine tap for synchronised spindles							
	HSS-E-PM Form C	HSS-E-PM Form E	HSS-E-PM IC / Form C					
	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm
M3	eShop	eShop	–	0.5	70	6	4.9	2.5
M4	eShop	eShop	–	0.7	70	6	4.9	3.3
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	eShop	1.75	110	12	9	10.2
M16	eShop	eShop	eShop	2	110	12	9	14

13

Synchro insert with ER collet base body

Advantages:

- Better thread quality.
- Less risk of tool breakage.
- Increased process reliability thanks to reduced axial forces and reduced load on the thread flanks.
- Increases the life of the tap.
- Modular design ensures flexibility in use.
- Easy handling thanks to the quick-change adapter.
- Perfect price/performance ratio yields optimum performance at low procurement costs.



For further information see Clamping Technology, No. 33 8180 – 33 8186.

M | 60° | DIN 13 | C ↤3↦ | 40° | h9 | ≤2×D

HSS E ≤ M24 | HSS M30 | DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant

Blind hole machine tap for stainless steels

13 5450 – Size M2.6 to the old DIN profile.

13 5550 – **With conically offset guide thread.**
Particularly for recessed blind hole threads where the swarf generated remains in the tap flutes.

13 5600 – **Tolerance class ISO 3 / 6G** = with oversize approx. 0.02 – 0.04 mm.

Application:

13 5600 – For components which are **galvanised** after threading or shrink slightly when hardened.

ISO 2 6H



13 5450

ISO 2 6H

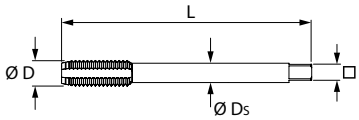


13 5550

ISO 3 6G



13 5600



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 5450–13 5600		13		15	15	15								6			13		●	○			

M	11H 13 5450	11H 13 5550	11H 13 5600	Thread pitch	L	$\varnothing D_s$	□	Tapping hole ∅
	Machine tap	tapered	6G					
	vaporised	vaporised	vaporised	mm	mm	mm	mm	mm
M2	eShop	–	eShop	0.4	45	2.8	2.1	1.6
M2,5	eShop	–	eShop	0.45	50	2.8	2.1	2.05
M2,6	eShop	–	–	0.45	50	2.8	2.1	2.1
M3	eShop	eShop	eShop	0.5	56	3.5	2.7	2.5
M4	eShop ■	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop ■	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	eShop	1.75	110	9	7	10.2
M14	eShop	eShop	eShop	2	110	11	9	12
M16	eShop	eShop	eShop	2	110	12	9	14
M18	eShop	–	–	2.5	125	14	11	15.5
M20	eShop	eShop	eShop	2.5	140	16	12	17.5
M24	eShop	–	–	3	160	18	14.5	21
M30	eShop	–	–	3.5	180	22	18	26.5

M | 60° | HSS E | DIN 13 | ISO 2 6H | C ↤3↦ | 40° | h9 | ≤2×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant

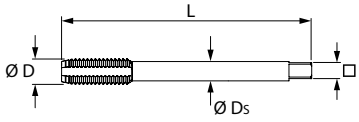
Blind hole machine tap for stainless and acid-resistant steels

Parallel offset guide thread.

Advantage: This allows the tap to be reversed with little risk of chips jamming and causing damage to the tap.



13 5650



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 5650		13		15	15	15								6	4		13		●	●			

M	11H 13 5650	Thread pitch	L	$\varnothing D_s$	□	Tapping hole ∅
	Machine tap					
	vaporised	mm	mm	mm	mm	mm
M2	eShop	0.4	45	2.8	2.1	1.6
M2,5	eShop	0.45	50	2.8	2.1	2.05
M3	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	0.8	70	6	4.9	4.2
M6	eShop	1	80	6	4.9	5

M	11H 13 5650	Thread pitch	L	$\varnothing D_s$	□	Tapping hole ∅
	Machine tap					
	vaporised	mm	mm	mm	mm	mm
M8	eShop	1.25	90	8	6.2	6.8
M10	eShop	1.5	100	10	8	8.5
M12	eShop	1.75	110	9	7	10.2
M16	eShop	2	110	12	9	14
M20	eShop	2.5	140	16	12	17.5
M24	eShop	3	160	18	14.5	21

M | 60° | HSS E-PM | DIN 13 | 45° | h9 | ≤2.5×D

Garant

GARANT Master Tap INOX blind hole machine tap for stainless and acid-resistant steels

High-performance tap, specially developed for **good process reliability in stainless and acid-resistant steels** and **duplex materials.**
The 45° helix angle of the flutes facilitates chip formation especially in ductile austenitic CrNi steels.

- **HSS-E-PM tool material** for a high degree of wear resistance
- The latest generation of **TiALN multi-layer coating**
- **Parameterised flute geometry** for optimum chip formation and **torsional rigidity**

13 5734 – With internal coolant supply
13 5736 – Form E (lead chamfer: 1.5 - 2 turns).
13 5737 – **Tolerance class ISO 3X/6GX.** For components which are **galvanised** or shrink slightly when hardened.
13 5739 – **With extra long shank.**

13 5739 Size M3–M10 – Shank to DIN 371.
13 5739 Size M12–M24 – Shank to DIN 376.

Advantage:
13 5739 – Designed for tapping threads where access is difficult.


13 5732

DIN 371 | DIN 376 | ISO 2X 6HX | C, 3
≤ M10 | ≥ M12


13 5734

DIN 371 | DIN 376 | ISO 2X 6HX | C, 3
≤ M10 | ≥ M12


13 5736

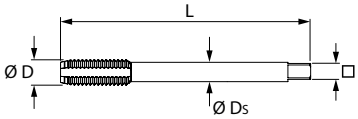
DIN 371 | DIN 376 | ISO 2X 6HX | E, 1½
≤ M10 | ≥ M12


13 5737

DIN 371 | DIN 376 | ISO 3X 6GX | C, 3
≤ M10 | ≥ M12


13 5739

Standard | ISO 2X 6HX | C, 3



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 5732–13 5737		28			23	23	**12**							**11**	**9**				●	●			
13 5739		20			16	16	**8**							**7**	**6**				●	●			

M	13 5732	13 5734	13 5736	13 5737	13 5739	Thread pitch	L		Ø D_s	□	Tapping hole Ø
	GARANT Master Tap INOX machine tap						13 5732, 13 5734, 13 5736, 13 5737	13 5739			
	HSS-E-PM Form C 6HX	HSS-E-PM IC / Form C 6HX	HSS-E-PM Form E 6HX	HSS-E-PM Form C 6GX	extra long HSS-E-PM Form C 6HX						
	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
M1,6	eShop	–	–	–	–	0.35	40	–	2.5	2.1	1.25
M2	eShop	–	eShop	eShop	–	0.4	45	–	2.8	2.1	1.6
M2,5	eShop	–	–	–	–	0.45	50	–	2.8	2.1	2.05
M2,6	eShop	–	–	–	–	0.45	50	–	2.8	2.1	2.1
M3	eShop	–	eShop	eShop	eShop	0.5	56	112	3.5	2.7	2.5
M4	eShop	–	eShop	eShop	eShop	0.7	63	126	4.5	3.4	3.3
M5	eShop	–	eShop	eShop	eShop	0.8	70	140	6	4.9	4.2
M6	eShop	eShop	eShop	eShop	eShop	1	80	160	6	4.9	5
M8	eShop	eShop	eShop	eShop	eShop	1.25	90	180	8	6.2	6.8
M10	eShop	eShop	eShop	eShop	eShop	1.5	100	200	10	8	8.5
M12	eShop	eShop	eShop	eShop	eShop	1.75	110	220	9	7	10.2
M14	eShop	eShop	eShop	eShop	eShop	2	110	220	11	9	12
M16	eShop	eShop	eShop	eShop	eShop	2	110	220	12	9	14
M20	eShop	eShop	eShop	eShop	eShop	2.5	140	280	16	12	17.5
M24	eShop	eShop	eShop	eShop	eShop	3	160	300	18	14.5	21

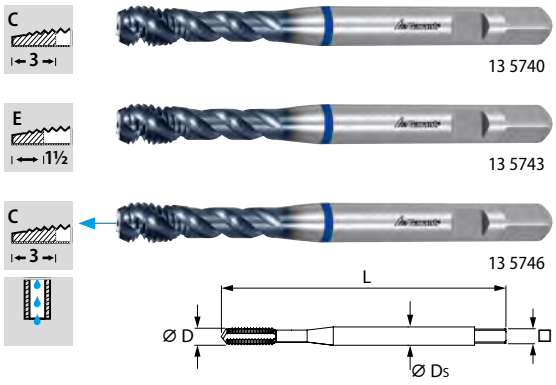
M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | 40° | h6 DIN 1835 B | ≤2.5×D

Garant Synchronised blind hole machine tap with internal coolant supply

Sturdy version with right-hand helix and shank to DIN 1835-B. Special geometry for use on machines with **synchronised spindle drives.** The tap is controlled by the synchronising spindle of the machine.
Special **TiAlN coating** for optimum tool life. For use with **emulsion** (fat content minimum 8%).

13 5743 – **Form E** (lead chamfer: 1.5 - 2 turns) for the deepest possible thread depths.
13 5746 – With **internal coolant supply** for maximum tool life.

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N
13 5740–13 5746		32			32	20								11	9		30	

M	13 5740	13 5743	13 5746	Thread pitch	L	Ø D_s	□	Tapping hole Ø
	Machine tap for synchronised spindles							
	HSS-E-PM Form C	HSS-E-PM Form E	HSS-E-PM IC / Form C					
	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm
M2,5	eShop	eShop	–	0.45	70	6	4.9	2.05
M3	eShop	eShop	–	0.5	70	6	4.9	2.5
M4	eShop	eShop	–	0.7	70	6	4.9	3.3
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	eShop	1.75	110	12	9	10.2
M16	eShop	eShop	eShop	2	110	12	9	14

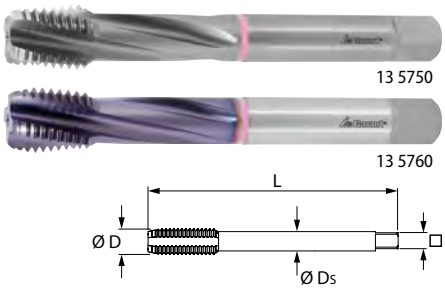
M | 60° | HSS E-PM | DIN 13 | ISO 2X 6HX | C 3 | 15° | h9 | ≤2×D

Garant Blind hole machine tap

Sturdy design, with 15° right-hand chip flutes.

13 5760 – For use with **emulsion** (fat content minimum 8%).

DIN 371 ≤ M12 | DIN 376 ≥ M14



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 5750						18	9	3								4		
13 5760						23	13	7								5		

M	13 5750	13 5760	Thread pitch	L	Ø D_s	□	Tapping hole Ø
	Machine tap HSS-E-PM						
	nitrided	TiCN	mm	mm	mm	mm	mm
M2	eShop	eShop	0.4	45	2.8	2.1	1.6
M2,5	eShop	eShop	0.45	50	2.8	2.1	2.05
M3	eShop	eShop	0.5	56	3.5	2.7	2.5
M3,5	eShop	eShop	0.6	56	4	3	2.9
M4	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	1.75	110	12	9	10.2
M14	–	eShop	2	110	11	9	12
M16	eShop	eShop	2	110	12	9	14
M20	eShop	eShop	2.5	140	16	12	17.5

M | 60° | HSS E | DIN 13 | ISO 2 6H | 40° | h9 | ≤3×D

Blind hole machine tap

13 5810 – Shank **to DIN 376** (shank ∅ relieved); thus suitable for greater operating depths.

13 5815 – **Form E** (1.5–2 turns lead chamfer).

13 5805/5810/5855/5910 – **Form C** (2–3 turns lead chamfer).

13 5910 – **HOLEX Pro Tap general-purpose tap.**
Sturdy design suitable for a wide spectrum of materials.
Improved HSS-E tool material with **friction-reduction TiN coating**.

13 5805–5815 – **Form C** (2–3 turns lead chamfer).



13 5805

C | DIN 371 | DIN 376
≤ M10 | ≥ M12



13 5810

C | DIN 376



13 5815

E | DIN 371 | DIN 376
≤ M10 | ≥ M12



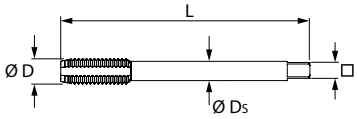
13 5855

C | DIN 371 | DIN 376
≤ M10 | ≥ M12



13 5910

C | DIN 371 | DIN 376
≤ M10 | ≥ M12



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 5805–13 5815	18	13	N	18	15	15	6	P	H	H	H	H	H	6	M	S	15	●	●	●			
13 5855		11		12	8	7	4							4			12	●	●				
13 5910	24	25	10	24	20	15	8							8			15	●	●	●			

M	13V 13 5805 Garant HSS-E Form C vaporised	13V 13 5810 Garant GARANT Vap Tap machine tap HSS-E Form C DIN 376 vaporised	13V 13 5815 HSS-E Form E vaporised	12H 13 5855 HOLEX Machine tap HSS-E Form C vaporised	12I 13 5910 HOLEX HOLEX Pro Tap machine tap HSS-E Form C TiN	Thread pitch	L	∅ D_s 13 5805 13 5815 13 5855 13 5910	∅ D_s 13 5810	□ 13 5805 13 5815 13 5855 13 5910	□ 13 5810	Tapping hole ∅
						mm	mm	mm	mm	mm	mm	mm
M1,6	eShop	–	–	–	–	0.35	40	2.5	–	2.1	–	1.25
M2	eShop	–	–	–	eShop	0.4	45	2.8	–	2.1	–	1.6
M2,5	eShop	–	–	–	eShop	0.45	50	2.8	–	2.1	–	2.05
M3	eShop	eShop	eShop	eShop ■	eShop	0.5	56	3.5	2.2	2.7	–	2.5
M3,5	eShop	–	–	–	–	0.6	56	4	–	3	–	2.9
M4	eShop	eShop	eShop	eShop ■	eShop	0.7	63	4.5	2.8	3.4	2.1	3.3
M5	eShop	eShop	eShop	eShop ■	eShop	0.8	70	6	3.5	4.9	2.7	4.2
M6	eShop	eShop	eShop	eShop ■	eShop	1	80	6	4.5	4.9	3.4	5
M7	eShop	–	–	–	–	1	80	7	–	5.5	–	6
M8	eShop	eShop	eShop	eShop ■	eShop	1.25	90	8	6	6.2	4.9	6.8
M10	eShop	eShop	eShop	eShop ■	eShop	1.5	100	10	7	8	5.5	8.5
M12	eShop	–	eShop	eShop ■	eShop	1.75	110	9	–	7	–	10.2
M14	eShop	–	–	eShop	eShop	2	110	11	–	9	–	12
M16	eShop	–	eShop	eShop ■	eShop	2	110	12	–	9	–	14
M18	eShop	–	–	–	–	2.5	125	14	–	11	–	15.5
M20	eShop	–	eShop	eShop	eShop	2.5	140	16	–	12	–	17.5
M22	eShop	–	–	–	–	2.5	140	18	–	14.5	–	19.5
M24	eShop	–	–	eShop	eShop	3	160	18	–	14.5	–	21
M27	eShop	–	–	–	–	3	160	20	–	16	–	24
M30	eShop	–	–	–	eShop	3.5	180	22	–	18	–	26.5
M33	eShop	–	–	–	–	3.5	180	25	–	20	–	29.5
M36	eShop	–	–	–	–	4	200	28	–	22	–	32

M | 60° | HSS E-PM | DIN 13 | 40° | h9 | ≤2.5×D

Garant

GARANT Master Tap blind hole machine tap

Universal taps, designed for use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for a high degree of wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

13 5962 – **All sizes:** Shank **to DIN 376 (= shank Ø relieved);** thus suitable for greater operating depths.

13 5965 – **With internal coolant feed.**

13 6152 – **Form E** (1.5-2 turns lead chamfer)

13 5960 Size M1–M1,4 – Corresponds to **ISO 1X/4HX**.

13 5960 Size M1,6–M30 – Corresponds to **ISO 2X/6HX**.



13 5960

DIN 371 | DIN 376 | ISO 1X 4HX | ISO 2X 6HX | C, 3

≤ M10 | ≥ M12 | ≤ M1.4 | ≥ M1.6



13 5962

DIN 376 | ISO 2X 6HX | C, 3



13 5965

DIN 371 | DIN 376 | ISO 2X 6HX | C, 3 | coolant

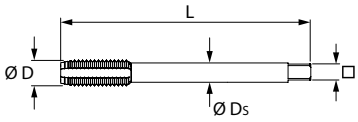
≤ M10 | ≥ M12



13 6152

DIN 371 | DIN 376 | ISO 2X 6HX | E, 1½

≤ M10 | ≥ M12



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 5960–13 5965	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 6152	22	25	15	22	22	18	8	6						7	6	15	15	●	●	●			

M	13 5960	13 5962	13 5965	13 6152	Thread pitch	L	Ø D_s		□		Tapping hole Ø
	GARANT Master Tap machine tap										
	HSS-E-PM Form C	HSS-E-PM Form C 6HX DIN 376	HSS-E-PM IC / Form C 6HX	HSS-E-PM Form E 6HX			13 5960 13 5965 13 6152	13 5962	13 5960 13 5965 13 6152	13 5962	
	AlTiX	AlTiX	AlTiX	AlTiX	mm	mm	mm	mm	mm	mm	mm
M1	eShop	–	–	–	0.25	40	2.5	–	2.1	–	0.75
M1,1	eShop	–	–	–	0.25	40	2.5	–	2.1	–	0.85
M1,2	eShop	–	–	–	0.25	40	2.5	–	2.1	–	0.95
M1,4	eShop	–	–	–	0.3	40	2.5	–	2.1	–	1.1
M1,6	eShop	–	–	–	0.35	40	2.5	–	2.1	–	1.25
M1,7	eShop	–	–	–	0.35	40	2.5	–	2.1	–	1.35
M1,8	eShop	–	–	–	0.35	40	2.5	–	2.1	–	1.45
M2	eShop	–	–	eShop	0.4	45	2.8	–	2.1	–	1.6
M2,2	eShop	–	–	–	0.45	45	2.8	–	2.1	–	1.75
M2,3	eShop	–	–	–	0.4	45	2.8	–	2.1	–	1.9
M2,5	eShop	–	–	–	0.45	50	2.8	–	2.1	–	2.05
M2,6	eShop	–	–	–	0.45	50	2.8	–	2.1	–	2.15
M3	eShop ■	eShop	–	eShop ■	0.5	56	3.5	2.2	2.7	–	2.5
M3,5	eShop	–	–	–	0.6	56	4	–	3	–	2.9
M4	eShop ■	eShop	–	eShop ■	0.7	63	4.5	2.8	3.4	2.1	3.3
M4,5	eShop	–	–	–	0.75	70	6	–	4.9	–	3.7
M5	eShop ■	eShop	–	eShop ■	0.8	70	6	3.5	4.9	2.7	4.2
M6	eShop ■	eShop	eShop	eShop ■	1	80	6	4.5	4.9	3.4	5
M7	eShop	–	–	–	1	80	7	–	5.5	–	6
M8	eShop	eShop	eShop	eShop	1.25	90	8	6	6.2	4.9	6.8
M10	eShop ■	eShop	eShop	eShop	1.5	100	10	7	8	5.5	8.5
M12	eShop ■	–	eShop	eShop	1.75	110	9	–	7	–	10.2
M14	eShop	–	eShop	eShop	2	110	11	–	9	–	12
M16	eShop	–	eShop	eShop ■	2	110	12	–	9	–	14
M18	eShop	–	–	–	2.5	125	14	–	11	–	15.5
M20	eShop	–	eShop	eShop	2.5	140	16	–	12	–	17.5
M22	eShop	–	–	–	2.5	140	18	–	14.5	–	19.5
M24	eShop	–	eShop	eShop	3	160	18	–	14.5	–	21
M27	eShop	–	–	–	3	160	20	–	16	–	24
M30	eShop	–	–	–	3.5	180	22	–	18	–	26.5

M | 60° | HSS E-PM | DIN 13 | C | 3 | 40° | h9 | ≤2.5×D

DIN 371 ≤ M10 | DIN 376 ≥ M12

Garant GARANT Master Tap blind hole machine tap

Universal taps, designed for use in a wide spectrum of materials with high process reliability.
- HSS-E-PM tool material for a high degree of wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

13 6158 – **Tolerance class: ISO 3X/6GX**
13 6162 – **Tolerance class: 7GX**
13 6164 – **Tolerance class: ISO 2/6H+0.1**

Application: For components which are galvanised or shrink slightly when hardened.
Recommendation: We recommend increasing the size of the tapping hole Ø by the tolerance allowance.

ISO 3X 6GX



13 6158

7GX

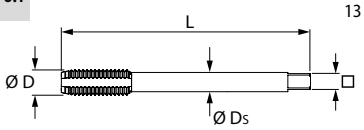


13 6162

ISO 2 6H +0.1



13 6164



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 6158–13 6164	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			

M	13 6158	13 6162	13 6164	Thread pitch	L	Ø D_s	□	Tapping hole Ø
	GARANT Master Tap machine tap							
	HSS-E-PM Form C 6GX	HSS-E-PM Form C 7GX	HSS-E-PM Form C 6H+0.1					
	AlTiX	AlTiX	AlTiX	mm	mm	mm	mm	mm
M2	eShop	eShop	–	0.4	45	2.8	2.1	1.6
M3	eShop	eShop	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	eShop	1.75	110	9	7	10.2
M14	eShop	–	–	2	110	11	9	12
M16	eShop	eShop	eShop	2	110	12	9	14
M20	eShop	–	–	2.5	140	16	12	17.5
M24	eShop	–	–	3	160	18	14.5	21

13

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | C | 3 | 40° | h9 | ≤2.5×D

Garant GARANT Master Tap blind hole machine tap, extra long shank

Universal taps, designed for use in a wide spectrum of materials with high process reliability.
- HSS-E-PM tool material for a high degree of wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

With extra long shank.

13 6168 – **All sizes** with shank to DIN 376 (**= shank Ø tapered**).
Therefore suitable for greater operating depths.

13 4680 Size M3–M10 – **Shank to DIN 371.**
Size M12–M20 – **Shank to DIN 376.**

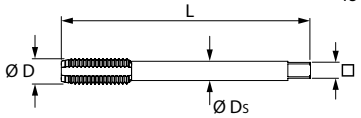
Advantage: Designed for tapping threads where access is difficult.



13 4680



13 6168



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 4680/6168	24	28	16	24	24	20	10	6						8	6	16	16	●	●	●			

M	13 4680	13 6168	Thread pitch	L	Ø D_s		□		Tapping hole Ø
	GARANT Master Tap machine tap								
	HSS-E-PM extra long Form C 6HX	HSS-E-PM extra long Form C 6HX DIN 376			13 4680	13 6168	13 4680	13 6168	
	AlTiX	AlTiX	mm	mm	mm	mm	mm	mm	mm
M3	eShop	–	0.5	100	3.5	–	2.7	–	2.5
M4	eShop	eShop	0.7	125	4.5	2.8	3.4	2.1	3.3
M5	eShop	eShop	0.8	160	6	3.5	4.9	2.7	4.2
M6	eShop	eShop	1	160	6	4.5	4.9	3.4	5
M8	eShop	eShop	1.25	180	8	6	6.2	4.9	6.8
M10	eShop	eShop	1.5	200	10	7	8	5.5	8.5
M12	eShop	–	1.75	200	9	–	7	–	10.2
M14	eShop	–	2	200	11	–	9	–	12
M16	eShop	–	2	200	12	–	9	–	14
M20	eShop	–	2.5	200	16	–	12	–	17.5

M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | 40° | h6 DIN 1835 B | ≤3×D

Garant

Synchronised blind hole machine tap with internal coolant supply

Sturdy design with right-hand chip flutes and shank to DIN 1835-B.
Special geometry for **universal applications** on machines with **synchronised spindle drive.**
The tap is guided by the synchronised spindle on the machine.
Special **TiAlN-S coating** for optimum tool life.
For use with **emulsion** (fat content minimum 8%).

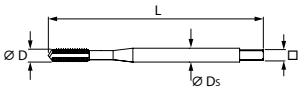
13 6173 – **Form E** (lead chamfer: 1.5 - 2 turns) for the deepest possible thread depths.
13 6176 – **Internal coolant feed** for maximum tool life.

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.


13 6171
C ↔3↔

13 6173
E ↔1½

13 6176
C ↔3↔



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 6171–13 6176	32	32		33	32	20	12	7						11	9		30	●	●	●	●		

M	11H 13 6171	11H 13 6173	11H 13 6176	Thread pitch	L	Ø D_s	□	Tapping hole Ø
	Machine tap for synchronised spindles							
	HSS-E-PM Form C	HSS-E-PM Form E	HSS-E-PM IC / Form C					
	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm
M2,5	eShop	eShop	–	0.45	70	6	4.9	2.05
M3	eShop	eShop	–	0.5	70	6	4.9	2.5
M4	eShop	eShop	–	0.7	70	6	4.9	3.3
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	eShop	1.75	110	12	9	10.2
M16	eShop	eShop	eShop	2	110	12	9	14
M20	eShop	–	–	2.5	140	16	12	17.5

M-LH | 60° | DIN 13 | C ↔3↔ | 40° | h9

Garant

Blind hole machine tap left-hand thread

13 6185 – **GARANT Vap Tap general-purpose tap – left-hand thread.**
Can be used reliably in a **wide range of materials.** Optimised **neck and flute length** for **improved chip evacuation** when working on **deep** threads.
High-performance **HSS-E tool material** with higher **vanadium content** for improved **wear resistance**. **Surface vaporised** for reduced edge build-up.

13 6190 – **GARANT Master Tap Universal taps,** designed for use in a wide spectrum of materials with high process reliability.
- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

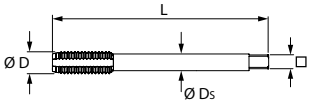
DIN 371 | DIN 376 | ≤ M10 | ≥ M12 | NEW


13 6185

HSS E | ISO 2 6H | ≤3×D


13 6190

HSS E-PM | ISO 2X 6HX | ≤2.5×D



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 6185	18	13		18	15	15	6							6			15	●	●	●			
13 6190	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			

M-LH	13V 13 6185	11I 13 6190	Thread pitch	L	Ø D_s	□	Tapping hole Ø
	GARANT Vap Tap machine tap left-hand thread	GARANT Master Tap machine tap left-hand thread					
	HSS-E 6H	HSS-E-PM 6HX					
	vaporised	AlTiX	mm	mm	mm	mm	mm
M3	eShop	eShop	0.5	56	3.5	2.7	2.5
M4	eShop	eShop	0.7	63	4.5	3.4	3.3
M5	eShop	eShop	0.8	70	6	4.9	4.2
M6	eShop	eShop	1	80	6	4.9	5
M8	eShop	eShop	1.25	90	8	6.2	6.8
M10	eShop	eShop	1.5	100	10	8	8.5
M12	eShop	eShop	1.75	110	9	7	10.2
M14	–	eShop	2	110	11	9	12
M16	eShop	eShop	2	110	12	9	14
M20	eShop	eShop	2.5	140	16	12	17.5
M24	eShop	eShop	3	160	18	14.5	21

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MF | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | E | 45° | h9 | ≤3×D

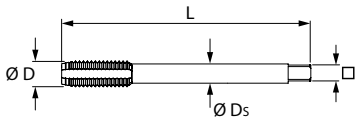
Garant GARANT Master Tap Alu blind hole machine tap

High-performance tap, specially developed for **aluminium and non-ferrous alloys. Dynamic helical pitch** of the clamping slots ensure **optimum chip evacuation** and **process reliability.**

- **HSS-E-PM tool material** – for high cutting edge stability.
- Ultra-smooth **DLC coating** for wear resistance and avoidance of edge build-up.
- **Dynamic helical pitch of the flutes.**
- **Short lead chamfer form E.**



13 6230



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
13 6230	35	32	20	20		18	18										18	25	●	●	●		

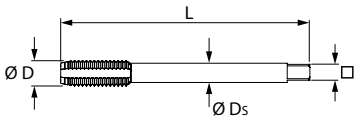
MF	13 6230 GARANT Master Tap Alu machine tap DLC	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
4×0,5	eShop	63	2.8	2.1	3.5
5×0,5	eShop	70	3.5	2.7	4.5
6×0,5	eShop	80	4.5	3.4	5.5
6×0,75	eShop	80	4.5	3.4	5.2
8×0,75	eShop	90	6	4.9	7.2
8×1	eShop	90	6	4.9	7
10×1	eShop	100	7	5.5	9
12×1	eShop	115	9	7	11
12×1,5	eShop	115	9	7	10.5
14×1,5	eShop	120	11	9	12.5
16×1,5	eShop	125	12	9	14.5

MF | 60° | HSS E | DIN 374 | DIN 13 | ISO 2 6H | C 3 | h9

Blind hole machine tap

13 6250 – **Sturdy design, with 15° right-hand chip flutes.**

13 6255 – **HOLEX Clever Tap:**
Sturdy tap for conventional standard applications.
High-quality HSS-E tool material and geometry for steels.
Surface: Bronze-coloured – tempered thread profile.





13 6250



13 6255

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	N						
13 6250			13		15	15	15										14	16	●	○			
13 6255		13	13		12	12	6												●	●			

MF	11H 13 6250 Garant Machine tap	12H 13 6255 HOLEX HOLEX Clever Tap machine tap	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
4×0,5	eShop	–	63	2.8	2.1	3.5
5×0,5	eShop	eShop	70	3.5	2.7	4.5
6×0,5	–	eShop	80	4.5	3.4	5.5
6×0,75	eShop	eShop	80	4.5	3.4	5.2
8×0,5	–	eShop	80	6	4.9	7.5
8×0,75	eShop	eShop	80	6	4.9	7.2
8×1	eShop	eShop	90	6	4.9	7
9×1	eShop	–	90	7	5.5	8
10×0,75	eShop	–	90	7	5.5	9.2
10×1	eShop	eShop	90	7	5.5	9
10×1,25	eShop	eShop	100	7	5.5	8.8
11×1	eShop	–	90	8	6.2	10
12×1	eShop	eShop	100	9	7	11
12×1,25	eShop	eShop	100	9	7	10.8
12×1,5	eShop	eShop	100	9	7	10.5
14×1	eShop	eShop	100	11	9	13
14×1,25	eShop	eShop	100	11	9	12.8
14×1,5	eShop	eShop	100	11	9	12.5
15×1	eShop	–	100	12	9	14
15×1,5	eShop	–	100	12	9	13.5
16×1	eShop	eShop	100	12	9	15
16×1,5	eShop	eShop	100	12	9	14.5
18×1	eShop	eShop	110	14	11	17
18×1,5	eShop	eShop	110	14	11	16.5
18×2	eShop	–	125	14	11	16
20×1	eShop	–	125	16	12	19
20×1,5	eShop	eShop	125	16	12	18.5
22×1	eShop	–	125	18	14.5	21
22×1,5	eShop	eShop	125	18	14.5	20.5
22×2	eShop	–	140	18	14.5	20
24×1	eShop	–	140	18	14.5	23
24×1,5	eShop	eShop	140	18	14.5	22.5
25×1,5	eShop	eShop	140	18	14.5	23.5
26×1,5	eShop	–	140	18	14.5	24.5
27×1,5	eShop	–	140	20	16	25.5
27×2	eShop	–	140	20	16	25
28×1,5	eShop	–	140	20	16	26.5
30×1,5	eShop	–	150	22	18	28.5
30×2	eShop	–	150	22	18	28
32×1,5	eShop	–	150	22	18	30.5
33×1,5	eShop	–	160	25	20	31.5
35×1,5	eShop	–	170	28	22	33.5
36×1,5	eShop	–	170	28	22	34.5

MF | 60° | HSS E-PM | DIN 374 | DIN 13 | ISO 2X 6HX | C 3 | 20° | h9 | ≤2×D

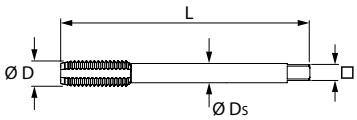
Garant

Blind hole machine tap

Surface vaporised for reduced edge build-up.



13 7055



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 7055						18	9	3								4		

MF	1H 13 7055 Machine tap HSS-E-PM vaporised	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
5×0,5	eShop	70	3.5	2.7	4.5
8×0,75	eShop	80	6	4.9	7.2
8×1	eShop	90	6	4.9	7
10×1	eShop	90	7	5.5	9
10×1,25	eShop	100	7	5.5	8.8
12×1	eShop	100	9	7	11
12×1,25	eShop	100	9	7	10.8
12×1,5	eShop	100	9	7	10.5
14×1	eShop	100	11	9	13

MF	1H 13 7055 Machine tap HSS-E-PM vaporised	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
14×1,5	eShop	100	11	9	12.5
16×1	eShop	100	12	9	15
16×1,5	eShop	100	12	9	14.5
18×1,5	eShop	110	14	11	16.5
20×1,5	eShop	125	16	12	18.5
22×1,5	eShop	125	18	14.5	20.5
24×1,5	eShop	140	18	14.5	22.5
26×1,5	eShop	140	18	14.5	24.5
30×1,5	eShop	150	22	18	28.5

MF | 60° | HSS E-PM | DIN 374 | DIN 13 | ISO 2X 6HX | C 3 | 40° | h9 | ≤2.5×D

Garant

GARANT Master Tap Steel^{HT} blind hole machine tap

High-performance tap, specially developed for use in **steels with high tensile strength** and for **difficult-to-machine materials.** Sturdy design with **optimised guide thread to avoid chips jamming.**

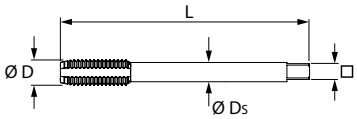
- **HSS-E-PM tool material** – for **very high cutting edge stability.**
- **Optimised honed cutting edges.**
- **TiAlN coating** – for **maximum wear protection.**

Recommendation: For **TOOLOX materials we recommend deviating from the DIN data** (see table) **by selecting a larger tapping hole Ø.**

Note: For **TOOLOX materials:** do not exceed the maximum thread depth of 2×D!



13 6350



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX > 900 N	Ti > 850 N
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	S
13 6350					30	20	15	12	5						15	5	7	5

MF	1H 13 6350 GARANT Master Tap Steel^{HT} machine tap HSS-E-PM Form C 6HX TiAlN	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
3×0,35	eShop	56	2.2	–	2.65
4×0,5	eShop	63	2.8	2.1	3.5
5×0,5	eShop	70	3.5	2.7	4.5
6×0,5	eShop	80	4.5	3.4	5.5
6×0,75	eShop	80	4.5	3.4	5.2
8×0,75	eShop	80	6	4.9	7.2
8×1	eShop	90	6	4.9	7
10×1	eShop	90	7	5.5	9
10×1,25	eShop	100	7	5.5	8.8
12×1	eShop	100	9	7	11

MF	1H 13 6350 GARANT Master Tap Steel^{HT} machine tap HSS-E-PM Form C 6HX TiAlN	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
12×1,25	eShop	100	9	7	10.8
12×1,5	eShop	100	9	7	10.5
14×1,5	eShop	100	11	9	12.5
16×1,5	eShop	100	12	9	14.5
18×1,5	eShop	110	14	11	16.5
20×1,5	eShop	125	16	12	18.5
24×1,5	eShop	140	18	14.5	22.5
26×1,5	eShop	140	18	14.5	24.5
30×1,5	eShop	150	22	18	28.5

MF | 60° | DIN 374 | DIN 13 | C ↔3↔ | h9

Garant

Blind hole machine tap for stainless and acid-resistant steels



13 7050

HSS E | ISO 2 6H | 40° | ≤2×D

13 7050 – Surface vaporised for reduced edge build-up.

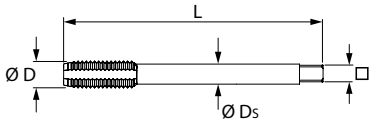
13 7053 – **GARANT Master Tap INOX:**
High-performance tap, specially developed for **good process reliability in stainless and acid-resistant steels** and **duplex materials.**
The 45° helix angle of the flutes facilitates chip formation especially in ductile austenitic CrNi steels.

- **HSS-E-PM tool material** for a high degree of wear resistance
- The latest generation of **TiALN multi-layer coating**
- **Parameterised flute geometry** for optimum chip formation and **torsional rigidity**



13 7053

HSS E-PM | ISO 2X 6HX | 45° | ≤2.5×D



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 7050		13		15	15	15								6			13		●	○			
13 7053		28			23	23	12							11	9				●	●			

MF	11H 13 7050	11I 13 7053	L	Ø D_s	□	Tapping hole Ø
	Machine tap	GARANT Master Tap INOX machine tap				
	HSS-E	HSS-E-PM				
	vaporised	TiAlN	mm	mm	mm	mm
4×0,5	eShop	eShop	63	2.8	2.1	3.5
5×0,5	eShop	eShop	70	3.5	2.7	4.5
6×0,5	eShop	eShop	80	4.5	3.4	5.5
6×0,75	eShop	eShop	80	4.5	3.4	5.2
8×0,75	eShop	eShop	80	6	4.9	7.2
8×1	eShop	eShop	90	6	4.9	7
10×1	eShop	eShop	90	7	5.5	9
10×1,25	–	eShop	100	7	5.5	8.8
12×1	eShop	eShop	100	9	7	11
12×1,25	–	eShop	100	9	7	10.8
12×1,5	eShop	eShop	100	9	7	10.5
14×1,5	eShop	eShop	100	11	9	12.5
16×1,5	eShop	eShop	100	12	9	14.5
18×1,5	eShop	eShop	110	14	11	16.5
20×1,5	eShop	eShop	125	16	12	18.5
22×1,5	eShop	eShop	125	18	14.5	20.5
24×1,5	eShop	eShop	140	18	14.5	22.5
26×1,5	–	eShop	140	18	14.5	24.5
30×1,5	–	eShop	150	22	18	28.5

MF | 60° | HSS E | DIN 374 | DIN 13 | ISO 2 6H | C ↔3↔ | 40° | h9 | ≤3×D

Garant

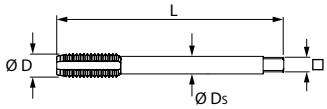
GARANT Vap Tap blind hole machine tap



NEW

13 7110

Can be used **reliably** in a **wide range of materials.** Optimised **neck and flute length** for **improved chip evacuation** when working on **deep** threads. High-performance **HSS-E tool material** with higher vanadium content for improved **wear resistance. Surface vaporised** for reduced edge build-up.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 7110	18	13		18	15	15	6							6			15	●	●	●			

MF	13V 13 7110	L	Ø D_s	□	Tapping hole Ø
	GARANT Vap Tap machine tap				
	HSS-E				
	vaporised	mm	mm	mm	mm
3×0,35	eShop	56	2.2	–	2.65
4×0,5	eShop	63	2.8	2.1	3.5
5×0,5	eShop	70	3.5	2.7	4.5
6×0,5	eShop	80	4.5	3.4	5.5
6×0,75	eShop	80	4.5	3.4	5.2
8×0,75	eShop	80	6	4.9	7.2
8×1	eShop	90	6	4.9	7
10×1	eShop	90	7	5.5	9
12×1	eShop	100	9	7	11
12×1,5	eShop	100	9	7	10.5

MF	13V 13 7110	L	Ø D_s	□	Tapping hole Ø
	GARANT Vap Tap machine tap				
	HSS-E				
	vaporised	mm	mm	mm	mm
14×1,5	eShop	100	11	9	12.5
16×1,5	eShop	100	12	9	14.5
18×1,5	eShop	110	14	11	16.5
20×1,5	eShop	125	16	12	18.5
22×1,5	eShop	125	18	14.5	20.5
24×1,5	eShop	140	18	14.5	22.5
26×1,5	eShop	140	18	14.5	24.5
28×1,5	eShop	140	20	16	26.5
30×1,5	eShop	150	22	18	28.5

MF | 60° | DIN 13 | C ↔3↔ | 40° | h9 | ≤2.5×D

Blind hole machine tap

13 7161 – **Tolerance class: ISO 3X/6GX**.
For components which are **galvanised** or shrink slightly when hardened.

13 7162 – With extra long shank.

13 7170 – **HOLEX Pro Tap general-purpose tap.**
Sturdy design suitable for a wide spectrum of materials. **Improved HSS-E tool material** with **low-friction TiN coating.**

13 7160–7162 – **GARANT Master Tap Universal taps,**
designed for use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

Advantage:

13 7162 – Designed for tapping threads where access is difficult.


13 7160

HSS E-PM | DIN 374 | ISO 2X 6HX


13 7161

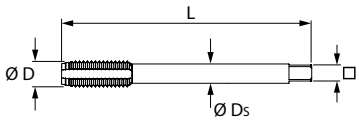
HSS E-PM | DIN 374 | ISO 3X 6GX


13 7162

HSS E-PM | Standard | ISO 2X 6HX


13 7170

HSS E | DIN 374 | ISO 2 6H



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 7160/7161	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 7162	24	28	16	24	24	20	10	6						8	6	16	16	●	●	●			
13 7170	24	25	10	24	20	15	8							8			15	●	●	●			

MF	13 7160	13 7161	13 7162	13 7170	L		Ø D_s	□	Tapping hole Ø
		GARANT Master Tap machine tap		HOLEX Pro Tap machine tap					
	HSS-E-PM 6HX	HSS-E-PM 6GX	extra long HSS-E-PM 6HX	HSS-E 6H	13 7160 13 7161 13 7170	13 7162			
	AlTiX	AlTiX	AlTiX	TiN	mm	mm	mm	mm	mm
2,5×0,35	eShop	–	–	–	50	–	1.8	–	2.15
2,6×0,35	eShop	–	–	–	50	–	1.8	–	2.25
3×0,35	eShop	–	–	eShop	56	–	2.2	–	2.65
3,5×0,35	eShop	–	–	–	56	–	2.2	–	3.15
4×0,35	eShop	–	–	–	63	–	2.8	2.1	3.65
4×0,5	eShop	–	–	eShop	63	–	2.8	2.1	3.5
4,5×0,5	eShop	–	–	–	70	–	3.5	2.7	4
5×0,5	eShop	eShop	–	eShop	70	–	3.5	2.7	4.5
6×0,5	eShop	–	–	eShop	80	–	4.5	3.4	5.5
6×0,75	eShop	eShop	–	eShop	80	–	4.5	3.4	5.2
6,5×0,75	eShop	–	–	eShop	80	–	5.5	4.3	5.8
7×0,5	eShop	–	–	–	80	–	5.5	4.3	6.5
8×0,75	eShop	–	–	eShop	80	–	6	4.9	7.2
8×1	eShop	eShop	eShop	eShop	90	180	6	4.9	7
9×1	eShop	–	–	–	90	–	7	5.5	8
10×0,75	eShop	–	–	–	90	–	7	5.5	9.25
10×1	eShop	eShop	eShop	eShop	90	180	7	5.5	9
10×1,25	eShop ■	–	eShop	eShop	100	200	7	5.5	8.8
11×1	eShop	–	–	–	90	–	8	6.2	10
12×0,5	eShop	–	–	–	100	–	9	7	11.5
12×0,75	eShop	–	–	–	100	–	9	7	11.25
12×1	eShop	eShop	–	eShop	100	–	9	7	11
12×1,25	eShop	–	eShop	eShop	100	200	9	7	10.8
12×1,5	eShop	eShop	eShop	eShop	100	200	9	7	10.5
13×1	eShop	–	–	–	100	–	11	9	12
14×1,5	eShop	eShop	–	eShop	100	–	11	9	12.5
16×1,5	eShop	eShop	eShop	eShop	100	200	12	9	14.5
18×1	eShop	–	–	–	110	–	14	11	17
18×1,5	eShop	–	–	eShop	110	–	14	11	16.5
20×1,5	eShop	–	eShop	eShop	125	250	16	12	18.5
20×2	eShop	–	–	–	140	–	16	12	18
22×1,5	eShop	–	–	eShop	125	–	18	14.5	20.5
24×1,5	eShop	–	–	eShop	140	–	18	14.5	22.5
24×2	eShop	–	–	–	140	–	18	14.5	22
26×1,5	eShop	–	–	eShop	140	–	18	14.5	24.5
30×1,5	eShop ■	–	–	eShop	150	–	22	18	28.5

MF | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | 40° | h6 DIN 1835 B | ≤3×D

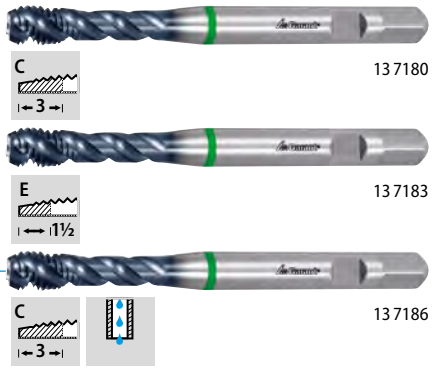
Garant Synchronised blind hole machine tap with internal coolant supply

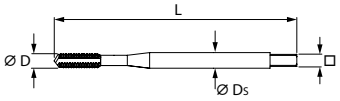
Sturdy version with right-hand helix and shank to DIN 1835-B. Special geometry for **general-purpose use** on machines with **synchronised spindle drive.** The tap is controlled by the synchronising spindle of the machine. Special **TiAlN-S coating** for optimum tool life. For use with **emulsion** (fat content minimum 8%).

13 7183 – **Form E** (lead chamfer: 1.5 - 2 turns) for the deepest possible thread depths.

13 7186 – With **internal coolant supply** for maximum tool life.

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 7180–13 7186	32	32		33	32	20	12	7						11	9		30	●

MF	11H 13 7180	11H 13 7183	11H 13 7186	L	Ø D_s	□	Tapping hole Ø
	Machine tap for synchronised spindles						
	HSS-E-PM Form C	HSS-E-PM Form E	HSS-E-PM IC / Form C				
	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm
8×1	eShop	eShop	eShop	90	8	6.2	7
10×1	eShop	eShop	eShop	90	10	8	9
10×1,25	eShop	eShop	eShop	100	10	8	8.8
12×1	eShop	eShop	eShop	100	12	9	11
12×1,25	eShop	eShop	eShop	100	12	9	10.8
12×1,5	eShop	eShop	eShop	100	12	9	10.5
14×1,5	eShop	eShop	eShop	100	12	9	12.5
16×1,5	eShop	eShop	eShop	100	12	9	14.5
20×1,5	eShop	eShop	eShop	125	16	12	18.5

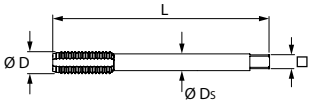
MF-LH | 60° | HSS E-PM | DIN 374 | DIN 13 | ISO 2X 6HX | C 3 | 40° | h9 | ≤2.5×D

Garant GARANT Master Tap blind hole machine tap, left-hand thread

Universal taps, designed for use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for a high degree of wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.


13 7190



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
13 7190	30	35	20	30	30	25	12	8						10	8	20	20	●

MF-LH	11 13 7190	L	Ø D_s	□	Tapping hole Ø
	GARANT Master Tap machine tap				
	Left-hand thread				
	AlTiX	mm	mm	mm	mm
8×1	eShop	90	6	4.9	7
10×1	eShop	90	7	5.5	9
10×1,25	eShop	100	7	5.5	8.8
12×1,25	eShop	100	9	7	10.8
12×1,5	eShop	100	9	7	10.5
16×1,5	eShop	100	12	9	14.5
20×1,5	eShop	125	16	12	18.5
24×1,5	eShop	140	18	14.5	22.5

G | 55° | HSS E-PM | DIN 5156 | E ≤1½ | 45° | h9 | ≤2.5×D | ≠

Garant GARANT Master Tap Alu blind hole machine tap

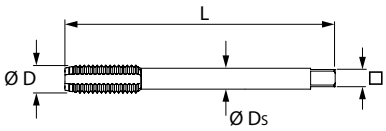
High-performance tap, specially developed for **aluminium and non-ferrous alloys. Dynamic helical pitch** of the clamping slots ensures **optimum chip evacuation** and **process reliability.**

- **HSS-E-PM tool material** for high cutting edge stability.
- Ultra-smooth **DLC coating** for wear resistance and avoidance of edge build-up.
- **Dynamic helical pitch of the flutes.**
- **Short lead chamfer form E.**

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).



13 7310



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13 7310	35	32	20	20		18	18										18	25

G	11I 13 7310 GARANT Master Tap Alu machine tap DLC	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
G1/8	eShop	28	9.73	90	7	5.5	8.8
G1/4	eShop	19	13.16	100	11	9	11.8
G3/8	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	14	20.96	125	16	12	19
G3/4	eShop	14	26.44	140	20	16	24.5
G1	eShop	11	33.25	160	25	20	30.75

G | 55° | HSS E-PM | Standard | 40° | h6 DIN 1835 B | ≤2.5×D

Garant Synchronised blind hole machine tap with internal coolant supply

Sturdy version with right-hand helix and shank to DIN 1835-B. Special geometry for use on machines with **synchronised spindle drives.** The tap is controlled by the synchronising spindle of the machine. With the latest generation of special **DLC coating sp²**. For use with **emulsion** (fat content minimum 8%).

13 7345 – **Form E** (lead chamfer: 1.5 - 2 turns) for the deepest possible thread depths.

13 7346 – With **internal coolant supply** for maximum tool life.

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.



13 7344

C ↔3↔



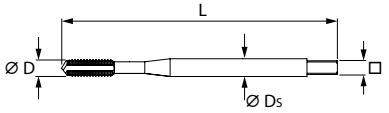
13 7345

E ↔1½



13 7346

C ↔3↔



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13 7344–13 7346	30	35	20	25								20		25			55	35

G	11H 13 7344 HSS-E-PM Form C DLC	11H 13 7345 HSS-E-PM Form E DLC	11H 13 7346 HSS-E-PM IC / Form C DLC	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
	Machine tap for synchronised spindles				mm	mm	mm	mm	mm
G1/8	eShop	eShop	eShop	28	9.73	90	8	6.2	8.8
G1/4	eShop	eShop	eShop	19	13.16	100	12	9	11.8
G3/8	eShop	eShop	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	eShop	eShop	14	20.96	125	16	12	19

G | 55° | HSS E-PM | DIN 5156 | C | 3 | 40° | h9 | ≤2.5×D

Garant

GARANT Master Tap Steel^{HT} blind hole machine tap

High-performance tap, specially developed for use in **steels with high tensile strength** and for **difficult-to-machine materials.**
Sturdy design with **optimised guide thread to avoid chips jamming.**

- **HSS-E-PM tool material** – for **very high cutting edge stability.**
- **Optimised honed cutting edges.**
- **TiAlN coating** – for **maximum wear protection.**

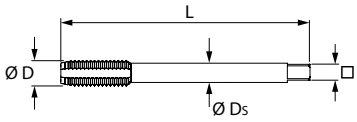
Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).

Recommendation: For **TOOLOX materials we recommend deviating from the DIN data** (see table) **by selecting a larger tapping hole Ø.**

Note:	For **TOOLOX materials**: Do not exceed the maximum thread depth of 2×D!



13 7425



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	H	M	S					
13 7425					30	**20**	**15**	**12**	5						**15**	**5**	**7**	5	●	●			

G	13 7425 GARANT Master Tap Steel^{HT} machine tap **HSS-E-PM Form C** **TiAlN**	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
G1/8	eShop	28	9.73	90	7	5.5	8.8
G1/4	eShop	19	13.16	100	11	9	11.8
G3/8	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	14	20.96	125	16	12	19
G3/4	eShop	14	26.44	140	20	16	24.5
G1	eShop	11	33.25	160	25	20	30.75

Hoffmann Group

Regrinding service

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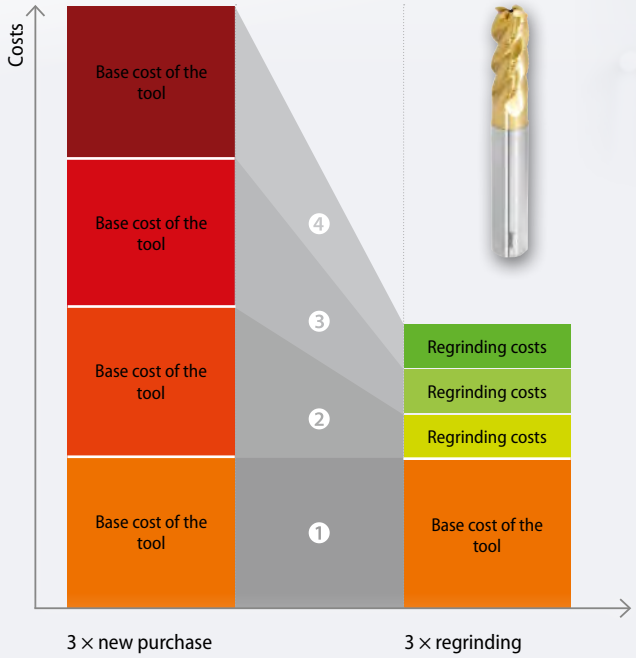



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Up to **85 %** potential savings … | … with **95 %** tool life | … and **100 %** machining performance

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Garant GARANT Master Tap INOX



Developed for very high performance in stainless steel.

Discover the outstanding characteristics of the GARANT Master Tap INOX.

- **TOP chip formation**
  due to optimised cutting edges.
- **TOP chip evacuation**
  due to the special flute geometry.
- **TOP wear resistance**
  due to high-quality HSS-E-PM tool material.
- **TOP efficiency**
  due to the special micro-geometry.
- **TOP tool life**
  due to the most modern TiAlN multilayer coating.

G | 55° | DIN 5156 | h9

Garant Blind hole machine tap for stainless and acid-resistant steels

13 7450 – Surface vaporised for reduced edge build-up.
13 7752 – **Form E** (1.5-2 turns lead chamfer).
13 7750/7752 – **GARANT Master Tap INOX:**
High-performance tap, specially developed for **good process reliability in stainless and acid-resistant steels** and **duplex materials.**
The 45° helix angle of the chip flutes facilitates chip formation especially in ductile austenitic CrNi steels.

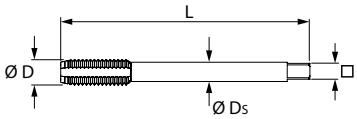
- **HSS-E-PM tool material** for maximum wear resistance
- The latest generation of **TiALN multi-layer coating**
- **Parameterised flute geometry** for optimum chip formation and **torsional rigidity**

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).


13 7450
HSS E | HSS | C ↔3↔ | 40° | ≤2×D


13 7750
HSS E-PM | C ↔3↔ | 45° | ≤2.5×D


13 7752
HSS E-PM | E ↔1½↔ | 45° | ≤2.5×D



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 7450		13		15	15	15								6			13		●	○			
13 7750/7752		28			23	23	12							11	9				●	●			

G	13 7450	13 7750	13 7752	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
	Machine tap	GARANT Master Tap INOX machine tap							
	HSS-E Form C	HSS-E-PM Form C	HSS-E-PM Form E						
	vaporised	TiAlN	TiAlN		mm	mm	mm	mm	mm
G1/8	eShop	eShop	eShop	28	9.73	90	7	5.5	8.8
G1/4	eShop	eShop	eShop	19	13.16	100	11	9	11.8
G3/8	eShop	eShop	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	eShop	eShop	14	20.96	125	16	12	19
G5/8	–	eShop	–	14	22.91	125	18	14.5	21
G3/4	eShop	eShop	eShop	14	26.44	140	20	16	24.5
G1	eShop	eShop	–	11	33.25	160	25	20	30.75

G | 55° | HSS E | DIN 5156 | C 3 | 40° | h9 | ≤3×D

Garant

GARANT Vap Tap blind hole machine tap

GARANT Vap Tap general-purpose tap.
Can be used **reliably** in a **wide range of materials**.
Optimised **neck and flute length** for **improved chip evacuation** when working on **deep** threads.
High-performance **HSS-E tool material** with higher **vanadium content** for improved **wear resistance**.
Surface vaporised for reduced edge build-up.

13 7765 – **Tolerance class ISO 228 + 0.05 mm.**

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).

13 7765 – For components which are **galvanised**, or shrink slightly when hardened.

Recommendation:

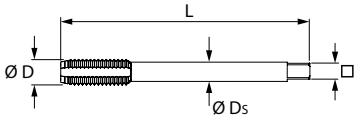
13 7765 – We recommend **deviating from the DIN data** (see table) by drilling the tapping hole ∅ **0.05mm larger**.



13 7755



13 7765



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 7755/7765	18	13		18	15	15	6							6			15	●	●	●			

G	13 7755 HSS-E vaporised	13 7765 HSS-E ISO 228 +0.05 mm vaporised	Threads per inch	Thread ∅ mm	L mm	∅ D_s mm	□ mm	Tapping hole ∅ mm
	GARANT Vap Tap machine tap							
G1/8	eShop	eShop	28	9.73	90	7	5.5	8.8
G1/4	eShop	eShop	19	13.16	100	11	9	11.8
G3/8	eShop	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	eShop	14	20.96	125	16	12	19
G3/4	eShop	eShop	14	26.44	140	20	16	24.5
G1	eShop	–	11	33.25	160	25	20	30.75
G1.1/8	eShop	–	11	37.9	170	28	22	35.5
G1.1/4	eShop	–	11	41.91	170	32	24	39.5
G1.1/2	eShop	–	11	47.8	190	36	29	45.25
G2	eShop	–	11	59.61	220	45	32.5	57

13

Garant

GARANT VAP TAP – THE RELIABLE SOLUTION FOR A WIDE RANGE OF MATERIALS.



- **Optimised neck and flute lengths** for improved chip evacuation when working on deep threads.
- **High-performance HSS-E tool material with higher vanadium content** for improved wear resistance.
- **A reliable process** in a wide range of materials.
- **For use across a wide spectrum of materials,** thus reducing the variety of tools that have to be stocked.



146437 146737

GARANT Vap Tap

available as a set (M3; M4; M5; M6; M8; M10; M12) in a handy plastic case.
For through hole No. 14 6437 M3-12,
for blind hole No. 14 6737 M3-12.



Blind hole machine tap

13 7806 – **HOLEX Pro Tap general-purpose tap.** Sturdy design suitable for a wide spectrum of materials. **Improved HSS-E tool material** with **low-friction TiN coating.**

13 7807 – With extra long shank.

13 7808 – **Form E** (1.5 - 2 turns lead chamfer).

13 7805/7808/7807 – **GARANT Master Tap Universal taps**, designed for use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

Advantage:

13 7807 – Designed for tapping threads where access is difficult.

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).



13 7805

HSS E-PM | DIN 5156 | C | 3



13 7808

HSS E-PM | DIN 5156 | E | 1½



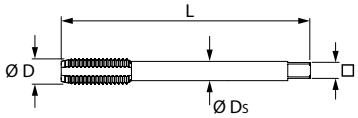
13 7807

HSS E-PM | Standard | C | 3



13 7806

HSS E | DIN 5156 | C | 3



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 7805/7808	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 7806	24	25	10	24	20	15	8							8			15	●	●	●			
13 7807	24	28	16	24	24	20	10	6						8	6	16	16	●	●	●			

G	13 7805	13 7808	13 7807	13 7806	Threads per inch	Thread Ø	L		Ø D_s	□	Tapping hole Ø
	Garant GARANT Master Tap machine tap			HOLEX HOLEX Pro Tap machine tap			13 7805 13 7808 13 7806	13 7807			
	HSS-E-PM Form C	HSS-E-PM Form E	extra long HSS-E-PM Form C	HSS-E Form C							
	AlTiX	AlTiX	AlTiX	TiN		mm	mm	mm	mm	mm	mm
G1/16	eShop	–	–	–	28	7.72	90	–	6	4.9	6.8
G1/8	eShop	eShop	eShop	eShop	28	9.73	90	180	7	5.5	8.8
G1/4	eShop	eShop	eShop	eShop	19	13.16	100	200	11	9	11.8
G3/8	eShop	eShop	eShop	eShop	19	16.66	100	200	12	9	15.25
G1/2	eShop	eShop	eShop	eShop	14	20.96	125	250	16	12	19
G5/8	eShop	–	–	eShop	14	22.91	125	–	18	14.5	21
G3/4	eShop	eShop	eShop	eShop	14	26.44	140	280	20	16	24.5
G1	eShop	eShop	eShop	eShop	11	33.25	160	280	25	20	30.75

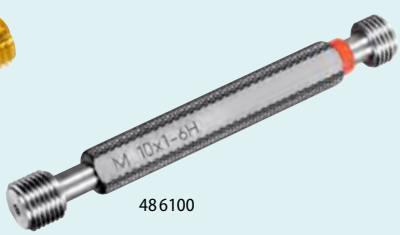
Thread gauges – Volume 2

Our comprehensive ex-stock thread gauge range for many different types of threads and all popular sizes can be found in catalogue **Volume 2 – Product Group 48.**

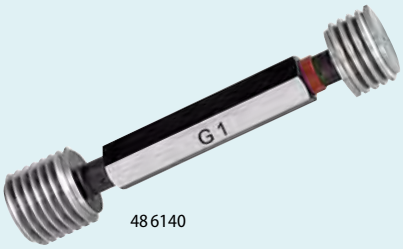
Thread gauges for non-standard pitches, for left-hand threads and for other thread forms are available on request.



48 6008



48 6100



48 6140



48 6010

G | 55° | HSS E-PM | Standard | 40° | h6 DIN 1835 B | ≤3×D

Garant

Synchronised blind hole machine tap with internal coolant supply

Sturdy version with right-hand helix and shank to DIN 1835-B.
Special geometry for **general-purpose use** on machines with **synchronised spindle drive.**
The tap is controlled by the synchronising spindle of the machine.
Special **TiAlN-S coating** for optimum tool life.
For use with **emulsion** (fat content minimum 8%).

13 7813 – **Form E** (lead chamfer: 1.5 - 2 turns) for the deepest possible thread depths.
13 7816 – With **internal coolant supply** for maximum tool life.

Application: **For Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.


13 7810

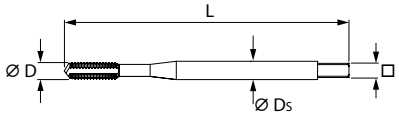
C ⊢3⊣


13 7813

E ⊢1½⊣


13 7816

C ⊢3⊣



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
13 7810–13 7816	32	32		33	32	20	12	7						11	9		30	●

G	11H 13 7810 HSS-E-PM Form C TiAlN	11H 13 7813 Machine tap for synchronised spindles HSS-E-PM Form E TiAlN	11H 13 7816 HSS-E-PM IC / Form C TiAlN	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
G1/8	eShop	eShop	eShop	28	9.73	90	8	6.2	8.8
G1/4	eShop	eShop	eShop	19	13.16	100	12	9	11.8
G3/8	eShop	eShop	eShop	19	16.66	100	12	9	15.25
G1/2	eShop	eShop	eShop	14	20.96	125	16	12	19

UNC | 60° | 2B | C ⊢3⊣ | h9

DIN 371 ≤ 3/8″ | DIN 376 ≥ 7/16″

Blind hole machine tap

13 7860 – **Sturdy design, with 20° right-hand chip flutes.**
13 7868 – **HOLEX Clever Tap:**
Sturdy tap for conventional standard applications.
High-quality HSS-E tool material and geometry for steels.
Surface: Bronze-coloured tempered thread profile.

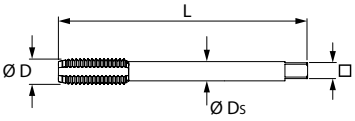
Application: **For UNC uniform coarse threads** ASME – B1.1.


13 7860

HSS E ≤ 7/8″ | HSS 1″ | 20° | ≤2×D


13 7868

HSS E | 40° | ≤2.5×D



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N
13 7860			13		15	15												
13 7868		13	13		12	12	6											

UNC	11H 13 7860 Garant Machine tap	12H 13 7868 HOLEX Clever Tap machine tap	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
4-40	eShop	eShop	40	2.84	56	3.5	2.7	2.35
5-40	eShop	–	40	3.17	56	3.5	2.7	2.65
6-32	eShop	eShop	32	3.51	56	4	3	2.85
8-32	eShop	eShop	32	4.16	63	4.5	3.4	3.5
10-24	eShop	eShop	24	4.83	70	6	4.9	3.9
12-24	eShop	–	24	5.49	80	6	4.9	4.5
1/4-20	eShop	eShop	20	6.35	80	7	5.5	5.1
5/16-18	eShop	eShop	18	7.94	90	8	6.2	6.6
3/8-16	eShop	eShop	16	9.53	100	9	7	8
7/16-14	eShop	eShop	14	11.11	100	8	6.2	9.4
1/2-13	eShop	eShop	13	12.7	110	9	7	10.8
9/16-12	eShop	–	12	14.29	110	11	9	12.2
5/8-11	eShop	eShop	11	15.88	110	12	9	13.5
3/4-10	eShop	eShop	10	19.05	125	14	11	16.5
7/8-9	eShop	–	9	22.23	140	18	14.5	19.5
1-8	eShop	–	8	25.4	160	20	16	22.25

UNC | 60° | HSS E-PM | 2BX | C 3 | 45° | h9 | ≤2.5×D

DIN 371 ≤ 3/8″ | DIN 376 ≥ 7/16″

Garant

GARANT Master Tap INOX blind hole machine tap for stainless and acid-resistant steels

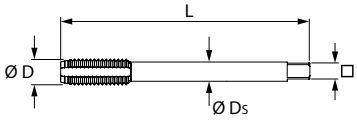
High-performance tap, specially developed for **good process reliability in stainless and acid-resistant steels** and **duplex materials.**
The 45° helix angle of the flutes facilitates chip formation especially in ductile austenitic CrNi steels.

- **HSS-E-PM tool material** for maximum wear resistance.
- The latest generation of **TiAlN multi-layer** coating.
- **Parameterised flute geometry** for optimum chip formation and **rigidity.**

Application: **For UNC uniform coarse threads** ASME – B1.1.



13 7857



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 7857		28			23	23	12							11	9				●	●			

UNC	11 13 7857 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
2-56	eShop ■	56	2.18	45	2.8	2.1	1.85
4-40	eShop ■	40	2.84	56	3.5	2.7	2.35
5-40	eShop ■	40	3.17	56	3.5	2.7	2.65
6-32	eShop ■	32	3.51	56	4	3	2.85
8-32	eShop ■	32	4.16	63	4.5	3.4	3.5
10-24	eShop ■	24	4.83	70	6	4.9	3.9
12-24	eShop ■	24	5.49	80	6	4.9	4.5
1/4-20	eShop ■	20	6.35	80	7	5.5	5.1

UNC	11 13 7857 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø mm
5/16-18	eShop ■	18	7.94	90	8	6.2	6.6
3/8-16	eShop ■	16	9.53	100	9	7	8
7/16-14	eShop ■	14	11.11	100	8	6.2	9.4
1/2-13	eShop ■	13	12.7	110	9	7	10.8
5/8-11	eShop ■	11	15.88	110	12	9	13.5
3/4-10	eShop ■	10	19.05	125	14	11	16.5
7/8-9	eShop ■	9	22.23	140	18	14.5	19.5
1-8	eShop ■	8	25.4	160	18	14.5	22.25

UNC | 60° | C 3 | 40° | h9 | ≤2.5×D



13 7870

HSS E-PM | 2BX | DIN 371 ≤ 3/8″ | DIN 376 ≥ 1/2″



13 7910

HSS E | 2B | DIN 371 ≤ 1/4″ | DIN 376 ≥ 5/16″

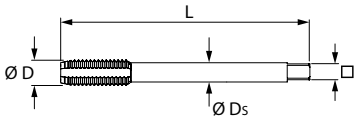
Blind hole machine tap

13 7870 – **GARANT Master Tap Universal tap**, designed for use in a wide spectrum of materials with high process reliability.

- **HSS-E-PM tool material** for maximum wear resistance.
- **Reduced coefficient of friction** due to the new high-performance coating.
- **Special geometry** for optimum swarf evacuation.

13 7910 – **HOLEX Pro Tap general-purpose tap.**
Sturdy design suitable for a wide spectrum of materials.
Improved HSS-E tool material with **low-friction TiN coating.**

Application: **For UNC uniform coarse threads** ASME – B1.1.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 7870	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 7910	24	25	10	24	20	15	8							8			15	●	●	●			

UNC	11 13 7870 Garant GARANT Master Tap machine tap HSS-E-PM AlTiX	12 13 7910 HOLEX HOLEX Pro Tap machine tap HSS-E TiN	Threads per inch	Thread Ø mm	L mm	Ø D_s 13 7870 mm	Ø D_s 13 7910 mm	□ 13 7870 mm	□ 13 7910 mm	Tapping hole Ø mm
2-56	eShop ■	eShop ■	56	2.18	46	2.8	2.8	2.1	2.1	1.85
3-48	eShop ■	–	48	2.51	50	2.8	–	2.1	–	2.1
4-40	eShop ■	eShop ■	40	2.84	56	3.5	3.5	2.7	2.7	2.35
5-40	eShop ■	–	40	3.17	56	3.5	–	2.7	–	2.7
6-32	eShop ■	eShop ■	32	3.51	56	4	4	3	3	2.85
8-32	eShop ■	eShop ■	32	4.16	63	4.5	4.5	3.4	3.4	3.5
10-24	eShop ■	eShop ■	24	4.83	70	6	6	4.9	4.9	3.9
12-24	eShop ■	eShop ■	24	5.49	80	6	6	4.9	4.9	4.5
1/4-20	eShop ■	eShop ■	20	6.35	80	7	7	5.5	5.5	5.1
5/16-18	eShop ■	eShop ■	18	7.94	90	8	6	6.2	4.8	6.6
3/8-16	eShop ■	eShop ■	16	9.53	100	10	7	8	5.5	8
1/2-13	eShop ■	eShop ■	13	12.7	110	9	9	7	7	10.8
5/8-11	eShop ■	eShop ■	11	15.88	110	12	12	9	9	13.5
3/4-10	eShop ■	eShop ■	10	19.05	125	14	14	11	11	16.5
7/8-9	eShop ■	eShop ■	9	22.23	140	18	18	14.5	14.5	19.5
1-8	eShop ■	–	8	25.4	160	18	–	14.5	–	22.25

UNF | 60° | 2B | C 3 | h9

Blind hole machine tap

13 8000 – **Sturdy design, with 20° right-hand chip flutes.**
13 8004 – **HOLEX Clever Tap:**
Sturdy tap for conventional standard applications.
High-quality HSS-E tool material and geometry for steels.
Surface: Bronze-coloured tempered thread profile.

Application: **For UNF uniform fine threads** ASME – B1.1.



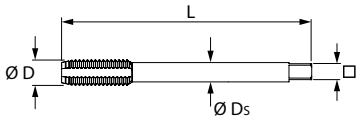
13 8000

HSS E | HSS | ≤2×D | DIN 371 | DIN 374 20° | ≤ 7/8″ | 1″ | ≤ 1/4″ | ≥ 5/16″



13 8004

HSS E | ≤2.5×D | DIN 371 | DIN 374 40° | ≤ 3/8″ | ≥ 7/16″



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
13 8000			13		15	15													●	○			
13 8004		13	13		12	12	6												●	●			

UNF	11H 13 8000 Garant Machine tap	12H 13 8004 HOLEX Clever Tap machine tap	Threads per inch	Thread Ø	L	Ø D_s		□		Tapping hole Ø
						13 8000	13 8004	13 8000	13 8004	
				mm	mm	mm	mm	mm	mm	mm
10-32	eShop	eShop	32	4.83	70	6	6	4.9	4.9	4.1
12-28	eShop	–	28	5.49	80	6	–	4.9	–	4.7
1/4-28	eShop	eShop	28	6.35	80	7	7	5.5	5.5	5.5
5/16-24	eShop	eShop	24	7.94	90	6	8	4.9	6.2	6.9
3/8-24	eShop	eShop	24	9.53	100	7	9	5.5	7	8.5
7/16-20	eShop	eShop	20	11.11	100	8	8	6.2	6.2	9.9
1/2-20	eShop	eShop	20	12.7	100	9	9	7	7	11.5
9/16-18	eShop	eShop	18	14.29	100	11	11	9	9	12.9
5/8-18	eShop	eShop	18	15.88	100	12	12	9	9	14.5
3/4-16	eShop	eShop	16	19.05	110	14	14	11	11	17.5
7/8-14	eShop	eShop	14	22.23	125	18	18	14.5	14.5	20.4
1-12	eShop	–	12	25.4	140	20	–	16	–	23.25

UNF | 60° | HSS E-PM | 2BX | C 3 | 45° | h9 | ≤2.5×D

DIN 371 | DIN 374 | ≤ 3/8″ | ≥ 7/16″

Garant GARANT Master Tap INOX blind hole machine tap for stainless and acid-resistant steels

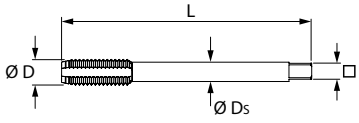
High-performance tap, specially developed for **good process reliability in stainless and acid-resistant steels** and **duplex materials.**
The 45° helix angle of the flutes facilitates chip formation especially in ductile austenitic CrNi steels.

- **HSS-E-PM tool material** for maximum wear resistance
- The latest generation of **TiALN multi-layer coating**
- **Parameterised flute geometry** for optimum chip formation and **rigidity**

Application: **For UNF uniform fine threads** ASME – B1.1.



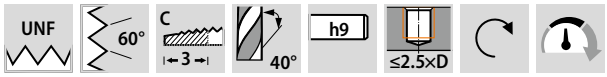
13 8007



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 8007		28			23	23	12							11	9				●	●			

UNF	11H 13 8007 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
2-64	eShop ■	64	2.18	45	2.8	2.1	1.85
4-48	eShop ■	48	2.84	56	3.5	2.7	2.4
5-44	eShop ■	44	3.17	56	3.5	2.7	2.7
6-40	eShop ■	40	3.51	56	4	3	2.95
8-36	eShop ■	36	4.16	63	4.5	3.4	3.5
10-32	eShop ■	32	4.83	70	6	4.9	4.1
12-28	eShop ■	28	5.49	80	6	4.9	4.7
1/4-28	eShop ■	28	6.35	80	7	5.5	5.5

UNF	11H 13 8007 GARANT Master Tap INOX machine tap HSS-E-PM TiAlN	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø
			mm	mm	mm	mm	mm
5/16-24	eShop ■	24	7.94	90	8	6.2	6.9
3/8-24	eShop ■	24	9.53	100	9	7	8.5
7/16-20	eShop ■	20	11.11	100	8	6.2	9.9
1/2-20	eShop ■	20	12.7	100	9	7	11.5
5/8-18	eShop ■	18	15.88	100	12	9	14.5
3/4-16	eShop ■	16	19.05	110	14	11	17.5
7/8-14	eShop ■	14	22.23	125	18	14.5	20.4
1-12	eShop ■	12	25.4	140	18	14.5	23.25



Blind hole machine tap

13 8010 – **GARANT Master Tap Universal tap, designed for** use in a wide spectrum of materials with high process reliability.

- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

13 8050 – **HOLEX Pro Tap general-purpose tap.** Sturdy design suitable for a wide spectrum of materials. **Improved HSS-E tool material** with **low-friction TiN coating.**

Application: **For UNF uniform fine threads** ASME – B1.1.



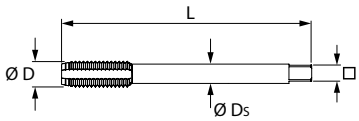
13 8010

HSS E-PM	2BX	DIN 371	DIN 374
		≤ 3/8"	≥ 7/16"



13 8050

HSS E	2B	DIN 371	DIN 374
		≤ 1/4"	≥ 5/16"



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
13 8010	30	35	20	30	30	25	12	8						10	8	20	20	●	●	●			
13 8050	24	25	10	24	20	15	8							8			15	●	●	●			

UNF	[11] 13 8010 Garant GARANT Master Tap machine tap HSS-E-PM AlTiX	[12] 13 8050 HOLEX HOLEX Pro Tap machine tap HSS-E TiN	Threads per inch	Thread Ø mm	L mm	Ø D_s 13 8010 mm	Ø D_s 13 8050 mm	□ 13 8010 mm	□ 13 8050 mm	Tapping hole Ø mm
2-64	eShop ■	–	64	2.18	45	2.8	–	2.1	–	1.85
3-56	eShop ■	–	56	2.51	50	2.8	–	2.1	–	2.15
4-48	eShop ■	–	48	2.84	56	3.5	–	2.7	–	2.4
5-44	eShop ■	–	44	3.17	56	3.5	–	2.7	–	2.7
6-40	eShop ■	–	40	3.51	56	4	–	3	–	2.95
8-36	eShop ■	–	36	4.16	63	4.5	–	3.4	–	3.5
10-32	eShop ■	eShop ■	32	4.83	70	6	6	4.9	4.9	4.1
12-28	eShop ■	–	28	5.48	80	6	–	4.9	–	4.7
1/4-28	eShop ■	eShop ■	28	6.35	80	7	7	5.5	5.5	5.5
5/16-24	eShop ■	eShop ■	24	7.94	90	8	6	6.2	4.9	6.9
3/8-24	eShop ■	eShop ■	24	9.53	90	10	7	8	5.5	8.5
7/16-20	eShop ■	eShop ■	20	11.11	100	8	8	6.2	6.2	9.9
1/2-20	eShop ■	eShop ■	20	12.7	100	9	9	7	7	11.5
9/16-18	eShop ■	eShop ■	18	14.29	100	11	11	9	9	12.9
5/8-18	eShop ■	eShop ■	18	15.88	100	12	12	9	9	14.5
3/4-16	eShop ■	eShop ■	16	19.05	110	14	14	11	11	17.5
7/8-14	eShop ■	eShop ■	14	22.23	125	18	18	14.5	14.5	20.4
1-12	eShop ■	–	12	25.4	140	18	–	14.5	–	23.25

NPT | 60° | ANSI B1.20.1 | C 3 | 1:16 | h9

Machine tap for tapered NPT pipe threads

13 8095 – **HOLEX Clever Tap:**
Sturdy tap for conventional standard applications. High-quality HSS-E tool material and geometry for steels. Surface: Bronze-coloured tempered thread profile.

13 8100 – **For the highest performance demands.** For use with **emulsion** (fat content minimum 8%).

13 8110 – A **special TiAlN coating** for long tool life. Due to **interrupted** guide thread: **reduced tapping torque** and **improved distribution of lubricant.** For use with **emulsion** (fat content minimum 8%).

Application: **Tapered** pipe threads **(NPT)** to **ANSI B1.20.1,** for threads with sealants. See the table for the specified minimum size of the tapping hole.

Recommendation: **Tapping hole Ø A:**
Pre-drill a plain hole **without using a reamer.**
Tapping hole Ø B:
Pre-drill a plain hole and then **ream it using a 1:16 taper reamer (see No. 162650).** The taper bore Ø can then be checked laterally by reference to the D_{max} check dimension (see table). **Variant B** for drilling the tapping hole offers the best process reliability for the tapping operation.


13 8095

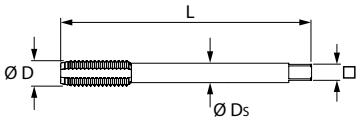
HSS E | Standard


13 8100

HSS E-PM | Standard | 15°


13 8110

HSS E | DIN 374



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	GG(G)	CuZn					
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	K	N					
13 8095		13	13		**12**	**12**	6												●	●			
13 8100							**23**	**13**	7				**4**	**3**	**2**				●	●			
13 8110	13		18		**17**	**15**	**12**									**5**	14	16	●	●			

NPT	12H 13 8095 HOLEX	11H 13 8100 Garant	11H 13 8110 Garant	Threads per inch	L		Ø D_s	□	Tapping hole Ø A		Tapping hole Ø B	Thread gauge Ø D_{max} + 0.05	Tapping hole minimum depth
	HOLEX Clever Tap machine tap	Machine tap			13 8095 13 8100	13 8110							
	HSS-E	HSS-E-PM TiAlN	HSS-E TiAlN		mm	mm	mm	mm	mm	in	mm	mm	mm
1/16-27	–	–	eShop	27	–	90	6	4.9	6.15	–	5.95	6.39	12
1/8-27	eShop	eShop	eShop	27	90	100	7	5.5	8.5	–	8.25	8.74	12
1/4-18	eShop	eShop	eShop	18	100	100	11	9	11.1	–	10.75	11.36	17.5
3/8-18	eShop	eShop	eShop	18	100	110	12	9	–	9/16	14.1	14.8	17.6
1/2-14	eShop	eShop	eShop	14	125	140	16	12	17.85	–	17.5	18.32	22.9
3/4-14	eShop	eShop	eShop	14	140	150	20	16	23.3	–	22.7	23.67	23
1-11,5	eShop	eShop	eShop	11.5	160	170	25	20	29	–	28.6	29.69	27.4

NPT | 60° | HSS E-PM | Standard | ANSI B1.20.1 | C 3 | 1:16 | 40° | h9

Garant GARANT Master Tap machine tap for tapered NPT pipe threads

Universal taps, designed for use in a wide spectrum of materials with high process reliability.

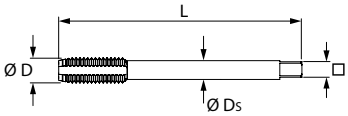
- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum chip evacuation.

Application: **Tapered** pipe threads **(NPT)** to **ANSI B1.20.1**, for threads with sealants. See the table for the specified minimum size of the tapping hole.



13 8105

Recommendation: **Tapping hole Ø A:**
Pre-drill a plain hole **without using a reamer.**
Tapping hole Ø B:
Pre-drill a plain hole and then **ream it using a 1:16 taper reamer (see No. 162650).** The taper bore Ø can then be checked laterally by reference to the D_{max} check dimension (see table). **Variant B** for drilling the tapping hole offers the best process reliability for the tapping operation.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
13 8105	30	35	20	30	30	25	12	8						10	8	20	20	●

NPT	11H 13 8105 GARANT Master Tap machine tap HSS-E-PM AlTiX	Threads per inch	L	Ø D_s	□	Tapping hole Ø A		Tapping hole Ø B	Thread gauge Ø D_{max} + 0.05	Tapping hole minimum depth
			mm	mm	mm	mm	in	mm	mm	mm
1/16-27	eShop	27	90	6	4.9	6.15	–	5.95	6.39	12
1/8-27	eShop	27	90	7	5.5	8.5	–	8.25	8.74	12
1/4-18	eShop	18	100	11	9	11.1	–	10.75	11.36	17.5
3/8-18	eShop	18	110	12	9	14.29	9/16	14.1	14.8	17.6
1/2-14	eShop	14	125	16	12	17.85	–	17.5	18.32	22.9
3/4-14	eShop	14	140	20	16	23.3	–	22.7	23.67	23
1-11,5	eShop	11.5	160	25	20	29	–	28.6	29.69	27.4

13

Rc | 55° | HSS E | DIN 2181 | DIN EN 10226-2 | C 3 | 1:16 | h9

Garant Machine tap for tapered Whitworth pipe thread

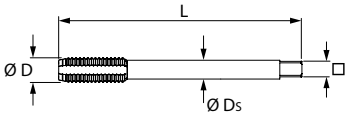
The **short shank overhangs less and hence is more stable.**

Application: For use as machine tap or for cleaning existing threads by hand. **Tapered** Whitworth pipe thread (**BSPT**) to **ISO 7/1** and **BS21,** for joints with sealant in the thread. See the table for the specified minimum size of the tapping hole.



13 8120

Recommendation: **Tapping hole Ø A:**
Pre-drill a plain hole **without using a reamer. Variant A** can be used if there is no risk of sealing problems.
Tapping hole Ø B:
Pre-drill a plain hole and then **ream it using a 1:16 taper reamer (see No. 162650).** The taper bore Ø can then be checked laterally by reference to the D_{max} check dimension (see table). **Variant B** for drilling the tapping hole offers the best process reliability for the tapping operation and at the same time ensures the most reliable seal in the thread.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
13 8120	9	9		7	6	5											5	9

Rc	11H 13 8120 Machine tap	Threads per inch	L	Ø D_s	□	Tapping hole Ø A	Tapping hole Ø B	Thread gauge Ø D_{max} JS11	Tapping hole minimum depth
			mm	mm	mm	mm	mm	mm	mm
1/8-28	eShop	28	63	7	5.5	8.15	8.1	8.57	11.1
1/4-19	eShop	19	63	11	9	10.85	10.75	11.45	16.3
3/8-19	eShop	19	70	12	9	14.3	14.25	14.95	16.7
1/2-14	eShop	14	80	16	12	17.8	17.7	18.63	22.3
3/4-14	eShop	14	100	20	16	23.2	23.1	24.12	23.6
1-11	eShop	11	110	25	20	29.2	29.1	30.29	28.3

EG-M | 60° | HSS E-PM | Standard | 6HX mod. | E | 45° | h9 | ≤3×D | ≠

GARANT Master Tap Alu blind hole machine tap for wire inserts

High-performance tap, specially developed for **aluminium and non-ferrous alloys**.
Dynamic helical pitch of the flutes ensures **optimum chip evacuation and process reliability.**

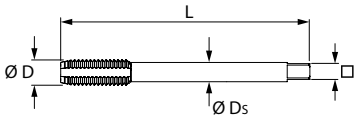
- **HSS-E-PM tool material** – for high cutting edge stability.
- Ultra-smooth **DLC coating** for wear resistance and avoidance of edge build-up.
- **Dynamic helical pitch of the flutes.**
- **Short lead chamfer form E.**

Application: For production of EG mounting thread according to metric ISO thread **DIN 8140** for **STI wire thread inserts** (Screw Thread Insert).

Note: Please be sure to observe the correct **tapping hole Ø (see table)!**
Size EG-M2 – Suitable up to thread depth 2.5 × D.



13 8205



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13 8205	35	32	20	20		18	18										18	25

EG-M	13 8205 GARANT Master Tap Alu machine tap for wire thread inserts DLC	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
EG-M2	eShop	0.4	50	2.8	2.1	2.15
EG-M2,5	eShop	0.45	56	3.5	2.7	2.65
EG-M3	eShop	0.5	63	4.5	3.4	3.15
EG-M4	eShop	0.7	70	6	4.9	4.2
EG-M5	eShop	0.8	80	6	4.9	5.25

EG-M	13 8205 GARANT Master Tap Alu machine tap for wire thread inserts DLC	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
EG-M6	eShop	1	90	8	6.2	6.3
EG-M8	eShop	1.25	105	10	8	8.4
EG-M10	eShop	1.5	115	9	7	10.5
EG-M12	eShop	1.75	120	11	9	12.5
EG-M16	eShop	2	140	14	11	16.5

EG-M | 60° | HSS E-PM | DIN 40435 | 6HX mod. | E | 40° | h9 | ≤2.5×D

GARANT Master Tap blind hole machine tap for wire inserts

Tap to DIN 40435 (similar to DIN 371 / DIN 376).
GARANT Master Tap Universal taps, designed for use in a wide spectrum of materials with high process reliability.

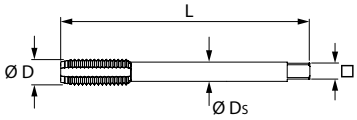
- HSS-E-PM tool material for maximum wear resistance.
- Reduced coefficient of friction due to the new high-performance coating.
- Special geometry for optimum swarf evacuation.

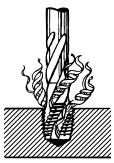
Application: For production of AC mounting thread to metric ISO threads **DIN 8140** for **STI** (Screw Thread Insert) wire thread inserts.

Note: Please ensure without fail the correct **tapping drill Ø (see table)!**



13 8210





The thread can be cut right to the bottom of the hole.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
13 8210	30	35	20	30	30	25	12	8						10	8	20	20	●

EG-M	13 8210 GARANT Master Tap machine tap for wire thread inserts HSS-E-PM AlTiX	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
EG-M2	eShop	0.4	50	2.8	2.1	2.15
EG-M2,5	eShop	0.45	56	3.5	2.7	2.65
EG-M3	eShop	0.5	63	4.5	3.4	3.15
EG-M4	eShop	0.7	70	6	4.9	4.2
EG-M5	eShop	0.8	80	6	4.9	5.25
EG-M6	eShop	1	90	8	6.2	6.3

EG-M	13 8210 GARANT Master Tap machine tap for wire thread inserts HSS-E-PM AlTiX	Thread pitch	L	Ø D_s	□	Tapping hole Ø
		mm	mm	mm	mm	mm
EG-M8	eShop	1.25	100	10	8	8.4
EG-M10	eShop	1.5	100	9	7	10.5
EG-M12	eShop	1.75	110	11	9	12.5
EG-M16	eShop	2	125	14	11	16.5
EG-M20	eShop	2.5	160	18	14.5	20.75

M | 60° | HSS E-PM | DIN 2174 | DIN 13 | C ↔3↔ | h9 | ≤1.5×D | ≤1.5×D

Fluteless machine tap without oil grooves

DIN 2174 (≈ DIN 371 ≤ M10; ≈ DIN 376 ≥ M12).

13 9135/9143 – **Tolerance class:** ISO 3X / 6GX = **Oversize 0.02 – 0.04 mm.**

13 9115/9125/9135 – The **innovative polygon form** permits a wide application spectrum. The **multi-function layer structure** achieves **maximum service life** even in **high-tensile materials.**

13 9125/9130 – Size M1–M1.4 – **tolerance class:** ISO 1X / 4HX.

Size M1,7; M2,3; M2,6 – with old DIN profile.

13 9130/9143 – **HOLEX Pro Form:** High-performance fluteless tap for use in a **wide range of materials.**

- HSS-E-PM tool material for **high wear resistance.**
- The latest-generation **optimised HIPIMS TiN coating**.

Application:

13 9135/9143 – For components which are **galvanised after threading** or which shrink slightly when hardened.

ISO 2X 6HX



13 9115

ISO 2X 6HX ≥M1.6



13 9125

ISO 2X 6HX ≥M1.6



13 9130

ISO 3X 6GX

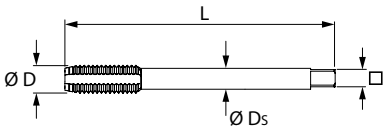


13 9135

ISO 3X 6GX



13 9143



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 9115				32	27	22	17							12	7		22		●	●			
13 9125/9135	42	42		37	32	27	22	17						12			22	●	●	●			
13 9130/9143	20	20		27	25	25	10							8			20	●	●	●			

M	11H 13 9115 Garant Fluteless machine tap without oil grooves 6HX TiN	11H 13 9125 Garant Fluteless machine tap without oil grooves 6HX TiN	12I 13 9130 HOLEX Pro Form fluteless machine tap without oil grooves 6HX TiN	11H 13 9135 Garant Fluteless machine tap without oil grooves 6GX TiN	12I 13 9143 HOLEX Pro Form fluteless machine tap without oil grooves 6GX TiN	Thread pitch mm	L mm	Ø D_s mm	□ mm	Tapping hole Ø guide value mm
M1	–	eShop	eShop	–	–	0.25	40	2.5	2.1	0.9
M1,2	–	eShop	eShop	–	–	0.25	40	2.5	2.1	1.1
M1,4	–	eShop	eShop	–	–	0.3	40	2.5	2.1	1.25
M1,6	–	eShop	eShop	–	–	0.35	40	2.5	2.1	1.45
M1,7	–	eShop	eShop	–	–	0.35	40	2.5	2.1	1.55
M2	eShop	eShop	eShop	eShop	eShop	0.4	45	2.8	2.1	1.85
M2,3	–	eShop	eShop	–	–	0.4	45	2.8	2.1	2.1
M2,5	eShop	eShop	eShop	–	–	0.45	50	2.8	2.1	2.3
M2,6	–	eShop	eShop	–	–	0.45	50	2.8	2.1	2.4
M3	eShop	eShop	eShop	eShop	eShop	0.5	56	3.5	2.7	2.8
M3,5	eShop	eShop	eShop	–	–	0.6	56	4	3	3.25
M4	eShop	eShop	eShop	eShop	eShop	0.7	63	4.5	3.4	3.7
M5	eShop	eShop	eShop	eShop	eShop	0.8	70	6	4.9	4.65
M6	eShop	eShop	eShop	eShop	eShop	1	80	6	4.9	5.55
M8	eShop	eShop	eShop	eShop	eShop	1.25	90	8	6.2	7.45
M10	eShop	eShop	eShop	eShop	eShop	1.5	100	10	8	9.35
M12	eShop	eShop	eShop	eShop	eShop	1.75	110	9	7	11.2
M16	eShop	eShop	eShop	–	–	2	110	12	9	15.1

M | 60° | HSS E-PM | DIN 2174 | DIN 13 | C ↔3↔ | h9 | ≤3×D | ≤3×D

Fluteless machine tap with oil grooves

DIN 2174 (≈ DIN 371 ≤ M10; ≈ DIN 376 ≥ M12). With oil grooves; optimum lubrication effect even in deeper threads.

13 9171 – Special **TiAlN coating,** highly suitable for **aluminium alloys.**

13 9195 – **Tolerance class:** ISO 3X / 6GX = **Oversize 0.02 – 0.04 mm**.

13 9171–9180 – **Tolerance class:** ISO 2X/6HX.

13 9171/9175 – The **innovative polygon form** permits a wide application spectrum. The **multi-function layer structure** achieves **maximum service life** even in **high-tensile materials.**

13 9180/9195 – **HOLEX Pro Form:** High-performance fluteless tap for use in a **wide range of materials**.

- HSS-E-PM cutting medium for **high wear resistance**.
- The latest-generation **optimised HIPIMS TiN coating**.

Application:

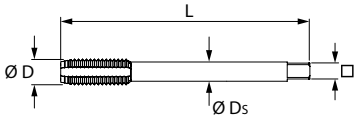
13 9195 – For components which are **galvanised after threading** or which shrink slightly when hardened.


ISO 2X 6HX
13 9171


ISO 2X 6HX
13 9175


ISO 2X 6HX
13 9180


ISO 3X 6GX
13 9195



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 9171	42	42	28	32															●	●			
13 9175				32	27	22	17							12	7		22		●	●			
13 9180/9195	20	20		27	25	25	10							8			20	●	●	●			

M	13 9171 (11H) Garant	13 9175 (11H)	13 9180 (12) HOLEX	13 9195 (12)	Thread pitch	L	Ø D_s	□	Tapping hole Ø guide value
	Fluteless machine tap with oil grooves		HOLEX Pro Form fluteless machine tap with oil grooves						
	6HX TiAlN	6HX TiN	6HX TiN	6GX TiN	mm	mm	mm	mm	mm
M2	eShop	eShop	eShop	eShop	0.4	45	2.8	2.1	1.85
M2,5	eShop	eShop	eShop	–	0.45	50	2.8	2.1	2.3
M2,6	–	–	eShop	–	0.45	50	2.8	2.1	2.4
M3	eShop	eShop	eShop	eShop	0.5	56	3.5	2.7	2.8
M3,5	–	eShop	eShop	–	0.6	56	4	3	3.25
M4	eShop	eShop	eShop	eShop	0.7	63	4.5	3.4	3.7
M5	eShop	eShop	eShop	eShop	0.8	70	6	4.9	4.65
M6	eShop	eShop	eShop	eShop	1	80	6	4.9	5.55
M8	eShop	eShop	eShop	eShop	1.25	90	8	6.2	7.45
M10	eShop	eShop	eShop	eShop	1.5	100	10	8	9.35
M12	eShop	eShop	eShop	eShop	1.75	110	9	7	11.2
M14	–	eShop	–	–	2	110	11	9	13.1
M16	eShop	eShop	eShop	–	2	110	12	9	15.1

M | 60° | HSS E-PM | DIN 13 | h9 | ≤3×D | ≤3×D

Garant

GARANT Master Form Steel fluteless machine tap with oil grooves

The latest generation of **high-performance fluteless taps**, specially developed for **use in steel materials.**

- Optimised polygon geometry for a **lower torque.**
- Multi-layer HIPIMS coating for **high wear resistance.**
- HSS-E-PM substrate for **exceptional process reliability.**

13 9198 – **Form E** (lead-in 1.5 – 2 turns) **for deep threads with short run-out.**
The thread is tapped almost to the bottom of the hole.

13 9202 – **With internal coolant feed laterally from the grooves.**
Permits the longest possible tool life when machining through holes and blind holes.

13 9205 – **Tolerance class: ISO 3X/6GX.**

13 9207 – **Tolerance class: 7GX.**

13 9194–9202/9208 – **Tolerance class: ISO 2X/6HX.**

13 9208 – With extra long shank.

13 9194–9207 – **DIN 2174 (≈ DIN 371** ≤ M10; ≈ **DIN 376** ≥ M12**).**

Advantage:

13 9208 – Ideal for thread forming where access is difficult.

Application:

13 9205/9207 – For components which are **galvanised**, or shrink slightly when hardened.

DIN 2174 | ISO 2X 6HX | C | 3 → 13 9194



DIN 2174 | ISO 2X 6HX | E | 1½ → 13 9198



DIN 2174 | ISO 2X 6HX | C | 3 → 13 9202



DIN 2174 | ISO 3X 6GX | C | 3 → 13 9205

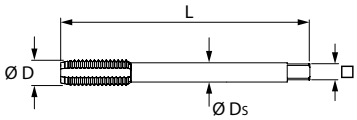


DIN 2174 | 7GX | C | 3 → 13 9207



Standard | ISO 2X 6HX | C | 3 → 13 9208





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 9194 / 9198 13 9205 / 9207		38		37	35	27	18	12						12	7		22		●	●	●		
13 9202		42		40	38	29	20	15						15	8		25		●	●	●		
13 9208		34		33	32	24	16	10						10			20		●	●	●		

M	13 9194	13 9198	13 9202	13 9205	13 9207	13 9208	Thread pitch	L		Ø D_s	□	Tapping hole Ø guide value
	GARANT Master Form Steel fluteless machine tap with oil grooves							13 9194 13 9198 13 9202 13 9205 13 9207	13 9208			
	HSS-E-PM Form C 6HX	HSS-E-PM Form E 6HX	HSS-E-PM IC / Form C 6HX	HSS-E-PM Form C 6GX	HSS-E-PM Form C 7GX	extra long HSS-E-PM Form C 6HX						
	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
M2	eShop	eShop	–	eShop	–	–	0.4	45	–	2.8	2.1	1.85
M2,5	eShop	eShop	–	–	–	–	0.45	50	–	2.8	2.1	2.3
M3	eShop	eShop	–	eShop	eShop	eShop	0.5	56	112	3.5	2.7	2.8
M3,5	eShop	eShop	–	–	–	–	0.6	56	–	4	3	3.25
M4	eShop	eShop	–	eShop	eShop	eShop	0.7	63	126	4.5	3.4	3.7
M5	eShop	eShop	eShop	eShop	eShop	eShop	0.8	70	140	6	4.9	4.65
M6	eShop	eShop	eShop	eShop	eShop	eShop	1	80	160	6	4.9	5.55
M7	eShop	–	–	–	–	–	1	80	–	7	5.5	6.6
M8	eShop	eShop	eShop	eShop	eShop	eShop	1.25	90	180	8	6.2	7.45
M10	eShop	eShop	eShop	eShop	eShop	eShop	1.5	100	200	10	8	9.35
M12	eShop	eShop	eShop	eShop	eShop	eShop	1.75	110	220	9	7	11.2
M14	eShop	–	–	–	–	–	2	110	–	11	9	13.1
M16	eShop	eShop	eShop	eShop	–	eShop	2	110	220	12	9	15.1
M20	eShop	eShop	eShop	eShop	–	–	2.5	140	–	16	12	18.9

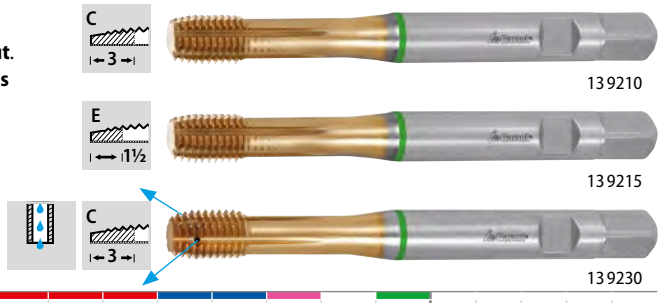
M | 60° | HSS E-PM | Standard | DIN 13 | ISO 2X 6HX | h6 DIN 1835 B | ≤2.5×D | ≤2.5×D

Garant HSS-E-PM synchronised fluteless machine tap with oil grooves

Special polygon geometry and shank to DIN 1835-B for machines with **synchronised spindle drive.**
With oil grooves; optimal lubrication effect even in deeper threads.
The **innovative polygon form** permits a wide application spectrum.
The **multi-function layered coating** achieves **maximum service life** even in **high-tensile materials** in **fixed** applications.

13 9215 – **Form E** (lead-in: 1.5 – 2 turns) **for deep threads with short run-out.**
13 9230 – **With internal coolant supply laterally from the grooves; permits maximum tool life.**

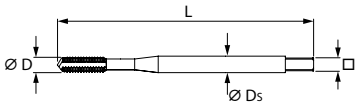
Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures the highest process reliability.



13 9210
13 9215
13 9230

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 9210/9215	45	45	40	45	37	35	32	22						10			35	●	●	●			
13 9230	48	48	45	50	42	40	37	27						10			40	●	●	●			

M	13 9210	13 9215	13 9230	Thread pitch	L	Ø D_s	□	Tapping hole Ø guide value
	Synchronised fluteless machine tap with oil grooves							
	HSS-E-PM Form C	HSS-E-PM Form E	HSS-E-PM IC / Form C					
	TiN	TiN	TiN	mm	mm	mm	mm	mm
M2,5	eShop	eShop	–	0.45	70	6	4.9	2.3
M3	eShop	eShop	–	0.5	70	6	4.9	2.8
M4	eShop	eShop	eShop	0.7	70	6	4.9	3.7
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.65
M6	eShop	eShop	eShop	1	80	6	4.9	5.55
M8	eShop	eShop	eShop	1.25	90	8	6.2	7.45
M10	eShop	eShop	eShop	1.5	100	10	8	9.35
M12	eShop	eShop	eShop	1.75	110	12	9	11.2
M16	eShop	eShop	eShop	2	110	12	9	15.1



M | 60° | Solid carbide | Standard | DIN 13 | ISO 2X 6HX | C 3 | h6 DIN 6535 HA | ≤3×D | ≤3×D

Garant Solid carbide synchronised fluteless machine tap with oil grooves

Special polygon geometry and shank to DIN 6535-HA for use on machines with **synchronised spindle drives.**
With oil grooves; optimal lubrication effect even in deeper threads.
Special solid carbide tool material for high cutting speeds and long tool life.
TiAlN and anti-friction coating ensure low wear and low tendency to edge build-up.

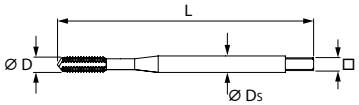
13 9243 – **With internal coolant supply laterally from the grooves; recommended for through and blind holes.**
13 9244 – **With axial internal coolant supply;** advantageous / sufficient for **blind hole** machining.

Note: **For use on synchronised spindles,** the **GARANT** quick-change tapping chuck **No. 338100 – 338121 with minimum length adjustment (MLA)** ensures very high process reliability.


13 9242
13 9243
13 9244

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 9242	50	50	48	52	48	45	40	33											●	●			
13 9243/9244	53	53	50	55	50	47	43	36											●	●			

M	13 9242	13 9243	13 9244	Thread pitch	L	Ø D_s	□	Tapping hole Ø guide value
	Synchronised fluteless machine tap with oil grooves							
	Solid carbide	Solid carbide IC	Solid carbide IC					
	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm
M2,5	eShop	–	–	0.45	50	6	4.9	2.3
M3	eShop	–	–	0.5	56	6	4.9	2.8
M4	eShop	–	–	0.7	63	6	4.9	3.7
M5	eShop	eShop	eShop	0.8	70	6	4.9	4.65
M6	eShop	eShop	eShop	1	80	6	4.9	5.55
M8	eShop	eShop	eShop	1.25	90	8	6.2	7.45
M10	eShop	eShop	eShop	1.5	100	10	8	9.35
M12	eShop	eShop	eShop	1.75	110	12	9	11.2



M-LH | 60° | HSS E-PM | DIN 2174 | DIN 13 | ISO 2X 6HX | C 3 | h9 | ≤3×D | ≤3×D

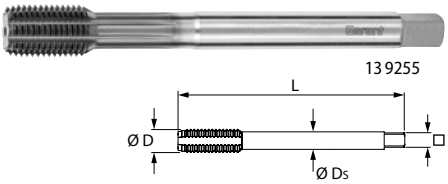
Garant

GARANT Master Form Steel fluteless machine tap with oil grooves, left-hand thread

The latest generation of **high-performance fluteless taps**, specially developed for **use in steel materials.**

- Optimised polygon geometry for a **lower torque.**
- Multi-layer HIPIMS coating for **high wear resistance.**
- HSS-E-PM substrate for **exceptional process reliability.**

DIN 2174 (≈ DIN 371 ≤ M10; **≈ DIN 376** ≥ M12**).**



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 9255		38		37	35	27	18	12						12	7		22		●	●	●		

M-LH	111 13 9255 GARANT Master Form Steel fluteless machine tap with oil grooves **Left-hand thread HSS-E-PM Form C 6HX** TiAlN	Thread pitch	L	Ø D_s	□	Tapping hole Ø guide value
		mm	mm	mm	mm	mm
M2	eShop	0.4	45	2.8	2.1	1.85
M3	eShop	0.5	56	3.5	2.7	2.8
M4	eShop	0.7	63	4.5	3.4	3.7
M5	eShop	0.8	70	6	4.9	4.65
M6	eShop	1	80	6	4.9	5.55

M-LH	111 13 9255 GARANT Master Form Steel fluteless machine tap with oil grooves **Left-hand thread HSS-E-PM Form C 6HX** TiAlN	Thread pitch	L	Ø D_s	□	Tapping hole Ø guide value
		mm	mm	mm	mm	mm
M8	eShop	1.25	90	8	6.2	7.45
M10	eShop	1.5	100	10	8	9.35
M12	eShop	1.75	110	9	7	11.2
M16	eShop	2	110	12	9	15.1

MF | 60° | HSS E-PM | DIN 13 | ISO 2X 6HX | C 3 | h9 | ≤3×D | ≤3×D

Fluteless machine tap with oil grooves

13 9260 – The **innovative polygon form** for a wide application spectrum. Particularly suitable for nickel-chrome steels.

13 9290 – With internal coolant feed laterally from the grooves. Permits the longest possible tool life when machining through holes and blind holes.

13 9370 – **GARANT Master Form Steel:**
The latest generation of **high-performance fluteless taps** are specially developed for **use in steels.**

- Optimised polygon geometry for a **reduced torque.**
- Multi-layer HIPIMS coating for **high wear resistance.**
- HSS-E-PM substrate for **top process reliability.**

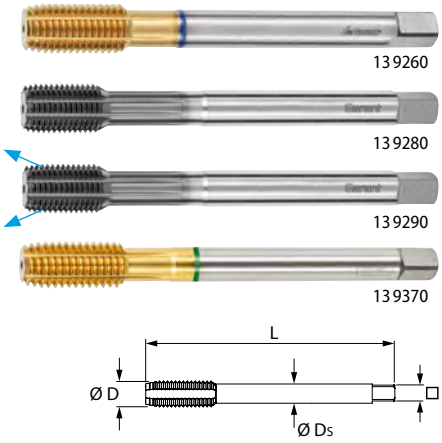
13 9260/9370 – **Satisfies DIN 374.**

13 9280/9290 – **GARANT Master Form Steel:**
High power fluteless taps of the latest generation, specially developed for **use in steels.**

- Optimised polygon geometry for a **reduced torque.**
- Multi-layer HIPIMS coating for **high wear resistance.**
- HSS-E-PM substrate for **top process reliability.**
- **DIN 2174** (≈ **DIN 371** ≤ M10; **DIN 376**≥ M12).

DIN 2174

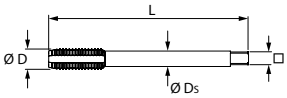
DIN 2174



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 9260				32	27	22	17							12	7		22		●	●			
13 9280		38		37	35	27	18	12						12	7		22		●	●	●		
13 9290		42		40	38	29	20	15						15	8		25		●	●	●		
13 9370	20	20		27	25	25								8			20	●	●	●	●		

MF	11H 13 9260 Fluteless machine tap with oil grooves HSS-E-PM TiN	111 13 9280 Garant GARANT Master Form Steel fluteless machine tap with oil grooves HSS-E-PM TiAlN	111 13 9290 GARANT Master Form Steel fluteless machine tap with oil grooves HSS-E-PM IC TiAlN	121 13 9370 HOLEX HOLEX Pro Form fluteless machine tap with oil grooves HSS-E-PM TiN	L	Ø D_s		□		Tapping hole Ø guide value
						13 9260 13 9370	13 9280 13 9290	13 9260 13 9370	13 9280 13 9290	
					mm	mm	mm	mm	mm	mm
4×0,5	–	eShop	–	–	63	–	4.5	–	3.4	3.8
5×0,5	–	eShop	eShop	–	70	–	6	–	4.9	4.8
6×0,75	–	eShop	eShop	eShop	80	4.5	6	3.4	4.9	5.65
8×1	eShop	eShop	eShop	eShop	90	6	8	4.9	6.2	7.55
10×1	eShop	eShop	eShop	eShop	90	7	10	5.5	8	9.55
12×1	eShop	eShop	eShop	eShop	100	9	9	7	7	11.55
12×1,5	eShop	eShop	eShop	eShop	100	9	9	7	7	11.35
14×1,5	–	eShop	eShop	–	100	–	11	–	9	13.3
16×1,5	eShop	eShop	eShop	eShop	100	12	12	9	9	15.35
18×1,5	–	eShop	–	eShop	110	14	14	11	11	17.35
20×1,5	eShop	eShop	–	eShop	125	16	16	12	12	19.35

G | 55° | HSS E-PM | DIN 2189 | ISO 228 X | C 3 | h9 | ≤3×D | ≤3×D



Fluteless machine tap with oil grooves

DIN 2189 (≈ DIN 5156). **With oil grooves; optimum lubrication effect even in deeper threads.**

13 9395 – Special **TiAlN coating**, highly suitable **for aluminium alloys.**

13 9425 – **With internal coolant feed** laterally from the grooves.
Permits the longest possible tool life when machining through holes and blind holes.

13 9475 – **HOLEX Pro Form:**
High-performance fluteless tap for use in a **wide range of materials.**
- HSS-E-PM tool material for **high wear resistance.**
- The latest-generation **optimised HiPIMS TiN coating**.

13 9395/9400 – The **innovative polygon form** permits a wide application spectrum.
The **multi-function layer structure** achieves **maximum service life** even in **high-tensile materials.**

13 9415/9425 – **GARANT Master Form Steel:**
The latest generation of high-performance fluteless taps, specially developed for **use in steels.**
- Optimised polygon geometry for a **lower torque.**
- Multi-layer HIPIMS coating for **high wear resistance.**
- HSS-E-PM substrate for **top process reliability.**

Application: For **Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connection).



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 9395	42	42	28	32															●	●			
13 9400				32	27	22	17							12	7		22		●	●			
13 9415		38		37	35	27	18	12						12	7		22		●	●	●		
13 9425		42		40	38	29	20	15						15	8		25		●	●	●		
13 9475	20	20		27	25	25	10							8			20	●	●	●			

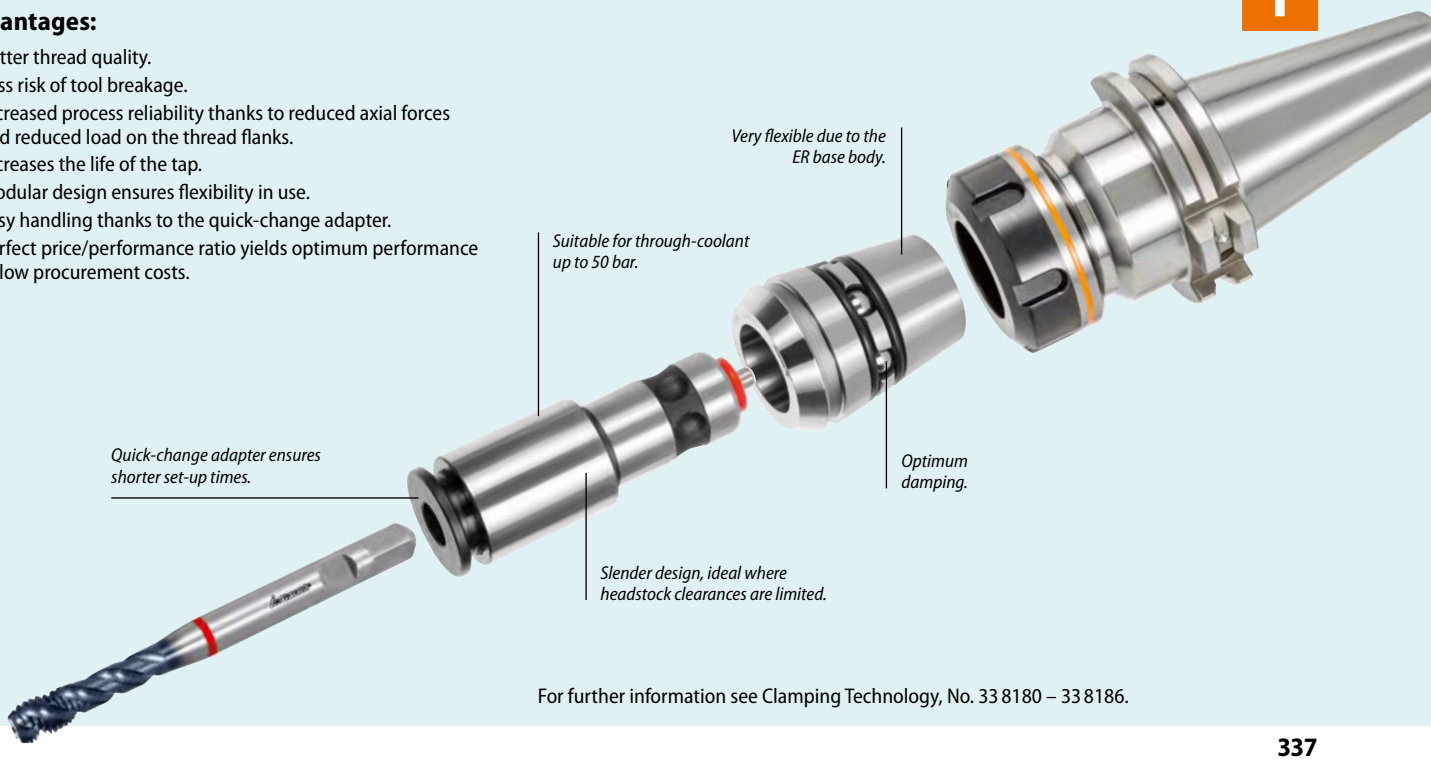
G	1H 13 9395	1H 13 9400	1H 13 9415	1H 13 9425	12I 13 9475	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø guide value
	Garant				HOLEX						
	Fluteless machine tap with oil grooves		GARANT Master Form Steel fluteless machine tap with oil grooves		HOLEX Pro Form fluteless machine tap with oil grooves						
	HSS-E-PM TiAlN	HSS-E-PM TiN	HSS-E-PM TiAlN	HSS-E-PM IC TiAlN	HSS-E-PM TiN		mm	mm	mm	mm	mm
G1/8	eShop	eShop	eShop	eShop	eShop	28	9.73	90	7	5.5	9.25
G1/4	eShop	eShop	eShop	eShop	eShop	19	13.16	100	11	9	12.55
G3/8	eShop	eShop	eShop	eShop	eShop	19	16.66	100	12	9	16.05
G1/2	eShop	eShop	eShop	eShop	eShop	14	20.96	125	16	12	20.05

13

Synchro insert with ER collet base body

Advantages:

- Better thread quality.
- Less risk of tool breakage.
- Increased process reliability thanks to reduced axial forces and reduced load on the thread flanks.
- Increases the life of the tap.
- Modular design ensures flexibility in use.
- Easy handling thanks to the quick-change adapter.
- Perfect price/performance ratio yields optimum performance at low procurement costs.



For further information see Clamping Technology, No. 33 8180 – 33 8186.

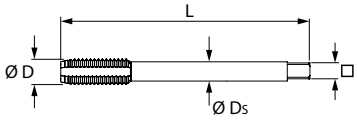
UNC | 60° | HSS E-PM | DIN 2174 | 2BX | E | h9 | ≤3×D | ≤3×D

Garant GARANT Master Form Steel fluteless machine tap with oil grooves

DIN 2174 (≈ DIN 371 ≤ 3/8; ≈ **DIN 376** ≥ 7/16**).**
The latest generation of **high-performance fluteless taps**, specially developed for **use in steel materials.**
- Optimised polygon geometry for a **lower torque.**
- Multi-layer HIPIMS coating for **high wear resistance.**

HSS-E-PM substrate for **exceptional process reliability.**
Form E (lead-in 1.5 – 2 turns). For deep threads with short lead-in. The thread is tapped almost to the bottom of the hole.
Application: **For UNC unified coarse threads ASME–B1.1.**


13 9485



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 9485		38		37	35	27	18	12						12	7		22		●	●	●		

UNC	13 9485	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø guide value
	GARANT Master Form Steel fluteless machine tap with oil grooves HSS-E-PM TiAlN		mm	mm	mm	mm	mm
2-56	eShop	56	2.18	45	2.8	2.1	2
4-40	eShop	40	2.84	56	3.5	2.7	2.55
5-40	eShop	40	3.17	56	3.5	2.7	2.9
8-32	eShop	32	4.16	63	4.5	3.4	3.8
10-24	eShop	24	4.83	70	6	4.9	4.35
12-24	eShop	24	5.49	80	6	4.9	5
1/4-20	eShop	20	6.35	80	7	5.5	5.75
5/16-18	eShop	18	7.94	90	8	6.2	7.3
3/8-16	eShop	16	9.53	100	10	8	8.8
7/16-14	eShop	14	11.11	100	8	6.2	10.25
1/2-13	eShop	13	12.7	110	9	7	11.8
5/8-11	eShop	11	15.88	110	12	9	14.8
3/4-10	eShop	10	19.05	125	14	11	17.8

13

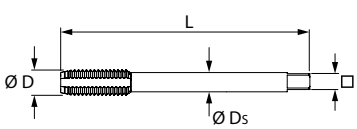
UNF | 60° | HSS E-PM | DIN 2174 | 2BX | E | h9 | ≤3×D | ≤3×D

Garant GARANT Master Form Steel fluteless machine tap with oil grooves

DIN 2174 (≈ DIN 371 ≤ 3/8; ≈ **DIN 376** ≥ 7/16**).**
The latest generation of **high-performance fluteless taps**, specially developed for **use in steel materials.**
- Optimised polygon geometry for a **lower torque.**
- Multi-layer HIPIMS coating for **high wear resistance.**

HSS-E-PM substrate for **exceptional process reliability.**
Form E (lead-in 1.5 – 2 turns). For deep threads with short lead-in. The thread is tapped almost to the bottom of the hole.
Application: **For UNF unified fine threads ASME–B1.1.**


13 9495



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
13 9495		38		37	35	27	18	12						12	7		22		●	●	●		

UNF	13 9495	Threads per inch	Thread Ø	L	Ø D_s	□	Tapping hole Ø guide value
	GARANT Master Form Steel fluteless machine tap with oil grooves HSS-E-PM TiAlN		mm	mm	mm	mm	mm
2-64	eShop	64	2.18	45	2.8	2.1	2
4-48	eShop	48	2.84	56	3.5	2.7	2.6
5-44	eShop	44	3.17	56	3.5	2.7	2.9
8-36	eShop	36	4.16	63	4.5	3.4	3.85
10-32	eShop	32	4.83	70	6	4.9	4.45
12-28	eShop	28	5.49	80	6	4.9	5.1
1/4-28	eShop	28	6.35	80	7	5.5	5.95
5/16-24	eShop	24	7.94	90	8	6.2	7.45
3/8-24	eShop	24	9.53	90	10	8	9.05
7/16-20	eShop	20	11.11	100	8	6.2	10.55
1/2-20	eShop	20	12.7	100	9	7	12.1
5/8-18	eShop	18	15.88	100	12	9	15.2
3/4-16	eShop	16	19.05	110	14	11	18.3

M | M-LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | 2 | 90° | Full profile

Garant Micro-grain solid carbide drill thread milling cutter with countersink

≤1.5×D ≤1.5×D



13 9511

Corrected thread profile for milling **exact internal threads** (ensure stable clamping conditions).
Incorporating a countersink profile for a 90° countersink. A stronger core diameter, two narrow geometrically optimised chip flutes and a special drill point result in good chip formation and low cutting pressure.

Size M4–M12 – **Internal coolant feed.**

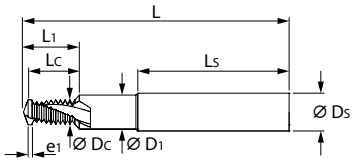
Advantage: **Drilling, countersinking and thread milling all with a single tool!**

Note: HB and HE shanks are available at the same price as HA.
13 9511 – **HB** shank: order with No. **139511**+ **12900 HB**.
HE shank: order with No. **139511**+ **12900 HE**.
13 9516 – **HB** shank: order with No. **139516** + **12900 HB**.
HE shank: order with No. **139516** + **12900 HE**.

≤2×D ≤2×D



13 9516



Feed rate reference values for drilling (for aluminium castings with > 10° Si)

Size = M	M4	M5	M6	M8	M10.	M12
f = mm/rev	0.1	0.15	0.2	0.25	0.27	0.3

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N
13 9511/9516		220	220														120	330

M	11J 13 9511	11J 13 9516	Thread pitch	$Ø D_c$	L_c		L_s		L	$Ø D_s$	$Ø D_1$	Programming value for countersink L_1		Width of groove e_1	Alu cast > 10 % Si f_z
	Drill thread milling cutter				13 9511	13 9516	13 9511	13 9516				13 9511	13 9516		
	1.5×D	2×D													
	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
M3	eShop	eShop	0.5	2.45	4.9	6.9	43	43	54	6	4.5	5.36	7.36	0.5	0.03
M4	eShop	eShop	0.7	3.24	6.8	8.9	43	40	54	6	4.5	7.41	9.5	0.7	0.03
M5	eShop	eShop	0.8	4.1	8.6	10.4	36	36	54	6	5.5	9.35	11.75	0.8	0.04
M6	eShop	eShop	1	4.85	10.7	13.7	40	40	62	8	6.6	11.6	14.6	1	0.05
M8	eShop	eShop	1.25	6.45	13.6	17.3	40	40	74	10	9	14.8	18.5	1.25	0.065
M10	eShop	eShop	1.5	8.08	17.6	22.15	48	45	80	12	11	19.18	23.68	1.5	0.065
M12	eShop	eShop	1.75	9.74	20.4	25.6	48	45	90	14	13.5	22.26	27.46	1.75	0.08

M | M-LH | EG-M | EG-M LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | 4 | ≤2.5×D | ≤2.5×D | Full profile

Garant GARANT Master TM end cutting thread mill

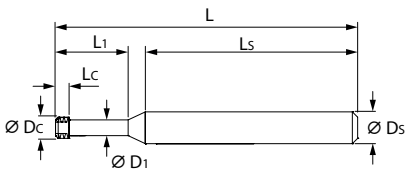
The special front cutter geometry **with unequal spacing** permits **process-reliable circular thread milling** across a **wide spectrum of materials.** The **side cooling grooves** on the shank ensure **outstanding coolant feed** without weakening the tool core and thus offer **maximum process reliability even in unstable conditions.** All tools have left-hand cutting and are suitable for **right-hand and left-hand threads.**

- **Significantly reduced vibrations** due to **irregular cutting edge spacing.**
- **New coating** for optimum **wear resistance.**
- **Cooling grooves** on the shank for targeted **coolant feed.**
- **Corrected thread profile** for avoidance of profile distortions.


13 9526

Note: HB and HE shanks are available at the same price as HA.
HB shank: order with No. **139526 + 129100 HB**.
HE shank: order with No. **139526 + 129100 HE**.

Size M6 – Can also be used for thread size MF7×1 and MF8×1.
Size M10 – Can also be used for thread size MF12×1.5.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	TOOLOX 33 HRC	TOOLOX 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
13 9526	220	220	180	140	130	120	90	80			85	50	82	75	50	120	200	●

M	11D 13 9526	Thread pitch	$Ø D_c$	L_c	L_1	L_s	L	$Ø D_s$	$Ø D_1$	Programming radius	< 750 N f_z
	GARANT Master TM end cutting thread mill 2.5×D										
	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
M3	eShop	0.5	2.33	1	8	36	58	6	1.65	1.135	0.015
M4	eShop	0.7	3.1	1.4	10.7	36	58	6	2.15	1.515	0.02
M5	eShop	0.8	3.9	1.6	13.3	36	58	6	2.8	1.913	0.025
M6	eShop	1	4.7	2	16.5	36	58	6	3.35	2.305	0.03
M8	eShop	1.25	6.4	2.5	21.25	36	62	8	4.7	3.152	0.04
M10	eShop	1.5	8.1	3	26.5	40	76	10	6.05	3.996	0.05
M12	eShop	1.75	9.8	3.5	31.75	40	76	10	7.45	4.84	0.06

M | M-LH | EG-M | EG-M LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | 4 | ≤2.5×D | ≤2.5×D | 90° | Full profile

Garant GARANT Diabolo solid carbide end cutting thread mill

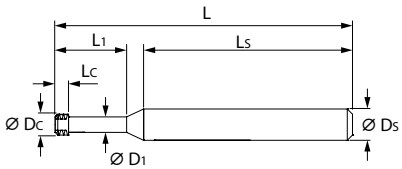
Tool for **combined production** of bore, chamfer and thread **in a single work step.** Pre-drilling is no longer required. The innovative centre cutting edge geometry makes this tool a specialist in thread production in **hardened and hard-to-machine materials.** The **TiAlN high-performance coating** ensures the longest possible **tool life**, especially in hardened steels **up to 63 HRC**. All tools have left-hand cutting and are suitable for **right-hand and left-hand threads.**



13 9524

Note: **Always use with cooling lubricant emulsion.** (Fat content minimum 8%). In the case of steels **>45 HRC**: can only be used with **compressed air**!
HB and HE shanks are available at the same price as HA.
Order **HB** shank: with **No. 139524 + 129100 HB**.
Order **HE** shank: with **No. 139524 + 129100 HE**.

Size M3 – Can also be used for thread size MF4×0.5.
Size M6 – Can also be used for thread size MF7×1 and MF8×1.
Size M8 – Can also be used for thread size MF10×1.25.
Size M10 – Can also be used for thread size MF12×1.5.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 9524							90	90	45	40	35			60	60	45			●				●

M	13 9524	Thread pitch	Ø D_c	L_c	L_1	L_s	L	Ø D_s	Ø D_1	Programming radius	< 65 HRC f_z
	GARANT Diabolo solid carbide end cutting thread mill 2.5×D TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
M3	eShop	0.5	2.4	1.8	8.2	44	57	6	1.7	1.2	0.01
M4	eShop	0.7	3.1	2.2	11.2	41.5	57	6	2.18	1.53	0.01
M5	eShop	0.8	4	2.56	13.7	39.8	57	6	2.97	1.98	0.01
M6	eShop	1	4.6	2.8	17.6	36.4	57	6	3.36	2.27	0.01
M8	eShop	1.25	6.2	3.5	22	45.1	72	10	4.66	3.04	0.01
M10	eShop	1.5	7.5	4.5	27.5	40.5	72	10	5.78	3.69	0.01
M12	eShop	1.75	9	4.8	32.8	36.2	72	10	6.92	4.44	0.01
M14	eShop	2	9	6.3	38.2	39.9	83	12	6.62	4.43	0.01
M16	eShop	2	11.7	6.3	43.2	37.3	83	12	9.36	5.71	0.01

13

G | G-LH | EG-G | EG-G LH | 55° | Solid carbide | h6 DIN 6535 HA | 4 | ≤2×D | ≤2×D | 90° | Full profile

Garant GARANT Diabolo solid carbide end cutting thread mill

Tool for **combined production** of bore, chamfer and thread **in a single work step.** Pre-drilling is no longer required. The innovative centre cutting edge geometry makes this tool a specialist in thread production in **hardened and hard-to-machine materials.** The **TiAlN high-performance coating** ensures the longest possible **tool life**, especially in hardened steels **up to 63 HRC**. All tools have left-hand cutting and are suitable for **right-hand and left-hand threads.**

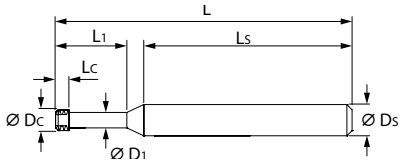
Application: For **Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connections).



13 9527

Note: **Always use with cooling lubricant emulsion.** (Fat content min 8%). In the case of steels **>45 HRC** can only be used with **compressed air**!
HB and HE shanks are available at the same price as HA.
Order **HB** shank: with **No. 139527 + 129100 HB**.
Order **HE** shank: with **No. 139527 + 129100 HE**.

Size G1/2 – **Also suitable for thread dimensions G5/8 to G3/4.**



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
13 9527							90	90	45	40	35			60	60	45			●				●

G	13 9527	Threads per inch	Ø D_c	L_c	L_1	L_s	L	Ø D_s	Ø D_1	Programming radius	< 65 HRC f_z
	GARANT Diabolo solid carbide end cutting thread mill 2×D TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm
G1/8	eShop	28	7.3	3.2	22	47.6	72	10	5.9	3.65	0.01
G1/4	eShop	19	9.8	4.5	30	40.5	72	10	7.74	4.9	0.01
G3/8	eShop	19	11.8	4.5	37	44.5	83	12	9.76	5.9	0.01
G1/2	eShop	14	15.7	6	47	51.2	100	16	12.92	7.85	0.01

Garant Producible threads with single-profile thread mill 139620 and 139625

Article number	ISO coarse thread	ISO fine thread	UNF	UNEF	UN-16	UN-20	UNS
139620 M1 139625 M1	M1X0.25; M1.1X0.25; M1.2X0.25	M1X0.2; M1.1X0.2; M1.2X0.2					
139620 M1.4 139625 M1.4	M1.4X0.3	M1.4X0.2; M1.4X0.25					
139620 M1.6 139625 M1.6	M1.6X0.35; M1.7X0.35; M1.8X0.35	M1.6X0.2; M1.6X0.25; M1.8X0.2; M1.8X0.25					
139620 M2 139625 M2	M2X0.4; M2.3X0.4	M2X0.2; M2X0.25; M2X0.35; M2.2X0.2; M2.2X0.25; M2.2X0.35	No. 2-64				
139620 M2.5 139625 M2.5	M2.5X0.45; M2.6X0.45	M2.5X0.2; M2.5X0.25; M2.5X0.35					
139620 M3 139625 M3	M3X0.5	M3X0.2; M3X0.25; M3X0.35					No. 10-56; No. 12-56
139620 M3.5 139625 M3.5	M3.5X0.6	M3.5X0.35; M3.5X0.5					No. 10-48; No. 12-48
139620 M4 139625 M4	M4X0.7	M4X0.35; M4.5X0.35; M4X0.5; M4.5X0.5					No. 10-40; No. 12-40
139620 M5 139625 M5	M5X0.8	M5X0.35; M5X0.5		No. 12-32			No. 12-36; 1/4"-56
139620 M6 139625 M6	M6X1; M7X1	M6X0.5; M6X0.75; M6.5X0.75; M7X0.5; M8X0.5	1/4"-28	1/4"-32; 5/16"-32			1/4"-27; 1/4"-36; 1/4"-40; 1/4"-48; 5/16"-27; 5/16"-36; 5/16"-40; 5/16"-48; 3/8"-36; 3/8-40
139625 M8	M8X1.25; M9X1.25	M8X1; M9X1	3/8"-24	3/8"-32			3/8"-27; 7/16"-24; 7/16"-27
139625 M10	M10X1.5; M11X1.5	M10X0.75; M10X1; M10X1.25; M11X0.75; M11X1; M11X1.25	7/16"-20; 1/2"-20	7/16"-28; 1/2"-28			7/16"-18; 1/2"-18; 1/2"-24; 1/2"-27; 5/8"-27
139625 M12	M12X1.75	M12X1; M12X1.25; M12X1.5; M13X1; M14X1	9/16"-18; 5/8"-18	9/16"-24; 5/8"-24; 11/16"-24	1/2"-16; 9/16"-16	9/16"-20	9/16"-27; 3/4"-24; 3/4"-27; 7/8"-24; 7/8"-27; 1"-24; 1"-27
139625 M14	M14X2; M16X2	M14X1.25; M14X1.5; M14X1.75; M15X1; M16X1.5; M18X1.5; M18X2; M20X1.5; M20X2	3/4"-16; 7/8"-14	3/4"-20; 13/16"-20; 7/8"-20; 15/16"-20; 1"-20	5/8"-16; 11/16"-16; 13/16"-16; 7/8"-16; 15/16"-16; 1"-16	5/8"-20; 11/16"-20	9/16"-14; 5/8"-14; 3/4"-14; 3/4"-18; 7/8"-18; 1"-14; 1"-18

M | M-LH | UN | UN-LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | ≤2×D | ≤2×D | ≠ | Partial profile | 4 | 6

Garant GARANT Master TM solid carbide single profile thread mill

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges.** Due to the **irregular cutting edge spacing** they achieve very **smooth cutting action** and **long tool life**. **Newly developed universal geometry** and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **Latest-generation AlTiN-based HIPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Size M1–M3,5 – **Parallel coolant channels.**

Size M4–M6 – **Axial cooling grooves on the shank.**

Advantage: Significantly **less radial pressure** than with multi-tooth thread mills. The tool can also be used for additional thread profiles (UN; UN-LH) **for various pitches and diameters**. See overview for possible threads.

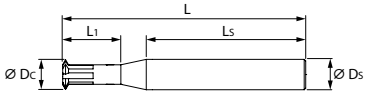
Note: HB and HE shanks are available at the same price as HA.
HB shank: order with No. **139620 + 129100 HB**.
HE shank: order with No. **139620 + 129100 HE**.



13 9620_M3



13 9620_M6



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	GRP	CRP	Graphite	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	M	M	S	N	N	N	N						
13 9620	220	220	180	140	130	120	90	80	45	35	82	75	50	200	100	100	150	●		●	●		●

M	11D	13 9620 GARANT Master TM solid carbide single profile thread mill 2×D AlTiN	Thread pitch range	Ø D_C	L_c	L_s	L_1	L	Ø D_s	No. of teeth Z	< 1400 N f_z	CRP f_z
			mm	mm	mm	mm	mm	mm	mm		mm	mm
M1		eShop	0.1 – 0.25	0.69	0.33	42	2	58	6	4	0.005	0.003
M1,4		eShop	0.14 – 0.3	1.03	0.39	42	3	58	6	4	0.008	0.004
M1,6		eShop	0.14 – 0.35	1.17	0.46	42	3.8	58	6	4	0.008	0.005
M2		eShop	0.15 – 0.4	1.51	0.53	42	4.2	58	6	4	0.008	0.007
M2,5		eShop	0.17 – 0.45	1.94	0.59	42	5.2	58	6	4	0.008	0.01
M3		eShop	0.18 – 0.5	2.38	0.66	42	6.3	58	6	4	0.01	0.02
M3,5		eShop	0.22 – 0.6	2.71	0.79	42	7.3	58	6	4	0.01	0.025
M4		eShop	0.26 – 0.7	3.1	0.93	46	8.4	58	6	6	0.02	0.03
M5		eShop	0.35 – 0.8	3.9	1.06	44.5	10.4	58	6	6	0.03	0.04
M6		eShop	0.5 – 1	4.7	1.33	42.9	12.5	58	6	6	0.04	0.05

M | M-LH | UN | UN-LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | ≤3×D | ≤3×D | ≠ | Partial profile | 4 | 6

Garant GARANT Master TM solid carbide single profile thread mill

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges.**
Due to the **irregular cutting edge spacing** they achieve very **smooth cutting action** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **Latest-generation AlTiN-based HIPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

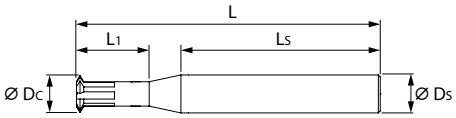
Size M1–M3,5 – **Parallel coolant channels.**
Size M4–M14 – **Axial cooling grooves on the shank.**


13 9625_M3


13 9625_M6

Advantage: Significantly **less radial pressure** than with multi-tooth thread mills.
The tool can also be used for additional thread profiles (UN; UN-LH) **for various pitches and diameters**. See overview for possible threads.

Note: HB and HE shanks are available at the same price as HA.
HB shank: order with No. **139625 + 129100 HB**.
HE shank: order with No. **139625 + 129100 HE**.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	GRP	CRP	Graphite	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	M	M	S	N	N	N	N						
13 9625	200	190	160	125	115	110	80	70	45	35	75	70	45	175	100	100	150	●		●	●		●

M	11D 13 9625 GARANT Master TM solid carbide single profile thread mill 3×D AlTiN	Thread pitch range	Ø D_c	L_s	L_1	L	Ø D_s	No. of teeth Z	< 1400 N f_z	CRP f_z
		mm	mm	mm	mm	mm	mm		mm	mm
M1	eShop	0.1 – 0.25	0.69	42	3	58	6	4	0.005	0.003
M1,4	eShop	0.14 – 0.3	1.03	42	4.4	58	6	4	0.008	0.004
M1,6	eShop	0.14 – 0.35	1.17	42	5.6	58	6	4	0.008	0.005
M2	eShop	0.15 – 0.4	1.51	42	6.2	58	6	4	0.008	0.007
M2,5	eShop	0.17 – 0.45	1.94	42	7.7	58	6	4	0.008	0.01
M3	eShop	0.18 – 0.5	2.38	42	9.3	58	6	4	0.01	0.02
M3,5	eShop	0.22 – 0.6	2.71	42	10.8	58	6	4	0.01	0.025
M4	eShop	0.26 – 0.7	3.1	42	12.4	58	6	6	0.02	0.03
M5	eShop	0.35 – 0.8	3.9	39.5	15.4	58	6	6	0.03	0.04
M6	eShop	0.5 – 1	4.7	36.9	18.5	58	6	6	0.04	0.05
M8	eShop	0.75 – 1.25	5.95	37.6	24.6	64	6	6	0.05	0.06
M10	eShop	0.75 – 1.5	7.95	37.2	30.8	70	8	6	0.07	0.08
M12	eShop	0.8 – 1.75	9.8	42.7	36.9	82	10	6	0.08	0.1
M14	eShop	1.25 – 2	11.5	46	49	98	12	6	0.09	0.12

13

UNIVERSAL AND POWERFUL.

GARANT Master TM thread mill.

Unequal spacing of the cutting edges, the HiPIMS coating technology and suitable for use in a wide range of materials: these are the hallmarks of the GARANT Master TM range.

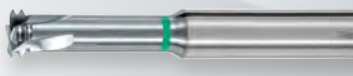
Thanks to the **innovative geometry**, the GARANT Master TM products ensure **extremely smooth cutting** and **reduced cutting forces** in the thread milling process.
These decisive advantages lead to **extremely high performance combined with absolute process reliability**. Whether in stainless steel, cast materials or high-tensile steels – thanks to their general-purpose characteristics, the GARANT Master TM family is always the **right choice for your thread milling process**.



Garant MASTER TM

Overview of the family


With core hole preparation


Without core hole preparation

Scan now!
You can find more information and a product demonstration on our website:
https://hog.tools/master-tm

M | M-LH | EG-M | EG-M LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | ≤3×D | ≤3×D | ≠ | Full profile | 4 | 6

Garant GARANT Master TM solid carbide three-profile thread mill

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges.** Due to the **irregular cutting edge spacing** they achieve very **smooth cutting action** and **long tool life**. **Newly developed universal geometry** and **high-performance coating** for use across a wide spectrum of materials.



13 9630_M3



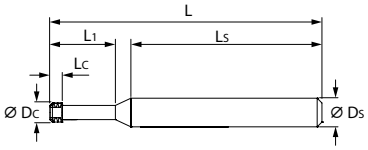
13 9630_M6

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **Latest-generation AlTiN-based HIPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Size M3 – **Parallel coolant channels.**
Size M4–M14 – **Axial cooling grooves on the shank.**

Advantage: Significantly **less radial pressure** than with multi-tooth thread mills.

Note: HB and HE shanks are available at the same price as HA.
HB shank: order with No. **139630 + 129100 HB**.
HE shank: order with No. **139630 + 129100 HE**.
Size M14 – Can also be used for thread size M16.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	GRP	CRP	Graphite	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	M	M	S	N	N	N	N						
13 9630	200	190	160	125	115	110	80	70	45	35	75	70	45	175	100	100	150	●		●	●		●

M	11D	13 9630 GARANT Master TM solid carbide three-profile thread mill 3×D AlTiN	Thread pitch	Ø D_c	L_c	L_s	L_1	L	Ø D_s	No. of teeth Z	< 1400 N f_z	CRP f_z
			mm	mm	mm	mm	mm	mm	mm		mm	mm
M3		eShop	0.5	2.33	1.8	42	9.2	58	6	4	0.01	0.02
M4		eShop	0.7	3.1	2.1	42	12.3	58	6	6	0.02	0.03
M5		eShop	0.8	3.9	2.4	39.6	15.4	58	6	6	0.03	0.04
M6		eShop	1	4.7	3	36.9	18.5	58	6	6	0.04	0.05
M8		eShop	1.25	5.95	3.75	37.6	24.6	64	6	6	0.05	0.06
M10		eShop	1.5	7.95	4.5	37.2	30.7	70	8	6	0.07	0.08
M12		eShop	1.75	9.8	5.25	42.7	36.9	82	10	6	0.08	0.1
M14		eShop	2	11.5	6	46	49	98	12	6	0.09	0.12

G | G-LH | EG-G | EG-G LH | 55° | Solid carbide | h6 DIN 6535 HA | 6 | ≤2×D | ≤2×D | ≠ | Full profile | ≤2×D

Garant GARANT Master TM solid carbide three-profile thread mill

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges.** Due to the **irregular cutting edge spacing** they achieve very **smooth cutting action** and **long tool life**. **Newly developed universal geometry** and **high-performance coating** for use across a wide spectrum of materials.



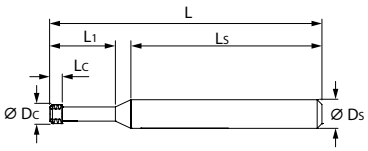
13 9631

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **Latest-generation AlTiN-based HIPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Advantage: Significantly less radial pressure than with multi-tooth thread mills.
Axial cooling grooves on the shank for optimum chip evacuation.

Application: For **Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connections). **Suitable for internal and external threads.**

Note: HB and HE shanks are available at the same price as HA.
HB shank: order with No. **139631 + 129100 HB**.
HE shank: order with No. **139631 + 129100 HE**.
Size G1/4 – Can also be used for thread size G3/8
Size G1/2 – Can also be used for thread size G5/8 - G7/8
Size G1 – Can also be used for thread size up to ≤G2



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	GRP	CRP	Graphite	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	M	M	S	N	N	N	N						
13 9631	200	190	160	125	115	110	80	70	45	35	75	70	45	175	100	100	150	●		●	●		●

G	11D	13 9631 GARANT Master TM solid carbide three-profile thread mill 2×D AlTiN	Threads per inch	Ø D_c	L_c	L_s		L	Ø D_s	No. of teeth Z	< 1400 N f_z	CRP f_z
				mm	mm	mm		mm	mm		mm	mm
G1/16		eShop	28	5.95	2.72	40.6		58	6	6	0.05	0.06
G1/8		eShop	28	7.95	2.72	48.6		70	8	6	0.06	0.08
G1/4		eShop	19	9.95	4.01	53.2		82	10	6	0.08	0.1
G1/2		eShop	14	13.95	5.44	45.9		95	14	6	0.1	0.12
G1		eShop	11	15.95	6.93	49.6		112	16	6	0.12	0.14

M | M-LH | EG-M | EG-M LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | ≠ | Full profile

≥ M4 | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Through-coolant feed ≥ M4

Note:
HB and HE shanks are available at the same price as HA.
13 9642 – Order **HB** shank: with **No. 139642 + 129100 HB**.
Order **HE** shank: with **No. 139642 + 129100 HE**.
13 9643 – Order **HB** shank: with **No. 139643 + 129100 HB**.
Order **HE** shank: with **No. 139643 + 129100 HE**.

≤2×D | ≤2×D

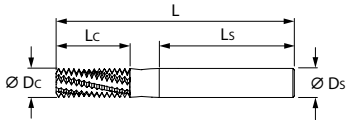


13 9642

≤2.5×D | ≤2.5×D



13 9643



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	TOOLOX 33 HRC	TOOLOX 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9642	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●		●	●		●
13 9643	200	190	160	125	115	110	80	70					75	70	45	105	175	●		●	●		●

M	11D 13 9642	11D 13 9643	Thread pitch	Ø D_C	L_c		L_s		L		Ø D_s	No. of teeth Z	< 750 N f_z
	GARANT Master TM plain shank thread mill				13 9642	13 9643	13 9642	13 9643	13 9642	13 9643			
	2×D	2.5×D											
	AlTiN	AlTiN	mm	mm	mm	mm	mm	mm	mm	mm	mm		mm
M3	eShop	eShop	0.5	2.33	6.25	7.73	41.8	40.3	58	58	6	4	0.01
M4	eShop	eShop	0.7	3.1	8.05	10.13	38	36	58	58	6	4	0.02
M5	eShop	eShop	0.8	3.9	36.08	13.17	36.1	39.7	58	64	6	4	0.035
M6	eShop	eShop	1	4.7	12.5	15.47	40.9	37.9	64	64	6	4	0.05
M8	eShop	eShop	1.25	5.95	16.88	20.58	37.4	37.7	64	68	6	4	0.06
M10	eShop	eShop	1.5	7.95	20.25	26.2	36.6	36.6	68	74	8	6	0.075
M12	eShop	eShop	1.75	9.8	25.38	30.75	44	40.7	82	84	10	6	0.09
M14	eShop	eShop	2	11.5	29	37.08	49	45	92	96	12	6	0.1
M16	eShop	eShop	2	11.95	33	40.93	45.4	45.4	92	100	12	6	0.11
M20	eShop	eShop	2.5	13.95	41.25	51.15	45.9	45.9	102	112	14	6	0.13
M24	eShop	eShop	3	19.95	49.5	61.41	53.2	51.2	120	130	20	6	0.15

M | M-LH | EG-M | EG-M LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | ≤2×D | ≤2×D | Full profile

≥ M8 | 2 | 3 | 4

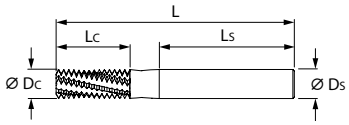
HOLEX Micro-grain solid carbide plain shank thread mill

Corrected thread profile for milling **exact internal threads** (ensure stable clamping conditions).
Size M8–M20 – **Internal coolant feed.**

Note:
HB and HE shanks are available at the same price as HA.
Order **HB** shank: with **No. 139651 + 129100 HB**.
Order **HE** shank: with **No. 139651 + 129100 HE**.



13 9651



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9651	220	220	170	170	150	120	80						80	60	60	120	180	●		●			

M	12J 13 9651	Thread pitch	Ø D_C	L_c	L_s	L	Ø D_s	No. of teeth Z	< 900 N f_z
	Plain shank thread mill								
	2×D								
	TiAlN	mm	mm	mm	mm	mm	mm		mm
M3	eShop	0.5	2.4	6.25	28	42	4	2	0.01
M4	eShop	0.7	3.15	8.75	36	55	6	3	0.012
M5	eShop	0.8	4	10.8	36	55	6	3	0.015
M6	eShop	1	4.8	12.5	36	55	6	3	0.02
M8	eShop	1.25	5.95	16.85	36	60	6	3	0.035
M10	eShop	1.5	7.95	21.75	36	70	8	3	0.035
M12	eShop	1.75	9.9	27.1	40	75	10	4	0.04
M14	eShop	2	11.6	31	45	85	12	4	0.045
M16	eShop	2	11.95	35	45	85	12	4	0.05
M20	eShop	2.5	13.95	41.25	48	90	16	4	0.055

M | M-LH | EG-M | EG-M LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | 90° | Full profile | 4 | 6

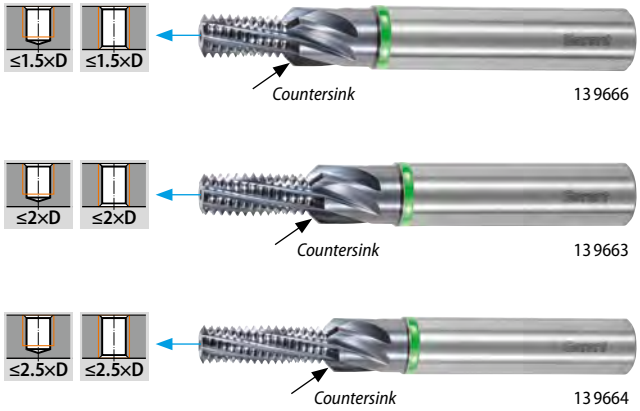
GARANT Master TM solid carbide plain shank thread mill with countersink

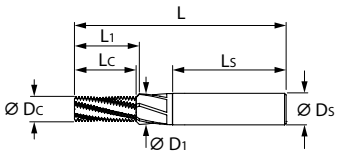
Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **Latest-generation AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Advantage: Incorporating a countersink profile for a 90° countersink and thread milling in a single operation.

Note: HB and HE shanks are available at the same price as HA.
13 9663 – Order **HB** shank: with **No. 139663 + 129100 HB**.
Order **HE** shank: with **No. 139663 + 129100 HE**.
13 9664 – Order **HB** shank: with **No. 139664 + 129100 HB**.
Order **HE** shank: with **No. 139664 + 129100 HE**.
13 9666 – Order **HB** shank: with **No. 139666 + 129100 HB**.
Order **HE** shank: with **No. 139666 + 129100 HE**.





13

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9663/9666	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●		●	●		●
13 9664	200	190	160	125	115	110	80	70					75	70	45	105	175	●		●	●		●

M	11D 13 9666	11D 13 9663	11D 13 9664	Ø D_c	L_c			L		Ø D_s	Ø D_1	Programming value for countersink L_1			No. of teeth Z	< 750 N f_z
	GARANT Master TM plain shank thread mill with countersink				13 9666	13 9663	13 9664	13 9666 13 9663	13 9664			13 9666	13 9663	13 9664		
	1.5×D	2×D	2.5×D													
	AlTiN	AlTiN	AlTiN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		mm
M4	eShop	eShop	eShop	3.1	6.63	8.05	10.15	58	58	6	5	7.33	8.75	10.85	4	0.02
M5	eShop	eShop	eShop	3.9	7.57	10.8	13.2	58	64	6	5.75	8.37	11.6	14	4	0.035
M6	eShop	eShop	eShop	4.7	9.47	12.5	15.5	68	68	8	7	10.37	13.4	16.4	4	0.05
M8	eShop	eShop	eShop	6.4	13.8	16.88	20.63	75	75	10	9	14.85	17.93	21.68	4	0.06
M10	eShop	eShop	eShop	8.1	15.7	20.25	26.25	82	92	12	11	16.9	21.45	27.45	6	0.075
M12	eShop	eShop	eShop	9.8	18.32	25.38	30.63	94	94	14	13	19.67	26.73	31.98	6	0.09
M14	eShop	eShop	eShop	11.5	22.94	29	35	106	106	16	15	24.44	30.5	36.5	6	0.1
M16	eShop	eShop	eShop	13.4	24.94	33	41	108	108	18	17	26.49	34.55	42.55	6	0.11

MF | MF-LH | EG-MF | EG-MF LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | ≤2×D | ≤2×D | ≠ | Full profile

≥ 4×0,5 | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

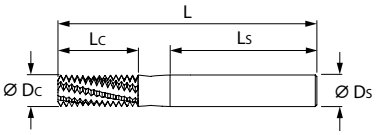
- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Through-coolant feed ≥ 4×0.5



13 9675

Note:	HB and HE shanks are available at the same price as HA. Order **HB** shank: with **No. 139675 + 129100 HB**. Order **HE** shank: with **No. 139675 + 129100 HE**.
Size 20×1,5 –	Can also be used for thread size M24 × 1.5 and M30 × 1.5.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	TOOLOX 33 HRC	TOOLOX 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9675	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●		●	●		●

MF	11D	13 9675	Ø D_c	L_c	L_s	L	Ø D_s	No. of teeth Z	< 750 N f_z
		GARANT Master TM plain shank thread mill 2×D AlTiN	mm	mm	mm	mm	mm		mm
3×0,35		eShop	2.45	6.13	41.8	58	6	4	0.01
4×0,5		eShop	3.29	8.25	38.1	58	6	4	0.02
5×0,5		eShop	4.1	10.25	37.1	58	6	4	0.035
6×0,75		eShop	4.9	12.38	36.5	58	6	4	0.05
8×0,75		eShop	5.95	16.13	38.7	64	6	4	0.06
8×1		eShop	5.95	16.5	38	64	6	4	0.06
10×1		eShop	7.95	20.5	36.4	68	8	6	0.075
10×1,25		eShop	7.95	20.63	36.4	68	8	6	0.075
12×1		eShop	9.95	24.5	45.7	82	10	6	0.09
12×1,5		eShop	9.95	24.75	45	82	10	6	0.09
14×1,5		eShop	11.95	29.25	49.6	92	12	6	0.1
16×1,5		eShop	13.9	32.25	47.7	94	14	6	0.11
18×1,5		eShop	15.9	36.75	54.4	106	16	6	0.11
20×1,5		eShop	15.95	41.25	49.9	106	16	6	0.13

13

MF | MF-LH | EG-MF | EG-MF LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | ≤2×D | ≤2×D | Full profile

≥ 8×1 | 3 | 4

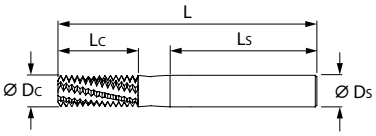
HOLEX Micro-grain solid carbide plain shank thread mill

Corrected thread profile for milling **exact internal fine threads** (ensure stable clamping conditions).
Size 8×1–20×1,5 – **Internal coolant feed.**



13 9680

Note:	HB and HE shanks are available at the same price as HA. Order **HB** shank: with **No. 139680 + 129100 HB**. Order **HE** shank: with **No. 139680 + 129100 HE**.
Size 20×1,5 –	Can also be used for thread size M24 × 1.5.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9680	220	220	170	170	150	120	80						80	60	60	120	180	●		●			

MF	12J	13 9680	Ø D_c	L_c	L_s	L	Ø D_s	No. of teeth Z	< 900 N f_z
		Plain shank thread mill 2×D TiAlN	mm	mm	mm	mm	mm		mm
5×0,5		eShop	4	10.25	36	55	6	3	0.018
6×0,75		eShop	4.8	12.38	36	55	6	3	0.02
8×1		eShop	5.95	16.5	36	60	6	3	0.035
10×1		eShop	7.95	20.5	36	70	8	3	0.035
10×1,25		eShop	7.95	20.6	36	70	8	3	0.035
12×1		eShop	7.95	26.5	40	75	10	4	0.04
12×1,5		eShop	9.9	26.2	40	75	10	4	0.04
14×1,5		eShop	11.6	30.7	45	85	12	4	0.045
16×1,5		eShop	11.95	33.7	45	85	12	4	0.05
18×1,5		eShop	13.95	41.2	45	90	14	4	0.05
20×1,5		eShop	15.95	41.2	48	90	16	4	0.055

MF | MF-LH | EG-MF | EG-MF LH | 60° | Solid carbide | DIN 13 | h6 DIN 6535 HA | 90° | Full profile | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill with countersink

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Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

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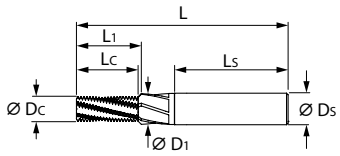
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Advantage: Incorporating a countersink profile for a 90° countersink and thread milling in a single operation.

Note: HB and HE shanks are available at the same price as HA.
13 9686 – Order **HB** shank: with **No. 139686 + 129100 HB**
Order **HE** shank: with **No. 139686 + 129100 HE**
13 9687 – Order **HB** shank: with **No. 139687 + 129100 HB**
Order **HE** shank: with **No. 139687 + 129100 HE**







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9686	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●		●	●		●
13 9687	200	190	160	125	115	110	80	70					75	70	45	105	175	●		●	●		●

MF	11D 13 9686	11D 13 9687	Ø D_c	L_c		L_s		L		Ø D_s	Ø D_1	Programming value for countersink L_1		No. of teeth Z	< 750 N f_z
	GARANT Master TM plain shank thread mill with countersink														
	2×D	2.5×D		13 9686	13 9687	13 9686	13 9687	13 9686	13 9687			13 9686	13 9687		
	AlTiN	AlTiN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		mm
4×0,5	eShop	eShop	3.29	8.25	10.25	38.1	36.2	58	58	6	5	8.86	10.86	4	0.02
5×0,5	eShop	eShop	4.1	10.25	13.25	37.1	40.1	58	64	6	5.75	10.95	13.95	4	0.035
6×0,75	eShop	eShop	4.9	12.38	15.38	42.3	39.3	68	68	8	7	13.18	16.18	4	0.05
8×0,75	eShop	eShop	6.8	16.13	20.63	43	40	75	75	10	9	16.98	21.48	4	0.06
8×1	eShop	eShop	6.6	16.5	20.5	43.7	40	75	75	10	9	17.45	21.45	4	0.06
10×1	eShop	eShop	8.5	20.5	25.5	45.7	50.7	82	92	12	11	21.5	26.5	6	0.075
12×1	eShop	eShop	10.4	24.5	30.5	52.8	46.8	94	94	14	13	25.55	31.55	6	0.09
12×1,5	eShop	eShop	10	24.75	30.75	52	46	94	94	14	13	26	32	6	0.09
16×1,5	eShop	eShop	13.9	32.25	41.25	57.1	48.1	108	108	18	17	33.55	42.55	6	0.11

Garant GARANT MASTER TM THREAD MILLS IN PERFECTION

Thanks to their unequal spacing of cutting edges, the new GARANT Master TM solid carbide thread milling cutters set new standards for thread milling.



Green ring
- For general applications.

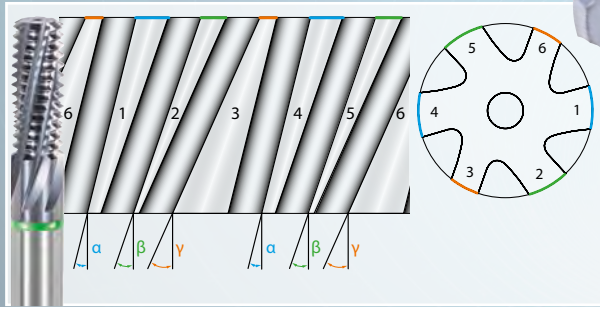
Innovative coating
- The latest coating technology for optimum protection against wear.
- High performance over a wide spectrum of materials.

Corrected thread profile
- Avoidance of profile distortion.
- Threads true to gauge and true to standard.

Unequal spacing
- Significant reduction in vibration.
- Very smooth cutting action.
- Reduction in the cutting forces avoids tool displacement.

Optimised solid carbide substrate
- Improved bending strength.
- High tool strength.

Increased number of cutting edges
- More efficiency due to increased contour feed rate.



Your advantages at a glance:
- Long tool life due to optimum cutting characteristics.
- Shorter machining times due to more cutting edges.
- Optimum protection against wear due to new high-performance coating.
- High surface quality of the thread.
- Precise threads due to profile correction.
- Reduction in the variety of tools required, thanks to good general-purpose capabilities.

G | G-LH | EG-G | EG-G LH | 55° | Solid carbide | h6 DIN 6535 HA | ≠ | Full profile

≤1.5×D ≥G3/4 | ≤1.5×D ≥G3/4 | ≤2×D ≤G1/2 | ≤2×D ≤G1/2 | ≤1.5×D ≥G3/4 | ≤2×D ≤G1/2 | 4 | 6

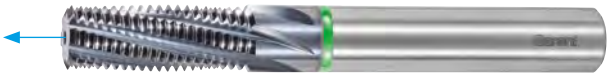
Garant GARANT Master TM solid carbide plain shank thread mill

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

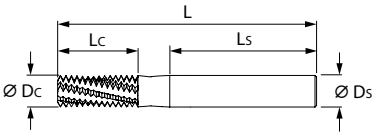
- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HIPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Application: For **Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connections).
Suitable for internal and external threads.

Note: HB and HE shanks are available at the same price as HA.
Order **HB** shank: with **No. 139706 + 129100 HB**.
Order **HE** shank: with **No. 139706 + 129100 HE**.



13 9706



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	TOOLOX 33 HRC	TOOLOX 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
13 9706	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●

G	11D 13 9706 GARANT Master TM plain shank thread mill AlTiN	Threads per inch	Ø D_c	L_c	L_s	L	Ø D_s	No. of teeth Z	< 750 N f_z
			mm	mm	mm	mm	mm		mm
G1/16	eShop	28	5.95	15.87	38.7	64	6	4	0.06
G1/8	eShop	28	7.95	19.5	37.7	68	8	4	0.075
G1/4	eShop	19	9.95	27.41	42.3	82	10	6	0.1
G3/8	eShop	19	13.95	34.09	45.9	94	14	6	0.11
G1/2	eShop	14	15.95	42.63	48.1	106	16	6	0.13
G3/4	eShop	14	17.95	40.82	51.1	108	18	6	0.15
G1	eShop	11	19.95	51.95	50.9	120	20	6	0.17

13

G | G-LH | EG-G | EG-G LH | 55° | Solid carbide | h6 DIN 6535 HA | ≤2×D | ≤2×D | ≤2×D | Full profile

3 | 4

HOLEX Micro-grain solid carbide plain shank thread mill

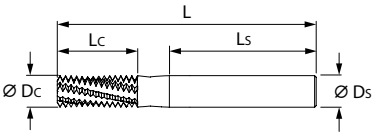
Corrected thread profile for milling **exact internal or external Whitworth pipe threads,**
(ensure stable clamping conditions).

Application: For Whitworth parallel pipe threads DIN-ISO 228/1 (threads that do not form a seal within the connections).
Suitable for internal and external threads.

Note: HB and HE shanks are available at the same price as HA.
Order **HB** shank: with **No. 139707 + 129100 HB**.
Order **HE** shank: with **No. 139707 + 129100 HE**.



13 9707



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
13 9707	220	220	170	170	150	120	80						80	60	60	120	180	●

G	12J 13 9707 Plain shank thread mill 2×D TiAlN	Threads per inch	Ø D_c	L_c	L_s	L	Ø D_s	No. of teeth Z	< 900 N f_z
			mm	mm	mm	mm	mm		mm
G1/8	eShop	28	7.95	20.8	36	70	8	3	0.035
G1/4	eShop	19	9.9	28	40	75	10	4	0.04
G3/8	eShop	19	13.95	36.1	40	90	14	4	0.05
G1/2	eShop	14	15.95	43.5	48	90	16	4	0.055

G | G-LH | EG-G | EG-G LH | 55° | Solid carbide | h6 DIN 6535 HA | ≤2×D | ≤2×D | ≤2×D | ≠ | 90° | Full profile | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill with countersink

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

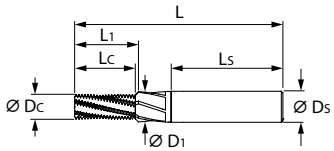
Advantage: Incorporating a countersink profile for a 90° countersink and thread milling in a single operation.

Application: For **Whitworth parallel pipe threads** DIN-ISO 228/1 (threads that do not form a seal within the connections). **Suitable for internal and external threads.**

Note: HB and HE shanks are available at the same price as HA.
Order **HB** shank: with **No. 139716 + 129100 HB**.
Order **HE** shank: with **No. 139716 + 129100 HE**.



13 9716



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9716	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●		●	●		●

G	11D	13 9716	Threads per inch	Ø D_c	L_c	L_s	L	Ø D_s	Ø D_1	Programming value for countersink L_1	No. of teeth Z	< 750 N f_z
		GARANT Master TM plain shank thread mill with countersink 2×D AlTiN		mm	mm	mm	mm	mm	mm	mm		mm
G1/8		eShop	28	8.1	19.5	47	82	12	11	22.57	4	0.075
G1/4		eShop	19	11	27.41	50.4	94	14	13.8	28.74	6	0.1
G3/8		eShop	19	14.4	34.09	55.8	108	18	17.5	35.47	6	0.11

UNC | UNC-LH | EG-UNC | EG-UNC LH | 60° | Solid carbide | h6 DIN 6535 HA | ≤2×D | ≤2×D | ≠ | Full profile | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill

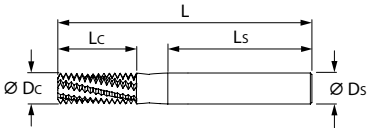
Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Application: For **UNC unified coarse threads** ASME-B1.1.

Note: HB and HE shanks are available at the same price as HA
Order **HB** shank: with **No. 139732 + 129100 HB**
Order **HE** shank: with **No. 139732 + 129100 HE**


13 9732



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9732	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●		●	●		●

UNC	11D	13 9732	Threads per inch	Ø D_c	L_c	L_s	L	Ø D_s	No. of teeth Z	< 750 N f_z
		GARANT Master TM plain shank thread mill 2×D AlTiN		mm	mm	mm	mm	mm		mm
10-24		eShop	24	3.55	10.02	36.2	58	6	4	0.03
1/4-20		eShop	20	4.7	13.29	39.8	64	6	4	0.05
5/16-18		eShop	18	5.95	16.18	38	64	6	4	0.06
3/8-16		eShop	16	7.5	19.8	36.5	68	8	4	0.07
7/16-14		eShop	14	7.95	22.6	36	70	8	6	0.08
1/2-13		eShop	13	9.95	26.31	43.1	82	10	6	0.09
9/16-12		eShop	12	11.6	28.51	49.6	92	12	6	0.1
5/8-11		eShop	11	11.95	33.39	45	92	12	6	0.11
3/4-10		eShop	10	13.95	39.31	47.8	102	14	6	0.13
7/8-9		eShop	9	15.95	46.43	48	110	16	6	0.14
1-8		eShop	8	19.95	52.26	50.3	120	20	6	0.15

Full profile | UNC | UNC-LH | EG-UNC | EG-UNC LH | 60° | Solid carbide | h6 DIN 6535 HA | ≤2×D | ≤2×D | ≠ | 90° | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill with countersink

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

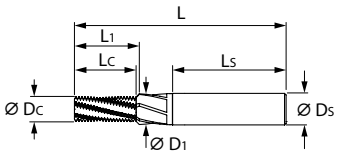
- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Advantage: Incorporating a countersink profile for a 90° countersink and thread milling in a single operation.

Application: For **UNC unified coarse threads** ASME-B1.1.

Note: HB and HE shanks are available at the same price as HA
Order **HB** shank: with **No. 139733 + 129100 HB**
Order **HE** shank: with **No. 139733 + 129100 HE**





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
13 9733	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●

UNC	11D 13 9733 GARANT Master TM plain shank thread mill with countersink 2×D AlTiN	Threads per inch	Ø D_c	L_c	L_s	L	Ø D_s	Ø D_1	Programming value for countersink L_1	No. of teeth Z	< 750 N f_z
			mm	mm	mm	mm	mm	mm	mm		mm
10-24	eShop	24	3.55	10.02	36	58	6	5.75	10.91	4	0.03
1/4-20	eShop	20	4.7	13.29	40.6	68	8	7	14.36	4	0.05
5/16-18	eShop	18	6.1	16.18	43.3	75	10	9	17.35	4	0.06
3/8-16	eShop	16	7.5	19.8	45	82	12	11	21.06	4	0.07
7/16-14	eShop	14	8.8	22.61	53.6	92	12	11.75	24.02	6	0.08
1/2-13	eShop	13	10.3	26.32	50.6	94	14	13.5	27.77	6	0.09
9/16-12	eShop	12	11.6	30.63	56.8	106	16	15	32.22	6	0.1
5/8-11	eShop	11	13	33.41	54	108	18	17	35.1	6	0.11
3/4-10	eShop	10	15.9	39.29	61.1	120	20	19.75	41.12	6	0.13

13

Full profile | UNF | UNF-LH | EG-UNF | EG-UNF LH | 60° | Solid carbide | h6 DIN 6535 HA | ≤2×D | ≤2×D | ≠ | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill

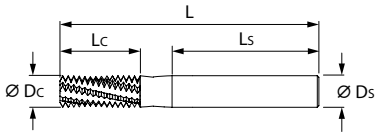
Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Application: For **UNF unified fine threads** ASME-B1.1.

Note: HB and HE shanks are available at the same price as HA
Order **HB** shank: with **No. 139737 + 129100 HB**
Order **HE** shank: with **No. 139737 + 129100 HE**





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
13 9737	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●

UNF	11D 13 9737 GARANT Master TM plain shank thread mill 2×D AlTiN	Threads per inch	Ø D_c	L_c	L_s	L	Ø D_s	No. of teeth Z	< 750 N f_z
			mm	mm	mm	mm	mm		mm
10-32	eShop	32	3.81	9.9	36.8	58	6	4	0.04
1/4-28	eShop	28	5.1	13.12	40.8	64	6	4	0.05
5/16-24	eShop	24	5.95	16.36	38.1	64	6	4	0.07
3/8-24	eShop	24	7.95	19.54	37.7	68	8	4	0.08
7/16-20	eShop	20	7.95	23.44	36	70	8	6	0.09
1/2-20	eShop	20	9.95	25.98	44	82	10	6	0.1
9/16-18	eShop	18	11.95	28.87	50	92	12	6	0.1
5/8-18	eShop	18	11.95	33.09	45.7	92	12	6	0.11
3/4-16	eShop	16	13.95	38.83	49	102	14	6	0.13
7/8-14	eShop	14	15.95	46.17	48.7	110	16	6	0.14
1-12	eShop	12	19.95	51.77	51.5	120	20	6	0.15

UNF | UNF-LH | EG-UNF | EG-UNF LH | 60° | Solid carbide | h6 DIN 6535 HA | ≤2×D | ≤2×D | 90° | Full profile | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill with countersink

Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

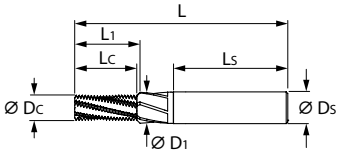
- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Corrected thread profile** for avoidance of profile distortions.
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**

Advantage: Incorporating a countersink profile for a 90° countersink and thread milling in a single operation.

Application: For **UNF unified fine threads** ASME-B1.1.

Note: HB and HE shanks are available at the same price as HA
Order **HB** shank: with **No. 139738 + 129100 HB**
Order **HE** shank: with **No. 139738 + 129100 HE**





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9738	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●		●	●		●

UNF	11D	13 9738 GARANT Master TM plain shank thread mill with countersink 2×D AlTiN	Threads per inch	Ø D_c	L_c	L_s	L	Ø D_s	Ø D_1	Programming value for countersink L_1	No. of teeth Z	< 750 N f_z
				mm	mm	mm	mm	mm	mm	mm		mm
10-32		eShop	32	3.81	9.1	36.8	58	6	5.75	9.86	4	0.04
1/4-28		eShop	28	5.1	13.12	41.4	68	8	7	14	4	0.05
5/16-24		eShop	24	6.5	16.36	43.7	75	10	9	17.33	4	0.07
3/8-24		eShop	24	8	19.54	46.3	82	12	11	20.55	4	0.08
7/16-20		eShop	20	9.3	23.45	53.4	92	12	11.75	24.61	6	0.09
1/2-20		eShop	20	10.9	25.99	51.8	94	14	13.5	27.14	6	0.1
9/16-18		eShop	18	12.3	27.88	59.4	106	16	15	29.12	6	0.1
5/8-18		eShop	18	13.9	33.11	56.3	108	18	17	34.35	6	0.11
3/4-16		eShop	16	16.8	38.85	62.7	120	20	19.75	40.23	6	0.13

NPT | 60° | Solid carbide | ANSI B1.20.1 | 1:16 | h6 DIN 6535 HA | Full profile | 4 | 6

Garant GARANT Master TM solid carbide plain shank thread mill

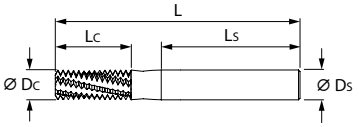
Solid carbide thread milling cutters **with irregular cutting edge spacing and an increased number of cutting edges**. Due to the **irregular cutting edge spacing** they achieve very **smooth running** and **long tool life**.
Newly developed universal geometry and **high-performance coating** for use across a wide spectrum of materials.

- **Significantly reduced vibration** due to **irregular cutting edge spacing.**
- **Increased number of cutting edges.**
- **The latest generation of AlTiN-based HiPIMS coating.**
- **Corrected thread profile** for avoidance of profile distortions.

Application: **Tapered** pipe threads **(NPT)** to ANSI B1.20.1, for threads with sealants.

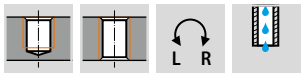
Note: HB and HE shanks are available at the same price as HA.
Order **HB** shank: with **No. 139739 + 129100 HB**.
Order **HE** shank: with **No. 139739 + 129100 HE**.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
13 9739	220	220	180	140	130	120	90	80	45		85	50	82	75	50	120	200	●		●	●		●

NPT	11D	13 9739 GARANT Master TM plain shank thread mill AlTiN	Threads per inch	Ø D_c	L_c	L_s	L	Ø D_s	No. of teeth Z	< 750 N f_z
				mm	mm	mm	mm	mm		mm
1/16-27		eShop	27	5.39	8.93	39.3	58	6	4	0.08
1/8-27		eShop	27	7.39	8.93	48.1	68	8	6	0.09
1/4-18		eShop	18	9.11	13.39	49	75	10	6	0.1
3/8-18		eShop	18	11.11	13.38	55	82	12	6	0.11
1/2-14		eShop	14	12.88	17.2	61.9	94	14	6	0.13



Garant Indexable thread mill

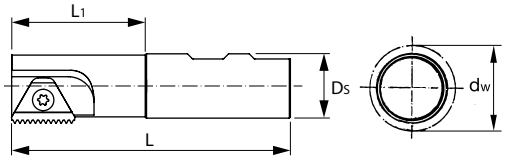
Application:

- For parallel **internal** and **external threads;** other inserts and taper thread tools available on request.
- For threads in **through holes** and **blind holes.**
- For universal use cutting **left-hand and right-hand threads.**
- No chip clearance problems, since only short chips are produced.
- Low cutting pressure.

Note:
Size 22/25–37/98 – Version with double HB drive flat.



218000



Effective ∅ D_w / Overhang L_1 mm	21R 21 8000 Indexable thread mill **Weldon shank**	Insert size	L mm	∅ D_s mm	Clamping screw
11,5/12	eShop	11	70	12	219923
11,5/20	eShop	11	85	20	219923
17/22	eShop	16	90	16	2798105
20/43	eShop	16	95	20	2798105
22/25	eShop	16	125	25	2798105
30/52	eShop	27	110	25	219925
30/92	eShop	27	150	25	219925
37/58	eShop	27	120	32	219925
37/98	eShop	27	160	32	219925

Full profile

Garant Thread milling inserts for thread mill No. 218000

Sturdy inserts. **Two usable edges.**

- Wide range of applications thanks to universal chip breaker geometry.
- High repetition accuracy.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
21 8005–21 8024	140	**120**	**80**	**120**	**110**	**100**	**80**	60						80	70	70	**120**	●		●			

21

M | M-LH | MF | MF-LH | 60°

Application:

21 8005 Size 2 – **For metric internal coarse threads** to DIN / ISO (DIN 13) **M14, M16.**
21 8015 – **For metric external threads** to DIN / ISO (DIN 13) tolerance class 6g.
21 8005–8009 – **For metric internal threads** to DIN / ISO (DIN 13) tolerance class 6H.



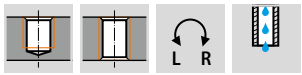
Pitch mm			0,5	1	1,25	1,5	1,75	2	2,5	3	3,5	4	Insert size mm	< 1100 N f_z mm	INOX < 900 N f_z mm
21D 21 8005	Thread milling insert **for internal threads 60°**	HB7720	eShop	eShop	–	eShop	–	eShop	–	–	–	–	11	0.1	0.05
21D 21 8007		HB7720	–	eShop	eShop	eShop	eShop	eShop	–	–	–	–	16	0.1	0.05
21D 21 8009		HB7720	–	–	–	eShop	–	eShop	eShop	eShop	eShop	eShop	27	0.1	0.05
21D 21 8015	Thread milling insert **for external threads 60°**	HB7720	–	eShop	eShop	eShop	–	eShop	–	–	–	–	16	0.1	0.05

G | BSW | G-LH | BSW-LH | BSP | BSP-LH | 55°

Application: **For internal and external threads 55°** to standard BS 84: 1956, DIN 259, ISO 228/1:1982. Tolerance medium, class A.



Threads per inch			11	14	19	Insert size mm	< 1100 N f_z mm	INOX < 900 N f_z mm
21D 21 8020	Thread milling insert **for internal and external threads 55°**	HB7720	–	eShop	eShop	11	0.1	0.05
21D 21 8022		HB7720	eShop	eShop	–	16	0.1	0.05
21D 21 8024		HB7720	eShop	–	–	27	0.1	0.05



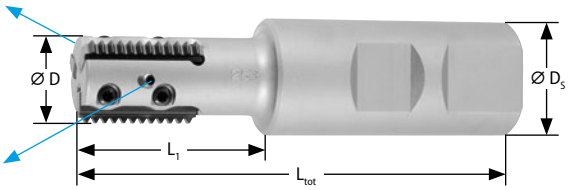
Garant High performance indexable thread mills HPC

HPC thread milling cutters for **reduced machining times.**

Application:

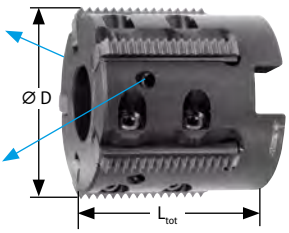
21 8050 – For general use on **right-hand and left-hand internal and external threads.** For threads in **through holes** and **blind holes.**

Note:	Thread mill No. 218050 sizes 17/26 and 17/36 suitable for pitches up to and including 2.5 mm. Thread mill No. 218050 sizes 30/65 suitable for pitches up to < 5.



21 8050

Effective Ø D / Overhang L_1	21R **21 8050** High performance indexable thread mill **Weldon shank**	Insert size	Number of cutting edges Z	L_{tot}	Ø D_s	Clamping screw	Fixing screw
mm				mm	mm		
10/20	eShop	19	1	68	12	–	219859
11,7/25,5	eShop	19	1	73.5	12	–	219859
13,6/26	eShop	24	1	82	20	–	219926
15,1/30	eShop	24	1	85	20	–	219926
16/28	eShop	24	2	83	20	–	219926
17/26	eShop	25	2	85	25	–	219926
17/36	eShop	25	2	95	25	–	219926
19/44	eShop	25	2	104	25	–	219926
20,5/37	eShop	25	3	96	25	–	219926
22/43	eShop	25	3	102	25	–	219926
30/55	eShop	25	5	115	25	–	219926
24,5/43	eShop	41	2	104	25	219928	219927
30/65	eShop	41	3	128.5	32	219928	219927
36/65	eShop	41	4	128	32	219928	219927



21 8054

Effective Ø D	21R **21 8054** High performance indexable thread milling head **with bore**	Insert size	Number of cutting edges Z	L_{tot}	Mounting bore Ø H7	Fixing screw
mm				mm	mm	
36	eShop	25	5	33.5	16	219926

TOOL **Scout**

- Quick application-related tool selection
- Direct ordering in the eShop
- Tool selection not restricted to specific standards or manufacturers
- Cutting data - direct selection
- Tool information for reliable engineering

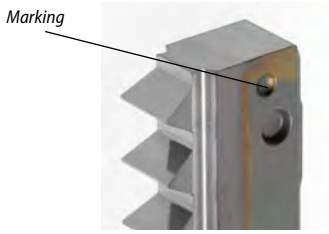
You can find optimum cutting data, machining strategy and NC programs for your machine programming in the ThreadScout.



Full profile

Garant

Milling inserts for HPC indexable thread mills No. 218050 / 218054



Sturdy milling inserts for **high feed rates** and **high productivity.**

Note: Always fit the thread milling inserts with the marks matching, otherwise the thread will be distorted! (Sides have either a mark or no mark).
Feed f_z = HB 7720 in steel < 750 N/mm² = 0.25 mm / tooth.
Feed f_z = HB 7735 in INOX > 900 N/mm² = 0.15 mm / tooth.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
HB 7720 -	140	120	80	120	110	100	80	60				80	70	40	70	120	120	●		●			
HB 7735 -				120	110	100	80	60	25	20		80	70		70	120			○	●	●	○	○

M | M-LH | MF | MF-LH | 60°

21 8055–8058 – Single-edged
21 8060–8071 – Double-edged

Application:
21 8055–8064 – **For metric internal threads 60°** to DIN / ISO R 262 (DIN 13) tolerance class 6H.
21 8070/8071 – **For metric external threads 60°** to DIN / ISO R 262 (DIN 13) tolerance class 6g.


21 8055_2


21 8061_2


21 8063_4

Pitch mm			0,5	0,75	1	1,25	1,5	1,75	2	2,5	3	3,5	4	4,5	5	5,5	6		Insert size mm
21D 21 8055	Milling insert **for internal threads 60°**	HB7720	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–	–	2	19
21D 21 8056		HB7735	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–	–	2	19
21D 21 8057		HB7720	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–	2	24
21D 21 8058		HB7735	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–	2	24
21D 21 8060		HB7720	–	–	eShop	–	eShop	–	eShop	eShop	eShop	–	–	–	–	–	–	2	25
21D 21 8061		HB7735	–	–	eShop	–	eShop	–	eShop	eShop	eShop	–	–	–	–	–	–	2	25
21D 21 8063		HB7720	–	–	–	–	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	2	41
21D 21 8064		HB7735	–	–	–	–	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	2	41
21D 21 8070	Milling insert **for external threads 60°**	HB7720	–	–	eShop	–	eShop	–	eShop	eShop	eShop	–	–	–	–	–	–	2	25
21D 21 8071		HB7735	–	–	eShop	–	eShop	–	eShop	eShop	eShop	–	–	–	–	–	–	2	25

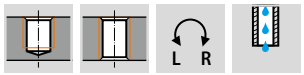
G | BSW | G-LH | BSW-LH | BSP | BSP-LH | 55°

21 8077/8078 – Single-edged.
21 8080/8081 – Double-edged.

Application: **For internal and external threads 55°** to standard BS 84: 1956, DIN 259, ISO 228/1: 1982. Tolerance class Medium Class A.


21 8080

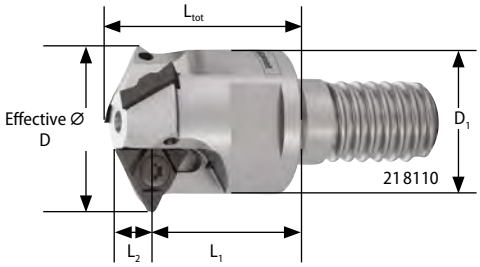
Threads per inch			11	14	19		Insert size mm
21D 21 8077	Milling insert **for internal and external threads 55°**	HB7720	–	eShop	eShop	2	24
21D 21 8078		HB7735	–	eShop	eShop	2	24
21D 21 8080		HB7720	eShop	eShop	–	2	25
21D 21 8081		HB7735	eShop	eShop	–	2	25



Garant Indexable thread milling head for deep holes

Application:

- For large and deep threads.
- For parallel internal threads; other inserts and carriers available on request.
- For threads in through holes and blind holes.
- For universal use on left-hand and right-hand threads.
- Low cutting pressure.



Ø D mm	21R 21 8110 Thread milling head with threaded shank	Insert size	Number of cutting edges Z	Mounting thread	Effective Ø D mm	Ø D_1 mm	L_{tot} mm	L_1 mm	L_2 mm	Insert screw
15	eShop	11	1	M6	14.75	10.6	20.2	15	5.2	279810 4 (TX8; 1.02 Nm)
17	eShop	11	1	M8	16.75	13	22.2	17	5.2	279810 4 (TX8; 1.02 Nm)
21	eShop	11	2	M8	20.75	14.1	19.2	14	5.2	279810 4 (TX8; 1.02 Nm)
23	eShop	11	2	M10	23.3	18	19.2	14	5.2	279810 4 (TX8; 1.02 Nm)
26	eShop	11	3	M12	26.5	21	25.2	20	5.2	279810 4 (TX8; 1.02 Nm)
31	eShop	11	4	M12	30.9	25	28	22.8	5.2	279810 4 (TX8; 1.02 Nm)
36	eShop	16	3	M16	36.5	29	32.95	25	7.95	279810 2 (TX10; 1.58 Nm)
42	eShop	16	4	M16	42	32	32.95	25	7.95	279810 5(TX10; 1.7 Nm)

Garant Milling head and insert overview

Select the right milling head and insert for the thread application area.

Milling head	D	Internal thread 21 8122 / 21 8124 Partial profile 60°				Internal and external thread 21 8131 / 21 8133 Partial profile 55°	
		ISO coarse thread	ISO fine thread	UNC	UN/UNF/UNEF/UNS	BSP(G)	BSW / BSF
21 8110_15	14,75	M24×3.0	M16×0.5; M16×0.75; M16×1.0; M17×1.25; M17×1.5	3/4–10	5/8–32UN; 5/8–28UN; 5/8–27UNS; 11/16–24UN; 11/16–20UN; 11/16–16UN; 3/4–14UNS; 3/4–12UN	3/8–19; 1/2–14; 1–11	11/16–14; 3/4–12; 7/8–11; 3/4–10; 7/8–9; 1–8; 1 1/8–7
21 8110_17	16,75	M24×3.0	M18×0.5; M18×0.75; M18×1.0; M19×1.25; M19×1.5	–	3/4–32UN; 3/4–28UN; 7/8–27UN; 3/4–24UN; 34–20UN; 3/4–16UNF; 3/4–14UNS; 13/16–12UN; 7/8–10UN	1/2–14; 1–11	13/16–12; 7/8–11; 1–10; 7/8–9; 1–8; 1 1/8–7
21 8110_21	20,75	M30×3.5	M22×0.5; M22×0.75; M22×1.0; M23×1.5	1 1/8–7; 1 3/8–6	7/8–32UN; 7/8–28UN; 7/8–27UNS; 7/8–24UNS; 7/8–20UNEF; 1–18UNS; 15/16–16UN; 1–14UNS; 1 –10UNS	3/4–14; 1–11	1–26; 1–20; 1–16; 1–12; 1–10; 1 1/8–9; 1–8; 1 1/8–7
21 8110_23	23,3	M36×4.0	M24×0.5; M24×0.75; M25×1.0; M25×1.25; M26×1.5; M26×2.0		1–32UN; 1–28UN; 1–27UNS; 1–24UNS; 1–20UNEF; 1–18UNS; 1–16UN; 1 1/8–10UNS	3/4–14; 1–11	1–26; 1–20; 1–16; 1 1/16–12; 1 1/8–9; 1 1/8–7
21 8110_26	26,5	M33×2.5; M36×4.0	M28×0.5; M28×0.75; M28×1.0; M28×1.25; M29×1.5		1 1/8–28UN; 1 1/8–24UNS; 1 1/8–18UNEF; 1 1/8–16UN; 1 1/4–14UNS; 1 3/16–12UN; 1 1/4–10UNS	7/8–14; 1–11	1 1/8–26; 1 1/8–20; 1 3/8–16; 1 3/8–12; 1 3/8–8; 1 1/4–7
21 8110_31	30,9		M32×0.5; M32×0.75; M33×1.0; M33×1.25; M33×1.5; M34×2.0		1 5/16–28UN; 1 3/8–24UNS; 1 5/16–20UN; 1 5/16–18UNEF; 1 5/16–16UN; 1 3/8–14UNS; 1 3/8–12UNF	11/8–11	1 3/8–26; 1 3/8–20; 1 3/8–16; 1 3/8–12; 1–10; 1 7/16–8
21 8110_36	36,5	M56×5.5; M64×6.0	M39×1.5; M39×2.0; M40×2.5	2 1/4–4	1 9/16–16UN; 1 5/8–14UNS; 1 9/16–12UN; 1 5/8–10UNS	1 1/4–11	1 5/8–16; 1 5/8–12; 1 5/8–8; 1 7/8–6; 1 3/4–5
21 8110_42	42,0	M56×5.5; M64×6.0	M45×1.5; M45×2.0; M46×2.5; M48×3.5	2 1/2–4	1 3/4–16UN; 1 3/4–14UNS; 1 13/16–12UN	1 1/2–11	1 7/8–16; 1 7/8–12; 1 7/8–8; 2 1/4–6; 2–4.5

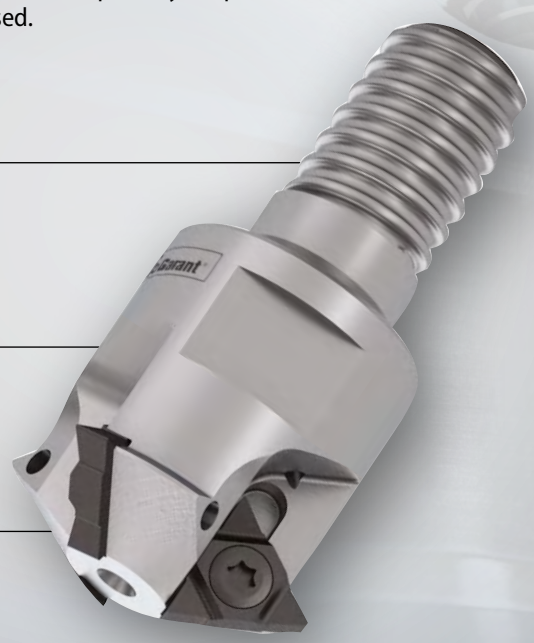
Garant MODULAR THREAD MACHINING

The GARANT thread milling range
Ideal for making large and deep threads.
The standard connection thread allows the thread mill to be optimally adapted to the machining depth and the performance to be increased.

Standard connection thread
for adaptive extension

Short overall length
to prevent displacement

Stable insert seating



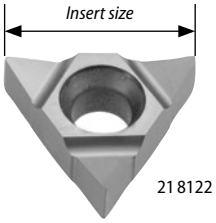
Partial profile

Garant Thread milling inserts for thread milling heads with connection thread No. 218110

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
21 8122–21 8133	140	120	80	120	110	100	80	60					80	70	40	70	120	●		●			

60°

21 8122 – Insert size 11.
21 8124 – Insert size 16.
Application: For metric internal threads with 60° flank to DIN / ISO R 262 (DIN 13).

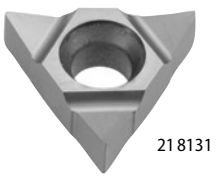


21 8122

Pitch		mm	0,5-1,5	1,5-2,0	2,5-3,5	2,5-4,0	4,0-6,0	Insert size mm	< 1100 N f_z mm	INOX < 900 N f_z mm
21D 21 8122	Thread milling insert **for internal threads 60°**	HB7720	eShop	eShop	–	eShop	–	11	0.1	0.03
21D 21 8124		HB7720	–	eShop	eShop	–	eShop	16	0.1	0.03

55°

21 8131 – Insert size 11.
21 8133 – Insert size 16.
Application: For internal and external threads with 55° flank to standard BS 84: 1956, DIN 259, ISO 228/1: 1982.


21 8131

Threads per inch			48-16	16-12	11-7	6-4	Insert size mm	< 1100 N f_z mm	INOX < 900 N f_z mm
21D 21 8131	Thread milling insert	HB7720	eShop	eShop	eShop	–	11	0.05	0.03
21D 21 8133		HB7720	–	eShop	eShop	eShop	16	0.05	0.03

M | 60° | HSS | EN 22568

Dies

Closed, pre-slit form. ≥ **M3 with tapered lead chamfer** on both sides for easy start to the threading action and clean swarf evacuation in the direction of cutting.
1¾ turns lead chamfer.

14 0350 – Tolerance zone 6e = **with undersize approx. 0.03 – 0.04 mm.**
For tolerance class "medium", when studs are provided with a **galvanic protection coating.**

14 0300 Size M1–M1,4 – Tolerance zone 6h.

DIN 13 6h ≤ M 1.4
DIN 13 6g ≤ M 1.6



14 0300

Pre-slit: If different thread tolerances are required, the die can be split here.

DIN 13 6e



14 0350

DIN 13 6g



14 0330

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
14 0300–14 0350		○		●	●													

M	14 0300 Garant 6g	14 0350 Garant 6e	14 0330 HOLEX 6g	Pitch mm	External Ø mm	Height mm
M1	eShop	–	–	0.25	16	5
M1,2	eShop	–	–	0.25	16	5
M1,4		–	–	0.3	16	5
M1,6		–	–	0.35	16	5
M1,7		–	–	0.35	16	5
M2		–	–	0.4	16	5
M3		eShop	eShop	0.5	20	5
M3,5	eShop	–	–	0.6	20	5
M4	eShop	eShop	eShop	0.7	20	5
M5	eShop	eShop	eShop	0.8	20	7
M6	eShop ■	eShop	eShop	1	20	7
M7	eShop	–	–	1	25	9

M	14 0300 Garant 6g	14 0350 Garant 6e	14 0330 HOLEX 6g	Pitch mm	External Ø mm	Height mm
M8	eShop	eShop	eShop	1.25	25	9
M9	eShop	–	–	1.25	25	9
M10	eShop ■	eShop	eShop	1.5	30	11
M12	eShop ■	eShop	eShop	1.75	38	14
M14	eShop	–	eShop	2	38	14
M16	eShop	–	eShop	2	45	18
M18	eShop	–	eShop	2.5	45	18
M20	eShop ■	–	eShop	2.5	45	18
M22	eShop	–	eShop	2.5	55	22
M24	eShop	–	eShop	3	55	22
M27	eShop	–	eShop	3	65	25
M30	eShop	–	eShop	3.5	65	25

M | 60° | HSS E | EN 22568 | DIN 13 6g

Dies for stainless and high-tensile steel

Closed, pre-slit form. ≥ **M3 with tapered lead chamfer** on both sides for easy start to the threading action and clean swarf evacuation in the direction of cutting.
2 turns lead chamfer.
Lapped and **nitrided,** rake approx. 15°.
14 0400 Size M2,3; M2,6 – with old DIN profile.



14 0400



14 0460

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
14 0400/0460				●	●	●	●	○						●	○			

M	14 0400 Garant	14 0460 HOLEX	Pitch mm	External Ø mm	Height mm
M2	eShop	–	0.4	16	5
M2,2	eShop	–	0.45	16	5
M2,3	eShop	–	0.4	16	5
M2,5	eShop	–	0.45	16	5
M2,6	eShop	–	0.45	16	5
M3	eShop	eShop	0.5	20	5
M3,5	eShop	eShop	0.6	20	5
M4	eShop	eShop	0.7	20	5
M5	eShop	eShop	0.8	20	7
M6	eShop	eShop	1	20	7

M	14 0400 Garant	14 0460 HOLEX	Pitch mm	External Ø mm	Height mm
M7	eShop	eShop	1	25	9
M8	eShop	eShop	1.25	25	9
M10	eShop	eShop	1.5	30	11
M12	eShop	eShop	1.75	38	14
M14	eShop	eShop	2	38	14
M16	eShop	eShop	2	45	18
M20	eShop	eShop	2.5	45	18
M24	eShop	eShop	3	55	22
M27	eShop	eShop	3	65	25
M30	eShop	eShop	3.5	65	25

M-LH | 60° | HSS | EN 22568 | DIN 13 6g

Garant Dies, left-hand thread

Closed, pre-slit form.
1 3/4 turns lead chamfer.
Size M3–M24 – **with spiral point on both sides** for easy start to the cutting action and clean chip evacuation in the direction of cutting.



14 0620

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
14 0620		○		●	●													

M-LH	11K	14 0620 Die Left-hand thread	Pitch mm	External ∅ mm	Height mm
M2		(eShop)	0.4	16	5
M2,5		(eShop)	0.45	16	5
M3		eShop	0.5	20	5
M4		eShop	0.7	20	5
M5		eShop	0.8	20	7
M6		eShop	1	20	7
M8		eShop	1.25	25	9

M-LH	11K	14 0620 Die Left-hand thread	Pitch mm	External ∅ mm	Height mm
M10		eShop	1.5	30	11
M12		eShop	1.75	38	14
M14		eShop	2	38	14
M16		eShop	2	45	18
M18		(eShop)	2.5	45	18
M20		eShop	2.5	45	18
M24		eShop	3	55	22

M | 60° | HSS | DIN 382 | DIN 13 6g

Garant Hexagon dies

External hexagon for standard socket size.
Without tapered spiral point.
1¾ turns lead chamfer.

Note:	For re-cutting damaged threads or for cutting where access is difficult.



14 0920

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N
14 0920		○		●	●	●	○							○			○	

M	11K	14 0920 Die Hexagon	Pitch mm	Width across flats mm	Height mm
M3		eShop	0.5	18	5
M4		eShop	0.7	18	5
M5		eShop	0.8	18	7
M6		eShop	1	18	7
M8		eShop	1.25	21	9

M	11K	14 0920 Die Hexagon	Pitch mm	Width across flats mm	Height mm
M10		eShop	1.5	27	11
M12		eShop	1.75	36	14
M14		eShop	2	36	14
M16		eShop	2	41	18
M20		eShop	2.5	41	18

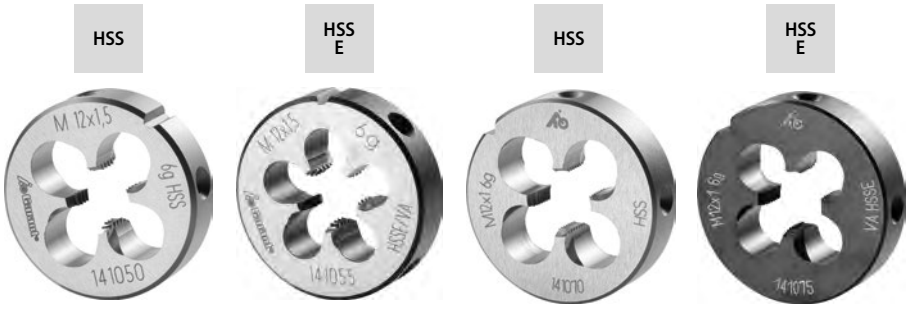
MF | 60° | EN 22568 | DIN 13 6g

Dies

Closed, pre-slit form, **with tapered lead chamfer on both sides.**

14 1050/1070 – **1¾ turns lead chamfer.**

14 1055/1075 – **2 turns lead chamfer. Lapped** and **nitrided,** rake approx. 15°. **For stainless and high-tensile steels.**



14 1050 | 14 1055 | 14 1070 | 14 1075

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
14 1050/1070		○		●	●														●			○	
14 1055/1075				●	●	●	●	○						●	○				●			○	

MF	11K 14 1050	11K 14 1055	12K 14 1070	12K 14 1075	External ∅	Height
	Garant		HOLEX			
	Die					
	HSS	HSS-E	HSS	HSS-E	mm	mm
4×0,5	eShop	–	–	–	20	5
5×0,5	eShop	–	–	–	20	5
6×0,5	eShop	–	–	–	20	5
6×0,75	eShop	eShop	–	eShop	20	7
7×0,75	eShop	–	–	–	25	9
8×0,5	eShop	–	–	–	25	9
8×0,75	eShop	eShop	–	eShop	25	9
8×1	eShop	eShop	eShop	eShop	25	9
9×1	eShop	–	–	–	25	9
10×0,75	eShop	–	–	–	30	11
10×1	eShop	eShop	eShop	eShop	30	11
10×1,25	eShop	eShop	–	eShop	30	11
11×1	eShop	–	–	–	30	11
12×1	eShop	eShop	eShop	eShop	38	10
12×1,25	eShop	eShop	–	eShop	38	10
12×1,5	eShop	eShop	eShop	eShop	38	10
14×1	eShop	eShop	–	eShop	38	10
14×1,25	eShop	–	–	–	38	10
14×1,5	eShop	eShop	eShop	eShop	38	10
15×1	eShop	–	–	–	38	10
16×1	eShop	eShop	–	eShop	45	14
16×1,5	eShop	eShop	eShop	eShop	45	14
18×1	eShop	–	–	–	45	14
18×1,5	eShop	eShop	eShop	eShop	45	14
20×1	eShop	–	–	–	45	14
20×1,5	eShop	eShop	eShop	eShop	45	14
22×1	eShop	–	–	–	55	16
22×1,5	eShop	–	eShop	–	55	16
24×1	eShop	–	–	–	55	16
24×1,5	eShop	–	eShop	–	55	16
24×2	eShop	–	–	–	55	16
25×1,5	eShop	–	–	–	55	16
26×1,5	eShop	–	–	–	55	16
27×1,5	eShop	–	–	–	65	18
27×2	eShop	–	–	–	65	18
28×1,5	eShop	–	–	–	65	18
30×1	(eShop)	–	–	–	65	18
30×1,5	eShop	–	–	–	65	18
30×2	eShop	–	–	–	65	18
32×1,5	eShop	–	–	–	65	18

BSW | 55° | HSS | EN 22568

Garant Dies

Closed, pre-slit form; **with tapered lead chamfer on both sides** for easy start to the threading action and clean swarf evacuation in the direction of cutting.
1¾ turns lead chamfer.

Application: **For Whitworth threads** to BSW standard BS84 in the tolerance field "medium".



14 1550

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
14 1550		○		●	●													

BSW	11K 14 1550 Die	Threads per inch	Thread ∅ mm	External ∅ mm	Height mm
W1/8	eShop	40	3.18	20	5
W5/32	eShop	32	3.97	20	7
W3/16	eShop	24	4.76	20	7
W7/32	eShop	24	5.56	20	7
W1/4	eShop	20	6.35	20	7
W5/16	eShop	18	7.94	25	9
W3/8	eShop	16	9.53	30	11
W7/16	eShop	14	11.11	30	11
W1/2	eShop	12	12.7	38	14
W9/16	eShop	12	14.29	38	14
W5/8	eShop	11	15.88	45	18
W3/4	eShop	10	19.05	45	18
W7/8	eShop	9	22.23	55	22
W1	eShop	8	25.4	55	22

14

G | 55° | HSS

Garant Dies

14 2050 – Closed, pre-slit form; **with tapered lead chamfer on both sides** for easy start to the threading action and clean swarf evacuation in the direction of cutting.
1¾ turns lead chamfer.

14 2060 – **Hexagon** die **without** tapered lead chamfer; for re-cutting.

Application: **For Whitworth parallel pipe threads** DIN ISO 228/1

EN 24231



14 2050

DIN 382



14 2060

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N
14 2050		○		●	●													
14 2060		○		●	●	●	○							○			○	

G	11K 14 2050 Die	11K 14 2060 Die	Threads per inch	Thread ∅ mm	External ∅ 14 2050 mm	Width across flats 14 2060 mm	Height mm
G1/8	eShop	eShop	28	9.73	30	27	11
G1/4	eShop	eShop	19	13.16	38	36	10
G3/8	eShop	eShop	19	16.66	45	41	14
G1/2	eShop	eShop	14	20.96	45	41	14
G3/4	eShop	eShop	14	26.44	55	50	16
G1	eShop	eShop	11	33.25	65	60	18
G1.1/4	–	eShop	11	41.91	–	70	20
G1.1/2	–	eShop	11	47.8	–	85	22
G2	–	eShop	11	59.61	–	100	22

UNC | 60° | HSS | EN 22568 | 2A

Garant Dies UNC

Closed, pre-slit form; **with tapered lead chamfer on both sides** for easy start to the threading action and clean swarf evacuation in the direction of cutting.
1¾ turns lead chamfer.
Application: **For UNC uniform coarse threads** ASME – B1.1.



14 2520

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
14 2520		○		●	●														●				○

UNC	11K 14 2520 Die	Threads per inch	Thread ∅ mm	External ∅ mm	Height mm
4-40	eShop ■	40	2.85	16	5
5-40	(eShop)	40	3.18	20	5
6-32	eShop ■	32	3.51	20	7
8-32	eShop ■	32	4.17	20	7
10-24	eShop ■	24	4.83	20	7
12-24	(eShop)	24	5.49	20	7
1/4-20	eShop ■	20	6.35	20	7
5/16-18	eShop ■	18	7.94	25	9
3/8-16	eShop	16	9.53	30	11
7/16-14	eShop ■	14	11.11	30	11
1/2-13	eShop	13	12.7	38	14
5/8-11	eShop ■	11	15.88	45	18
3/4-10	eShop ■	10	19.05	45	18
7/8-9	(eShop)	9	22.23	55	22
1-8	(eShop)	8	25.4	55	22

UNF | 60° | HSS | EN 22568 | 2A

Garant Dies UNF

Closed, pre-slit form; **with tapered lead chamfer on both sides** for easy start to the threading action and clean swarf evacuation in the direction of cutting.
1¾ turns lead chamfer.
Application: **For UNF uniform fine threads** ASME – B1.1.



14 2620

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
14 2620		○		●	●														●				○

UNF	11K 14 2620 Die	Threads per inch	Thread ∅ mm	External ∅ mm	Height mm
10-32	eShop ■	32	4.83	20	7
12-28	(eShop)	28	5.49	20	7
1/4-28	eShop ■	28	6.35	20	7
5/16-24	eShop	24	7.94	25	9
3/8-24	eShop ■	24	9.53	30	11
7/16-20	eShop ■	20	11.11	30	11
1/2-20	eShop ■	20	12.7	38	10
5/8-18	eShop ■	18	15.88	45	14
3/4-16	eShop ■	16	19.05	45	14
7/8-14	eShop ■	14	22.23	55	16
1-12	(eShop)	12	25.4	55	16

Die sets in a case

60° | EN 22568 | DIN 13 6g

HSS | HSS E

14 2700/2725 – Die set **HSS,** 7 pieces (M3–M12) in a case.
14 2710/2735 – Die set **HSS-E,** 7 pieces (M3–M12) in a case.

for metric threads			M3-12	Content:
11K 14 2700	Garant	Die set HSS	eShop ■	1 each die No. 140300 size M3; M4; M5; M6; M8; M10; M12.
11K 14 2710	Garant	Die set HSS-E	eShop	1 each die No. 140400 size M3; M4; M5; M6; M8; M10; M12.
12K 14 2725	HOLEX	Die set HSS	eShop	1 each die No. 140330 size M3; M4; M5; M6; M8; M10; M12.
12K 14 2735	HOLEX	Die set HSS-E	eShop	1 each die No. 140460 size M3; M4; M5; M6; M8; M10; M12.



14 2700

14 2725

Suitable for: Dies M3–M12

for metric threads			M3-12
11K 14 2740	Garant	Empty case for dies	eShop
12K 14 2745	HOLEX		eShop

Thread cutting set in a sheet metal case

M | 60°

14 5114–5314 – **Strong sheet metal case** with carrying handle and 2 offset catches. Each tool is securely stored and protected in a foam insert and is immediately ready to hand. The taps are raised up vertically when the lid is opened. For more detailed descriptions of the content see individual products.



14 5114_M3-12



14 5114_M3-20

for metric threads			M3-12	M3-20
11K 14 5114	Garant	Thread cutting set **with tap sets, 3 pieces**	eShop	eShop
12K 14 5119	HOLEX		eShop	eShop
11K 14 5314	Garant	Thread cutting set **with spiral point taps**	eShop	–
Content: 1 each tap set, 3 pieces, No. 130150 (14 5114)			Size M3; M4; M5; M6; M8; M10; M12	Size M3; M4; M5; M6; M8; M10; M12; M14; M16; M18; M20
1 each tap set, 3 pieces, No. 130250 (14 5119)			Size M3; M4; M5; M6; M8; M10; M12	Size M3; M4; M5; M6; M8; M10; M12; M14; M16; M18; M20
3 each spiral point taps No. 131450 (14 5314)			Size M3; M4; M5; M6; M8; M10; M12	–
1 each die No. 140300 (14 5114, 14 5314)			Size M3; M4; M5; M6; M8; M10; M12	Size M3; M4; M5; M6; M8; M10; M12; M14; M16; M18; M20
1 each die No. 140330 (14 5119)			Size M3; M4; M5; M6; M8; M10; M12	Size M3; M4; M5; M6; M8; M10; M12; M14; M16; M18; M20
1 each jobber drill No. 114150 (14 5114, 14 5314)			Size 2.5; 3.3; 4.2; 5; 6.8; 8.5; 10.2	–
1 each adjustable tap wrench No. 148410			Size 1; 2	Size 1.1/2; 3
1 each jobber drill No. 114031 (14 5119)			Size 2.5; 3.3; 4.2; 5; 6.8; 8.5; 10.2	–
1 each die stock No. 149310			Size 20×5; 20×7; 25×9; 30×11; 38×14	Size 20×5; 20×7; 25×9; 30×11; 38×14; 45×18
1 toolholder with ratchet No. 148701			Size 85	Size 85; 110
1 thread gauge No. 477000			Size M/W	
1 screwdriver No. 664300			Size 3×60	

for metric threads			M3-12	M3-20
11K 14 5607	Garant	Sheet metal case empty for thread cutting set	eShop	eShop
12K 14 5612	HOLEX		eShop	eShop

Garant Fine thread cutting set – in a sheet metal case

14 5809 – **Sturdy sheet metal case** with carrying handle and 2 catches. Each tool is securely stored and protected in a foam insert and is immediately ready to hand. For more detailed descriptions of the content see individual products.

MF 60°

for metric fine threads		MF3-20
1 14 5809	Fine thread cutting set in a metal case	eShop
Content: 1 set each hand tap No. 130470		Size 3×0.35; 4×0.5; 5×0.5; 6×0.75; 8×1; 10×1; 12×1.5; 14×1.5; 16×1.5; 18×1.5; 20×1.5;
1 each die No. 141050		Size 4×0.5; 5×0.5; 6×0.75; 8×1; 10×1; 12×1.5; 14×1.5; 16×1.5; 18×1.5; 20×1.5;
1 each adjustable tap wrench No. 148410		Size 1; 3
1 each die stock No. 149310		Size 20×5; 20×7; 25×9; 30×11; 38×10; 45×14
1 toolholder with ratchet No. 148701		Size 85; 110
1 thread gauge No. 477000		Size M/W
1 screwdriver No. 664300		Size 3×60

for metric fine threads		MF3-20
1 14 5817	Sheet metal case empty for fine thread cutting set	eShop



14 5809

G 55°

Garant Pipe thread cutting set – in a case

Sturdy plastic case with carrying handle and 2 catches. Each tool is securely stored and protected in a foam insert and is immediately ready to hand. For more detailed descriptions of the content see individual products.

Application: For **Whitworth parallel pipe threads** DIN ISO 228/1

for parallel pipe threads		G1/8-1
1 14 5905	Pipe thread cutting set in a plastic case	eShop
Content: 1 set each hand tap No. 130550		Size 5.5
1 each die No. 142050		Size 1/8; 1/4; 3/8; 1/2; 3/4; 1
1 each adjustable tap wrench No. 148410		Size 3; 5
1 each die stock No. 149310		Size 30×11; 38×10; 45×14; 55×16; 65×18
1 screwdriver No. 664122		Size 5.5



14 5905

UNC 60°

Garant UNC thread cutting set in a case

Sturdy plastic case with carrying handle and 2 catches. Each tool is securely stored and protected in a foam insert and is immediately ready to hand. For more detailed descriptions of the content see individual products.

Application: **For UNC unified coarse threads** ASME–B1.1.

for UNC unified coarse threads		UNC1/4-3/4
1 14 5955	UNC thread cutting set in a plastic case	eShop
Content: 1 set each hand tap No. 130700		Size 1/4; 5/16; 3/8; 7/16; 1/2; 5/8; 3/4
1 each die No. 142520		Size 1/4; 5/16; 3/8; 7/16; 1/2; 5/8; 3/4
1 each adjustable tap wrench No. 148410		Size 1.1/2; 2; 4
1 each die stock No. 149310		Size 20×7; 25×9; 30×11; 38×14; 45×18
1 screwdriver No. 664122		Size 5.5



14 5955

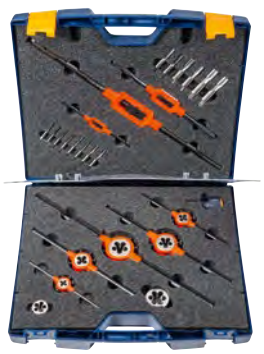
UNF 60°

Garant UNF thread cutting set in a case

Sturdy plastic case with carrying handle and 2 catches. Each tool is securely stored and protected in a foam insert and is immediately ready to hand. For more detailed descriptions of the content see individual products.

Application: **For UNF unified fine threads** ASME–B1.1.

for UNF unified fine threads		UNF1/4-3/4
1 14 5965	UNF thread cutting set in a plastic case	eShop
Content: 1 set each hand tap No. 130750		Size 1/4; 5/16; 3/8; 7/16; 1/2; 5/8; 3/4
1 each die No. 142620		Size 1/4; 5/16; 3/8; 7/16; 1/2; 5/8; 3/4
1 each adjustable tap wrench No. 148410		Size 1.1/2; 2; 4
1 each die stock No. 149310		Size 20×7; 25×9; 30×11; 38×10; 45×14
1 screwdriver No. 664122		Size 5.5



14 5965

M 60° DIN 352

Hand tap and spiral point tap sets in a case

When the case is opened, the tools raise up vertically and can easily be selected.

14 6260 – Consisting of spiral point taps M3; M4; M5; M6; M8; M10; M12, tapping drills size 2.5; 3.3; 4.2; 5; 6.8; 8.5; 10.2 and tap wrench size 1.1/2.

14 6350 – Consisting of spiral point taps M3; M4; M5; M6; M8; M10; M12, tapping drills size 2.5; 3.3; 4.2; 5; 6.8; 8.5; 10.2.

14 6050/6060 – Consisting of 3-piece hand tap sets M3; M4; M5; M6; M8; M10; M12.

14 6150/6175 – Consisting of 3-piece hand tap sets M3; M4; M5; M6; M8; M10; M12 and tapping drills size 2.5; 3.3; 4.2; 5; 6.8; 8.5; 10.2.

Hand tap sets, 3 pieces



14 6050



14 6060



14 6050

for metric threads			M3-12	Content:
11K 14 6050	Garant	Hand taps	eShop	1 set each M3 – M12 hand taps 3 pieces No. 130150
12K 14 6060	HOLEX		eShop	1 set each M3 – M12 hand taps 3 pieces No. 130250

Hand tap sets, 3 pieces, with tapping drill



14 6150



14 6175



14 6150

for metric threads			M3-12	Content:
11K 14 6150	Garant	Hand taps + tapping drills	eShop ■	1 pc. each 3-piece set of M3 – M12 hand taps No. 130150 and tapping drill No. 114150
12K 14 6175	HOLEX		eShop	1 pc. each 3-piece set of M3 – M12 hand taps No. 130250 and tapping drill No. 114031

Spiral point tap sets, short, with tapping drill



14 6260



14 6350



14 6260



14 6350

for metric threads			M3-12	Content:
11K 14 6260	Garant	Through hole taps, short + tapping drills + tap wrench	eShop	1 pc. each spiral point tap M3 – M12 No. 131450, tapping drill No. 114150 and tap wrench No. 148410
11K 14 6350		Blind hole taps, short + tapping drills	eShop	1 pc. each spiral point tap M3 – M12 No. 134650 and tapping drill No. 114150

M | 60° | DIN 371 | DIN 376

Through hole machine tap sets in a case

When the case is opened, the tools raise up vertically and can easily be selected.

Through hole machine tap sets

Consisting of machine taps M3; M4; M5; M6; M8; M10; M12.



14 6435 14 6440

for metric threads			M3-12	Content:	
11I 14 6435	Garant	GARANT Master Tap through hole machine taps	eShop	1 each machine tap M3 – M12 No. 132721	
13V 14 6437	Garant	GARANT Vap Tap through hole machine taps	eShop	1 each machine tap M3 – M12 No. 132642	
12I 14 6440	HOLEX	HOLEX Pro Tap through hole machine taps	eShop	1 each machine tap M3 – M12 No. 132680	
12K 14 6445	HOLEX	Through hole machine taps	eShop	1 each machine tap M3 – M12 No. 132645	

Through hole machine tap sets, with tapping drill

Consisting of machine taps M3; M4; M5; M6; M8; M10; M12 and tapping drills size 2.5; 3.3; 4.2; 5; 6.8; 8.5; 10.2.



14 6650 14 6724

for metric threads			M3-12	Content:	
11K 14 6450	Garant	Through hole machine taps + tapping drills	eShop	1 pc. each machine tap M3 – M10 No. 131150, 1 machine tap M12 No. 131200 and tapping drill No. 114150	
11K 14 6550	Garant	Through hole machine taps + tapping drills	eShop	1 pc. each machine tap with oil groove M3 – M12 No. 131850 and tapping drill No. 114150	
11K 14 6650	Garant	Through hole machine taps + tapping drills	eShop	1 pc. each machine tap M3 – M12 No. 132150 and tapping drill No. 114400	
13V 14 6721	Garant	GARANT Vap Tap through hole machine taps + tapping drill	eShop	1 pc. each machine tap M3 – M12 No. 132642 and tapping drill No. 114580	
12H 14 6724	HOLEX	HOLEX Clever Tap through hole machine taps + tapping drills	eShop	1 pc. each machine tap M3 – M12 No. 131265 and tapping drill No. 114031.	
12K 14 6725	HOLEX	Through hole machine taps + tapping drills	eShop	1 pc. each machine tap M3 – M12 No. 132645 and tapping drill No. 114405	

Blind hole machine tap sets in a case

When the case is opened, the tools raise up vertically and can easily be selected.

Blind hole machine tap sets

M | 60° | DIN 371 | DIN 376

Consisting of machine taps M3; M4; M5; M6; M8; M10; M12.



146735 146742

for metric threads			M3-12	Content:
11I 14 6735	Garant	GARANT Master Tap blind hole machine taps	eShop	1 pc. each machine tap M3 – M12 No. 135960
13V 14 6737	Garant	GARANT Vap Tap blind hole machine taps	eShop	1 pc. each machine tap M3 – M12 No. 135805
12I 14 6742	HOLEX	HOLEX Pro Tap blind hole machine taps	eShop	1 pc. each machine tap M3 – M12 No. 135910
12K 14 6745	HOLEX	Blind hole machine taps	eShop	1 pc. each machine tap M3 – M12 No. 135855

Blind hole machine tap sets, with tapping drill

M | 60° | DIN 371 | DIN 376

Consisting of machine taps M3; M4; M5; M6; M8; M10; M12 and tapping drills size 2.5; 3.3; 4.2; 5; 6.8; 8.5; 10.2.



146950 146924

for metric threads			M3-12	Content:
11K 14 6950	Garant	Blind hole machine taps + tapping drills	eShop ■	1 pc. each machine tap M3 – M12 No. 135450 and tapping drill No. 114400
13V 14 6955	Garant	Blind hole machine taps + tapping drills	eShop	1 pc. each machine tap M3 – M12 No. 135450 and tapping drill No. 114400
12H 14 6924	HOLEX	HOLEX Clever Tap blind hole machine taps + tapping drills	eShop	1 pc. each machine tap M3 – M12 No. 135255 and tapping drill No. 114031
12K 14 6925	HOLEX	Blind hole machine taps + tapping drills	eShop ■	1 pc. each machine tap M3 – M12 No. 135855 and tapping drill No. 114405

Empty cases



146960 146961

Type			1	2	3	4	5
11K 14 6960	Garant	Empty case	eShop	eShop	eShop	eShop	eShop
12K 14 6961	HOLEX		eShop	eShop	–	eShop	eShop
for taps M3–M12			Sets, 3 pieces DIN 352	Sets, 3 pieces DIN 352	Spiral point DIN 352	Machine taps DIN 371/376	Machine taps DIN 371/376
for 1 each tapping drill			–	Size M3–M12	Size M3–M12	Size M3–M12	–
for 1 adjustable tap wrench No. 148410			–	–	No. 1.1/2	–	–

Garant Toolholder with ratchet

With two-jaw chuck for clamping square shanks.
Moveable T-handle with a grooves centred and at each end for engaging the retaining ball.
Holder with stainless steel sheath.
Ratchet is reversible and can also be locked. **All-steel construction** for high torque applications.
Clamping jaws milled and hardened for high toughness and optimum surface hardness.

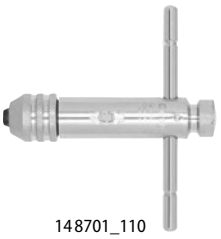
14 8701 Size 117 – **Heavy-duty version** for taps up to M20.
With head-side **hexagon** with 22 mm jaw width.

14 8706 – **Adaptor** with **1/4** inch hexagon shank to DIN 3126, in all-steel version, for holding small taps (M3 - M10).

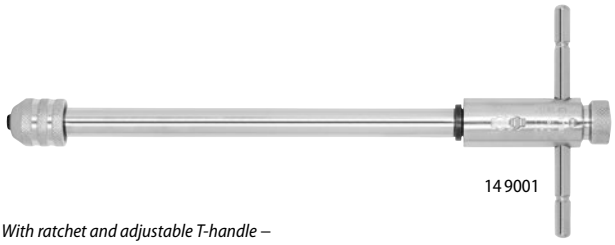
Application:

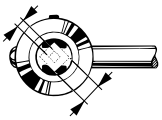
14 8701 – Suitable for tapping holes where access is difficult.
14 8706 – Ideal for repair and assembly work in mobile situations.
14 9001 – Suitable for tapping holes where access is difficult.

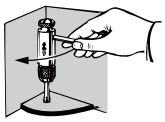
Note:	The square sizes of other tap and reamer sizes can be found in the tables in the respective Product Groups.


14 8701_110


14 8701_117


14 9001


With 2 adjustable jaws.
The specified dimensions relate to the smallest and largest diameter.


With ratchet and adjustable T-handle – particularly useful for tapping holes where access is difficult.

Overall length			mm	85	110	117	250	300
11K **14 8701**	Toolholder with ratchet	**All-steel**		eShop ■	eShop ■	eShop ■	–	–
11K **14 9001**	Toolholder with ratchet **long**	**All-steel**		–	–	–	eShop	eShop
Capacity ☐			mm	2.5 – 5.5	4.5 – 8	8.5 – 12.5	2.5 – 5.5	4.5 – 8
for hand taps DIN 352				M3 – M10	M5 – M12	M13 – M20	M3 – M10	M5 – M12
Spare jaws No. 148712 size				85	110	117	85	110


14 8706_6,3C


14 8706_6,3E

Type			6,3C	6,3E
11K **14 8706**	Adapter for toolholder	**All-steel**	eShop ■	eShop ■
Capacity ☐		mm	2.5 – 5.5	
for hand taps DIN 352			M3 - M10	
Shank standard			DIN 3126 Form C	DIN 3126 Form E

HOLEX Pin vice

Serrated brass handle, nickel-plated with two interchangeable collets for different diameters.
With square clamping nut.


14 9150

12L **14 9150**	Pin vice		eShop
Capacity ☐		mm	0 – 3
Overall length		mm	110


14 9160_0-1/1-2

Serrated brass handle, nickel-plated.
Size 0-3 – With two collets for different diameters.
Size 0-1; 1-2 – With one collet.

Capacity ☐		mm	0-1	1-2	0-3
12L **14 9160**	Pin vice		eShop	eShop	eShop
Capacity ☐		mm	0 – 1	1 – 2	0 – 3
Overall length		mm	74	74	105


14 9160_0-3

Garant Adjustable micro tap wrench with round vial

Precision tap wrenches for exact axial guidance even with the smallest thread dimensions.

- Precisely eroded steel clamping jaws hardened.
- Lightweight design made of 3D printing plastic.
- Pre-centering of the tap using an integral retaining magnet.
- Easy clamping of taps by means of a bayonet lock.

Application: For exact perpendicular guidance, especially on small taps M1– M3. Can also be used for direct mounting in a die stock No. 149310 25×9.

Note: Removable round vial with magnetic fixing.



14 8450



Type		M1-M3	External ∅ mm	Capacity square up to mm
11K 14 8450	Micro tap wrench with vial	eShop	25	1.6 – 2.7

HOLEX Adjustable circular tap wrench

Adjustable to tool square drive by means of a knurled adjusting screw. Hardened clamping jaws.

Application: For gentle cutting with small taps M1 – M2.6.





14 8500

Type			External ∅ mm	Capacity square up to mm
12L 14 8500	Circular tap wrench	eShop	40	2.4

Adjustable tap wrenches

DIN 1814

With hardened jaws and steel grips. For use in confined spaces one steel handle can be unscrewed.

14 8200 – For **heavy** duties and **precision applications.** All dimensions with **high-quality forged steel base bodies** and integral fixed jaws. **Round vials** for straight application.

14 8350 – Strengthened version. All dimensions with high-quality steel housing and all-steel handles, optimised clamping mechanism.

14 8410 – For **standard** use: Zinc die-cast body.



14 8200



14 8350



14 8410

Type	11K 14 8200 Garant strengthened	11K 14 8350 Garant strengthened	12L 14 8410 HOLEX	Capacity □ mm	for hand taps DIN 352	for hand reamer ∅ DIN 206 mm	Overall length mm
	Tap wrench, adjustable						
0	eShop	eShop	eShop	2 – 5	M1 – M8	2.5 – 6.5	125
1	eShop	eShop	eShop	2 – 6.3	M1 – M10	2.5 – 7.5	175
1.1/2	eShop	eShop	eShop ■	2 – 8	M1 – M12	2.5 – 9.5	175
2	eShop	eShop ■	eShop ■	3 – 9	M4 – M12	5 – 10	265
3	eShop	eShop ■	eShop ■	4.9 – 12	M5 – M20	6.5 – 15	370
4	eShop	eShop	eShop	5.5 – 16	M9 – M27	7 – 20	480
5	eShop	eShop	eShop	7 – 20	M12 – M33	9 – 26	700
6	eShop	eShop	–	9 – 24	M16 – M42	11 – 32	1000
7	eShop	eShop	–	14.5 – 36	M25 – M58	20 – 45	1258
8	–	eShop	–	14.5 – 40	M25 – M68	20 – 50	1258

HOLEX Die stock

EN 22568

Steel handle can be unscrewed. With 5 screws to clamp the die. **Up to size 65×25** of die-cast zinc, **from size 75×20** of steel.

Application: For direct mounting of solid and adjustable dies to EN 22568.



14 9310

for die ∅ × height mm	12L 14 9310 Die stock	Overall length mm	Number of fastening screws
16×5	eShop	160	4
20×5	eShop	175	4
20×7	eShop ■	175	4
25×9	eShop	210	5
25,4×9,5	eShop	225	3
30×11	eShop	260	5
38×10	eShop	310	5
38×14	eShop	310	5
38,1×12,7	eShop	315	3
45×14	eShop	440	5
45×18	eShop	440	5

for die ∅ × height mm	12L 14 9310 Die stock	Overall length mm	Number of fastening screws
50,8×15,9	eShop	560	3
55×16	eShop	495	5
55×22	eShop	495	5
65×18	eShop	630	5
65×25	eShop	630	5
75×20	eShop	700	5
75×30	eShop	700	5
90×22	eShop	900	5
90×36	eShop	900	5
105×22	eShop	930	5

HOLEX Extensions for taps and hand reamers

DIN 377

Hardened and nickel-plated. Square drive and square socket the same size.

Application: For extending short taps (e.g. DIN 351 / 352 / 2181 / 5157), hand reamers and other tools with square shanks.

Note: Extensions for machine taps with shank, e.g. to DIN 371 / 374 / 376, can be found under **No. 338400.**



14 9400

Internal and external □ mm	12L 14 9400 Extension	for metric taps DIN 352	Ø D mm	Overall length mm
2,1	eShop	M1 – M2.6	6	60
2,4	eShop	–	6	70
2,7	eShop	M3	7	80
3	eShop	M3.5	7	90
3,4	eShop	M4	8	95
3,8	eShop	–	9	100
4,3	eShop	–	10	105
4,9	eShop	M4.5 – M8	11	110
5,5	eShop	M9 – M10	12	115
6,2	eShop	M11	14	120
7	eShop	M12	15	125

Internal and external □ mm	12L 14 9400 Extension	for metric taps DIN 352	Ø D mm	Overall length mm
8	eShop	–	17	125
9	eShop	M13 – M16	19	130
10	eShop	–	21	140
11	eShop	M18	23	150
12	eShop	M20	25	155
13	eShop	–	27	165
14,5	eShop	M22 – M24	29	175
16	eShop	M27	30	180
18	eShop	M30	33	200
20	eShop	M33	36	220

Set of holders for cutting internal and external threads on conventional lathes

High-quality **holders** for taps and dies for use on conventional lathes.

Size 2Q – Set of holders with quick-change system for internal threads **M3 – M16** and external threads **M3 – M14.**

Size 3Q – Set of holders with quick-change system for internal threads **M4 – M24** and external threads **M16 – M24.**

Supplied with: Complete set of holders with bits and sockets, in a synthetic leather case.
Without cutting tools.

Note: A reducing adapter (see No. 343000) can be used to easily change the existing **MT3** face mill arbor on the machine to accept MT4 or larger. Further holder sets, reducer pieces and individual holders available on request.



14 9650

Type		2Q	3Q
14B 14 9650	Set of holders	eShop	eShop
Shank		MT3	
for dies		M3 – M14	M16 – M24
for taps		M3 – M16	M4 – M24

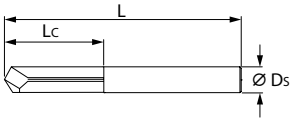
Garant Solid carbide tap drilling out tool

Solid carbide | Standard

Strong plain shank with **hexagon** for mounting in a drill chuck and self-centring cutting edge.

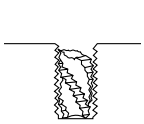
Application: For **drilling out broken off taps.**
Stable clamping is necessary, the hole must be dry and without cutting oil.

Note: v_c for material < 67 HRC 10 – 28 m/min.
Wear safety glasses.

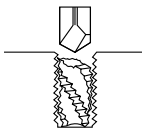




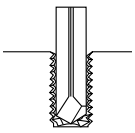
14 9830



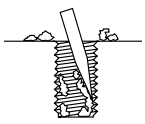
Grind oblique break-through points flat.



Approach the start several times in order to centre the boring-out tool.



Drill out with an even feed rate. Evacuate chips frequently.



Clean the bore and remove the residue.

for taps	11L 14 9830 Solid carbide tap drilling out tool plain shank with hexagon TiAlN	L_c mm	L mm	Ø D_s mm
M3	eShop	10	38	3
M4	eShop	14	46	4
M5	eShop	19	50	5
M6	eShop	23	50	6
M8	eShop	23	60	7
M10	eShop	25	100	9
M12	eShop	35	100	11

Tap extractor set

Number of drilling-out tools			5
11L 14 9831	Solid carbide tap drilling-out tool set in a case	TiAlN	eShop
Content: 1 each solid carbide tap drilling-out tool No. 149830			Sizes M3; M4; M5; M6; M8



14 9831

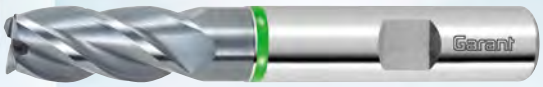
New products – Machining – milling

NEW

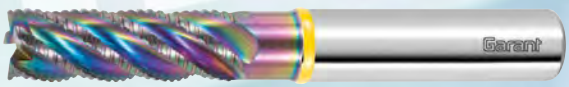
We use this symbol to tag new items in our range of catalogue products



Page **464**
GARANT **INOX milling cutter** with chip separators HPC/TPC



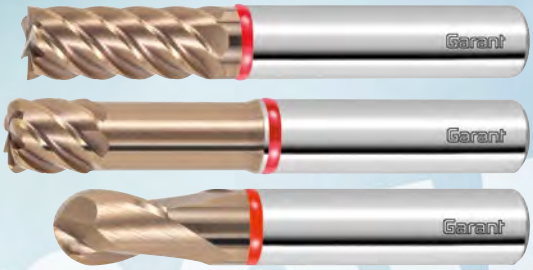
Page **472**
GARANT **Steel solid carbide milling cutter** with chip separators HPC



Page **495**
GARANT **Master ALU SlotMachine** solid carbide roughing end mill HPC/TPC



Page **497**
GARANT **INOX SlotMachine** solid carbide roughing end mill HPC



Pages **490/528/536**
GARANT **Diabolo solid carbide milling cutter HRC62**
GARANT **Diabolo solid carbide torus cutter HRC62**
GARANT **Diabolo solid carbide ball nose slot drill HRC62**



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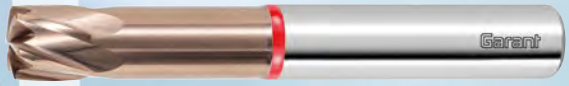
GARANT **GreenPlus** solid carbide milling cutter HPC



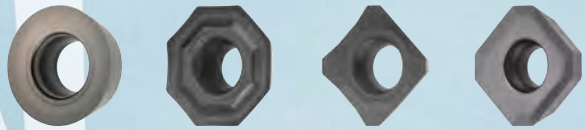
Page **516**
GARANT **solid carbide high feed rate milling cutter** HSC



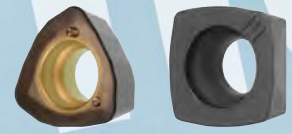
Page **641 – 643**
GARANT **Softcut® 90° high-performance mill** for inserts **AO..1104**
Chamfer mill/shoulder mill with Weldon shank, plain shank, with bore/porcupine mill



Pages **599, 631**
HOLEX **inserts** RD..1003, RD..12T3, SO..09T3



Pages **598, 599/618/624/625**
GARANT **inserts** RD..05-..12, OF..05, SE..12, SD..09
with **diamond coating**



Pages **608/614 – 615**
GARANT **tool material update**
GARANT **Power Q**
and GARANT **Feedking**



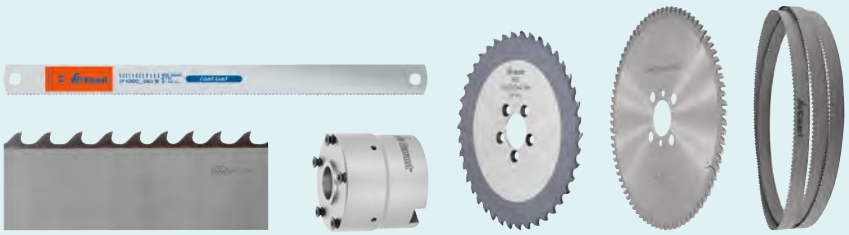
Page **679**
Haimer **DUO-LOCK** solid carbide extension



Page **685**
Kennametal **tool material update** for steel machining

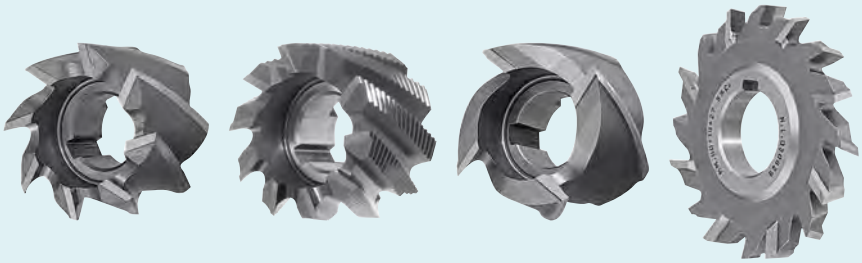
Machining – Milling

The whole catalogue of these brands is available from the Hoffmann Group – just request it!



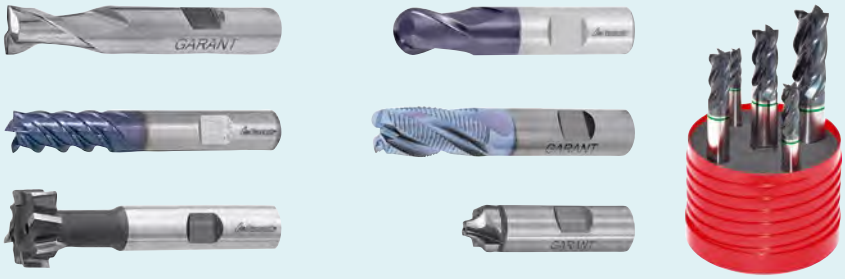
Metal band saw blades and metal circular saw blades, saw system

17 372 – 390



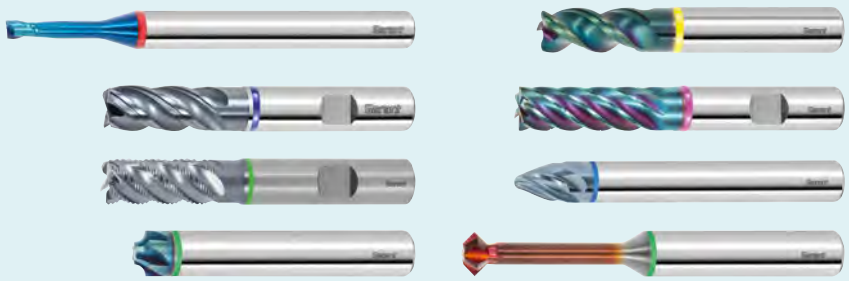
HPC
Milling cutters with bore
HSS and solid carbide

18 391 – 394



HPC / MTC
HSS milling cutters, sets, Woodruff keyseating cutters, T-slot cutters, dovetail milling cutters, ball nose slot drills, corner rounding cutters

19 395 – 413



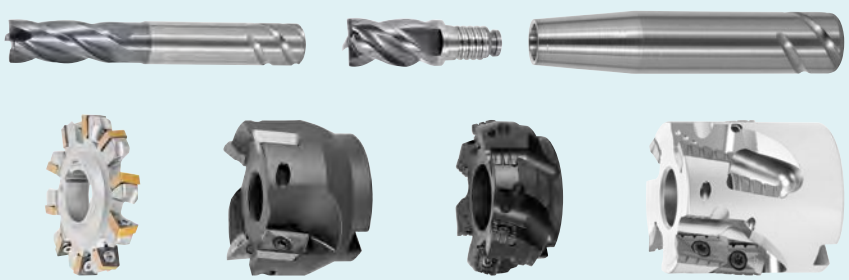
Colour code DIN-ISO 513
HPC / MTC / TPC / PPC
Range overview Solid carbide milling pages 414 – 426
GARANT Master families

20 414 – 578



Range overview Modular milling pages 579 – 583
Tool materials overview pages 584 – 586
Face milling, shoulder milling, copy milling, chamfering, engraving, radius milling cutter, circular milling, parting-off milling

21 579 – 672



Solid carbide milling interchangeable head system, modular face milling, corner milling, copy milling, side milling

22 673 – 709

a = a

Power saw blades for power hacksaws

17 1000/1150 – **GARANT –** saw blade made of molybdenum alloyed high performance cutting steel **HSS (DMo5).** Due to constantly high hardness and extreme toughness, particularly **high cutting performances** are obtained (reduced cutting times and longer tool life). The precise set ensures a straight cut.

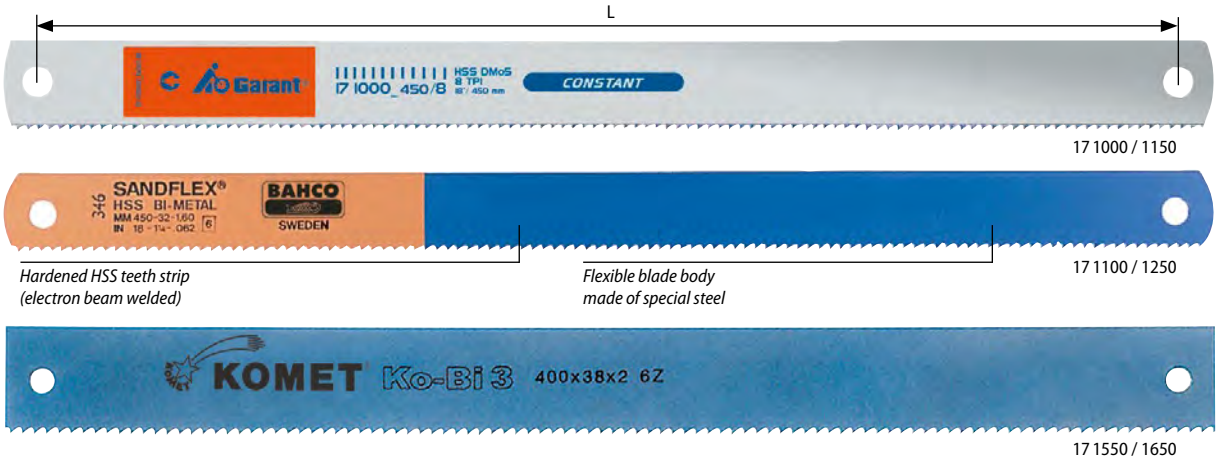
17 1100/1250 – **BAHCO bi-metal –** a strip of HSS teeth welded to a flexible blade body of special steel using electron beam welding in a vacuum. In this way the saw blades are extremely hard at the tooth tips, but have **enormous flexibility** and are unbreakable even **at high feed rates.**

17 1550/1650 – **KOMET bi-metal –** tooth tips of HSS-M3 and blade body of spring steel. For high cutting performance and feed rates. Unbreakable for maximum safety at the workplace.

Note:

17 1150–1650 – **Especially for Kasto machines** (clamping holes offset from 38 mm blade width).
Important: The instructions included with the saw blades must be followed in all details.

17 1550/1650 – **KOMET** HSS saw blades: Other versions such as VP 7 (7° rake angle, Vario toothing) and P 13 (13° rake angle – especially for stainless steels) available on request on short delivery times.

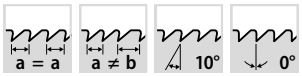


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
17 1000/1150		○	○	●	●	○														●			
17 1100/ 1250–17 1650		○	○	●	●	●	●	○						○		●	●	●		●			

Length L / TPI	11R 17 1000 Garant HSS	16D 17 1100 BAHCO bimetal	16E 17 1550 KOMET Ko-Bi3		Width 17 1000 mm	Width 17 1100 mm	Width 17 1550 mm	Thickness 17 1000 mm	Thickness 17 1100 mm	Thickness 17 1550 mm	Clamping hole ∅ mm
	Power saw blade										
300/6	eShop	–	–	10	25	–	–	1.6	–	–	8.5
300/8	eShop	–	–	10	25	–	–	1.6	–	–	8.5
300/10	eShop	–	eShop	10	25	–	25	1.6	–	1.25	8.5
300/14	eShop	eShop	eShop	10	25	25	25	1.6	1.25	1.25	8.5
350/6	eShop	eShop	eShop	10	32	32	32	1.6	1.6	1.6	8.5
350/8	eShop	–	–	10	32	–	–	1.6	–	–	8.5
350/10	eShop	eShop	eShop	10	32	25	32	1.6	1.25	1.6	8.5
350/14	eShop	eShop	–	10	32	25	–	1.6	1.25	–	8.5
400/4	eShop	eShop	eShop	10	32	32	32	2	1.6	1.6	8.5
400/6	eShop	eShop	eShop	10	32	32	32	2	1.6	1.6	8.5
400/8	eShop	eShop	eShop	10	32	32	32	1.6	1.6	1.6	8.5
400/10	eShop	eShop	eShop	10	32	32	32	1.6	1.6	1.6	8.5
400/14	eShop	eShop	eShop	10	32	32	32	1.6	1.6	1.6	8.5
425/6	eShop	–	–	10	32	–	–	2	–	–	8.5
450/4	eShop	eShop	eShop	10	32	38	38	2	2	2	10.5
450/6	eShop	eShop	eShop	10	32	32	38	2	1.6	2	10.5
450/8	eShop	eShop	eShop	10	32	38	38	2	2	2	10.5
450/10	eShop	eShop	eShop	10	32	32	38	2	1.6	2	10.5
500/4	eShop	–	–	10	38	–	–	2	–	–	10.5
500/6	eShop	eShop	eShop	10	38	38	38	2	2	2	10.5
500/8	eShop	–	–	10	38	–	–	2	–	–	10.5
500/10	eShop	–	–	10	38	–	–	2	–	–	10.5
550/4	eShop	–	–	10	45	–	–	2.25	–	–	10.5
550/6	–	eShop	–	10	–	45	–	–	2.25	–	10.5
550/8	eShop	–	–	10	45	–	–	2.25	–	–	10.5
575/4	–	eShop	–	10	–	45	–	–	2.25	–	12.5
600/4	eShop	eShop	–	10	50	50	–	2.5	2.5	–	12.5
600/6	eShop	–	–	10	50	–	–	2.5	–	–	12.5
600/8	eShop	–	–	10	50	–	–	2.5	–	–	12.5

Length L / TPI	11R 17 1150 Garant	16D 17 1250 BAHCO	16E 17 1650 KOMET		Width		Thickness		Clamping hole ∅
	Power saw blade for Kasto				17 1150 17 1650	17 1250	17 1150 17 1650	17 1250	
	HSS	bimetal	Ko-Bi3		mm	mm	mm	mm	mm
300/6	eShop	–	–	10	32	–	2	–	8.5
300/8	eShop	–	–	10	32	–	2	–	8.5
300/10	eShop	–	–	10	32	–	2	–	8.5
350/4	eShop	–	–	10	32	–	2	–	8.5
350/6	eShop	–	–	10	32	–	2	–	8.5
350/8	eShop	–	–	10	32	–	2	–	8.5
350/10	eShop	–	–	10	32	–	2	–	8.5
400/8	eShop	–	–	10	32	–	2	–	8.5
400/10	eShop	–	–	10	32	–	2	–	8.5
450/4	eShop	eShop	eShop	10	38	38	2	2	8.5
450/6	eShop	eShop	eShop	10	38	38	2	2	8.5
450/8	eShop	–	–	10	38	–	2	–	8.5
450/10	–	eShop	eShop	10	38	38	2	2	8.5
500/4	eShop	–	–	10	50	–	2.5	–	10.5
500/6	eShop	–	–	10	50	–	2.5	–	10.5
500/8	eShop	–	–	10	50	–	2.5	–	10.5
550/4	eShop	eShop	–	10	45	50	2.25	2.5	10.5
550/6	eShop	–	–	10	45	–	2.25	–	10.5
550/8	eShop	–	–	10	45	–	2.25	–	10.5
550/10	eShop	–	–	10	45	–	2.25	–	10.5
575/3	eShop	–	–	10	50	–	2.5	–	10.5
575/4	eShop	eShop	eShop	10	50	50	2.5	2.5	10.5
575/6	eShop	eShop	–	10	50	50	2.5	2.5	10.5
575/8	eShop	–	–	10	50	–	2.5	–	10.5
650/4	eShop	eShop	–	10	50	50	2.5	2.5	10.5
650/6	–	eShop	eShop	10	50	50	2.5	2.5	10.5
650/8	eShop	–	–	10	50	–	2.5	–	10.5
700/4	eShop	eShop	eShop	10	50	50	2.5	2.5	10.5
700/6	eShop	eShop	–	10	50	50	2.5	2.5	10.5

RÖNTGEN Band saw blades in coils



Regular tooth pitch –Constant pitch with **0° rake angle** in plastic dispenser, no welded joint.

17 2000 – **RRR-Plus** made of alloyed tool steel, 30 m each coil.

17 2050/2100 – **bi-alpha-cobalt: High-performance bi-metal band saw blade** with high chrome content **spring steel backing** and cobalt alloyed (M42) HSS tooth tips (67–69HRC). **Extreme tooth tip hardness, flexible backing**, each roll 15 m.

Application: Particularly suitable for smaller and medium size cross sections (up to maximum 70 mm contact length).

Note:
- **Regular pitch teeth 10°:** Sizes 6/4H, 6/6H, 10/4H, 10/6H, 13/4H, 13/6H, 16/4H.
- **Variable pitch teeth 0°:** Size 6/1014, 10/1014, 13/1014.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
17 2000				85	65											40			●	●	○	●	
17 2050/2100		100	60	85	65	55	35	20					30	20	20	40	60	○	●	●	○	●	

width mm / TPI	16F 17 2000 Band saw blade RRR Plus 30 m	16F 17 2050 Band saw blade bi-alfa-cobalt 15 m	16F 17 2100 Band saw blade bi-alfa-cobalt 15 m	Thickness 17 2000 mm	17 2050 mm	17 2100 mm
6/4H	eShop	–	–	0.65	–	–
6/6H	eShop	–	eShop	0.65	–	0.9
6/8	eShop	–	–	0.65	–	–
6/10	eShop	–	eShop	0.65	–	0.9
6/14	eShop	–	eShop	0.65	–	0.9
6/1014	–	eShop	eShop	–	0.6	0.9
6/18	eShop	–	–	0.65	–	–
6/24	eShop	–	–	0.65	–	–
8/8	eShop	–	–	0.65	–	–
8/10	eShop	–	–	0.65	–	–
8/14	eShop	–	–	0.65	–	–
8/18	eShop	–	–	0.65	–	–
8/24	eShop	–	–	0.65	–	–
10/4H	eShop	–	–	0.65	–	–
10/6H	eShop	eShop	eShop	0.65	0.6	0.9

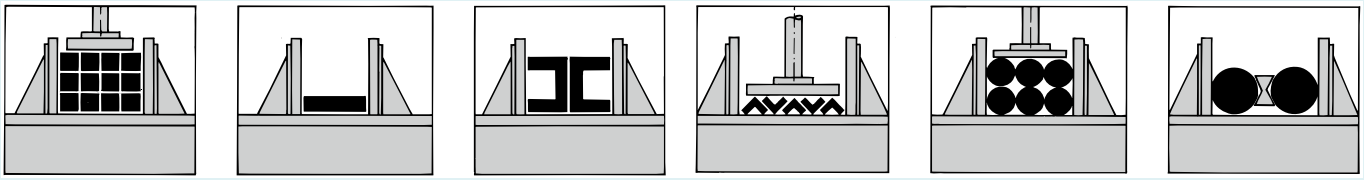
width mm / TPI	16F 17 2000 Band saw blade RRR Plus 30 m	16F 17 2050 Band saw blade bi-alfa-cobalt 15 m	16F 17 2100 Band saw blade bi-alfa-cobalt 15 m	Thickness 17 2000 mm	17 2050 mm	17 2100 mm
10/8	eShop	–	eShop	0.65	–	0.9
10/10	eShop	–	eShop	0.65	–	0.9
10/14	eShop	–	eShop	0.65	–	0.9
10/1014	–	eShop	eShop	–	0.6	0.9
10/18	eShop	–	–	0.65	–	–
10/24	eShop	–	–	0.65	–	–
13/4H	eShop	–	(eShop)	0.65	–	0.9
13/6H	eShop	eShop	eShop	0.65	0.6	0.9
13/8	eShop	–	–	0.65	–	–
13/10	–	–	eShop	–	–	0.9
13/14	eShop	–	–	0.65	–	–
13/1014	–	eShop	–	–	0.6	–
16/4H	eShop	–	–	0.8	–	–
16/8	eShop	–	–	0.8	–	–

Garant RÖNTGEN HOLEX

Band saw blades

Clamping of the material

Clamp the material so that the band saw blade cuts with as little vibration as possible. When cutting material bundles, tack weld the ends together if necessary.
This increases the cutting performance and the blade life.



Running in new blades

At normal feed rates the sharp teeth of a new blade dig very aggressively into the material.
Therefore reduce the feed rate by 50 % and the cutting speed by 70 % for the first cuts.
After the blade has cut an area of about 400 cm^2, slowly increase the feed rate to the optimum value.
The working life of a band-saw blade is to a large extent dependant on controlled running in!

Coolant

The coolant helps to prevent the saw tooth and workpiece from overheating and to take the chips away from the cutting point.
Coolant is normally applied when sawing all steels. Cast iron on the other hand is usually sawn dry.
Cutting oil gives good results when sawing case-hardening steels, higher alloyed tool steels, heat-treatable steels, stainless steels and titanium.
Micro-spray systems give good results when sawing pipes and profiles. In this connection, note the need for a good chip clearance brush.

Cutting speed and feed rate

The cutting speed (blade speed) depends on the tensile strength, type and cross-section of the material to be sawn.
The greater the tensile strength, the lower the cutting speed should be. Smaller cross-sections can be sawn at higher speeds than larger cross-sections.
Thin-walled pipes and profiles, and sharp edges, are sawn at low feed rates; the feed rate (pressure) should be kept as constant as possible.

Material	Cutting speed in m/min bi-alfa-cobalt (M42)
General purpose steels / machining steels	80 – 90
Case-hardening steels / heat-treatable steels	45 – 75
Unalloyed tool steels / roller bearing steels	40 – 60
Alloyed tool steels / high speed steels	30 – 40
Stainless steels	20 – 35
Heat resistant steels High-temperature alloys	15 – 25

If vibration occurs adjust the cutting speed (m/min) to marginally faster or slower.
As the blade becomes more blunt increase the feed rate somewhat.

Assessing a cracked weld on the blade

Straight rupturing of the weld after a short period of use indicates a manufacturing fault.
Breaking of the weld after longer term use, the crack propagating as a zigzag, is an overload fracture.

Tooth pitches

Tooth pitch recommendations for **solid material:**
Recommendation: also state the rake angle.

For material thickness	Variable pitch teeth	Rake angle
< 25 mm	10/14	0°
15 – 40 mm	8/12	0°
25 – 50 mm	6/10	0°
35 – 70 mm	5/8	0°
40 – 90 mm	5/6	10°
50 – 120 mm	4/6	0° / 10°
50 – 150 mm	4/5	10°
80 – 180 mm	3/4	0° / 10°
130 – 350 mm	2/3	10°
150 – 400 mm	1.5/2	10°
200 – 600 mm	1.1/1.6	10°
> 500 mm	0.75/1.25	10°

Variable pitch teeth 3/4 0° and 4/6 0° are suitable only for pipes, profiles and girders, **not** for solid material. Variable pitch teeth 10° and the band qualities Bi-Alfa Master No. 174050 are recommended for sawing solid material of high-alloy and long-chipping materials.

Tooth pitch recommendations for **pipes:**

Wall thickness S (mm)	Pipe outside∅ D (mm) Tooth pitch Z (tpi)									
	20	40	60	80	100	120	150	200	300	500
2	14	10/14	10/14	10/14	10/14	8/12	8/12	8/12	8/12	5/8
3	14	10/14	10/14	8/12	8/12	8/12	8/12	6/10	6/10	5/8
4	10/14	10/14	8/12	8/12	8/12	6/10	6/10	5/8	5/8	4/6
5	10/14	10/14	8/12	8/12	6/10	6/10	5/8	4/6	4/6	4/6
6	10/14	8/12	8/12	6/10	6/10	5/8	5/8	4/6	4/6	4/6
8	10/14	8/12	8/12	6/10	5/8	5/8	4/6	4/6	4/6	4/6
10		8/12	6/10	5/8	4/6	4/6	4/6	4/6	4/6	4/5
12		8/12	6/10	4/6	4/6	4/6	4/6	4/6	4/6	4/5
15		8/12	6/10	4/6	4/6	4/6	4/5	4/5	4/5	4/5
20			4/6	4/6	4/6	4/6	4/5	4/5	4/5	3/4
30				4/6	4/6	4/5	4/5	4/5	4/5	2/3
50							4/5	3/4	2/3	2/3
80								3/4	2/3	2/3
> 100									2/3	1.5/2

For thin-walled pipes (up to approx. 8 mm wall thickness) use preferably tooth pitches with 0° rake. **Rule of thumb: There should be at least 3 teeth in contact with the component.**

Blade width

The largest blade width permissible on the machine should be selected,
in order to achieve sufficient stability at higher feed rate forces.
When sawing curves, the blade width depends on the smallest radius to be cut (see table).

Radius (mm)	3	8	15	30	38	65	100	140
Blade width (mm)	3	5	6	8	10	13	16	20

HSS Co8

a = a | a ≠ b | 10° | 0°

Metal band saw blades welded in standard lengths

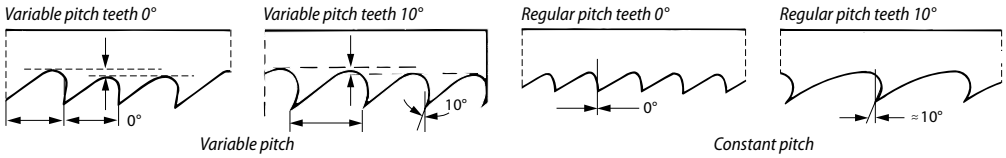
GARANT – high-performance bi-metal band saw blade with wear-resistant **M42 teeth** and special flexible backing with increased load capacity.
X-RAY – bi-alfa-cobalt: High-performance bi-metal band saw blade with **M42** high-speed alloy steel (HSS, 67-69 HRC) tooth tips and a high-alloy spring steel backing.
HOLEX – Production band saw blade with high cutting performance.

Application:
Variable pitch teeth 0° – very low vibration, for a large range of cross sections (for pipes and profiles, solid materials up to maximum 70 mm).
Variable pitch teeth 10° – general purpose for a wide range of cross-sections (for solid material from 50 mm).
Regular pitch teeth 0° – for small to medium cross-sections up to maximum 70 mm engagement length.
Regular pitch teeth 10° – for large cross-sections from 50 mm engagement.

Note: **Running in a new blade:** See GARANT machining handbook No. 110010 and information page.



GARANT
RÖNTGEN
HOLEX



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
Combi 0° / normal 0°		100		85	65	55	35	20								40		○	●	●	○		
Combi 10° / normal 10°		**100**		85	65	55	35	20					30	20	20	40	60	●	●	●	○		

TPI	11S 17 3480 Garant	16F 17 3500 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 13×1138				degrees	mm	mm	mm
6/10	–	eShop	5	combi	0	13	0.6	1138
8/12	eShop	eShop	5	combi	0	13	0.6	1138
10/14	–	eShop	5	combi	0	13	0.6	1138

TPI	11S 17 3530 Garant	16F 17 3550 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 13×1325				degrees	mm	mm	mm
6/10	–	(eShop)	5	combi	0	13	0.6	1325
8/12	eShop	eShop	5	combi	0	13	0.6	1325
10/14	–	(eShop)	5	combi	0	13	0.6	1325

TPI	11S 17 3557 Garant	16F 17 3560 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 20×2375				degrees	mm	mm	mm
5/8	eShop	(eShop)	5	combi	0	20	0.9	2375
6/10	eShop	eShop	5	combi	0	20	0.9	2375
8/12	eShop	eShop	5	combi	0	20	0.9	2375
10/14	eShop	eShop	5	combi	0	20	0.9	2375

TPI	11S 17 3577 Garant	16F 17 3580 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×2450				degrees	mm	mm	mm
4/6H	eShop	(eShop)	5	combi	10	27	0.9	2450
4/6	–	eShop	5	combi	0	27	0.9	2450
5/8	eShop	eShop	5	combi	0	27	0.9	2450
6/10	eShop	eShop	5	combi	0	27	0.9	2450
8/12	eShop	eShop	5	combi	0	27	0.9	2450
10/14	eShop	eShop	5	combi	0	27	0.9	2450

TPI	11S 17 3597 Garant	16F 17 3600 RÖNTGEN	12S 17 3605 HOLEX		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×2750					degrees	mm	mm	mm
4/6H	eShop	(eShop)	–	5	combi	10	27	0.9	2750
4/6	–	eShop	eShop	5	combi	0	27	0.9	2750
5/8	eShop	eShop	eShop	5	combi	0	27	0.9	2750
6/10	eShop	eShop	eShop	5	combi	0	27	0.9	2750
8/12	eShop	eShop	eShop	5	combi	0	27	0.9	2750
10/14	eShop	(eShop)	–	5	combi	0	27	0.9	2750

TPI	11S 17 3627 Garant	16F 17 3650 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×2835				degrees	mm	mm	mm
4/6H	eShop	eShop	5	combi	10	27	0.9	2835
5/8	eShop	eShop	5	combi	0	27	0.9	2835
6/10	eShop	eShop	5	combi	0	27	0.9	2835
8/12	eShop	eShop	5	combi	0	27	0.9	2835
10/14	eShop	(eShop)	5	combi	0	27	0.9	2835

TPI	11S 17 3657 Garant	16F 17 3660 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×2910				degrees	mm	mm	mm
4/6H	eShop	eShop	5	combi	10	27	0.9	2910
5/8	eShop	eShop	5	combi	0	27	0.9	2910
6/10	eShop	eShop	5	combi	0	27	0.9	2910
8/12	eShop	eShop	5	combi	0	27	0.9	2910

TPI	11S 17 3667 Garant	16F 17 3680 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×2950				degrees	mm	mm	mm
4/6H	eShop	eShop	5	combi	10	27	0.9	2950
5/8	eShop	eShop	5	combi	0	27	0.9	2950
6/10	eShop	eShop	5	combi	0	27	0.9	2950
8/12	eShop	eShop	5	combi	0	27	0.9	2950

TPI	11S 17 3687 Garant	16F 17 3700 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×3150				degrees	mm	mm	mm
4/6H	eShop	eShop	5	combi	10	27	0.9	3150
5/8	eShop	eShop	5	combi	0	27	0.9	3150
6/10	eShop	eShop	5	combi	0	27	0.9	3150
8/12	eShop	eShop	5	combi	0	27	0.9	3150
10/14	eShop	eShop	5	combi	0	27	0.9	3150

TPI	11S 17 3737 Garant	16F 17 3750 RÖNTGEN	12S 17 3755 HOLEX		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×3660					degrees	mm	mm	mm
3/4H	eShop	eShop	eShop	5	combi	10	27	0.9	3660
4/6H	eShop	eShop	eShop	5	combi	10	27	0.9	3660
5/6H	–	eShop	eShop	5	combi	10	27	0.9	3660
3/4	–	eShop	eShop	5	combi	0	27	0.9	3660
4/6	–	eShop	eShop	5	combi	0	27	0.9	3660
5/8	eShop	eShop	eShop	5	combi	0	27	0.9	3660
6/10	eShop	eShop	eShop	5	combi	0	27	0.9	3660
8/12	eShop	eShop	eShop	5	combi	0	27	0.9	3660
10/14	eShop	eShop	eShop	5	combi	0	27	0.9	3660
4H	–	eShop	–	5	normal	10	27	0.9	3660
6H	–	eShop	–	5	normal	10	27	0.9	3660
4	–	eShop	–	5	normal	0	27	0.9	3660
6	–	eShop	–	5	normal	0	27	0.9	3660
8	–	eShop	–	5	normal	0	27	0.9	3660
10	–	eShop	–	5	normal	0	27	0.9	3660

TPI	11S 17 3787 Garant	16F 17 3800 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×3830				degrees	mm	mm	mm
3/4H	eShop	eShop	5	combi	10	27	0.9	3830
4/6H	eShop	eShop	5	Combi	10	27	0.9	3830
5/6H	–	eShop	5	combi	10	27	0.9	3830
5/8	eShop	eShop	5	combi	0	27	0.9	3830
6/10	eShop	eShop	5	combi	0	27	0.9	3830
8/12	eShop	(eShop)	5	combi	0	27	0.9	3830
10/14	eShop	(eShop)	5	combi	0	27	0.9	3830

TPI	11S 17 3837 Garant	16F 17 3850 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 27×4150				degrees	mm	mm	mm
3/4H	eShop	eShop	5	combi	10	27	0.9	4150
4/6H	eShop	eShop	5	Combi	10	27	0.9	4150
5/6H	–	(eShop)	5	combi	10	27	0.9	4150
5/8	eShop	eShop	5	combi	0	27	0.9	4150
6/10	eShop	eShop	5	combi	0	27	0.9	4150
8/12	eShop	(eShop)	5	combi	0	27	0.9	4150

TPI	11S 17 3847 Garant	16F 17 3852 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×3800				degrees	mm	mm	mm
3/4H	eShop	eShop	5	combi	10	34	1.1	3800
4/6H	eShop	eShop	5	combi	10	34	1.1	3800

TPI	11S 17 3848 Garant	16F 17 3854 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×4100				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	34	1.1	4100
3/4H	eShop	eShop	5	combi	10	34	1.1	4100
4/6H	eShop	eShop	5	combi	10	34	1.1	4100

TPI	11S 17 3849 Garant	16F 17 3856 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×4150				degrees	mm	mm	mm
3/4H	eShop	eShop	5	combi	10	34	1.1	4150
4/6H	eShop	eShop	5	combi	10	34	1.1	4150

TPI	11S 17 3851 Garant	16F 17 3858 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×4400				degrees	mm	mm	mm
3/4H	eShop	eShop	5	combi	10	34	1.1	4400
4/6H	eShop	eShop	5	combi	10	34	1.1	4400

TPI	11S 17 3853 Garant	16F 17 3859 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×4530				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	34	1.1	4530
3/4H	eShop	eShop	5	combi	10	34	1.1	4530

TPI	11S 17 3855 Garant	16F 17 3861 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×4570				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	34	1.1	4570
3/4H	eShop	eShop	5	combi	10	34	1.1	4570

TPI	11S 17 3857 Garant	16F 17 3860 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×4640				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	34	1.1	4640
3/4H	eShop	eShop	5	combi	10	34	1.1	4640
4/6H	eShop	eShop	5	combi	10	34	1.1	4640

TPI	11S 17 3863 Garant	16F 17 3864 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×5000				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	34	1.1	5000
3/4H	eShop	eShop	5	combi	10	34	1.1	5000

TPI	11S 17 3865 Garant	16F 17 3866 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 34×5090				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	34	1.1	5090
3/4H	eShop	eShop	5	combi	10	34	1.1	5090

TPI	11S 17 3868 Garant	16F 17 3870 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 41×4115				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	41	1.3	4115
3/4H	eShop	eShop	5	combi	10	41	1.3	4115

TPI	11S 17 3871 Garant	16F 17 3872 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 41×4640				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	41	1.3	4640
3/4H	eShop	eShop	5	combi	10	41	1.3	4640

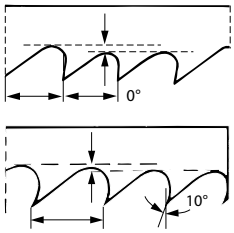
TPI	11S 17 3873 Garant	16F 17 3874 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 41×5334				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	41	1.3	5334
3/4H	eShop	eShop	5	combi	10	41	1.3	5334

TPI	11S 17 3875 Garant	16F 17 3876 RÖNTGEN		Tooth type	Rake	Width	Thickness	Length
	Metal band saw blade 41×5800				degrees	mm	mm	mm
2/3H	eShop	eShop	5	combi	10	41	1.3	5800
3/4H	eShop	eShop	5	combi	10	41	1.3	5800

HSS Co8 | a ≠ b

Metal band saw blades welded to length as ordered

Note:
Our application engineers will gladly offer you further technical advice.
Further information can be found in the **GARANT machining handbook No. 110020** or from **RÖNTGEN Cutting Solutions (RCS)** at https://www.roentgen-saw.com/RCS/.
Price each = price per running metre × band length incl. welded joint.
Information required when placing an order: Length × width × thickness (mm) tooth format.
Example: 10 pieces No. 174000, 4870×34×1.1 - 3/4H -10°.
Use 3/4 0° and 4/6 0° variable pitch teeth only for pipes and profiles!





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
17 3905–17 4025		100		85	65	55	35	20						30				○	●	●	○		
17 4040		100		85	65	55	35	20						30	25	20	60	●	●	●	○		
17 4050–17 4064		100		85	65	55	35	20						30	20	20	60	○	●	●	○		
17 4105														30	20	20	60		●	●	○		

Variable pitch teeth 0° / 10°

17 3905 – **High-performance bi-metal band saw blade** with wear-resistant **M42 teeth** and special flexible backing with increased load capacity.
17 4000 – **bi-alpha-cobalt: High-performance bi-metal band saw blade** with **M42** high-speed alloy steel (HSS, 67-69 HRC) tooth tips and a high-alloy spring steel backing.
17 4025 – **Production band-saw blade** for high cutting performance.

Description:
Variable pitch teeth, 0° – Very low vibration, for a large range of cross sections (for pipes and profiles, solid materials up to max. 70 mm).
Variable pitch teeth 10° – General purpose for a large range of cross sections (for solid materials from 50 mm).
3/4 – 10/14 teeth per inch: 0° variable pitch teeth
1.4/2H – 5/6H teeth per inch: 10° variable pitch teeth

Note:
17 3905 – **Successor product to No. 173900.**

Width×thickness mm	20×0,9	27×0,9	34×1,1	41×1,3	54×1,6	
11S **17 3905** Garant Metal band saw blade, bi-metal	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	5
1.4/2H TPI	–	–	–	●	●	
2/3H TPI	–	●	●	●	●	
3/4H TPI	–	●	●	●	●	
4/6H TPI	●	●	●	●	–	
5/8 TPI	●	●	●	–	–	
6/10 TPI	●	●	●	–	–	
8/12 TPI	●	●	●	–	–	
10/14 TPI	●	●	–	–	–	
Tooth type	combi					

width×thickness mm	13×0,6	20×0,9	27×0,9	34×1,1	41×1,3	54×1,3	54×1,6	
16F **17 4000** RÖNTGEN Metal band saw blade **bi-alpha cobalt**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	5
1.5/2H TPI	–	–	–	–	●	●	●	
2/3H TPI	–	–	●	●	●	●	●	
3/4H TPI	–	–	●	●	●	●	●	
4/5H TPI	–	–	●	●	●	●	●	
4/6H TPI	–	–	●	●	●	●	●	
5/6H TPI	–	–	●	●	–	–	●	
3/4 TPI	–	–	●	●	●	–	–	
4/6 TPI	–	–	●	●	●	–	–	
5/8 TPI	–	●	●	●	●	–	–	
6/10 TPI	●	●	●	●	●	–	–	
8/12 TPI	●	●	●	●	–	–	–	
10/14 TPI	●	●	●	–	–	–	–	
Tooth type	combi							

width×thickness mm	13×0,6	20×0,9	27×0,9	34×1,1	41×1,3	
12S **17 4025** HOLEX Metal band saw blade, bi-metal	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	5
1.5/2H TPI	–	–	–	–	●	
2/3H TPI	–	–	●	●	●	
3/4H TPI	–	–	●	●	●	
4/5H TPI	–	–	●	●	●	
4/6H TPI	–	–	●	●	●	
5/6H TPI	–	–	●	●	–	
3/4 TPI	–	–	●	●	●	
4/6 TPI	–	–	●	●	●	
5/8 TPI	–	●	●	●	–	
6/10 TPI	●	●	●	●	–	
8/12 TPI	●	●	●	●	–	
10/14 TPI	●	●	●	–	–	
Tooth type	combi					

Variable pitch teeth 6°

17 4040 – **High-performance bi-metal band saw blade** with sturdy **profile tooth** and **positive rake angle.**
Aggressive cutting with **low tendency to vibrate**, resulting in a **very quiet sawing process.**
Proven **M42 teeth** and special flexible backing with increased load capacity.
Ideal for **sawing tasks that are prone to vibrations**, such as hollow and angled sections, carriers as well as material bundles and layer cuts, but also for flat material.

17 4062 – **bi-alfa Profile: High-performance bi-metal saw blade** with **M42** alloy high-speed steel (HSS) tooth tips.
The **reinforced back of the tooth** increases the resistance to overloading of the tooth due to **vibrations during interrupted cutting.**
For tooth pitches **3/4 and 4/6**, an **optimised** tooth profile ensures high performance in **process-controlled sawing operation.**

17 4064 – **Bi-alfa profile WS: High-performance bi-metal saw blade** with **M42** alloy high-speed steel (HSS) tooth tips.
The **reinforced back of the tooth** increases the resistance to overloading of the tooth due to **vibrations during interrupted cutting.**
The WS version generates a wide cutting channel to prevent jamming, especially for materials with internal stresses.
The **optimised tooth profile** ensures high performance in **process-controlled sawing operation.**

width×thickness	mm	27×0,9	34×1,1	41×1,3	
11S **17 4040** Garant	Metal band saw blade, bi-metal **Profile tooth**	(eShop)	(eShop)	(eShop)	5
2/3 TPI		–	●	–	
3/4 TPI			●		
4/6 TPI		●	●	–	
5/7 TPI		●	●	–	
8/11 TPI		●	–	–	
Tooth type			Combi		
Rake	degrees		6		

width×thickness	mm	13×0,6	20×0,9	27×0,9	34×1,1	41×1,3	54×1,6	
16F **17 4062** RÖNTGEN	Metal band saw blade **bi-alpha Profile**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	5
3/4 TPI		–	–	●	●	●	●	
4/6 TPI		–	–	●	●	●	●	
5/7 TPI		–	–	●	●	●	–	
8/11 TPI		●	●	●	●	–	–	
12/16 TPI		–	●	●	–	–	–	
Tooth type					combi			
Rake	degrees				6			

width×thickness	mm	34×1,1	41×1,3	54×1,6	
16F **17 4064** RÖNTGEN	Metal band saw blade **bi-alpha Profile WS**	(eShop)	(eShop)	(eShop)	5
3/4 TPI			●		
Tooth type			combi		
Rake	degrees		6		

Variable pitch teeth 10° ground

bi-alfa Master: High-performance bi-metal saw blade with **M42** alloy high-speed steel (HSS) tooth tips.
With **special ground finish on the taper tap** (tooth height difference) for improved cutting guidance.
Optimally suitable for solid material (from 50 mm) of all common **high and very high-alloy steel grades** up to a hardness of <45 HRC.

width×thickness	mm	27×0,9	34×1,1	41×1,3	
16F **17 4050** RÖNTGEN	Metal band saw blade **bi-alpha Master**	(eShop)	(eShop)	(eShop)	5
1.5/2H TPI		–	–	●	
2/3H TPI		–	●	●	
3/4H TPI		●	●	●	
Tooth type			combi		
Rake	degrees		10		

Variable pitch teeth 16° ground

Master Supreme: Tooth tips made of high-speed alloy steel (HSS) **M51**, with **increased thermal and mechanical wear resistance.**
The ground **taper tap improves the cutting guidance** and the cutting behaviour, especially for large material cross-sections and the **extra-wide teeth setting prevents jamming of materials with internal stresses** (e.g. forgings).
Ideal for machining **high and very high-alloy steel grades.**

Width×thickness	mm	34×1,1	41×1,3	54×1,3	54×1,6	
16F **17 4105** RÖNTGEN	Metal band saw blade **Master Supreme**	(eShop)	(eShop)	(eShop)	(eShop)	5
1.1/1.6 TPI		–	–	–	●	
1.5/2 TPI		–	●	●	●	
2/3 TPI				●		
3/4 TPI		●	–	–	–	
Tooth type				combi		
Rake	degrees			16		

Carbide

RÖNTGEN

Carbide-tipped band saw blades, welded to length as ordered

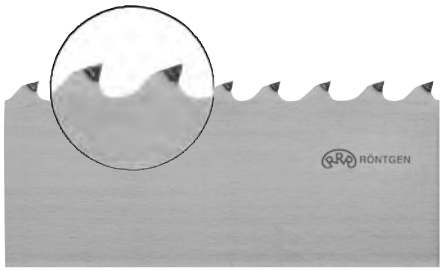
RÖNTGEN carbide titanium:
Carbide-tipped band saw blade with ground tooth profiles. (Hardness approx. 1600 HV). Very high rate of metal removal.

Note: When placing an enquiry, please indicate the band saw machine (manufacturer and type), band dimensions, material, and material cross section.
General-purpose small workshop machines (tilting frame bandsaws with saw blade width 27×0.9 mm) are generally not designed for use with carbide-tipped saw blades.
Our application engineers will gladly offer you further technical advice.
Further information can be found in the **GARANT machining handbook No. 110020** or from **RÖNTGEN Cutting Solutions (RCS)** at https://www.roentgen-saw.com/RCS/.
Price each = price per running metre × band length **incl. welded joint.**
Order information: Item number and size (teeth per inch) × desired length (mm).
Example: 5 pieces No. 174113 size 2/3 × 4640 mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
17 4111–17 4117/ 4151–17 4156	100	100	70	90	80	70	60	50					70	60	60	80	80	●		●			
17 4121–17 4131									100	90	85									●			
17 4182–17 4187	110	110	80	100	90	80	65	55					80	65	65	90	90	●		●			

Carbide-titanium MU

Tooth tips made of **high-quality carbide (HM) with positive rake angle (10°)** and a backing made of high-alloy spring steel. Suitable for **general applications**, especially in all common steel grades up to a tensile strength of 1700 N/mm². **The smooth running** and **optimised cutting surface** are achieved by a **highly precise grinding geometry of the teeth**.



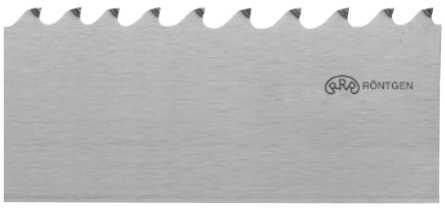
17 4111

TPI	16F 17 4111 Width × thickness 27 × 0.9 mm	16F 17 4112 Width × thickness 34 × 1.1 mm	16F 17 4113 Width × thickness 41 × 1.3 mm	16F 17 4114 Width × thickness 54 × 1.3 mm	16F 17 4115 Width × thickness 54 × 1.6 mm	16F 17 4116 Width × thickness 67 × 1.6 mm	16F 17 4117 Width × thickness 80 × 1.6 mm	Tooth type	Rake degrees
	Carbide-tipped band saw blade **Carbide - titanium MU**								
0,85/1,15	–	–	–	–	(eShop)	(eShop)	–	Combi	10
1,1/1,6	–	–	–	–	(eShop)	(eShop)	(eShop)	Combi	10
1,5/2	–	–	(eShop)	(eShop)	(eShop)	(eShop)	–	Combi	10
2/3	–	(eShop)	(eShop)	(eShop)	(eShop)	–	–	Combi	10
3/4	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	–	–	Combi	10

Carbide - titanium B0

Carbide (HM) tipped high-performance saw blade with special geometry and a **rake angle of 0°.**
Especially suitable for hardened/induction-hardened and high-hardness materials > 50 HRC.
The B0 can be used on sawing machines with limited power.

Note:
17 4122/4123 Size 3/4 – For the configurations, a forte C-coated variant with a performance increase of 20-30% is available on request.



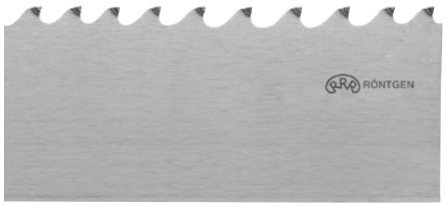
17 4121

TPI	16F 17 4121 Width × thickness 27 × 0.9 mm	16F 17 4122 Width × thickness 34 × 1.1 mm	16F 17 4123 Width × thickness 41 × 1.3 mm	16F 17 4125 Width × thickness 54 × 1.3 mm	16F 17 4124 Width × thickness 54 × 1.6 mm	Tooth type	Rake degrees
	Carbide-tipped band saw blade **Carbide - titanium B0**						
1,5/2	–	–	(eShop)	–	–	Combi	0
2/3	–	(eShop)	(eShop)	(eShop)	(eShop)	Combi	0
3/4	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	Combi	0

Carbide-titanium MUSN

Carbide (HM) tipped high-performance saw blade **with a negative rake angle (-18°) and special tooth geometry to increase the machining parameters. Especially suitable for sawing hardened/induction-hardened and high-hardness materials >50 HRC.** Use requires a **powerful band saw machine.**

Note:
Size 3/4 – For the configurations, a forte C-coated variant with a performance increase of 20-30% is available on request.



17 4130

TPI	16F 17 4130	16F 17 4131	Tooth type	Rake
	Carbide-tipped band saw blade **Carbide-titanium MUSN**			
	Width × thickness 34 × 1.1 mm	**Width × thickness 41 × 1.3 mm**		degrees
2/3	–	(eShop)	Combi	–18
3/4	(eShop)	(eShop)	Combi	–18

Carbide-titanium nSET

Carbide (HM) tipped high-performance saw blade with a **positive rake angle (11°).**
The **normal set** generates a cutting channel in which the **jamming of the saw blade is prevented, especially in the case of internal material stresses** (e.g. in Inconel, Hastelloy or forged materials)**.**
Suitable for sawing all common types of steel up to a tensile strength of 1700 N/mm^2 and especially for **large contact lengths.**
The saw blade can also be used on powerful bi-metal sawing machines.

Note: Quality carbide-titanium SET (item number 174161 to 174167) is still available. Just contact us with your request.



17 4151

TPI	16F 17 4151	16F 17 4152	16F 17 4153	16F 17 4154	16F 17 4155	16F 17 4156	Tooth type	Rake
	Carbide-tipped band saw blade **Carbide-titanium nSET**							
	Width × thickness 27 × 0.9 mm	**Width × thickness 34 × 1.1 mm**	**Width × thickness 41 × 1.3 mm**	**Width × thickness 54 ×1.3 mm**	**Width × thickness 54 × 1.6 mm**	**Width × thickness 67 × 1.6 mm**		degrees
1,1/1,6	–	–	–	–	–	(eShop)	Combi	11
1,5/2	–	–	(eShop)	(eShop)	(eShop)	(eShop)	Combi	11
2/3	–	(eShop)	(eShop)	(eShop)	(eShop)	–	Combi	11
3/4	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	–	Combi	11

Carbide-titanium forte C

Carbide (HM) tipped high-performance saw blade with a **positive rake angle (10°)** and **special tooth geometry** to increase the machining parameters.
Performance increase in comparison to the quality carbide-titanium MU of 10-30% with the same tool life due to **forte C coating.**
The **cutting edges are pre-rounded,** eliminating the need to run the belt in.



17 4182

TPI	16F 17 4182	16F 17 4183	16F 17 4184	16F 17 4185	16F 17 4186	16F 17 4187	Tooth type	Rake
	Carbide-tipped band saw blade **Carbide-titanium forte C**							
	Width × thickness 34 × 1.1 mm	**Width × thickness 41 × 1.3 mm**	**Width × thickness 54 × 1.3 mm**	**Width × thickness 54 × 1.6 mm**	**Width × thickness 67 × 1.6 mm**	**Width × thickness 80 × 1.6 mm**		degrees
0,85/1,15	–	–	–	–	(eShop)	–	Combi	10
1,1/1,6	–	–	–	(eShop)	(eShop)	(eShop)	Combi	10
1,5/2	–	(eShop)	(eShop)	(eShop)	–	–	Combi	10
2/3	(eShop)	(eShop)	(eShop)	(eShop)	–	–	Combi	10
3/4	–	(eShop)	–	–	–	–	Combi	10

17

RÖNTGEN Metal band-saw blades

Tooth spacing for carbide-titanium saw blades

Tooth pitch	Material Ø
0.85/1.15	> 500 mm
1.1/1.6	350 – 600 mm
1.5/2	150 – 400 mm
2/3	100 – 250 mm
3/4	50 – 120 mm

Type **carbide-titanium ALU** (specially for aluminium materials) available on request.
Different versions are available depending on the available bandsaw and component shape (plates, castings, pipes).

HSS

Re-Bo Metal circular saw blades

All blades are hollow ground to give side clearance.
All sizes with 200 mm ∅ and very thin blades have a bore collar for stabilisation.
Accuracy, tooth form, and side clearance grinding according to DIN 1840.

17 5000 – **DIN 1837 A fine-toothed** with raked teeth form A.
Straight teeth with relatively small indentations.

17 5500 – **DIN 1838 B coarse-toothed** with curved form B.
Curved teeth with relatively large tooth indentations.

17 6000 – **DIN 1838 C coarse-toothed** with curved form C.
High performance tooth pitch (HZ) **with high teeth and lower finishing teeth.** The roughing tooth is 0.15 – 0.30 mm higher than the finishing tooth and is chamfered at both tooth corners. In this way both types of teeth share the cutting work.

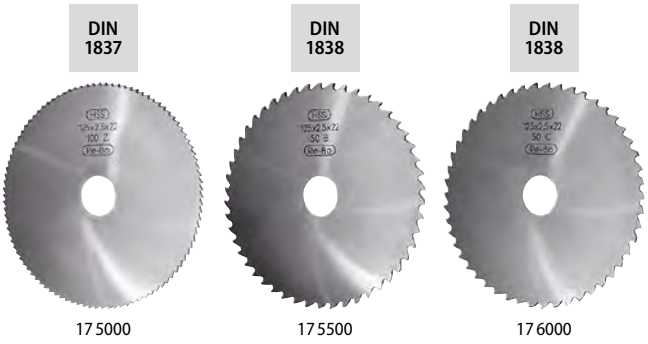
Application:

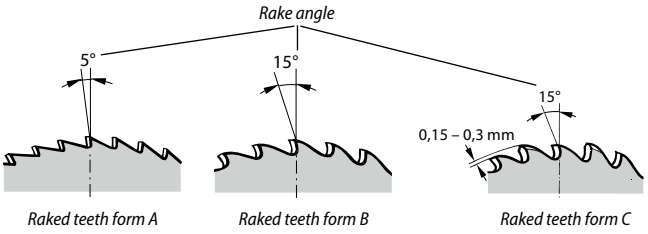
17 5000 – For thin-walled components and small cutting depths.

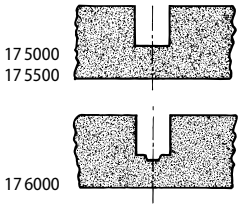
17 5500 – These blades are suitable for more universal use due to the improved chip formation and larger gullets compared to No. 175000. Should be used for thicker materials and greater cutting depths.

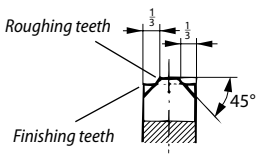
17 6000 – Particularly suitable for cutting workpieces with low to medium tensile strength. High cutting performance due to the chip breaking tooth form.
Please note: If the component is not cut through, but only cut into, the bottom of the cut will have an additional slot due to the projecting high tooth.

Note:	The concentricity and axial run-out values are considerably better than the figures according to DIN 1840, in some cases by up to 50 %.









Arbors for saw blades
∅ 20 – 100 mm
see No. 34 5510 / 34 5555



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
17 5000				**37**	**22**	**20**	15							11	11	**27**	**400**	●		●		○	○
17 5500/6000		800	600	**37**	**22**	**20**	15							11	11	**27**	400	●		●		○	○

∅× thickness mm	17A 17 5000 Metal circular saw blade **fine**	Thickness mm	Bore ∅ mm	No. of teeth Z
20×0,2	eShop	0.2	5	80
20×0,25	(eShop)	0.25	5	64
20×0,3	eShop	0.3	5	64
20×0,4	eShop	0.4	5	64
20×0,5	eShop	0.5	5	50
20×0,6	eShop	0.6	5	50
20×0,8	eShop	0.8	5	50
20×1	eShop	1	5	40
20×1,2	eShop	1.2	5	40
20×1,6	eShop	1.6	5	40
20×2	eShop	2	5	32
20×2,5	(eShop)	2.5	5	32
20×3	(eShop)	3	5	32
20×6	(eShop)	6	5	24
25×0,2	(eShop)	0.2	8	80
25×0,3	eShop	0.3	8	80
25×0,4	(eShop)	0.4	8	64
25×0,5	eShop	0.5	8	64
25×0,6	eShop	0.6	8	64
25×0,8	eShop	0.8	8	50
25×1	eShop	1	8	50
25×1,2	eShop	1.2	8	50
25×1,6	eShop	1.6	8	40
25×2	eShop	2	8	40

∅× thickness mm	17A 17 5000 Metal circular saw blade **fine**	Thickness mm	Bore ∅ mm	No. of teeth Z
25×2,5	eShop	2.5	8	40
25×3	(eShop)	3	8	32
32×0,2	eShop	0.2	8	100
32×0,25	(eShop)	0.25	8	100
32×0,3	eShop	0.3	8	80
32×0,4	eShop	0.4	8	80
32×0,5	eShop	0.5	8	80
32×0,6	eShop	0.6	8	64
32×0,8	eShop	0.8	8	64
32×1	eShop	1	8	64
32×1,2	eShop	1.2	8	50
32×1,6	eShop	1.6	8	50
32×2	eShop	2	8	50
32×2,5	eShop	2.5	8	40
32×3	eShop	3	8	40
32×6	(eShop)	6	8	32
40×0,2	eShop	0.2	10	128
40×0,25	(eShop)	0.25	10	100
40×0,3	eShop	0.3	10	100
40×0,4	eShop	0.4	10	100
40×0,5	eShop	0.5	10	80
40×0,6	eShop	0.6	10	80
40×0,8	eShop	0.8	10	80
40×1	eShop	1	10	64

Ø× thickness	17A 17 5000 Metal circular saw blade			Thick-ness	Bore Ø	No. of teeth Z	
						17 5000	17 5500 17 6000
mm	fine	coarse	coarse HZ	mm	mm		
40×1,2	eShop	–	–	1.2	10	64	–
40×1,6	eShop	–	–	1.6	10	64	–
40×2	eShop	–	–	2	10	50	–
40×2,5	eShop	–	–	2.5	10	50	–
40×3	eShop	–	–	3	10	50	–
40×4	eShop	–	–	4	10	40	–
40×5	(eShop)	–	–	5	10	40	–
40×6	(eShop)	–	–	6	10	40	–
50×0,2	eShop	–	–	0.2	13	128	–
50×0,3	eShop	–	–	0.3	13	128	–
50×0,4	(eShop)	–	–	0.4	13	100	–
50×0,5	eShop	eShop	–	0.5	13	100	50
50×0,6	eShop	eShop	–	0.6	13	100	50
50×0,8	eShop	eShop	–	0.8	13	80	40
50×1	eShop	eShop	(eShop)	1	13	80	40
50×1,2	eShop	eShop	(eShop)	1.2	13	80	40
50×1,6	eShop	eShop	(eShop)	1.6	13	64	32
50×2	eShop	eShop	(eShop)	2	13	64	32
50×2,5	(eShop)	(eShop)	(eShop)	2.5	13	64	32
50×3	eShop	(eShop)	(eShop)	3	13	50	24
50×4	(eShop)	(eShop)	(eShop)	4	13	50	24
50×6	(eShop)	(eShop)	(eShop)	6	13	40	20
63×0,25	eShop	–	–	0.25	16	160	–
63×0,3	eShop	–	–	0.3	16	128	–
63×0,4	eShop	–	–	0.4	16	128	–
63×0,5	eShop	eShop	–	0.5	16	128	64
63×0,6	eShop	(eShop)	–	0.6	16	100	50
63×0,8	eShop	eShop	–	0.8	16	100	50
63×1	eShop	eShop	eShop	1	16	100	50
63×1,2	eShop	eShop	eShop	1.2	16	80	40
63×1,6	eShop	eShop	(eShop)	1.6	16	80	40
63×2	eShop	eShop	eShop	2	16	80	40
63×2,5	eShop	eShop	(eShop)	2.5	16	64	32
63×3	eShop	eShop	(eShop)	3	16	64	32
63×4	eShop	eShop	(eShop)	4	16	64	32
63×5	(eShop)	(eShop)	(eShop)	5	16	50	24
63×6	(eShop)	(eShop)	(eShop)	6	16	50	24
80×0,3	eShop	–	–	0.3	22	160	–
80×0,4	eShop	–	–	0.4	22	160	–
80×0,5	eShop	eShop	–	0.5	22	128	64
80×0,6	eShop	(eShop)	–	0.6	22	128	64
80×0,8	eShop	eShop	–	0.8	22	128	64
80×1	eShop	eShop	eShop	1	22	100	50
80×1,2	eShop	eShop	eShop	1.2	22	100	50
80×1,6	eShop	eShop	(eShop)	1.6	22	100	50
80×2	eShop	eShop	eShop	2	22	80	40

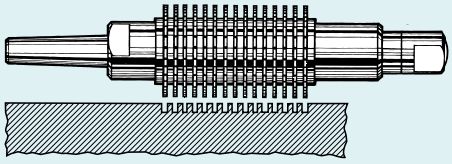
Ø× thickness	17A 17 5000 Metal circular saw blade			Thick-ness	Bore Ø	No. of teeth Z	
						17 5000	17 5500 17 6000
mm	fine	coarse	coarse HZ	mm	mm		
80×2,5	eShop	eShop	(eShop)	2.5	22	80	40
80×3	eShop	eShop	(eShop)	3	22	80	40
80×4	eShop	(eShop)	eShop	4	22	64	32
80×5	(eShop)	(eShop)	(eShop)	5	22	64	32
80×6	(eShop)	(eShop)	(eShop)	6	22	64	32
100×0,5	eShop	eShop	–	0.5	22	160	80
100×0,6	eShop	(eShop)	–	0.6	22	160	80
100×0,8	eShop	eShop	–	0.8	22	128	64
100×1	eShop	eShop	eShop	1	22	128	64
100×1,2	eShop	eShop	(eShop)	1.2	22	128	64
100×1,6	eShop	eShop	eShop	1.6	22	100	50
100×2	eShop	eShop	eShop	2	22	100	50
100×2,5	eShop	eShop	(eShop)	2.5	22	100	50
100×3	eShop	eShop	eShop	3	22	80	40
100×4	(eShop)	eShop	(eShop)	4	22	80	40
100×5	(eShop)	(eShop)	(eShop)	5	22	80	40
125×0,6	eShop	eShop	–	0.6	22	160	80
125×0,8	(eShop)	(eShop)	–	0.8	22	160	80
125×1	eShop	eShop	eShop	1	22	160	80
125×1,2	eShop	(eShop)	eShop	1.2	22	128	64
125×1,6	eShop	eShop	eShop	1.6	22	128	64
125×2	eShop	eShop	eShop	2	22	128	64
125×2,5	(eShop)	eShop	(eShop)	2.5	22	100	50
125×3	eShop	eShop	eShop	3	22	100	50
125×4	(eShop)	(eShop)	eShop	4	22	100	50
125×5	eShop	(eShop)	(eShop)	5	22	80	40
125×6	(eShop)	(eShop)	(eShop)	6	22	80	40
160×1	eShop	(eShop)	(eShop)	1	32	160	80
160×1,2	(eShop)	(eShop)	(eShop)	1.2	32	160	80
160×1,6	eShop	eShop	eShop	1.6	32	160	80
160×2	eShop	eShop	eShop	2	32	128	64
160×2,5	(eShop)	(eShop)	(eShop)	2.5	32	128	64
160×3	(eShop)	eShop	eShop	3	32	128	64
160×4	(eShop)	(eShop)	(eShop)	4	32	100	50
160×5	(eShop)	(eShop)	(eShop)	5	32	100	50
160×6	(eShop)	(eShop)	(eShop)	6	32	100	50
200×1	eShop	eShop	(eShop)	1	32	200	100
200×1,2	eShop	(eShop)	(eShop)	1.2	32	200	100
200×1,6	eShop	(eShop)	(eShop)	1.6	32	160	80
200×2	eShop	eShop	eShop	2	32	160	80
200×2,5	(eShop)	eShop	(eShop)	2.5	32	160	80
200×3	eShop	(eShop)	eShop	3	32	128	64
200×4	(eShop)	(eShop)	(eShop)	4	32	128	64
200×5	(eShop)	(eShop)	(eShop)	5	32	128	64
200×6	(eShop)	(eShop)	(eShop)	6	32	100	50

Metal circular saw blades for special applications

Please make a note on your order if you want to use the metal circular saw blades in sets.
These blades will then be gauged as a set and ground plane parallel as a precision matched set, hollow ground from teeth to collar (spacer ring Ø). This arrangement must be made to order. We also need further information on the order if dimensional tolerances are tighter than DIN, or for special tooth formats or fully surface ground types, for keyways or pinholes etc.

On request:

- Metal circular saw blades with hard coating "Re-Bo-TiN" or "Re-Bo-Top" for difficult machining applications in industrial use.
- Driving slots can be produced if required.



HSS

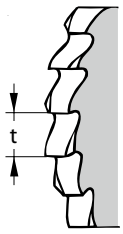
Metal circular saw blades

Application: On low speed machines (approx. 50 rpm).
Pitch t: (tooth form).

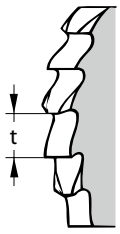
- 4 mm (BW) – For profiles and pipes with 1.0 – 1.5 mm wall thickness.
- 5 / 6 mm (HZ) – For medium profiles, tubes and solid material with 1.5 – 20 mm wall thickness or cross–section.
- 7 / 8 mm (HZ) – For thick profiles and solid materials up to approx. 50 mm wall thickness or cross-section.
- 10 – 16 mm (HZ) – For extra thick cross-sections and solid material more than 50 mm.

Note:

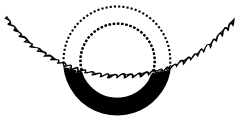
- **For stainless steels (such as V2A)** the correct cutting speed and lubrication is crucial (see information in the machining handbook, No. 110020).
- The concentricity and axial run-out values are considerably better than the figures according to DIN 1840, in some cases by up to 50 %.

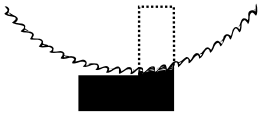


*t 4 mm = **BW** curved teeth set alternately*



*t from 5 mm = **HZ** tooth configuration with roughing and finishing teeth*







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
17 7000/7200/7400		800	600	**37**	**22**	**20**	15						11	11	15	**27**	400	●		●		○	○
17 7055/7255/7455		800	600	**37**	**22**	20										**27**	400	●		●		○	○
17 7070		800	800	**55**	**42**	**38**	**28**						**24**	20	26	**45**	600	●	●	●	●	○	○

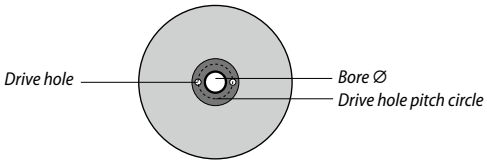
Metal circular saw blades, fine version

17 7000 – **German top quality product.** Precision tooth geometry and very fine ground side faces. Significant increase in service life and protection against edge build-up due to the **nitrided surface.**

17 7055 – Precise format and good quality for a competitive price. **Vaporised surface** protects against edge build-up.

Note:

17 7055 – **Successor product to No. 177050.**





17 7000



17 7055

Ø×thickness	17B 17 7000 Re-Bo	12T 17 7055 HOLEX	Thickness	Bore Ø	No. of teeth Z	Pitch t	Number of drive holes		Drive hole Ø		Drive hole pitch circle		suitable for saw makes
	Circular saw blade fine						17 7000	17 7055	17 7000	17 7055	17 7000	17 7055	
mm			mm	mm		mm			mm	mm	mm	mm	
225×2/K	eShop	eShop	2	32	180	4	2	2; 2; 4	8	8; 11; 9	45	45; 63; 50	Eisele
225×2	(eShop)	eShop	2	40	180	4	2	2; 4	8	8; 12	55	55; 64	Eisele
250×2/K	–	eShop	2	32	200	4	–	2; 2; 4	–	8; 11; 9	–	45; 63; 50	Adige; Berg & Schmid; Bewo; IBP; Thomas
250×2	eShop	eShop	2	40	200	4	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
250×2,5	(eShop)	eShop	2.5	40	200	4	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
275×2	eShop	eShop	2	40	220	4	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
275×2,5	eShop	eShop	2.5	40	220	4	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele; Trennjäger
300×2,5/K	–	eShop	2.5	32	220	4	–	2; 2; 4	–	8; 9; 11	–	45; 63; 50	Adige; Berg & Schmid; Bewo; IBP; Thomas
300×2,5	eShop	eShop	2.5	40	220	4	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
315×2,5	eShop	eShop	2.5	40	220	4	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
315×3	eShop	eShop	3	40	160	6	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
350×3	eShop	eShop	3	40	180	6	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
370×3/G	–	eShop	3	50	160	7	–	4; 4	–	15; 14	–	80; 85	Kaltenbach
400×3/G	–	eShop	3	50	180	7	–	4; 4	–	15; 14	–	80; 85	Kaltenbach
400×3,5	(eShop)	–	3.5	40	160	8	2	–	11	–	65	–	Eisele

Metal circular saw blades, medium version

177070 – Top quality **with TiAlN coating** for the highest blade life requirements. Shorter sawing times due to higher cutting speeds.

177200 – **German top quality product.** Precision tooth geometry and very fine ground side faces. Significant increase in service life and protection against edge build-up due to the **nitrided surface.**

177255 – Precise format and good quality for a competitive price. **Vaporised surface** protects against edge build-up.

Note:

177070 – **Successor product to No. 177060.**

177255 – **Successor product to No. 177250.**



177070



177200



177255

∅×thickness	11T 177070 Garant	17B 177200 Re-Bo	12T 177255 HOLEX	Thick-ness	Bore ∅	No. of teeth Z	Pitch t	Number of drive holes		Drive hole ∅		Drive hole pitch circle		suitable for saw makes
	Circular saw blade **medium**							177070 177200	177255	177070 177200	177255	177070 177200	177255	
mm	TiAlN			mm	mm		mm			mm	mm	mm	mm	
225×2/K	–	eShop	eShop	2	32	120	6	2	2; 2 ; 4	8	8; 11; 9	45	45; 63; 50	Eisele
225×2	–	(eShop)	eShop	2	40	120	6	2	2; 4	8	8; 12	55	55; 64	Eisele
250×2/K	–	–	eShop	2	32	160	5	–	2; 2; 4	–	8; 11; 9	–	45; 63; 50	Adige; Berg & Schmid; Bewo; IBP; Thomas
250×2	eShop	eShop	eShop	2	40	128	6	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
250×2,5	–	eShop	eShop	2.5	40	128	6	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
275×2	–	eShop	eShop	2	40	140	6	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
275×2,5	eShop	eShop	eShop	2.5	40	140	6	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele; Trennjäger
300×2,5/K	–	–	eShop	2.5	32	160	6	–	2; 2; 4	–	8; 11; 9	–	45; 63; 50	Adige; Berg & Schmid; Bewo; IBP; Thomas
300×2,5	eShop	eShop	eShop	2.5	40	160	6	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
315×2,5	eShop	eShop	eShop	2.5	40	160	6	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
315×3	–	eShop	eShop	3	40	120	8	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
350×3	eShop	eShop	eShop	3	40	140	8	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
370×3/G	–	–	eShop	3	50	120	10	–	4; 4	–	15; 14	–	80; 85	Kaltenbach
400×3	–	(eShop)	–	3	40	128	10	2	–	11	–	55	–	Eisele
400×3/G	–	–	eShop	3	50	100	12	–	4; 4	–	15; 14	–	80; 85	Kaltenbach
400×3,5	–	(eShop)	–	3.5	40	128	10	2	–	11	–	65	–	Eisele

Metal circular saw blades, coarse version

177400 – **German top quality product.** Precision tooth geometry and very fine ground side faces. Significant increase in service life and protection against edge build-up due to the **nitrided surface.**

177455 – Precise format and good quality for a competitive price. **Vaporised surface** protects against edge build-up.

Note:

177455 – **Successor product to No. 177450.**



177400



177455

∅×thickness	17B 177400 Re-Bo	12T 177455 HOLEX	Thickness	Bore ∅	No. of teeth Z	Pitch t	Number of drive holes		Drive hole ∅		Drive hole pitch circle		suitable for saw makes
	Circular saw blade **coarse**						177400	177455	177400	177455	177400	177455	
mm			mm	mm		mm			mm	mm	mm	mm	
225×2/K	–	eShop	2	32	90	8	–	2; 2; 4	–	8; 11; 19	–	45; 63; 50	Eisele
225×2	(eShop)	eShop	2	40	90	8	2	2; 4	8	8; 12	55	55; 64	Eisele
250×2/K	–	eShop	2	32	128	6	–	2; 2; 4	–	8; 11; 19	–	45; 63; 50	Adige; Berg & Schmidt; Bewo; IBP; Thomas
250×2	(eShop)	eShop	2	40	100	8	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
275×2	(eShop)	eShop	2	40	110	8	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
275×2,5	eShop	eShop	2.5	40	110	8	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele; Trennjäger
300×2,5/K	–	eShop	2.5	32	120	8	–	2; 2; 4	–	8; 11; 19	–	45; 63; 50	Adige; Berg & Schmidt; Bewo; IBP; Thomas
300×2,5	eShop	eShop	2.5	40	120	8	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
315×2,5	eShop	eShop	2.5	40	120	8	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
315×3	eShop	eShop	3	40	100	10	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
350×3	eShop	eShop	3	40	110	10	2; 4	2; 4	8; 12	8; 12	55; 64	55; 64	Eisele
370×3/G	–	eShop	3	50	100	12	–	4; 4	–	15; 14	–	80; 85	Kaltenbach
400×3/G	–	eShop	3	50	80	16	–	4; 4	–	15; 14	–	80; 85	Kaltenbach
400×3,5	(eShop)	–	3.5	40	100	12	2	–	11	–	65	–	Eisele

HSS E

Re-Bo VA circular saw blades, for stainless steels

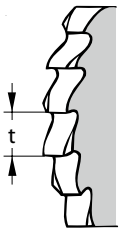
Precision toothing and very fine ground side faces. **Rake angle especially for stainless steels.**
Nitrided surface: hard, durable protection against edge build-up.

Suitable for: **EISELE** and **TRENNJAEGER** cold circular saws.

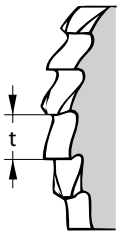
Application: **Pitch t:** (tooth form)

- 3 mm (BW) – For thin pipes, profiles, sheet metal with 1 – 2 mm wall thickness.
- 4 mm (BW) – For pipes, profiles, sheet metal with 1.5 – 4 mm wall thickness.
- 6 mm (HZ) – For pipes, profiles and solid material above 4 mm wall thickness or cross–section up to a maximum of. 50 mm.
- 8 mm (HZ) – For solid material above 50 mm.

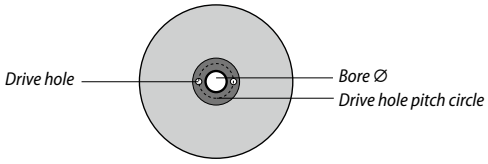
Note:
- For optimum performance and service life: use coolant concentrate No. 084260.
- The concentricity and axial run-out values are considerably better than the figures according to DIN 1840, in some cases by up to 50 %.

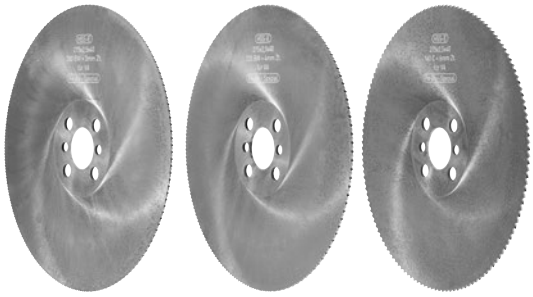


*T 3/4 mm = **BW***
curved teeth set alternately



*t 6/8 mm = **HZ***
tooth configuration with roughing and finishing teeth





17 7500 17 7520 17 7540

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
17 7500–17 7540				37	22	20	15	11					11	11	15	27	400	●

Ø×thickness	17 7500	17 7520	17 7540	Thickness	Bore Ø	No. of teeth Z			Pitch t			Number of drive holes	Drive hole Ø	Drive hole pitch circle
	Stainless steel circular saw blade					17 7500	17 7520	17 7540	17 7500	17 7520	17 7540			
mm	fine	medium	coarse	mm	mm				mm	mm	mm		mm	mm
250×2	eShop	eShop	(eShop)	2	40	250	200	128	3	4	6	2; 4	9; 12	55; 64
275×2,5	eShop	eShop	eShop	2.5	40	280	220	140	3	4	6	2; 4	9; 12	55; 64
300×2,5	(eShop)	(eShop)	(eShop)	2.5	40	220	160	120	4	6	8	2; 4	9; 12	55; 64
315×3	eShop	eShop	(eShop)	3	40	220	160	120	4	6	8	2; 4	9; 12	55; 64
350×3	eShop	eShop	eShop	3	40	280	180	140	4	6	8	2; 4	9; 12	55; 64

17

HSS E

Re-Bo Metal circular saw blades

Top quality German product, hollow ground with precision tooth format.

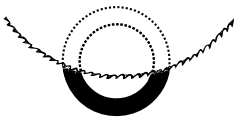
Suitable for: **GF** and **AXX AiR.**



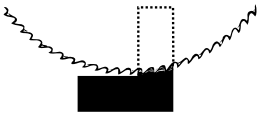
*Tooth form **BW** curved teeth set alternately*



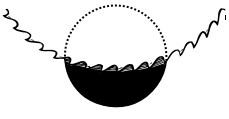
17 8860



F = fine



M = medium



G = coarse

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	
17 8860		800	600	37	22	20	15						11	11	15	27	400	●

Ø×thickness	17 8860	Thickness	Bore Ø	No. of teeth Z
	Metal circular saw blade			
mm		mm	mm	
63×1,6M	(eShop)	1.6	16	64
68×1,6F	(eShop)	1.6	16	72

Ø×thickness	17 8860	Thickness	Bore Ø	No. of teeth Z
	Metal circular saw blade			
mm		mm	mm	
68×1,6M	(eShop)	1.6	16	64
68×1,6G	(eShop)	1.6	16	44

Carbide

Garant

Carbide tipped circular saw blades for non-ferrous metals

High performance toothing with high teeth and lower finishing teeth. The trapezoidal carbide tips cut easily and generate clean cut surfaces.

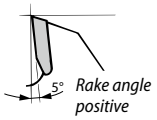
Advantage: Particularly suitable for hard anodised profile material.

Application: **On high-speed machines.**
F = fine tooth pitch for thin walled profiles or plates up to 5 mm thickness.
M = medium tooth pitch for profiles and pipes with greater than 5 mm thickness.
G = coarse tooth pitch for solid material such as bars and rods.

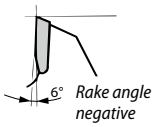
17 9600 – **Positive rake angle 5°** for smooth, burr-free cutting on machines with saw blade infeed from below or horizontal. Very suitable for cutting to size, for mitre and ripping cuts on profiles, and for cutting into solid material.

17 9700 – **Negative rake angle 6°** for use on machines with oscillating saw blade infeed from above. Advantageous for thin profiles.

Note:
- Recommended cutting speed: 40 – 80 m/s, for harder materials such as alloys, brass, or bronze it is preferable to use the lowest recommended speed.
- Pay special attention to maintaining an even feed rate; this prevents damage.
- **Additional versions on request.**
- **Further circular saw blades can be found in catalogue volume 2.**

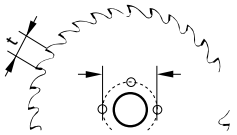


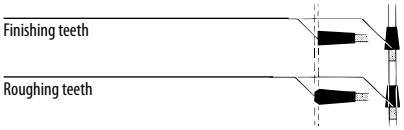
Rake angle positive



Rake angle negative


17 9600


Pitch circle diameter of drive hole.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
17 9600/9700		850	650														450				●	●	○

∅×bore	17 9600	17 9700	Thickness	Bore ∅	No. of teeth Z	Pitch t	Number of drive holes	Drive hole ∅	Drive hole pitch circle	suitable for saw makes
	Carbide-tipped circular saw blade									
mm	Rake angle positive	Rake angle negative	mm	mm		mm		mm	mm	
250×32F	eShop	eShop	3.2	32	80	9.8	2	11	63	Kaltenbach
250×32M	eShop	(eShop)	3.2	32	60	13.1	2	11	63	Kaltenbach
250×32G	eShop	–	3.2	32	40	19.6	2	11	63	Kaltenbach
250×40M	(eShop)	–	3.2	40	60	13.1	2;4	8;12	55; 64	Eisele; Trennjäger; Ulmia
275×40M	eShop	–	3.2	40	72	12.3	2;4	8;12	55;64	Eisele
300×30F	eShop	eShop	3.2	30	96	9.8	2;2	7;11	42;63	Kaltenbach
300×30M	eShop	eShop	3.2	30	72	13.1	2;2	7;11	42;63	Kaltenbach
300×30G	eShop	–	3.2	30	48	18.1	2;2	7;11	42;63	Kaltenbach
350×40F	eShop	(eShop)	3.4	40	108	10	2;4	8;12	55; 64	Eisele
350×40M	eShop	eShop	3.4	40	84	13.1	2;4	8;12	55; 64	Eisele
370×50F	(eShop)	–	3.6	50	120	9.7	4	15	80	Kaltenbach
370×50M	eShop	–	3.6	50	96	12.1	4	15	80	Kaltenbach
400×30M	(eShop)	–	4	30	96	13.1	2	11	63	Kaltenbach
400×30G	(eShop)	–	4	30	72	18.5	2	11	63	Kaltenbach

Reducing ring for circular saw blades with bore 40 mm

External and internal ∅ each H7 fit, **thickness 3 mm.**

Application: For circular saw blades No. 177000 - 177540 with 40 mm bore diameter, for use in machines with 32 mm arbor.

17B 17 9710	Reducing ring 40 / 32 for circular saw blades	eShop


17 9710

Solid carbide

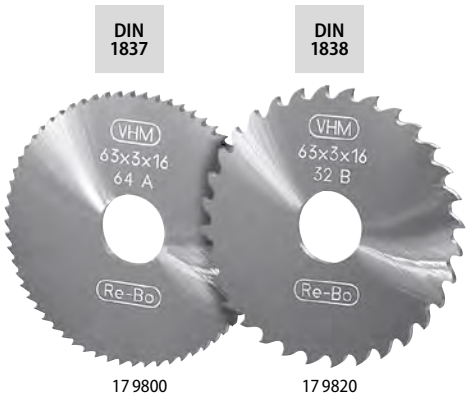
Re-Bo Solid carbide circular saw blades

Top quality German product with **precision toothing** and **hollow ground mirror finish sides**.
Compared to HSS saw blades, the cutting speed can be increased by a factor of 3 to 4.

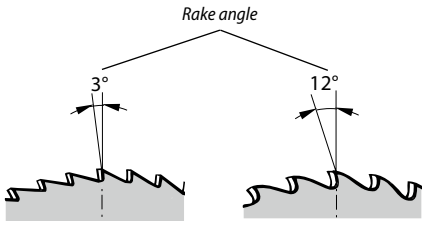
17 9800 – **DIN 1837 A fine-toothed** with **raked teeth to form A** with chisel edge.
For thin-walled components and small cutting depths.

17 9820 – **DIN 1838 B coarse-toothed** with **curved teeth to form B** with chisel edge.
For cutting larger cross sections and greater cutting depths.
These blades are suitable for more universal use due to the improved chip formation and larger gullets compared to the fine-toothed version.

Note:
- Stable conditions of machine and component clamping are important prerequisites. If these conditions are disregarded the circular saw blade may break.
- The values for radial run-out and axial run-out are considerably better than the values specified in DIN 1840.
- Special sizes on request.



17 9800 17 9820



Raked teeth form A Curved teeth form B

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
17 9800/9820		1200	700	200	140	140	90	40				110	100	90	125	400	600	○		●		●	●

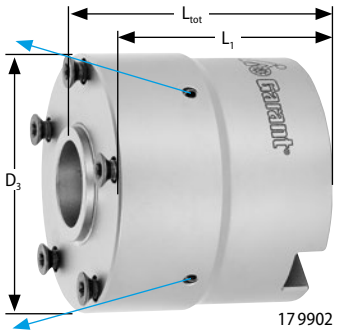
Ø×thickness mm	17 9800 DIN 1837 A fine	17 9820 DIN 1838 B coarse	Thickness mm	Bore Ø mm	No. of teeth Z 17 9800	No. of teeth Z 17 9820
	Solid carbide circular saw blade					
20×0,25	(eShop)	(eShop)	0.25	5	64	32
20×0,3	eShop	(eShop)	0.3	5	64	32
20×0,5	eShop	eShop	0.5	5	50	24
20×0,6	(eShop)	(eShop)	0.6	5	50	24
20×1	eShop	eShop	1	5	40	20
20×1,6	(eShop)	(eShop)	1.6	5	40	20
25×0,3	(eShop)	(eShop)	0.3	8	80	40
25×0,5	eShop	eShop	0.5	8	64	32
25×0,6	(eShop)	(eShop)	0.6	8	64	32
25×0,8	(eShop)	(eShop)	0.8	8	50	24
25×1	eShop	eShop	1	8	50	24
25×1,2	(eShop)	(eShop)	1.2	8	50	24
25×1,6	(eShop)	(eShop)	1.6	8	40	20
25×2	eShop	eShop	2	8	40	20
30×0,25	(eShop)	(eShop)	0.25	8	80	40
30×0,3	(eShop)	(eShop)	0.3	8	80	40
30×0,4	eShop	(eShop)	0.4	8	80	40
30×0,5	eShop	eShop	0.5	8	80	40
30×0,6	(eShop)	(eShop)	0.6	8	64	32
30×0,8	eShop	eShop	0.8	8	64	32
30×1	eShop	eShop	1	8	64	32
30×1,2	(eShop)	(eShop)	1.2	8	50	24
30×1,6	eShop	eShop	1.6	8	50	24
30×2	eShop	eShop	2	8	50	24
30×2,5	(eShop)	(eShop)	2.5	8	40	20
40×0,4	eShop	eShop	0.4	10	100	50
40×0,5	eShop	eShop	0.5	10	80	40
40×0,6	eShop	eShop	0.6	10	80	40
40×0,8	(eShop)	(eShop)	0.8	10	80	40
40×1	eShop	eShop	1	10	64	32
40×1,2	(eShop)	(eShop)	1.2	10	64	32
40×1,6	eShop	eShop	1.6	10	64	32
40×2	eShop	eShop	2	10	50	24
40×2,5	(eShop)	(eShop)	2.5	10	50	24
40×3	eShop	eShop	3	10	50	24
50×0,5	eShop	eShop	0.5	13	100	50
50×0,6	(eShop)	(eShop)	0.6	13	100	50
50×0,8	(eShop)	(eShop)	0.8	13	80	40
50×1	eShop	eShop	1	13	80	40
50×1,2	eShop	eShop	1.2	13	80	40
50×1,6	eShop	eShop	1.6	13	64	32
50×2	eShop	eShop	2	13	64	32
50×3	eShop	(eShop)	3	13	50	24
63×0,3	(eShop)	(eShop)	0.3	16	128	64
63×0,5	eShop	eShop	0.5	16	128	64
63×0,6	(eShop)	(eShop)	0.6	16	100	50
63×0,8	(eShop)	(eShop)	0.8	16	100	50
63×1	eShop	eShop	1	16	100	50
63×1,2	eShop	eShop	1.2	16	80	40
63×1,6	eShop	eShop	1.6	16	80	40
63×2	eShop	eShop	2	16	80	40
63×2,5	eShop	eShop	2.5	16	64	32
63×3	eShop	eShop	3	16	64	32
80×0,5	eShop	eShop	0.5	22	128	64
80×0,6	(eShop)	(eShop)	0.6	22	128	64
80×0,8	(eShop)	(eShop)	0.8	22	128	64
80×1	eShop	eShop	1	22	100	50
80×1,2	(eShop)	(eShop)	1.2	22	100	50
80×1,6	eShop	eShop	1.6	22	100	50
80×2	eShop	eShop	2	22	80	40
80×2,5	(eShop)	eShop	2.5	22	80	40
80×3	(eShop)	eShop	3	22	80	40
100×0,6	(eShop)	(eShop)	0.6	22	128	64
100×0,8	(eShop)	(eShop)	0.8	22	128	64
100×1	eShop	eShop	1	22	128	64
100×1,2	eShop	(eShop)	1.2	22	128	64
100×1,6	eShop	eShop	1.6	22	100	50
100×2	eShop	eShop	2	22	100	50
100×3	eShop	eShop	3	22	80	40
125×0,8	(eShop)	(eShop)	0.8	22	160	80
125×1	eShop	(eShop)	1	22	160	80
125×1,2	eShop	(eShop)	1.2	22	128	64
125×2	(eShop)	eShop	2	22	128	64
125×2,5	(eShop)	(eShop)	2.5	22	100	50
125×3	(eShop)	(eShop)	3	22	100	50

Garant Adapter for saw system

Ni-coated for improved wear resistance.

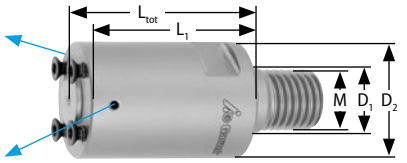
Application: Together with circular saw blades for sawing system. For slitting and parting off milling.

Note:
17 9902 – Mounting bore Ø = interface to arbor.
17 9907 – Arbor for saw blade adapter with thread see catalogue machining and clamping technology section 3. **Successor product to No. 179905.**



17 9902

for saw blade Ø	210 17 9902 Saw blade adapter	L_1	L_{tot}	Ø D_3	Mounting bore Ø	Number of attachment holes	Pitch circle of attachment holes	Set of insert screws
mm	**with bore**	mm	mm	mm	mm		mm	
125	eShop	43	45	38	16	5	31.5	219985 (TX15; 4.2 Nm)
160	eShop	43	45	50	22	5	43.5	219985 (TX15; 4.2 Nm)



17 9907

for saw blade Ø	210 17 9907 Saw blade adapter	L_1	L_{tot}	Ø D_1 h6	Ø D_2	Mounting thread M	Number of attachment holes	Pitch circle of attachment holes	Set of insert screws
mm	**with thread**	mm	mm	mm	mm			mm	
40/50	eShop	35	36.8	12.5	24	M12	3	17.5	219985 (TX15; 4.2 Nm)
63/80/100	eShop	40	41.8	17	32	M16	4	25.5	219985 (TX15; 4.2 Nm)

Garant Circular saw blades for saw system

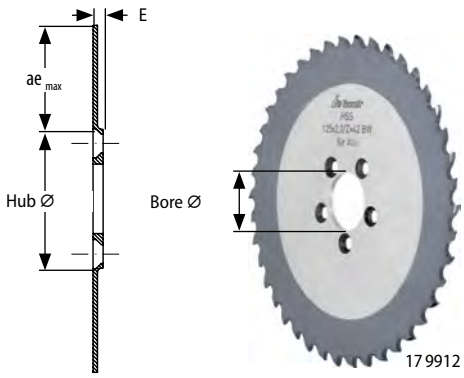
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
17 9912	**400**	**600**	**300**	50	40									20	15		300	○	●			○
17 9915		800	400	**180**	**130**	**120**	**85**	35						**90**	70		200	○	●			○
17 9925		**300**	150																●			○
17 9930				**150**	**125**	**110**	**80**												●			

HSS

ae/D	12 %	8 %	5 %
fz factor	1.0	1.15	1.25

Optimised geometry and coating. Extra deep relief ground for reliable chip evacuation.
For flat base of the slot.

Note:
- Tooth profile BW.
- The tolerances for the circular saw blade diameter are considerably better than the values permissible to DIN 1837/1838, in some cases by up to 50%.



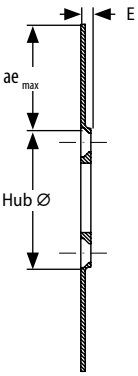
17 9912

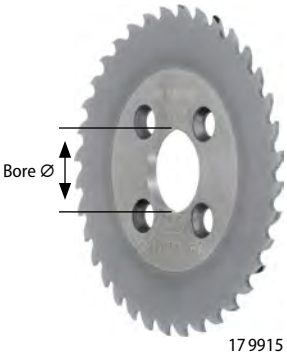
Ø×thickness	17C 17 9912 Circular saw blade	Thickness	Collar thickness E	$a_{e\,max}$	Hub Ø	Bore Ø	No. of teeth Z	Number of drive holes	Drive hole Ø	Drive hole pitch circle	suitable adapter	Alu f_z
mm	**TiAlN**	mm	mm	mm	mm	mm			mm	mm		mm
63×2	eShop	2	2.5	14	32	16	24	4	4.4	25.5	179907 63; 80; 100	0.01
80×2	eShop	2	2.5	22	32	16	30	4	4.4	25.5	179907 63; 80; 100	0.01
100×2	eShop	2	2.5	32	32	16	34	4	4.4	25.5	179907 63; 80; 100	0.02
125×2	eShop	2	2.5	40	38	22	42	5	4.4	31.5	179902 125	0.02
160×2	eShop	2	2.5	51	50	22	54	5	4.4	43.5	179902 160	0.02

Solid carbide

GARANT solid carbide circular saw blade with extra narrow cutting width in order to minimise the loss of material. The cutting speed can be **increased by a factor of 3 to 4** compared to HSS saw blades. Reinforced collar for a significant increase in the stability of the saw blade. For flat base of the slot.

Note: The tolerances for the circular saw blade diameter are considerably better than the values permissible to DIN 1837/1838, in some cases by up to 50%.
Size 40×1 – Tooth profile B.
Size 50×1–125×2 – Tooth profile BW.





17 9915

Ø×thickness	17C 17 9915 Circular saw blade	Thick-ness	Collar thick-ness E	$a_{e\,max}$	Hub Ø	Bore Ø	No. of teeth Z	Number of drive holes	Drive hole Ø	Drive hole pitch circle	suitable adapter	< 900 N f_z
mm	TiAlN	mm	mm	mm	mm	mm			mm	mm		mm
40×1	eShop	1	2.4	6	24	8	28	3	4.4	17.5	179907 40; 50	0.015
50×1	eShop	1	2.4	11	24	8	32	3	4.4	17.5	179907 40; 50	0.015
50×2	eShop	2	2.4	11	24	8	28	3	4.4	17.5	179907 40; 50	0.02
63×1	eShop	1	2.4	14	32	16	32	4	4.4	25.5	179907 63; 80; 100	0.015
63×1,5	eShop	1.5	2.4	14	32	16	28	4	4.4	25.5	179907 63; 80; 100	0.02
63×2	eShop	2	2.4	14	32	16	26	4	4.4	25.5	179907 63; 80; 100	0.025
80×1,2	eShop	1.2	2.4	22	32	16	44	4	4.4	25.5	179907 63; 80; 100	0.015
80×1,5	eShop	1.5	2.4	22	32	16	36	4	4.4	25.5	179907 63; 80; 100	0.02
80×2	eShop	2	2.4	22	32	16	34	4	4.4	25.5	179907 63; 80; 100	0.025
100×1,5	eShop	1.5	2.4	28	38	22	44	5	4,4	31,5	179902 125	0.02
100×2	eShop	2	2.4	28	38	22	42	5	4.4	31.5	179902 125	0.025
125×2	eShop	2	2.4	36	50	22	50	5	4.4	43.5	179902 160	0.025

Carbide

GARANT carbide-tipped circular saw blade for extra deep saw cuts. Unequal spacing of the saw blade teeth for smooth cutting. We recommend radial feed to minimise vibration and increase the working life of the saw blade.

17 9925 – Carbide substrate. Tooth form and number of teeth specially configured for machining aluminium.
17 9930 – Carbide substrate. Tooth form and number of teeth specially configured for machining steel. Very well suited even for steel < 1100 N/mm².



17 9925



17 9930

Ø×thickness	17C 17 9925 Circular saw blade uncoated	17C 17 9930 Circular saw blade uncoated	Thick-ness	$a_{e\,max}$	Bore Ø	No. of teeth Z 17 9925	No. of teeth Z 17 9930	Number of drive holes	Drive hole Ø	Drive hole pitch circle	suitable adapter	Alu f_z	< 900 N f_z
mm			mm	mm	mm				mm	mm		mm	mm
100×3	eShop	eShop	3	32	16	16	26	4	4.4	25.5	179907 63; 80; 100	0.02	0.02
125×3	eShop	eShop	3	42	22	16	26	5	4.4	31.5	179902 125	0.025	0.025
160×3	eShop	eShop	3	52	22	20	28	5	4.4	43.5	179902 160	0.03	0.03

Garant Disposable saw blades

On request we can also supply **disposable saw blades** (carbide-tipped and/or coated) in the following versions:

250 × 2.0 × 1.75 × 32 × 60 Z	285 × 2.0 × 1.75 × 32 × 80 Z
250 × 2.0 × 1.75 × 32 × 80 Z	360 × 2.6 × 2.25 × 40 × 60 Z
285 × 2.0 × 1.75 × 32 × 60 Z	360 × 2.6 × 2.25 × 40 × 100 Z

Saw blades tipped with Cermet are also available on request.

HSS Co5 | DIN 841 | js16

Garant Shell end mills

The end mills cut on the front face and on the circumference.

Application:

18 1000 – **Type N** = standard toothing, 30° helix.

18 1100 – **Type H** = fine toothing, 20° helix.

Note: Sizes 30×30, 35×35, 40×20, 50×25, 60×60 can only be mounted using a bore keyway.
f_z for a_e = 0.5 - 1×D.

Type N 30°



18 1000

Type H 20°



18 1100

Ø	30	35	40	50	60	75	90
a_p	0.1×D	0.09×D	0.08×D	0.06×D	0.05×D	0.04×D	0.03×D

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
18 1000				30	28	25								20	18		45	○
18 1100					28	25	22									20	45	●

Ø×width js16	1TU 18 1000	1TU 18 1100	Bore Ø H7	No. of teeth Z		f_z < 750 N
	Shell end mill			18 1000	18 1100	
mm	N	H	mm			mm
30×30	eShop	(eShop)	13	6	10	0.07
35×35	eShop	eShop	16	6	10	0.07
40×20	eShop	eShop	16	6	10	0.07
40×40	eShop	eShop	16	6	10	0.07
50×25	eShop	(eShop)	22	8	12	0.07

Ø×width js16	1TU 18 1000	1TU 18 1100	Bore Ø H7	No. of teeth Z		f_z < 750 N
	Shell end mill			18 1000	18 1100	
mm	N	H	mm			mm
50×50	eShop	eShop	22	8	12	0.07
60×30	eShop	eShop	27	8	12	0.07
60×60	eShop	eShop	27	8	12	0.07
75×35	eShop	–	27	10	–	0.07
90×35	(eShop)	(eShop)	27	10	16	0.07

HSS Co5 | DIN 1880T1 | js16

Garant Shell end mills

The end mills cut on the front face and on the circumference.

Application:

18 1500 – **Type N** = standard toothing, 30° helix.

18 1700 – **Type W** = coarse toothing, 40° helix.

Note: f_z for a_e = 0.5 - 1×D.

Type N 30°



18 1500

Type W 40°



18 1700

Ø	40	50	63	80	100
a_p	0.08×D	0.06×D	0.05×D	0.04×D	0.03×D

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
18 1500				30	28	25								20	18			○
18 1700	200	150		30														●

Ø×width js16	1TU 18 1500	1TU 18 1700	Bore Ø H7	No. of teeth Z		f_z < 750 N
	Shell end mill			18 1500	18 1700	
mm	N	W	mm			mm
40×32	eShop	eShop	16	6	3	0.07
50×36	eShop	eShop	22	8	3	0.07
63×40	eShop	eShop	27	8	4	0.07

Ø×width js16	1TU 18 1500	1TU 18 1700	Bore Ø H7	No. of teeth Z		f_z < 750 N
	Shell end mill			18 1500	18 1700	
mm	N	W	mm			mm
80×45	eShop	eShop	27	10	4	0.07
100×50	eShop	–	32	12	–	0.07

HSS Co5 | DIN 1880T1 | js16 | 27°

Garant Roughing / semi-roughing shell end mill

Relief ground profile. Wide lands permit frequent regrinding without losing the profile.

Note: f_z for a_e = 0.5 - 1×D.

Ø	40	50	60	63	80	100
a_p	0.08×D	0.06×D	0.05×D	0.05×D	0.04×D	0.03×D

NR



18 2200

NF



18 2500

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
18 2200/2500				30	28	25								20	18		45	●

Ø×width js16	18 2200	18 2500	Bore Ø H7	No. of teeth Z	< 750 N f_z
	Roughing shell end mill	Semi-roughing shell end mill			
mm	NR	NF	mm		mm
40×32	eShop	eShop	16	6	0.07
50×36	eShop	eShop	22	6	0.07
50×50	–	eShop	22	6	0.07
60×30	–	eShop	27	8	0.07
63×40	eShop	eShop	27	8	0.07
80×45	eShop	eShop	27	8	0.07
100×50	eShop	(eShop)	32	10	0.07

HSS Co5 | DIN 1880T1 | HR | js16 | 27°

Garant Roughing shell end mill

Eccentric relief ground fine knuckle-type profile.
Optimum cutting edge geometry.

Note: f_z for a_e = 0.5 - 1×D.

Ø	40	50	60	80	100
a_p	0.08×D	0.06×D	0.05×D	0.04×D	0.03×D



18 2750

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
18 2750					45	42	38	33						25	20	15	60	●

Ø×width js16	18 2750	Bore Ø H7	No. of teeth Z	< 1100 N f_z
	Roughing shell end mill			
mm	HR TiAlN	mm		mm
40×32	eShop	16	8	0.07
50×36	eShop	22	8	0.07
63×40	eShop	27	10	0.07
80×45	eShop	27	10	0.07
100×50	eShop	32	12	0.07

SIMTEK simmillQX SIMTEK milling tools type QX

SOLID CARBIDE SIDE MILLING CUTTER. SHARP TEETH FOR EFFICIENT SLOT MILLING.

High-performance side milling cutter made of solid carbide for slot milling.



We would be pleased to advise you!
Custom solutions on request.

In eight different cutting widths.

Tool diameter of 50 mm and 63 mm.

Each version available as sharp-edged or with a corner radius of 0.2.

Coatings
X700 for applications in P and K materials.
X500 for applications in M, N and S materials.

18

Note
Following an update to the range, the SIMTEK
solid carbide side milling cutter replaces the GARANT side milling cutter 18 5015.

Suitable GARANT toolholders:



300835_13/_16 302895_13/_16 306110_13/_16

HSS Co5 | DIN 885 A | Type N | js16

Garant

Side milling cutter

Staggered teeth with collar and keyway.

Application: For **slotting or cutting-off** when the side faces of the component must have an accurate and clean surface.

Note: f_z for $a_e = 0.1 \times D$.

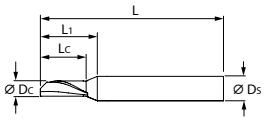


18 5820

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
18 5820		200		19	19	19								9			180	○

Ø×width js16×k11 mm	18 5820 Side milling cutter	Bore Ø H7 mm	No. of teeth Z	< 750 N f_z mm
50×3	eShop	16	14	0.04
50×4	eShop	16	14	0.04
50×5	eShop	16	14	0.04
50×6	eShop	16	14	0.04
50×8	eShop	16	14	0.04
50×10	eShop	16	14	0.04
63×3	eShop	22	16	0.05
63×4	eShop	22	16	0.05
63×5	eShop	22	16	0.05
63×6	eShop	22	16	0.05
63×8	eShop	22	14	0.05
63×10	eShop	22	14	0.05
63×12	eShop	22	14	0.05
80×3	eShop	27	18	0.06
80×4	eShop	27	18	0.06
80×5	eShop	27	18	0.06
80×6	eShop	27	18	0.06
80×8	eShop	27	16	0.06
80×10	eShop	27	16	0.06
80×12	eShop	27	16	0.06
100×3	eShop	32	22	0.06
100×4	eShop	32	22	0.06
100×5	eShop	32	22	0.06
100×6	eShop	32	22	0.06
100×8	eShop	32	18	0.06
100×10	eShop	32	18	0.06
100×12	eShop	32	18	0.06
125×4	eShop	32	24	0.09
125×5	eShop	32	24	0.09
125×6	eShop	32	24	0.09
125×8	eShop	32	20	0.09
125×10	eShop	32	20	0.09
125×12	eShop	32	20	0.09
160×6	eShop	40	26	0.11
160×8	eShop	40	26	0.11
160×10	eShop	40	22	0.11
160×12	eShop	40	22	0.11
160×14	eShop	40	22	0.11

HSS Co5 | js14 | 1 | 30° | h6

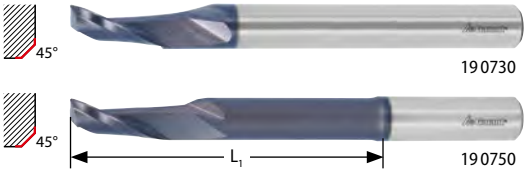


Garant Slot drill for ELU machines

Special cutting edge geometry for aluminium and plastics.
Frontal and peripheral cutting with only one cutting edge.

19 0750 – With **neck recess.**
Size 5×100 special water drainage slot drill.

Application: **For milling slots on doors and windows of aluminium or plastic using high speed special milling machines (Elu, Haffner etc.).**



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
19 0730/0750	200	120	100	78													90				○	●	

Ø×Length js14 D_c	11W 19 0730	11W 19 0750	L_c	L_1	L	Ø D_s	Corner chamfer width at 45°
	Slot drill			19 0750			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm
3×60	eShop	–	12	–	60	8	0.13
4×60	eShop	–	12	–	60	8	0.13
5×60	eShop	–	14	–	60	8	0.13
5×80	–	eShop	18	35	80	8	0.13
5×100	–	eShop	40	–	100	8	0.13

Ø×Length js14 D_c	11W 19 0730	11W 19 0750	L_c	L_1	L	Ø D_s	Corner chamfer width at 45°
	Slot drill			19 0750			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm
6×60	eShop	–	16	–	60	8	0.13
8×80	eShop	eShop	14	54	80	8	0.23
8×120	eShop	–	14	–	120	8	0.23
10×80	eShop	–	14	–	80	8	0.13

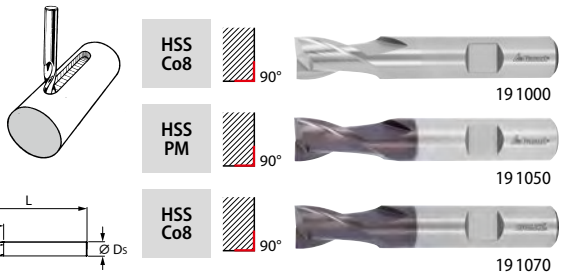
DIN 327 D | Type N | e8 | 2 | 30° | h6 DIN 1835 B

Slot drill (keyway cutter)

Centre cutting edge geometry for plunging.

19 1050 – For very high demands on the metal removal rate.
19 1070 – Economy version.

Application: For milling **keyways** (slots) or pockets from the centre of the component.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 1000		83	37	28	23	23										23	55	●		●			
19 1050		138	110	83	64	64	37	32						23	18	55	110	●		●		●	
19 1070				78	55	55								17	14	46	92	●		●		●	

Ø e8 D_c	11W 19 1000 Garant	11W 19 1050 Garant	12W 19 1070 HOLEX	L_c	L	Ø D_s	< 750 N f_z
	Slot drill						
	HSS-Co8	HSS-PM TiAlN	HSS-Co8 TiAlN				
mm				mm	mm	mm	mm
1	eShop	–	–	2.5	47	6	0.005
1,5	eShop	–	–	3	47	6	0.005
2	eShop	eShop	eShop	4	48	6	0.006
2,5	eShop	eShop	eShop	5	49	6	0.006
2,8	eShop	eShop	eShop	5	49	6	0.006
3	eShop	eShop	eShop	5	49	6	0.007
3,5	eShop	eShop	eShop	6	50	6	0.007
3,8	eShop	eShop	eShop	7	51	6	0.007
4	eShop	eShop	eShop	7	51	6	0.009
4,5	eShop	eShop	eShop	7	51	6	0.009
4,8	eShop	eShop	eShop	8	52	6	0.009
5	eShop	eShop	eShop	8	52	6	0.012
5,5	eShop	eShop	eShop	8	52	6	0.012
5,75	eShop	eShop	eShop	8	52	6	0.012
6	eShop	eShop	eShop	8	52	6	0.014
6,5	eShop	eShop	eShop	10	60	10	0.014
6,75	eShop	–	–	10	60	10	0.014
7	eShop	eShop	eShop	10	60	10	0.016
7,5	eShop	eShop	eShop	10	60	10	0.016
7,75	eShop	eShop	eShop	11	61	10	0.016
8	eShop	eShop	eShop	11	61	10	0.02
8,5	eShop	eShop	eShop	11	61	10	0.02
8,7	eShop	–	–	11	61	10	0.02
9	eShop	eShop	eShop	11	61	10	0.024
9,5	eShop	–	–	11	61	10	0.024
9,7	eShop	eShop	eShop	13	63	10	0.024
10	eShop	eShop	eShop	13	63	10	0.03
10,5	eShop	eShop	eShop	13	63	12	0.03

Ø e8 D_c	11W 19 1000 Garant	11W 19 1050 Garant	12W 19 1070 HOLEX	L_c	L	Ø D_s	< 750 N f_z
	Slot drill						
	HSS-Co8	HSS-PM TiAlN	HSS-Co8 TiAlN				
mm				mm	mm	mm	mm
11	eShop	eShop	eShop	13	70	12	0.032
11,7	eShop	–	eShop	13	70	12	0.032
12	eShop	eShop	eShop	16	73	12	0.035
12,7	eShop	–	–	16	73	12	0.035
13	eShop	eShop	eShop	16	73	12	0.038
13,7	eShop	–	–	16	73	12	0.038
14	eShop	eShop	eShop	16	73	12	0.042
14,5	eShop	–	–	16	73	12	0.042
15	eShop	eShop	eShop	16	73	12	0.045
15,7	eShop	–	–	19	79	16	0.045
16	eShop	eShop	eShop	19	79	16	0.048
16,5	eShop	–	–	19	79	16	0.048
17	eShop	eShop	eShop	19	79	16	0.051
17,7	eShop	–	–	19	79	16	0.051
18	eShop	eShop	eShop	19	79	16	0.054
19	eShop	–	–	19	79	20	0.057
19,7	eShop	–	–	22	88	20	0.057
20	eShop	eShop	eShop	22	88	20	0.06
21,7	eShop	–	–	22	88	20	0.062
22	eShop	–	–	22	88	20	0.062
24	eShop	–	–	26	102	25	0.065
25	eShop	–	–	26	102	25	0.065
26	eShop	–	–	26	102	25	0.065
28	eShop	–	–	26	102	25	0.068
30	eShop	–	–	26	102	25	0.068
32	eShop	–	–	32	112	32	0.068
36	eShop	–	–	32	112	32	0.072
40	eShop	–	–	38	130	32	0.072

HSS Co8 | DIN 844 B | Type N | e8 | 2 | 30° | h6 DIN 1835 B

Garant

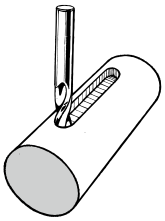
Slot drill (keyway cutter)

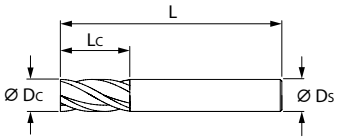
Dimensions to **DIN 844 long.**
Cutting length to **DIN 844 short.**
Centre cutting edge geometry for plunging.

Application: For milling **keyways** (slots) or pockets from the centre of the component.



19 1080





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
19 1080		83		**28**	**25**	23											23	55		●			

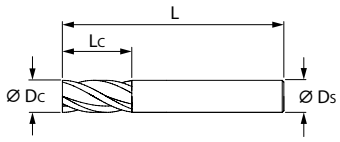
Ø e8 D_c	11W 19 1080 Slot drill	L_c	L	Ø D_s	< 750 N f_z
mm		mm	mm	mm	mm
2	eShop	7	54	6	0.006
2,5	eShop	8	56	6	0.006
3	eShop	8	56	6	0.007
3,5	eShop	10	59	6	0.007
4	eShop	11	63	6	0.008
4,5	eShop	11	63	6	0.008
5	eShop	13	68	6	0.01
5,5	eShop	13	68	6	0.01
6	eShop	13	68	6	0.012
6,5	eShop	16	80	10	0.012
7	eShop	16	80	10	0.016
7,5	eShop	16	80	10	0.016
8	eShop	19	88	10	0.018
8,5	eShop	19	88	10	0.018
9	eShop	19	88	10	0.022
9,5	eShop	19	88	10	0.022
10	eShop	22	95	10	0.028
11	eShop	22	102	12	0.028
12	eShop	26	110	12	0.034
13	eShop	26	110	12	0.036
14	eShop	26	110	12	0.038
15	eShop	26	110	12	0.042
16	eShop	32	123	16	0.042
17	eShop	32	123	16	0.046
18	eShop	32	123	16	0.046
19	eShop	38	141	20	0.05
20	eShop	38	141	20	0.054
22	eShop	38	141	20	0.054
30	eShop	45	166	25	0.06

HSS Co8 | DIN 844 B | Type W | e8 | 2 | 42° | h6 DIN 1835 B

Garant Slot drill



19 1100



Centre cutting edge geometry for plunging. Wide, fine ground chip flutes.
Exceptionally fine component surface finish - due to precisely ground cutting edges.
For slots or for milling pockets from the component centre.

Note: **Note!** Only for use in climb milling.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
19 1100		150	37	28														

Ø e8 D_C mm	11W 19 1100 Slot drill	L_c mm	L mm	Ø D_s mm	Alu f_z mm
2	eShop	7	51	6	0.006
2,5	eShop	8	52	6	0.006
3	eShop	8	52	6	0.008
3,5	eShop	10	54	6	0.008
4	eShop	11	55	6	0.012
4,5	eShop	11	55	6	0.012
5	eShop	13	57	6	0.015
5,5	eShop	13	57	6	0.015
6	eShop	13	57	6	0.018
6,5	eShop	16	66	10	0.018

Ø e8 D_C mm	11W 19 1100 Slot drill	L_c mm	L mm	Ø D_s mm	Alu f_z mm
7	eShop	16	66	10	0.018
8	eShop	19	69	10	0.024
8,5	eShop	19	69	10	0.024
9	eShop	19	69	10	0.024
10	eShop	22	72	10	0.029
12	eShop	26	83	12	0.041
14	eShop	26	83	12	0.041
16	eShop	32	92	16	0.046
18	eShop	32	92	16	0.046
20	eShop	38	104	20	0.055

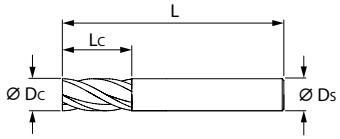
DIN 844 B | Type N | e8 | 3 | 30° | h6 DIN 1835 B

Slot drill

HSS Co8  19 1200

HSS PM  19 1250

HSS Co8  19 1260



Centre cutting teeth for plunging.
Eccentric relief ground.

19 1250 – For very high demands on the metal removal rate.
19 1260 – Economy version.

Note: **Suitable for use as a slot drill** (tolerance e8) **or an end mill.**
50 % higher metal removal rate than 2 flute slot drills.
Larger flutes than multi-flute end mills (good for soft material).
For milling keyways.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 1200		83		30	25	23										23	55	●
19 1250		138	110	83	64	64	37	32						25	18	55	110	●
19 1260		120		78	55	55								17		46	92	●

Ø e8 D_C mm	11W 19 1200 Garant HSS-Co8	11W 19 1250 Garant HSS-PM TiAlN	12W 19 1260 HOLEX HSS-Co8 TiAlN	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
1,5	eShop	–	–	7	51	6	0.002
2	eShop	eShop	eShop	7	51	6	0.003
2,5	eShop	eShop	eShop	8	52	6	0.003
3	eShop	eShop	eShop	8	52	6	0.004
3,5	eShop	eShop	eShop	10	54	6	0.004
4	eShop	eShop	eShop	11	55	6	0.007
4,5	eShop	eShop	eShop	11	55	6	0.007
5	eShop	eShop	eShop	13	57	6	0.008
5,5	eShop	eShop	eShop	13	57	6	0.008
6	eShop	eShop	eShop	13	57	6	0.01
6,5	eShop	eShop	eShop	16	66	10	0.01
7	eShop	eShop	eShop	16	66	10	0.013
7,5	eShop	–	–	16	66	10	0.013
8	eShop	eShop	eShop	19	69	10	0.016
8,5	eShop	eShop	eShop	19	69	10	0.016
9	eShop	eShop	eShop	19	69	10	0.018

Ø e8 D_C mm	11W 19 1200 Garant HSS-Co8	11W 19 1250 Garant HSS-PM TiAlN	12W 19 1260 HOLEX HSS-Co8 TiAlN	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
9,5	eShop	–	–	19	69	10	0.018
10	eShop	eShop	eShop	22	72	10	0.02
11	eShop	eShop	eShop	22	79	12	0.02
12	eShop	eShop	eShop	26	83	12	0.024
13	eShop	eShop	eShop	26	83	12	0.024
14	eShop	eShop	eShop	26	83	12	0.024
15	eShop	eShop	eShop	26	83	12	0.024
16	eShop	eShop	eShop	32	92	16	0.03
18	eShop	eShop	eShop	32	92	16	0.03
20	eShop	eShop	eShop	38	104	20	0.035
22	eShop	–	–	38	104	20	0.035
24	eShop	–	eShop	45	121	25	0.04
25	eShop	eShop	eShop	45	121	25	0.04
26	eShop	–	–	45	121	25	0.044
28	eShop	–	–	45	121	25	0.044
30	eShop	–	–	45	121	25	0.048

DIN 844 B | Type N | e8 | 3 | 30° | h6 DIN 1835 B

Garant Slot drills

Centre cutting teeth for plunging.
Eccentric relief ground.

19 1290 – For the most demanding metal removal rates.

Note: **Suitable for use as a slot drill** (tolerance e8) **or an end mill.**
50 % higher metal removal rate than 2 flute slot drills.
Larger flutes than multi-flute end mills (good for soft material).
For milling keyways.

HSS Co8

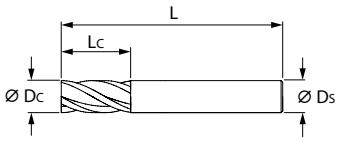


191280

HSS PM



191290



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 1280		83		**28**	**25**	23										23	55	●
19 1290		138	110	**83**	**64**	**64**	**37**	32						**23**	18	55	110	●

Ø e8 D_C	11W 19 1280	11W 19 1290	L_c	L	Ø D_s	< 750 N f_z
	Slot drills					
	HSS-Co8	HSS-PM TiAlN				
mm			mm	mm	mm	mm
3	eShop	eShop	12	56	6	0.003
3,5	eShop	–	15	59	6	0.005
4	eShop	eShop	19	63	6	0.005
4,5	eShop	–	19	63	6	0.005
5	eShop	eShop	24	68	6	0.008
5,5	eShop	–	24	68	6	0.008
6	eShop	eShop	24	68	6	0.011
8	eShop	eShop	38	88	10	0.015
10	eShop	eShop	45	95	10	0.018

Ø e8 D_C	11W 19 1280	11W 19 1290	L_c	L	Ø D_s	< 750 N f_z
	Slot drills					
	HSS-Co8	HSS-PM TiAlN				
mm			mm	mm	mm	mm
12	eShop	eShop	53	110	12	0.024
14	eShop	eShop	53	110	12	0.024
16	eShop	eShop	63	123	16	0.03
18	eShop	–	63	123	16	0.033
20	eShop	eShop	75	141	20	0.04
22	eShop	–	75	141	20	0.04
25	eShop	–	90	166	25	0.045
30	eShop	–	90	166	25	0.05

HSS Co8 | DIN 844 B | Type W | e8 | 3 | 42° | h6 DIN 1835 B

Garant Slot drills

Centre cutting teeth for plunging.
Eccentric relief ground.

- Wide, precision ground chip flutes.
- Extremely fine workpiece surfaces due to precisely ground cutting edges.
- Special rake angle for aluminium.

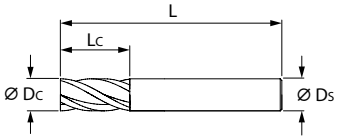
Note: For milling keyways.



19 1320



19 1340



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
19 1320/1340		**150**	37	**28**														● ●

Ø e8 D_C	11W 19 1320	11W 19 1340	L_c		L		Ø D_s	Alu f_z
	Slot drills							
			19 1320	19 1340	19 1320	19 1340		
mm			mm	mm	mm	mm	mm	mm
3	eShop	–	8	–	52	–	6	0.008
4	eShop	–	11	–	55	–	6	0.012
5	eShop	–	13	–	57	–	6	0.015
6	eShop	eShop	13	24	57	68	6	0.018
7	eShop	–	16	–	66	–	10	0.02
8	eShop	eShop	19	38	69	88	10	0.024
9	eShop	–	19	–	69	–	10	0.026
10	eShop	eShop	22	45	72	95	10	0.029
11	eShop	–	22	–	79	–	12	0.029

Ø e8 D_C	11W 19 1320	11W 19 1340	L_c		L		Ø D_s	Alu f_z
	Slot drills							
			19 1320	19 1340	19 1320	19 1340		
mm			mm	mm	mm	mm	mm	mm
12	eShop	eShop	26	53	83	110	12	0.041
14	eShop	eShop	26	53	83	110	12	0.041
15	eShop	–	26	–	83	–	12	0.041
16	eShop	eShop	32	63	92	123	16	0.046
20	eShop	eShop	38	75	104	141	20	0.055
22	eShop	eShop	38	75	104	141	20	0.058
25	eShop	eShop	45	90	121	166	25	0.065
30	eShop	eShop	45	90	121	166	25	0.07

Standard | Type N | e8 | 3 | 30° | h6

HSS Co8 90°



19 1360

HSS PM 90°

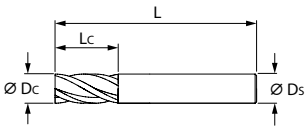


19 1380

HOLEX Mini milling cutter

Centre cutting teeth for plunging.
Eccentric relief ground. Shank similar to DIN 1835 B with shank tolerance h6. General-purpose cutting edge geometry. For use as **slot drill or end mill** in side lock arbors and collet chucks. **High cutting performance,** very competitive price. For milling keyways.

19 1380 – For the most demanding metal removal rates.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
19 1360		83		30	25	25											55			●			
19 1380		138	110	83	64	64	37	32						23	18		110	●		●		●	

Ø e8 D_c mm	12W 19 1360 HSS-Co8	12W 19 1380 HSS-PM TiAlN	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
1	eShop	–	3	34	6	0.002
1,5	eShop	eShop	3	34	6	0.002
1,8	eShop	–	3	34	6	0.002
2	eShop	eShop	4	35	6	0.003
2,3	eShop	–	4	36	6	0.003
2,5	eShop	eShop	5	36	6	0.003
2,8	eShop	eShop	5	36	6	0.003
3	eShop	eShop	5	36	6	0.003
3,3	eShop	–	5	36	6	0.003
3,5	eShop	eShop	6	37	6	0.003
3,8	eShop	eShop	7	38	6	0.003
4	eShop	eShop	7	38	6	0.005
4,3	eShop	–	7	38	6	0.005
4,5	eShop	eShop	7	38	6	0.005
4,8	eShop	eShop	8	39	6	0.005

Ø e8 D_c mm	12W 19 1360 HSS-Co8	12W 19 1380 HSS-PM TiAlN	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
5	eShop	eShop	8	39	6	0.008
5,5	eShop	eShop	8	39	6	0.008
5,75	eShop	eShop	8	39	6	0.008
6	eShop	eShop	8	39	6	0.011
6,5	–	eShop	10	42	8	0.011
7	eShop	eShop	10	42	8	0.014
7,5	eShop	eShop	10	42	8	0.014
8	eShop	eShop	11	43	8	0.018
9	–	eShop	11	48	10	0.018
9,5	–	eShop	11	48	10	0.018
10	eShop	eShop	13	50	10	0.025
12	eShop	eShop	16	58	12	0.04
16	eShop	eShop	19	64	16	0.05
20	eShop	eShop	22	78	20	0.06

Standard | Type N | e8 | 3 | 30° | h6

HSS Co8 90°



19 1400

HSS PM 90°

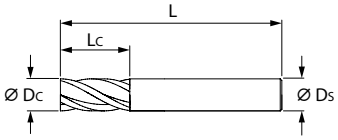


19 1420

HOLEX Mini milling cutter

Centre cutting teeth for plunging.
Eccentric relief ground. General-purpose cutting edge geometry. Shank similar to DIN 1835 B with shank tolerance h6. For use as **slot drill or end mill** in side lock arbors and collet chucks. **High cutting performance,** very competitive price. For milling keyways.

19 1420 – For the most demanding metal removal rates.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
19 1400		83		30	25	25											55			●			
19 1420		138	110	83	64	64	37	32						23	18		110	●		●		●	

Ø e8 D_c mm	12W 19 1400 HSS-Co8	12W 19 1420 HSS-PM TiAlN	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
2	eShop	eShop	7	38	6	0.003
2,5	eShop	eShop	8	39	6	0.003
3	eShop	eShop	8	39	6	0.003
3,5	eShop	eShop	10	41	6	0.003
4	eShop	eShop	11	42	6	0.005
4,5	eShop	eShop	11	42	6	0.005
5	eShop	eShop	13	44	6	0.008
5,5	eShop	eShop	13	44	6	0.008

Ø e8 D_c mm	12W 19 1400 HSS-Co8	12W 19 1420 HSS-PM TiAlN	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
6	eShop	eShop	13	44	6	0.01
6,5	–	eShop	16	48	8	0.01
7	eShop	eShop	16	48	8	0.012
7,5	–	eShop	16	48	8	0.012
8	eShop	eShop	19	51	8	0.016
8,5	–	eShop	19	56	10	0.016
9	eShop	eShop	19	56	10	0.018
10	eShop	eShop	22	59	10	0.024

DIN 844 B | Type N | k10 | 30-40° | h6 DIN 1835 B

4 | 6

End mill

Multi-flute end mill. **Eccentric relief ground.**

19 1500 – Centre cutting edge geometry for plunging.

19 1520 – For the highest demands in respect to material removal rates. **Excellent results** when **milling dry.** Size 6M–25M **MID mills:** Dimensions to **manufacturer's standard,** which lies **between** DIN 844 **short** and DIN 844 **long**. **Particularly suitable** for **mould** and **tool making**, as the **medium length** provides higher **rigidity** than long series mills to DIN 844.

19 1590 – Economy version.

HSS Co8 | 90° | 19 1500



HSS PM | 90° | 19 1520



HSS PM | 90° | MID end mill 19 1520



HSS Co8 | 90° | 19 1590

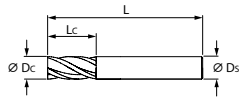


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 1500		83		**30**	**25**	25										23	55	●
19 1520		138	110	**83**	**64**	**64**	**37**	32						**23**	18	55	110	●
19 1590		120		**78**	**55**	**55**								**17**	14	46	92	●

Ø k10 D_c	11W 19 1500 Garant End mill HSS-Co8	11W 19 1520 End mill HSS-PM TiAlN	12W 19 1590 HOLEX End mill HSS-Co8 TiAlN	No. of teeth Z 19 1500	19 1520	19 1590	L_c	L	Ø D_s	< 750 N f_z
mm							mm	mm	mm	mm
2	eShop	–	–	4	–	–	7	51	6	0.003
2,5	eShop	–	–	4	–	–	8	52	6	0.003
3	eShop	eShop	eShop ■	4	4	4	8	52	6	0.005
3,5	eShop	–	–	4	–	–	10	54	6	0.005
4	eShop	eShop	eShop ■	4	4	4	11	55	6	0.008
4,5	eShop	–	–	4	–	–	11	55	6	0.008
5	eShop	eShop	eShop ■	4	4	4	13	57	6	0.01
5,5	eShop	–	–	4	–	–	13	57	6	0.01
6	eShop	eShop	eShop ■	4	4	4	13	57	6	0.014
6M	–	eShop	–	–	4	–	19	63	6	0.014
6,5	eShop	–	–	4	–	–	16	66	10	0.014
7	eShop	eShop	eShop	4	4	4	16	66	10	0.014
7,5	eShop	–	–	4	–	–	16	66	10	0.014
8	eShop	eShop	eShop ■	4	4	4	19	69	10	0.02
8M	–	eShop	–	–	4	–	28	78	10	0.02
8,5	eShop	–	–	4	–	–	19	69	10	0.02
9	eShop	eShop	eShop	4	4	4	19	69	10	0.02
10	eShop	eShop	eShop ■	4	4	4	22	72	10	0.023
10M	–	eShop	–	–	4	–	35	84	10	0.023
10,5	eShop	–	–	4	–	–	22	79	12	0.023
11	eShop	–	–	4	–	–	22	79	12	0.025
11,5	eShop	–	–	4	–	–	22	79	12	0.025
12	eShop	eShop	eShop ■	4	4	4	26	83	12	0.028
12M	–	eShop	–	–	4	–	40	97	12	0.028
13	eShop	eShop	eShop	4	4	4	26	83	12	0.028
14	eShop	eShop	eShop ■	4	4	4	26	83	12	0.028
15	eShop	eShop	eShop ■	4	4	4	26	83	12	0.028
16	eShop	eShop	eShop ■	4	6	4	32	92	16	0.034
16M	–	eShop	–	–	6	–	48	108	16	0.034
18	eShop	eShop	eShop	4	6	4	32	92	16	0.034
20	eShop	eShop	eShop ■	4	6	4	38	104	20	0.039
20M	–	eShop	–	–	6	–	58	122	20	0.039
22	eShop	eShop	eShop	4	6	4	38	104	20	0.042
24	eShop	–	–	4	–	–	45	121	25	0.042
25	eShop	eShop	eShop	4	6	6	45	121	25	0.046
25M	–	eShop	–	–	6	–	68	144	25	0.046
26	eShop	–	–	6	–	–	45	121	25	0.046
28	eShop	–	–	6	–	–	45	121	25	0.05
30	eShop	–	–	6	–	–	45	121	25	0.05
32	eShop	–	–	6	–	–	53	133	32	0.05
35	eShop	–	–	6	–	–	53	133	32	0.056
40	eShop	–	–	6	–	–	63	155	32	0.06

HSS Co8 | DIN 844 B | Type N | k10 | 30° | h6 DIN 1835 B

5 6 7



Garant Milling cutter

Multi-flute end mill. End face recessed.
Eccentric relief ground.



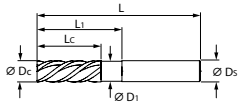
19 1530

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 1530		83		**30**	**25**	25										23	55	●

Ø k10 D_C mm	11W 19 1530 End mm	No. of teeth Z	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
5	eShop	5	24	68	6	0.008
6	eShop	5	24	68	6	0.012
7	eShop	5	30	80	10	0.012
8	eShop	5	38	88	10	0.018
9	eShop	5	38	88	10	0.018
10	eShop	5	45	95	10	0.03
11	eShop	5	45	102	12	0.03
12	eShop	5	53	110	12	0.04
14	eShop	5	53	110	12	0.04

Ø k10 D_C mm	11W 19 1530 End mm	No. of teeth Z	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
16	eShop	6	63	123	16	0.045
18	eShop	6	63	123	16	0.045
20	eShop	6	75	141	20	0.048
22	eShop	6	75	141	20	0.048
25	eShop	6	90	166	25	0.05
30	eShop	7	90	166	25	0.055
32	eShop	7	106	186	32	0.055
40	eShop	7	125	217	32	0.06

HSS PM | DIN 844 B | Type N | k10 | 4 | 50° | h6 DIN 1835 B



Garant Milling cutter

Multi-flute end mill, for highest metal removal rate demands.
Centre cutting edge geometry for plunging. **Eccentric relief ground.**
For peripheral milling as a finishing operation, **producing very high surface finish quality.**
Advantage: **Excellent results** when **milling dry.**

Ground recess



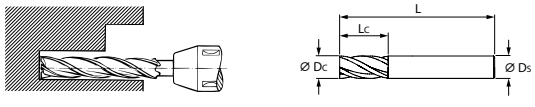
19 1581

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 1581		138	110	**83**	**64**	**64**	**37**	32						**23**	18	55	110	●

Ø k10 D_C mm	11W 19 1581 End mm HSS-PM TiAlN	L_c mm	L_1 mm	Ø D_1 mm	L mm	Ø D_s mm	Corner chamfer width at 45° mm	< 750 N f_z mm
6	eShop	13	21	5.7	57	6	0.2	0.016
8	eShop	19	–	–	69	10	0.2	0.024
10	eShop	22	32	9.7	72	10	0.2	0.038
12	eShop	26	38	11.5	83	12	0.25	0.058
14	eShop	26	–	–	83	12	0.25	0.058

Ø k10 D_C mm	11W 19 1581 End mm HSS-PM TiAlN	L_c mm	L_1 mm	Ø D_1 mm	L mm	Ø D_s mm	Corner chamfer width at 45° mm	< 750 N f_z mm
16	eShop	32	44	15.5	92	16	0.25	0.066
18	eShop	32	–	–	92	16	0.3	0.066
20	eShop	38	54	19.5	104	20	0.3	0.076
25	eShop	45	65	24	121	25	0.3	0.076

HSS Co8 | Type N | k10 | 5 | 30° | h6 DIN 1835 B



Garant Milling cutter

Multi-flute end mill. End face recessed.
Advantage: Particularly for machining at recessed or difficult to access places or for milling deep opened ended pockets in one operation.

19 1620

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 1620		83		**28**	**23**	23										23	55	●

Ø k10 D_C mm	11W 19 1620 End mm	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
6	eShop	56	100	6	0.01
8	eShop	63	106	10	0.02
10	eShop	70	112	10	0.03
12	eShop	75	125	12	0.035

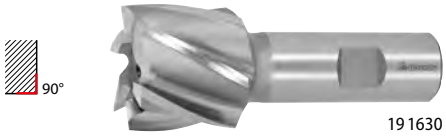
Ø k10 D_C mm	11W 19 1620 End mm	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
14	eShop	75	125	12	0.038
16	eShop	85	140	16	0.04
18	eShop	100	160	16	0.04
20	eShop	110	180	20	0.045

HSS Co5 | Type N | k10 | 30° | h6 DIN 1835 B | 6 | 8

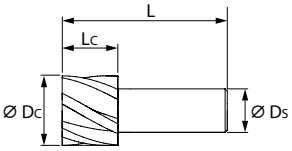
Garant Milling cutter

Multi-flute end mill. End face recessed.

Advantage: For milling at low cutting depths (predominantly face milling).
Very reliable cutter, due to low load on the machine spindle.



19 1630



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 1630		83		**28**	**23**	23										23	55	●		●			

Ø k10 D_c	11W	19 1630 End mill	No. of teeth Z	L_c	L	Ø D_s	< 750 N f_z
mm				mm	mm	mm	mm
30		eShop	6	30	90	20	0.08
35		eShop	6	30	90	20	0.08
40		eShop	6	32	95	25	0.1
50		eShop	8	36	100	32	0.12

HSS E-SPM | DIN 844 B | Type N | 0 –0.03 | 4 | 38° | ≠ | ≠ | a_e 0.3×D | h6 DIN 1835 B | HPC

HOLEX Milling cutter set HPC

For roughing and finishing, multi-tooth with general purpose geometry.
One each end mill No. 191637 Ø 6; 8; 10; 12 and 16 mm.

Supplied with: 5 pieces.

Note: For cutting data recommendations see item 191637.





19 1639_SET

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
19 1639					74	64	42	32						26	21			●		●		●	●

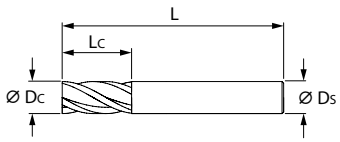
Type			SET
12W 19 1639	End mill SET HSS-E-SPM	TiAlN	eShop

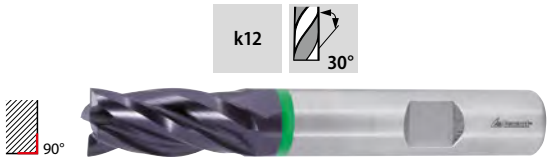
HSS E-SPM | DIN 844 B | Type N | 4 | ≠ | a_e 0.5×D | h6 DIN 1835 B | HPC

Milling cutter HPC

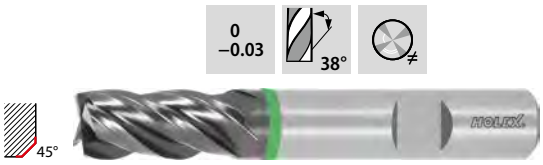
19 1635 – Special **SPM** substrate with very high cobalt content.
Combines the **hardness of solid carbide** and the **toughness of PM steel.**
Multi-flute end mill with universal geometry.
Can be used as a finishing end mill, semi-roughing or roughing end mill.

19 1637 – Very high-performance substrate for machining steel and stainless steel materials.





19 1635



19 1637

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 1635		159	125	95	74	74	42	32						26	21	63	125	●		●		●	●
19 1637					74	64	42	32						26	21			●		●		●	●

Ø D_c	11W 19 1635 Garant	12W 19 1637 HOLEX	L_c		L	Ø D_s		< 1100 N f_z
	End mill							
	HSS-E-SPM HPC		19 1635	19 1637		19 1635	19 1637	
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
3	eShop	eShop	8	8	52	6	6	0.008
3,5	eShop	–	10	–	54	6	–	0.008
4	eShop	eShop	11	11	55	6	6	0.012
4,5	eShop	–	11	–	55	6	–	0.012
5	eShop	eShop	13	13	57	6	6	0.012
6	eShop	eShop	13	13	57	6	6	0.016
7	eShop	–	16	–	66	10	–	0.016
8	eShop	eShop	19	19	69	10	8	0.024
9	eShop	–	19	–	69	10	–	0.024
10	eShop	eShop	22	22	72	10	10	0.038
12	eShop	eShop	26	26	83	12	12	0.052
14	eShop	eShop	27	26	83	12	12	0.06
16	eShop	eShop	32	32	92	16	16	0.066
18	eShop	eShop	32	32	92	16	16	0.07
20	eShop	eShop	38	38	104	20	20	0.075
25	eShop	eShop	45	45	121	25	25	0.08

HSS Co8 | DIN 844 B | NF | k10 | 3 | 25° | h6 DIN 1835 B

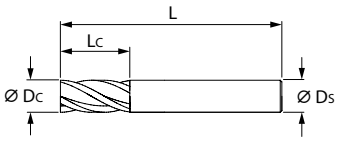
Garant Semi-roughing end mill

Relief ground truncated-type roughing profile.
Centre cutting teeth for plunging.
The wide tooth lands can be re-ground frequently without losing the profile.
Universal cutter for profile milling or for plunging.

Advantage: Compared to multi–flute cutters, **better chip evacuation due to larger flutes.**



19 1700



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 1700		83		**30**	**25**	25										23	55	○		●			

Ø k10 D_c	11W	19 1700	L_c	L	Ø D_s	Corner chamfer width at 45°	< 750 N f_z
		Semi-roughing end mill					
mm			mm	mm	mm	mm	mm
8		eShop	38	88	10	0.3	0.016
10		eShop	45	95	10	0.3	0.025
12		eShop	53	110	12	0.5	0.04
14		eShop	53	110	12	0.5	0.04
16		eShop	63	123	16	0.5	0.05
20		eShop	75	141	20	0.5	0.06

HSS Co8 | DIN 844 B | NF | k12 | 27-30° | h6 DIN 1835 B | 4 | 5 | 6

Garant Semi-roughing end mill

19 1710 – **Relief ground fine pitch semi-roughing profile.**
19 1720 – Size 10 – 30 centre cutting teeth for plunging.
or a considerable performance improvement with special ground **chip breaker flutes.**

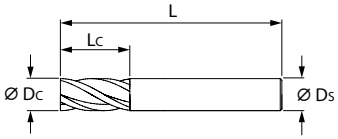
Advantage:
19 1720 – The chip breaker flutes **facilitate chip evacuation** and at the same time ensure a **good component surface finish.**



19 1710



19 1720



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 1710		83		**30**	**25**	25										23	55	●		●			
19 1720		120		**78**	**55**	**55**								**17**	14	46	92	●		●		○	

Ø k12 D_c	11W	19 1710	11W	19 1720	No. of teeth Z		L_c	L	Ø D_s	< 750 N f_z
		Semi-roughing end mill			19 1710	19 1720				
mm				TiAlN			mm	mm	mm	mm
6		eShop		eShop	4	4	13	57	6	0.012
7		eShop		eShop	4	4	16	66	10	0.012
8		eShop		eShop	4	4	19	69	10	0.018
9		eShop		eShop	4	4	19	69	10	0.018
10		eShop		eShop	4	4	22	72	10	0.028
11		eShop		eShop	4	4	26	79	12	0.028
12		eShop		eShop	4	4	26	83	12	0.042
14		eShop		eShop	4	4	26	83	12	0.042
16		eShop		eShop	4	4	32	92	16	0.05
18		eShop		eShop	4	4	32	92	16	0.05
20		eShop		eShop	4	4	38	104	20	0.06
22		eShop		eShop	5	4	38	104	20	0.06
25		eShop		eShop	5	4	45	121	25	0.064
28		–		eShop	–	6	45	121	25	0.068
30		eShop		eShop	5	6	45	121	25	0.068

HSS Co8 | Standard | NF | js12 | 4 | 30° | h6 DIN 1835 B

Garant

High performance milling cutter

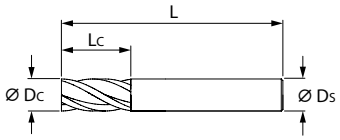
Multi-flute mills **with ground chip breaker on flutes.**
End cutting teeth for plunging.
Special surface treatment.
Advantage: Applicable as finishing cutter with particularly high cutting performance.



19 1850



19 1870



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 1850/1870		83		**28**	**23**	23										23	55	●		●			

Ø js12 D_c	11W 19 1850	11W 19 1870	L_c		L		Ø D_s	< 750 N f_z
	High performance end mill		19 1850	19 1870	19 1850	19 1870		
mm			mm	mm	mm	mm	mm	mm
6	eShop	eShop	15	25	60	65	6	0.012
7	eShop	eShop	20	35	65	80	10	0.012
8	eShop	eShop	20	35	65	80	10	0.018
9	eShop	eShop	25	45	75	95	12	0.018
10	eShop	eShop	25	45	75	95	12	0.03
11	eShop	eShop	30	55	80	105	12	0.03
12	eShop	eShop	30	55	80	110	12	0.04
13	eShop	eShop	35	55	90	110	16	0.04
14	eShop	eShop	35	55	90	110	16	0.04
15	eShop	eShop	40	65	95	120	16	0.04
16	eShop	eShop	40	65	95	120	16	0.05
17	eShop	–	40	–	105	–	20	0.05
18	eShop	eShop	40	65	105	130	20	0.05
20	eShop	eShop	45	75	110	140	20	0.06
22	eShop	–	45	–	110	–	20	0.06
24	eShop	–	50	–	120	–	25	0.07
25	eShop	eShop	50	90	120	160	25	0.07

DIN 844 B | NR | js12 | 3 | 25° | h6 DIN 1835 B

Roughing end mill

Relief ground knuckle form profile.
Centre cutting teeth for plunging.
Universal end mills for profile milling or for plunging.

19 2445 – For the most demanding metal removal rates.
19 2450 – Economy version.

Advantage: Compared to multi–flute cutters, **better chip evacuation due to larger flutes.**

HSS Co8 | 45°



19 2400

HSS PM | 45°

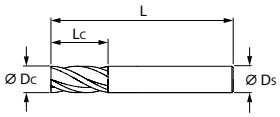


19 2445

HSS Co8 | 45°



19 2450



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 2400		83		**28**	**23**	23										23	55	●		●			
19 2445		138		**83**	**64**	**64**	**37**	32						**23**	18	55	110	●		●		●	
19 2450		120		**78**	**55**	**55**								**17**	14	46	92	●		●			

Ø js12 D_c	11W 19 2400 Garant HSS-Co8	11W 19 2445 HSS-PM TiAlN	12W 19 2450 HOLEX HSS-Co8 TiAlN	L_c	L	Ø D_s	Corner chamfer width at 45°	< 750 N f_z
	Roughing end mill							
mm				mm	mm	mm	mm	mm
6	eShop	eShop	eShop	13	57	6	0.3	0.01
7	eShop	eShop	eShop	16	66	10	0.3	0.01
8	eShop	eShop	eShop	19	69	10	0.3	0.015
9	eShop	eShop	eShop	19	69	10	0.4	0.015
10	eShop	eShop	eShop	22	72	10	0.4	0.025
11	eShop	–	eShop	22	79	12	0.6	0.025
12	eShop	eShop	eShop	26	83	12	0.6	0.03
14	eShop	eShop	eShop	26	83	12	0.6	0.03
15	eShop	–	eShop	26	83	12	0.6	0.03
16	eShop	eShop	eShop	32	92	16	0.6	0.04
18	eShop	eShop	eShop	32	92	16	0.6	0.04
20	eShop	eShop	eShop	38	104	20	0.6	0.05
22	eShop	–	–	38	104	20	0.6	0.05
25	eShop	eShop	eShop	45	121	25	0.6	0.055

DIN 844 B | WR | js14 | 3 | 36° | h6 DIN 1835 B

Garant Roughing end mill

Relief ground knuckle form profile.
Centre cutting teeth for plunging.

- Wide, precision ground chip flutes.
- Special chip angle for aluminium and non-ferrous metals.

19 2541 – For the most demanding metal removal rates.

Advantage: Suitable **for high machining volumes** due to the large flutes.

HSS Co8 | 45°

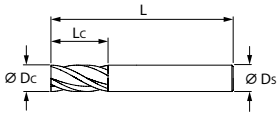


19 2520

HSS PM | 45°



19 2541



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
19 2520	**138**	**83**												9					●		○		
19 2541		**138**												23					●		●		

Ø js14 D_c	11W 19 2520 HSS-Co8	11W 19 2541 HSS-PM TiAlN	L_c	L	Ø D_s	Corner chamfer width at 45° 19 2520	Corner chamfer width at 45° 19 2541	Alu f_z
	Roughing end mill							
mm			mm	mm	mm	mm	mm	mm
10	eShop	eShop	45	95	10	0.3	0.5	0.04
12	eShop	eShop	53	110	12	0.5	0.7	0.05
14	eShop	eShop	53	110	12	0.5	0.7	0.055
16	eShop	eShop	63	123	16	0.5	0.7	0.075
18	eShop	eShop	63	123	16	0.5	0.7	0.075
20	eShop	eShop	75	141	20	0.5	1	0.08
22	eShop	–	75	141	20	0.5	–	0.08
25	eShop	eShop	90	166	25	0.5	1	0.09

HSS Co8 | DIN 844 B | NR | k12 | 30° | h6 DIN 1835 B

4 5 6

Garant Roughing end mill

With relief ground knuckle profile. The wide teeth lands permit multiple re-grinding without losing the profile.

19 2600 – Up to size 20 end cutting teeth profile for plunging.

19 2605 – Sizes 6M to 25M – **MID mills.** Dimensions to **factory standard, between** DIN 844 **short**and DIN 844 **long**.

19 2605/2610 – End face geometry for plunging and unequal spacing of the teeth.



19 2600

≤ 20 mm >20 mm

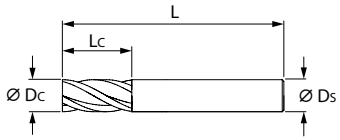


19 2605



19 2610

a_e 0.15×D



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 2600		83		**30**	**25**	**25**	12									23		●		●			
19 2605		120		**78**	**55**	**55**	**29**	25						**17**	**14**	46	90	●		●		○	
19 2610		100		**60**	**45**	**45**								**13**	11	36	73	●		●		○	

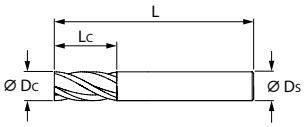
Ø k12 D_c	11W 19 2600	11W 19 2605	11W 19 2610	No. of teeth Z	L_c		L			Ø D_s	Corner chamfer width at 45°	< 750 N f_z	< 750 N f_z
	Roughing end mill				19 2600 19 2605	19 2610	19 2600	19 2605	19 2610			19 2600 19 2605	19 2610
		HSS-Co8											
mm		TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	eShop	4	13	24	57	57	68	6	0.5	0.006	0.01
6M	–	eShop	–	4	19	–	–	63	–	6	0.5	0.006	–
7	eShop	eShop	eShop	4	16	30	66	66	80	10	0.5	0.006	0.01
8	eShop	eShop	eShop	4	19	38	69	69	88	10	0.5	0.09	0.014
8M	–	eShop	–	4	28	–	–	78	–	10	0.5	0.09	–
9	eShop	eShop	eShop	4	19	38	69	69	88	10	0.5	0.09	0.014
10	eShop	eShop	eShop	4	22	45	72	72	95	10	0.5	0.014	0.019
10M	–	eShop	–	4	35	–	–	84	–	10	0.5	0.014	–
11	eShop	eShop	eShop	4	22	45	79	79	102	12	0.5	0.014	0.019
12	eShop	eShop	eShop	4	26	53	83	83	110	12	0.5	0.021	0.029
12M	–	eShop	–	4	40	–	–	97	–	12	0.5	0.021	–
13	eShop	eShop	eShop	4	26	53	83	83	110	12	0.5	0.021	0.029
14	eShop	eShop	eShop	4	26	53	83	83	110	12	0.5	0.021	0.029
15	eShop	eShop	eShop	4	26	53	83	83	110	12	0.5	0.021	0.029
16	eShop	eShop	eShop	4	32	63	92	92	123	16	0.5	0.025	0.047
16M	–	eShop	–	4	45	–	–	108	–	16	0.5	0.025	–
17	eShop	–	–	4	32	–	92	–	–	16	0.5	0.025	–
18	eShop	eShop	eShop	4	32	63	92	92	123	16	0.5	0.025	0.047
19	eShop	–	–	4	32	–	92	–	–	16	0.5	0.025	–
20	eShop	eShop	eShop	4	38	75	104	104	141	20	0.5	0.031	0.057
20M	–	eShop	–	4	58	–	–	122	–	20	0.5	0.031	–
22	eShop	eShop	eShop	5	38	75	104	104	141	20	0.5	0.031	0.057
24	eShop	–	–	5	45	–	121	–	–	25	0.5	0.031	–
25	eShop	eShop	eShop	5	45	90	121	121	166	25	0.5	0.031	0.061
25M	–	eShop	–	5	68	–	–	144	–	25	0.5	0.031	–
26	eShop	–	–	5	45	–	121	–	–	25	0.5	0.031	–
28	eShop	eShop	eShop	5	45	90	121	121	166	25	0.5	0.031	0.061
30	eShop	eShop	eShop	5	45	90	121	121	166	25	0.5	0.031	0.061
32	eShop	eShop	eShop	6	53	106	133	133	186	32	0.5	0.031	0.066
35	eShop	–	–	6	53	–	133	–	–	32	0.5	0.031	–
40	eShop	–	eShop	6	63	125	155	–	217	32	0.5	0.031	0.066

HSS Co8 | DIN 844 | HR | 30° | h6 DIN 1835 B

3 4 5

Roughing end mill

Relief ground fine pitch knuckle form profile.
Centre cutting teeth for plunging.
19 2850 – Economy version.



±0.12 | 45°


19 2840

js12 | 45°


19 2850

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 2840		120		78	55	55	29	25						17	14	46	92	●		●		○	
19 2850		120		78	55	55								17			92			●		○	

Ø D_c	11W 19 2840 Garant	12W 19 2850 HOLEX	No. of teeth Z		L_c	L	Ø D_s	Corner chamfer width at 45°		< 900 N f_z
	Roughing end mill		19 2840	19 2850				19 2840	19 2850	
mm	TiAlN	TiAlN			mm	mm	mm	mm	mm	mm
4	eShop	–	3	–	12	55	6	0.3	–	0.007
5	eShop	–	3	–	13	57	6	0.3	–	0.007
6	eShop	eShop ■	3	3	13	57	6	0.3	0.3	0.01
7	eShop	–	3	–	16	66	10	0.3	–	0.01
8	eShop	eShop ■	4	3	19	69	10	0.3	0.3	0.014
9	eShop	–	4	–	19	69	10	0.3	–	0.014
10	eShop	eShop ■	4	4	22	72	10	0.3	0.3	0.018
11	eShop	–	4	–	22	79	12	0.3	–	0.018
12	eShop	eShop	4	4	26	83	12	0.3	0.4	0.026
13	eShop	–	4	–	26	83	12	0.3	–	0.026
14	eShop	eShop	4	4	26	83	12	0.3	0.4	0.026
16	eShop	eShop	4	4	32	92	16	0.3	0.4	0.033
18	eShop	–	4	–	32	92	16	0.3	–	0.033
20	eShop	eShop ■	4	4	38	104	20	0.3	0.4	0.043
22	eShop	–	5	–	38	104	20	0.3	–	0.043
25	eShop	–	5	–	45	121	25	0.3	–	0.054
28	eShop	–	5	–	45	121	25	0.3	–	0.062
30	eShop	–	5	–	45	121	25	0.3	–	0.065

HSS E-SPM | HRF | k12 | 30° | h6 DIN 1835 B | HPC

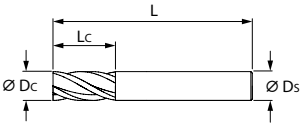
3 4 5 6

Garant Roughing end mill HPC

Special **SPM** substrate with very high cobalt content.
Combines the **hardness of solid carbide** and the **toughness of PM steel.**
Centre cutting teeth profile for plunging.
Application: **For very high metal removal rates and increased machining volumes on stainless steels.**

DIN 327 | 45°


19 2852



DIN 844 | 45°


19 2855

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
19 2852/2855		159		95	74	74	42							26	21	20		○		●	●	○	

Ø k12 D_c	11W 19 2852	11W 19 2855	No. of teeth Z	L_c		L		Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z
	Roughing end mill HPC HSS-E-SPM			19 2852	19 2855	19 2852	19 2855			
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	3	8	13	52	57	6	0.3	0.008
8	eShop	eShop	4	11	19	61	69	10	0.3	0.012
10	eShop	eShop	4	13	22	63	72	10	0.3	0.019
12	eShop	eShop	4	16	26	73	83	12	0.3	0.029
14	eShop	eShop	4	16	26	73	83	12	0.3	0.03
16	eShop	eShop	5	19	32	79	92	16	0.3	0.034
18	eShop	eShop	5	19	32	79	92	16	0.3	0.038
20	eShop	eShop	5	22	38	88	104	20	0.3	0.042
25	eShop	eShop	5	26	45	102	121	25	0.3	0.047
32	eShop	eShop	6	32	53	112	133	32	0.3	0.055

HSS PM | DIN 844 | HR | 30° | h6 DIN 1835 B

3 4 5 6

Roughing end mill

Relief ground fine pitch knuckle form profile.
Centre cutting teeth for plunging.

19 2860 – Size 6M to 25M – **MID mills:** Dimensions to **manufacturer's standard**,which is **between** DIN 844 **stub** and DIN 844 **long**.
19 2890 – Economy version.

±0.12 | 45°

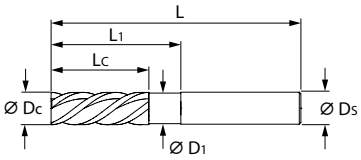


19 2860

k12 | 45°



19 2890



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
19 2860		138		**83**	**64**	**64**	**37**	**32**						**23**	18	55	110	●		●		●	
19 2890		138		**83**	**64**	**64**	**37**	32						**23**	18		110	●		●		●	

Ø D_c	11W 19 2860 Garant	12W 19 2890 HOLEX	No. of teeth Z		L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z
	Roughing end mill HSS-PM		19 2860	19 2890		19 2860	19 2860				
mm	TiAlN	TiAlN			mm	mm	mm	mm	mm	mm	mm
4	eShop	–	3	–	12	–	–	55	6	0.3	0.006
5	eShop	–	3	–	13	–	–	57	6	0.3	0.006
6	eShop	eShop	4	4	13	20	5.5	57	6	0.3	0.008
6M	eShop	–	4	–	19	26	5.5	63	6	0.3	0.008
7	eShop	–	4	–	16	–	–	66	10	0.3	0.008
8	eShop	eShop	4	4	19	–	–	69	10	0.3	0.015
8M	eShop	–	4	–	28	–	–	78	10	0.3	0.015
9	eShop	–	5	–	19	–	–	69	10	0.3	0.015
10	eShop	eShop	5	5	22	31	9.5	72	10	0.3	0.024
10/4	eShop	–	4	–	22	31	9.5	72	10	0.3	0.024
10M	eShop	–	5	–	35	43	9.5	84	10	0.3	0.024
11	eShop	–	5	–	22	–	–	79	12	0.3	0.024
12	eShop	eShop	5	5	26	–	–	83	12	0.3	0.033
12/4	eShop	–	4	–	26	37	11.5	83	12	0.3	0.033
12M	eShop	–	5	–	40	51	11.5	97	12	0.3	0.033
13	eShop	–	5	–	26	–	–	83	12	0.3	0.033
14	eShop	eShop	5	5	26	–	–	83	12	0.3	0.033
14/4	eShop	–	4	–	26	–	–	83	12	0.3	0.033
15	eShop	–	5	–	26	–	–	83	12	0.3	0.033
16	eShop	eShop	5	5	32	43	15.5	92	16	0.3	0.041
16/4	eShop	–	4	–	32	43	15.5	92	16	0.3	0.041
16M	eShop	–	5	–	48	59	15.5	108	16	0.3	0.041
18	eShop	eShop	5	5	32	–	–	92	16	0.3	0.041
20	eShop	eShop	5	5	38	53	19.5	104	20	0.3	0.048
20/4	eShop	–	4	–	38	53	19.5	104	20	0.3	0.048
20M	eShop	–	5	–	58	71	19.5	122	20	0.3	0.048
22	eShop	–	5	–	38	–	–	104	20	0.3	0.052
25	eShop	eShop	6	5	45	64	24.5	121	25	0.3	0.052
25M	eShop	–	6	–	68	87	24.5	144	25	0.3	0.054
30	eShop	–	6	–	45	–	–	121	25	0.3	0.064
32	–	eShop	–	6	53	–	–	133	32	0.3	0.064

HSS E-SPM | DIN 844 | HRF | k12 | 45° | h6 DIN 1835 B | MTC

3 4 5

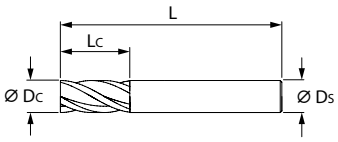
Garant Roughing end mill MTC

SPM substrate with very high cobalt content. Combines the **hardness of solid carbide** with the **toughness of PM steel. Dynamic special knuckle profile for roughing.**
For use as a universal roughing end mill Centre cutting edge geometry for plunging.

Application: **For very high metal removal rates and increased machining volumes.** Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.



19 2895



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
19 2895				95	75	75	40	35						25	20	14		●		●	●	○	●

Ø k12 D_c	11W 19 2895	No. of teeth Z	L_c	L	Ø D_s	Corner chamfer width at 45°	< 1100 N f_z
	Roughing end mill MTC						
	HSS-E-SPM						
mm	TiAlN		mm	mm	mm	mm	mm
6	eShop	3	13	57	6	0.2	0.014
8	eShop	4	19	69	10	0.2	0.02
10	eShop	4	22	72	10	0.2	0.032
12	eShop	4	26	83	12	0.2	0.044
14	eShop	4	26	83	12	0.2	0.051
16	eShop	5	32	92	16	0.2	0.053
18	eShop	5	32	92	16	0.2	0.059
20	eShop	5	38	104	20	0.2	0.065

DIN 844 | HR | 30° | a_e 0.15×D | h6 DIN 1835 B

4 5 6

Roughing end mill

Relief ground fine pitch knuckle form profile.
Centre cutting teeth for plunging.
19 2925 – For the most demanding metal removal rates.
19 2930 – Economy version.

Advantage:
19 2925 – Excellent results when milling dry.



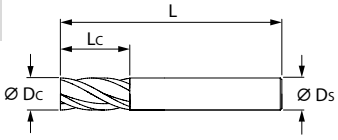
19 2925

HSS PM | k12



19 2930

HSS Co8 | js12



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N					
19 2925		138	110	83	64	64	37	32						23	18	55	110	●		●		●	
19 2930		120	101	78	55									17			92	○		●		○	

Ø D_c	11W 19 2925 Garant	12W 19 2930 HOLEX	No. of teeth Z	L_c	L	Ø D_s	Corner chamfer width at 45°		< 900 N f_z
	Roughing end mill								
	HSS-PM	HSS-Co8					19 2925	19 2930	
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm
10	eShop	eShop	4	45	95	10	0.5	0.18	0.02
12	eShop	eShop	4	53	110	12	0.5	0.18	0.034
14	eShop	–	4	53	110	12	0.5	–	0.034
16	eShop	eShop	4	63	123	16	0.5	0.25	0.039
18	eShop	–	4	63	123	16	0.5	–	0.039
20	eShop	eShop	4	75	141	20	0.5	0.25	0.046
25	eShop	–	5	90	166	25	0.5	–	0.046
32	eShop	–	6	106	186	32	0.5	–	0.046

HSS Co8 | NR | k12 | 30° | h6 DIN 1835 B

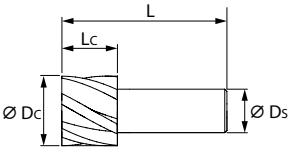
5 | 6

Garant Roughing end mill

Relief ground knuckle form profile.
End face recessed. Wide lands permit frequent regrinding without losing the profile.
Advantage: For roughing at low cutting depths (predominantly face milling).
Very reliable, due to lower load on the machine spindle.



19 2970



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 2970		83		**28**	**23**	23	12									23	55	●

Ø k12 D_c mm	11W 19 2970 Roughing end mill	No. of teeth Z	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
30	eShop	5	30	90	20	0.055
35	eShop	6	30	90	20	0.055

Ø k12 D_c mm	11W 19 2970 Roughing end mill	No. of teeth Z	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
40	eShop	6	32	95	25	0.055

HSS Co5 | DIN 850 D/F | e8 | h6 DIN 1835 B

Garant Woodruff keyseating cutter

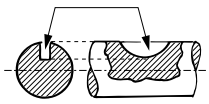
Peripheral cutting, alternate set teeth (staggered).
The sides of the teeth are ground to give clearance and thus cannot jam in the component.
Special surface treatment.

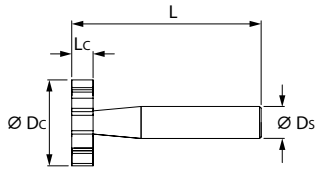
Note: For milling Woodruff keyways to DIN 6888 or for milling small slots.



19 4010

Woodruff keyway





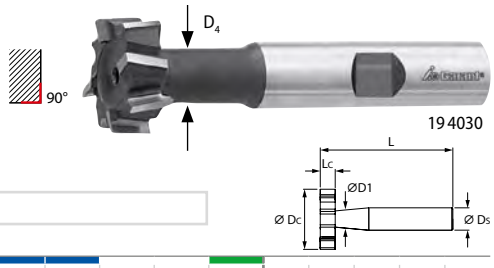
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 4010	250	**70**		**35**	**28**											22	35	●

Ø D_c × L_c h11 × e8 mm	11W 19 4010 Woodruff keyseating cutter	No. of teeth Z	for Woodruff keyways to DIN 6888 mm	L mm	Ø D_s mm	< 750 N f_z mm
10,5×2	eShop	6	2.0×3.7	50	6	0.045
10,5×2,5	eShop	6	2.5×3.7	50	6	0.045
10,5×3	eShop	6	3.0×3.7	50	6	0.045
13,5×2	eShop	10	2.0×5.0	56	10	0.06
13,5×2,5	eShop	10	2.5×5.0	56	10	0.06
13,5×3	eShop	10	3.0×5.0	56	10	0.06
13,5×4	eShop	10	4.0×5.0	56	10	0.06
16,5×2,5	eShop	10	2.5×6.5	56	10	0.06
16,5×3	eShop	10	3.0×6.5	56	10	0.06
16,5×4	eShop	10	4.0×6.5	56	10	0.06
16,5×5	eShop	10	5.0×6.5	56	10	0.06
19,5×3	eShop	10	3.0×7.5	56	10	0.06
19,5×4	eShop	10	4.0×7.5	56	10	0.06
19,5×5	eShop	10	5.0×7.5	63	10	0.06
22,5×4	eShop	10	4.0×9.0	63	10	0.08
22,5×5	eShop	10	5.0×9.0	63	10	0.08
22,5×6	eShop	10	6.0×9.0	63	10	0.08

Ø D_c × L_c h11 × e8 mm	11W 19 4010 Woodruff keyseating cutter	No. of teeth Z	for Woodruff keyways to DIN 6888 mm	L mm	Ø D_s mm	< 750 N f_z mm
25,5×5	eShop	10	5.0×10.0	63	10	0.08
25,5×6	eShop	10	6.0×10.0	63	10	0.08
25,5×7	eShop	10	7.0×10.0	63	10	0.08
25,5×8	eShop	10	8.0×10.0	63	10	0.08
28,5×5	eShop	10	5.0×11.0	63	10	0.08
28,5×6	eShop	10	6.0×11.0	63	10	0.08
28,5×7	eShop	10	7.0×11.0	63	10	0.08
28,5×8	eShop	10	8.0×11.0	63	10	0.08
32,5×5	eShop	12	5.0×13.0	71	12	0.09
32,5×6	eShop	12	6.0×13.0	71	12	0.09
32,5×8	eShop	12	8.0×13.0	71	12	0.09
38,5×7	eShop	12	7.0×15.0	71	12	0.09
38,5×8	eShop	12	8.0×15.0	71	12	0.09
38,5×9	eShop	12	9.0×15.0	71	12	0.09
38,5×10	eShop	12	10.0×15.0	71	12	0.09
45,5×10	eShop	12	10.0×16.0	71	12	0.09

HSS Co5 | d11 | 15° | h6 DIN 1835 B

Garant T-slot cutter



The mill cuts on all three sides.
Due to alternate set teeth (staggered), high cutting performance is achieved.

Note: For milling T-slots to DIN 650 into machine tables on jigs and fixtures.

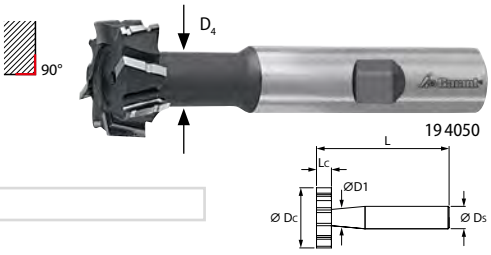
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 4030	250	70		35	28											22	35	●

Ø $D_C \times L_C$ d11 × d11 mm	11W 19 4030 T-slot cutter	Number of effective inserts Z_{eff}	No. of teeth Z	for T-slots DIN 650 mm	Ø D_1 mm	L mm	Ø D_s mm	< 750 N f_z mm
12,5×6	eShop	3	6	6	5	57	10	0.06
16×8	eShop	3	6	8	7	62	10	0.06
18×8	eShop	3	6	10	8	70	12	0.06
21×9	eShop	4	8	12	10	74	12	0.08

Ø $D_C \times L_C$ d11 × d11 mm	11W 19 4030 T-slot cutter	Number of effective inserts Z_{eff}	No. of teeth Z	for T-slots DIN 650 mm	Ø D_1 mm	L mm	Ø D_s mm	< 750 N f_z mm
25×11	eShop	4	8	14	12	82	16	0.08
28×12	eShop	4	8	16	13	85	16	0.08
32×14	eShop	4	8	18	15	90	16	0.09

HSS Co5 | d11 | 15° | h6 DIN 1835 B

Garant T-slot semi-roughing cutter



Cuts on all three sides.
Alternate set teeth with ground chip breaker on flutes.

Note: For milling T-slots to DIN 650.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 4050	250	70		35	28											22	35	●

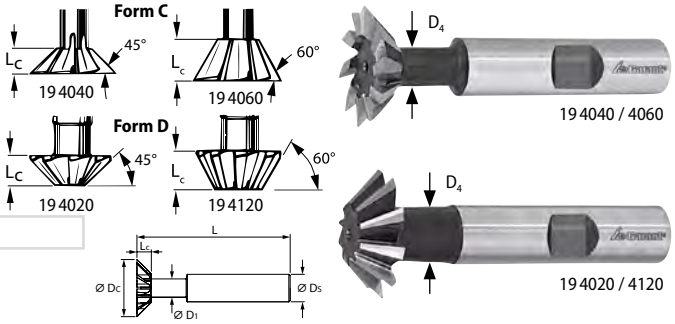
Ø $D_C \times L_C$ d11 × d11 mm	11W 19 4050 T-slot semi-roughing cutter	Number of effective inserts Z_{eff}	No. of teeth Z	for T-slots DIN 650 mm	Ø D_1 mm	L mm	Ø D_s mm	< 750 N f_z mm
12,5×6	eShop	3	6	6	5	57	10	0.06
16×8	eShop	4	8	8	7	62	10	0.06
18×8	eShop	4	8	10	8	70	12	0.06
21×9	eShop	4	8	12	10	74	12	0.08
25×11	eShop	4	8	14	12	82	16	0.08

Ø $D_C \times L_C$ d11 × d11 mm	11W 19 4050 T-slot semi-roughing cutter	Number of effective inserts Z_{eff}	No. of teeth Z	for T-slots DIN 650 mm	Ø D_1 mm	L mm	Ø D_s mm	< 750 N f_z mm
28×12	eShop	4	8	16	13	85	16	0.08
32×14	eShop	4	8	18	15	90	16	0.09
36×16	eShop	4	8	20	17	103	25	0.09
40×18	eShop	4	8	22	19	108	25	0.09

19

HSS Co5 | DIN 1833 | js16 | h6 DIN 1835 B

Garant Dovetail milling cutter



Special surface treatment.
19 4020/4120 – Form D cuts only on the circumference, straight teeth.
19 4040/4060 – Form C cuts frontal and on the circumference.

Note: For milling small dovetails in tool making and machine building.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 4020–19 4120	250	70		35	28											22	35	●

Ø js16 D_C mm	11W 19 4040 Dovetail milling cutter, form C 45°	11W 19 4020 Dovetail milling cutter, form D 45°	11W 19 4060 Dovetail milling cutter, form C 60°	11W 19 4120 Dovetail milling cutter, form D 60°	No. of teeth Z	Ø D_1 19 4040 mm	Ø D_1 19 4020 mm	Ø D_1 19 4060 mm	Ø D_1 19 4120 mm	L mm	Ø D_s mm	L_c 19 4040 19 4020 mm	L_c 19 4060 19 4120 mm	< 750 N f_z mm
16	eShop	eShop	eShop	eShop	6	6.7	8	6	8.2	60	12	4	6.3	0.06
20	eShop	eShop	eShop	eShop	8	7	10	7.8	10.5	63	12	5	8	0.08
22	eShop	eShop	eShop	eShop	8	8	10.2	10	10.2	67	12	6	9	0.08
25	eShop	eShop	eShop	eShop	10	8	11	9	11.5	67	12	6.3	10	0.08
28	eShop	eShop	eShop	eShop	10	8.5	14	13	14	80	16	7.5	11	0.08
32	eShop	eShop	eShop	eShop	12	13	15	15	15	71	16	8	12.5	0.09
38	eShop	eShop	eShop	eShop	14	15	15	15	15	80	16	10	16	0.09

HSS Co5 | H11 | h6 DIN 1835 B | r | 4 | 6

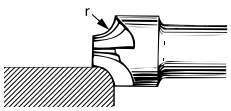
Garant Corner rounding cutter

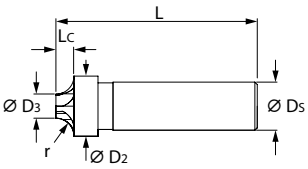
Straight flutes. Special surface treatment.

Application: For rounding and deburring edges and contours.



19 4220





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 4220	138	**83**		**28**	**23**	23										23	55	●

Radius r H11 D_C mm	19 4220 Corner rounding cutter	No. of teeth Z	Ø D_3 mm	Ø D_2 mm	L_c mm	L mm	Ø D_s mm	< 750 N f_z mm
1	eShop	4	6	8	1	60	10	0.003
1,5	eShop	4	6	9	1.5	60	10	0.003
2	eShop	4	6	10	2	60	10	0.005
2,5	eShop	4	6	11	2.5	60	10	0.005
3	eShop	4	6	12	3	60	12	0.005
4	eShop	4	6	14	4	60	12	0.007
5	eShop	4	6	16	5	60	16	0.007
6	eShop	4	8	20	6	67	16	0.01
8	eShop	4	8	24	8	71	16	0.015
10	eShop	4	8	28	10	85	25	0.024
12	eShop	4	10	34	12	90	25	0.032
16	eShop	6	16	48	16	100	25	0.053

HSS PM | Type N | e8 | 2 | 30° | a_e 0.05×D | h6 DIN 1835 B

Garant Ball nose slot drill

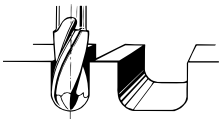
Centre cutting edge geometry for plunging.
For the most demanding metal removal rates.

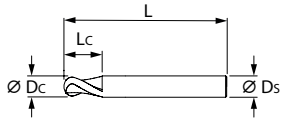
Note: For milling concave slots or for milling radius transitions.
Suitable for use as a copy mill and for mould making.
f_z for a_p 0.05×D.





19 4302





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	
19 4302		138	110	**83**	**64**	**64**	**37**	32						**23**	18	55	110	●

Ø e8 D_C mm	19 4302 Ball nose slot drill HSS-PM TiAlN	L_c mm	L mm	Ø D_s mm	<750 N f_z mm
2	eShop	4	48	6	0.006
3	eShop	5	49	6	0.006
4	eShop	7	51	6	0.012
5	eShop	8	52	6	0.012
6	eShop	8	52	6	0.016
7	eShop	10	60	6	0.016
8	eShop	11	61	8	0.024
9	eShop	11	61	8	0.024
10	eShop	13	63	10	0.038
11	eShop	13	70	10	0.038
12	eShop	16	73	12	0.052
13	eShop	16	73	12	0.052

Ø e8 D_C mm	19 4302 Ball nose slot drill HSS-PM TiAlN	L_c mm	L mm	Ø D_s mm	<750 N f_z mm
14	eShop	16	73	12	0.052
15	eShop	16	73	14	0.052
16	eShop	19	79	16	0.066
18	eShop	19	79	16	0.066
19	eShop	19	79	16	0.066
20	eShop	22	88	20	0.076
22	eShop	22	88	20	0.076
24	eShop	26	102	20	0.076
25	eShop	26	102	25	0.076
26	eShop	26	102	25	0.076
30	eShop	26	102	25	0.076

Categorisation of the tools by application based on DIN ISO 513

Material group	Material designations		Strength (N/mm²)
17.0	Long-chipping Al; wrought Al alloy; Mg	N	< 530
17.1	Short-chipping Al alloys	N	< 600
17.2	Cast Al alloys > 10 % Si	N	< 600
18.0	Low-alloy copper	N	< 400
18.1	Short-chipping brass	N	< 600
18.2	Long–chipping brass	N	< 600
18.3	Short–chipping bronze	N	< 600
18.4	Short–chipping bronze	N	650 – 850
18.5	Long-chipping bronze	N	< 850
18.6	Long-chipping bronze	N	850 – 1200

GARANT Master Alu*



20 2004, GARANT Master Alu PickPocket



20 3115, GARANT Master Alu milling cutter TPC



20 3205, GARANT Master Alu finishing cutter



20 5282, GARANT Master Alu SlotMachine

N

Material group	Material designations		Strength (N/mm²)
10.0	Hardened steels	H	45 – 50 HRC
10.1	Hardened steels	H	50 – 55 HRC
10.2	Hardened steels	H	55 – 60 HRC
10.3	Hardened steels	H	60 – 65 HRC
10.4	Hardened steels	H	65 – 67 HRC
10.5	Hardened steels	H	67 – 70 HRC

GARANT hard machining*



20 1631, Diabolo solid carbide micro slot drill



20 3221, GARANT Diabolo solid carbide milling cutter HRC 62



20 3079, solid carbide milling cutter with chip separators



20 6342, Diabolo solid carbide torus cutter



20 7523, solid carbide barrel milling cutter PPC



20 8158, Diabolo solid carbide deburrer, spiral flutes

H

Hoffmann Group colour ring code	Alu	Alu	Alu cast > 10 % Si	Cu	CuZn	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC
Colour code DIN-ISO 513	DIN					ISO					513				
	N	N	N	N	N	P	P	P	P	P	H	H	H	H	H

P



20 2289, GARANT Master Steel solid carbide mini milling cutter



20 2404, GARANT Master Steel PickPocket



20 3035, GARANT Master Steel solid carbide roughing end mill



20 3049, GARANT Steel solid carbide milling cutter with chip separators HPC



20 4018, GARANT Master Steel solid carbide finishing cutter



20 3055, GARANT GreenPlus solid carbide milling cutter HPC



20 5550, GARANT Master Steel SlotMachine



20 6335, GARANT Master Steel solid carbide torus cutter



20 7246, GARANT Master Steel solid carbide ball nose slot drill



20 7525, solid carbide barrel milling cutter PPC

GARANT Master Steel*

Material group	Material designations		Strength (N/mm²)
1.0	General structural steels	P	< 500
1.1	General structural steels	P	500 – 850
2.0	Free-cutting steels	P	< 850
2.1	Free-cutting steels	P	850 – 1000
3.0	Unalloyed heat-treatable steels	P	< 700
3.1	Unalloyed heat-treatable steels	P	700 – 850
3.2	Unalloyed heat-treatable steels	P	850 – 1000
4.0	Alloyed heat-treatable steels	P	850 – 1000
4.1	Alloyed heat-treatable steels	P	1000 – 1200
5.0	Unalloyed case-hardening steels	P	< 750
6.0	Alloyed case-hardening steels	P	< 1000

Material group	Material designations		Strength (N/mm²)
6.1	Alloyed case-hardening steels	P	>1000
7.0	Nitriding steels	P	< 1000
7.1	Nitriding steels	P	>1000
8.0	Tool steels	P	< 850
8.1	Tool steels	P	850 – 1100
8.2	Tool steels	P	1100 – 1400
9.0	High-speed steels	P	830 – 1200
11.0	Abrasion-resistant structural steel	P	1350
11.1	Abrasion-resistant structural steel	P	1800
12.0	Spring steels	P	< 1500
13.3	Stainless steels, martensitic	P	< 1100

*Tool selection

Material group	Material designations		Strength (N/mm²)
13.0	Stainless steels, sulphuretted	M	< 700
13.1	Stainless steels, austenitic	M	< 700
13.2	Stainless steels, austenitic	M	< 850

GARANT Master INOX*



20 2956, GARANT INOX solid carbide milling cutter with chip separators HPC/TPC



20 3106, solid carbide milling cutter TPC with chip separators



20 5449, GARANT INOX SlotMachine solid carbide roughing end mill HPC



20 6345, GARANT Master INOX solid carbide torus cutter



20 7474, GARANT Master INOX solid carbide ball nose end mill



20 7537, solid carbide barrel milling cutter PPC

M

Material group	Material designations		Strength (N/mm²)
15.0	Cast iron (GG)	K	< 180 HB
15.1	Cast iron (GG)	K	> 180 HB
15.2	Cast iron (GGG, GT)	K	> 180 HB
15.3	Cast iron (GGG, GT)	K	> 260 HB

GARANT machining cast iron*



20 2392, solid carbide milling cutter MTC



20 3049, GARANT Steel solid carbide milling cutter with chip separators HPC

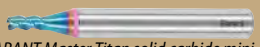


20 3055, GARANT GreenPlus solid carbide milling cutter HPC

K

INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	GG(G)	GRP CRP	Graphite	Plastics
DIN ISO 513							
M	M	S	S	K	O	O	O

S



20 2287, GARANT Master Titan solid carbide mini milling cutter



20 3157, GARANT Master Titan solid carbide milling cutter



20 6371, GARANT Master Ni-Based solid carbide torus cutter



20 7487, GARANT Master Titan solid carbide ball nose end mill

GARANT Master Titan* / GARANT Master Ni-Based*

Material group	Material designations		Strength (N/mm²)
14.0	Special alloys	S	< 1200
16.0	Titanium, titanium alloys	S	< 850
16.1	Titanium, titanium alloys	S	850 – 1200

O



209320, solid carbide slot drill for work on plastics



20 9806, GARANT PCD ball nose slot drill with internal cooling



20 9517, solid carbide milling cutter for GRP, CRP, graphite



20 9540, solid carbide milling cutter Composite, dragging cut



20 9548, solid carbide milling cutter Composite, compacting cut

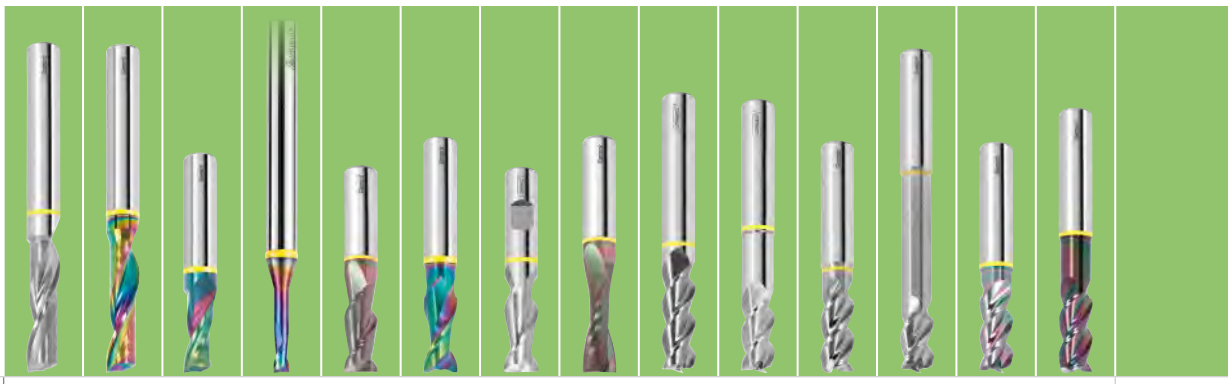
GARANT non-metallic materials*

Material group	Material designations		Strength (N/mm²)
19.0	Graphite	O	
20.0	Thermoplastic	O	
20.0.1	Acrylic	O	
20.0.2	PE-HD	O	
20.0.3	PA 66	O	
20.0.4	PEEK	O	
20.1	Thermoset plastic	O	
20.1.1	PF 31	O	
20.2	GRP and CRP	O	
20.2.1	AFRP aramid	O	

Material group	Material designations		Strength (N/mm²)
20.2.10	MMC	O	
20.2.11	CRP	O	
20.2.2	PVDF GF20	O	
20.2.3	POM GF25	O	
20.2.4	PA 66 GF30	O	
20.2.5	PEEK GF30	O	
20.2.6	PTFE CF25	O	
20.2.7	PEEK CF30	O	
20.2.9	Honeycomb sandwich	O	

Garant HOLEX Solid carbide milling cutters for machining non-ferrous metals

N



Milling cutter type	Millling cutters													
DIN >	Man. std	Man. std	Man. std	Man. std	6527	6527	6527	Man. std	Man. std	Man. std	6527	Man. std	6527	Man. std
			GARANT Master Alu	Micro precision		GARANT Master Alu								
Hoffmann Group code														
Article number	201040 201043	201045 201046	201070 201075	201140	201170 201270	201260	201200 201280	201735	202238	202239 202241 202242	202243 202244 202249	202247 202256 202257	202270 202272 202278	202271 202273
Milling cutter type	W	W	W	W	W	W	W	W	W	W	W	W	W	W
Application recommendation														
Size range (Ø mm)	1 – 12	1 – 12	2 – 12	0.1 – 3	2 – 20	2 – 20	2 – 20	1 – 20	3 – 20	3 – 20	1 – 25	4 – 20	1 – 20	6 – 20
Cutting edge length (mm)	6 – 45	4 – 45	5 – 33	0.15 – 4.6	5 – 38	8 – 38	5 – 38	5 – 41	9 – 60	6 – 60	2.5 – 60	6.5 – 41	2.5 – 60	13 – 41
Number of cutting edges	1	1	1	2	2	2	2	2/3	3	3	3	3	3	3
Coolant channels IC											– / IC		– / IC	
HSC / HPC / MTC / TPC / PPC	HSC	HSC	HPC	HSC	HSC	HPC		HSC			MTC	MTC	MTC	MTC
Coating		DLC	(DLC)	DLC	DLC	DLC		DLC					DLC	DLC
Type of shank	HA	HA	HA	HA	HA	HA	HB	HA	HA	HA	HA/HB	HA/HB	HA/HB	HA/HB
Secondary application to DIN ISO 513	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Page	428	428	429	430/431	432	432	432	438	438	438	439	440	441	442

Garant HOLEX Solid carbide milling cutters for machining non-ferrous metals

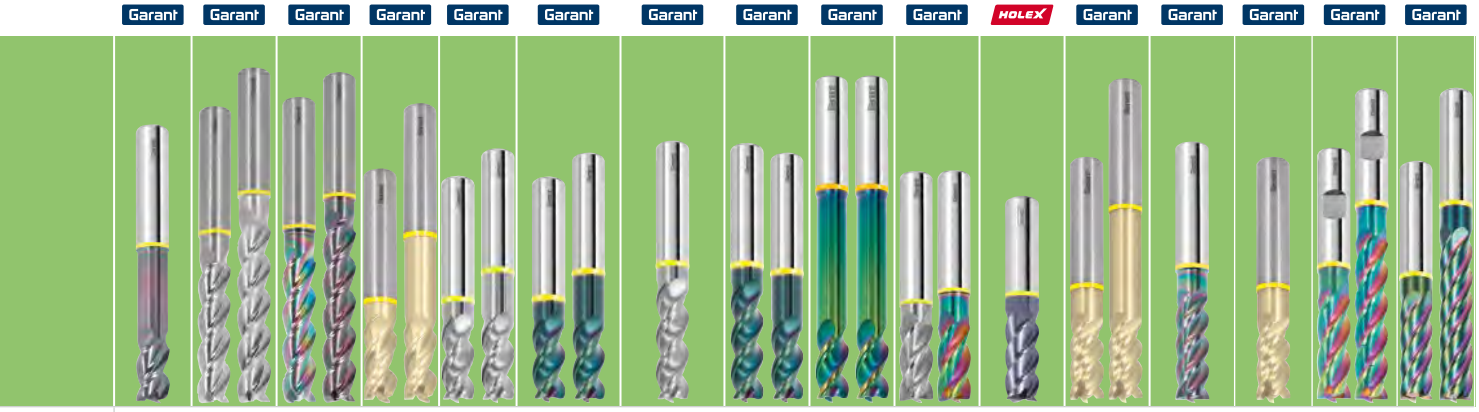
N



Milling cutter type	Finishing cutters	Roughing end mills						Torus cutters					
DIN >	Man. std	6527/Man. std	6527/Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	6527/Man. std	
	GARANT Master Alu	GARANT Master Alu SlotMachine		GARANT Master Alu SlotMachine	GARANT Master Alu SlotMachine	GARANT Master Alu SlotMachine		Micro precision					
Hoffmann Group code													
Article number	203213/203214 203215/203216	205250 205255 205265	205260 205270	205267	205274 205275	205282	205330/31 205335/36	206041– 206045	206040	206065 206071 206075	206260 206265	206190 206192	
Milling cutter type	W	WR	WR	WR	WR	WR	WR	W	W	W	W	W	
Application recommendation													
Size range (Ø mm)	6 – 20	4 – 20	4 – 20	6 – 20	6 – 20	6 – 20	4 – 20	0.2 – 3	3 – 20	3 – 20	5 – 20	5 – 20	
Cutting edge length (mm)	20 – 105	8 – 60	8 – 60	18 – 60	25 – 82	20 – 64	11 – 38	0.2 – 4.5	4 – 20	4 – 20	13 – 41	8 – 41	
Number of cutting edges	7	3/4	3	3/4	3/4	5	3	2	2	2	3	3	
Coolant channels IC		– / IC		IC			– / IC						
HSC / HPC / MTC / TPC / PPC	HPC	HPC	HPC	HPC/TPC	TPC	HPC/TPC		HSC	HSC	HSC	HPC	HSC	
Coating		DLC		DLC	DLC	DLC	(DLC)	DLC		DLC	ZOX		
Type of shank	HA	HA	HA	HA	HA	HA	HB/HA	HA	HA	HA	HA	HA	
Secondary application to DIN ISO 513				0	0	0		0	0	0		0	
Page	487	494	494	495	495	495	496	504/505	506	506/507	510	512	

Garant HOLEX Solid carbide milling cutters for machining non-ferrous metals

N



Millling cutters

Man. std	Man. std	Man. std	Man. std	6527/Man.std	6527/Man. std	Man. std	Man. std	Man. std	6527	6527	Man. std	Man. std	Man. std	Man. std	Man. std
				GARANT Master Alu PickPocket	GARANT Master Alu PickPocket	GARANT Master Alu PickPocket	GARANT Master Alu PickPocket	GARANT Master Alu PickPocket	GARANT Master Alu					GARANT Master Alu	GARANT Master Alu
202274 202279	202281 202283	202282 202284	202248/51 202255/59	202002 202012	202004 202006 202014	202008	202010 202015	202017 202019	202512 202470	202545	202551 202548 202549	202552	203553	203113 203114 203115	203203 203204 203205
W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
4 – 20	6 – 20	6 – 20	3 – 25	1.8 – 20	3.8 – 20	6 – 20	6 – 20	4 – 20	3 – 20	3 – 20	3 – 20	4 – 20	3 – 20	5 – 20	4 – 20
6.5 – 32	25 – 102	25 – 102	5 – 52	4 – 41	8 – 41	18 – 60	13 – 60	6.5 – 32	6 – 60	10 – 41	6 – 60	16 – 60	6 – 40	17 – 102	16 – 100
3	3	3	3	3	3	3	3	3	4	4	4	4	4	4/5	5
– / IC			– / IC		– / IC		– / IC	– / IC					IC		
MTC	TPC	TPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC		HPC	HPC	HPC	TPC	HPC
DLC		DLC	ZOX		DLC		DLC	DLC	(DLC)	TiAlN	ZOX	DLC	ZOX	DLC	DLC
HA/HB	HA/HB	HA/HB	HA/HB	HA	HA	HA	HA	HA	HA	HA	HA/HB	HA	HA/HB	HA/HB	HA
0	0	0		0	0	0	0	0	0	0		0		0	0
442	443	443	444	445/446	445/446	445	445/446	446	457	457	458	458	458	478	486

Garant HOLEX Solid carbide milling cutters for machining non-ferrous metals

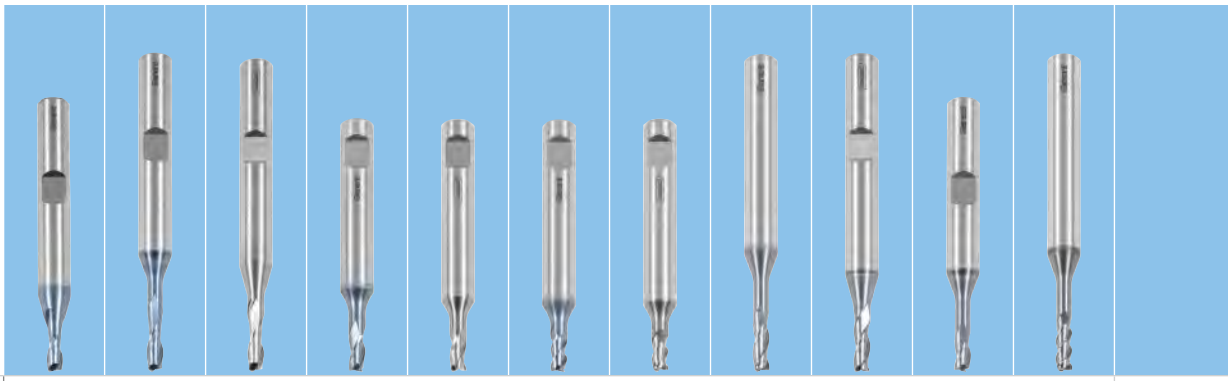
N



	Torus cutters						Radius Milling Tools						PPC milling cutters				Deburrer
Man. std	6527/Man.std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std
		GARANT Master Alu PickPocket	GARANT Master Alu SlotMachine	GARANT Master Alu PickPocket	GARANT Master Alu	Micro precision	Micro precision			high precision		tangential	conical	stub/ conical	straight	
206211	206230 206250	206255 206257	206258	206261	206264	207023	207025	207026 207028	207032 207072 207092	207097	207441 207443	207517	207529– 207533	207542– 207548	207514	208154
W	W	W	WR	W	W	W	W	W	W	W	W	N	N	N	N	N
																90°
6 – 20	4 – 20	4 – 20	6 – 20	4 – 16	6 – 20	0.1 – 3	0.5 – 2	3 – 20	3 – 20	3 – 12	3 – 20	6 – 12	6 – 16	8 – 12	10 – 12	0.5 – 16
25 – 82	6.5 – 41	8 – 41	25 – 82	6.5 – 25	25 – 82	0.08 – 3.5	0.4 – 1.6	6 – 40	6 – 40	6 – 16	6 – 40	20.5 – 27	8 – 16	1.4 – 3.5	21.5 – 23	
3	3	3	3/4	3	4/5	2	2	2	2	2	4	4	4	3/5	5	3/4
TPC	HSC	HPC	HPC/TPC	HPC	HPC	HSC	HSC	HSC	HSC	HSC	HSC	PPC	PPC	PPC	PPC	
DLC	DLC	DLC	DLC	DLC	DLC	DLC	DLC		DLC	DLC	DLC	DLC	DLC	DLC	DLC	
HA/HB	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
512/513	513	514	515	515	515	529/530	529/530	531	531	532	541	547	548	549	549	559

Garant HOLEX Solid carbide milling cutters for machining steels

P



Milling cutter type	Milling cutters										
DIN >	6527	6527	6527	Man. std	Man. std	Man. std	Man. std	6527	6527	6527	6527
Hoffmann-Group Code											
Item number	201302	201306/08	201310	202260	202262	202264	202266	202267	202275	202285	202290–202294
Milling cutter type	N	N	N	N	N	N	N	N	N	N	N
Application recommendation											
Size range (Ø mm)	0.3 – 20	0.25 – 20	2 – 20	0.5 – 20	0.5 – 20	0.5 – 20	0.5 – 20	1 – 20	3 – 20	1 – 20	1 – 20
Cutting edge length (mm)	1 – 26	0.5 – 38	7 – 38	1.5 – 22	1.5 – 22	1.5 – 22	1.5 – 22	3 – 38	8 – 38	3 – 26	3 – 38
Number of cutting edges	2	2	2	3	3	3	3	3	3	3	3
Cooling channels IC											
HSC / HPC / MTC / TPC / PPC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC
Coating	AlCrN	AlCrN	AlCrN	AlCrN		AlCrN		AlCrN	AlCrN	AlCrN	AlCrN
Type of shank	HA/HB	HA/HB	HA/HB	HA/HB	HA/HB	HA/HB	HA/HB	HA	HA/HB	HA/HB	HA/HB
Secondary application to DIN ISO 513	N M K	N M K	N M K	N M K	N M K	N M K	N M K	N M K	N M K	N M K	N M K
Page	433	433	433	447	447	447	447	449	449	449	450

Garant HOLEX Solid carbide milling cutters for machining steels

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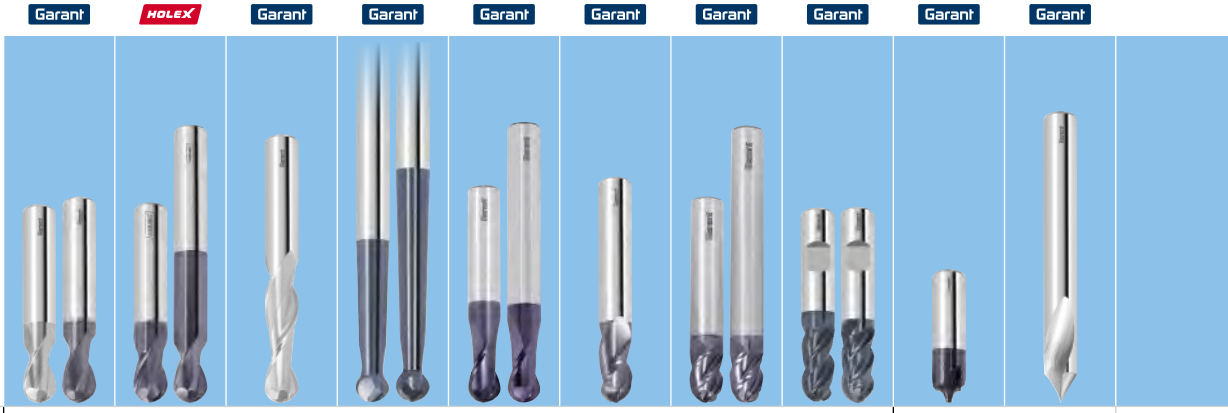

Milling cutter type	Ball nose slot drills								Special mills	
DIN >	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	6527	6527	Man. std	Man. std
Hoffmann-Group Code										
Item number	207106 207115	207125 207154	207135	207175 207176	207240/80 207320	207381	207450 207460	207505 207507	208020	208040
Milling cutter type	N	N	N	H	H	N	N	HR	N	N
Application recommendation										Engraving 60°
Size range (Ø mm)	1 – 20	1 – 20	3 – 20	1 – 10	0.1 – 20	3 – 18	3 – 20	5 – 20	0.2 – 10	3 – 6
Cutting edge length (mm)	2 – 26	3 – 26	20 – 75	0.7 – 8.7	0.2 – 26	7 – 26	5 – 26	13 – 38	0.2 – 10	15 – 20
Number of cutting edges	2	2	2	2	2	3	4	3/4	4	1
Cooling channels IC										
HSC / HPC / MTC / TPC / PPC	HSC	HSC	HSC	HSC	HPC	HSC	MTC	HSC		
Coating	(TiAlN)	TiAlN		TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	
Type of shank	HA	HA	HA	HA	HA	HA	HA	HB	HA	HA
Secondary application to DIN ISO 513	N M K	N M K	N M K	M K	M K	M S K	M K	N M K	N M K	N M K
Page	532	532/533	533	534	535	541	542	545	550	554

Garant HOLEX Solid carbide milling cutters for machining steels

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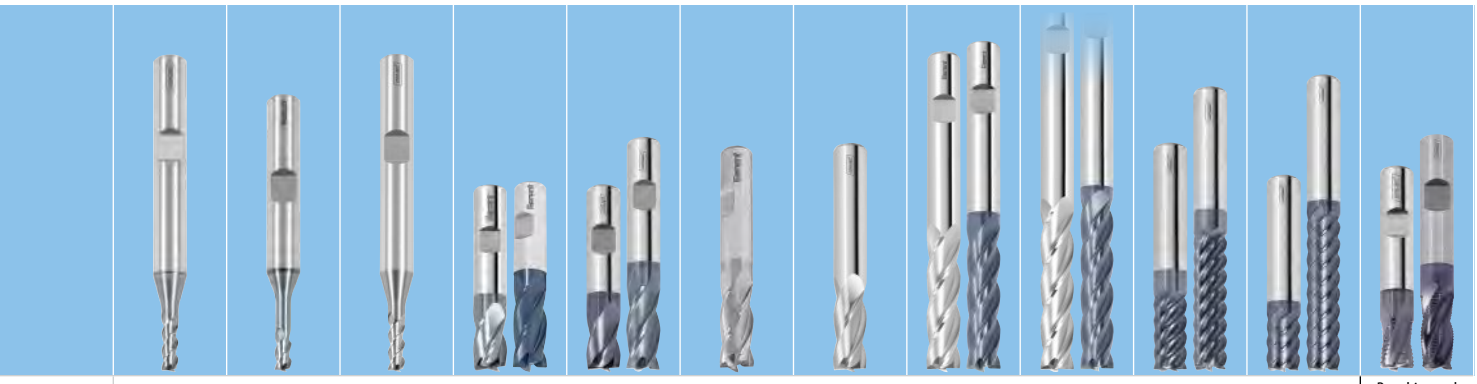
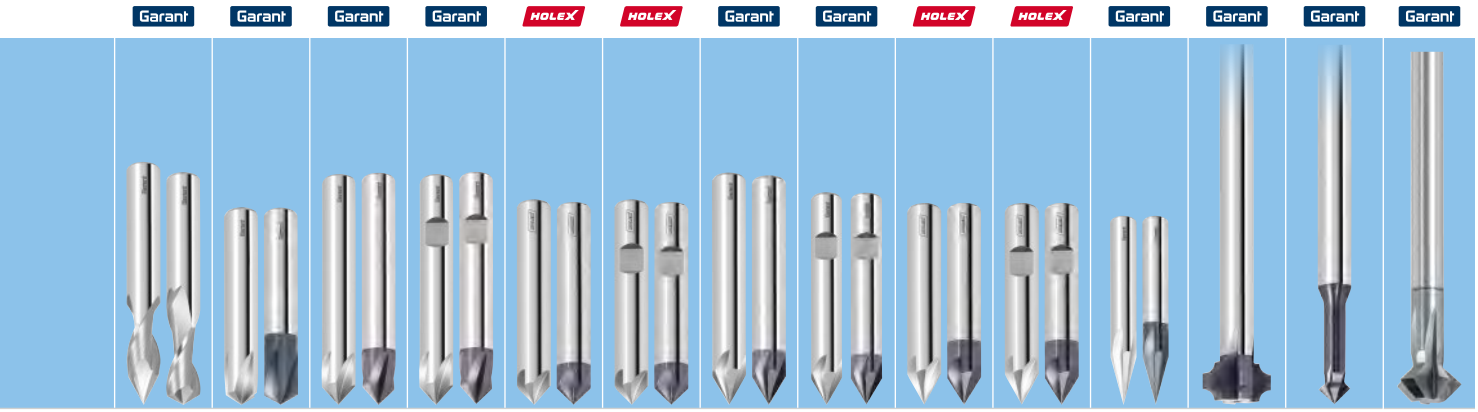


	Milling cutters										Roughing end mills
	6527	6527	6527	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	6527/Man. std	Man. std	6527
	202296	202305	202299 202307	202556 202720/25	202615 202760	202640	202680	202810 202815	202820 202825	203510– 203612	203617– 203620	205486 205492
	N	N	N	N	N	N	N	N	N	N	N	HR
	3 – 20	1 – 20	1 – 20	2 – 25	2 – 20	2 – 25	2 – 16	4 – 20	3 – 20	2 – 25	3 – 25	4 – 25
	8 – 38	3 – 26	3 – 38	3 – 50	3 – 41	8 – 50	8 – 35	16 – 60	16 – 80	6.5 – 80	6 – 92	8 – 45
	3	3	3	4	4	4	4	4	4	6/8	6	3/4/5
	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HSC	HPC
	AlCrN	AlCrN		TiAlN	TiAlN			(TiAlN)	(TiAlN)	TiAlN	TiAlN	(TiAlN)
	HB	HA/HB	HA/HB	HA/HB	HA/HB	HA/HB	HA/HB	HA/HB	HA/HB	HA/HB	HA	HB
	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	H	NMK
	450	451	451	459/460	459/460	459	459	461	461	488	489	498

Garant HOLEX Solid carbide milling cutters for machining steels

P



	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std
	208065 208070/80	208090 208092	208095 208105	208110 208120	208097 208107	208111 208121	208125 208135	208140 208160	208127 208137	208141 208161	208150 208152	208170	208180	208181
	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	60°/ 90°/ 120°	120°	90°	90°	90°	90°	60°	60°	60°	60°	30°			
	3 – 20	1 – 16	1 – 16	6 – 16	1 – 16	6 – 12	1 – 16	6 – 16	1 – 16	6 – 12	1 – 16	0.2 – 2.5	3 – 12	3 – 12
	8 – 38											0.2 – 2.5		
	2	3/4	3/4	4	3/4	4	3/4	4	3/4	4	3/4	4	4	5
		(TiAlN)	(TiAlN)	(TiAlN)	(TiAlN)	(TiAlN)	(TiAlN)	(TiAlN)	(TiAlN)	(TiAlN)	(TiAlN)	TiAlN	TiAlN	TiSiN
	HA	HA	HA	HB	HA	HB	HA	HB	HA	HB	HA	HA	HA	HA
	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMK	NMSK
	554	556	556	557	556	557	557	558	557	558	558	562	562	563

Garant HOLEX Solid carbide milling cutters for machining hardened steels

H



Milling cutter type	Milling cutters												Torus cutters
DIN >	Man. std	6527	Man. std	Man. std	Man. std	Man. std	Man. std	6527	6527/Man. std	Man. std	6527/Man. std	Man. std	Man. std
	Diabolo micro precision	Diabolo	Diabolo 70	ISO H55			with chip separators	Diabolo HRC 62	Diabolo	Diabolo		Diabolo 70	Diabolo micro precision
Hoffmann Group Code													
Item number	201631	201639	201648	202970	202976 202977 202979	202978 202982 202981	203079	203221	203211 203282	203372 203382	203246 203248	203212	206155– 206159
Milling cutter type	H	H	H	H	H	H	H	H	H	H	H	H	H
Application recommendation													
Size range (Ø mm)	0.1 – 3	0.5 – 20	0.5 – 6	4 – 20	4 – 20	4 – 20	6 – 20	2 – 20	2 – 20	6 – 25	5 – 20	2 – 16	0.2 – 3
Cutting edge length (mm)	0.15 – 4.6	1.5 – 38	1.3 – 15	11 – 41	8 – 41	16 – 60	18 – 60	8 – 41	8 – 60	16 – 75	13 – 60	6 – 32	0.2 – 4.5
Number of cutting edges	2	2	2	4	4	4	5	4 – 10	4 – 10	6 – 10	6	4/6	2
HSC / HPC / MTC / TPC / PPC	HSC	HPC	HPC	HPC/TPC	MTC (TPC)	MTC (TPC)	TPC	HPC	HPC	HPC		HPC	HSC
Coating	TiAlN	TiAlN	TiAlN	TiSiN	TiAlN	TiAlN	TiAlN	TiSiN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN
Type of shank	HA	HA	HA	HA	HB /HA	HB / HA	HB	HA	HA	HA	HA	HA	HA
Secondary application to DIN ISO 513	PM			P	P	P					P		PM
Page	434/435	436	436	462	462	463	480	490	490	490	491	491	508/509

Garant HOLEX Solid carbide milling cutters for machining high-alloy steels

M



Milling cutter type	Milling cutters												
DIN >	6527	6527/Man. std	Man. std	6527	6527/manufactur- er	6527/Man. std	6527	6527	6527/Man. std	6527	Man. std	6527/Man. std	Man. std
	GARANT Master INOX	GARANT Master INOX	HOLEX Pro INOX	GARANT INOX	GARANT INOX with chip separators	GARANT Master INOX	GARANT Master INOX	GARANT Master INOX			HOLEX Pro INOX	HOLEX Pro INOX M	
Hoffmann Group Code													
Item number	201647	202387 202389	202378	202950 202952	202954 202956	202998 203006 203007 203011	202997	202999	202995 203014 203017	203016	203013 203015 203021 203027	202991 202994 202996	203023 203024 203026
Milling cutter type	N	N	N	N	N	N	N	N	N	N	N	N	N
Application recommendation													
Size range (Ø mm)	1 – 20	1 – 20	3 – 20	0.5 – 20	4 – 20	2 – 25	3 – 20	4 – 20	3 – 20	4 – 20	3 – 20	3 – 20	6 – 20
Cutting edge length (mm)	3 – 38	2.5 – 60	8 – 41	1.3 – 41	11 – 64	5 – 60	8 – 38	11 – 38	5 – 60	11 – 41	5 – 60	5 – 60	32 – 102
Number of cutting edges	2	3	3	4	4	4	4	4	4	4	4	4	4
Cooling channels IC								IC	– / – / IC	IC	– / IC		
HSC / HPC / MTC / TPC / PPC	HPC	HPC	HPC	HPC	HPC / TPC	HPC (TPC)	HPC / TPC	HPC/TPC	HPC	HPC	HPC	HPC	HPC (TPC)
Coating	TiAlN	TiAlN	AlCrN	AlTiN	AlTiN	TiAlN	TiAlN	TiAlN	TiSi	TiAlN	AlCrN	TiSiN	TiAlN
Type of shank	HA	HB	HB	HA/HB	HB	HB	HB	HB	HB	HB	HB	HB	HB
Secondary application to DIN ISO 513	P	P	P	P	P	P	P	P	P	PS	P	P	PS
Page	437	452	452	464	464	465	465	465	466	466	467	468	469

20

Garant HOLEX Solid carbide milling cutters for machining hardened steels

H



	Torus cutters							Ball nose slot drills / end mills							PPC milling cutters			Special mills	
	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man.std/6527	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std
	Diabolo		Diabolo	Diabolo	Diabolo 70	Diabolo HRC 62	Diabolo	Diabolo HRC 62	Diabolo	Diabolo high precision	Diabolo	Diabolo micro precision	Diabolo	Diabolo	tangential	conical	stub/ conical	Diabolo	Diabolo
	206162	206269	206273 206275	206322 206342	206323 206324	206421	206372 206422 206442	207341	207342 207362	207347	207372	207373 207377	207424	207472 207476	207523	207540 207541 207544	207551 207553	208158	208167
	H	N	H	H	H	H	H	H	H	H	H	H	H	H	N	N	N	H	H
	0.8 – 12	1 – 12	2 – 16	1 – 16	2 – 12	6 – 16	6 – 20	0.1 – 20	0.1 – 20	0.1 – 6	0.6 – 12	0.1 – 3	3 – 12	2 – 20	6 – 12	6 – 16	12	6 – 16	6 – 16
	1 – 8	1 – 12	1.5 – 8.8	1.5 – 16	2 – 12	7 – 16	7 – 60	0.2 – 26	0.2 – 26	0.1 – 6	0.8 – 11	0.08 – 3.5	8 – 22	4 – 26	14 – 18.5	8.5 – 16	1.7 – 2.5		
	2	4/6	2/4	4	4/6	6	6-10	2	2	2	2	2	3	4	4/6	4/6	5	6	6
	HSC / HPC	HSC	HPC	HPC	HPC	HPC	HPC	HPC	HSC / HPC	HSC / HPC	HSC / HPC	HSC	HSC / HPC	HSC / HPC	PPC	PPC	PPC		
	TiAlN	AlTiSiN	TiAlN	TiAlN	TiAlN	TiSiN	TiAlN	TiSiN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN
	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA
												PM							
	510	516	517	519	521	528	528	536	536/537	537	537	538/539	541	542	547	548	549	560	561

Garant HOLEX Solid carbide milling cutters for machining high-alloy steels

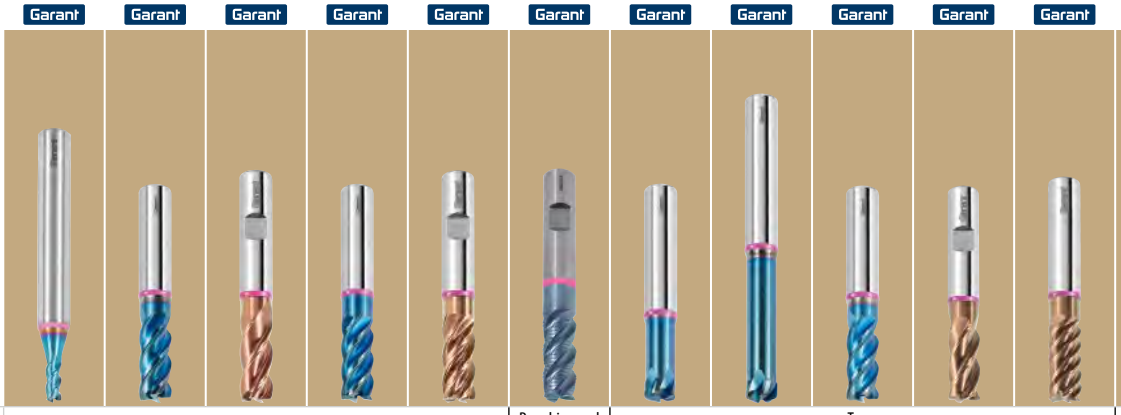
M



	Milling cutters					Roughing end mills		Torus cutters					Ball nose end mills		PPC milling cutters
	Man. std	Man. std	Man. std	Man. std	Man. std	6527	6527	Man. std	Man. std	Man. std	6527	Man. std	Man. std	Man. std	Man. std
	GARANT Master INOX with chip separators				with chip separators	GARANT INOX SlotMachine		HOLEX Pro INOX M	GARANT Master INOX	HOLEX Pro INOX			GARANT Master INOX		conical
	203120	203116 203117	203118 203119	203019 203102 203106	203109	205447 205449	205712	206344	206345 206347	206348	206351	206353	207473 207474	207477 207478	207535 207537 207539
	N	N	N	N	N	NF	HR	N	N	N	N	N	N	N	N
	4 – 20	4 – 20	5 – 20	4 – 20	4 – 20	4 – 20	6 – 20	4 – 16	3 – 20	4 – 20	4 – 20	4 – 20	2 – 20	2 – 20	12 – 16
	16 – 60	11 – 60	20 – 100	11 – 60	16 – 60	8 – 41	12 – 40	11 – 36	8 – 38	11 – 41	12 – 38	11 – 41	4 – 26	4 – 26	12.5 – 22
	6	6	6	5/7	5	4	4/5	4	4	4	4	4	4	4	6
	IC														
	TPC	TPC	TPC	TPC	TPC	HPC	MTC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	PPC
	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	AlTiN	TiAlN	TiSiN	TiAlN	AlCrN	TiAlN	TiSi	TiAlN	TiAlN	TiAlN
	HB	HB	HB	HB	HB	HB	HB	HB	HA/HB	HB	HA	HB	HA	HA	HA
	P	P	P	P	P	P	P	P	P	P	P	P	P	P	NS
	484	484	484	480/485	485	497	502	522	523	523	524	524	543	543	548

Garant Solid carbide milling cutters for machining titanium and superalloys

S



Milling cutter type	Milling cutters					Roughing end mills	Torus cutters				
DIN >	Man. std	6527	6527	6527	6527	6527	Man. std	Man. std	6527	6527	Man. std
	GARANT Master Titan	GARANT Master Titan	GARANT Master Ni-Based	GARANT Master Titan	GARANT Master Ni-Based		GARANT Master Titan	GARANT Master Titan	GARANT Master Titan	GARANT Master Ni-Based	GARANT Master Ni-Based
Hoffmann Group Code											
Item number	202287	203029	203048	203157	203161	205711	206286	206288	206364	206371	206373
Milling cutter type	N	N	N	N	N	HR	N	N	N	N	N
Application recommendation											
Size range (Ø mm)	0.2 – 12	3 – 20	3 – 16	4 – 20	3 – 16	6 – 25	2 – 12	2 – 12	4 – 20	4 – 20	6 – 16
Cutting edge length (mm)	0.6 – 16	8 – 41	8 – 36	11 – 41	8 – 36	12 – 50	1.5 – 6.8	1.5 – 6.8	11 – 41	11 – 41	19 – 49
Number of cutting edges	2-4	4	4	5	5	4/5	2/4/5	2/4/5	4	4/5	6/8
Cooling channels IC											
HSC / HPC / MTC / TPC / PPC	HPC	HPC	HPC / TPC	HPC / TPC	HPC / TPC	MTC	HPC	HPC	HPC	HPC / TPC	HPC
Coating	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN
Type of shank	HA	HA	HB	HA	HB	HB	HA	HA	HA	HB	HA
Secondary application to DIN ISO 513						PK					
Page	448	469	469	481	481	502	517	517	525	525	525

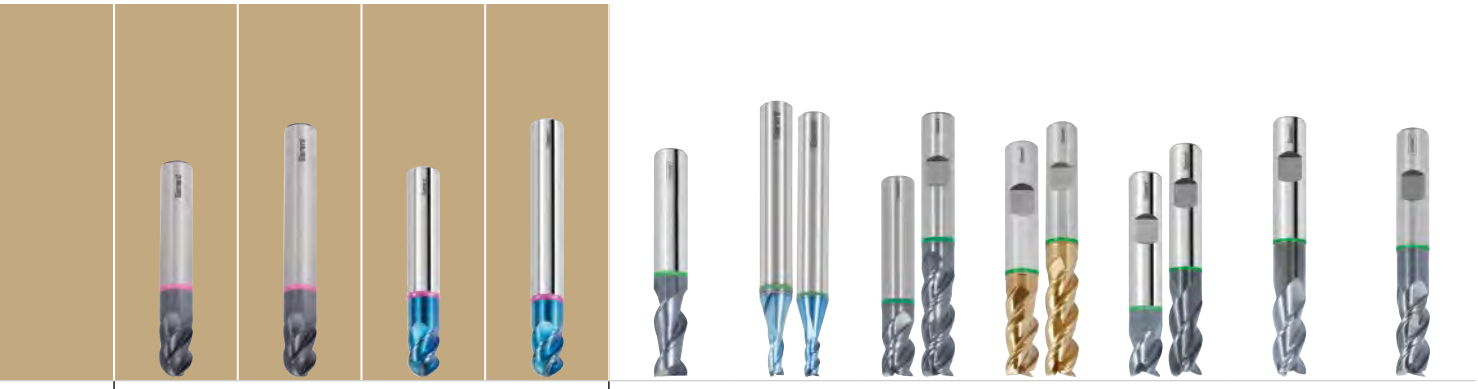
Garant HOLEX Solid carbide milling cutters for general-purpose machining

P M K



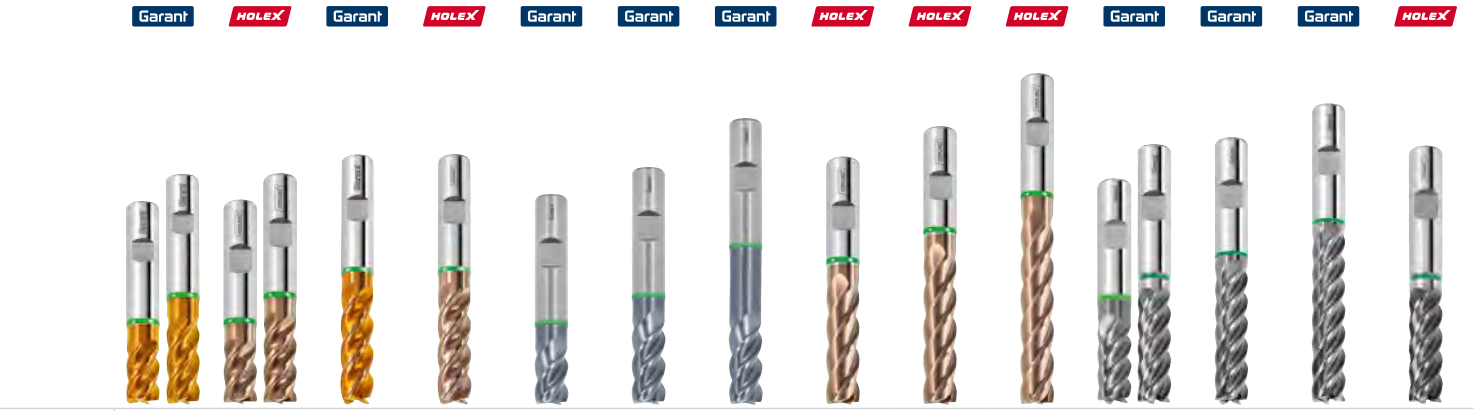
Milling cutter type	Milling cutters											
DIN >	Man. std	6527	6527	Man. std	Man. std	Man. std	6527	6527	6527/Man. std	6527/Man. std	Man. std	Man. std
	HOLEX Pro UNI	GARANT Master Steel	GARANT Master Steel	GARANT Master Steel	GARANT Master Steel	GARANT GreenPlus	GARANT Steel	GARANT Steel with chip dividers		HOLEX Pro Steel	HOLEX Pro Steel	HOLEX Pro Steel
Hoffmann Group Code												
Item number	202432	203034	203035 203039	203036	203038	203055	203053 203057	203049	203037 203044/47	203052 203054	203056 203058	203059
Milling cutter type	N	N	N	N	N	N	N	N	N	N	N	N
Application recommendation												
Size range (Ø mm)	1 – 20	3 – 20	3 – 25	6 – 20	6 – 20	3 – 20	3 – 25	6 – 25	3 – 25	3 – 25	5 – 20	6 – 20
Cutting edge length (mm)	2.5 – 41	6 – 26	8 – 68	13 – 41	13 – 41	8 – 41	6 – 68	13 – 68	8 – 68	6 – 45	13 – 60	22 – 68
Number of cutting edges	3	4	4	4	4	4	4	4	4	4	4	4
Cooling channels IC												
HSC / HPC / MTC / TPC / PPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC	HPC
Coating	TiSiN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiXSi	TiAlN	TiAlN	TiAlN
Type of shank	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HA
Secondary application to DIN ISO 513	PMK	PMK	PMK	PMK	PMK	PMSK	PMK	PMK	PMK	PMK	PMK	PMK
Page	456	470	470	470	470	471	472	472	473/474	473	474	474

Garant HOLEX Solid carbide milling cutters for general-purpose machining



	Ball nose end mills				Millling cutters						
	Man. std	Man. std	Man. std	Man. std	6527	Man. std	6527/Man. std	6527/Man. std	6527	Man. std	Man. std
			GARANT Master Titan	GARANT Master Titan		GARANT Master Steel			GARANT Master Steel PickPocket	GARANT Master Steel PickPocket	HOLEX Pro Steel
	207480	207485	207482	207487	201650	202289 202295	202391 202396/99	202392 202394	202402 202404	202406	202414 202416
	N	N	N	N	N	N	N	N	N	N	N
	2 – 12	2 – 12	1 – 12	1 – 12	3 – 20	0.2 – 16	1 – 20	1 – 20	3.8 – 20	5.7 – 20	3 – 20
	4 – 16	4 – 16	2 – 16	2 – 16	8 – 38	0.6 – 18	2.5 – 60	2.5 – 60	5 – 41	13 – 41	8 – 38
	4	4	4	4	2	3	3	3	3	3	3
	HPC	HPC	HPC	HPC		HPC	MTC	MTC	HPC	HPC	HPC
	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	AlCrN	SiTiN	TiAlN	TiAlN	TiAlN
	HA	HA	HA	HA	HA	HA	HB	HB	HB	HB	HB
					NPMK	NPMK	PMK	PMK	PMK	PMK	PMK
	544	544	544	544	437	448	453	453	454	454	455

Garant HOLEX Solid carbide milling cutters for general-purpose machining



	Milling cutters													
	6527	6527	6527	6527	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std
	GARANT Master UNI	HOLEX Pro UNI	GARANT Master UNI	HOLEX Pro UNI							with chip separators	with chip separators	with chip separators	with chip separators
	203062 203067	203063 203068	203073	203074	203051	203061 203076	203071	203085	203086	203087	203088/ 203092	203093	203094	203095
	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	3 – 25	3 – 25	6 – 16	6 – 16	3 – 20	3 – 20	6 – 20	4 – 20	5 – 20	8 – 20	4 – 20	5 – 20	8 – 20	4 – 20
	5 – 68	8 – 68	18 – 48	18 – 48	5 – 26	8 – 41	13 – 41	16 – 60	20 – 80	40 – 100	11 – 60	20 – 80	40 – 100	16 – 60
	4	4	4	4	4	4	4	4	4	4	5	5	5	5
						(IC)								
	HPC	HPC	HPC	HPC	MTC	MTC	MTC	TPC	TPC	TPC	TPC	TPC	TPC	TPC
	TiSiN	TiSiN	TiSiN	TiSiN	AlCrN	AlCrN	AlCrN	TiSiN	TiSiN	TiSiN	TiAlN	TiAlN	TiAlN	TiAlN
	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB
	NPMSK	NPMSK	NPMSK	NPMSK	PMK	PMK	PMK	PM	PM	PM	PMK	PMK	PMK	PMK
	475	476	475	476	477	477	477	479	479	479	482/483	483	483	483

Garant HOLEX Solid carbide milling cutters for general-purpose machining



Milling cutter type	Milling cutters					Roughing end mills					
DIN >	Man. std	6527	Man. std	Man. std	Man. std	6527	6527	6527	6527	6527	6527
	HOLEX Pro Steel		high precision	GARANT Master Steel	GARANT Master Steel				GARANT Master Steel SlotMachine	GARANT Master Steel SlotMachine	GARANT Master Steel SlotMachine
Hoffmann Group Code											
Item number	203623 203624	203440 203480	203530 203540	204012/14 204015	204016/18 204019	205482 205490	205488 205592	205710	205548	205550	205551
Milling cutter type	N	N	N	N	N	HR	HR	HR	NR	NR	NR
Application recommendation											
Size range (∅ mm)	4 – 20	5 – 20	6 – 25	4 – 20	6 – 20	4 – 25	8 – 20	6 – 20	4 – 20	4 – 20	4 – 20
Cutting edge length (mm)	16 – 80	13 – 38	13 – 105	11 – 60	24 – 100	8 – 45	11 – 38	8 – 20	8 – 26	11 – 38	11 – 38
Number of cutting edges	6	6/8	6/8	7	7	3/4/5	3/4	4/5	5	5	5
Cooling channels IC							IC				IC
HSC / HPC / MTC / TPC / PPC	HPC	HSC	HSC	HPC	HPC	HPC	HPC	MTC	HPC	HPC	HPC
Coating	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN
Type of shank	HA	HA/HB	HA	HA	HA	HB	HB	HB	HB	HB	HB
Secondary application to DIN ISO 513	PMK	NPMK	PMK	PMK	PMK	NPMK	NPMK	PMSK	PMK	PMK	PMK
Page	488	492	492	493	493	498	499	499	500	500	500

Garant HOLEX Solid carbide milling cutters for general-purpose machining



Milling cutter type	Torus cutters			Ball nose slot drills/end mills		PPC milling cutters				Special mills			
DIN >	6527	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	850 D/F
	HOLEX Pro Steel	GARANT Master UNI	HOLEX Pro UNI	GARANT Master Steel	GARANT Master Steel	tangential	conical	stub/ conical	straight				
Hoffmann Group Code													
Item number	206357	206367	206368	207242 207244/46	207490 207492	207525	207530– 207534	207543– 207549	207520	208021 208023	208022	208033	208024
Milling cutter type	N	N	N	N	N	N	N	N	N	N	N	N	N/NF
Application recommendation													
Size range (∅ mm)	4 – 20	4 – 16	4 – 16	0.1 – 20	2 – 20	6 – 12	6 – 16	8 – 12	10 – 12	0.2 – 10	0.5 – 5	5.8 – 7.8	10.5 – 45.5
Cutting edge length (mm)	11 – 38	11 – 36	11 – 36	0.2 – 26	4 – 26	20.5 – 27	8 – 22	1.4 – 3.5	21.5 – 23			0.5 – 2.0	2 – 10
Number of cutting edges	4	4	4	2	4	4	4	3/5	5	3/4/5/6	4	3	6/8/10
Cooling channels IC													
HSC / HPC / MTC / TPC / PPC	HPC	HPC	HPC	HPC	HPC	PPC	PPC	PPC	PPC	HPC			
Coating	TiAlN	TiSiN	TiSiN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiSiN	AlTiN	TiAlN
Type of shank	HB	HB	HB	HA	HA	HA	HA	HA	HA	HA	HA	HA	HB
Secondary application to DIN ISO 513	PMK	NPMSK	NPMSK	PMK	PMK	NPMK	NPMK	NPMK	NPMK	NPM	NPMK	NPMK	PM
Page	526	527	527	540	545	547	548	549	549	550	550	551	552

Garant HOLEX Solid carbide milling cutters for general-purpose machining



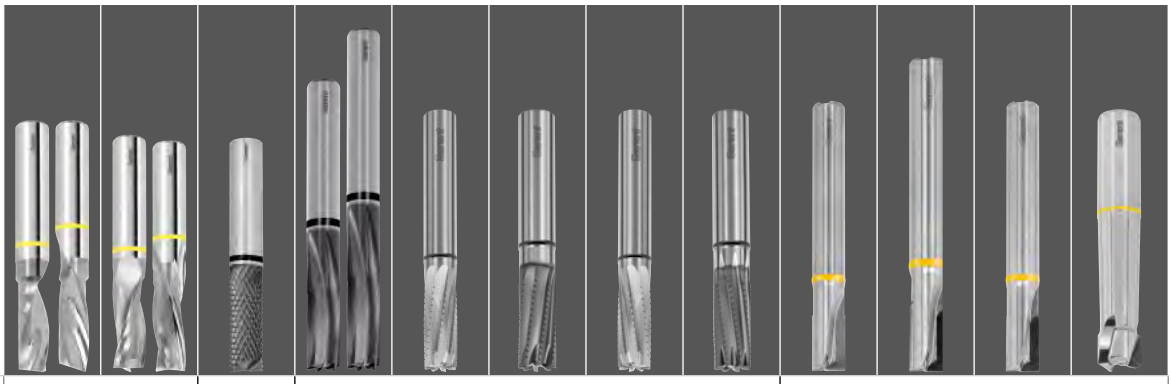
	Roughing end mills									Torus cutters			
	Man. std	Man. std	Man. std	Man. std	Man. std	6527	6527	6527	Man. std	Man. std	Man. std	Man. std	6527/Man. std
	GARANT Master Steel SlotMachine	GARANT Master Steel SlotMachine	GARANT Master Steel SlotMachine	GARANT Master Steel SlotMachine	GARANT Master Steel SlotMachine		HOLEX Pro Steel					GARANT Master Steel	GARANT Master Steel
	205552	205556	205554	205555	205557	205714 205716	205704 205706	205715	205718	206266 206267	206262 206263	206333 206335	206354 206359
	NR	NR	NR	NR	NR	HR	HR	HR	HR	N	N	H	N
	5 – 20	6 – 20	5 – 20	6 – 20	8 – 16	6 – 25	4 – 20	6 – 25	6 – 20	2 – 16	2 – 12	1 – 16	4 – 20
	13 – 41	13 – 41	17 – 60	24 – 80	40 – 80	12 – 50	6 – 38	13 – 50	12 – 40	1.5 – 8.8	1.5 – 6.8	1.5 – 16	11 – 41
	5	5	5	5	5	4/5	4/5/6	4/5/6	4/5	2/4	3/5/6	4/5/6	4
						– / IC							
	HPC TiAlN	HPC TiAlN	HPC/TPC TiAlN	HPC/TPC TiAlN	HPC/TPC TiAlN	MTC TiAlN	HPC TiAlN	MTC TiAlN	MTC TiAlN	HPC TiAlN	HPC TiAlN	HPC TiAlN	HPC TiAlN
	HB	HB	HB	HB	HB	HB	HB	HB	HB	HA	HA	HA	HB
	PMK	PMK	PMK	PMK	PMK	PMK	PMK	PMK	PMK	PM	PM	PMK	PMK
	500	501	501	501	501	502	503	503	503	518	518	520	526

Garant HOLEX Solid carbide milling cutters for general-purpose machining



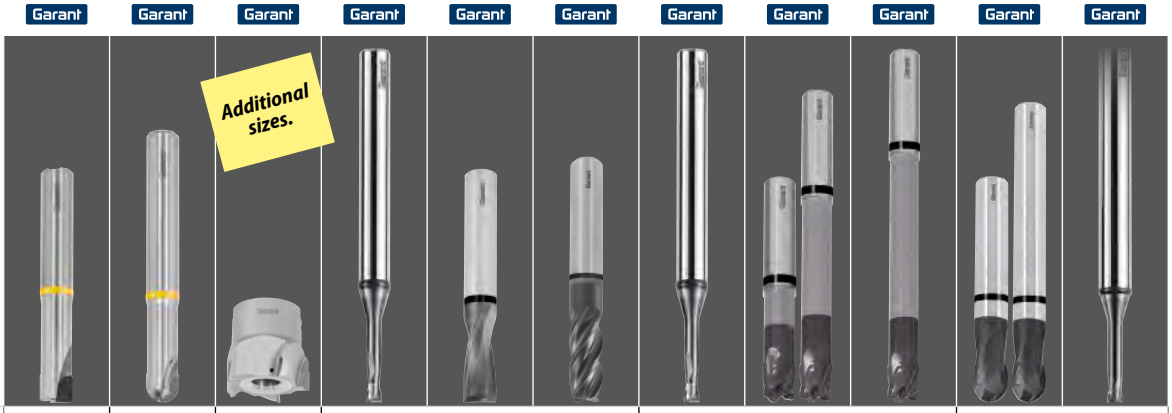
	Special mills															
	851	851	1833	1833	1833	1833	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std
	208026	208027	208028	208029	208030	208031	208086	208087	208088	208089	208156	208162 208164	208166 208168	208165	208172	208185
	N	N/F	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			45°	45°	60°	60°	60°	60°	90°	120°	90°	90°	60°	60°		
	12.5 – 32	12.5 – 32	12 – 38	12 – 38	12 – 38	12 – 38	3 – 6	3 – 12	3 – 20	3 – 12	6 – 16	6 – 20	6 – 20	6 –16	0.2 – 2.5	7.8 – 12
	6 – 14	6 – 14	3 – 10	3 – 10	5 – 16	5 – 16	15 – 20	8 – 26	8 – 38	8 – 26						
	6	6	6/8/10	6/8/9	6/8/9	6/8/10	2	2	2	2	4	6/8	6/8	4	5	5
	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	(TiAlN)	(TiAlN)	TiAlN	TiAlN	TiAlN
	HB	HB	HB	HB	HB	HB	HA	HA	HA	HA	HA	HB	HB	HA	HA	HA
	P	P	P	P	P	P	NPMSK	NPMSK	NPMSK	NPMSK	NPMK	NPMK	NPMK	NPMSK	NPMK	NPMK
	552	553	553	553	553	553	555	555	555	555	559	560	561	561	562	562

Garant Solid carbide milling cutters for machining non-metallic materials



Milling cutter type	Millling cutters		Router	Millling cutters					Millling cutters			
DIN >	Man. std	Man. std	Man. std	Man. std	6527	6527	6527	6527	Man. std	Man. std	Man. std	Man. std
			fine		Composite	Composite	Composite	Composite	straight cut	dragging cut	compacting cut	
Hoffmann Group code												
Article number	209300 209305	209320 209322	209512	209515 209517	209540	209546	209542	209548	209800	209801	209802	209808
Milling cutter type	W	W										N
Application recommendation												
Size range (Ø mm)	1.5 – 12	4 – 20	4 – 20	6 – 12	4 – 16	4 – 16	4 – 16	4 – 16	3 – 16	3 – 16	3 – 16	16 – 20
Cutting edge length (mm)	6 – 30	13 – 41	16 – 45	16 – 36	11 – 32	11 – 32	11 – 32	11 – 32	2.5 – 20	2.5 – 20	2.5 – 20	11.4 – 14.2
Number of cutting edges	1	2/3		4/6	8	8	8	8	2	2	2	3
Coolant channels IC									IC	IC	IC	IC
HSC / HPC / MTC / TPC / PPC												HPC
Coating			Diamond	Diamond		Diamond		Diamond	PCD	PCD	PCD	PCD
Type of shank	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA
Secondary application to DIN ISO 513	N	N							N	N	N	N
Page	564	564	565	565	567	567	567	567	568	568	568	569

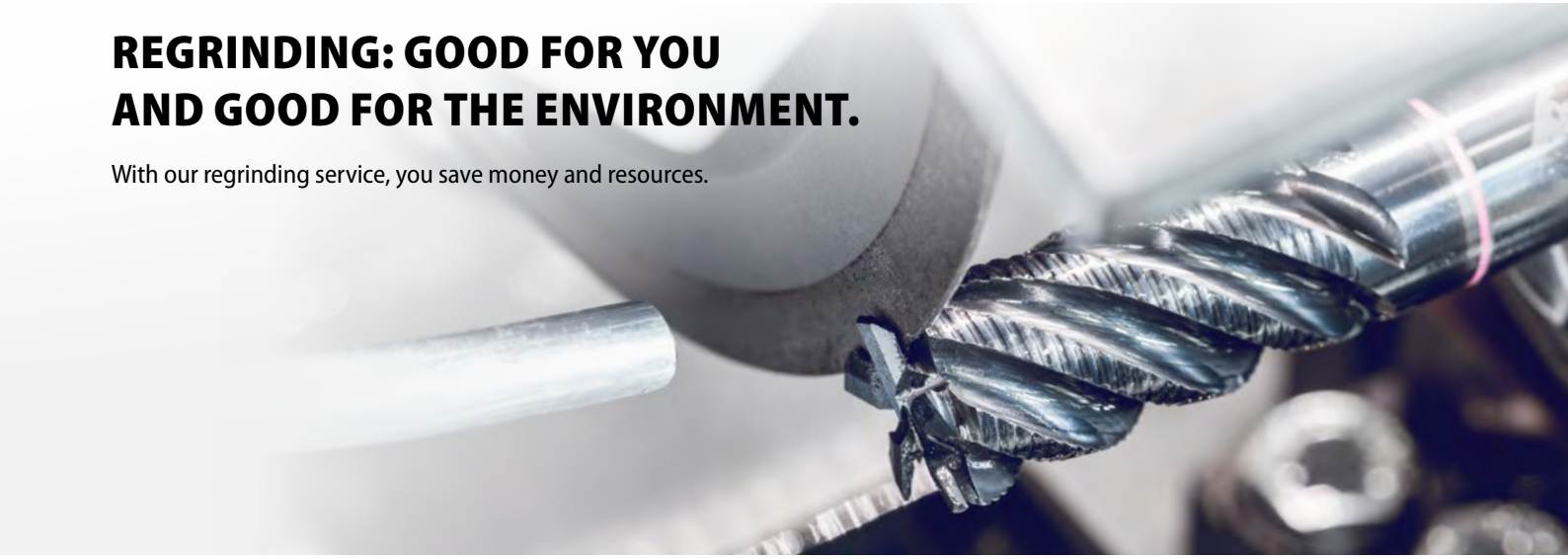
Garant Solid carbide milling cutters for machining non-metallic materials



Milling cutter type	Torus cutter	Radius Milling Tool	Face mill	Millling cutters			Torus cutters			Radius Milling Tools		
DIN >	Man. std	Man. std		Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	Man. std	
	straight cut	straight cut		Micro precision			Micro precision				Micro precision	
Hoffmann Group code												
Article number	209804	209806	209810	209700	209711	209713	209714– 209731	209755/ 209758	209760	209776/ 209781	209791	
Milling cutter type												
Application recommendation												
Size range (Ø mm)	3 – 10	3 – 16	50 – 63	0.1 – 3	3 – 20	6 – 20	0.2 – 3	3 – 12	4 – 12	1 – 20	0.2 – 3	
Cutting edge length (mm)	2.5 – 8	2.5 – 10		0.15 – 4.5	8 – 38	13 – 38	0.2 – 4.5	4 – 12	5 – 12	2 – 26	0.16 – 3.5	
Number of cutting edges	2	2	5/6	2	2	4	2	4	4	2	2	
Coolant channels IC	IC	IC	IC									
HSC / HPC / MTC / TPC / PPC												
Coating	PCD	PCD	PCD	Diamond	Diamond	Diamond	Diamond	Diamond	Diamond	Diamond	Diamond	
Type of shank	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	HA	
Secondary application to DIN ISO 513	N	N	N									
Page	568	569	570	570/571	572	572	573/574	575	576	576	577/578	

REGRINDING: GOOD FOR YOU AND GOOD FOR THE ENVIRONMENT.

With our regrinding service, you save money and resources.



Hoffmann Group
Regrinding service



Good for you

It is already worth it from the first regrind. Overall, you can expect amazing savings of up to 85%. And all with the original regrind quality, to the original geometry and on the original production machines. There are no compromises here. **In addition:** Of course, we also provide you with excellent regrinding results for your third-party brands!

Good for the environment

Reusing the tool saves valuable resources and avoids unnecessary waste. In addition, the shorter transport distances also ensure a reduced CO_2 footprint. A good contribution to environmental protection.

Just good all round

Pick-up and delivery service, coating service, measurement certificate service, labelling service. **An all-round worry-free package has never been so easy – and with maximum cost transparency.** For you, this means the highest precision and reliability as quickly as possible.

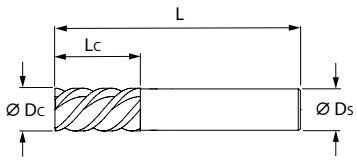
> "The efficiency and quality of the reconditioned tools due to the original regrind quality surprised me very positively!"
> **Marin Engelsberger, Bacher GmbH**

Further information on the regrinding service:
Discover all about our services online now.
https://hog.tools/regrinding

Solid carbide | Standard | Type W | h10 | 1 | 26° | h6 DIN 6535 HA

Garant Solid carbide slot drill

Large flute section for unobstructed swarf evacuation.
Special geometry for aluminium machining.
20 1045/1046 – With the latest generation of **DLC coating sp²**.
Application: Especially for milling **aluminium, plunging** and **contour milling.**

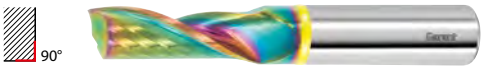




20 1040



20 1043



20 1045



20 1046

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 1040	180	140	105	180	130	150	130	110								180	140	180		●	○	○	○
20 1043	170	125	100	170	120	140	120	100								170	130	160		●	○	○	○
20 1045	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200		●	○	○	●
20 1046	440	400	360	180	150	180	140	120		170	150	140	120	150		280	150	190		●	○	○	●

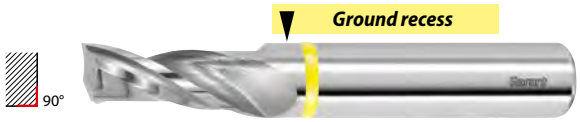
Ø h10 D_c	11X 20 1040	11X 20 1043	L_c		L		Ø D_s	Alu f_z
	Solid carbide slot drill		20 1040	20 1043	20 1040	20 1043		
mm			mm	mm	mm	mm	mm	mm
1	–	eShop	–	8	–	75	3	0.004
1,5	eShop	eShop	6	12	50	75	3	0.004
2	eShop	eShop	8	18	50	75	3	0.008
3	eShop	eShop	12	22	50	75	3	0.008
4	eShop	eShop	15	25	60	75	4	0.015
5	eShop	eShop	17	25	60	75	5	0.015
6	eShop	eShop	20	30	65	100	6	0.025
8	eShop	eShop	22	35	64	100	8	0.03
10	eShop	eShop	25	40	75	100	10	0.04
12	eShop	eShop	30	45	80	120	12	0.05

Ø h10 D_c	11X 20 1045	11X 20 1046	L_c		L		Ø D_s	Alu f_z
	Solid carbide slot drill		20 1045	20 1046	20 1045	20 1046		
mm	DLC	DLC	mm	mm	mm	mm	mm	mm
1	eShop	eShop	4	8	50	75	3	0.004
1,5	eShop	eShop	6	12	50	75	3	0.004
2	eShop	eShop	8	18	50	75	3	0.008
3	eShop	eShop	12	22	50	75	3	0.008
4	eShop	eShop	15	25	60	75	4	0.015
5	eShop	eShop	17	25	60	75	5	0.015
6	eShop	eShop	20	30	65	100	6	0.025
8	eShop	eShop	22	35	64	100	8	0.03
10	eShop	eShop	25	40	75	100	10	0.04
12	eShop	eShop	30	45	80	120	12	0.05

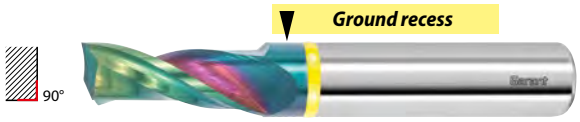
Solid carbide | Standard | Type W | e8 | 1 | 30° | a_e 0.5×D | G 1,8 n_{max} | HPC

Garant GARANT Master Alu solid carbide slot drill HPC

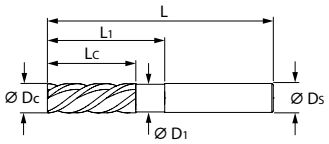
Precision balanced tools, ideally suited for use on **high-speed spindles.**
Special geometry for optimum chip evacuation thanks to **newly developed balancing process.**
Very smooth cutting action for **outstanding surface quality.**



20 1070



20 1075



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 1070	180	140	105	180	130	150	130	110								180	140	180		●	○	○	○
20 1075	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200		●	○	○	●

Ø e8 D_c	11Z 20 1070 GARANT Master Alu solid carbide slot drill HPC	11Z 20 1075 GARANT Master Alu solid carbide slot drill HPC DLC	L_c	L_1	Ø D_1	L	Ø D_s	Alu f_z	Alu f_z
mm			mm	mm	mm	mm	mm	mm	mm
2M	eShop	eShop	5	–	–	50	6	0.02	0.04
2L	eShop	eShop	11	–	–	50	6	0.02	0.04
3M	eShop	eShop	6	9	2.8	50	6	0.03	0.05
3L	eShop	eShop	12	16	2.8	50	6	0.03	0.05
4M	eShop	eShop	10	16	3.8	50	6	0.04	0.06
4L	eShop	eShop	16	21	3.8	55	6	0.04	0.06
5E	eShop	eShop	9	14	4.8	50	6	0.05	0.07
5M	eShop	eShop	16	21	4.8	55	6	0.05	0.07
6E	eShop	eShop	11	17	5.5	50	6	0.06	0.08
6L	eShop	eShop	16	24	5.5	50	6	0.06	0.08
6X	eShop	eShop	21	27	5.5	55	6	0.06	0.08
8K	eShop	eShop	8	13	7.4	50	8	0.08	0.1
8E	eShop	eShop	14	26	7.4	60	8	0.08	0.1
8D	eShop	eShop	14	43	7.4	70	8	0.07	0.09
8S	eShop	eShop	21	31	7.4	60	8	0.08	0.1
8T	eShop	eShop	26	34	7.4	70	8	0.07	0.09
8X	eShop	eShop	31	43	7.4	70	8	0.07	0.09
10D	eShop	eShop	10	16	9.2	55	10	0.1	0.12
10E	eShop	eShop	18	28	9.2	60	10	0.1	0.12
10S	eShop	eShop	18	52	9.2	80	10	0.08	0.1
10L	eShop	eShop	26	34	9.2	60	10	0.1	0.12
10M	eShop	eShop	26	34	9.2	85	10	0.08	0.1
10X	eShop	eShop	33	43	9.2	70	10	0.09	0.11
12K	eShop	eShop	12	19	11	60	12	0.12	0.14
12E	eShop	eShop	21	33	11	70	12	0.1	0.12
12L	eShop	eShop	32	42	11	70	12	0.1	0.12

Garant GARANT Master Alu solid carbide slot drill HPC

Advantages of precision balanced GARANT Master Alu solid carbide slot drills

- Low-vibration milling, particularly at high speeds.
- Significant lengthening of the machine spindle life cycle.
- Significantly longer working life of the tool.
- Improved surface quality of the workpiece.

Solid carbide | Standard | Type W | 0 −0.005 | 2 | a_e 0.5×D | h5 DIN 6535 HA

25° ≤ 0.8 mm | 30° ≥ 1 mm

Garant Solid carbide precision micro slot drill

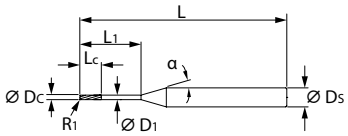
With **advanced DLC sp² coating.**
For the **highest demands regarding performance and precision in aluminium materials. Extremely tight tolerances** ensure maximum accuracy.
Double relief ground with 2 hollow-ground chamfers. **Recess angle α = 16°.**
Tolerances:

- Neck Ø: **D_1 = 0 / -0.01 mm.**

Note: At greater tool overhang lengths, use a reduced value for a_p!
Values for:
slots milled from solid: $a_p = 0.25 \times D \times a_{p\,corr}$
side milling: $a_p = 0.5 \times D \times a_{p\,corr}$
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)!
e.g: vf = 18000 [rpm]× fz [mm/Z]× z



20 1140_2×10



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 1140	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200		●	●	○	●

Ø D_c × L_1	20 1140	L_c	L_1	Ø D_1	L	Ø D_s	Alu cast > 10 % Si f_z	Alu cast > 10 % Si f_z	Correction factor $a_{p\,corr}$
	Solid carbide micro slot drill								
mm	DLC	mm	mm	mm	mm	mm	mm	mm	
0,1×0,3	eShop	0.15	0.3	0.08	45	4	0.008	0.012	1
0,1×0,5	eShop	0.15	0.5	0.08	45	4	0.008	0.012	1
0,1×1	eShop	0.15	1	0.08	45	4	0.005	0.007	0.5
0,2×0,5	eShop	0.3	0.5	0.18	45	4	0.008	0.012	1
0,2×1	eShop	0.3	1	0.18	45	4	0.008	0.012	1
0,2×2	eShop	0.3	2	0.18	45	4	0.005	0.007	0.5
0,2×3	eShop	0.3	3	0.18	45	4	0.005	0.007	0.2
0,3×0,5	eShop	0.4	0.5	0.28	45	4	0.012	0.016	1
0,3×1	eShop	0.4	1	0.28	45	4	0.012	0.016	1
0,3×2	eShop	0.4	2	0.28	45	4	0.012	0.016	0.9
0,3×3	eShop	0.4	3	0.28	45	4	0.008	0.012	0.5
0,3×4	eShop	0.4	4	0.28	45	4	0.008	0.012	0.35
0,3×6	eShop	0.4	6	0.28	45	4	0.005	0.007	0.08
0,4×1	eShop	0.6	1	0.38	45	4	0.012	0.016	1
0,4×2	eShop	0.6	2	0.38	45	4	0.012	0.016	1
0,4×3	eShop	0.6	3	0.38	45	4	0.012	0.016	0.8
0,4×4	eShop	0.6	4	0.38	45	4	0.008	0.012	0.5
0,4×6	eShop	0.6	6	0.38	45	4	0.008	0.012	0.2
0,4×8	eShop	0.6	8	0.38	45	4	0.005	0.007	0.08
0,5×1	eShop	0.7	1	0.48	45	4	0.016	0.02	1
0,5×2	eShop	0.7	2	0.48	45	4	0.016	0.02	1
0,5×3	eShop	0.7	3	0.48	45	4	0.016	0.02	0.9
0,5×4	eShop	0.7	4	0.48	45	4	0.016	0.02	0.8
0,5×6	eShop	0.7	6	0.48	45	4	0.012	0.016	0.35
0,5×8	eShop	0.7	8	0.48	45	4	0.012	0.016	0.12
0,5×10	eShop	0.7	10	0.48	50	4	0.008	0.012	0.08
0,6×2	eShop	0.9	2	0.58	45	4	0.016	0.02	1
0,6×3	eShop	0.9	3	0.58	45	4	0.016	0.02	1
0,6×4	eShop	0.9	4	0.58	45	4	0.016	0.02	0.9
0,6×6	eShop	0.9	6	0.58	45	4	0.012	0.016	0.5
0,6×8	eShop	0.9	8	0.58	45	4	0.012	0.016	0.35
0,6×10	eShop	0.9	10	0.58	50	4	0.012	0.016	0.12
0,8×2	eShop	1.2	2	0.78	45	4	0.016	0.02	1
0,8×3	eShop	1.2	3	0.78	45	4	0.016	0.02	1
0,8×4	eShop	1.2	4	0.78	45	4	0.016	0.02	1
0,8×6	eShop	1.2	6	0.78	45	4	0.016	0.02	0.8
0,8×8	eShop	1.2	8	0.78	45	4	0.012	0.016	0.8
0,8×10	eShop	1.2	10	0.78	50	4	0.012	0.016	0.35
0,8×12	eShop	1.2	12	0.78	50	4	0.012	0.016	0.2
1×2	eShop	1.5	2	0.95	45	4	0.025	0.03	1
1×3	eShop	1.5	3	0.95	45	4	0.025	0.03	1

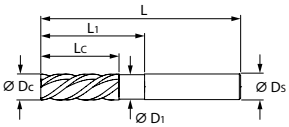
∅ $D_c \times L_1$	11X **20 1140** Solid carbide micro slot drill	L_c	L_1	∅ D_1	L	∅ D_s	Alu cast > 10 % Si f_z	Alu cast > 10 % Si f_z	Correction factor $a_{p\,corr}$
mm	**DLC**	mm	mm	mm	mm	mm	mm	mm	
1×4	eShop	1.5	4	0.95	45	4	0.025	0.03	1
1×5	eShop	1.5	5	0.95	45	4	0.025	0.03	1
1×6	eShop	1.5	6	0.95	45	4	0.025	0.03	0.9
1×8	eShop	1.5	8	0.95	45	4	0.025	0.03	0.8
1×10	eShop	1.5	10	0.95	45	4	0.02	0.025	0.5
1×12	eShop	1.5	12	0.95	50	4	0.02	0.025	0.35
1×14	eShop	1.5	14	0.95	50	4	0.02	0.025	0.3
1×15	eShop	1.5	15	0.95	50	4	0.02	0.025	0.2
1×16	eShop	1.5	16	0.95	50	4	0.02	0.025	0.1
1×20	eShop	1.5	20	0.95	60	4	0.016	0.02	0.08
1×25	eShop	1.5	25	0.95	60	4	0.016	0.02	0.04
1×30	eShop	1.5	30	0.95	70	4	0.012	0.016	0.02
1,2×3	eShop	1.8	3	1.14	45	4	0.025	0.03	1
1,2×4	eShop	1.8	4	1.14	45	4	0.025	0.03	1
1,2×6	eShop	1.8	6	1.14	45	4	0.025	0.03	1
1,2×8	eShop	1.8	8	1.14	45	4	0.025	0.03	0.9
1,2×10	eShop	1.8	10	1.14	45	4	0.025	0.03	0.8
1,2×12	eShop	1.8	12	1.14	50	4	0.02	0.025	0.5
1,2×15	eShop	1.8	15	1.14	50	4	0.02	0.025	0.35
1,2×20	eShop	1.8	20	1.14	60	4	0.02	0.025	0.12
1,4×6	eShop	1.8	6	1.34	45	4	0.025	0.03	0.8
1,5×3	eShop	2.3	3	1.44	45	4	0.025	0.03	1
1,5×4	eShop	2.3	4	1.44	45	4	0.025	0.03	1
1,5×6	eShop	2.3	6	1.44	45	4	0.025	0.03	1
1,5×8	eShop	2.3	8	1.44	45	4	0.025	0.03	1
1,5×10	eShop	2.3	10	1.44	45	4	0.025	0.03	0.9
1,5×12	eShop	2.3	12	1.44	50	4	0.025	0.03	0.8
1,5×14	eShop	2.3	14	1.44	50	4	0.025	0.03	0.6
1,5×15	eShop	2.3	15	1.44	50	4	0.02	0.025	0.5
1,5×16	eShop	2.3	16	1.44	50	4	0.02	0.025	0.4
1,5×20	eShop	2.3	20	1.44	60	4	0.02	0.025	0.35
1,5×25	eShop	2.3	25	1.44	60	4	0.02	0.025	0.12
1,5×30	eShop	2.3	30	1.44	70	4	0.016	0.02	0.08
1,8×6	eShop	2.7	6	1.71	45	4	0.03	0.035	1
1,8×8	eShop	2.7	8	1.71	45	4	0.03	0.035	1
1,8×10	eShop	2.7	10	1.71	45	4	0.03	0.035	0.9
1,8×12	eShop	2.7	12	1.71	50	4	0.03	0.035	0.9
1,8×15	eShop	2.7	15	1.71	50	4	0.03	0.035	0.8
1,8×20	eShop	2.7	20	1.71	60	4	0.025	0.03	0.5
2×4	eShop	3	4	1.91	45	4	0.03	0.035	1
2×6	eShop	3	6	1.91	45	4	0.03	0.035	1
2×8	eShop	3	8	1.91	45	4	0.03	0.035	1
2×10	eShop	3	10	1.91	45	4	0.03	0.035	1
2×12	eShop	3	12	1.91	50	4	0.03	0.035	0.9
2×14	eShop	3	14	1.91	50	4	0.03	0.035	0.8
2×15	eShop	3	15	1.91	50	4	0.03	0.035	0.8
2×16	eShop	3	16	1.91	50	4	0.03	0.035	0.7
2×20	eShop	3	20	1.91	60	4	0.025	0.03	0.5
2×25	eShop	3	25	1.91	60	4	0.025	0.03	0.35
2×30	eShop	3	30	1.91	70	4	0.025	0.03	0.2
2×35	eShop	3	35	1.91	80	4	0.02	0.025	0.08
2×40	eShop	3	40	1.91	80	4	0.02	0.025	0.08
2,5×8	eShop	3.7	8	2.41	50	4	0.035	0.04	1
2,5×12	eShop	3.7	12	2.41	50	4	0.03	0.035	0.9
2,5×15	eShop	3.7	15	2.41	50	4	0.03	0.035	0.9
2,5×16	eShop	3.7	16	2.41	50	4	0.03	0.035	0.8
2,5×20	eShop	3.7	20	2.41	60	4	0.03	0.035	0.8
2,5×25	eShop	3.7	25	2.41	60	4	0.025	0.03	0.5
2,5×30	eShop	3.7	30	2.41	70	4	0.025	0.03	0.35
3×6	eShop	4.6	6	2.91	45	4	0.03	0.035	1
3×8	eShop	4.6	8	2.91	45	4	0.03	0.035	1
3×10	eShop	4.6	10	2.91	45	4	0.03	0.035	1
3×12	eShop	4.6	12	2.91	45	4	0.03	0.035	1
3×15	eShop	4.6	15	2.91	50	4	0.03	0.035	1
3×20	eShop	4.6	20	2.91	60	4	0.03	0.035	0.9
3×25	eShop	4.6	25	2.91	60	4	0.03	0.035	0.8
3×30	eShop	4.6	30	2.91	70	4	0.025	0.03	0.5
3×35	eShop	4.6	35	2.91	70	4	0.025	0.03	0.35
3×40	eShop	4.6	40	2.91	80	4	0.025	0.03	0.35
3×45	eShop	4.6	45	2.91	80	4	0.025	0.03	0.2

Solid carbide | DIN 6527 | Type W | 2 | 45° | a_e 0.5×D

Solid carbide slot drill

Stronger cutting edges.
Dimensions similar to DIN 6527.

20 1170 – With the latest generation of **DLC coating sp²**.



e8 | h6 DIN 6535 HA | 45° — Ground recess



20 1170

h10 | h6 DIN 6535 HB | 45°



20 1200

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 1170	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200		●	●	○	●
20 1200	180	140	105	180	130	150	130	110								180	140	180		●	●	○	●

Ø D_c	11X 20 1170 Garant	12X 20 1200 HOLEX	L_c	L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide slot drill										
	DIN 6535 HA	DIN 6535 HB									
mm	DLC		mm	20 1170 mm	20 1170 mm	20 1170 mm	20 1200 mm	mm	mm	mm	mm
2	eShop	eShop	5	10	1.9	54	50	6	0.05	0.008	0.01
3	eShop	eShop	5	12	2.9	54	50	6	0.1	0.008	0.01
4	eShop	eShop	8	15	3.9	54	54	6	0.1	0.015	0.02
5	eShop	eShop	9	16	4.9	54	54	6	0.1	0.015	0.02
6	eShop	eShop	10	17	5.9	54	54	6	0.1	0.025	0.03
8	eShop	eShop	12	20	7.7	58	58	8	0.1	0.03	0.04
10	eShop	eShop	14	24	9.7	66	66	10	0.1	0.04	0.05
12	eShop	eShop	16	26	11.7	73	73	12	0.1	0.05	0.07
14	–	eShop	18	–	–	–	75	14	0.1	0.05	0.07
16	eShop	eShop	22	32	15.5	82	82	16	0.1	0.065	0.09
18	–	eShop	24	–	–	–	84	18	0.1	0.065	0.09
20	eShop	eShop	26	40	19.5	92	92	20	0.1	0.085	0.12

Solid carbide | DIN 6527 | Type W | 2 | a_e 0.5×D

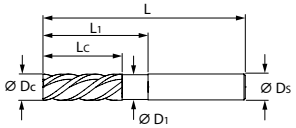
GARANT Master Alu solid carbide slot drill / solid carbide slot drill

Stronger cutting edges.
Dimensions similar to DIN 6527.

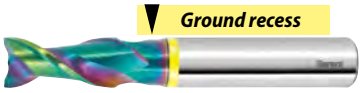
20 1260/1270 – With the latest generation of **DLC coating sp²**.

Advantage:

20 1260 – Very smooth cutting action for **outstanding surface quality.**



38° | e6 | G 2.5 ^{n}max | h6 DIN 6535 HA | 90° — Ground recess



20 1260

45° | e8 | 45° — Ground recess



20 1270

45° | h10 | h6 DIN 6535 HB | 45°



20 1280

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 1260	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200		●	●	○	●
20 1270	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200		●	●	○	●
20 1280	180	140	105	180	130	150	130	110								180	140	180		●	●	○	●

Ø D_c	11X 20 1260 Garant	11X 20 1270	12X 20 1280 HOLEX	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	Alu f_z		Alu f_z	
	GARANT Master Alu solid carbide slot drill	Solid carbide slot drill											
	DIN 6535 HA	DIN 6535 HA	DIN 6535 HB							20 1260	20 1270 20 1280	20 1260	20 1270 20 1280
mm	DLC	DLC		mm	20 1260 20 1270 mm	20 1260 20 1270 mm	mm	mm	20 1270 20 1280 mm	mm	mm	mm	mm
1	eShop	–	–	5	10	0.9	57	6	–	0.03	–	0.04	–
2	eShop	eShop	eShop	8	16	1.9	57	6	0.05	0.03	0.008	0.04	0.01
3	eShop	eShop	eShop	8	18	2.9	57	6	0.1	0.04	0.008	0.05	0.01
4	eShop	eShop	eShop	11	18	3.9	57	6	0.1	0.05	0.015	0.06	0.02
5	eShop	eShop	eShop	13	20	4.9	57	6	0.1	0.06	0.015	0.08	0.02
6	eShop	eShop	eShop	13	20	5.9	57	6	0.1	0.06	0.025	0.08	0.03
8	eShop	eShop	eShop	19	26	7.7	63	8	0.1	0.08	0.03	0.1	0.04
10	eShop	eShop	eShop	22	29	9.7	72	10	0.1	0.09	0.04	0.12	0.05
12	eShop	eShop	eShop	26	36	11.7	83	12	0.1	0.1	0.05	0.15	0.07
14	–	–	eShop	26	–	–	83	14	0.1	–	0.05	–	0.07
16	eShop	eShop	eShop	32	42	15.5	92	16	0.1	0.14	0.065	0.18	0.09
18	–	–	eShop	32	–	–	92	18	0.1	–	0.065	–	0.09
20	eShop	eShop	eShop	38	52	19.5	104	20	0.1	0.18	0.085	0.22	0.12

Solid carbide | DIN 6527 | Type N | e8 | 2 | 30° | a_e 0.3×D

Solid carbide milling cutter

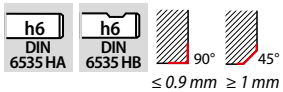
Dimensions similar to **DIN 6527**.

20 1302–1308 – Improved coating for general-purpose applications in steel and cast iron.

Note:

20 1308 – **Successor product for No. 201630 and 201522.**

20 1310 – **Successor product for No. 201640 and 201405.**

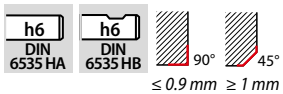



20 1302_3





20 1306_3

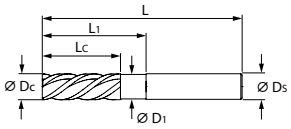




20 1308_3




20 1310_3



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 1302–20 1308		280	200	120	110	100	70	60						70	50		90	●		●	●	○	●
20 1310	170	140	100	70	60	45								40			55	○		●	●	○	●

Ø e8 D_c	11X 20 1302 Garant	11X 20 1306 Garant	11X 20 1308 Garant	12X 20 1310 HOLEX	L_c	L_1	Ø D_1	L	Ø D_s		Shank form		Corner chamfer width at 45°	< 750 N f_z	< 750 N f_z
	Solid carbide slot drill				20 1302	20 1306 20 1308 20 1310	20 1306 20 1308	20 1306 20 1308	20 1302	20 1306 20 1308 20 1310	20 1302 20 1310	20 1306 20 1308	20 1302 20 1310	20 1306 20 1308	20 1302 20 1308 20 1310		
mm	AlCrN	AlCrN	AlCrN		mm	mm	mm	mm	mm	mm	mm	mm			mm	mm	mm
0,25	–	–	eShop	–	–	0.5	–	–	–	38	–	3	–	HA	–	0.002	0.002
0,3	eShop	–	eShop	–	1	1	–	–	38	38	3	3	HA	HA	–	0.002	0.002
0,35	–	–	eShop	–	–	1	–	–	–	38	–	3	–	HA	–	0.002	0.002
0,4	eShop	–	eShop	–	1	1	–	–	38	38	3	3	HA	HA	–	0.002	0.002
0,5	eShop	–	eShop	–	1.5	1.5	–	–	38	38	3	3	HA	HA	–	0.003	0.003
0,6	eShop	–	eShop	–	1.5	1.5	–	–	38	38	3	3	HA	HA	–	0.003	0.003
0,7	eShop	–	eShop	–	2	2	–	–	38	38	3	3	HA	HA	–	0.003	0.003
0,8	eShop	–	eShop	–	2	2	–	–	38	38	3	3	HA	HA	–	0.003	0.003
0,9	eShop	–	eShop	–	2.5	2.5	–	–	38	38	3	3	HA	HA	–	0.003	0.003
1	eShop	eShop	eShop	–	3	3	–	–	38	50	3	3	HA	HA	0.1	0.005	0.006
1,1	–	–	eShop	–	–	3	–	–	–	50	–	3	–	HA	0.1	0.005	0.006
1,2	eShop	–	eShop	–	3	4	–	–	38	50	3	3	HA	HA	0.1	0.005	0.006
1,4	eShop	eShop	eShop	–	3	4	–	–	38	50	3	3	HA	HA	0.1	0.005	0.006
1,5	eShop	eShop	eShop	–	3	4	–	–	38	50	3	3	HA	HA	0.1	0.005	0.006
1,6	eShop	eShop	eShop	–	3	4	–	–	38	50	3	3	HA	HA	0.1	0.005	0.006
1,8	eShop	eShop	eShop	–	3	5	–	–	38	50	3	3	HA	HA	0.1	0.005	0.006
2	eShop	eShop	eShop	eShop	4	7	15	1.8	38	57	3	3	HA	HA	0.1	0.01	0.011
2,5	eShop	eShop	eShop	–	4	8	15	2.3	50	57	6	3	HB	HA	0.1	0.01	0.011
2,8	eShop	eShop	eShop	–	5	8	15	2.7	50	57	6	6	HB	HB	0.1	0.01	0.011
3	eShop	eShop	eShop	eShop	5	8	15	2.8	50	57	6	6	HB	HB	0.13	0.02	0.025
3,8	eShop	eShop	eShop	–	6	11	15	3.6	54	57	6	6	HB	HB	0.13	0.02	0.025
4	eShop	eShop	eShop	eShop	8	11	15	3.8	54	57	6	6	HB	HB	0.18	0.02	0.025
4,8	eShop	eShop	eShop	–	9	13	21	4.6	54	57	6	6	HB	HB	0.18	0.02	0.025
5	eShop	eShop	eShop	eShop	9	13	21	4.8	54	57	6	6	HB	HB	0.2	0.03	0.04
5,75	eShop	eShop	eShop	–	10	13	21	5.5	54	57	6	6	HB	HB	0.2	0.03	0.04
6	eShop	eShop	eShop	eShop	10	13	21	5.8	54	57	6	6	HB	HB	0.2	0.04	0.05
6,75	–	–	eShop	–	–	16	27	6.55	–	63	–	8	–	HB	0.2	0.04	0.05
7	eShop	eShop	eShop	eShop	11	16	27	6.8	58	63	8	8	HB	HB	0.2	0.04	0.05
7,75	eShop	eShop	eShop	–	12	19	27	7.55	58	63	8	8	HB	HB	0.2	0.04	0.05
8	eShop	eShop	eShop	eShop	12	19	27	7.8	58	63	8	8	HB	HB	0.2	0.05	0.08
8,7	–	–	eShop	–	–	19	32	8.5	–	72	–	10	–	HB	0.3	0.05	0.08
9	eShop	eShop	eShop	eShop	13	19	32	8.8	66	72	10	10	HB	HB	0.3	0.05	0.08
9,7	eShop	eShop	eShop	–	14	22	32	9.5	66	72	10	10	HB	HB	0.3	0.05	0.08
10	eShop	eShop	eShop	eShop	14	22	32	9.8	66	72	10	10	HB	HB	0.3	0.06	0.09
11	eShop	eShop	eShop	–	16	26	38	10.8	73	83	12	12	HB	HB	0.3	0.06	0.09
11,7	eShop	eShop	eShop	–	16	26	38	11.5	73	83	12	12	HB	HB	0.3	0.06	0.09
12	eShop	eShop	eShop	eShop	16	26	38	11.8	73	83	12	12	HB	HB	0.3	0.07	0.1
13,7	eShop	eShop	eShop	–	18	26	38	13.5	75	83	14	14	HB	HB	0.3	0.07	0.1
14	eShop	eShop	eShop	eShop	18	26	38	13.8	75	83	14	14	HB	HB	0.3	0.07	0.1
15,7	eShop	eShop	eShop	–	22	32	44	15.4	82	92	16	16	HB	HB	0.4	0.08	0.13
16	eShop	eShop	eShop	eShop	22	32	44	15.7	82	92	16	16	HB	HB	0.4	0.08	0.13
18	eShop	eShop	eShop	eShop	24	32	44	17.7	84	92	18	18	HB	HB	0.4	0.09	0.15
20	eShop	eShop	eShop	eShop	26	38	54	19.7	92	104	20	20	HB	HB	0.5	0.1	0.15

Solid carbide | Standard | Type H | 0 −0.005 | 2 | a_e 0.1×D | h5 DIN 6535 HA

25° ≤ 0.8 mm | 30° ≥ 1 mm

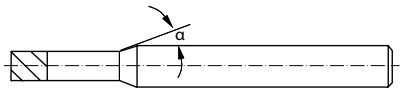
Garant GARANT Diabolo solid carbide precision micro slot drill

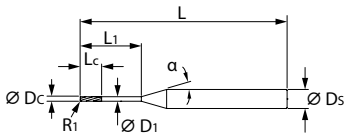
GARANT Diabolo:
Special geometry, coating and carbide **for hard machining in the high-performance field.** Suitable even for **machining electrolytic copper.** Double-relief ground 2 chamfers hollow ground for high-precision hard machining.
Tolerances:
Neck ∅: **D_1 = 0 / -0.01 mm.**
Recess angle α = 16°.

Note: At greater tool overhang lengths, use a reduced value for a_p!
Values for:
slots milled from solid: $a_p = 0.05 \times D \times a_p$ korr
side milling: $a_p = 0.1 \times D \times a_p$ korr
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)! e.g: vf = 18000 [rpm]× fz [mm/Z]× z



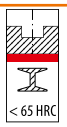
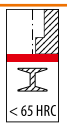
20 1631_2×10





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 1631					200	200	190	170	120	100	72	55	50	45	90	80		140	○	○	●	●	

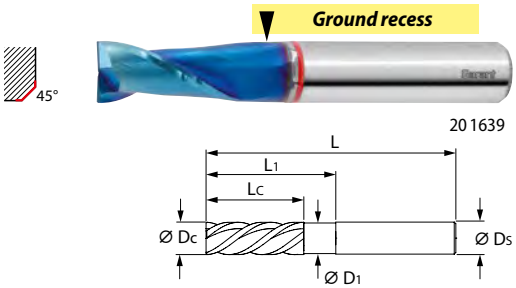
∅ D_c × L_1	11X 20 1631 GARANT Diabolo solid carbide micro slot drill	L_c	L_1	∅ D_1	L	∅ D_s	< 65 HRC f_z	< 65 HRC f_z	Correction factor $a_{p\,corr}$
mm	TiAlN	mm	mm	mm	mm	mm	mm	mm	
0,1×0,3	eShop	0.15	0.3	0.08	45	4	0.005	0.009	1
0,1×0,5	eShop	0.15	0.5	0.08	45	4	0.005	0.009	1
0,1×1	eShop	0.15	1	0.08	45	4	0.003	0.005	0.5
0,2×0,5	eShop	0.3	0.5	0.18	45	4	0.005	0.009	1
0,2×1	eShop	0.3	1	0.18	45	4	0.005	0.009	1
0,2×1,5	eShop	0.3	1.5	0.18	45	4	0.005	0.009	0.8
0,2×2	eShop	0.3	2	0.18	45	4	0.003	0.005	0.5
0,2×3	eShop	0.3	3	0.18	45	4	0.003	0.005	0.2
0,3×0,5	eShop	0.4	0.5	0.28	45	4	0.008	0.012	1
0,3×1	eShop	0.4	1	0.28	45	4	0.008	0.012	1
0,3×2	eShop	0.4	2	0.28	45	4	0.008	0.012	0.9
0,3×3	eShop	0.4	3	0.28	45	4	0.005	0.009	0.5
0,3×4	eShop	0.4	4	0.28	45	4	0.005	0.009	0.35
0,4×1	eShop	0.6	1	0.38	45	4	0.008	0.012	1
0,4×2	eShop	0.6	2	0.38	45	4	0.008	0.012	1
0,4×3	eShop	0.6	3	0.38	45	4	0.008	0.012	0.8
0,4×4	eShop	0.6	4	0.38	45	4	0.005	0.009	0.5
0,4×5	eShop	0.6	5	0.38	45	4	0.005	0.009	0.35
0,4×6	eShop	0.6	6	0.38	45	4	0.005	0.009	0.2
0,5×1	eShop	0.7	1	0.48	45	4	0.012	0.015	1
0,5×2	eShop	0.7	2	0.48	45	4	0.012	0.015	1
0,5×3	eShop	0.7	3	0.48	45	4	0.012	0.015	0.9
0,5×4	eShop	0.7	4	0.48	45	4	0.012	0.015	0.8
0,5×5	eShop	0.7	5	0.48	45	4	0.008	0.012	0.5
0,5×6	eShop	0.7	6	0.48	45	4	0.008	0.012	0.35
0,5×8	eShop	0.7	8	0.48	45	4	0.008	0.012	0.12
0,5×10	eShop	0.7	10	0.48	50	4	0.005	0.009	0.08
0,6×1	eShop	0.9	1	0.58	45	4	0.012	0.015	1
0,6×2	eShop	0.9	2	0.58	45	4	0.012	0.015	1
0,6×3	eShop	0.9	3	0.58	45	4	0.012	0.015	1
0,6×4	eShop	0.9	4	0.58	45	4	0.012	0.015	0.9
0,6×5	eShop	0.9	5	0.58	45	4	0.012	0.015	0.8
0,6×6	eShop	0.9	6	0.58	45	4	0.008	0.012	0.5
0,6×8	eShop	0.9	8	0.58	45	4	0.008	0.012	0.35
0,6×10	eShop	0.9	10	0.58	50	4	0.008	0.012	0.12
0,7×2	eShop	1	2	0.68	45	4	0.01	0.012	1
0,8×2	eShop	1.2	2	0.78	45	4	0.012	0.015	1
0,8×3	eShop	1.2	3	0.78	45	4	0.012	0.015	1
0,8×4	eShop	1.2	4	0.78	45	4	0.012	0.015	1
0,8×5	eShop	1.2	5	0.78	45	4	0.012	0.015	0.9
0,8×6	eShop	1.2	6	0.78	45	4	0.012	0.015	0.8
0,8×8	eShop	1.2	8	0.78	45	4	0.008	0.012	0.5
0,8×10	eShop	1.2	10	0.78	50	4	0.008	0.012	0.35
0,9×4	eShop	1.3	4	0.88	45	4	0.012	0.015	1

$\varnothing D_c \times L_1$	11X **20 1631** GARANT Diabolo solid carbide micro slot drill **TiAlN**	L_c	L_1	$\varnothing D_1$	L	$\varnothing D_s$	 < 65 HRC f_z	 < 65 HRC f_z	Correction factor $a_{p\,corr}$
mm		mm	mm	mm	mm	mm	mm	mm	
1×2	eShop	1.5	2	0.95	45	4	0.015	0.02	1
1×3	eShop	1.5	3	0.95	45	4	0.015	0.02	1
1×4	eShop	1.5	4	0.95	45	4	0.015	0.02	1
1×5	eShop	1.5	5	0.95	45	4	0.015	0.02	1
1×6	eShop	1.5	6	0.95	45	4	0.015	0.02	0.9
1×8	eShop	1.5	8	0.95	45	4	0.015	0.02	0.8
1×10	eShop	1.5	10	0.95	50	4	0.01	0.015	0.5
1×12	eShop	1.5	12	0.95	50	4	0.01	0.015	0.35
1×14	eShop	1.5	14	0.95	50	4	0.01	0.015	0.2
1×16	eShop	1.5	16	0.95	60	4	0.01	0.015	0.12
1×18	eShop	1.5	18	0.95	60	4	0.006	0.01	0.08
1×20	eShop	1.5	20	0.95	60	4	0.006	0.01	0.04
1,2×2	eShop	1.8	2	1.14	45	4	0.015	0.02	1
1,2×4	eShop	1.8	4	1.14	45	4	0.015	0.02	1
1,2×6	eShop	1.8	6	1.14	45	4	0.015	0.02	1
1,2×8	eShop	1.8	8	1.14	45	4	0.015	0.02	0.9
1,2×10	eShop	1.8	10	1.14	45	4	0.015	0.02	0.8
1,2×12	eShop	1.8	12	1.14	50	4	0.01	0.015	0.5
1,2×14	eShop	1.8	14	1.14	50	4	0.01	0.015	0.35
1,2×16	eShop	1.8	16	1.14	50	4	0.01	0.015	0.35
1,2×18	eShop	1.8	18	1.14	60	4	0.01	0.015	0.2
1,2×20	eShop	1.8	20	1.14	60	4	0.01	0.015	0.12
1,4×6	eShop	2.1	6	1.34	45	4	0.01	0.015	1
1,4×8	eShop	2.1	8	1.34	45	4	0.01	0.015	1
1,5×3	eShop	2.3	3	1.44	45	4	0.015	0.02	1
1,5×4	eShop	2.3	4	1.44	45	4	0.015	0.02	1
1,5×6	eShop	2.3	6	1.44	45	4	0.015	0.02	1
1,5×8	eShop	2.3	8	1.44	45	4	0.015	0.02	1
1,5×10	eShop	2.3	10	1.44	45	4	0.015	0.02	0.9
1,5×12	eShop	2.3	12	1.44	50	4	0.015	0.02	0.8
1,5×14	eShop	2.3	14	1.44	50	4	0.015	0.02	0.8
1,5×16	eShop	2.3	16	1.44	50	4	0.01	0.015	0.5
1,5×18	eShop	2.3	18	1.44	55	4	0.01	0.015	0.35
1,5×20	eShop	2.3	20	1.44	55	4	0.01	0.015	0.35
1,6×4	eShop	2.4	4	1.51	45	4	0.025	0.03	1
1,6×8	eShop	2.4	8	1.51	45	4	0.025	0.03	1
1,6×10	eShop	2.4	10	1.51	45	4	0.025	0.03	0.8
1,6×12	eShop	2.4	12	1.51	45	4	0.025	0.03	0.8
1,6×16	eShop	2.4	16	1.51	55	4	0.02	0.025	0.5
1,6×20	eShop	2.4	20	1.51	55	4	0.02	0.025	0.35
1,8×6	eShop	2.7	6	1.71	45	4	0.025	0.03	1
1,8×8	eShop	2.7	8	1.71	45	4	0.025	0.03	1
1,8×10	eShop	2.7	10	1.71	50	4	0.025	0.03	0.9
1,8×12	eShop	2.7	12	1.71	50	4	0.025	0.03	0.9
1,8×16	eShop	2.7	16	1.71	50	4	0.025	0.03	0.8
1,8×20	eShop	2.7	20	1.71	55	4	0.02	0.025	0.5
2×4	eShop	3	4	1.91	45	4	0.025	0.03	1
2×6	eShop	3	6	1.91	45	4	0.025	0.03	1
2×8	eShop	3	8	1.91	45	4	0.025	0.03	1
2×10	eShop	3	10	1.91	45	4	0.025	0.03	1
2×12	eShop	3	12	1.91	50	4	0.025	0.03	0.9
2×14	eShop	3	14	1.91	50	4	0.025	0.03	0.9
2×16	eShop	3	16	1.91	50	4	0.025	0.03	0.8
2×18	eShop	3	18	1.91	55	4	0.025	0.03	0.8
2×20	eShop	3	20	1.91	55	4	0.02	0.025	0.5
2×22	eShop	3	22	1.91	60	4	0.02	0.025	0.5
2×25	eShop	3	25	1.91	60	4	0.02	0.025	0.35
2×30	eShop	3	30	1.91	70	4	0.02	0.025	0.2
2×35	eShop	3	35	1.91	80	4	0.015	0.02	0.08
2×40	eShop	3	40	1.91	80	4	0.015	0.02	0.08
2,5×6	eShop	3.7	6	2.41	45	4	0.025	0.03	1
2,5×8	eShop	3.7	8	2.41	45	4	0.025	0.03	1
2,5×10	eShop	3.7	10	2.41	45	4	0.025	0.03	1
2,5×12	eShop	3.7	12	2.41	50	4	0.025	0.03	0.9
2,5×15	eShop	3.7	15	2.41	50	4	0.025	0.03	0.9
2,5×20	eShop	3.7	20	2.41	60	4	0.025	0.03	0.8
2,5×25	eShop	3.7	25	2.41	60	4	0.02	0.025	0.5
2,5×30	eShop	3.7	30	2.41	70	4	0.02	0.025	0.35
3×6	eShop	4.6	6	2.91	45	4	0.025	0.03	1
3×8	eShop	4.6	8	2.91	45	4	0.025	0.03	1
3×10	eShop	4.6	10	2.91	45	4	0.025	0.03	1
3×12	eShop	4.6	12	2.91	45	4	0.025	0.03	1
3×14	eShop	4.6	14	2.91	50	4	0.025	0.03	1
3×16	eShop	4.6	16	2.91	50	4	0.025	0.03	1
3×18	eShop	4.6	18	2.91	60	4	0.025	0.03	0.9
3×20	eShop	4.6	20	2.91	60	4	0.025	0.03	0.9
3×25	eShop	4.6	25	2.91	60	4	0.025	0.03	0.8
3×30	eShop	4.6	30	2.91	70	4	0.02	0.025	0.5
3×35	eShop	4.6	35	2.91	70	4	0.02	0.025	0.35
3×40	eShop	4.6	40	2.91	80	4	0.02	0.025	0.35

Solid carbide	DIN 6527	Type H	e8	2	30°			a_e 0.05×D	h6 DIN 6535 HA	HPC

Garant GARANT Diabolo solid carbide milling cutter HPC

GARANT Diabolo:
Special geometry, coating and carbide specially for hard machining.
New generation of high performance milling cutters in the **HPC machining range.**
From size 2 with neck recess (dimensions L_1 and Ø D_1).



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 1639								120	110	80	60	50								○	○	●	●

Ø e8 D_C	11X	20 1639	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 65 HRC f_z	< 65 HRC f_z
		GARANT Diabolo solid carbide slot drill								
		HPC								
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
0,5		eShop	1.5	–	–	57	6	0.02	0.003	0.004
1		eShop	3	–	–	57	6	0.02	0.003	0.004
1,5		eShop	4	–	–	57	6	0.03	0.004	0.005
2		eShop	5	12	1.8	57	6	0.03	0.004	0.006
2,5		eShop	6	13	2.3	57	6	0.04	0.005	0.007
3		eShop	8	15	2.8	57	6	0.04	0.006	0.008
3,5		eShop	8	15	3.3	57	6	0.05	0.007	0.009
4		eShop	11	15	3.8	57	6	0.05	0.008	0.01
5		eShop	13	21	4.8	57	6	0.06	0.01	0.014
6		eShop	16	24	5.8	57	6	0.07	0.01	0.014
8		eShop	19	27	7.8	63	8	0.08	0.01	0.016
10		eShop	22	32	9.8	72	10	0.1	0.02	0.024
12		eShop	26	38	11.8	83	12	0.13	0.02	0.024
16		eShop	32	44	15.7	92	16	0.18	0.03	0.035
20		eShop	38	54	19.7	104	20	0.2	0.04	0.045

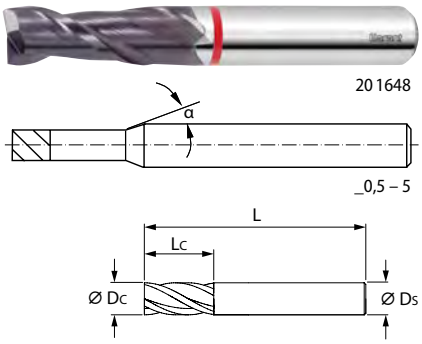
Solid carbide	Standard	Type H	0 −0.02	2	35°	≠			a_e 0.05×D	h6 DIN 6535 HA	HPC

Garant Solid carbide milling cutter HPC

GARANT Diabolo 70:
Special solid carbide substrate with extremely high tensile strength combined with **outstanding wear resistance** for optimum process reliability. Newly developed **nano-crystalline high-tech coating for hard milling up to 70 HRC.** Very suitable for **continuous use** in tool and mould making.
Sizes 0.5 – 5: **Recess angle α = 15°.**

Application: Due to the **special hard geometry** ideal for use on hardened materials from 60 HRC to 70 HRC.

Note: f_z for a_p = 0.05×D.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 1648										60	50	40	35								○	●	●

Ø D_C	11X	20 1648	L_c	L	Ø D_s	< 70 HRC f_z	< 70 HRC f_z
		Solid carbide slot drill					
		HPC					
mm		TiAlN	mm	mm	mm	mm	mm
0,5		eShop	1.3	40	4	0.003	0.004
1		eShop	2.5	40	4	0.003	0.004
1,5		eShop	3.8	40	4	0.004	0.005
2		eShop	5	40	4	0.004	0.006
2,5		eShop	6.3	40	4	0.005	0.007
3		eShop	7.5	50	6	0.006	0.008
4		eShop	10	50	6	0.008	0.01
5		eShop	12.5	50	6	0.01	0.014
6		eShop	15	50	6	0.01	0.014

Solid carbide | DIN 6527 | Type N | e8 | 2 | 50° | a_e 0.5×D | h6 DIN 6535 HA | HPC

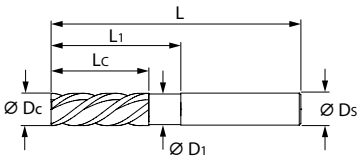
Garant GARANT Master INOX solid carbide milling cutter HPC

Double relief ground **2 chamfers hollow ground** for use in **HPC applications.**
Greater oxidation resistance and high-temperature hardness.
Can be used at high cutting speeds, particularly suitable even for Toolox®.

Note: **Successor product to No. 201644.**



20 1647



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 1647				250	230	200	170	170						115	80	110	90	○		●	○		○

Ø e8 D_c	11X	20 1647	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	INOX < 900 N f_z	INOX < 900 N f_z
		GARANT Master INOX solid carbide slot drill HPC								
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
1		eShop	3	13	0.95	57	6	0.02	0.008	0.01
2		eShop	5	15	1.8	57	6	0.03	0.01	0.014
3		eShop	8	15	2.8	57	6	0.04	0.015	0.02
4		eShop	11	15	3.8	57	6	0.05	0.018	0.022
5		eShop	13	21	4.8	57	6	0.08	0.018	0.022
6		eShop	13	21	5.8	57	6	0.15	0.035	0.04
8		eShop	19	27	7.8	63	8	0.17	0.05	0.06
10		eShop	22	32	9.8	72	10	0.17	0.055	0.067
12		eShop	26	38	11.8	83	12	0.25	0.07	0.08
16		eShop	32	44	15.7	92	16	0.3	0.09	0.11
20		eShop	38	54	19.7	104	20	0.4	0.11	0.13

Solid carbide | DIN 6527 | Type N | h10 | 2 | 45° | a_e 0.5×D | h6 DIN 6535 HA

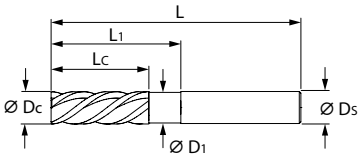
HOLEX Solid carbide slot drills

Eccentric relief ground for stronger cutting edges.
Dimensions similar to DIN 6527.

Note: **Successor product to No. 201646.**



20 1650



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 1650		280	200	120	105	100								80	60		90	●		●	○	○	○

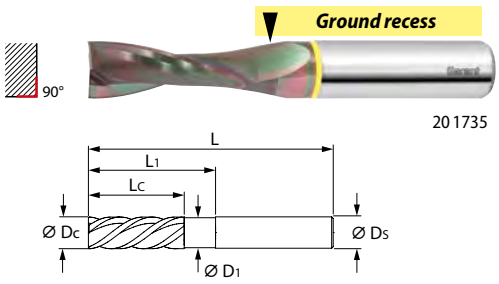
Ø D_c	12X	20 1650	L_c	L	Ø D_s	Corner chamfer width at 45°	< 750 N f_z	< 750 N f_z
		Solid carbide slot drill						
mm		TiAlN	mm	mm	mm	mm	mm	mm
3		eShop	8	57	6	0.1	0.01	0.011
4		eShop	11	57	6	0.1	0.02	0.023
5		eShop	13	57	6	0.1	0.02	0.023
6		eShop	13	57	6	0.1	0.03	0.033
8		eShop	19	63	8	0.1	0.04	0.045
10		eShop	22	72	10	0.1	0.05	0.06
12		eShop	26	83	12	0.1	0.06	0.08
16		eShop	32	92	16	0.1	0.08	0.1
20		eShop	38	104	20	0.1	0.1	0.12

Solid carbide | Standard | Type W | e8 | 20° | a_e 0.25×D | h6 DIN 6535 HA | 2 | 3

Garant Solid carbide milling cutter

With the latest generation of **DLC coating sp²**.
Special geometry for machining aluminium and plastics.

Application: Double relieved chip angle, **especially for aluminium machining.**



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 1735	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200	●	●	○	●	

Ø e8 D_C	11X 20 1735	No. of teeth Z	L_c	L_1	Ø D_1	L	Ø D_s	Alu cast > 10 % Si f_z	Alu cast > 10 % Si f_z
	Solid carbide slot drill								
mm	DLC		mm	mm	mm	mm	mm	mm	mm
1	eShop	2	5	8	0.9	50	3	0.004	0.005
2	eShop	2	8	11	1.85	50	3	0.004	0.01
3	eShop	2	11	14	2.8	50	3	0.008	0.01
4	eShop	2	13	16	3.8	54	4	0.015	0.025
5	eShop	2	15	18	4.8	54	5	0.015	0.025
6	eShop	2	16	21	5.8	64	6	0.025	0.04
8	eShop	2	22	27	7.8	70	8	0.03	0.05
10	eShop	2	25	32	9.8	72	10	0.04	0.065
12	eShop	3	28	38	11.8	83	12	0.05	0.09
14	eShop	3	30	42	13.8	83	14	0.05	0.09
16	eShop	3	36	44	15.8	92	16	0.065	0.12
20	eShop	3	41	54	19.8	104	20	0.085	0.15

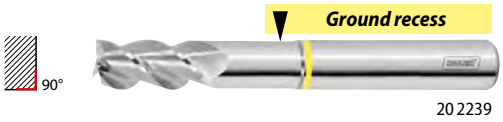
Solid carbide | Standard | Type W | e8 | 3 | 45° | a_e 0.5×D | h6 DIN 6535 HA



HOLEX Solid carbide milling cutter

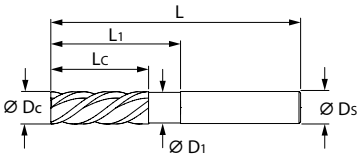
Eccentric relief ground, additionally **finish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium workpieces.

Application: For roughing and finishing.









Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2238–20 2242	170	140	105	160	110	130	110	90								160	120	150	●	○	○	○	

Ø e8 D_C	12X 20 2241	12X 20 2239	12X 20 2238	12X 20 2242	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide slot drill				20 2241 20 2239	20 2238 20 2242	20 2239	20 2239	20 2241	20 2239 20 2238 20 2242		20 2238		
mm					mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	eShop	eShop	6	9	27	2.7	57	65	6	0.1	0.008	0.01
4	eShop	eShop	eShop	eShop	8	12	27	3.7	57	65	6	0.1	0.015	0.02
5	eShop	eShop	eShop	eShop	10	15	27	4.7	57	65	6	0.1	0.015	0.02
6	eShop	eShop	eShop	eShop	12	18	27	5.5	57	65	6	0.2	0.025	0.03
8	eShop ■	eShop	eShop	eShop	16	24	32	7.5	63	70	8	0.2	0.03	0.04
10	eShop	eShop	eShop	eShop	20	30	42	9.5	72	85	10	0.2	0.04	0.05
12	eShop	eShop	eShop	eShop	24	36	50	11.5	83	100	12	0.2	0.05	0.07
16	eShop	eShop	eShop	eShop	32	48	56	15.5	92	110	16	0.2	0.065	0.09
20	eShop	eShop	eShop	eShop	40	60	70	19.5	104	126	20	0.2	0.085	0.12

Solid carbide | DIN 6527 | Type W | MTC | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 nmax | G 2.5 nmax

Garant Solid carbide milling cutter MTC

Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium workpieces.
Without 45° corner chamfer.

20 2244 – **Without** 45° corner chamfer.
Size 1–2 – tolerance: Size nominal ∅ D_c = **e8.**
Size 2.5–20M – tolerance: Size nominal ∅ D_c = **h6.**

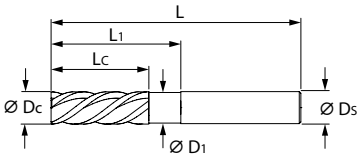
Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

Note:
20 2244 – **NEW GENERATION AVAILABLE! Recommended successor product is No. 202002.**

h6 | 45° | Ground recess
20 2243

e8 | h6 | 90° | Ground recess
20 2244

h6 | 45° | Ground recess
20 2249



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2243–20 2249	190	150	120	180	130	150	130	110								180	120	150		●	●	○	○

∅ D_c	11X 20 2243	11X 20 2244	11X 20 2249	L_c	L_1	∅ D_1	L	∅ D_s	Shank form	Corner chamfer width at 45° 20 2243 20 2249	Alu f_z	Alu f_z
	Solid carbide milling cutter		Solid carbide milling cutter with internal coolant supply									
	MTC											
mm				mm	mm	mm	mm	mm		mm	mm	mm
1	–	eShop	–	2.5	5	0.95	57	6	HA	–	0.005	0.008
1,5	–	eShop	–	4	7.5	1.44	57	6	HA	–	0.005	0.008
2	–	eShop	–	5	10	1.92	57	6	HA	–	0.006	0.009
2,5	eShop	eShop	–	6.5	12.5	2.4	57	6	HA	0.05	0.006	0.009
3	eShop	eShop	–	8	13	2.7	57	6	HA	0.1	0.008	0.01
3,5	eShop	eShop	–	11	17	3.2	57	6	HA	0.1	0.008	0.01
4	eShop	eShop	–	11	17	3.7	57	6	HA	0.1	0.015	0.02
4,5	eShop	eShop	–	13	19	4.2	57	6	HA	0.1	0.015	0.02
5	eShop	eShop	–	13	19	4.7	57	6	HA	0.1	0.015	0.02
5,5	eShop	eShop	–	13	19	5.2	57	6	HA	0.1	0.015	0.02
6	eShop	eShop	eShop	13	19	5.7	57	6	HA	0.2	0.025	0.03
6M	eShop	eShop	–	18	24	5.7	62	6	HA	0.2	0.025	0.03
6,5	eShop	eShop	–	21	25	6.1	63	8	HA	0.2	0.025	0.03
7,5	eShop	eShop	–	21	25	7.1	63	8	HA	0.2	0.03	0.04
8	eShop	eShop	eShop	21	25	7.4	63	8	HA	0.2	0.03	0.04
8M	eShop	eShop	–	24	30	7.4	68	8	HA	0.2	0.03	0.04
8,5	eShop	eShop	–	22	30	7.9	72	10	HA	0.2	0.03	0.04
9,5	eShop	eShop	–	22	30	8.9	72	10	HA	0.2	0.04	0.05
10	eShop	eShop	eShop	22	30	9.2	72	10	HA	0.2	0.04	0.05
10M	eShop	eShop	–	30	38	9.2	80	10	HA	0.2	0.04	0.05
11,5	eShop	eShop	–	26	36	10.5	83	12	HA	0.2	0.05	0.07
12	eShop	eShop	eShop	26	36	11	83	12	HA	0.2	0.05	0.07
12M	eShop	eShop	–	36	46	11	93	12	HA	0.2	0.05	0.07
14	eShop	–	–	26	36	13	83	14	HA	0.2	0.05	0.07
16	eShop	eShop	eShop	36	42	15	92	16	HB	0.2	0.065	0.09
16M	eShop	eShop	–	48	58	15	108	16	HB	0.2	0.065	0.09
20	eShop	eShop	eShop	41	52	19	104	20	HB	0.2	0.085	0.12
20M	eShop	eShop	–	60	74	19	126	20	HB	0.2	0.085	0.12
25	eShop	–	–	52	62	24	121	25	HB	0.3	0.085	0.12

Solid carbide | Standard | Type W | h6 | 3 | 45° | ≠ | a_e 0.5×D | MTC | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 n max | G 2.5 n max

Garant

Solid carbide milling cutter MTC

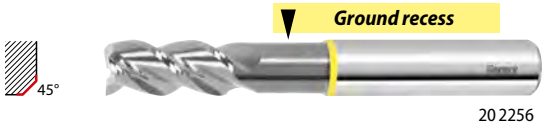
Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium workpieces.

20 2257 – **Without** 45° corner chamfer.

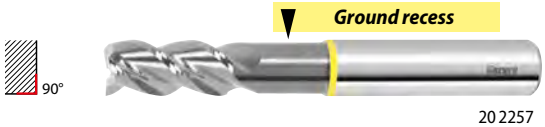
Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

Note:

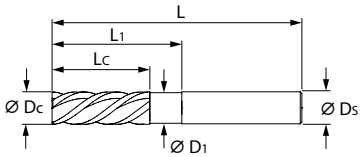
20 2257 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 202012.



20 2256



20 2257



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2256/2257	190	150	120	180	130	150	130	110								180	120	150	●	●	○	○	

Ø h6 D_c	11X 20 2256	11X 20 2257	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45° 20 2256	Alu f_z	Alu f_z
mm	MTC		mm	mm	mm	mm	mm		mm	mm	mm
6	eShop	eShop	13	24	5.7	62	6	HA	0.2	0.025	0.03
8	eShop	eShop	21	30	7.4	68	8	HA	0.2	0.03	0.04
10	eShop	eShop	22	38	9.2	80	10	HA	0.2	0.04	0.05
12	eShop	eShop	26	46	11	93	12	HA	0.2	0.05	0.07
16	eShop	eShop	36	58	15	108	16	HB	0.2	0.065	0.09
20	eShop	eShop	41	74	19	126	20	HB	0.2	0.085	0.12

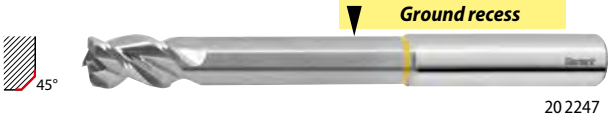
Solid carbide | Standard | Type W | h6 | 3 | 45° | ≠ | a_e 0.3×D | MTC | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 n max | G 2.5 n max

Garant

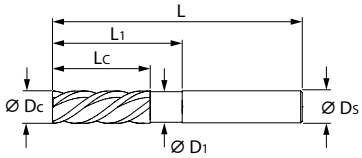
Solid carbide milling cutter MTC

Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium workpieces.

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.



20 2247



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2247	130	100	85	140	100	110	100	85								100	80	100	●	●	○	○	

Ø h6 D_c	11X 20 2247	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45°	Alu f_z	Alu f_z
mm	MTC	mm	mm	mm	mm	mm		mm	mm	mm
4	eShop	6.5	24	3.7	80	6	HA	0.1	0.015	0.02
5	eShop	8	30	4.7	80	6	HA	0.1	0.015	0.02
6	eShop	10	42	5.7	80	6	HA	0.2	0.025	0.03
8	eShop	13	62	7.4	100	8	HA	0.2	0.03	0.04
10	eShop	16	58	9.2	100	10	HA	0.2	0.04	0.05
12	eShop	19	73	11	120	12	HA	0.2	0.05	0.07
16	eShop	25	100	15	150	16	HB	0.2	0.065	0.09
20	eShop	32	98	19	150	20	HB	0.2	0.085	0.12

Solid carbide | DIN 6527 | Type W | 3 | 45° | ≠ | a_e 0.5×D | MTC

h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 n_{max} | G 2.5 n_{max}

Garant

Solid carbide milling cutter MTC

With the latest generation of **DLC coating sp²**.
Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium components.
Lengths similar to **DIN 6527 long.**

20 2272 – **Without** 45° corner chamfer.
Size 1–2 – tolerance: Size nominal ∅ D_c = **e8.**
Size 2.5–20M – tolerance: Size nominal ∅ D_c = **h6.**

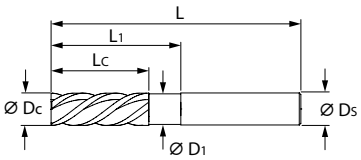
Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

Note:
20 2270 – **NEW GENERATION AVAILABLE! Recommended successor products are No. 202004 and No. 202010.**
20 2278 – **NEW GENERATION AVAILABLE! Recommended successor product is No. 202006.**

h6 | 45° | **Ground recess** | 20 2270

e8 | h6 | 90° | **Ground recess** | 20 2272

h6 | 45° | **Ground recess** | 20 2278



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2270–20 2278	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200	●	●	●	○	○

∅ D_c	11X 20 2270	11X 20 2272	11X 20 2278	L_c	L_1	∅ D_1	L	∅ D_s	Shank form	Corner chamfer width at 45° 20 2270 20 2278	Alu f_z	Alu f_z
	Solid carbide milling cutter MTC		Solid carbide milling cutter with internal coolant supply									
mm	DLC	DLC	DLC	mm	mm	mm	mm	mm		mm	mm	mm
1	–	eShop ■	–	2.5	5	0.95	57	6	HA	–	0.005	0.008
1,5	–	eShop	–	4	7.5	1.44	57	6	HA	–	0.005	0.008
2	–	eShop ■	–	5	10	1.92	57	6	HA	–	0.006	0.009
2,5	eShop	eShop ■	–	6.5	12.5	2.4	57	6	HA	0.05	0.006	0.009
3	eShop	eShop ■	–	8	13	2.7	57	6	HA	0.1	0.008	0.01
3,5	eShop	eShop	–	11	17	3.2	57	6	HA	0.1	0.008	0.01
4	eShop	eShop ■	–	11	17	3.7	57	6	HA	0.1	0.015	0.02
4,5	eShop	eShop	–	13	19	4.2	57	6	HA	0.1	0.015	0.02
5	eShop	eShop	–	13	19	4.7	57	6	HA	0.1	0.015	0.02
5,5	eShop	eShop	–	13	19	5.2	57	6	HA	0.1	0.015	0.02
6	eShop	eShop ■	eShop	13	19	5.7	57	6	HA	0.2	0.025	0.03
6M	eShop	eShop	–	18	24	5.7	62	6	HA	0.2	0.025	0.03
7,5	eShop	eShop	–	21	25	7.1	63	8	HA	0.2	0.03	0.04
8	eShop	eShop ■	eShop	21	25	7.4	63	8	HA	0.2	0.03	0.04
8M	eShop	eShop	–	24	30	7.4	68	8	HA	0.2	0.03	0.04
9,5	eShop	eShop	–	22	30	8.9	72	10	HA	0.2	0.04	0.05
10	eShop	eShop ■	eShop	22	30	9.2	72	10	HA	0.2	0.04	0.05
10M	eShop	eShop	–	30	38	9.2	80	10	HA	0.2	0.04	0.05
11,5	eShop	eShop ■	–	26	36	10.5	83	12	HA	0.2	0.05	0.07
12	eShop	eShop ■	eShop	26	36	11	83	12	HA	0.2	0.05	0.07
12M	eShop	eShop	–	36	46	11	93	12	HA	0.2	0.05	0.07
14	eShop	–	–	26	36	13	83	14	HA	0.2	0.05	0.07
16	eShop	eShop ■	eShop	36	42	15	92	16	HB	0.2	0.065	0.09
16M	eShop	eShop	–	48	58	15	108	16	HB	0.2	0.065	0.09
20	eShop	eShop	eShop	41	52	19	104	20	HB	0.2	0.085	0.12
20M	eShop	eShop	–	60	74	19	126	20	HB	0.2	0.085	0.12

Solid carbide | Standard | Type W | h6 | 3 | 45° | ≠ | a_e 0.5×D | MTC | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 n_{max} | G 2.5 n_{max}

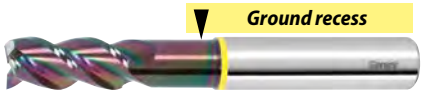
Garant Solid carbide milling cutter MTC

With the latest generation of **DLC coating sp²**.
Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium components.

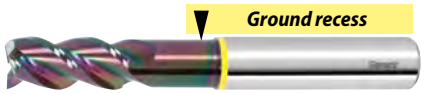
20 2273 – **Without** 45° cutting edge chamfer.

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

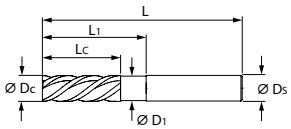
Note:
20 2271 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 202014.

45°


20 2271

90°


20 2273



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2271/2273	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200	●	●	○	○	

Ø h6 D_C	11X 20 2271	11X 20 2273	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45° 20 2271	Alu f_z	Alu f_z
	Solid carbide milling cutter										
	MTC										
mm	DLC	DLC	mm	mm	mm	mm	mm		mm	mm	mm
6	eShop	eShop	13	24	5.7	62	6	HA	0.2	0.025	0.03
8	eShop	eShop	21	30	7.4	68	8	HA	0.2	0.03	0.04
10	eShop	eShop	22	38	9.2	80	10	HA	0.2	0.04	0.05
12	eShop	eShop	26	46	11	93	12	HA	0.2	0.05	0.07
16	eShop	eShop	36	58	15	108	16	HB	0.2	0.065	0.09
20	eShop	eShop	41	74	19	126	20	HB	0.2	0.085	0.12

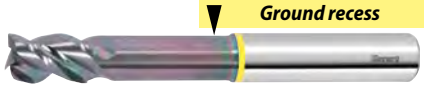
Solid carbide | Standard | Type W | h6 | 3 | 45° | ≠ | a_e 0.3×D | MTC | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 n_{max} | G 2.5 n_{max}

Garant Solid carbide milling cutter MTC

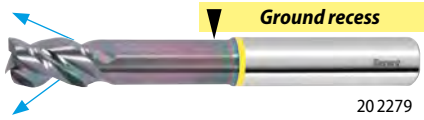
With the latest generation of **DLC coating sp²**.
Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium components.

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

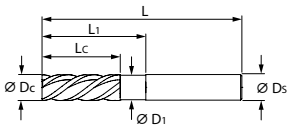
Note:
20 2274 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 202017.
20 2279 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 202019.

45°


20 2274

45°


20 2279



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2274/2279	440	400	360	180	150	180	140	120		170	150	140	120	150		280	150	190	●	●	○	○	

Ø h6 D_C	11X 20 2274	11X 20 2279	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide milling cutter	Solid carbide milling cutter with internal cooling									
	MTC										
mm	DLC	DLC	mm	mm	mm	mm	mm		mm	mm	mm
4	eShop	–	6.5	24	3.7	80	6	HA	0.1	0.015	0.02
5	eShop	–	8	30	4.7	80	6	HA	0.1	0.015	0.02
6	eShop	eShop	10	42	5.7	80	6	HA	0.2	0.025	0.03
8	eShop	eShop	13	62	7.4	100	8	HA	0.2	0.03	0.04
10	eShop	eShop	16	58	9.2	100	10	HA	0.2	0.04	0.05
12	eShop	eShop	19	73	11	120	12	HA	0.2	0.05	0.07
16	eShop	eShop	25	100	15	150	16	HB	0.2	0.065	0.09
20	eShop	eShop	32	98	19	150	20	HB	0.2	0.085	0.12

Solid carbide | Standard | Type W | h6 | 3 | 45° | TPC

h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 nmax | G 2.5 nmax

Garant

Solid carbide milling cutter TPC

Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium workpieces.
With double chip-breaker for exemplary chip formation.

20 2282/2284 – With the latest generation of **DLC coating sp²**.

Note:

20 2282 – **NEW GENERATION AVAILABLE! Recommended successor product is No. 203114.**

20 2284 – **NEW GENERATION AVAILABLE! Recommended successor product is No. 203115.**

20 2281/2282 – $a_{e\,max}$ = 0.12×D for TPC machining.
h_{max}: The values stated in the table are maximum values.

20 2283/2284 – $a_{e\,max}$ = 0.1×D for TPC machining.
h_{max}: The values stated in the table are maximum values.



20 2281



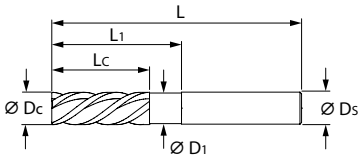
20 2282



20 2283



20 2284



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2281/2283	130	100	85	125	90	100	80	70								100	70	90		●	●	○	○
20 2282/2284	280	270	180	125	110	140	90	80		125	115	105	90	110		120	80	100		●	●	○	○

Ø h6 D_c	20 2281	20 2282	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45°	TPC Alu hmax
	Solid carbide milling cutter TPC									
mm		DLC	mm	mm	mm	mm	mm		mm	mm
6	eShop	eShop	25	30	5.7	71	6	HA	0.2	0.032
8	eShop	eShop	33	40	7.4	80	8	HA	0.2	0.043
10	eShop	eShop	41	50	9.2	95	10	HA	0.2	0.054
12	eShop	eShop	49	60	11	109	12	HA	0.2	0.075
16	eShop	eShop	65	80	15	132	16	HB	0.2	0.096
20	eShop	eShop	82	100	19	154	20	HB	0.2	0.13

Ø h6 D_c	20 2283	20 2284	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45°	TPC Alu hmax
	Solid carbide milling cutter TPC									
mm		DLC	mm	mm	mm	mm	mm		mm	mm
6	eShop	eShop	31	36	5.7	76	6	HA	0.2	0.027
8	eShop	eShop	41	48	7.4	89	8	HA	0.2	0.036
10	eShop	eShop	51	60	9.2	104	10	HA	0.2	0.045
12	eShop	eShop	61	72	11	121	12	HA	0.2	0.063
16	eShop	eShop	81	96	15	148	16	HB	0.2	0.081
20	eShop	eShop	102	120	19	174	20	HB	0.2	0.108

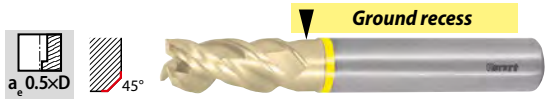
Solid carbide | Standard | Type W | f8 | 3 | 45° | HPC | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 nmax | G 2.5 nmax

Garant Solid carbide roughing end mill HPC

Sturdy roughing end mill **without** knuckle profile.
With strong core, **special chip breaker recesses** and **large polished flutes.**

Application: For roughing milling with high demands on the component surface.

Note:
20 2248 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 202004.



20 2248



20 2251

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn				
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N				
20 2248		500	**480**	**240**														**240**	●	○	○	○
20 2251		250	**240**	**120**														**120**	●	○	○	○

Ø f8 D_C	11X 20 2248	11X 20 2251	L_c		L_1		Ø D_1	L		Ø D_s	Shank form	Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide milling cutter HPC		20 2248	20 2251	20 2248	20 2251		20 2248	20 2251					
mm	ZOX	ZOX	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm
3	eShop	eShop	8	5	12	18	2.7	57	80	6	HA	0.1	0.035	0.045
4	eShop	eShop	11	6.5	18	24	3.7	57	80	6	HA	0.1	0.035	0.045
5	eShop	eShop	13	8	18	30	4.7	57	80	6	HA	0.1	0.06	0.08
6	eShop	eShop	13	10	18	42	5.7	57	80	6	HA	0.2	0.06	0.08
8	eShop	eShop	21	13	25	62	7.4	63	100	8	HA	0.2	0.06	0.08
10	eShop	eShop	22	16	30	58	9.2	72	100	10	HA	0.2	0.07	0.09
12	eShop	eShop	26	19	36	73	11	83	120	12	HA	0.2	0.07	0.09
16	eShop	eShop	36	25	42	100	15	92	150	16	HB	0.2	0.09	0.12
20	eShop	eShop	41	32	52	98	19	104	150	20	HB	0.2	0.12	0.16
25	eShop	–	52	–	62	–	24	121	–	25	HB	0.3	0.14	0.18

Solid carbide | Standard | Type W | f8 | 3 | 45° | HPC | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 nmax | G 2.5 nmax

Garant Solid carbide roughing end mill HPC with internal coolant supply

Sturdy roughing end mill **without** knuckle profile.
With strong core, **special chip breaker recesses** and **large polished flutes.**

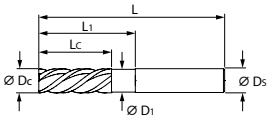
Application: For roughing milling with high demands on the component surface.

Note:
20 2255 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 202006.
20 2259 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 202019.



20 2255





20 2259

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn				
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N				
20 2255		500	**480**	**240**														**240**	●	○	○	○
20 2259		250	**240**	**120**														**120**	●	○	○	○

Ø f8 D_C	11X 20 2255	11X 20 2259	L_c		L_1		Ø D_1	L		Ø D_s	Shank form	Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide milling cutter with internal coolant supply HPC		20 2255	20 2259	20 2255	20 2259		20 2255	20 2259					
mm	ZOX	ZOX	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm
6	eShop	eShop	13	10	18	42	5.7	57	80	6	HA	0.2	0.06	0.08
8	eShop	eShop	21	13	25	62	7.4	63	100	8	HA	0.2	0.06	0.08
10	eShop	eShop	22	16	30	58	9.2	72	100	10	HA	0.2	0.07	0.09
12	eShop	eShop	26	19	36	73	11	83	120	12	HA	0.2	0.07	0.09
16	eShop	eShop	36	25	42	100	15	92	150	16	HB	0.2	0.09	0.12
20	eShop	eShop	41	32	52	98	19	104	150	20	HB	0.2	0.12	0.16
25	eShop	–	52	–	62	–	24	121	–	25	HB	0.3	0.14	0.18

Solid carbide | Type W | 3 | 42° | ≠ | ≠ | a_e 0.5×D | h6 DIN 6535 HA | G 2.5 n_{max} | HPC

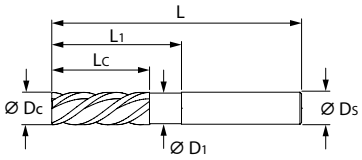
Garant

GARANT Master Alu PickPocket solid carbide roughing end mill HPC

For roughing and finishing.
Up to 2 × D into solid material at very high feed rates and smooth cutting action.
Very high feed rates when plunging vertically.
Ramping capability up to 45°.

20 2006 – Improved chip evacuation due to central through-coolant. Due to the patented geometry also suitable for boring.
20 2004/2006/2010 – With the latest generation of DLC coating sp^2.

Advantage: **Optimised flute form, eccentric relief ground, generous chip spaces.**



e8	DIN 6527	90°	Ground recess	20 2002
e8	DIN 6527	r_v	Ground recess	20 2004
e8	DIN 6527	r_v	Ground recess	20 2006
e6	Standard	90°	Ground recess	20 2008
e6	Standard	r_v	Ground recess	20 2010

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2002/2008	250	200	180	180	130	150	130	110								180	120	150	●	○	○	●	
20 2004/2010	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200	●	○	○	●	
20 2006	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200	●			●	

Ø e8 D_c	11X 20 2002	11X 20 2004	11X 20 2006	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	Alu f_z	Alu f_z
	GARANT Master Alu PickPocket solid carbide roughing end mill		GARANT Master Alu PickPocket solid carbide roughing end mill with through-coolant						20 2004 20 2006		
	HPC										
mm		DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm
1,8	eShop	–	–	4	–	–	57	6	–	0.03	0.04
2	eShop	–	–	5	–	–	57	6	–	0.03	0.04
3	eShop	–	–	8	–	–	57	6	–	0.04	0.05
3,8	eShop	eShop	eShop	8	–	–	57	6	0.1	0.04	0.05
4	eShop	eShop	eShop	8	–	–	57	6	0.1	0.05	0.06
4M	eShop	eShop ■	–	11	17	3.7	57	6	0.1	0.05	0.06
4,8	eShop	eShop	eShop	9	–	–	57	6	0.2	0.05	0.06
5	eShop	eShop	eShop	9	–	–	57	6	0.2	0.06	0.08
5M	eShop	eShop ■	–	13	19	4.7	57	6	0.2	0.06	0.08
5,7	eShop	eShop	eShop	13	19	5.5	57	6	0.2	0.06	0.08
6	eShop	eShop	eShop	13	19	5.8	57	6	0.2	0.06	0.08
7	eShop	eShop	eShop	16	25	6.8	63	8	0.2	0.07	0.1
7,7	eShop	eShop	eShop	19	25	7.5	63	8	0.2	0.07	0.1
8	eShop	eShop	eShop	19	25	7.8	63	8	0.2	0.08	0.1
8M	eShop	eShop	–	21	25	7.8	63	8	0.2	0.08	0.1
9	eShop	eShop	eShop	22	30	8.8	72	10	0.32	0.08	0.12
9,7	eShop	eShop	eShop	22	30	9.5	72	10	0.32	0.09	0.12
10	eShop	eShop ■	eShop	22	30	9.8	72	10	0.32	0.09	0.12
11,7	eShop	eShop	eShop	26	36	11.5	83	12	0.32	0.1	0.15
12	eShop	eShop	eShop	26	36	11.8	83	12	0.32	0.1	0.15
14	eShop	eShop	eShop	26	36	13.8	83	14	0.32	0.12	0.17
15,5	eShop	eShop	–	31	42	15.3	92	16	0.32	0.14	0.18
16	eShop	eShop	eShop	31	42	15.8	92	16	0.32	0.14	0.18
16M	eShop	eShop	–	36	42	15.8	92	16	0.2	0.14	0.18
18	eShop	eShop	eShop	31	42	17.8	92	18	0.32	0.16	0.2
20	eShop	eShop	eShop	41	52	19.8	104	20	0.5	0.18	0.22

Ø e6 D_c	11X 20 2008	11X 20 2010	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	Alu f_z	Alu f_z
	GARANT Master Alu PickPocket solid carbide roughing end mill							20 2010		
	HPC									
mm		DLC	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop ■	18	24	5.8	62	6	0.2	0.04	0.06
8	eShop	eShop ■	24	30	7.8	68	8	0.2	0.05	0.07
10	eShop	eShop ■	30	38	9.8	80	10	0.2	0.06	0.08
12	eShop	eShop ■	36	46	11.8	93	12	0.2	0.08	0.1
16	eShop	eShop ■	48	58	15.8	108	16	0.2	0.12	0.14
20	eShop	eShop ■	60	74	19.8	126	20	0.2	0.16	0.18

Solid carbide | Standard | Type W | 3 | 42° | ≠ | ≠ | h6 DIN 6535 HA | G 2.5 n_{max} | HPC

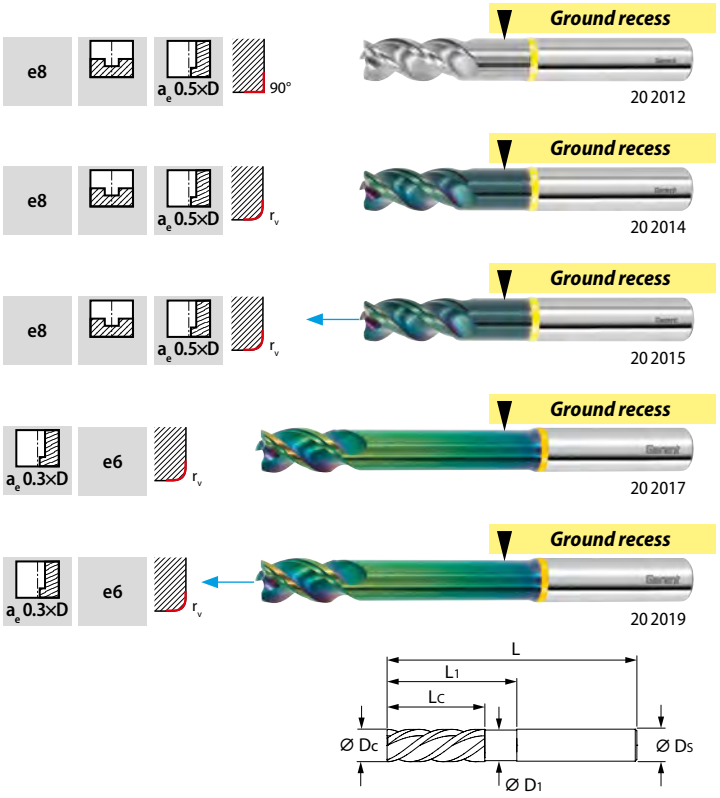
GARANT Master Alu PickPocket solid carbide roughing end mill HPC

For roughing and finishing.
Up to 2×D into solid material at very high feed rates and smooth cutting action.
Very high feed rates when plunging vertically.
Ramping capability up to 45°.

20 2014–2019 – With the latest generation of DLC coating sp^2.
20 2015/2019 – Improved chip evacuation due to central through-coolant.
20 2017/2019 – Very long overhang for safe machining of deep cavities.

Advantage: **Optimised flute form, eccentric relief ground, generous chip spaces.**

Note: A minimum oversize of 0.1×D must be maintained for subsequent finishing operations.



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 2012	250	200	180	180	130	150	130	110								180	120	150		●	○	○	●
20 2014	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200		●	○	○	●
20 2015	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200		●			●
20 2017	380	300	270	180	130	150	130	110		160	150	140	120	150		220	140	160		●	○	○	●
20 2019	380	300	270	180	130	150	130	110		160	150	140	120	150		220	140	160		●			●

Ø e8 D_C	20 2012	20 2014	20 2015	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	Alu f_z	Alu f_z
	GARANT Master Alu PickPocket solid carbide roughing end mill		GARANT Master Alu PickPocket solid carbide roughing end mill with through-coolant								
	HPC										
		DLC	DLC						20 2014 20 2015		
mm				mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	eShop	13	24	5.8	62	6	0.2	0.04	0.06
7	eShop	eShop	–	16	30	6.8	68	8	0.2	0.05	0.07
8	eShop	eShop	eShop	19	30	7.8	68	8	0.2	0.05	0.07
9	eShop	eShop	–	22	38	8.8	80	10	0.32	0.06	0.08
10	eShop	eShop	eShop	22	38	9.8	80	10	0.32	0.06	0.08
12	eShop	eShop	eShop	26	46	11.8	93	12	0.32	0.08	0.1
14	eShop	eShop	–	26	52	13.8	99	14	0.32	0.1	0.12
16	eShop	eShop	eShop	31	58	15.8	108	16	0.32	0.12	0.14
18	eShop	eShop	–	31	67	17.8	117	18	0.32	0.14	0.16
20	eShop	eShop	eShop	41	74	19.8	126	20	0.5	0.2	0.22

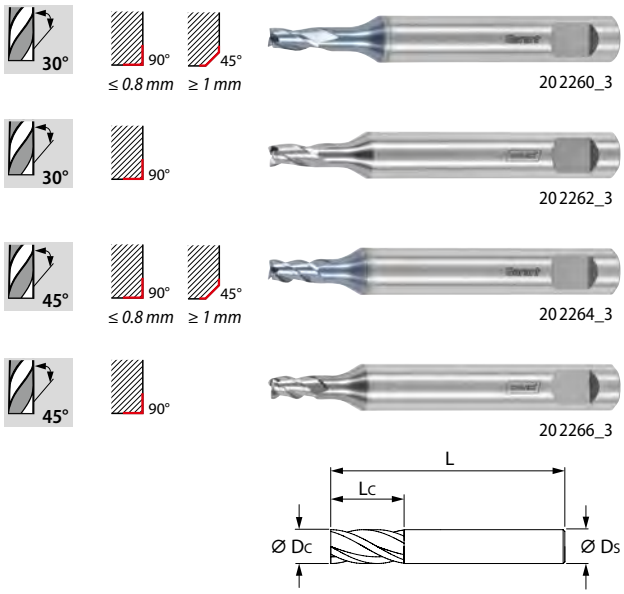
Ø e6 D_C	20 2017	20 2019	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	Alu f_z	Alu f_z
	GARANT Master Alu PickPocket solid carbide roughing end mill	GARANT Master Alu PickPocket solid carbide roughing end mill with through-coolant								
	HPC									
mm	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop ■	–	6.5	24	3.7	80	6	0.1	0.03	0.04
5	eShop ■	–	8	30	4.7	80	6	0.1	0.04	0.06
6	eShop	eShop ■	10	42	5.7	80	6	0.2	0.04	0.06
8	eShop	eShop ■	13	62	7.4	100	8	0.2	0.05	0.07
10	eShop	eShop ■	16	58	9.2	100	10	0.2	0.05	0.07
12	eShop	eShop ■	19	73	11	120	12	0.2	0.06	0.08
16	eShop	eShop	25	100	15	150	16	0.2	0.08	0.1
20	eShop	–	32	98	19	150	20	0.2	0.12	0.15

Solid carbide | Standard | Type N | e8 | 3 | a_e 0.3×D | h6 | h6

Solid carbide mini milling cutter

Shank similar to **DIN 6535 HB**.

20 2260/2264 – Improved coating for general-purpose applications in steel and cast iron.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
20 2260/2264		280	200	120	110	100	70	60						70	50		90	●
20 2262/2266	170	140	100	70	60	45								40			55	○

Ø e8 D_c	11X 20 2260 Garant	12X 20 2262 HOLEX	11X 20 2264 Garant	12X 20 2266 HOLEX	L_c	L	Ø D_s	Shank form	Corner chamfer width at 45° 20 2260 20 2264	< 750 N f_z	< 750 N f_z
	Solid carbide mini milling cutter										
mm	AlCrN	uncoated	AlCrN	uncoated	mm	mm	mm		mm	mm	mm
0,5	eShop	eShop	eShop	eShop	1.5	38	3	HA	–	0.003	0.003
0,6	eShop	eShop	eShop	eShop	1.5	38	3	HA	–	0.003	0.003
0,8	eShop	eShop	eShop	eShop	2	38	3	HA	–	0.003	0.003
1	eShop	eShop	eShop	eShop	2	38	3	HA	0.1	0.005	0.006
1,1	eShop	eShop	eShop	eShop	2	38	3	HA	0.1	0.005	0.006
1,2	eShop	eShop	eShop	eShop	2	38	3	HA	0.1	0.005	0.006
1,3	eShop	eShop	eShop	eShop	3	38	3	HA	0.1	0.005	0.006
1,5	eShop	eShop	eShop	eShop	3	38	3	HA	0.1	0.005	0.006
1,6	eShop	eShop	eShop	eShop	3	38	3	HA	0.1	0.005	0.006
1,7	eShop	eShop	eShop	eShop	3	38	3	HA	0.1	0.005	0.006
1,8	eShop	eShop	eShop	eShop	3	38	3	HA	0.1	0.005	0.006
1,9	eShop	eShop	eShop	eShop	4	38	3	HA	0.1	0.005	0.006
2	eShop	eShop	eShop	eShop	4	45	6	HB	0.1	0.01	0.011
2,5	eShop	eShop	eShop	eShop	4	45	6	HB	0.1	0.01	0.011
2,8	eShop	–	–	–	5	45	6	HB	0.13	0.02	0.025
3	eShop	eShop	eShop	eShop	5	45	6	HB	0.13	0.02	0.025
3,5	eShop	eShop	eShop	eShop	5	45	6	HB	0.13	0.02	0.025
3,8	eShop	–	–	–	7	45	6	HB	0.18	0.02	0.025
4	eShop	eShop	eShop	eShop	7	45	6	HB	0.18	0.02	0.025
4,5	eShop	eShop	eShop	eShop	7	45	6	HB	0.18	0.02	0.025
4,8	eShop	–	–	–	8	45	6	HB	0.2	0.03	0.04
5	eShop	eShop	eShop	eShop	8	45	6	HB	0.2	0.03	0.04
5,5	eShop	eShop	eShop	eShop	8	45	6	HB	0.2	0.03	0.04
5,75	eShop	eShop	eShop	eShop	8	45	6	HB	0.2	0.03	0.04
6	eShop	eShop	eShop	eShop	8	45	6	HB	0.2	0.04	0.05
6,75	eShop	eShop	eShop	eShop	10	55	8	HB	0.2	0.04	0.05
7	eShop	eShop	eShop	eShop	10	55	8	HB	0.2	0.04	0.05
7,75	eShop	eShop	eShop	eShop	10	55	8	HB	0.2	0.04	0.05
8	eShop	eShop	eShop	eShop	11	55	8	HB	0.2	0.05	0.08
8,7	eShop	eShop	eShop	eShop	11	55	10	HB	0.3	0.05	0.08
9	eShop	eShop	eShop	eShop	11	55	10	HB	0.3	0.05	0.08
9,7	eShop	eShop	eShop	eShop	11	55	10	HB	0.3	0.05	0.08
10	eShop	eShop	eShop	eShop	13	55	10	HB	0.3	0.06	0.09
11	eShop	–	–	–	15	60	12	HB	0.3	0.06	0.09
12	eShop	eShop	eShop	eShop	15	60	12	HB	0.3	0.07	0.1
14	eShop	eShop	eShop	eShop	15	60	14	HB	0.3	0.07	0.1
16	eShop	eShop	eShop	eShop	18	65	16	HB	0.4	0.08	0.13
20	eShop	eShop	eShop	eShop	22	75	20	HB	0.5	0.1	0.15

Solid carbide | Standard | Type N | e8 | a_e 0.5×D | h6 DIN 6535 HA | HPC

GARANT Master Titan solid carbide mini milling cutter / GARANT Master Steel solid carbide mini milling cutter

Extra short cutter for maximum stability. **Shank length to DIN** for improved support of the tool in the holder. This significantly increases the tool life.

20 2287 – Attractively priced and extra stable version for **high-power machining of titanium.**

20 2289/2295 – Tool for **general-purpose machining.**

Note:

20 2289 – For **HB shanks** use order **no. 202291**.

20 2295 – For **HB shanks** use order **no. 202297**.

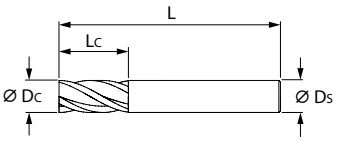
20 2289/2295 – HB shanks are available at the same price as HA.













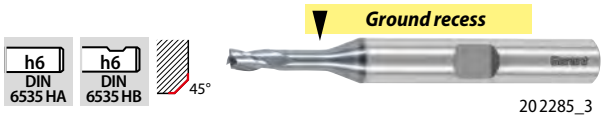
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2287																60			●				
20 2289/2295		290	240	140	120	100	70	50						90	70	40	85	●	●	○	●	●	

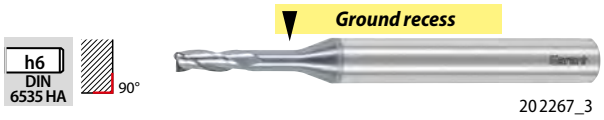
Ø e8 D_c	11Z 20 2287 GARANT Master Titan solid carbide mini milling cutter HPC	11X 20 2289 GARANT Master Steel solid carbide mini milling cutter HPC	11X 20 2295 GARANT Master Steel solid carbide mini milling cutter HPC	No. of teeth Z	L_c		L		Ø D_s		Corner chamfer width at 45°	Corner rounding r_v	< 900 N f_z	< 900 N f_z	Ti > 850 N f_z	
				20 2287	20 2287 20 2295	20 2289	20 2287	20 2289 20 2295	20 2287	20 2289 20 2295	20 2295	20 2287	20 2289 20 2295	20 2289 20 2295	20 2287	
mm	TiAlN	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
0,2	eShop	eShop	–	2	0.6	0.6	44	38	4	3	–	–	0.002	0.003	0.002	
0,5	eShop	eShop	–	2	1	1.5	44	38	4	3	–	–	0.002	0.003	0.003	
0,6	–	eShop	–	–	–	1.5	–	38	–	3	–	–	0.003	0.005	–	
0,8	–	eShop	eShop	–	2	2	–	38	–	3	0.01	–	0.003	0.005	–	
1	eShop	eShop	eShop	2	2	2	44	38	4	3	0.02	0.02	0.005	0.006	0.005	
1,1	–	–	eShop	–	2	–	–	38	–	3	0.02	–	0.005	0.006	–	
1,2	–	eShop	eShop	–	2	2	–	38	–	3	0.02	–	0.005	0.006	–	
1,3	–	–	eShop	–	3	–	–	38	–	3	0.02	–	0.005	0.006	–	
1,4	–	–	eShop	–	3	–	–	38	–	3	0.02	–	0.005	0.006	–	
1,5	eShop	eShop	eShop	2	3	3	44	38	4	3	0.02	0.02	0.005	0.006	0.006	
1,8	–	eShop	eShop	–	3	3	–	38	–	3	0.02	–	0.005	0.006	–	
2	eShop	eShop	eShop	3	4	4	50	50	6	6	0.03	0.03	0.01	0.012	0.01	
2,5	–	eShop	eShop	–	5	5	–	50	–	6	0.03	–	0.01	0.012	–	
3	eShop	eShop	eShop	3	6	6	50	50	6	6	0.03	0.03	0.02	0.022	0.012	
3,5	–	eShop	eShop	–	6	6	–	50	–	6	0.03	–	0.02	0.022	–	
4	eShop	eShop	eShop	3	7	7	50	50	6	6	0.03	0.03	0.02	0.022	0.02	
4,5	–	eShop	eShop	–	8	8	–	50	–	6	0.03	–	0.025	0.028	–	
5	eShop	eShop	eShop	3	8	8	50	50	6	6	0.04	0.04	0.025	0.028	0.025	
5,5	–	eShop	eShop	–	8	8	–	50	–	6	0.04	–	0.025	0.028	–	
6	eShop	eShop	eShop	3	10	10	50	50	6	6	0.04	0.04	0.03	0.035	0.03	
8	eShop	eShop	eShop	3	13	13	55	55	8	8	0.05	0.05	0.04	0.045	0.035	
10	eShop	eShop	eShop	4	16	16	66	66	10	10	0.05	0.05	0.05	0.06	0.04	
12	eShop	eShop	eShop	4	16	16	73	73	12	12	0.05	0.05	0.06	0.07	0.05	
16	–	eShop	eShop	–	18	18	–	82	–	16	0.06	–	0.08	0.09	–	

Solid carbide | DIN 6527 | Type N | e8 | 3 | 30° | a_e 0.3×D

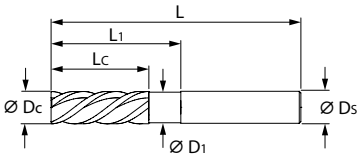
Solid carbide milling cutter

Dimensions similar to **DIN 6527**.
Improved coating for general-purpose applications in steel and cast iron.









Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2267/2285		280	200	120	110	100	70	60						70	50		90	●		●	●	○	●
20 2275		200	160	100	80	70	50							60	40		75	○		●	●	○	●

Solid carbide milling cutter

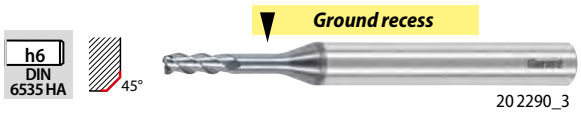
Ø e8 D_c	11X 20 2285 Garant	11X 20 2267 Garant	12X 20 2275 HOLEX	L_c		L_1		Ø D_1	L		Ø D_s	Shank form	Corner chamfer width at 45°		< 750 N f_z	< 750 N f_z
				20 2285	20 2267 20 2275	20 2285	20 2267	20 2285 20 2267	20 2285	20 2267 20 2275		20 2285	20 2285	20 2275		
mm	AlCrN	AlCrN	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm	mm
1	eShop	eShop	–	3	3	–	–	–	38	50	3	HA	0.1	–	0.005	0.006
1,2	eShop	eShop	–	3	4	–	–	–	38	50	3	HA	0.1	–	0.005	0.006
1,5	eShop	eShop	–	3	4	–	–	–	38	50	3	HA	0.1	–	0.005	0.006
1,8	eShop	eShop	–	3	5	–	–	–	38	50	3	HA	0.1	–	0.005	0.006
2	eShop	eShop	–	4	5	–	15	1.8	38	50	3	HA	0.1	–	0.01	0.011
2,5	eShop	eShop	–	4	6	10	15	2.3	50	50	6	HB	0.1	–	0.01	0.011
2,8	–	eShop	–	–	8	–	15	2.6	–	57	6	–	–	–	0.02	0.025
3	eShop	eShop	eShop	5	8	12	15	2.8	50	57	6	HB	0.1	0.13	0.02	0.025
3,5	eShop	eShop	eShop	6	11	13	15	3.3	54	57	6	HB	0.1	0.13	0.02	0.025
3,8	–	eShop	–	–	11	–	15	3.6	–	57	6	–	–	–	0.02	0.025
4	eShop	eShop	eShop	8	11	15	15	3.8	54	57	6	HB	0.1	0.18	0.02	0.025
4,5	eShop	eShop	eShop	9	13	15	21	4.3	54	57	6	HB	0.1	0.18	0.02	0.025
4,8	–	eShop	–	–	13	–	21	4.6	–	57	6	–	–	–	0.03	0.04
5	eShop	eShop	eShop	9	13	16	21	4.8	54	57	6	HB	0.1	0.2	0.03	0.04
5,5	eShop	eShop	eShop	10	13	17	21	5.3	54	57	6	HB	0.1	0.2	0.03	0.04
5,75	eShop	eShop	eShop	10	13	17	21	5.55	54	57	6	HB	0.1	0.2	0.03	0.04
6	eShop	eShop	eShop	10	13	17	21	5.8	54	57	6	HB	0.1	0.2	0.04	0.05
6,5	–	eShop	eShop	–	16	–	27	6.3	–	63	8	–	–	0.2	0.04	0.05
7	–	eShop	eShop	–	16	–	27	6.8	–	63	8	–	–	0.2	0.04	0.05
7,5	–	eShop	eShop	–	19	–	27	7.3	–	63	8	–	–	0.2	0.04	0.05
8	eShop	eShop	eShop	12	19	20	27	7.8	58	63	8	HB	0.1	0.2	0.05	0.08
8,5	–	eShop	eShop	–	19	–	32	8.3	–	72	10	–	–	0.3	0.05	0.08
9	–	eShop	eShop	–	19	–	32	8.8	–	72	10	–	–	0.3	0.05	0.08
9,5	–	eShop	eShop	–	22	–	32	9.3	–	72	10	–	–	0.3	0.05	0.08
10	eShop	eShop	eShop	14	22	24	32	9.8	66	72	10	HB	0.1	0.3	0.06	0.09
11	–	eShop	–	–	26	–	38	10.8	–	83	12	–	–	–	0.06	0.09
12	eShop	eShop	eShop	16	26	26	38	11.8	73	83	12	HB	0.1	0.3	0.07	0.1
14	eShop	eShop	eShop	18	26	28	38	13.8	75	83	14	HB	0.1	0.3	0.07	0.1
16	eShop	eShop	eShop	22	32	32	44	15.7	82	92	16	HB	0.1	0.4	0.08	0.13
18	eShop	eShop	eShop	24	32	34	44	17.7	84	92	18	HB	0.1	0.4	0.09	0.15
20	eShop	eShop	eShop	26	38	40	54	19.7	92	104	20	HB	0.1	0.5	0.1	0.15

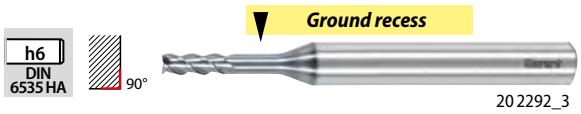
Solid carbide | DIN 6527 | Type N | e8 | 3 | 45° | a_e 0.5×D

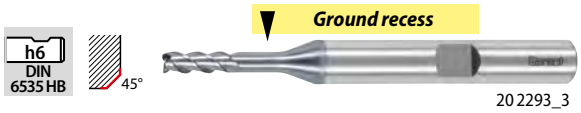
Solid carbide milling cutter

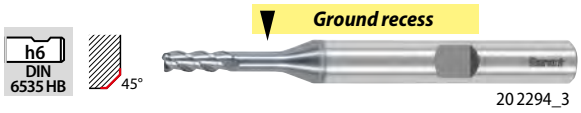
Dimensions similar to **DIN 6527**.
Improved coating for general-purpose applications in steel and cast iron.

Note:
20 2293 – **Successor product to No. 202320.**

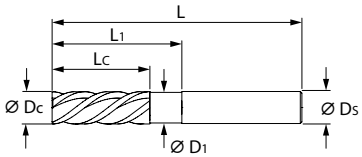












Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2290–20 2294		280	200	**120**	**110**	**100**	**70**	60						**70**	50		**90**	●		●	●	○	●
20 2296		200	160	**100**	**80**	**70**	**50**							**60**	40		**75**	○		●	●	○	●

Solid carbide milling cutter

Ø e8 D_c	11X 20 2290	11X 20 2292 Garant	11X 20 2293	11X 20 2294	12X 20 2296 HOLEX	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45°		< 750 N f_z	< 750 N f_z
							20 2290 20 2292 20 2293 20 2294	20 2290 20 2292 20 2293 20 2294			20 2293 20 2294 20 2296	20 2290 20 2294 20 2296	20 2293		
mm	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN	mm	mm	mm	mm	mm		mm	mm	mm	mm
1	eShop	eShop	–	–	–	3	–	–	50	3	–	0.1	–	0.005	0.006
1,2	eShop	eShop	–	–	–	4	–	–	50	3	–	0.1	–	0.005	0.006
1,5	eShop	eShop	–	–	–	4	–	–	50	3	–	0.1	–	0.005	0.006
1,8	eShop	eShop	–	–	–	5	–	–	50	3	–	0.1	–	0.005	0.006
2	eShop	eShop	–	–	–	5	15	1.8	50	3	–	0.1	–	0.01	0.011
2,5	eShop	eShop	–	eShop	–	6	15	2.3	50	6	HB	0.1	–	0.01	0.011
3	eShop	eShop	eShop	eShop	eShop	8	15	2.8	57	6	HB	0.13	0.1	0.02	0.025
3,5	eShop	eShop	eShop	eShop	eShop	11	15	3.3	57	6	HB	0.13	0.1	0.02	0.025
4	eShop	eShop	eShop	eShop	eShop	11	15	3.8	57	6	HB	0.18	0.1	0.02	0.025
4,5	eShop	eShop	eShop	eShop	eShop	13	21	4.3	57	6	HB	0.18	0.1	0.02	0.025
5	eShop	eShop	eShop	eShop	eShop	13	21	4.8	57	6	HB	0.2	0.1	0.03	0.04
5,5	eShop	eShop	eShop	eShop	eShop	13	21	5.3	57	6	HB	0.2	0.1	0.03	0.04
5,75	eShop	eShop	eShop	eShop	eShop	13	21	5.55	57	6	HB	0.2	0.1	0.03	0.04
6	eShop	eShop	eShop	eShop	eShop	13	21	5.8	57	6	HB	0.2	0.1	0.04	0.05
6,5	eShop	eShop	eShop	eShop	eShop	16	27	6.3	63	8	HB	0.2	0.1	0.04	0.05
7	eShop	eShop	eShop	eShop	eShop	16	27	6.8	63	8	HB	0.2	0.1	0.04	0.05
7,5	eShop	eShop	eShop	eShop	eShop	19	27	7.3	63	8	HB	0.2	0.1	0.04	0.05
8	eShop	eShop	eShop	eShop	eShop	19	27	7.8	63	8	HB	0.2	0.1	0.05	0.08
8,5	eShop	eShop	eShop	eShop	eShop	19	32	8.3	72	10	HB	0.3	0.1	0.05	0.08
9	eShop	eShop	eShop	eShop	eShop	19	32	8.8	72	10	HB	0.3	0.1	0.05	0.08
9,5	eShop	eShop	eShop	eShop	eShop	22	32	9.3	72	10	HB	0.3	0.1	0.05	0.08
10	eShop	eShop	eShop	eShop	eShop	22	32	9.8	72	10	HB	0.3	0.1	0.06	0.09
12	eShop	eShop	eShop	eShop	eShop	26	38	11.8	83	12	HB	0.3	0.1	0.07	0.1
14	eShop	eShop	eShop	eShop	eShop	26	38	13.8	83	14	HB	0.3	0.1	0.07	0.1
16	eShop	eShop	eShop	eShop	eShop	32	44	15.7	92	16	HB	0.4	0.1	0.08	0.13
18	eShop	eShop	eShop	eShop	eShop	32	44	17.7	92	18	HB	0.4	0.1	0.09	0.15
20	eShop	eShop	eShop	eShop	eShop	38	54	19.7	104	20	HB	0.5	0.1	0.1	0.15

Solid carbide | DIN 6527 | Type N | e8 | 3 | 45° | a_e 0.5×D

h6 DIN 6535 HA | h6 DIN 6535 HB

Solid carbide milling cutter

Dimensions similar to **DIN 6527**.

20 2305 – Improved coating for general-purpose applications in steel and cast iron.

Note:

20 2305 – **Successor product to No. 202210.**

20 2307 – **Successor product to No. 202240 / 202245.**



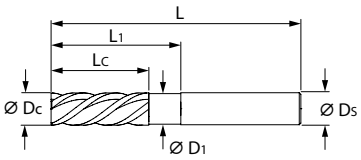
20 2305_3



20 2299_3



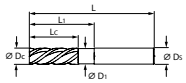
20 2307_3



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2299/2307	170	**140**	**100**	**70**	**60**	**45**								40			55	○		●	●	○	●
20 2305		280	200	**120**	**110**	**100**	**70**	60						**70**	50		**90**	●		●	●	○	●

Ø e8 D_c	11X 20 2305 Garant	12X 20 2299 HOLEX	12X 20 2307	L_c		L_1	Ø D_1	L		Ø D_s	Shank form	Corner chamfer width at 45°		< 750 N f_z	< 750 N f_z
	Solid carbide milling cutter			20 2305	20 2299 20 2307	20 2305	20 2305	20 2305	20 2299 20 2307			20 2305	20 2299		
mm	AlCrN			mm	mm	mm	mm	mm	mm	mm		mm	mm	mm	mm
1	eShop	eShop	eShop	3	3	–	–	38	50	3	HA	0.1	0.1	0.005	0.006
1,2	eShop	eShop	eShop	3	4	–	–	38	50	3	HA	0.1	0.1	0.005	0.006
1,5	eShop	eShop	eShop	3	4	–	–	38	50	3	HA	0.1	0.1	0.005	0.006
1,8	eShop	eShop	eShop	3	5	–	–	38	50	3	HA	0.1	0.1	0.005	0.006
2	eShop	eShop	eShop	4	5	–	–	38	50	3	HA	0.1	0.1	0.01	0.011
2,5	eShop	eShop	eShop	4	6	10	2.3	50	50	6	HB	0.1	0.1	0.01	0.011
3	eShop	eShop	eShop	5	8	12	2.8	50	57	6	HB	0.1	0.13	0.02	0.025
3,5	eShop	eShop	eShop	6	11	13	3.3	54	57	6	HB	0.1	0.13	0.02	0.025
4	eShop	eShop	eShop	8	11	15	3.8	54	57	6	HB	0.1	0.18	0.02	0.025
4,5	eShop	eShop	eShop	9	13	15	4.3	54	57	6	HB	0.1	0.18	0.02	0.025
5	eShop	eShop	eShop	9	13	16	4.8	54	57	6	HB	0.1	0.2	0.03	0.04
5,5	eShop	eShop	eShop	10	13	17	5.3	54	57	6	HB	0.1	0.2	0.03	0.04
5,75	eShop	eShop	eShop	10	13	17	5.55	54	57	6	HB	0.1	0.2	0.03	0.04
6	eShop	eShop	eShop	10	13	17	5.8	54	57	6	HB	0.1	0.2	0.04	0.05
6,5	–	–	eShop	–	16	–	–	–	63	8	HB	–	–	0.04	0.05
7	–	–	eShop	–	16	–	–	–	63	8	HB	–	–	0.04	0.06
7,5	–	–	eShop	–	19	–	–	–	63	8	HB	–	–	0.05	0.07
8	eShop	eShop	eShop	12	19	20	7.8	58	63	8	HB	0.1	0.2	0.05	0.08
8,5	–	–	eShop	–	19	–	–	–	72	10	HB	–	–	0.05	0.08
9	–	–	eShop	–	19	–	–	–	72	10	HB	–	–	0.05	0.08
9,5	–	–	eShop	–	22	–	–	–	72	10	HB	–	–	0.06	0.09
10	eShop	eShop	eShop	14	22	24	9.8	66	72	10	HB	0.1	0.3	0.06	0.09
12	eShop	eShop	eShop	16	26	26	11.8	73	83	12	HB	0.1	0.3	0.07	0.1
14	eShop	eShop	eShop	18	26	28	13.8	75	83	14	HB	0.1	0.3	0.07	0.1
16	eShop	eShop	eShop	22	32	32	15.7	82	92	16	HB	0.1	0.4	0.08	0.13
18	eShop	eShop	eShop	24	32	34	17.7	84	92	18	HB	0.1	0.4	0.09	0.15
20	eShop	eShop	eShop	26	38	40	19.7	92	104	20	HB	0.1	0.5	0.1	0.15

Solid carbide | Type N | h10 | 3 | 40° | ≠ | ≠ | h6 DIN 6535 HB | HPC



Garant GARANT Master INOX solid carbide milling cutter HPC

For roughing and finishing
HPC milling cutters with **newly developed high-performance coating** for **outstanding service life** and **optimum metal removal rates** in a wide range of stainless steels.
Greater oxidation resistance and **high-temperature hardness**.
Can be used at **high cutting speeds**, particularly suitable even for TOOLOX®.
20 2387 – Dimensions similar to **DIN 6527**.

a_e 0.5×D | DIN 6527 | 45°

Ground recess



20 2387

a_e 0.3×D | Standard | 45°

Ground recess

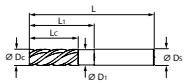


20 2389

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 2387				250	230	200	170	170						115	80	110	90	○		●	●	○	●
20 2389				240	220	180	150	150						115	80	100	85	○		●	●	○	●

Ø h10 D_c	11X 20 2387	11X 20 2389	L_c		L_1		Ø D_1	L		Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	GARANT Master INOX solid carbide milling cutter												
	HPC												
			20 2387	20 2389	20 2387	20 2389		20 2387	20 2389				
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
1	eShop	eShop	2.5	3	5	13	0.9	57	57	6	0.05	0.01	0.012
1,5	eShop	–	4	–	7.5	–	1.44	57	–	6	0.05	0.01	0.012
2	eShop	eShop	5	5	10	15	1.92	57	57	6	0.05	0.02	0.024
2,5	eShop	–	6	–	12.5	–	2.4	57	–	6	0.05	0.02	0.024
3	eShop	eShop	8	8	15	20	2.9	57	57	6	0.05	0.02	0.024
3,5	eShop	–	11	–	16	–	3.4	57	–	6	0.05	0.02	0.024
4	eShop	eShop	11	16	16	24	3.9	57	62	6	0.1	0.02	0.024
4,5	eShop	–	13	–	19	–	4.4	57	–	6	0.1	0.04	0.048
5	eShop	eShop	13	17	19	24	4.9	57	62	6	0.1	0.04	0.048
5,5	eShop	–	13	–	19	–	5.4	57	–	6	0.1	0.04	0.048
6	eShop	eShop	13	18	19	24	5.9	57	62	6	0.1	0.04	0.048
7	eShop	–	19	–	25	–	6.8	63	–	8	0.1	0.04	0.048
7,5	eShop	–	19	–	25	–	7.3	63	–	8	0.1	0.04	0.048
8	eShop	eShop	19	24	25	30	7.8	63	70	8	0.1	0.04	0.048
9	eShop	–	22	–	30	–	8.7	72	–	10	0.1	0.06	0.072
10	eShop	eShop	22	30	30	38	9.7	72	80	10	0.1	0.06	0.072
12	eShop	eShop	26	36	36	46	11.7	83	93	12	0.1	0.06	0.072
14	eShop	–	26	–	36	–	13.7	83	–	14	0.15	0.08	0.096
16	eShop	eShop	32	48	42	58	15.5	92	108	16	0.2	0.08	0.096
20	eShop	eShop	38	60	52	74	19.5	104	124	20	0.2	0.1	0.12

Solid carbide | Standard | Type N | e8 | 3 | 35° | ≠ | ≠ | a_e 0.5×D | h6 DIN 6535 HB | HPC



HOLEX HOLEX Pro INOX solid carbide milling cutter HPC

HPC milling cutter with **newly developed high-performance coating** for **outstanding tool life** and **optimum metal removal rate** in a wide range of stainless steels.
Can be used at **high cutting speeds**, highly suitable even for steels up to approx. 1100 N/mm².

a_e 0.5×D | 45°

Ground recess



20 2378

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 2378				240	220	180	180	150						115	80	100	85	○		●	●	○	○
20 2382				215	200	160	160	135						100	70	90	75	○		●	●	○	○

Ø e8 D_c	12X 20 2378	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	HOLEX Pro Inox solid carbide milling cutter								
	HPC								
mm	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	8	13	2.8	57	6	0.1	0.012	0.015
4	eShop	11	17	3.8	57	6	0.1	0.012	0.015
5	eShop	13	19	4.8	57	6	0.1	0.025	0.025
6	eShop	13	19	5.8	57	6	0.1	0.025	0.03
7	eShop	21	25	6.7	63	8	0.2	0.025	0.04
8	eShop	21	25	7.7	63	8	0.2	0.025	0.04
9	eShop	22	30	8.7	72	10	0.2	0.04	0.045
10	eShop	22	30	9.7	72	10	0.2	0.04	0.045
12	eShop	26	36	11.6	83	12	0.3	0.04	0.05
16	eShop	36	42	15.5	92	16	0.3	0.05	0.055
20	eShop	41	52	19.5	104	20	0.3	0.07	0.08

Solid carbide | Type N | f8 | 3 | 45° | ≠ | ≠ | MTC

Garant Solid carbide milling cutter MTC

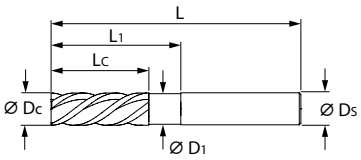
Special flute profile. Strengthened core.
MTC rough milling up to 1.5×D in solid material.
Eccentric relief ground.

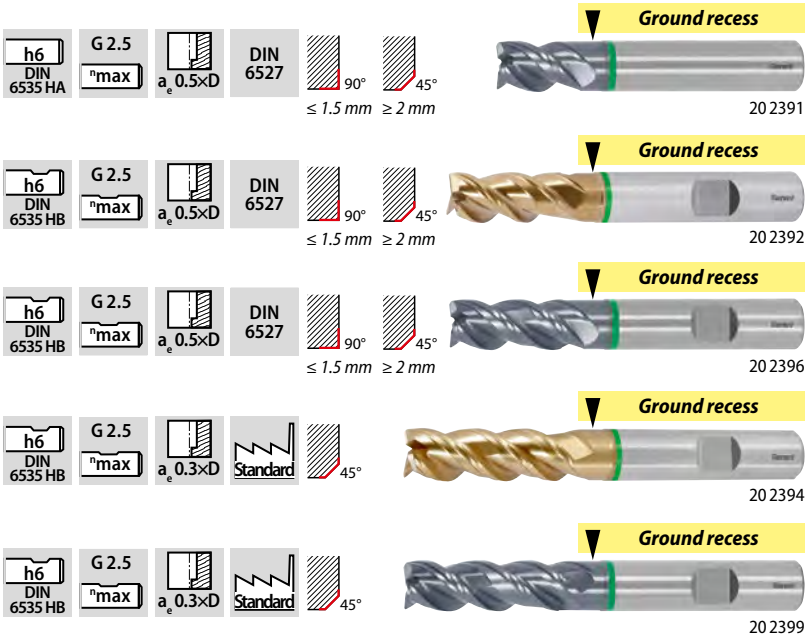
20 2391 – Particularly sturdy due to short overall length. Overall length similar to **DIN 6527 short.**

20 2396/2399 – Improved coating for a further reduction in cutting force combined with increased tool life.

20 2392/2396 – Lengths similar to **DIN 6527 long.**

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.



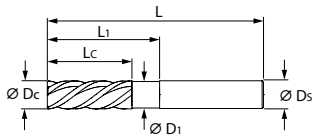


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
20 2391–20 2399				250	220	200	190	170	90	60				130	100	50	160	●

Ø f8 D_c	11X 20 2391	11X 20 2392	11X 20 2396	L_c		L_1		Ø D_1		L		Ø D_s	Corner chamfer width at 45°		< 900 N f_z	< 900 N f_z
	Solid carbide milling cutter MTC			20 2391	20 2392 20 2396	20 2391	20 2392 20 2396	20 2391	20 2392 20 2396	20 2391	20 2392 20 2396		20 2391	20 2392 20 2396		
mm	AlCrN	SiTiN	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
1	–	eShop	eShop	–	2.5	–	5	–	0.95	–	57	6	–	–	0.01	0.012
1,5	eShop	eShop	eShop	3	4	–	7.5	–	1.44	38	57	6	–	–	0.01	0.012
2	eShop	eShop	eShop	4	5	–	10	–	1.92	38	57	6	0.05	0.05	0.02	0.024
2,5	eShop	eShop	eShop	4	6.5	10	12.5	2.3	2.4	50	57	6	0.05	0.05	0.02	0.024
3	eShop	eShop	eShop	5	8	12	15	2.8	2.9	50	57	6	0.08	0.1	0.02	0.024
3,5	eShop	eShop	eShop	6	11	13	16	3.3	3.4	54	57	6	0.08	0.1	0.02	0.024
4	eShop	eShop	eShop	8	11	15	16	3.8	3.9	54	57	6	0.08	0.1	0.02	0.024
4,5	eShop	eShop	eShop	9	13	15	19	4.3	4.4	54	57	6	0.08	0.1	0.04	0.048
5	eShop	eShop	eShop	9	13	16	19	4.8	4.9	54	57	6	0.08	0.1	0.04	0.048
5,5	eShop	eShop	eShop	10	13	17	19	5.3	5.4	54	57	6	0.08	0.1	0.04	0.048
6	eShop	eShop	eShop	12	13	17	19	5.8	5.9	54	57	6	0.15	0.2	0.04	0.048
6,5	–	eShop	eShop	–	19	–	25	–	6.3	–	63	8	–	0.2	0.04	0.048
7	–	eShop	eShop	–	19	–	25	–	6.8	–	63	8	–	0.2	0.04	0.048
7,5	–	eShop	eShop	–	19	–	25	–	7.3	–	63	8	–	0.2	0.04	0.048
8	eShop	eShop	eShop	12	19	20	25	7.8	7.8	58	63	8	0.15	0.2	0.04	0.048
8,5	–	eShop	eShop	–	22	–	30	–	8.2	–	72	10	–	0.2	0.06	0.072
9	–	eShop	eShop	–	22	–	30	–	8.7	–	72	10	–	0.2	0.06	0.072
9,5	–	eShop	eShop	–	22	–	30	–	9.2	–	72	10	–	0.2	0.06	0.072
10	eShop	eShop	eShop	14	22	24	30	9.8	9.7	66	72	10	0.15	0.2	0.06	0.072
12	eShop	eShop	eShop	16	26	26	36	11.8	11.7	73	83	12	0.15	0.2	0.06	0.072
14	–	eShop	eShop	–	26	–	36	–	13.7	–	83	14	–	0.2	0.08	0.096
16	–	eShop	eShop	–	32	–	42	–	15.5	–	92	16	–	0.2	0.08	0.096
20	–	eShop	eShop	–	38	–	52	–	19.5	–	104	20	–	0.2	0.1	0.12

Ø f8 D_c	11X 20 2394	11X 20 2399	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide milling cutter MTC									
mm	SiTiN	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	16	24	3.9	62	6	0.1	0.02	0.024
5	eShop	eShop	17	24	4.9	62	6	0.1	0.04	0.048
6	eShop	eShop	18	24	5.9	62	6	0.2	0.04	0.048
8	eShop	eShop	24	30	7.8	68	8	0.2	0.04	0.048
10	eShop	eShop	30	38	9.7	80	10	0.2	0.06	0.072
12	eShop	eShop	36	46	11.7	93	12	0.2	0.06	0.072
16	eShop	eShop	48	58	15.5	108	16	0.2	0.08	0.096
20	eShop	eShop	60	74	19.5	126	20	0.2	0.1	0.12

Solid carbide | Type N | f8 | 3 | 38° | ≠ | ≠ | a_e 0.4×D | h6 DIN 6535 HB | HPC



Garant

GARANT Master Steel PickPocket solid carbide roughing end mill HPC

For **roughing and finishing**
With corner radii similar to torus cutters.
Up to 1×D into solid material **at very high feed rates** with smooth cutting action.
20 2402 – Corner radii matched to DIN specifications for **drive keyways**.
Advantage: Optimised flute form, eccentric relief ground, wide chip space.

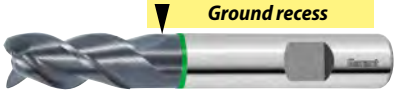
DIN 6527 r_v



20 2402

DIN 6527 r_v

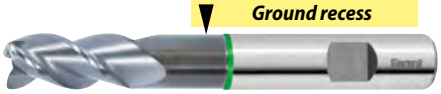
Ground recess



20 2404

Standard r_v

Ground recess



20 2406

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2402–20 2406				260	240	190	180	150						80	70		250	●		●	○	●	●

Ø f8 D_c	20 2402 / 20 2404		L_c		L_1	Ø D_1	L		Ø D_s	Corner rounding r_v		< 900 N f_z	< 900 N f_z
	GARANT Master Steel PickPocket solid carbide roughing end mill HPC		20 2402	20 2404	20 2404	20 2404	20 2402	20 2404		20 2402	20 2404		
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3,8	eShop	eShop	5	10	–	–	54	57	6	0.12	0.19	0.03	0.04
4	eShop	eShop	5	11	–	–	54	57	6	0.12	0.2	0.03	0.04
4,8	eShop	eShop	6	11	–	–	54	57	6	0.2	0.24	0.04	0.05
5	eShop	eShop	6	13	–	–	54	57	6	0.2	0.25	0.04	0.05
5,7	eShop	eShop	7	13	19	5.5	54	57	6	0.2	0.29	0.04	0.05
6	eShop	eShop	7	13	19	5.8	54	57	6	0.2	0.3	0.04	0.05
6,7	eShop	eShop	8	16	25	6.5	58	63	8	0.2	0.34	0.04	0.05
7	eShop	eShop	8	16	25	6.8	58	63	8	0.2	0.35	0.04	0.05
7,7	eShop	eShop	9	19	25	7.5	58	63	8	0.2	0.39	0.05	0.06
8	eShop	eShop	9	19	25	7.8	58	63	8	0.2	0.4	0.05	0.06
8,7	–	eShop	–	22	30	8.5	–	72	10	–	0.44	0.06	0.08
9	eShop	eShop	10	22	30	8.8	66	72	10	0.32	0.45	0.06	0.08
9,7	eShop	eShop	11	22	30	9.5	66	72	10	0.32	0.49	0.06	0.08
10	eShop	eShop	11	22	30	9.8	66	72	10	0.32	0.5	0.06	0.08
11,7	eShop	eShop	12	26	36	11.5	73	83	12	0.32	0.59	0.07	0.09
12	eShop	eShop	12	26	36	11.8	73	83	12	0.32	0.6	0.07	0.09
13,7	–	eShop	–	26	36	13.5	–	83	14	–	0.69	0.08	0.1
14	eShop	eShop	14	26	36	13.8	75	83	14	0.32	0.7	0.08	0.1
15,5	eShop	eShop	16	31	42	15.3	82	92	16	0.32	0.78	0.08	0.1
16	eShop	eShop	16	31	42	15.8	82	92	16	0.32	0.8	0.08	0.1
17,5	–	eShop	–	31	42	17.3	–	92	18	–	0.88	0.1	0.13
18	–	eShop	–	31	42	17.8	–	92	18	–	0.9	0.1	0.13
19,5	–	eShop	–	41	52	19.3	–	104	20	–	0.98	0.1	0.13
20	eShop	eShop	20	41	52	19.8	92	104	20	0.5	1	0.1	0.13

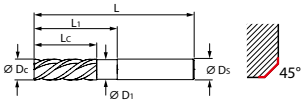
Ø f8 D_c	20 2406	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	< 900 N f_z	< 900 N f_z
	GARANT Master Steel PickPocket solid carbide roughing end mill HPC								
mm	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
5,7	eShop	13	24	5.5	62	6	0.29	0.04	0.05
6	eShop	13	24	5.8	62	6	0.3	0.04	0.05
6,7	eShop	16	30	6.4	68	8	0.34	0.04	0.05
7	eShop	16	30	6.7	68	8	0.35	0.04	0.05
7,7	eShop	21	30	7.4	68	8	0.39	0.05	0.06
8	eShop	21	30	7.7	68	8	0.4	0.05	0.06
8,7	eShop	22	38	8.4	80	10	0.44	0.06	0.08
9	eShop	22	38	8.7	80	10	0.45	0.06	0.08
9,7	eShop	22	38	9.4	80	10	0.49	0.06	0.08
10	eShop	22	38	9.7	80	10	0.5	0.06	0.08
11,7	eShop	26	46	11.3	93	12	0.59	0.07	0.09
12	eShop	26	46	11.6	93	12	0.6	0.07	0.09
14	eShop	26	52	13.6	99	14	0.7	0.08	0.1
15,5	eShop	36	58	15	108	16	0.78	0.08	0.1
16	eShop	36	58	15.5	108	16	0.8	0.08	0.1
18	eShop	36	67	17.5	117	18	0.9	0.1	0.13
20	eShop	41	74	19.5	126	20	1	0.1	0.13

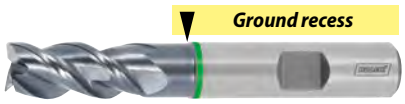
Solid carbide | Standard | Type N | 0 –0.03 | 3 | 45° | ≠ | | | | a_e 0.4×D | h6 DIN 6535 HB | HPC

HOLEX Pro Steel solid carbide roughing end mill HPC

For **roughing and finishing.**
Up to 1×D into solid material **at very high feed rates** with smooth cutting action.

Advantage: Optimised flute form, eccentric relief ground, wide chip space.





20 2414

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2414				240	220	170	150							80			190	●		●	○	●	●

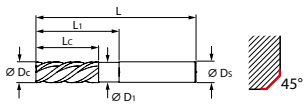
Ø D_c	12X	20 2414	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
		HOLEX Pro Steel solid carbide roughing end mill HPC								
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
3		eShop	8	12	2.8	57	6	0.13	0.02	0.025
4		eShop	11	15	3.8	57	6	0.18	0.02	0.025
5		eShop	13	17	4.8	57	6	0.2	0.04	0.05
5,7		eShop	13	21	5.2	57	6	0.2	0.04	0.05
6		eShop	13	21	5.5	57	6	0.2	0.04	0.05
7,7		eShop	19	27	7.2	63	8	0.2	0.05	0.06
8		eShop	19	27	7.5	63	8	0.2	0.05	0.06
9,7		eShop	22	32	9.2	72	10	0.3	0.06	0.08
10		eShop	22	32	9.5	72	10	0.3	0.06	0.08
11,7		eShop	26	38	11.2	83	12	0.3	0.07	0.09
12		eShop	26	38	11.5	83	12	0.3	0.07	0.09
14		eShop	26	42	13.5	83	14	0.3	0.08	0.1
15,6		eShop	32	44	15.1	92	16	0.4	0.08	0.1
16		eShop	32	44	15.5	92	16	0.4	0.08	0.1
17,5		eShop	32	50	17	92	18	0.4	0.1	0.13
18		eShop	32	50	17.5	92	18	0.4	0.1	0.13
20		eShop	38	54	19.5	104	20	0.5	0.1	0.13

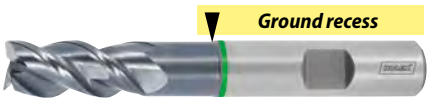
Solid carbide | Standard | Type N | 0 –0.03 | 3 | 45° | ≠ | | | | a_e 0.3×D | h6 DIN 6535 HB | HPC

HOLEX Pro Steel solid carbide roughing end mill HPC

For **roughing and finishing.**
Up to 0.7×D into solid material **at very high feed rates** with smooth cutting action.

Advantage: Optimised flute form, eccentric relief ground, wide chip space.





20 2416

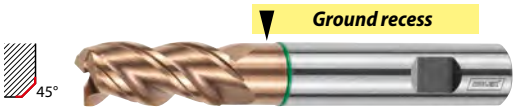
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2416				240	220	170	150							80			190	●		●	○	●	●

Ø D_c	12X	20 2416	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
		HOLEX Pro Steel solid carbide roughing end mill HPC								
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
5		eShop	13	25	4.8	62	6	0.2	0.03	0.05
5,7		eShop	13	25	5.2	62	6	0.2	0.03	0.05
6		eShop	13	25	5.5	62	6	0.2	0.03	0.05
7,7		eShop	19	32	7.2	68	8	0.2	0.04	0.06
8		eShop	19	32	7.5	68	8	0.2	0.04	0.06
9,7		eShop	22	40	9.2	80	10	0.3	0.05	0.08
10		eShop	22	40	9.5	80	10	0.3	0.05	0.08
11,7		eShop	26	48	11.2	93	12	0.3	0.06	0.09
12		eShop	26	48	11.5	93	12	0.3	0.06	0.09
15,6		eShop	32	56	15.1	108	16	0.4	0.07	0.1
16		eShop	32	56	15.5	108	16	0.4	0.07	0.1
19,5		eShop	38	70	19	126	20	0.5	0.09	0.13
20		eShop	38	70	19.5	126	20	0.5	0.09	0.13

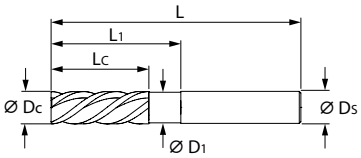
Solid carbide | Standard | Type N | e8 | 3 | 42° | ≠ | ≠ | a_e 0.3×D | h6 DIN 6535 HB | HPC

HOLEX Pro UNI solid carbide milling cutters, HPC

For **roughing at very high feed rates** with smooth cutting action.
Innovative geometry and high-performance coating for outstanding production results and tool life in a variety of materials.
Unequal spacing gives **high intrinsic stability** and smooth cutting action.



20 2432

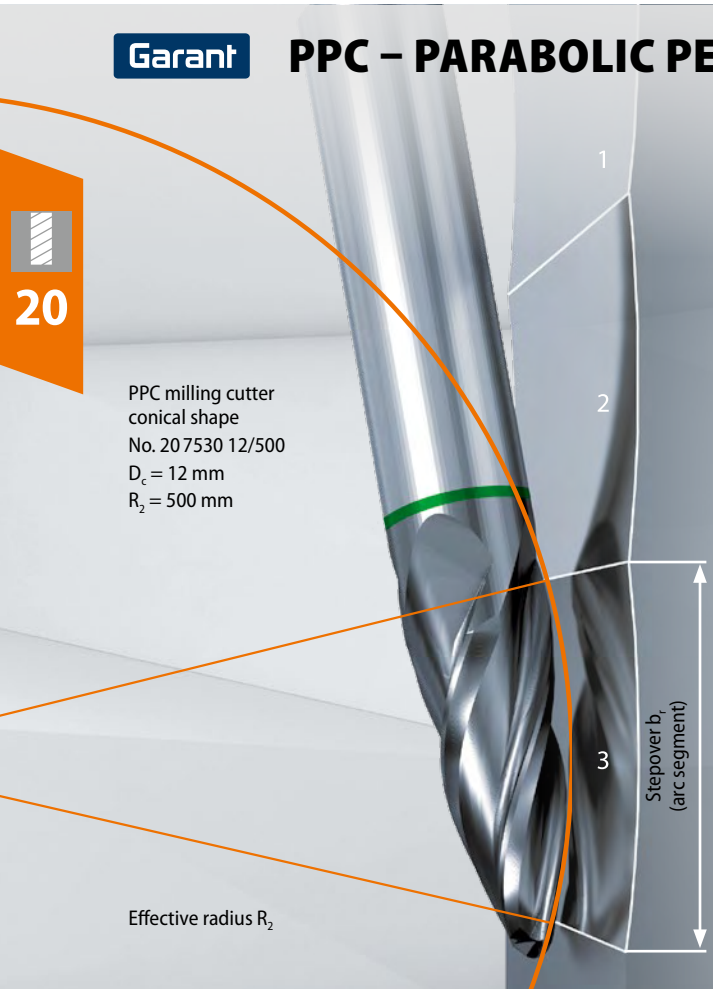


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2432		250		240	220	180	170	140						90	80	35	240	●		●	○	●	●

Ø e8 D_c	12Y 20 2432 Pro UNI solid carbide milling cutter HPC TiSiN	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	INOX > 900 N f_z	< 900 N f_z	INOX > 900 N f_z
mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
1	eShop	2.5	5	0.9	57	6	0.06	0.009	0.005	0.012	0.009
2	eShop	5	10	1.9	57	6	0.06	0.012	0.008	0.015	0.011
3	eShop	8	13	2.8	57	6	0.06	0.02	0.012	0.025	0.015
4	eShop	11	17	3.8	57	6	0.08	0.02	0.012	0.025	0.015
5	eShop	13	19	4.8	57	6	0.1	0.03	0.025	0.04	0.03
6	eShop	13	19	5.8	57	6	0.1	0.04	0.025	0.05	0.03
8	eShop	21	25	7.7	63	8	0.2	0.05	0.025	0.06	0.03
10	eShop	22	30	9.7	72	10	0.2	0.06	0.04	0.08	0.05
12	eShop	26	36	11.6	83	12	0.3	0.07	0.04	0.09	0.05
16	eShop	36	42	15.5	92	16	0.3	0.08	0.05	0.1	0.06
20	eShop	41	52	19.5	104	20	0.3	0.1	0.07	0.12	0.08

Garant PPC – PARABOLIC PERFORMANCE CUTTING

20



PPC milling cutter
conical shape
No. 20 7530 12/500
D_c = 12 mm
R_2 = 500 mm

Dynamic 5-axis milling.
Reduce process times and increase surface quality.

Advantages of the PPC process:
- Shorter machining times due to the large stepover.
- Lower set-up costs.
- Higher surface qualities at shorter cycle times.
- Outstanding process reliability.
- Extreme wear resistance.
- Increased productivity.



The right tool
for every application

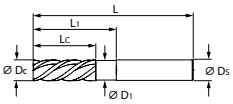
The entire range can be found from page 547 of this catalogue.

Solid carbide | DIN 6527 | Type W | h6 | 4 | 38° | a_e 0.5×D | h6 DIN 6535 HA | HPC

Garant GARANT Master Alu solid carbide milling cutter, HPC

Extra sharp cutting edges.
Dimensions similar to DIN 6527.
Double relief ground side clearance angle.
For roughing and finishing. Up to 2×D into solid material at very high feed rates and smooth cutting action.

Note: **Successor product to No. 202480.**



h6 | 38° | 90°



20 2470

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 2470	250	200	180	180	130	150	130	110								180	120	150

Ø D_c mm	11X 20 2470 GARANT Master Alu solid carbide milling cutter HPC	L_c mm	L_1 mm	Ø D_1 mm	L mm	Ø D_s mm	Alu f_z mm	Alu f_z mm
3	eShop	10	15	2.8	57	6	0.04	0.05
4	eShop	13	18	3.7	57	6	0.05	0.06
5	eShop	15	20	4.7	57	6	0.06	0.08
6	eShop	16	21	5.5	57	6	0.06	0.08
8	eShop	22	27	7.4	63	8	0.08	0.1
10	eShop	25	30	9.2	72	10	0.09	0.12
12	eShop	28	33	11	83	12	0.1	0.15
14	eShop	30	35	13	83	14	0.12	0.17
16	eShop	36	41	15	92	16	0.14	0.18
20	eShop	41	51	19	104	20	0.18	0.22

Solid carbide | DIN 6527 | Type W | 4 | a_e 0.25×D | h6 DIN 6535 HA

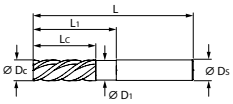
GARANT Master Alu solid carbide milling cutter HPC / solid carbide milling cutter

Extra sharp cutting edges.
Dimensions similar to DIN 6527.

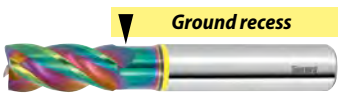
20 2512 – For roughing and finishing.Up to 2×D into solid material at very high feed rates and smooth cutting action.
With the latest generation of **DLC coating sp²**.

20 2545 – Eccentric relief ground.

Note:
20 2512 – **Successor product to No. 202515.**



HPC | h6 | 38° | 90°



20 2512

e8 | 45° | 90°



20 2545

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 2512	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200
20 2545	300	280	200	180	130	150	130	110								180	120	150

Ø D_c mm	11X 20 2512 Garant GARANT Master Alu solid carbide milling cutter HPC DLC	12X 20 2545 HOLEX Solid carbide milling cutter TiAlN	L_c mm	L_1 20 2512 mm	Ø D_1 20 2512 mm	L mm	Ø D_s mm	Alu f_z 20 2512 mm	Alu f_z 20 2545 mm	Alu f_z 20 2512 mm	Alu f_z 20 2545 mm
2	eShop	–	6	13	1.8	57	6	0.03	–	0.04	–
3	eShop	eShop	10	15	2.8	57	6	0.04	0.008	0.05	0.01
4	eShop	eShop	13	18	3.7	57	6	0.05	0.015	0.06	0.025
4M	eShop	–	16	22	3.7	57	6	0.05	–	0.06	–
5	eShop	eShop	15	20	4.7	57	6	0.06	0.015	0.08	0.025
6	eShop	eShop	16	21	5.5	57	6	0.06	0.025	0.08	0.04
6M	eShop	–	20	24	5.5	65	6	0.06	–	0.08	–
8	eShop	eShop	22	27	7.4	63	8	0.08	0.03	0.1	0.05
8M	eShop	–	26	30	7.4	70	8	0.08	–	0.1	–
10	eShop	eShop	25	30	9.2	72	10	0.09	0.04	0.12	0.065
10M	eShop	–	30	38	9.2	80	10	0.09	–	0.12	–
12	eShop	eShop	28	33	11	83	12	0.1	0.05	0.15	0.09
12M	eShop	–	36	46	11	93	12	0.1	–	0.15	–
16	eShop	eShop	36	41	15	92	16	0.14	0.065	0.18	0.12
16M	eShop	–	48	58	15	110	16	0.14	–	0.18	–
20	eShop	eShop	41	51	19	104	20	0.18	0.085	0.22	0.15
20M	eShop	–	60	74	19	126	20	0.18	–	0.22	–

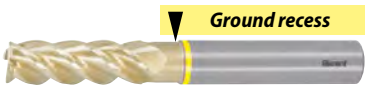
Solid carbide | Standard | Type W | f8 | 4 | 45° | HPC | a_e 0.3×D | G 2.5 n_{max} | G 2.5 n_{max}

Garant Solid carbide roughing end mill HPC

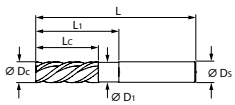
Sturdy roughing end mill **without** knuckle profile.
With strong core, **special chip breaker recesses** and **large polished flutes.**

Application: For roughing milling with high demands on the component surface.

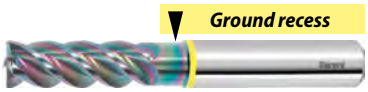
h6 DIN 6535 HA | h6 DIN 6535 HB | 45°



20 2549



h6 DIN 6535 HA | 45°



20 2552

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	Hybrid	Honey-comb sandwich	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 2549	500	**480**	**240**															**240**
20 2552	**480**	**440**	**400**	**200**	**160**	**200**	**150**	**130**		**180**	**160**	**150**	**130**	**160**		300	**160**	**200**

Ø f8 D_c	11X 20 2549	11X 20 2552	L_c	L_1	Ø D_1	L	Ø D_s	Shank form		Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide end mill							20 2549	20 2552			
	HPC											
mm	ZOX	DLC	mm	mm	mm	mm	mm			mm	mm	mm
4	eShop	eShop	16	22	3.7	62	6	HA	HA	0.1	0.05	0.06
5	eShop	eShop	17	24	4.7	62	6	HA	HA	0.1	0.06	0.08
6	eShop	eShop	18	24	5.5	62	6	HA	HA	0.2	0.07	0.09
8	eShop	eShop	24	30	7.4	68	8	HA	HA	0.2	0.08	0.1
10	eShop	eShop	30	38	9.2	80	10	HA	HA	0.2	0.09	0.11
12	eShop	eShop	36	46	11	93	12	HA	HA	0.2	0.1	0.12
16	eShop	eShop	48	58	15	108	16	HB	HA	0.2	0.12	0.14
20	eShop	eShop	60	74	19	126	20	HB	HA	0.2	0.16	0.18

Solid carbide | Standard | Type W | f8 | 4 | 45° | HPC | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 n_{max} | G 2.5 n_{max}

Garant Solid carbide roughing end mill HPC

Sturdy roughing end mills **without** knuckle profile.
With strong core, **special chip breaker recesses** and **large polished flutes.**

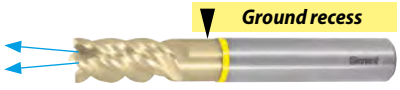
Application: For roughing milling with high demands on the component surface.

a_e 0.5×D | 45°

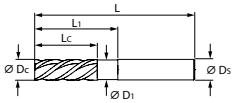


20 2548

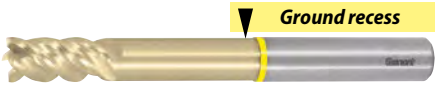
a_e 0.5×D | 45°



20 2553



a_e 0.3×D | 45°

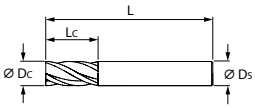


20 2551

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 2548/2553	500	**480**	**240**															**240**
20 2551	250	**240**	**120**															**120**

Ø f8 D_c	11X 20 2548	11X 20 2553	11X 20 2551	L_c	L_1		Ø D_1	L		Ø D_s	Shank form	Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide end mill	Solid carbide end mill with internal coolant supply	Solid carbide end mill		20 2548 20 2553	20 2551		20 2548 20 2553	20 2551					
	HPC													
mm	ZOX	ZOX	ZOX	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm
3	eShop	eShop	–	6	10	–	2.7	57	–	6	HA	0.1	0.035	0.045
4	eShop	eShop	–	8	14	–	3.7	57	–	6	HA	0.1	0.035	0.045
5	eShop	eShop	–	10	16	–	4.7	57	–	6	HA	0.1	0.06	0.08
6	eShop	eShop	eShop	12	19	42	5.5	57	80	6	HA	0.2	0.06	0.08
8	eShop	eShop	eShop	16	25	62	7.4	63	100	8	HA	0.2	0.06	0.08
10	eShop	eShop	eShop	20	30	58	9.2	72	100	10	HA	0.2	0.07	0.09
12	eShop	eShop	eShop	24	36	73	11	83	120	12	HA	0.2	0.07	0.09
16	eShop	eShop	eShop	32	42	100	15	92	150	16	HB	0.2	0.09	0.12
20	eShop	eShop	eShop	40	52	98	19	104	150	20	HB	0.2	0.12	0.16

Solid carbide | Standard | Type N | e8 | 4 | 30° | a_e 0.3×D



Solid carbide milling cutter

20 2556 – Double relief ground side clearance angle.
20 2615 – Eccentric relief ground.

Note:
20 2556 – **Successor product to No. 202555.**
20 2615 – **Successor product to No. 202610.**

h6 DIN 6535 HA | h6 DIN 6535 HB | 45°



20 2556

h6 DIN 6535 HA | h6 DIN 6535 HB | 90°

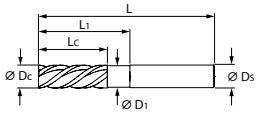


20 2615

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 2556		280	200	120	105	100	70	60	35					80	60		90	●		●	○	●	●
20 2615		280	200	120	105	100	70							80	60		90			●	○	○	○

Ø e8 D_C	11X 20 2556 Garant	12X 20 2615 HOLEX	L_c	L		Ø D_s	Shank form	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide milling cutter			20 2556	20 2615			20 2556		
mm	TiAlN	TiAlN	mm	mm	mm	mm		mm	mm	mm
2	eShop	eShop	3	32	32	2	HA	0.03	0.01	0.011
3	eShop	eShop	5	32	32	3	HA	0.04	0.01	0.011
4	eShop	eShop	8	36	36	4	HA	0.05	0.02	0.023
5	eShop	eShop	9	45	45	5	HA	0.06	0.02	0.023
6	eShop	eShop	10	45	46	6	HB	0.07	0.03	0.033
8	eShop	eShop	12	55	55	8	HB	0.08	0.04	0.045
10	eShop	eShop	14	67	65	10	HB	0.1	0.05	0.06
12	eShop	eShop	16	66	66	12	HB	0.13	0.06	0.08

Solid carbide | Standard | Type N | e8 | 4 | 30° | a_e 0.3×D



Solid carbide milling cutter

20 2640 – Double relief ground side clearance angle.
20 2680 – Eccentric relief ground.

Ground recess

h6 DIN 6535 HA | h6 DIN 6535 HB | 45°



20 2640

h6 DIN 6535 HA | h6 DIN 6535 HB | 90°



20 2680

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 2640		140	105	70	60	55	35	30	25					40	30		55	●		●	○	○	○
20 2680		140	105	70	60	55	35							40			55	○		●	○	○	○

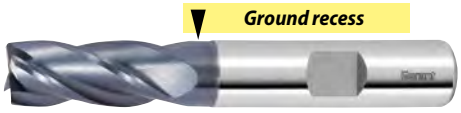
Ø e8 D_C	11X 20 2640 Garant	12X 20 2680 HOLEX	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide milling cutter			20 2640	20 2640				20 2640		
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm		mm	mm	mm
2	eShop	eShop	8	13	1.8	32	2	HA	0.03	0.01	0.011
3	eShop	eShop	12	17	2.8	38	3	HA	0.04	0.01	0.011
4	eShop	eShop	13	18	3.8	40	4	HA	0.05	0.02	0.023
5	eShop	eShop	15	20	4.8	50	5	HA	0.06	0.02	0.023
6	eShop	eShop	16	21	5.8	58	6	HB	0.07	0.03	0.033
7	eShop	–	20	25	6.8	60	7	HA	0.07	0.03	0.033
8	eShop	eShop	22	32	7.8	70	8	HB	0.08	0.04	0.045
9	eShop	–	20	30	8.8	60	9	HA	0.08	0.04	0.045
10	eShop	eShop	25	30	9.8	73	10	HB	0.1	0.05	0.06
12	eShop	eShop	28	38	11.8	84	12	HB	0.13	0.06	0.08
13	eShop	–	25	35	12.8	75	13	HA	0.14	0.06	0.08
14	eShop	–	30	35	13.8	84	14	HB	0.15	0.06	0.08
15	eShop	–	25	35	14.8	75	15	HA	0.15	0.06	0.08
16	eShop	eShop	35	45	15.8	93	16	HB	0.18	0.08	0.1
18	eShop	–	35	45	17.8	100	18	HB	0.18	0.08	0.1
20	eShop	–	40	50	19.8	104	20	HB	0.2	0.1	0.12
25	eShop	–	50	60	24.5	125	25	HB	0.25	0.1	0.12

Solid carbide | Standard | Type H | 4 | 30° | a_e 0.3×D | h6 DIN 6535 HA | h6 DIN 6535 HB

Solid carbide milling cutter

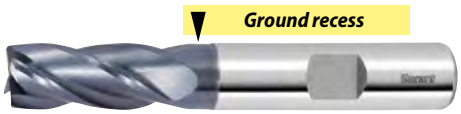
20 2760 – Eccentric relief ground.
20 2720/2725 – Double relief ground side clearance angle.
20 2725/2760 – **Without** 45° cutting edge chamfer.

e8 | 45°



20 2720

e8 | 90°

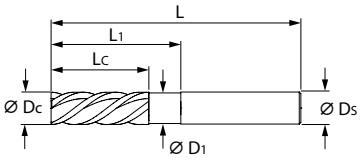


20 2725

h10 | 90°



20 2760



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2720/2725		280				**100**	**70**	**60**	**35**					**80**	60		**90**	●		●	○	●	●
20 2760		280				**100**	**70**	**60**	35					**80**	60		**90**	○		●	○	○	○

Ø e8 D_c	11X 20 2720 Garant	11X 20 2725 Garant	L_c	L_1	Ø D_1	L	Ø D_s	Shank form	Corner chamfer width at 45° 20 2720	< 900 N f_z	< 900 N f_z
	Solid carbide milling cutter										
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm		mm	mm	mm
2	eShop	eShop ■	8	13	1.8	32	2	HA	0.03	0.01	0.011
3	eShop	eShop ■	12	17	2.8	38	3	HA	0.04	0.01	0.011
4	eShop	eShop	12	18	3.8	40	4	HA	0.04	0.02	0.023
5	eShop	eShop ■	15	20	4.8	50	5	HA	0.06	0.02	0.023
6	eShop	eShop	16	21	5.8	58	6	HB	0.07	0.03	0.033
7	eShop	eShop ■	20	25	6.8	60	7	HA	0.07	0.03	0.033
8	eShop	eShop	22	32	7.8	70	8	HB	0.08	0.04	0.045
9	eShop	eShop ■	20	30	8.8	60	9	HA	0.08	0.04	0.045
10	eShop	eShop	25	30	9.8	73	10	HB	0.1	0.05	0.06
12	eShop	eShop ■	28	38	11.8	84	12	HB	0.13	0.06	0.08
13	eShop	eShop	25	35	12.8	75	13	HA	0.14	0.06	0.08
14	eShop	eShop	30	35	13.8	84	14	HB	0.15	0.06	0.08
15	eShop	eShop	25	35	14.8	75	15	HA	0.15	0.06	0.08
16	eShop	eShop	35	45	15.8	93	16	HB	0.18	0.08	0.1
18	eShop	eShop	36	45	17.8	100	18	HB	0.18	0.08	0.1
20	eShop	eShop	41	50	19.8	104	20	HB	0.2	0.1	0.12
25	eShop	eShop	50	60	24.5	125	25	HB	0.25	0.1	0.12

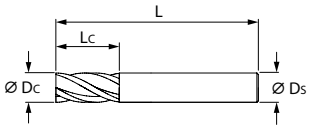
Ø h10 D_c	12X 20 2760 HOLEX	L_c	L	Ø D_s	Shank form	< 900 N f_z	< 900 N f_z
	Solid carbide milling cutter						
mm	TiAlN	mm	mm	mm		mm	mm
2	eShop ■	8	32	2	HA	0.01	0.011
3	eShop ■	12	38	3	HA	0.01	0.011
4	eShop ■	12	40	4	HA	0.02	0.023
5	eShop ■	15	50	5	HA	0.02	0.023
6	eShop ■	16	58	6	HB	0.03	0.033
8	eShop ■	22	70	8	HB	0.04	0.045
10	eShop ■	25	73	10	HB	0.05	0.06
12	eShop ■	28	84	12	HB	0.06	0.08
16	eShop ■	35	93	16	HB	0.08	0.1
20	eShop ■	41	104	20	HB	0.1	0.12

Solid carbide | Standard | Type N | e8 | 4 | 35° | h6 DIN 6535 HA | h6 DIN 6535 HB

Garant Solid carbide milling cutter

Double relief ground side clearance angle.

20 2815/2825 – With **high-performance coating** for general-purpose use.





20 2810



20 2815



20 2820



20 2825

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 2810		140	105	70	60	55	35	30	25					40			55	○		●	○		
20 2815		280	200	120	105	100	70	60	35					80	60		90	●		●	○	○	○
20 2820		110	80	50	45	40	35	25						35			55	○		●	○		
20 2825		210	140	80	75	70	50	40	25					60	40		70	●		●	○	○	○

Ø e8 D_C	11X 20 2810	11X 20 2815	L_c	L	Ø D_s	Shank form	Corner chamfer width at 45°	< 900 N f_z 20 2810	< 900 N f_z
	Solid carbide milling cutter								
		TiAlN							
mm			mm	mm	mm		mm	mm	mm
4	eShop	eShop	16	75	4	HA	0.04	0.02	0.023
5	eShop	eShop	20	75	5	HA	0.05	0.02	0.023
6	eShop	eShop	24	80	6	HB	0.06	0.03	0.033
8	eShop	eShop	32	100	8	HB	0.07	0.04	0.045
10	eShop	eShop	40	100	10	HB	0.08	0.05	0.06
12	eShop	eShop	48	120	12	HB	0.1	0.06	0.08
14	eShop	eShop	45	100	14	HB	0.13	0.06	0.08
16	eShop	eShop	50	125	16	HB	0.15	0.08	0.1
18	eShop	eShop	55	130	18	HB	0.18	0.08	0.1
20	eShop	eShop	60	135	20	HB	0.2	0.1	0.12

Ø e8 D_C	11X 20 2820	11X 20 2825	L_c	L	Ø D_s	Shank form	Corner chamfer width at 45°	< 900 N f_z 20 2820	< 900 N f_z
	Solid carbide milling cutter								
		TiAlN							
mm			mm	mm	mm		mm	mm	mm
3	eShop	eShop	16	75	3	HA	0.04	0.01	0.011
4	eShop	eShop	20	100	4	HA	0.05	0.02	0.023
5	eShop	eShop	25	100	5	HA	0.06	0.02	0.023
6	eShop	eShop	30	100	6	HB	0.07	0.03	0.033
8	eShop	eShop	40	120	8	HB	0.08	0.04	0.045
10	eShop	eShop	50	120	10	HB	0.1	0.05	0.06
12	eShop	eShop	60	150	12	HB	0.13	0.06	0.08
14	eShop	eShop	56	150	14	HB	0.15	0.06	0.08
16	eShop	eShop	65	150	16	HB	0.18	0.08	0.1
18	eShop	eShop	72	150	18	HB	0.18	0.08	0.1
20	eShop	eShop	80	150	20	HB	0.2	0.1	0.12

Solid carbide | Standard | Type H | f8 | 4 | 45° | TPC $a_{e\,max}$ 0.1×D | a_e 0.15×D | h6 DIN 6535 HA | HPC | TPC

Garant Solid carbide milling cutters ISO H55 HPC/TPC

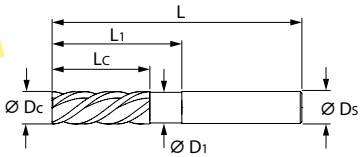
For machining **steels** in the transition range between the **ISO material groups P and H.**
Specially developed for steel materials with **tensile strengths of 1000-1500 N/mm²** and for **hardened steel materials up to HC 55.**
Micro-grain substrate and coating are coordinated to achieve the **longest service life and process reliability.**
Soft cuts due to 45° helix angle.

Ground recess



20 2970

Specialist for steels around 55 HRC



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N				
20 2970						160	120	115	70	60	30										●	●

Ø f8 D_C	11Z 20 2970	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	< 55 HRC f_z	< 55 HRC f_z
	Solid carbide roughing end mill ISO H55 HPC/TPC								
mm	TiSiN	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	11	18	3.8	57	6	0.1	0.008	0.02
5	eShop	13	18	4.7	57	6	0.1	0.01	0.02
6	eShop	13	20	5.5	57	6	0.1	0.015	0.02
8	eShop	21	25	7.4	63	8	0.2	0.02	0.03
10	eShop	22	30	9.2	72	10	0.2	0.025	0.03
12	eShop	26	35	11	83	12	0.3	0.03	0.04
16	eShop	36	40	15	92	16	0.3	0.04	0.05
20	eShop	41	50	19	104	20	0.3	0.04	0.05

Solid carbide | Standard | Type H | f8 | 4 | 45° | MTC

Garant Solid carbide milling cutter MTC, MTC / TPC

Significant cutting force reduction due to 45° helix.

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

Note: For materials > 55 HRC we recommend reducing the depth of cut to a_p =0.25×D...0.5×D.

a_e 0.3×D | h6 DIN 6535 HB | 45°



20 2976

Ground recess

TPC $a_{e\,max}$ 0.1×D | a_e 0.15×D | TPC | h6 DIN 6535 HB | 45°



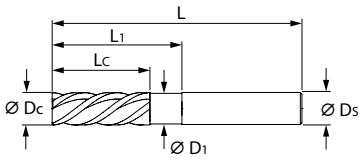
20 2977

Ground recess

TPC $a_{e\,max}$ 0.1×D | a_e 0.15×D | TPC | h6 DIN 6535 HA | r_v



20 2979



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
20 2976–20 2979						160	115	115	60	30	25	20							○	○	●	●

Ø f8 D_C	11X 20 2976	11X 20 2977	11X 20 2979	L_c	L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	Corner rounding r_v	< 60 HRC f_z	< 60 HRC f_z
	Solid carbide roughing end mill												
	MTC	MTC / TPC	MTC / TPC	20 2976	20 2977 20 2979	20 2977 20 2979	20 2977 20 2979	20 2976	20 2977 20 2979		20 2976 20 2977	20 2979		
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	eShop	8	11	18	3.8	54	57	6	0.05	0.1	0.008	0.01
5	eShop	eShop	eShop	9	13	18	4.7	54	57	6	0.1	0.1	0.01	0.015
6	eShop	eShop	eShop	10	13	20	5.5	54	57	6	0.1	0.1	0.015	0.02
8	eShop	eShop	eShop	12	21	25	7.4	58	63	8	0.1	0.2	0.02	0.025
10	eShop	eShop	eShop	14	22	30	9.2	66	72	10	0.15	0.2	0.025	0.03
12	eShop	eShop	eShop	16	26	35	11	73	83	12	0.15	0.3	0.03	0.035
14	eShop	eShop	–	16	26	35	13	73	83	14	0.15	–	0.035	0.04
16	eShop	eShop	eShop	22	36	40	15	82	92	16	0.15	0.3	0.04	0.045
20	eShop	eShop	eShop	26	41	50	19	92	104	20	0.25	0.3	0.045	0.05

Solid carbide | Standard | Type H | f8 | 4 | 45° | MTC

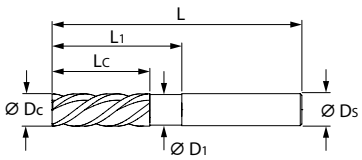
Garant

Solid carbide milling cutter MTC / TPC, MTC

Significant cutting force reduction due to 45° helix.

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

Note: For materials > 55 HRC we recommend reducing the depth of cut to a_p=0.25×D...0.5×D.



TPC $a_{e\,max}$ 0.1×D | a_e 0.2×D | TPC | h6 DIN 6535 HB | 45°



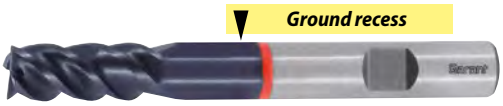
20 2978

TPC $a_{e\,max}$ 0.1×D | a_e 0.2×D | TPC | h6 DIN 6535 HA | r_v



20 2981

a_e 0.15×D | h6 DIN 6535 HB | 45°



20 2982

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 2978/2981						160	115	115	60	30	25	20							○	○	●	●	
20 2982						90	70	60	45	25	20	15							○	○	●	●	

Ø f8 D_c	1X 20 2978	1X 20 2981	1X 20 2982	L_c		L_1		Ø D_1	L		Ø D_s	Corner chamfer width at 45°	Corner rounding r_v	< 60 HRC f_z	< 60 HRC f_z
	Solid carbide roughing end mill														
	MTC / TPC	MTC / TPC	MTC	20 2978 20 2981	20 2982	20 2978 20 2981	20 2982		20 2978 20 2981	20 2982		20 2978 20 2982	20 2981		
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	–	16	–	23	–	3.8	62	–	6	0.05	0.1	0.008	0.01
5	eShop	eShop	–	17	–	24	–	4.7	62	–	6	0.1	0.1	0.01	0.015
6	eShop	eShop	eShop	18	12	25	42	5.5	62	80	6	0.1	0.1	0.015	0.02
8	eShop	eShop	eShop	24	16	30	62	7.4	68	100	8	0.1	0.2	0.02	0.025
10	eShop	eShop	eShop	30	20	35	60	9.2	80	100	10	0.15	0.2	0.025	0.03
12	eShop	eShop	eShop	36	24	45	73	11	93	120	12	0.15	0.3	0.03	0.035
14	eShop	–	–	42	–	50	–	13	99	–	14	0.15	–	0.05	0.04
16	eShop	eShop	eShop	48	32	55	100	15	108	150	16	0.15	0.3	0.04	0.045
20	eShop	eShop	eShop	60	40	70	98	19	126	150	20	0.25	0.3	0.05	0.05

Solid carbide | Type N | e8 | 4 | 40° | ≠ | a_e 0.3×D | HPC

Garant

INOX solid carbide milling cutter HPC, INOX solid carbide milling cutter with chip separators HPC/TPC

Milling cutter with **optimised geometry** and modern **high-performance coating** for optimum metal removal rate in various **stainless steels.**
Can also be used in **duplex materials**.
Dimensions similar to DIN 6527.

Note:

20 2950 – **Successor product to 202986.**
20 2952 – **Successor product to 202989.**
20 2954/2956 – **With chip separators for controlled chip breaking**. For reliable working in automated production environments thanks to reliable chip evacuation from the component. Cutting data for TPC machining in the ToolScout.

h6 DIN 6535 HB | DIN 6527 | r_v



20 2950

h6 DIN 6535 HB | h6 DIN 6535 HA | DIN 6527 | r_v



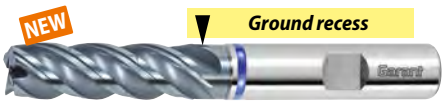
20 2952

TPC $a_{e\,max}$ 0.15×D | h6 DIN 6535 HB | DIN 6527 | TPC | r_v

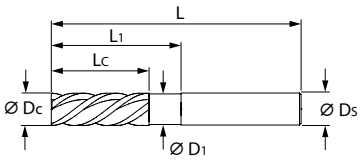


20 2954

TPC $a_{e\,max}$ 0.12×D | Standard | h6 DIN 6535 HB | DIN 6527 | TPC | r_v



20 2956

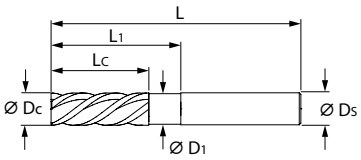


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M	S					
20 2950–20 2954				240	220	200	180	150						115	80	**100**	**90**		●	●	○	●	
20 2956				210	190	170	150	120						110	75	**95**	**85**		●	●	○	●	

Ø e8 D_c	11Z 20 2950	11Z 20 2952	L_c		L_1		Ø D_1	L		Ø D_s	Shank form	Corner rounding r_v	INOX > 900 N f_z	INOX > 900 N f_z
	GARANT INOX solid carbide milling cutter HPC		20 2950	20 2952	20 2950	20 2952		20 2950	20 2952					
mm	AlTiN	AlTiN	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm
0,5	–	eShop	–	1.3	–	1.5	0.48	–	50	4	HA	0.02	0.007	0.01
0,8	–	eShop	–	2.1	–	3	0.76	–	50	4	HA	0.03	0.008	0.012
1	–	eShop	–	2.5	–	4	0.9	–	50	4	HA	0.05	0.012	0.018
1,5	–	eShop	–	3.5	–	6	1.4	–	50	4	HA	0.1	0.015	0.022
2	–	eShop	–	5	–	8	1.8	–	57	6	HA	0.1	0.017	0.024
2,5	–	eShop	–	6	–	10	2.3	–	57	6	HA	0.1	0.019	0.028
3	eShop	eShop	5	8	–	13	2.8	50	57	6	HA	0.1	0.02	0.03
4	eShop	eShop	8	11	–	17	3.8	54	57	6	HA	0.1	0.025	0.035
5	eShop	eShop	9	13	–	19	4.8	54	57	6	HB	0.1	0.03	0.04
6	eShop	eShop	10	13	16	19	5.8	54	57	6	HB	0.1	0.035	0.045
8	eShop	eShop	12	21	20	25	7.7	58	63	8	HB	0.15	0.05	0.05
10	eShop	eShop	14	22	24	30	9.7	66	72	10	HB	0.2	0.055	0.06
12	eShop	eShop	16	26	26	36	11.6	73	83	12	HB	0.2	0.06	0.07
16	eShop	eShop	22	36	32	42	15.5	82	92	16	HB	0.2	0.07	0.08
20	eShop	eShop	26	41	40	52	19.5	92	104	20	HB	0.2	0.09	0.1

Ø e8 D_c	11Z 20 2954	11Z 20 2956	L_c		L_1		Ø D_1	L		Ø D_s	Number of chip separators		Shank form	Corner rounding r_v	INOX > 900 N f_z
	GARANT INOX solid carbide milling cutter with chip separators HPC / TPC		20 2954	20 2956	20 2954	20 2956		20 2954	20 2956		20 2954	20 2956			
mm	AlTiN	AlTiN	mm	mm	mm	mm	mm	mm	mm	mm				mm	mm
4	eShop	–	11	–	17	–	3.8	57	–	6	1	–	HB	0.1	0.012
5	eShop	–	13	–	19	–	4.8	57	–	6	1	–	HB	0.1	0.022
6	eShop	eShop	13	20	19	25	5.8	57	65	6	1	2	HB	0.1	0.032
8	eShop	eShop	21	26	25	30	7.7	63	70	8	1	2	HB	0.15	0.042
10	eShop	eShop	22	32	30	36	9.7	72	80	10	1	2	HB	0.2	0.052
12	eShop	eShop	26	39	36	46	11.6	83	93	12	1	2	HB	0.2	0.062
16	eShop	eShop	36	52	42	57	15.5	92	110	16	1	2	HB	0.2	0.077
20	eShop	eShop	41	64	52	72	19.5	104	125	20	1	2	HB	0.2	0.097

Solid carbide | Type N | h10 | 4 | 40° | ≠ | ≠ | h6 DIN 6535 HB | HPC



Garant GARANT Master INOX solid carbide milling cutter HPC, HPC/TPC

For **roughing and finishing**.
HPC milling cutter with **newly developed high-performance coating** for **outstanding tool life** and **optimum metal removal rate** in a very wide range of stainless steels. **Greater oxidation resistance** and **high-temperature hardness**.
Can be used at **high cutting speeds**, particularly suitable even for TOOLOX®.

20 2999 – With **internal coolant supply** for reliable chip evacuation.

Advantage: Particularly low vibration running.

DIN 6527 | a_e 0.3×D | 45°



20 2998

DIN 6527 | TPC a_{emax} 0.1×D | TPC | 45°

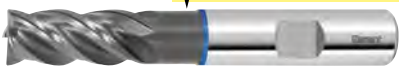
Ground recess



20 2997

DIN 6527 | TPC a_{emax} 0.1×D | TPC | 45°

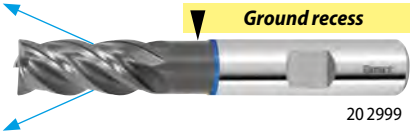
Ground recess



20 3007

DIN 6527 | TPC a_{emax} 0.1×D | TPC | 45°

Ground recess



20 2999

Standard | a_e 0.3×D | 45°

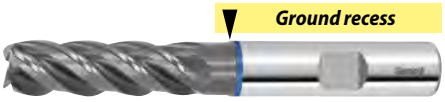
Ground recess



20 3006

Standard | TPC a_{emax} 0.08×D | TPC | 45°

Ground recess



20 3011

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 2997/2998/3007				250	230	200	180	115	80						110	90			●	●	○	●	
20 2999				250	230	200	180	115	80						110	90			●			●	
20 3006/3011				240	220	180	180	115	80						100	85			●	●	○	●	

Ø h10 D_c	11X 20 2998	11X 20 2997	11X 20 3007	11X 20 2999	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°		INOX > 900 N f_z	INOX > 900 N f_z
	GARANT Master INOX solid carbide milling cutter														
	HPC	HPC / TPC	HPC / TPC	HPC / TPC	20 2998	20 2997 20 3007 20 2999	20 2997 20 3007 20 2999	20 2997 20 3007 20 2999	20 2998	20 2997 20 3007 20 2999		20 2998 20 3007 20 2999	20 2997		
mm	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2	–	–	eShop	–	–	5	13	1.8	–	40	4	0.15	–	0.01	0.012
3	eShop	eShop	eShop	–	5	8	20	2.8	50	57	6	0.15	0.1	0.012	0.015
4	eShop	eShop	eShop ■	eShop	8	11	21	3.8	54	57	6	0.15	0.1	0.012	0.015
5	eShop	eShop	eShop	eShop	9	13	22	4.7	54	57	6	0.25	0.1	0.025	0.025
6	eShop	eShop	eShop	eShop	10	13	23	5.6	54	57	6	0.25	0.1	0.025	0.03
8	eShop	eShop	eShop	eShop	12	19	29	7.5	57	63	8	0.25	0.1	0.025	0.04
10	eShop	eShop	eShop	eShop	14	22	34	9.5	66	72	10	0.25	0.1	0.04	0.045
12	eShop	eShop	eShop	eShop	16	26	40	11.5	73	83	12	0.25	0.1	0.04	0.05
14	–	–	eShop	–	–	26	40	13.5	–	83	14	0.25	–	0.05	0.055
16	eShop	eShop	eShop	eShop	22	32	46	15.5	82	92	16	0.35	0.1	0.05	0.055
18	–	–	eShop	–	–	32	46	17.5	–	92	18	0.35	–	0.07	0.08
20	eShop	eShop	eShop	eShop	26	38	56	19.5	92	104	20	0.35	0.1	0.07	0.08
25	–	–	eShop	–	–	45	66	24.5	–	121	25	0.35	–	0.07	0.08

Ø h10 D_c	11X 20 3006	11X 20 3011	L_c		L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	GARANT Master INOX solid carbide milling cutter										
	HPC	HPC / TPC	20 3006	20 3011							
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm
5	eShop	eShop	13	18	25	4.8	62	6	0.25	0.025	0.025
6	eShop	eShop	13	18	25	5.5	62	6	0.25	0.025	0.03
8	eShop	eShop	19	24	32	7.5	68	8	0.25	0.025	0.04
10	eShop	eShop	22	30	40	9.5	80	10	0.25	0.04	0.045
12	eShop	eShop	26	36	48	11.5	93	12	0.25	0.04	0.05
16	eShop	eShop	32	48	56	15.5	108	16	0.35	0.05	0.055
20	eShop	eShop	38	60	70	19.5	126	20	0.35	0.07	0.08

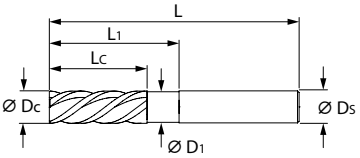
Solid carbide | Type N | f8 | 4 | 35° | ≠ | h6 DIN 6535 HB | HPC

HOLEX Solid carbide milling cutter HPC

Special TiSi coating.

20 3017 – With **internal coolant supply** for reliable chip evacuation.

Note: **NEW GENERATION AVAILABLE! Recommended successor products are No. 203013, 203015, 203021, 203027.**

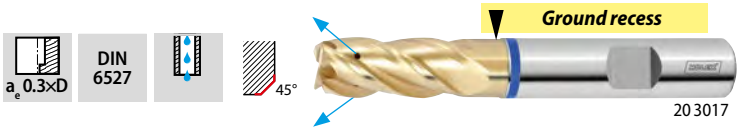




20 2995



20 3014



20 3017

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 2995/3014				240	220	180	180	150						115	80	90	80	○		●	○	●	●
20 3017				240	220	180	180	150						115	80	90	80	○		●			●

Ø f8 D_c	12X 20 2995	12X 20 3014	12X 20 3017	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	Solid carbide milling cutter		Solid carbide milling cutter with internal coolant supply										
	HPC												
				20 2995	20 3014 20 3017	20 3014 20 3017	20 3014 20 3017	20 2995	20 3014 20 3017				
mm	TiSi	TiSi	TiSi	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	–	5	8	13	2.8	50	57	6	0.1	0.012	0.015
4	eShop	eShop	–	8	11	17	3.8	54	57	6	0.1	0.012	0.015
5	eShop	eShop	–	9	13	19	4.8	54	57	6	0.1	0.025	0.025
6	eShop	eShop	eShop	10	13	19	5.8	54	57	6	0.1	0.025	0.03
6M	–	eShop	–	–	18	24	5.8	–	62	6	0.1	0.025	0.03
8	eShop	eShop	eShop	12	21	25	7.7	58	63	8	0.2	0.025	0.04
8M	–	eShop	–	–	24	30	7.7	–	68	8	0.2	0.025	0.04
10	eShop	eShop	eShop	14	22	30	9.7	66	72	10	0.2	0.04	0.045
10M	–	eShop	–	–	30	38	9.7	–	80	10	0.2	0.04	0.045
12	eShop	eShop	eShop	16	26	36	11.6	73	83	12	0.3	0.04	0.05
12M	–	eShop	–	–	36	46	11.6	–	93	12	0.3	0.04	0.05
14	–	eShop	–	–	26	36	13.6	–	83	14	0.3	0.04	0.05
16	eShop	eShop	eShop	22	36	42	15.5	82	92	16	0.3	0.05	0.055
16M	–	eShop	–	–	48	58	15.5	–	108	16	0.3	0.05	0.055
18	–	eShop	–	–	36	42	17.5	–	104	18	0.3	0.07	0.08
20	eShop	eShop	eShop	26	41	52	19.5	92	104	20	0.3	0.07	0.08
20M	–	eShop	–	–	60	74	19.5	–	126	20	0.3	0.07	0.08

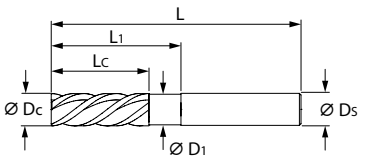
20

Solid carbide | DIN 6527 | Type N | e8 | 4 | 38° | ≠ | ae 0.3×D | h6 DIN 6535 HB | G 2.5 nmax | HPC

Garant Solid carbide milling cutter HPC with internal coolant supply

With **internal coolant supply** for reliable swarf evacuation.

Note: **NEW GENERATION AVAILABLE! Recommended successor product is No. 202999.**



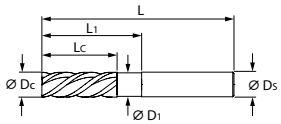


20 3016

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S						
20 3016				250	230	200	180	170					115	80	100	85	60	○		●			●

Ø e8 D_c	11X 20 3016	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	Solid carbide milling cutter with internal coolant supply								
	HPC								
mm	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	11	17	3.8	57	6	0.1	0.012	0.015
5	eShop	13	19	4.8	57	6	0.1	0.025	0.025
6	eShop	13	19	5.8	57	6	0.1	0.025	0.03
8	eShop	21	25	7.7	63	8	0.2	0.025	0.04
10	eShop	22	30	9.7	72	10	0.2	0.04	0.045
12	eShop	26	36	11.6	83	12	0.3	0.04	0.05
16	eShop	36	42	15.5	92	16	0.3	0.05	0.055

Solid carbide | DIN 6527 | Type N | f8 | 4 | 35° | h6 DIN 6535 HB | HPC



HOLEX Pro INOX solid carbide milling cutter HPC

HPC milling cutters with **newly developed high-performance coating** for **outstanding tool working life** and **optimum metal removal rates** in a wide range of stainless steels.
For use at **high cutting speeds**,
particularly suitable even for steels up to approx. 1100 N/mm².

20 3027 – With **internal coolant supply** for reliable swarf evacuation.



20 3013



20 3015



20 3027

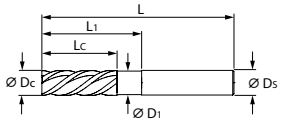
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 3013/3015				240	220	180	180	150						115	80	100	85	○		●	●	○	●
20 3027				240	220	180	180	150						115	80	100	85	○		●			●

Ø f8 D_c	12X 20 3013	12X 20 3015	12X 20 3027	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	HOLEX Pro Inox solid carbide milling cutter		HOLEX Pro Inox solid carbide milling cutter with through-coolant	20 3013	20 3015 20 3027	20 3015 20 3027	20 3015 20 3027	20 3013	20 3015 20 3027				
	HPC												
mm	AlCrN	AlCrN	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	–	5	8	13	2.8	50	57	6	0.1	0.012	0.015
4	eShop	eShop	eShop	8	11	17	3.8	54	57	6	0.1	0.012	0.015
5	eShop	eShop	eShop	9	13	19	4.8	54	57	6	0.1	0.025	0.025
6	eShop	eShop ■	eShop	10	13	19	5.8	54	57	6	0.1	0.025	0.03
8	eShop	eShop	eShop	12	21	25	7.7	58	63	8	0.2	0.025	0.04
10	eShop	eShop	eShop	14	22	30	9.7	66	72	10	0.2	0.04	0.045
12	eShop	eShop	eShop	16	26	36	11.6	73	83	12	0.3	0.04	0.05
14	–	eShop	–	–	26	36	13.6	–	83	14	0.3	0.05	0.055
16	eShop	eShop	eShop	22	36	42	15.5	82	92	16	0.3	0.05	0.055
18	–	eShop	–	–	36	42	17.5	–	104	18	0.3	0.07	0.08
20	eShop	eShop	eShop	26	41	52	19.5	92	104	20	0.3	0.07	0.08

Solid carbide | Standard | Type N | f8 | 4 | 35° | a_e 0.3×D | h6 DIN 6535 HB | HPC

HOLEX Pro INOX solid carbide milling cutter HPC

HPC milling cutters with **newly developed high-performance coating** for **outstanding tool working life** and **optimum metal removal rates** in a wide range of stainless steels.
For use at **high cutting speeds**, particularly suitable even for steels up to approx. 1100 N/mm².





20 3021

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 3021				240	220	180	180	150						115	80	100	85	○		●	●	○	○

Ø f8 D_c	12X 20 3021	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	HOLEX Pro Inox solid carbide milling cutter								
	HPC								
mm	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	18	24	5.8	62	6	0.1	0.025	0.03
8	eShop	24	30	7.7	68	8	0.2	0.025	0.04
10	eShop	30	38	9.7	80	10	0.2	0.04	0.045
12	eShop	36	46	11.6	93	12	0.3	0.04	0.05
16	eShop	48	58	15.5	108	16	0.3	0.05	0.055
20	eShop	60	74	19.5	126	20	0.3	0.07	0.08

Solid carbide | Type N | e8 | 4 | 38° | ≠ | ≠ | h6 DIN 6535 HB | HPC

HOLEX Pro INOX M solid carbide milling cutter HPC

Outstanding tool life in its class for machining **corrosion-resistant steels** thanks to **innovative coating and geometry.** Especially for **stainless steels in the high-performance range,** e.g. duplex. **Optimal metal removal rate** due to **high cutting speeds.**

DIN 6527 | a_e 0.5×D | 45°



20 2991

DIN 6527 | a_e 0.4×D | 45°

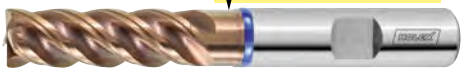
Ground recess



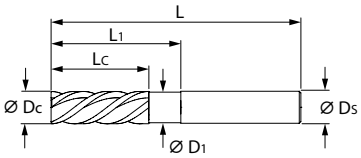
20 2994

Standard | a_e 0.3×D | 45°

Ground recess



20 2996



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 2991–20 2996				240	220	180	180	150						115	80	100	85	○		●	●	○	○

Ø e8 D_C	12Y 20 2991	12Y 20 2994	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	HOLEX Pro Inox M solid carbide milling cutter											
	HPC											
mm	TiSiN	TiSiN	20 2991 mm	20 2994 mm	20 2994 mm	20 2994 mm	20 2991 mm	20 2994 mm	mm	mm	mm	mm
3	eShop	eShop	5	8	13	2.8	50	57	6	0.1	0.012	0.015
4	eShop	eShop	8	11	17	3.8	54	57	6	0.1	0.012	0.015
5	eShop	eShop	9	13	19	4.8	54	57	6	0.1	0.025	0.03
6	eShop	eShop	10	13	19	5.8	54	57	6	0.1	0.025	0.03
8	eShop	eShop	12	21	25	7.7	58	63	8	0.2	0.03	0.05
10	eShop	eShop	14	22	30	9.7	66	72	10	0.2	0.04	0.055
12	eShop	eShop	16	26	36	11.6	73	83	12	0.3	0.045	0.06
16	eShop	eShop	22	36	42	15.5	82	92	16	0.3	0.06	0.08
20	eShop	eShop	26	41	52	19.5	92	104	20	0.3	0.075	0.09

Ø e8 D_C	12Y 20 2996	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
	HOLEX Pro Inox M solid carbide milling cutter								
	HPC								
mm	TiSiN	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	18	24	5.8	65	6	0.1	0.02	0.025
8	eShop	24	30	7.7	70	8	0.2	0.03	0.05
10	eShop	30	38	9.7	80	10	0.2	0.035	0.05
12	eShop	36	46	11.6	93	12	0.3	0.04	0.06
16	eShop	48	58	15.5	110	16	0.3	0.05	0.065
20	eShop	60	74	19.5	126	20	0.3	0.07	0.09

Solid carbide | Standard | Type N | e8 | 4 | 38° | ≠ | h6 DIN 6535 HB | HPC

Garant Solid carbide milling cutter HPC / TPC

20 3023 – Shank **similar to DIN 6535 HB.**

Note:

20 3023 – **Successor product to No. 203018.**
20 3024 – **Successor product to No. 203022.**
20 3026 – **Successor product to No. 203025.**

TPC $a_{e\,max}$ 0.04×D | TPC | 45°



20 3023

a_e 0.1×D | 45°



20 3024

Ground recess

a_e 0.1×D | 45°



20 3026

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	
20 3023				210	195	170	150	145					95	70	85	75	50	○
20 3024				100	90	80	70	65					55	50	45	40	30	○
20 3026				120	110	100	90	80					70	60	55	45	35	○

Ø e8 D_c	11X 20 3023	11X 20 3024	11X 20 3026	L_c			L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z
	Solid carbide milling cutter												
	HPC / TPC	HPC	HPC	20 3023	20 3024	20 3026	20 3026	20 3026	20 3023	20 3024 20 3026			
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	–	eShop	32	–	12	42	5.5	83	100	6	0.4	0.04
8	eShop	–	eShop	32	–	16	62	7.4	90	100	8	0.4	0.04
10	eShop	eShop	eShop	38	50	20	60	9.2	100	100	10	0.5	0.065
12	eShop	eShop	eShop	51	76	24	73	11	100	125	12	0.5	0.065
16	eShop	eShop	eShop	57	76	32	100	15	125	150	16	0.5	0.08
20	eShop	eShop	eShop	57	102	40	98	19	126	175	20	0.5	0.1

Solid carbide | DIN 6527 | Type N | 4 | ≠ | HPC

Garant GARANT Master Titan solid carbide milling cutter HPC / GARANT Master Ni-Based solid carbide milling cutter HPC/TPC

Specially ground with **corner radii similar to torus cutters.**

20 3048 – Innovative substrate specially for machining **nickel-based alloys.** Newly developed coating.

Application:

20 3029 – For milling **titanium and titanium alloys**, with very smooth cutting action for optimum tool life and top metal removal rate.
20 3048 – For milling **nickel-based alloys with high red hardness.**

Note:

20 3048 – **Successor product** to **No. 203028.**

h6 DIN 6535 HA | a_e 0.3×D | 40° | e8

R

Ground recess



20 3029

h6 DIN 6535 HB | TPC $a_{e\,max}$ 0.08×D | ≠ | 35° | f8 | TPC | R

Ground recess

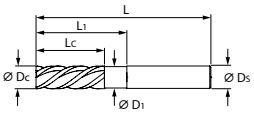


20 3048

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	N
20 3029																60		
20 3048																	40	

Ø D_c	11Z 20 3029	11Z 20 3048	L_c		L_1		Ø D_1	L	Ø D_s	Corner rounding r_v		Inconel® f_z	Ti > 850 N f_z	Ti > 850 N f_z
	GARANT Master Titan solid carbide milling cutter	GARANT Master Ni-Based solid carbide milling cutter												
	HPC	HPC / TPC	20 3029	20 3048	20 3029	20 3048				20 3029	20 3048	20 3048	20 3029	20 3029
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	8	8	13	13	2.8	57	6	0.1	0.2	0.03	0.012	0.015
4	eShop	eShop	11	11	16	17	3.8	57	6	0.1	0.2	0.035	0.015	0.018
5	eShop	eShop	13	13	18	19	4.8	57	6	0.1	0.2	0.04	0.018	0.022
6	eShop	eShop	13	13	19	19	5.8	57	6	0.1	0.2	0.05	0.022	0.026
8	eShop	eShop	21	21	25	25	7.7	63	8	0.2	0.2	0.065	0.028	0.034
10	eShop	eShop	22	22	32	30	9.7	72	10	0.2	0.2	0.07	0.034	0.042
12	eShop	eShop	26	26	36	36	11.6	83	12	0.2	0.2	0.075	0.04	0.05
16	eShop	eShop	36	36	42	42	15.5	92	16	0.2	0.3	0.08	0.05	0.065
20	eShop	–	41	–	54	–	19.5	104	20	0.2	–	–	0.06	0.08

Solid carbide | DIN 6527 | Type N | f8 | 4 | 38° | h6 DIN 6535 HB | HPC



GARANT Master Steel solid carbide roughing end mill HPC

For **roughing and finishing.**

20 3034 – Up to 1×D into solid material **at very high feed rates** with smooth cutting action.
At maximum machining depths, ensure compliance with the ratio dimension L_C (cutting length) / Ø (nominal size)!

20 3039/3035 – Up to 1.5×D into solid material **at very high feed rates** with smooth cutting action.

Advantage: Optimised flute form, eccentric relief ground, wide chip space.



20 3034



20 3039

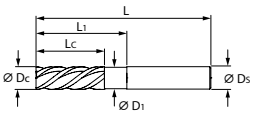


20 3035

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 3034–20 3039				260	240	190	180	150						80	70		250	●		●	○	●	●

Ø f8 D_C	11X 20 3034	11X 20 3039	11X 20 3035	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°		< 900 N f_z	< 900 N f_z
	GARANT Master Steel solid carbide roughing end mill HPC			20 3034	20 3039 20 3035	20 3039 20 3035	20 3039 20 3035	20 3034	20 3039 20 3035		20 3034 20 3035	20 3039		
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	–	eShop	6	8	–	–	50	57	6	0.06	–	0.02	0.025
4	eShop	–	eShop	8	11	–	–	54	57	6	0.08	–	0.02	0.025
5	eShop	–	eShop	9	13	–	–	54	57	6	0.1	–	0.03	0.04
6	eShop	eShop	eShop	10	13	20	5.8	54	57	6	0.12	0.1	0.04	0.05
7	–	–	eShop	–	16	25	6.8	–	63	8	0.14	–	0.04	0.05
8	eShop	eShop	eShop	12	21	25	7.8	58	63	8	0.16	0.1	0.05	0.06
9	–	–	eShop	–	22	30	8.8	–	72	10	0.18	–	0.06	0.08
10	eShop	eShop	eShop	14	22	30	9.8	66	72	10	0.2	0.1	0.06	0.08
12	eShop	eShop	eShop	16	26	36	11.8	73	83	12	0.24	0.1	0.07	0.09
14	eShop	eShop	eShop	16	26	36	13.8	73	83	14	0.28	0.1	0.08	0.1
16	eShop	eShop	eShop	22	36	42	15.8	82	92	16	0.32	0.1	0.08	0.1
18	eShop	–	eShop	22	36	42	17.8	82	92	18	0.36	–	0.1	0.13
20	eShop	eShop	eShop	26	41	54	19.8	92	104	20	0.4	0.1	0.1	0.13
25	–	eShop	eShop	–	68	80	24.5	–	136	25	0.5	0.1	0.12	0.16

Solid carbide | Standard | Type N | f8 | 4 | 38° | h6 DIN 6535 HB | HPC



GARANT Master Steel solid carbide roughing end mill HPC

For **roughing and finishing** up to 0.7×D into solid material **at very high feed rates** with smooth cutting action.

Advantage: Optimised flute form, eccentric relief ground, wide chip space.



20 3036



20 3038

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 3036				260	240	190	180	150						80	70		250	●		●	○	●	●
20 3038				125	95	85	80	70						50	35		85	●		●	○	●	●

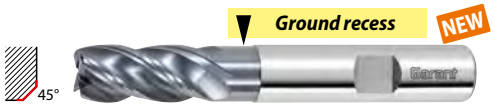
Ø f8 D_C	11X 20 3036	11X 20 3038	L_c	L_1		Ø D_1	L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	GARANT Master Steel solid carbide roughing end mill HPC			20 3036	20 3038		20 3036	20 3038				
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	13	25	42	5.8	62	80	6	0.12	0.04	0.05
8	eShop	eShop	21	30	62	7.7	68	100	8	0.16	0.05	0.06
10	eShop	eShop	22	38	58	9.7	80	100	10	0.2	0.06	0.08
12	eShop	eShop	26	46	73	11.6	93	120	12	0.24	0.07	0.09
14	eShop	–	26	52	–	13.6	99	–	14	0.28	0.08	0.1
16	eShop	eShop	36	58	100	15.5	108	150	16	0.32	0.08	0.1
18	eShop	–	36	67	–	17.5	117	–	18	0.36	0.1	0.13
20	eShop	eShop	41	74	98	19.5	126	150	20	0.4	0.1	0.13

Solid carbide | Standard | Type N | f8 | 4 | 35° | ≠ | ≠ | a_e 0.3×D | h6 DIN 6535 HB | HPC

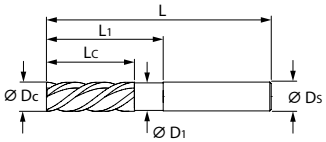
Garant GARANT GreenPlus solid carbide milling cutter HPC

For **roughing and finishing** with **very high cutting data.**
Optimised core geometry ensures a **low tendency to vibrate** and thus significantly **increased tensile strength**.
Innovative geometry and high-performance coating allow the machining of **different materials** while maintaining **high temperature resistance.**

Advantage: **In the milling cutter range of the Hoffmann Group**, the production of the **micrograin carbide substrate rod** currently has the **lowest product-specific CO_2 emissions**, thus **reducing the environmental footprint** compared to conventionally produced carbide rods.



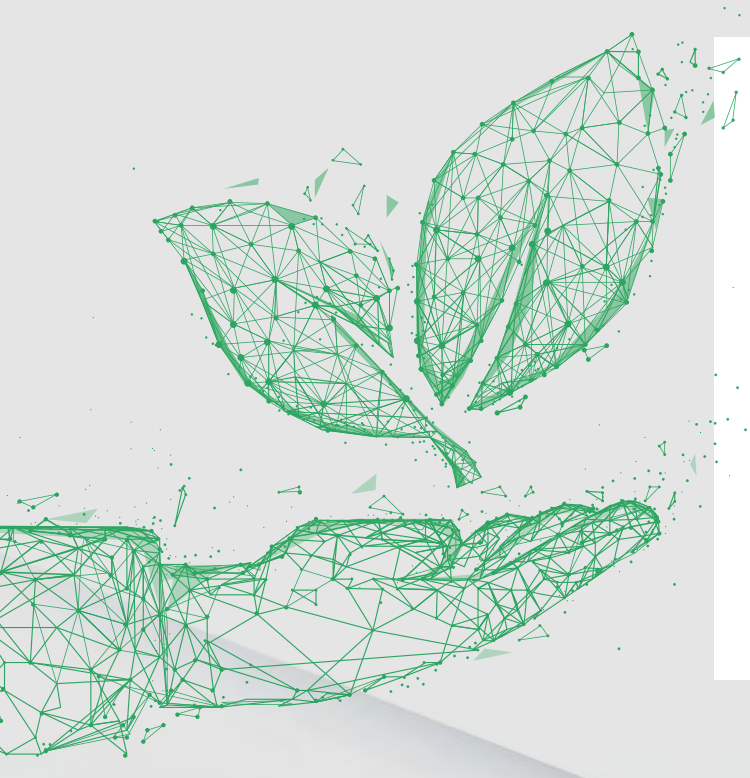
20 3055



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 3055				250	230	190	180	150						100	90	40	220	●		●	○	●	●

Ø f8 D_c	117	20 3055	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	INOX > 900 N f_z	< 900 N f_z	INOX > 900 N f_z
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3		eShop	8	13	2.8	57	6	0.1	0.015	0.01	0.02	0.012
4		eShop	11	17	3.8	57	6	0.1	0.02	0.012	0.025	0.015
5		eShop	13	19	4.8	57	6	0.1	0.025	0.015	0.035	0.02
6		eShop	13	19	5.8	57	6	0.1	0.035	0.02	0.045	0.025
8		eShop	21	25	7.7	63	8	0.2	0.045	0.025	0.055	0.03
10		eShop	22	30	9.7	72	10	0.2	0.06	0.04	0.08	0.045
12		eShop	26	36	11.6	83	12	0.3	0.07	0.04	0.09	0.05
16		eShop	36	42	15.5	92	16	0.3	0.085	0.05	0.11	0.055
20		eShop	41	52	19.5	104	20	0.3	0.1	0.07	0.13	0.08

PRODUCED IN A WAY THAT CONSERVES RESOURCES.



Carbide rod

- Made from more than 99% secondary raw materials.
- The carbon footprint of the carbide rod during production is reduced * by approx. 65% compared to a conventionally produced carbide rod.
- Same mechanical properties as a conventional carbide rod.

Furthermore:

- Milling cutter production with electricity 100% from renewable sources.
- 100% recycled plastic packaging.
- Can be reground up to 3 times (see regrinding service from the Hoffmann Group).

Garant GREENPLUS



* The stated reduction in carbon footprint refers exclusively to the CO2 equivalent during production of the carbide rod.

Solid carbide | DIN 6527 | Type N | f8 | 4 | 38° | DIN 6535 HB | HPC

GARANT Steel solid carbide milling cutter HPC

For **roughing and finishing.**
For use in unstable machining processes and for machining complex components.

20 3053 – Up to 1×D into solid material **at very high feed rates** with smooth cutting action.
At maximum machining depths, ensure compliance with the ratio dimension L_c (cutting length) / Ø D_c (cutting Ø)!

20 3057 – Up to 1.5×D into solid material **at very high feed rates** with smooth cutting action.

Advantage: Optimised flute form, eccentric relief ground, wide chip space.

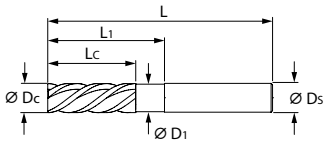
Note:
20 3053 – **Successor product to No. 203031.**
20 3057 – **Successor product to No. 203041.**



20 3053



20 3057



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3053/3057				250	200	180	160							70	50		120	●	●	○	●	●

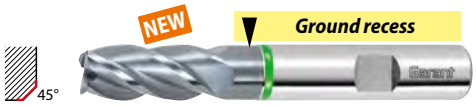
Ø f8 D_c	11Z 20 3053	11Z 20 3057	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	GARANT Steel solid carbide milling cutter HPC		20 3053	20 3057	20 3057	20 3057	20 3053	20 3057				
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	6	8	–	–	50	57	6	0.06	0.02	0.025
4	eShop	eShop	8	11	–	–	54	57	6	0.08	0.02	0.025
5	eShop	eShop	9	13	–	–	54	57	6	0.1	0.03	0.04
6	eShop	eShop	10	13	20	5.8	54	57	6	0.12	0.04	0.05
8	eShop	eShop	12	21	25	7.8	58	63	8	0.16	0.05	0.06
10	eShop	eShop	14	22	30	9.8	66	72	10	0.2	0.06	0.08
12	eShop	eShop	16	26	36	11.8	73	83	12	0.24	0.07	0.09
14	–	eShop	–	26	36	13.8	–	83	14	0.28	0.08	0.1
16	eShop	eShop	22	36	42	15.8	82	92	16	0.32	0.08	0.1
18	–	eShop	–	36	42	17.8	–	92	18	0.36	0.1	0.13
20	eShop	eShop	26	41	54	19.8	92	104	20	0.4	0.1	0.13
25	–	eShop	–	68	80	24.5	–	136	25	0.5	0.12	0.16

Solid carbide | DIN 6527 | Type N | f8 | 4 | 38° | a_e 0.3×D | DIN 6535 HB | HPC

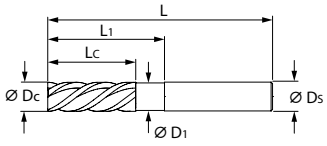
GARANT Steel solid carbide milling cutter HPC with chip separators

For **roughing and finishing. Chip breakers for controlled chip breaking.**
For reliable working in automated production environments thanks to reliable chip evacuation from the component.
Up to 1.5×D into solid material **at very high feed rates** with smooth cutting action.

Advantage: Optimised flute form, eccentric relief ground, wide chip space.



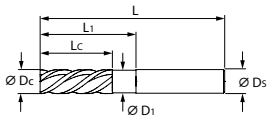
20 3049



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3049				250	200	180	160							70	50		120	●	●	○	●	●

Ø f8 D_c	11Z 20 3049	L_c	L_1	Ø D_1	L	Ø D_s	Number of chip separators	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	GARANT Steel solid carbide roughing end mill with chip separators HPC									
mm	TiAlN	mm	mm	mm	mm	mm		mm	mm	mm
6	eShop	13	20	5.8	57	6	1	0.12	0.04	0.05
8	eShop	21	25	7.8	63	8	1	0.16	0.05	0.06
10	eShop	22	30	9.8	72	10	1	0.2	0.06	0.08
12	eShop	26	36	11.8	83	12	1	0.24	0.07	0.09
16	eShop	36	42	15.8	92	16	1	0.32	0.08	0.1
20	eShop	41	54	19.8	104	20	1	0.4	0.1	0.13
25	eShop	68	80	24.5	136	25	1	0.5	0.12	0.16

Solid carbide | DIN 6527 | Type N | f8 | 4 | 38° | ≠ | h6 DIN 6535 HB | HPC



HOLEX Solid carbide roughing end mill HPC

For **roughing and finishing.**

20 3037 – Up to 1×D into solid material **at very high feed rates** with smooth cutting action.
At maximum machining depths, ensure compliance with the ratio dimension L_c (cutting length) / Ø D_c (cutting Ø)!

20 3044 – Up to 1.5×D into solid material **at very high feed rates** with smooth cutting action.

Advantage: Optimised flute form, eccentric relief ground, wide chip space.

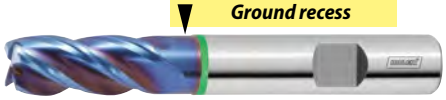
a_e 0.5×D | 45°



20 3037

Ground recess

a_e 0.3×D | 45°



20 3044

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3037/3044				250	200	180	160							70			120	●	●	○	●	●

Ø f8 D_c	12X 20 3037	12X 20 3044	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide roughing end mill											
	HPC		20 3037	20 3044	20 3044	20 3044	20 3037	20 3044				
mm	TiXSi	TiXSi	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	5	8	13	2.8	50	57	6	0.1	0.02	0.025
4	eShop	eShop	8	11	17	3.8	54	57	6	0.1	0.02	0.025
5	eShop	eShop	9	13	19	4.8	54	57	6	0.1	0.03	0.04
6	eShop	eShop	10	13	19	5.8	54	57	6	0.1	0.04	0.05
8	eShop	eShop	12	21	25	7.7	58	63	8	0.2	0.05	0.06
10	eShop	eShop	14	22	30	9.7	66	72	10	0.2	0.06	0.08
12	eShop	eShop	16	26	36	11.6	73	83	12	0.3	0.07	0.09
14	eShop	eShop	16	26	36	13.6	73	83	14	0.3	0.08	0.1
16	eShop	eShop	22	36	42	15.5	82	92	16	0.3	0.08	0.1
20	eShop	eShop	26	41	52	19.5	92	104	20	0.3	0.1	0.13
25	–	eShop	–	68	78	24.5	–	136	25	0.3	0.12	0.16

Solid carbide | Type N | 0 –0.03 | 4 | 38° | ≠ | HPC

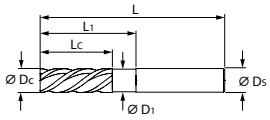
HOLEX Pro Steel solid carbide roughing end mill HPC

For **roughing and finishing.**

20 3052 – Up to 1×D into solid material **at very high feed rates** with smooth cutting action.
At maximum machining depths, ensure compliance with the ratio dimension L_c (cutting length) / Ø D_c (cutting Ø)!

20 3054 – Up to 1×D into solid material **at very high feed rates** with smooth cutting action. Dimensions to **manufacturer's standard.**

Advantage: Optimised flute form, eccentric relief ground, wide chip space.



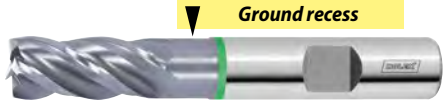
DIN 6527 | a_e 0.5×D | h6 DIN 6535 HB | 45°



20 3052

Ground recess

Standard | a_e 0.3×D | h6 | 45°



20 3054

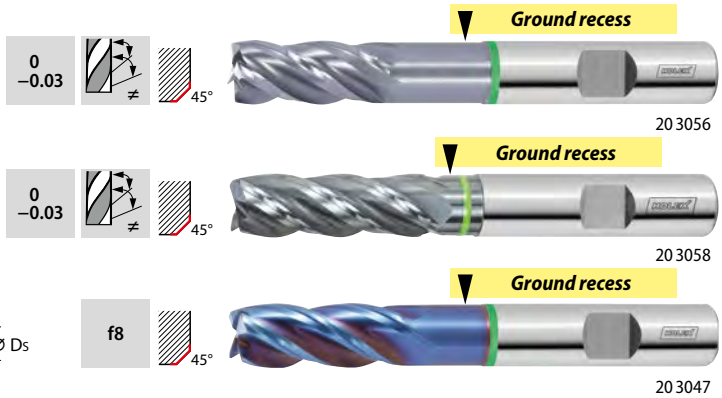
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3052/3054				260	240	180	160							80			250	●	●	○	●	●

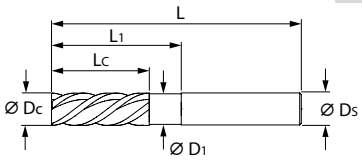
Ø D_c	12X 20 3052	12X 20 3054	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	HOLEX Pro Steel solid carbide roughing end mill											
	HPC		20 3052	20 3054	20 3054	20 3054	20 3052	20 3054				
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	6	8	12	2.8	54	57	6	0.13	0.02	0.025
4	eShop	eShop ■	8	11	15	3.8	54	57	6	0.18	0.02	0.025
5	eShop	eShop	9	13	17	4.8	54	57	6	0.2	0.03	0.04
6	eShop	eShop	10	13	21	5.5	54	57	6	0.2	0.04	0.05
8	eShop	eShop	12	19	27	7.5	58	63	8	0.2	0.05	0.06
10	eShop	eShop	14	22	32	9.5	66	72	10	0.3	0.06	0.08
12	eShop	eShop	16	26	38	11.5	73	83	12	0.3	0.07	0.09
14	eShop	eShop	18	26	42	13.5	75	83	14	0.3	0.08	0.1
16	eShop	eShop	22	32	44	15.5	82	92	16	0.4	0.08	0.1
18	eShop	eShop	24	32	50	17.5	84	92	18	0.4	0.1	0.13
20	eShop	eShop	26	38	54	19.5	92	104	20	0.5	0.1	0.13
25	–	eShop	–	45	60	24.5	–	125	25	0.5	0.12	0.16

Solid carbide | Standard | Type N | 4 | 38° | ≠ | a_e 0.25×D | h6 DIN 6535 HB | HPC

HOLEX Pro Steel solid carbide roughing end mill HPC

For **roughing and finishing.**
Up to 0.7×D into solid material **at very high feed rates** with smooth cutting action.
20 3047 – Without dynamic twist pitch.
Advantage: Optimised flute form, eccentric relief ground, wide chip space.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3047				250	200	180	160							70			120	●		●	○	●	●
20 3056/3058				260	240	180	160							80			250	●		●	○	●	●

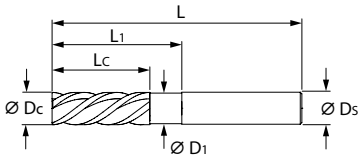
Ø D_c mm	12X 20 3056 HOLEX Pro Steel solid carbide roughing end mill HPC TiAlN	12X 20 3058 HOLEX Pro Steel solid carbide roughing end mill HPC TiAlN	12X 20 3047 Solid carbide roughing end mill HPC TiXSi	L_c 20 3056 mm	L_c 20 3058 20 3047 mm	L_1 20 3056 mm	L_1 20 3058 20 3047 mm	Ø D_1 20 3056 20 3058 mm	Ø D_1 20 3047 mm	L mm	Ø D_s mm	Corner chamfer width at 45° 20 3056 20 3058 mm	Corner chamfer width at 45° 20 3047 mm	< 900 N f_z mm	< 900 N f_z mm
5	eShop	eShop	–	13	18	25	24	4.8	–	62	6	0.2	–	0.03	0.04
6	eShop	eShop	eShop	13	18	25	24	5.5	5.8	62	6	0.2	0.1	0.04	0.05
8	eShop	eShop	eShop	19	24	32	30	7.5	7.7	68	8	0.2	0.2	0.05	0.06
10	eShop	eShop	eShop	22	30	40	38	9.5	9.7	80	10	0.3	0.2	0.06	0.08
12	eShop	eShop	eShop	26	36	48	46	11.5	11.6	93	12	0.3	0.3	0.07	0.09
16	eShop	eShop	eShop	32	48	56	58	15.5	15.5	108	16	0.4	0.3	0.08	0.1
20	eShop	eShop	eShop	38	60	70	74	19.5	19.5	126	20	0.5	0.3	0.1	0.13

Solid carbide | Standard | Type N | 0 −0.03 | 4 | 38° | ≠ | a_e 0.25×D | h6 DIN 6535 HA | HPC

HOLEX Pro Steel solid carbide roughing end mill HPC

For **roughing and finishing.**
Up to 0.5×D into solid material **at very high feed rates** with smooth cutting action.
Extra-long version for avoiding interference contours.
Advantage: Optimised flute form, eccentric relief ground, generous chip spaces.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3059				200	190	140	120							60			200	●		●	○	●	●

Ø D_c mm	12X 20 3059 HOLEX Pro Steel solid carbide roughing end mill HPC TiAlN	L_c mm	L_1 mm	Ø D_1 mm	L mm	Ø D_s mm	Corner chamfer width at 45° mm	< 900 N f_z mm	< 900 N f_z mm
6	eShop	22	29	5.5	65	6	0.1	0.03	0.04
8	eShop	28	36	7.5	80	8	0.2	0.04	0.05
10	eShop	33	54	9.5	100	10	0.2	0.05	0.06
12	eShop	33	54	11.5	100	12	0.3	0.06	0.07
16	eShop	53	84	15.5	150	16	0.3	0.07	0.09
20	eShop	68	84	19.5	150	20	0.3	0.09	0.11

Solid carbide | Standard | Type N | e8 | 4 | 42° | h6 DIN 6535 HB | HPC

Garant GARANT Master UNI solid carbide milling cutter HPC

For **roughing and finishing at very high feed rates** with smooth cutting action. **Newly developed geometry and high-performance coating** for excellent production results with maximum tool life in various materials. **High intrinsic stability** and smooth cutting action due to unequal spacing.

Advantage:
- Particularly low vibration running.
- Special flute profile, large flutes.
- Specially matched edge honing.
- Optimised substrate for hardness and toughness.



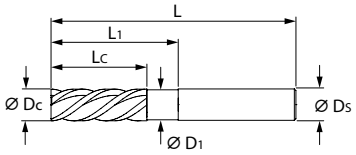
20 3062



20 3067



20 3073



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
20 3062–20 3073		280		260	240	190	180	150						90	80	40	250	●

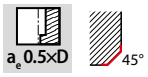
Ø e8 D_C	11Z 20 3062	11Z 20 3067	L_c		L_1		Ø D_1		L		Ø D_s	Corner rounding r_v		< 900 N f_z	INOX > 900 N f_z	< 900 N f_z	INOX > 900 N f_z
	GARANT Master UNI solid carbide milling cutter																
	HPC		20 3062	20 3067	20 3062	20 3067	20 3062	20 3067	20 3062	20 3067		20 3062	20 3067				
mm	TiSiN	TiSiN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	5	8	10	13	2.8	2.8	50	57	6	0.1	0.06	0.02	0.012	0.025	0.015
4	eShop	eShop	8	11	14	17	3.8	3.8	54	57	6	0.1	0.08	0.02	0.012	0.025	0.015
5	eShop	eShop	9	13	16	19	4.8	4.8	54	57	6	0.1	0.1	0.03	0.025	0.04	0.03
6	eShop	eShop	10	13	16	19	5.8	5.8	54	57	6	0.1	0.1	0.04	0.025	0.05	0.03
8	eShop	eShop	12	21	20	25	7.7	7.7	58	63	8	0.2	0.2	0.05	0.025	0.06	0.03
10	eShop	eShop	14	22	24	30	9.7	9.7	66	72	10	0.2	0.2	0.06	0.04	0.08	0.05
12	eShop	eShop	16	26	26	36	11.5	11.6	73	83	12	0.3	0.3	0.07	0.04	0.09	0.05
16	eShop	eShop	22	36	32	42	15.5	15.5	82	92	16	0.3	0.3	0.08	0.05	0.1	0.06
20	eShop	eShop	26	41	40	52	19.5	19.5	92	104	20	0.3	0.3	0.1	0.07	0.13	0.08
25	–	eShop	–	68	–	80	–	24.5	–	136	25	–	0.3	0.12	0.08	0.16	0.09

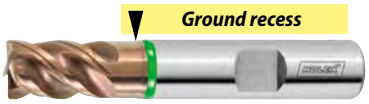
Ø e8 D_C	11Z 20 3073	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	< 900 N f_z	INOX > 900 N f_z	< 900 N f_z	INOX > 900 N f_z
	GARANT Master UNI solid carbide milling cutter										
	HPC										
mm	TiSiN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	18	24	5.8	65	6	0.1	0.03	0.02	0.04	0.025
8	eShop	24	30	7.7	70	8	0.2	0.04	0.02	0.05	0.025
10	eShop	30	38	9.7	80	10	0.2	0.05	0.035	0.07	0.04
12	eShop	36	46	11.6	93	12	0.3	0.06	0.035	0.08	0.04
16	eShop	48	58	15.5	110	16	0.3	0.07	0.04	0.09	0.05

Solid carbide | Standard | Type N | e8 | 4 | 42° | ≠ | ≠ | h6 DIN 6535 HB | HPC

HOLEX Pro UNI solid carbide milling cutter HPC

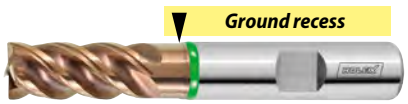
For **roughing and finishing at very high feed rates** with smooth cutting action. **Newly developed geometry and high-performance coating** for excellent production results with maximum tool life in various materials. **High intrinsic stability** and smooth cutting action due to unequal spacing.



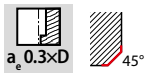


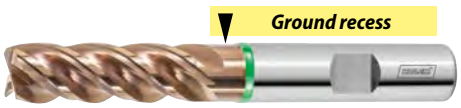
20 3063





20 3068





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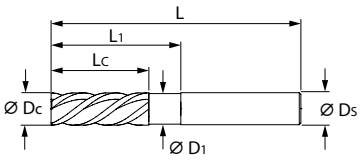


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 3063–20 3074		250		240	220	180	170	140						90	80	35	240	●		●	○	●	●

Ø e8 D_c	12Y 20 3063 / 12Y 20 3068 HOLEX Pro UNI solid carbide milling cutter HPC		L_c		L_1		Ø D_1		L		Ø D_s	Corner chamfer width at 45°		< 900 N f_z	INOX > 900 N f_z	< 900 N f_z	INOX > 900 N f_z
	20 3063	20 3068	20 3063	20 3068	20 3063	20 3068	20 3063	20 3068	20 3063	20 3068		20 3063	20 3068				
mm	TiSiN	TiSiN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	–	eShop	–	8	–	13	–	2.8	–	57	6	–	0.06	0.02	0.012	0.025	0.015
4	eShop	eShop	8	11	14	17	3.8	3.8	54	57	6	0.1	0.08	0.02	0.012	0.025	0.015
5	eShop	eShop	9	13	16	19	4.8	4.8	54	57	6	0.1	0.1	0.03	0.025	0.04	0.03
6	eShop	eShop	10	13	16	19	5.8	5.8	54	57	6	0.1	0.1	0.04	0.025	0.05	0.03
8	eShop	eShop	12	21	20	25	7.7	7.7	58	63	8	0.2	0.2	0.05	0.025	0.06	0.03
10	eShop	eShop	14	22	24	30	9.7	9.7	66	72	10	0.2	0.2	0.06	0.04	0.08	0.05
12	eShop	eShop	16	26	26	36	11.5	11.6	73	83	12	0.3	0.3	0.07	0.04	0.09	0.05
16	eShop	eShop	22	36	32	42	15.5	15.5	82	92	16	0.3	0.3	0.08	0.05	0.1	0.06
20	eShop	eShop	26	41	40	52	19.5	19.5	92	104	20	0.3	0.3	0.1	0.07	0.13	0.08
25	–	eShop	–	68	–	80	–	24.5	–	136	25	–	0.3	0.12	0.08	0.16	0.09

Ø e8 D_c	12Y 20 3074 HOLEX Pro UNI solid carbide roughing end mill HPC	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	INOX > 900 N f_z	< 900 N f_z	INOX > 900 N f_z
mm	TiSiN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	18	24	5.8	65	6	0.1	0.03	0.02	0.04	0.025
8	eShop	24	30	7.7	70	8	0.2	0.04	0.02	0.05	0.025
10	eShop	30	38	9.7	80	10	0.2	0.05	0.035	0.07	0.04
12	eShop	36	46	11.6	93	12	0.3	0.06	0.035	0.08	0.04
16	eShop	48	58	15.5	110	16	0.3	0.07	0.04	0.09	0.05

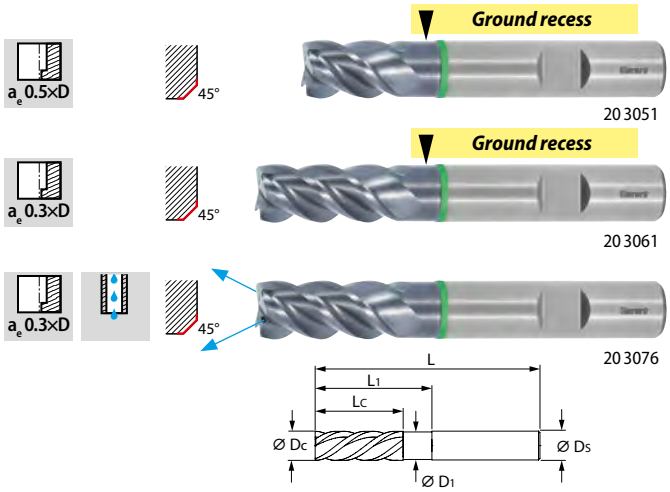
Solid carbide | Standard | Type N | e8 | 4 | 45° | ≠ | h6 DIN 6535 HB | G 2.5 nmax | MTC

Garant

Solid carbide roughing end mill MTC

For **roughing and finishing** up to 1.5×D into solid material **at very high feed rates** with smooth cutting action.
For cutting force reduction and better surface quality due to **45° helix.**
Improved coating for a further reduction in cutting force combined with increased tool life.

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.



Suitable for/ vc [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3051/3061				250	230	200	180	150						70	50		150	●		●	○	●	●
20 3076				250	230	200	180	150						80	60		170	●		●	○	●	●

Ø e8 D_C	11X 20 3051	11X 20 3061	11X 20 3076	L_c		L_1		Ø D_1	L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z
	Solid carbide roughing end mill			20 3051	20 3061 20 3076	20 3051	20 3061	20 3051 20 3061	20 3051	20 3061 20 3076			
	MTC	MTC	MTC with through-coolant										
mm	AlCrN	AlCrN	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	–	5	8	10	13	2.8	50	57	6	0.1	0.058
4	eShop	eShop	eShop	8	11	14	17	3.8	54	57	6	0.1	0.058
5	eShop	eShop	eShop	9	13	16	19	4.8	54	57	6	0.1	0.07
6	eShop	eShop	eShop	10	13	16	19	5.8	54	57	6	0.1	0.07
8	eShop	eShop	eShop	12	21	20	25	7.7	58	63	8	0.2	0.07
10	eShop	eShop	eShop	14	22	24	30	9.7	66	72	10	0.2	0.09
12	eShop	eShop	eShop	16	26	26	36	11.6	73	83	12	0.3	0.09
14	eShop	eShop	–	16	26	26	36	13.6	73	83	14	0.3	0.13
16	eShop	eShop	eShop	22	36	32	42	15.5	82	92	16	0.3	0.13
18	eShop	eShop	–	22	36	32	42	17.5	82	92	18	0.3	0.155
20	eShop	eShop	eShop	26	41	40	52	19.5	92	104	20	0.3	0.155

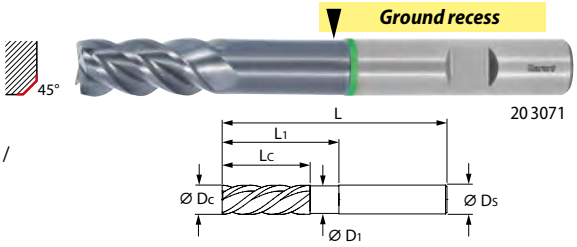
Solid carbide | Standard | Type N | e8 | 4 | 45° | ≠ | ae 0.1×D | h6 DIN 6535 HB | G 2.5 nmax | MTC

Garant

Solid carbide roughing end mill MTC

For **roughing and finishing** up to 0.7×D into solid material **at very high feed rates** with smooth cutting action.
For cutting force reduction and better surface quality due to **45° helix.**
Improved coating for a further reduction in cutting force combined with increased tool life.

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.



Suitable for/ vc [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3071				100	90	85	80							40	30		100	●		●	○	●	●

Ø e8 D_C	11X 20 3071	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide roughing end mill								
	MTC								
mm	AlCrN	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	13	42	5.8	80	6	0.1	0.03	0.04
8	eShop	21	62	7.7	100	8	0.2	0.03	0.04
10	eShop	22	58	9.7	100	10	0.2	0.04	0.05
12	eShop	26	73	11.6	120	12	0.3	0.04	0.05
16	eShop	36	100	15.5	150	16	0.3	0.05	0.065
20	eShop	41	98	19.5	150	20	0.3	0.06	0.08

Solid carbide | Standard | Type W | h6 | 38° | TPC

4 | 5 | h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 n_{max} | G 2.5 n_{max}

Garant

GARANT Master Alu solid carbide milling cutter TPC with more chip separators

Specially designed for TPC high-performance milling.
Optimised bending strength due to the use of ultra-fine grain substrates.
1×D chip separator for controlled chip breaking.
Balanced for very high process reliability and protecting the machine at high speeds.
Application: Especially for milling **aluminium and non-ferrous metals.**

Note:
20 3113 – h_{max}: The values stated in the table are maximum values.
ae_{max} = 0.15×D for TPC machining.
20 3114 – h_{max}: The values stated in the table are maximum values.
ae_{max} = 0.12×D for TPC machining.
Successor product for No. 202281, 202282.
20 3115 – h_{max}: The values stated in the table are maximum values.
ae_{max} = 0.1×D for TPC machining.
Successor product for No. 202283, 202284.



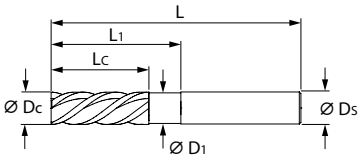
20 3113



20 3114



20 3115



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 3113	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200		●	○	●	●
20 3114/3115	500	450	400	180	140	180	130	110		160	140	120	140	260		260	140	120		●	○	●	●

Ø h6 D_C mm	11X 20 3113 GARANT Master Alu solid carbide milling cutter with more chip separators TPC DLC	No. of teeth Z	L_c mm	L_1 mm	Ø D_1 mm	L mm	Ø D_s mm	Number of chip separators	Shank form	Corner rounding r_v mm	TPC Alu h_{max} mm
5	eShop	4	17	24	4.5	65	6	2	HA	0.05	0.036
6	eShop	4	18	25	5.5	65	6	2	HA	0.05	0.043
8	eShop	4	24	30	7.5	70	8	2	HA	0.1	0.057
10	eShop	4	30	35	9.5	80	10	2	HB	0.1	0.071
12	eShop	4	36	45	11	93	12	2	HB	0.1	0.086
16	eShop	5	48	55	15	110	16	2	HB	0.2	0.114
20	eShop	5	60	70	19	125	20	2	HB	0.2	0.143

Ø h6 D_C mm	11X 20 3114 DLC	11X 20 3115 DLC	No. of teeth Z	L_c 20 3114 mm	L_c 20 3115 mm	L_1 20 3114 mm	L_1 20 3115 mm	Ø D_1 mm	L 20 3114 mm	L 20 3115 mm	Ø D_s mm	Number of chip separators 20 3114	Number of chip separators 20 3115	Shank form	Corner rounding r_v mm	TPC Alu h_{max} 20 3114 mm	TPC Alu h_{max} 20 3115 mm
4	eShop	–	4	17	–	23	–	3.7	65	–	6	3	–	HA	0.05	0.026	–
5	eShop	eShop	4	21	26	30	36	4.5	70	75	6	3	4	HA	0.05	0.032	0.03
6	eShop	eShop	4	25	31	30	36	5.5	70	75	6	3	4	HA	0.05	0.039	0.036
8	eShop	eShop	4	33	41	40	48	7.5	80	90	8	3	4	HA	0.1	0.052	0.048
10	eShop	eShop	4	41	51	50	60	9.5	90	104	10	3	4	HB	0.1	0.065	0.06
12	eShop	eShop	4	49	61	60	72	11	110	120	12	3	4	HB	0.1	0.078	0.072
16	eShop	eShop	5	65	81	80	96	15	130	150	16	3	4	HB	0.2	0.104	0.096
20	eShop	eShop	5	82	102	100	120	19	150	175	20	3	4	HB	0.2	0.13	0.12

Solid carbide | Standard | Type N | e8 | 4 | 40° | ≠ | ≠ | h6 DIN 6535 HB | G 2.5 n_{max} | TPC

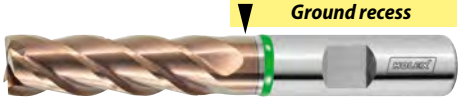
HOLEX Solid carbide milling cutter TPC with chip separators

High-performance end mill for general-purpose applications, **specially designed for TPC applications**.
Strengthened core.
Optimised bending strength due to the use of ultra-fine grain substrates.
Chip breaker for controlled chip breaking.

Note: h_{max}: The values stated in the table are maximum values.
20 3085 – $a_{e\,max}$ = 0.18×D for TPC machining.
20 3086 – $a_{e\,max}$ = 0.07×D for TPC machining.
20 3087 – $a_{e\,max}$ = 0.05×D for TPC machining.

TPC $a_{e\,max}$ 0.18×D, 45°

Ground recess



20 3085

TPC $a_{e\,max}$ 0.07×D, 45°

Ground recess



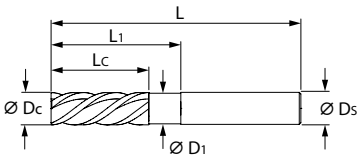
20 3086

TPC $a_{e\,max}$ 0.05×D, 45°

Ground recess



20 3087



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 3085				360	330	290	220	140						180	150			●				●	●
20 3086				350	320	280	210	135						170	145			●				●	●
20 3087				340	300	260	190	115						160	110			●				●	●

Ø e8 D_c	12X 20 3085 Solid carbide milling cutter with chip separators TPC	L_c	L_1	Ø D_1	L	Ø D_s	Number of chip separators	Corner chamfer width at 45°	TPC < 900N h_{max}
mm	TiSiN	mm	mm	mm	mm	mm		mm	mm
4	eShop	16	23	3.9	65	6	1	0.08	0.046
5	eShop	17	24	4.8	65	6	1	0.1	0.052
6	eShop	18	25	5.8	65	6	1	0.12	0.058
8	eShop	24	30	7.8	70	8	1	0.16	0.062
10	eShop	30	35	9.8	80	10	1	0.2	0.074
12	eShop	36	45	11.8	93	12	1	0.24	0.092
16	eShop	48	55	15.8	110	16	1	0.32	0.12
20	eShop	60	70	19.8	126	20	1	0.4	0.134

Ø e8 D_c	12X 20 3086	12X 20 3087 Solid carbide milling cutter with chip separators TPC	L_c		L_1		Ø D_1	L		Ø D_s	Number of chip separators	Corner chamfer width at 45°	TPC < 900N h_{max}
			20 3086	20 3087	20 3086	20 3087		20 3086	20 3087				
mm	TiSiN	TiSiN	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm
5	eShop	–	20	–	30	–	4.8	70	–	6	2	0.1	0.052
6	eShop	–	24	–	30	–	5.8	70	–	6	2	0.1	0.058
8	eShop	eShop	32	40	40	48	7.8	80	90	8	2	0.12	0.062
10	eShop	eShop	40	50	50	60	9.8	90	104	10	2	0.16	0.074
12	eShop	eShop	48	60	60	72	11.8	110	120	12	2	0.2	0.091
16	eShop	eShop	64	80	80	96	15.8	130	150	16	2	0.32	0.12
20	eShop	eShop	80	100	100	120	19.8	150	175	20	2	0.4	0.134

Solid carbide | Standard | Type H | f8 | 5 | 45° | TPC $a_{e\,max}$ 0.05×D | h6 DIN 6535 HB | G 2.5 n_{max} | TPC

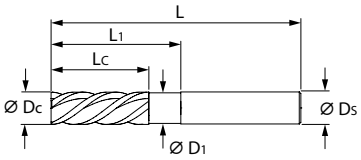
Garant Solid carbide milling cutter TPC with chip separators

High-performance slot drill for machining materials up to 60 HRC,
specially designed for TPC applications.
Strengthened core. With corner radii similar to torus cutters.
Chip breakers for controlled chip breaking.

Note: h_{max}: The values stated in the table are maximum values.
$a_{e\,max}$ = 0.05×D for TPC machining.
Successor product to No. 203077.



20 3079



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 3079								150	140	125	110											○	●

Ø f8 D_c	11X	20 3079 Solid carbide milling cutter with chip separators TPC TiAlN	L_c	L_1	Ø D_1	L	Ø D_s	Number of chip separators	Corner rounding r_v	TPC < 60 HRC h_{max}
mm			mm	mm	mm	mm	mm		mm	mm
6		eShop	18	25	5.8	62	6	1	0.1	0.02
8		eShop	24	30	7.8	68	8	1	0.2	0.022
10		eShop	30	35	9.8	80	10	1	0.2	0.031
12		eShop	36	45	11.8	93	12	1	0.3	0.035
16		eShop	48	55	15.8	108	16	1	0.3	0.049
20		eShop	60	70	19.8	126	20	1	0.3	0.062

Solid carbide | Standard | Type N | f8 | 5 | 45° | TPC $a_{e\,max}$ 0.08×D | h6 DIN 6535 HB | G 2.5 n_{max} | TPC

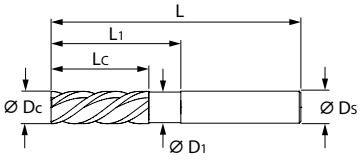
Garant Solid carbide milling cutter TPC with chip separators

High-performance mills for machining stainless steels,
specially designed for TPC applications.
Strengthened core.

Note: h_{max}: The values stated in the table are maximum values.
$a_{e\,max}$ = 0.08×D for TPC machining.
NEW GENERATION AVAILABLE!
Recommended successor product is No. 203117



20 3019



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 3019				380	340	300	230							240	170					●	○		●

Ø f8 D_c	11X	20 3019 Solid carbide milling cutter with chip separators TPC TiAlN	L_c	L_1	Ø D_1	L	Ø D_s	Number of chip separators	Corner chamfer width at 45°	TPC INOX < 900 N h_{max}	TPC INOX > 900 N h_{max}
mm			mm	mm	mm	mm	mm		mm	mm	mm
4		eShop	16	23	3.9	62	6	1	0.08	0.025	0.02
5		eShop	17	24	4.8	62	6	1	0.1	0.03	0.025
6		eShop	18	25	5.8	62	6	1	0.12	0.04	0.03
8		eShop	24	30	7.8	68	8	1	0.16	0.05	0.04
10		eShop	30	35	9.8	80	10	1	0.2	0.06	0.05
12		eShop	36	45	11.8	93	12	1	0.24	0.07	0.06
16		eShop	48	55	15.8	108	16	1	0.32	0.09	0.075
20		eShop	60	70	19.8	126	20	1	0.4	0.125	0.105

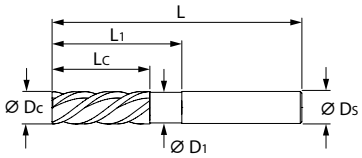
Solid carbide | DIN 6527 | Type N | e8 | 5 | 40° | a_e 0.3×D | TPC $a_{e\,max}$ 0.08×D | h6 DIN 6535 HA | HPC | TPC

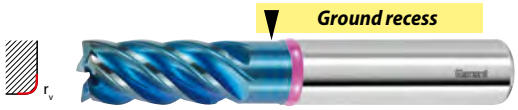
Garant GARANT Master Titan solid carbide milling cutter HPC/TPC

For roughing and finishing at very high feed rates and smooth cutting action for the best tool life and high metal removal rate.
Specially ground with corner radii similar to torus cutters and **special coating.**
Dimensions to DIN 6527 long.

Application: For milling **titanium and titanium alloys.**

Note: Can be reground when used as a TPC milling cutter.





203157

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
203157																60		

Ø e8 D_c	117	203157	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	Ti > 850 N f_z	Ti > 850 N f_z
		GARANT Master Titan solid carbide milling cutter HPC/TPC								
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
4		eShop	11	16	3.8	57	6	0.1	0.015	0.018
5		eShop	13	18	4.8	57	6	0.1	0.018	0.022
6		eShop	13	20	5.8	57	6	0.1	0.022	0.026
8		eShop	19	25	7.7	63	8	0.2	0.028	0.034
10		eShop	22	32	9.7	72	10	0.2	0.034	0.042
12		eShop	26	38	11.6	83	12	0.2	0.04	0.05
16		eShop	32	44	15.5	92	16	0.3	0.05	0.065
20		eShop	41	54	19.5	104	20	0.3	0.06	0.08

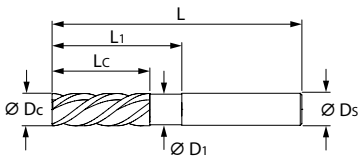
Solid carbide | DIN 6527 | Type N | e8 | 5 | 38° | TPC $a_{e\,max}$ 0.08×D | a_e 0.3×D | h6 DIN 6535 HB | G 2.5 n_{max} | HPC | TPC

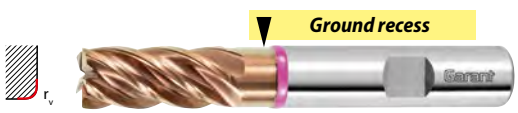
Garant GARANT Master Ni-Based solid carbide milling cutter HPC/TPC

Specially ground with **Torus-like corner radius.**
Innovative substrate specially for machining **nickel-based alloys.** Newly developed coating.

Application: For milling **nickel-based alloys with high red hardness.**

Note: **Successor product to No. 203082.**





203161

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	N
203161																	40	

Ø e8 D_c	117	203161	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	Inconel® f_z
		GARANT Master Ni-Based solid carbide milling cutter HPC/TPC							
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm
3		eShop	8	13	2.8	57	6	0.2	0.03
4		eShop	11	17	3.8	57	6	0.2	0.035
5		eShop	13	19	4.8	57	6	0.2	0.04
6		eShop	13	19	5.8	57	6	0.2	0.05
8		eShop	21	25	7.7	63	8	0.2	0.065
10		eShop	22	30	9.7	72	10	0.2	0.07
12		eShop	26	36	11.6	83	12	0.2	0.075
16		eShop	36	42	15.5	92	16	0.3	0.08

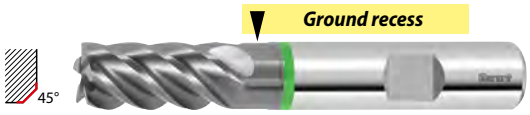
Solid carbide	Standard	Type N	f8	5	40°	≠	≠	TPC $a_{e\,max}$ 0.1×D	h6 DIN 6535 HB	G 2.5 n_{max}	TPC

Garant

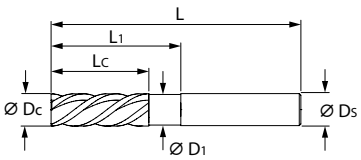
Solid carbide milling cutter TPC

High-performance milling cutter specially designed for general-purpose TPC applications.
Strengthened core.
Optimised bending strength due to the use of ultra-fine grain substrates.

Note: $a_{e\,max}$ = 0.1×D for TPC machining.
h_{max}: The values stated in the table are maximum values. For finishing operations we recommend items No. 204012, 204014 and 204015.



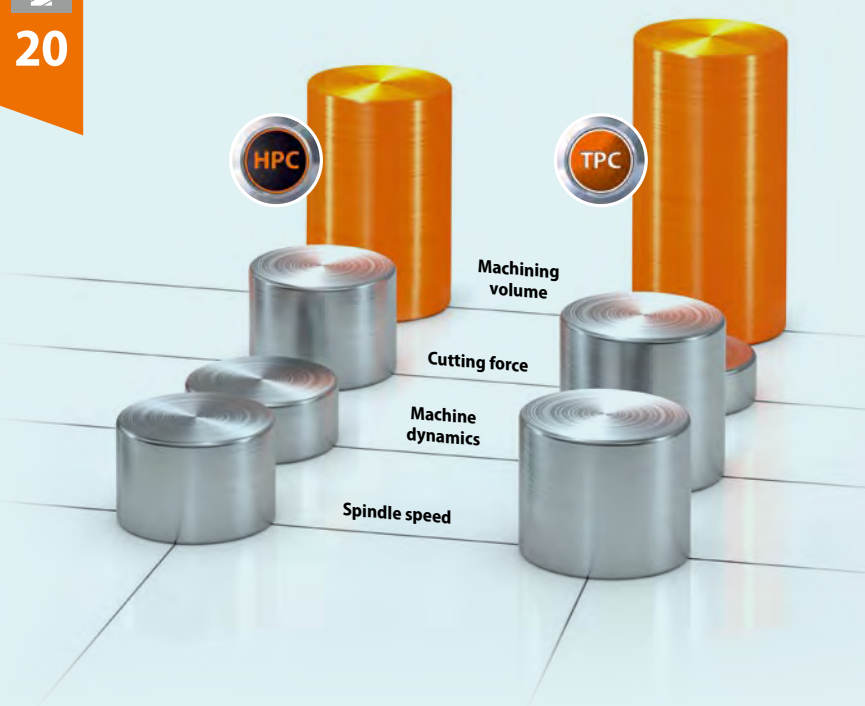
20 3088



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 3088				380	340	300	230	150					60	40	25	220	150	●		●		○	●

Ø f8 D_c	11X 20 3088 Solid carbide milling cutter TPC TiAlN	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	TOOLOX® 44 HRC h_{max}
mm		mm	mm	mm	mm	mm	mm	mm
4	eShop	11	–	–	57	6	0.08	0.02
5	eShop	13	–	–	57	6	0.1	0.025
6	eShop	13	19	5.8	57	6	0.12	0.035
8	eShop	19	25	7.8	63	8	0.16	0.045
10	eShop	22	30	9.8	72	10	0.2	0.055
12	eShop	26	36	11.8	83	12	0.24	0.065
16	eShop	32	42	15.8	92	16	0.32	0.085
20	eShop	41	52	19.8	104	20	0.4	0.105

Milling processes compared



HPC
High Performance Cutting

- High feed rates.
- Very low degree of vibration due to unequal spacing.
- High chipping rates due to high a_p and a_e.

Lower cutting speeds than with HSC.

TPC
Trochoidal Performance Cutting

- Very high metal removal rate, especially when used on difficult-to-machine materials.
- Very high dynamic path speed.
- Very low cutting force.
- Low wear.
- High savings potential compared to the conventional strategy.

Requirements for successful TPC machining

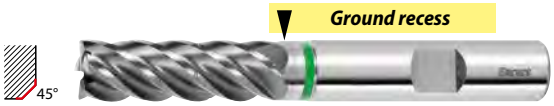
- A modern CAM system or modern machine control.
- A machining centre with the most dynamic characteristics possible.
- TPC tools from GARANT – specially developed for the requirements in trochoidal application.

Solid carbide | Standard | Type N | f8 | 5 | 40° | ≠ | TPC $a_{e\,max}$ 0.07×D | h6 DIN 6535 HB | G 2.5 n_{max} | TPC

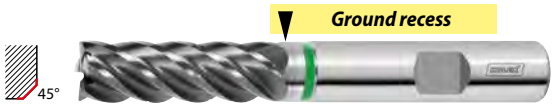
Solid carbide milling cutter TPC with chip separators

High-performance end mill for general-purpose applications, **specially designed for TPC applications**.
Strengthened core.
Optimised bending strength due to the use of ultra-fine grain substrates.
Offset chip breakers for controlled chip breaking.

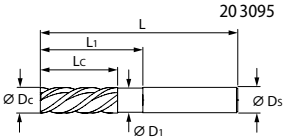
Note:
$a_{e\,max}$ = 0.07×D for TPC machining.
h_{max}: The values stated in the table are maximum values. For finishing operations we recommend items No. 204012, 204014 and 204015.
20 3092 – **Successor product to No. 203089.**



20 3092



20 3095



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 3092/3095				380	340	300	230	150					60	40	25	220	150	●		●		○	●

Ø f8 D_C	11X 20 3092 Garant	12X 20 3095 HOLEX	L_c	L_1	Ø D_1	L	Ø D_s	Number of chip separators		Corner chamfer width at 45°	TPC TOOLOX® 44 HRC h_{max}
	Solid carbide milling cutter with chip separators TPC							20 3092	20 3095		
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm			mm	mm
4	eShop	eShop	16	23	3.9	62	6	1	1	0.08	0.018
5	eShop	eShop	17	24	4.8	62	6	1	1	0.1	0.023
6	eShop	eShop	18	25	5.8	62	6	1	1	0.12	0.032
8	eShop	eShop	24	30	7.8	68	8	1	1	0.16	0.042
10	eShop	eShop	30	35	9.8	80	10	1	1	0.2	0.051
12	eShop	eShop	36	45	11.8	93	12	2	1	0.24	0.06
14	eShop	eShop	42	50	13.8	99	14	2	1	0.28	0.069
16	eShop	eShop	48	55	15.8	108	16	2	1	0.32	0.078
20	eShop	eShop	60	70	19.8	126	20	2	1	0.4	0.097

Solid carbide | Standard | Type N | f8 | 5 | 40° | ≠ | h6 DIN 6535 HB | G 2.5 n_{max} | TPC

Garant Solid carbide milling cutter TPC with chip separators

High-performance end mill for general-purpose applications, **specially designed for TPC applications**.
Strengthened core.
Optimised bending strength due to the use of ultra-fine grain substrates.
Offset chip breakers for controlled chip breaking.

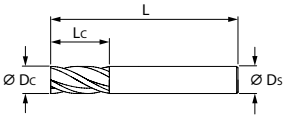
Note:
h_{max}: The values stated in the table are maximum values. For finishing operations we recommend items No. 204016, 204018 and 204019.
20 3093 – $a_{e\,max}$ = 0.05×D for TPC machining.
Successor product to No. 203090.
20 3094 – $a_{e\,max}$ = 0.03×D for TPC machining.
Successor product to No. 203091.

TPC $a_{e\,max}$ 0.05×D | 45°


20 3093

TPC $a_{e\,max}$ 0.03×D | 45°


20 3094



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	HARDOX® 500 < 1600 N	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 3093				380	340	300	230	150					60	40	25	220	150	●		●		○	●
20 3094				350	310	270	200	120					50	30	20	190	120	●		●		○	●

Ø f8 D_C	11X 20 3093	11X 20 3094	L_c		L		Ø D_s	Number of chip separators		Corner chamfer width at 45°	TPC TOOLOX® 44 HRC h_{max}	
	Solid carbide milling cutter with chip separators TPC		20 3093	20 3094	20 3093	20 3094		20 3093	20 3094		20 3093	20 3094
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm			mm	mm	mm
5	eShop	–	20	–	66	–	6	2	–	0.1	0.021	–
6	eShop	–	24	–	66	–	6	2	–	0.12	0.029	–
8	eShop	eShop	32	40	74	81	8	2	3	0.16	0.038	0.03
10	eShop	eShop	40	50	89	96	10	2	3	0.2	0.046	0.037
12	eShop	eShop	48	60	100	112	12	2	3	0.24	0.054	0.044
16	eShop	eShop	64	80	123	136	16	2	3	0.32	0.071	0.057
20	eShop	eShop	80	100	140	160	20	2	3	0.4	0.088	0.07

Solid carbide | Standard | Type N | f8 | 6 | 36° | h6 DIN 6535 HB | G 2.5 n_{max} | TPC

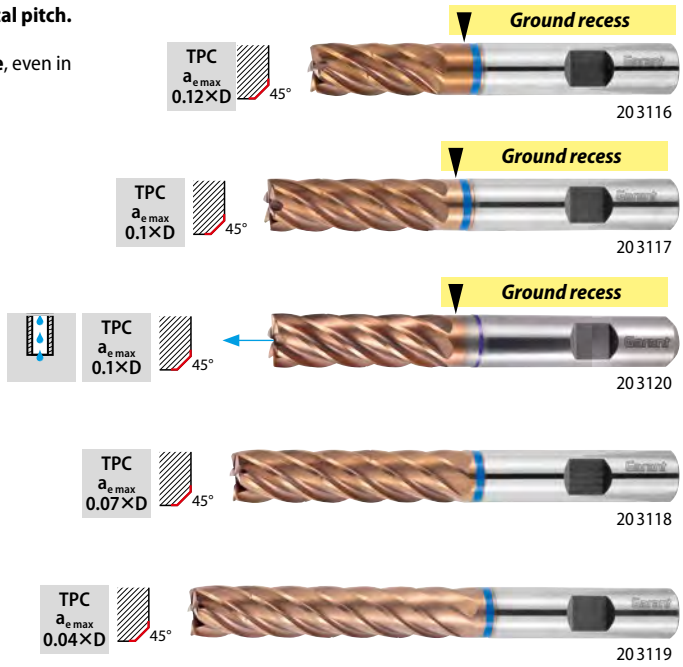
Garant GARANT Master INOX solid carbide milling cutter TPC with chip separators

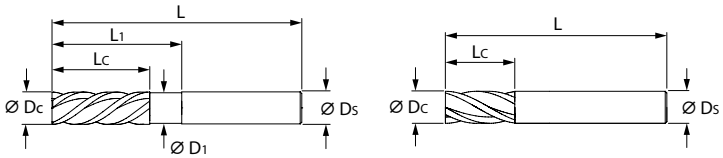
High-performance milling cutter with **irregular cutter spacing** and **irregular helical pitch.**
High process reliability and **better chip evacuation** due to **increased flutes.**
Optimised carbide substrate for **higher bending strength** and **extreme tool life**, even in stainless steels in the high-performance field, especially duplex.
Chip separator positioned offset **at cutting edges.**

20 3120 – Internal cooling version for improved chip evacuation.

Advantage: Lower pull-out forces due to reduced helix angle.

Note:
h_{max} : The values stated in the table are maximum values. For finishing operations we recommend items No. 204012, 204014, 204015, 204016, 204018 and 204019.
20 3116 – $a_{e\,max}$ = 0.12×D for TPC machining.
20 3118 – $a_{e\,max}$ = 0.07×D for TPC machining.
Successor product for No. 203104 and No. 203107.
20 3119 – $a_{e\,max}$ = 0.04×D for TPC machining.
Successor product for No. 203105 and No. 203108.
20 3117/3120 – $a_{e\,max}$ = 0.1×D for TPC machining.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
20 3116/3117/3120				380	340	300	230							**240**	**170**	**140**			●	○		●
20 3118				320	290	260	200							**220**	**160**	**120**			●	○		●
20 3119				270	240	210	160							**200**	**140**	**100**			●	○		●

Ø f8 D_c	11Z 20 3116	11Z 20 3117	11Z 20 3120	L_c		L_1		Ø D_1	L		Ø D_s	Number of chip separators		Corner chamfer width at 45°	TPC INOX < 900 N h_{max}	
	GARANT Master INOX solid carbide milling cutter with chip separators		GARANT Master INOX solid carbide milling cutter with chip separators and internal cooling													
	TPC			20 3116	20 3117 20 3120	20 3116	20 3117 20 3120		20 3116	20 3117 20 3120		20 3116	20 3117 20 3120		20 3116	20 3117 20 3120
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm			mm	mm	mm
4	eShop	eShop	–	11	16	–	23	3.9	57	62	6	–	1	0.08	0.026	0.024
5	eShop	eShop	–	13	17	–	24	4.8	57	62	6	–	1	0.1	0.032	0.03
6	eShop	eShop	–	13	18	19	25	5.8	57	62	6	–	1	0.12	0.039	0.036
8	eShop	eShop	eShop	19	24	25	30	7.8	63	68	8	–	1	0.16	0.052	0.048
10	eShop	eShop	eShop	22	30	30	35	9.8	72	80	10	–	1	0.2	0.065	0.06
12	eShop	eShop	eShop	26	36	36	45	11.8	83	93	12	1	2	0.24	0.078	0.072
14	–	eShop	–	–	42	–	50	13.8	–	99	14	–	2	0.28	–	0.084
16	eShop	eShop	eShop	32	48	42	55	15.8	92	108	16	1	2	0.32	0.104	0.096
20	eShop	eShop	–	41	60	52	70	19.8	104	126	20	1	2	0.4	0.13	0.12

Ø f8 D_c	11Z 20 3118	11Z 20 3119	L_c		L		Ø D_s	Number of chip separators		Corner chamfer width at 45°	TPC INOX < 900 N h_{max}	
	GARANT Master INOX solid carbide milling cutter with chip separators											
	TPC		20 3118	20 3119	20 3118	20 3119		20 3118	20 3119		20 3118	20 3119
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm			mm	mm	mm
5	eShop	–	20	–	66	–	6	2	–	0.1	0.026	–
6	eShop	–	24	–	66	–	6	2	–	0.12	0.031	–
8	eShop	eShop	32	40	74	81	8	2	3	0.16	0.041	0.031
10	eShop	eShop	40	50	89	96	10	2	3	0.2	0.051	0.039
12	eShop	eShop	48	60	100	112	12	2	3	0.24	0.061	0.047
16	eShop	eShop	64	80	123	136	16	2	3	0.32	0.082	0.063
20	eShop	eShop	80	100	140	160	20	2	3	0.4	0.102	0.078

Solid carbide | Standard | Type N | f8 | 40° | ≠ | ≠ | h6 DIN 6535 HB | G 2.5 n_{max} | TPC

Solid carbide milling cutter TPC / Solid carbide milling cutter TPC with chip separators

High-performance milling cutter with **irregular cutter spacing** and **irregular helical pitch.** Optimised bending strength due to the use of ultra-fine grain substrates. **Offset chip breakers for controlled chip breaking.**

Note:
h_{max}: The values stated in the table are maximum values. For finishing operations we recommend items No. 204012, 204014 and 204015.
20 3102 – $a_{e\,max}$ = 0.1×D for TPC machining.
NEW GENERATION AVAILABLE!
Recommended successor product is No. 203116.
20 3106 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 203117.
20 3106/3109 – $a_{e\,max}$ = 0.07×D for TPC machining.



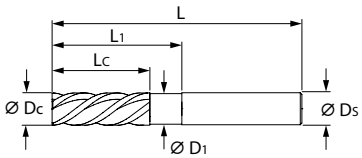
20 3102



20 3106



20 3109



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 3102–20 3109				380	340	300	230							240	170				●	○		●	

Ø f8 D_c	11X 20 3102 Garant Solid carbide milling cutter TPC TiAlN	11X 20 3106 Garant Solid carbide milling cutter with chip separators TPC TiAlN	L_c		L_1		Ø D_1		L		Ø D_s	Number of chip separators	Corner chamfer width at 45°	TPC INOX < 900 N h_{max}	
			20 3102	20 3106	20 3102	20 3106	20 3102	20 3106	20 3102	20 3106		20 3106		20 3102	20 3106
mm			mm	mm	mm	mm	mm	mm	mm	mm	mm		mm	mm	mm
4	eShop	eShop	11	16	–	23	–	3.9	57	62	6	1	0.08	0.02	0.018
5	eShop	eShop	13	17	–	24	–	4.8	57	62	6	1	0.1	0.025	0.023
6	eShop	eShop	13	18	19	25	5.8	5.8	57	62	6	1	0.12	0.035	0.032
8	eShop	eShop	19	24	25	30	7.8	7.8	63	68	8	1	0.16	0.045	0.042
10	eShop	eShop	22	30	30	35	9.8	9.8	72	80	10	1	0.2	0.055	0.051
12	eShop	eShop	26	36	36	45	11.8	11.8	83	93	12	2	0.24	0.065	0.06
16	eShop	eShop	32	48	42	55	15.8	15.8	92	108	16	2	0.32	0.085	0.078
20	eShop	eShop	41	60	52	70	19.8	19.8	104	126	20	2	0.4	0.105	0.097

Ø f8 D_c	12X 20 3109 HOLEX Solid carbide milling cutter with chip separators TPC TiAlN	L_c	L_1	Ø D_1	L	Ø D_s	Number of chip separators	Corner chamfer width at 45°	TPC INOX < 900 N h_{max}
mm		mm	mm	mm	mm	mm		mm	mm
4	eShop	16	23	3.9	62	6	1	0.08	0.018
5	eShop	17	24	4.8	62	6	1	0.1	0.023
6	eShop	18	25	5.8	62	6	1	0.12	0.032
8	eShop	24	30	7.8	68	8	1	0.16	0.042
10	eShop	30	35	9.8	80	10	1	0.2	0.051
12	eShop	36	45	11.8	93	12	1	0.24	0.06
16	eShop	48	55	15.8	108	16	1	0.32	0.078
20	eShop	60	70	19.8	126	20	1	0.4	0.097

Solid carbide | Standard | Type W | h6 | 5 | 38° | h6 DIN 6535 HA | G 2.5 n max | HPC

Garant GARANT Master Alu solid carbide finishing cutter HPC

For finishing operations.
Special geometry for optimum chip evacuation.
Unequal spacing gives high intrinsic stability and smooth cutting action.
For profile milling as a finishing operation.

Note:
20 3203 – Order the **uncoated version** using **No. 203207**.
20 3204 – Order the **uncoated version** using **No. 203208**.
20 3205 – Order the **uncoated version** using **No. 203209**.



20 3203



20 3207



20 3204



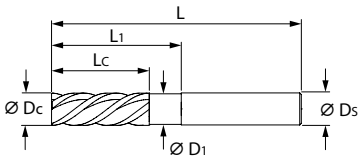
20 3208



20 3205



20 3209



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 3203	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200		●	○	●	●
20 3204/3205	500	450	400	180	140	180	130	110		160	140	140	120	140		260	140	120		●	○	●	●

Ø h6 D_C	11X 20 3203	L_c	L_1	Ø D_1	L	Ø D_s	Alu f_z
	GARANT Master Alu solid carbide milling cutter, HPC HPC						
mm	DLC	mm	mm	mm	mm	mm	mm
4	eShop ■	16	23	3.8	65	6	0.05
6	eShop	18	25	5.8	65	6	0.05
8	eShop	24	30	7.8	70	8	0.06
10	eShop	30	35	9.5	80	10	0.065
12	eShop	36	45	11.5	93	12	0.07
16	eShop	48	55	15.5	110	16	0.08
20	eShop	60	70	19.5	125	20	0.09

Ø h6 D_C	11X 20 3204	11X 20 3205	L_c		L_1		Ø D_1	L		Ø D_s	Alu f_z	
	GARANT Master Alu solid carbide milling cutter, HPC HPC		20 3204	20 3205	20 3204	20 3205		20 3204	20 3205		20 3204	20 3205
mm	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop ■	–	24	–	32	–	5.8	65	–	6	0.045	–
8	eShop	eShop ■	32	40	40	48	7.8	75	80	8	0.05	0.04
10	eShop	eShop	40	50	48	58	9.5	90	100	10	0.06	0.05
12	eShop	eShop ■	48	60	56	68	11.5	100	119	12	0.06	0.05
16	eShop	eShop	64	80	72	88	15.5	125	134	16	0.07	0.06
20	eShop	eShop	80	100	88	108	19.5	150	175	20	0.08	0.07

Solid carbide | Standard | Type W | h6 | 7 | 40° | ≠ | ≠ | 90° | h6 DIN 6535 HA | G 2.5 n_{max} | HPC

Garant GARANT Master Alu solid carbide finishing cutter HPC

For fine finishing operations. Cutter geometry optimised for low infeeds and excellent surfaces. Unequal spacing gives high intrinsic stability and smooth cutting action.

Application: For profile milling as a finishing operation.

Note: Optimal production results in conjunction with the GARANT HiRunER precision ER collet chuck, GARANT Master Chuck hydraulic chuck and heavy-duty chuck.



203213



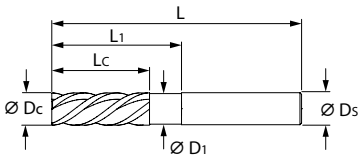
203214



203215



203216



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
203213–203216	380	360	320	260	220	250	220	200									160	220		●	●		●

Ø h6 D_C	11X 203213	11X 203214	L_c		L_1		Ø D_1	L		Ø D_s	Alu f_z
	GARANT Master Alu solid carbide finishing cutter		203213	203214	203213	203214		203213	203214		
mm	HPC		mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	20	26	25	32	5.8	65	65	6	0.03
8	eShop	eShop	26	34	30	40	7.8	70	75	8	0.03
10	eShop	eShop	32	42	36	48	9.5	80	90	10	0.035
12	eShop	eShop	39	51	46	56	11.5	93	100	12	0.035
16	eShop	eShop	52	68	57	74	15.5	110	125	16	0.04
20	eShop	eShop	64	84	72	90	19.5	125	150	20	0.04

Ø h6 D_C	11X 203215	11X 203216	L_c		L_1		Ø D_1		L		Ø D_s	Alu f_z
	GARANT Master Alu solid carbide finishing cutter		203215	203216	203215	203216	203215	203216	203215	203216		
mm	HPC		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	–	eShop	–	16	–	42	–	5.7	–	80	6	0.025
8	eShop	eShop	42	19	48	62	7.8	7.4	80	100	8	0.025
10	eShop	eShop	52	25	58	58	9.5	9.2	100	100	10	0.03
12	eShop	eShop	63	30	68	73	11.5	11	119	119	12	0.03
16	eShop	eShop	84	40	88	100	15.5	15	134	150	16	0.035
20	eShop	–	105	–	113	–	19.5	–	175	–	20	0.035

Solid carbide | Type N | 45°

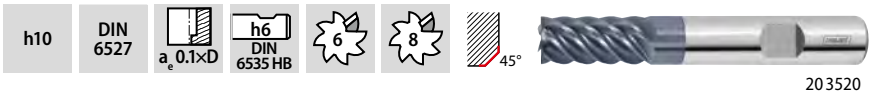
HOLEX Solid carbide milling cutter / HOLEX Pro Steel solid carbide finishing cutter HPC

20 3510–3612 – **High stability** and **extremely smooth cutting action due to at least 6 teeth.** Eccentric relief ground. **For profile milling as a finishing operation.**

20 3623/3624 – For **finishing operations**. Special geometry for optimum chip evacuation. For **profile milling as a finishing operation.** Very sturdy version with strengthened core.



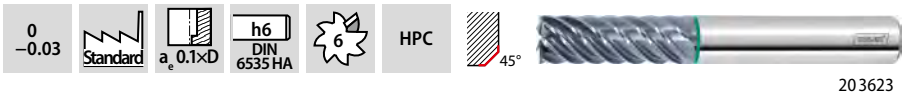
20 3510



20 3520



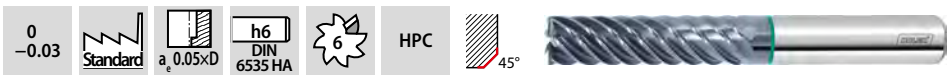
20 3610



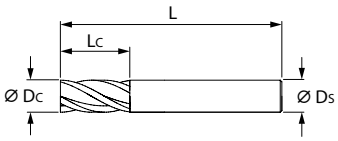
20 3623



20 3612



20 3624



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 3510/3520		600	400	190	170	160	95	85						90			120	○		●	○	○	○
20 3610/3612		600	400	190	170	160	95							90			120	○		●	○	○	○
20 3623				160	140	120	110	100	70					90	70			●		●	○	●	●
20 3624				120	110	100	90	80	60					80	60			●		●	○	●	●

Ø h10 D_c	12X 20 3510	12X 20 3520	No. of teeth Z	L_c	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z
	Solid carbide milling cutter							
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm
5	eShop	eShop	6	13	57	6	0.1	0.032
6	eShop	eShop	6	13	57	6	0.1	0.054
8	eShop	eShop	6	19	63	8	0.1	0.063
10	eShop	eShop	6	22	72	10	0.1	0.072
12	eShop	eShop	6	26	83	12	0.1	0.08
16	eShop	eShop	6	32	92	16	0.1	0.089
20	eShop	eShop	8	38	104	20	0.1	0.107

Ø D_c	12X 20 3610	12X 20 3623	12X 20 3612	12X 20 3624	No. of teeth Z		L_c			L			Ø D_s	Corner chamfer width at 45°		< 900 N f_z
	Solid carbide milling cutter	HOLEX Pro Steel solid carbide finishing cutter HPC	Solid carbide milling cutter	HOLEX Pro Steel solid carbide finishing cutter HPC	20 3610 20 3612	20 3623 20 3624	20 3610	20 3623	20 3612 20 3624	20 3610 20 3623	20 3612	20 3624		20 3610 20 3612	20 3623 20 3624	
mm	TiAlN	TiAlN	TiAlN	TiAlN			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2	eShop	–	–	–	6	–	6.5	–	–	62	–	–	6	0.05	–	0.016
3	eShop	–	–	–	6	–	10	–	–	62	–	–	6	0.05	–	0.016
4	eShop	eShop	–	–	6	6	16	16	–	62	–	–	6	0.1	0.04	0.032
5	eShop	eShop	eShop	–	6	6	18	17	20	62	70	–	6	0.1	0.05	0.032
6	eShop	eShop	eShop	eShop	6	6	18	18	24	62	70	66	6	0.1	0.06	0.054
8	eShop	eShop	eShop	eShop	6	6	23	24	32	68	90	74	8	0.1	0.08	0.063
10	eShop	eShop	eShop	eShop	6	6	30	30	40	80	100	89	10	0.1	0.1	0.072
12	eShop	eShop	eShop	eShop	6	6	36	36	48	93	110	100	12	0.1	0.12	0.08
16	eShop	eShop	eShop	eShop	6	6	48	48	64	108	130	123	16	0.1	0.16	0.089
20	eShop	eShop	eShop	eShop	8	6	60	60	80	126	140	140	20	0.1	0.2	0.107
25	eShop	–	–	–	8	–	75	–	–	150	–	–	25	0.1	–	0.107

Solid carbide | Standard | Type N | h10 | 6 | 45° | h6 DIN 6535 HA

HOLEX Solid carbide milling cutter

For **finishing operations**. Special geometry for optimum chip evacuation. For **profile milling as a finishing operation.** Very sturdy version with strengthened core.

Application:

20 3620 – Very suitable for large depths of cut.



20 3617



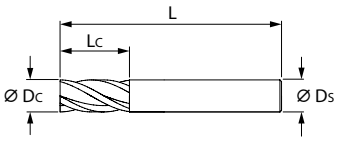
20 3618



20 3619



20 3620



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 3617/3618				160	140	120	110	100	70	60									●	○	●	●	
20 3619/3620				120	110	100	90	80	60	50									●	○	●	●	

Ø D_c	12X 20 3617	12X 20 3618	L_c		L		Ø D_s	< 900 N f_z
	Solid carbide milling cutter		20 3617	20 3618	20 3617	20 3618		
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
3	eShop	–	6	–	54	–	6	0.016
4	eShop	–	8	–	54	–	6	0.032
5	eShop	eShop	9	13	54	57	6	0.032
6	eShop	eShop	10	13	54	57	6	0.054
8	eShop	eShop	12	19	58	63	8	0.063
10	eShop	eShop	14	22	66	72	10	0.072
12	eShop	eShop	16	26	73	83	12	0.08
14	eShop	–	18	–	75	–	14	0.085
16	eShop	eShop	22	32	82	92	16	0.089
20	eShop	eShop	26	38	92	104	20	0.107
25	–	eShop	–	45	–	125	25	0.107

Ø D_c	12X 20 3619	12X 20 3620	L_c		L		Ø D_s	< 900 N f_z
	Solid carbide milling cutter		20 3619	20 3620	20 3619	20 3620		
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
4	eShop	eShop	16	18	62	65	6	0.032
5	eShop	eShop	18	22	62	70	6	0.032
6	eShop	eShop	18	26	62	70	6	0.054
8	eShop	eShop	24	36	68	90	8	0.063
10	eShop	eShop	30	46	80	100	10	0.072
12	eShop	eShop	36	56	93	110	12	0.08
16	eShop	eShop	48	66	108	130	16	0.089
20	eShop	eShop	60	76	126	140	20	0.107
25	–	eShop	–	92	–	180	25	0.107

Solid carbide | Type H | 50° | ≠ | a_e 0.05×D | h6 DIN 6535 HA | HPC

4 | 6 | 8 | 10

Garant GARANT Diabolo solid carbide milling cutter HRC 62 / GARANT Diabolo solid carbide milling cutter HPC

GARANT Diabolo:
Special geometry, coating and carbide, specially for hard machining.
20 3221/3211 – Dimensions similar to DIN 6527.
20 3221 – **Specialist for steels up to 62 HRC**. Reliable process and longer service life thanks to optimised cutter geometry and state-of-the-art high-performance coating.

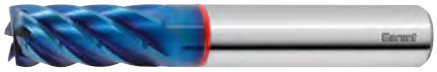
Application: **For peripheral milling** as a **finishing operation.** (plunge cutting only to shallow depths).

h7 | DIN 6527 | 90° | NEW



20 3221

e8 | DIN 6527 | 90°



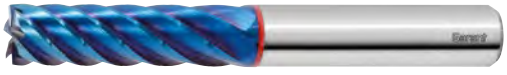
20 3211

e8 | Standard | 90°

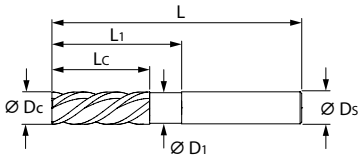


20 3282

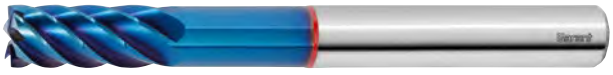
e8 | Standard | 90°



20 3372



e8 | Standard | 90°



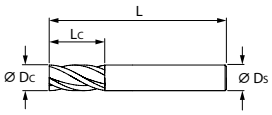
20 3382

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 3211/3282								170	170	170	145	100									○	●	●
20 3221								170	150	130	100	80	65								○	●	●
20 3372/3382								120	115	100	90	60									○	●	●

Ø D_c	11Z 20 3221 GARANT Diabolo solid carbide milling cutter HRC 62	11X 20 3211 GARANT Diabolo solid carbide milling cutter	11X 20 3282	No. of teeth Z	L_c		L		Ø D_s	< 60 HRC f_z	< 65 HRC f_z
	HPC				20 3221 20 3211	20 3282	20 3221 20 3211	20 3282		20 3221	20 3211 20 3282
mm	TiSiN	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm
2	eShop	eShop	–	4	8	–	57	–	6	0.015	0.016
3	eShop	eShop	–	4	12	–	57	–	6	0.02	0.016
4	eShop	eShop	–	6	13	–	57	–	6	0.025	0.016
5	eShop	eShop	–	6	15	–	57	–	6	0.03	0.016
6	eShop	eShop	eShop	6	16	18	57	65	6	0.035	0.016
8	eShop	eShop	eShop	6	19	24	63	70	8	0.04	0.02
10	eShop	eShop	eShop	6	25	30	72	85	10	0.045	0.02
12	eShop	eShop	eShop ■	6	28	36	83	93	12	0.05	0.025
14	eShop	eShop	eShop	6	30	42	83	100	14	0.05	0.025
16	eShop	eShop	eShop	8	36	48	92	110	16	0.06	0.025
18	eShop	eShop	eShop	8	36	54	92	114	18	0.065	0.03
20	eShop	eShop	eShop	10	41	60	104	126	20	0.07	0.03

Ø e8 D_c	11X 20 3372	11X 20 3382	No. of teeth Z	L_c		L_1	Ø D_1	L		Ø D_s	< 65 HRC f_z
	GARANT Diabolo solid carbide milling cutter HPC			20 3372	20 3382	20 3382	20 3382	20 3372	20 3382		
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm
6	–	eShop	6	–	16	40	5.8	–	80	6	0.014
8	–	eShop	6	–	19	50	7.7	–	100	8	0.016
10	–	eShop	6	–	25	60	9.7	–	100	10	0.018
12	eShop	eShop	6	45	30	60	11.6	100	120	12	0.021
16	eShop	eShop	8	65	40	100	15.6	125	150	16	0.025
20	eShop	eShop	10	75	50	100	19.6	135	150	20	0.03
25	eShop	–	10	75	–	–	–	150	–	25	0.036

Solid carbide | Type H | 6 | 45° | a_e 0.05×D | h6 DIN 6535 HA | 0 −0.01 | 0 −0.02



HOLEX Solid carbide milling cutter

Strengthened core and geometry for hard machining, without dynamic helical pitch.

20 3246 Size 5 – Tolerance: Size nominal Ø D_c **0/-0.01 mm.**
Size 6–20 – Tolerance: Size nominal Ø D_c **0/-0.02 mm.**

Application: **For profile milling as finishing.**
(Plunge cutting only to shallow depths).

Note:
20 3246 – **Successor product to No. 203240.**
20 3248 – **Successor product to No. 203320.**

DIN 6527 | 45°



20 3246

Standard | 45°



20 3248

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 3246/3248						160	95	85	75	65	50	30									○	●	●

Ø D_c	12X 20 3246	12X 20 3248	L_c		L		Ø D_s	Corner chamfer width at 45°	< 55 HRC f_z
	Solid carbide milling cutter		20 3246	20 3248	20 3246	20 3248			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm
5	eShop	–	13	–	57	–	6	0.05	0.016
6	eShop	eShop	13	18	57	62	6	0.06	0.023
8	eShop	eShop	19	24	63	68	8	0.08	0.03
10	eShop	eShop	22	30	72	80	10	0.1	0.038
12	eShop	eShop	26	36	83	93	12	0.12	0.045
14	eShop	eShop	26	42	83	99	14	0.14	0.045
16	eShop	eShop	32	48	92	108	16	0.16	0.05
20	eShop	eShop	38	60	104	126	20	0.2	0.055

Solid carbide | Standard | Type H | 45° | a_e 0.05×D | h6 DIN 6535 HA | HPC | 0 −0.02 | 0 −0.03 | 4 | 6

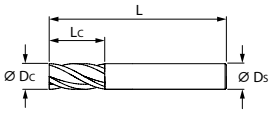
Garant Solid carbide milling cutter HPC

GARANT Diabolo 70:
Special solid carbide substrate with extremely high tensile strength combined with **outstanding wear resistance** for optimum process reliability. Newly developed **nano-crystalline high-tech coating for hard milling up to 70 HRC.** Very suitable for **continuous use** in tool and mould making.
Sizes 2 – 5: **Recess angle α = 15°.**

Tolerance:
- Size nominal Ø: **D_c ≤ size 12: 0 / −0.02 mm;**
- Size nominal Ø: **D_c from size 16: 0 / -0.03 mm.**

Application: Due to the **special hard geometry** ideal for use on hardened materials from 60 HRC to 70 HRC.
For profile milling as **finishing.**
(Plunge cutting only to shallow depths.)

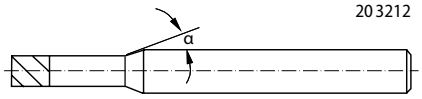
Note: For materials > 65 HRC: a_e = 0.02×D.



a_e 0.05×D | 90°



20 3212



Size 2-5

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 3212										145	100	80	75								○	●	●

Ø D_c	11X 20 3212	No. of teeth Z	L_c	L	Ø D_s	< 70 HRC f_z
	Solid carbide milling cutter HPC					
mm	TiAlN		mm	mm	mm	mm
2	eShop	4	6	58	6	0.018
3	eShop	6	8	58	6	0.018
4	eShop	6	11	58	6	0.018
5	eShop	6	13	58	6	0.018
6	eShop	6	13	58	6	0.02
8	eShop	6	19	64	8	0.025
10	eShop	6	22	73	10	0.025
12	eShop	6	26	74	12	0.035
16	eShop	6	32	93	16	0.04

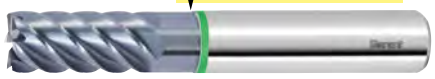
Solid carbide | DIN 6527 | Type N | e8 | 45° | a_e 0.1×D | 6 | 8

Garant Solid carbide milling cutter

High stability and **extremely smooth cutting action** due to at least 6 teeth.
Double relief ground clearance angle.
Application: **For peripheral milling** as a **finishing operation.**

Ground recess

h6 DIN 6535 HA, 45°



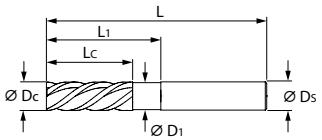
20 3440

Ground recess

h6 DIN 6535 HB, 45°



20 3480



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3440/3480		600	400	190	170	160	95	85	65					90	75	60	120	●		●	○	○	○

Ø e8 D_c	11X 20 3440	11X 20 3480	No. of teeth Z	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z
	Solid carbide milling cutter									
	DIN 6535 HA	DIN 6535 HB								
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm
5	eShop	eShop	6	13	18	4.8	57	6	0.02	0.032
6	eShop	eShop	6	13	18	5.8	57	6	0.03	0.054
7	eShop	eShop	6	16	26	6.8	63	8	0.04	0.054
8	eShop	eShop	6	19	24	7.8	63	8	0.04	0.063
9	eShop	eShop	6	19	29	8.8	72	10	0.04	0.063
10	eShop	eShop	6	22	32	9.8	72	10	0.05	0.072
12	eShop	eShop	6	26	36	11.8	83	12	0.05	0.08
14	eShop	eShop	6	26	36	13.8	83	14	0.06	0.08
16	eShop	eShop	6	32	42	15.8	92	16	0.06	0.089
18	–	eShop	8	32	42	17.8	92	18	0.07	0.089
20	eShop	eShop	8	38	48	19.8	104	20	0.07	0.107

Solid carbide | Standard | Type N | f8 | 45° | ≠ | ≠ | 90° | a_e 0.05×D | h6 DIN 6535 HA | G 2.5 ^{n}max | 6 | 8

Garant Solid carbide high precision milling cutter

Ground recess

High stability and **extremely smooth cutting action due to at least 6 teeth. Eccentric relief ground.**
Extremely **high taper accuracy with tolerances in the µm range**, for **precise 90° angles** and plane-parallel surfaces in profile milling.
For the most demanding angular accuracy.
Cutter corner chamfer undefined due to eccentric relief grinding.
20 3530 – **With maximum 0.008 mm tapering.**
20 3540 – **With maximum 0.014 mm tapering.**
Application: **For peripheral milling** as a **finishing operation.**

90°

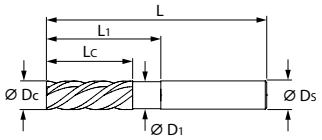


20 3530

90°



20 3540



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 3530				250	200	175	145	120	50					100	80		220	●		●	○	○	○
20 3540				200	160	140	115	100	40					80	65		175	●		●	○	○	○

Ø f8 D_c	11X 20 3530	11X 20 3540	No. of teeth Z		L_c		L_1	Ø D_1	L		Ø D_s	< 900 N f_z
	Solid carbide high precision milling cutter											
			20 3530	20 3540	20 3530	20 3540	20 3530	20 3530	20 3530	20 3540		
mm	TiAlN	TiAlN			mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	6	6	13	33	19	5.6	57	80	6	0.04
8	eShop	eShop	6	6	19	40	25	7.6	63	100	8	0.04
10	eShop	eShop	6	6	22	55	30	9.6	72	100	10	0.06
12	eShop	eShop	6	6	26	65	36	11.5	83	120	12	0.06
16	eShop	eShop	6	8	32	85	42	15	92	150	16	0.08
20	eShop	eShop	6	8	38	100	52	19	104	160	20	0.1
25	–	eShop	–	8	–	105	–	–	–	165	25	0.12

Solid carbide | Standard | Type N | f8 | 45° | h6 DIN 6535 HA | G 2.5 n_{max} | HPC

Garant GARANT Master Steel solid carbide finishing cutter HPC

For **finishing operations**.
Special geometry for optimum chip evacuation.
Unequal spacing gives high **intrinsic stability and smooth cutting action**.
For **profile milling as a finishing operation**.

20 4012–4016 – Suitable for machining titanium and titanium alloys.
20 4016–4019 – Particularly long cutting edges for efficient finishing.

Note:	Can be reground from Ø D_C = 6 mm.
20 4012–4015 –	$a_{e\,max} = 0.1 \times D$
20 4016–4019 –	$a_{e\,max} = 0.05 \times D$



20 4012



20 4014



20 4015



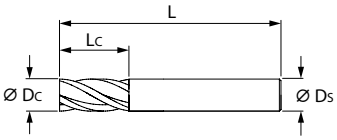
20 4016



20 4018



20 4019



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
20 4012–20 4015				**360**	**340**	**300**	**290**	**200**						**130**	**120**	100	**300**		○	○	○	●	
20 4016				**240**	**220**	**200**	**180**	**150**						**90**	**80**	100	**200**		○	○	○	●	
20 4018/4019				**240**	**220**	**200**	**180**	**150**						**90**	**80**		**200**		○	○	○	●	

Ø f8 D_C	11X 20 4012	11X 20 4014	11X 20 4015	L_c		L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z
	GARANT Master Steel solid carbide finishing cutter HPC			20 4012	20 4014 20 4015	20 4012	20 4014 20 4015		20 4012 20 4014	
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	eShop	11	16	57	62	6	0.04	0.02
5	eShop	eShop	eShop	13	17	57	62	6	0.05	0.028
6	eShop	eShop	eShop	13	18	57	62	6	0.06	0.035
8	eShop	eShop	eShop	19	24	63	68	8	0.08	0.058
10	eShop	eShop	eShop	22	30	72	80	10	0.1	0.081
12	eShop	eShop	eShop	26	36	83	93	12	0.12	0.1
14	eShop	eShop	eShop	26	42	83	99	14	0.14	0.11
16	eShop	eShop	eShop	32	48	92	108	16	0.16	0.117
20	eShop	eShop	eShop	41	60	104	126	20	0.2	0.13

Ø f8 D_C	11X 20 4016	11X 20 4018	11X 20 4019	L_c		L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z
	GARANT Master Steel solid carbide finishing cutter HPC			20 4016	20 4018 20 4019	20 4016	20 4018 20 4019		20 4016 20 4018	
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm
6	eShop	–	–	24	–	66	–	6	0.06	0.025
8	eShop	eShop	eShop	32	40	74	81	8	0.08	0.043
10	eShop	eShop	eShop	40	50	89	96	10	0.1	0.065
12	eShop	eShop	eShop	48	60	100	112	12	0.12	0.08
14	eShop	eShop	eShop	56	70	108	122	14	0.14	0.098
16	eShop	eShop	eShop	64	80	123	136	16	0.16	0.105
20	eShop	eShop	eShop	80	100	140	160	20	0.2	0.122

Solid carbide | WR | e8 | a_e 0.5×D | h6 DIN 6535 HA | HPC | 3 | 4

GARANT Master Alu SlotMachine solid carbide roughing end mill HPC / solid carbide roughing end mill HPC

20 5255 – Improved chip evacuation due to central through-coolant.

20 5265 – For roughing. Special profile for machining non-ferrous metals.

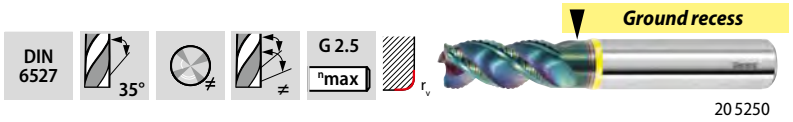
20 5250–5260/5270 – For roughing. Special profile for machining non-ferrous metals.

Advantage:

20 5250/5255/5265 – **Optimised flute form, eccentric relief ground, generous chip spaces.**
Up to 2 × D into solid material at very high feed rates and smooth cutting action.
Ramping capability up to 45°.
Very high feed rates when plunging vertically, thanks to **special plunging geometry**.

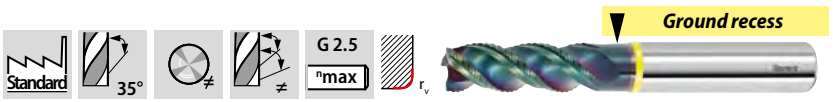
Note:

20 5250 – For **HB shanks** use order **no. 205251**.
20 5255 – For **HB** shanks use order **No. 205256**.
20 5265 – For **HB shanks:** use order **no. 205266**.

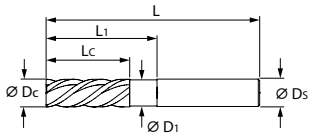












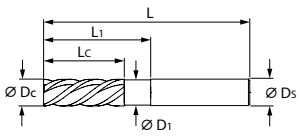
Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 5250/5265	450	400	380			120	100										160	200	●	○	○	●	
20 5255	450	400	380			120	100										160	200	●			●	
20 5260/5270	300	280	200			120	100										80	100	●	○	○	○	

Ø e8 D_c	11X 20 5250 Garant GARANT Master Alu SlotMachine solid carbide roughing end mill HPC DLC	11X 20 5255 Garant GARANT Master Alu SlotMachine solid carbide roughing end mill with through-coolant HPC DLC	12X 20 5260 HOLEX Solid carbide roughing end mill	No. of teeth Z 20 5250 20 5255	No. of teeth Z 20 5260	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_ε	Alu f_z	Alu f_z
mm						mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	eShop	3	3	8	–	–	57	6	0.1	0.04	0.06
5	eShop	eShop	eShop	3	3	9	–	–	57	6	0.2	0.06	0.08
6	eShop	eShop	eShop	3	3	13	19	5.5	57	6	0.2	0.08	0.1
8	eShop	eShop	eShop	3	3	19	25	7.5	63	8	0.2	0.1	0.12
10	eShop	eShop	eShop	3	3	22	30	9.5	72	10	0.32	0.12	0.14
12	eShop	eShop	eShop	3	3	26	36	11	83	12	0.32	0.15	0.18
14	eShop	eShop	eShop	4	3	26	36	13	83	14	0.32	0.18	0.2
16	eShop	eShop	eShop	4	3	31	42	15	92	16	0.32	0.2	0.22
18	eShop	eShop	eShop	4	3	31	42	17	92	18	0.32	0.22	0.25
20	eShop	eShop	eShop	4	3	41	52	19	104	20	0.5	0.25	0.28

Ø e8 D_c	11X 20 5265 Garant GARANT Master Alu SlotMachine solid carbide roughing end mill HPC DLC	12X 20 5270 HOLEX Solid carbide roughing end mill	No. of teeth Z 20 5265	No. of teeth Z 20 5270	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_ε	Alu f_z	Alu f_z
mm					mm	mm	mm	mm	mm	mm	mm	mm
6	eShop ■	eShop	3	3	18	24	5.5	62	6	0.2	0.08	0.1
8	eShop ■	eShop	3	3	24	30	7.5	68	8	0.2	0.1	0.12
10	eShop ■	eShop	3	3	30	38	9.5	80	10	0.32	0.12	0.14
12	eShop ■	eShop	3	3	36	46	11	93	12	0.32	0.15	0.18
14	eShop	eShop	4	3	42	52	13	99	14	0.32	0.18	0.2
16	eShop	eShop	4	3	48	58	15	108	16	0.32	0.2	0.22
18	eShop	eShop	4	3	54	67	17	117	18	0.32	0.22	0.25
20	eShop	eShop	4	3	60	74	19	126	20	0.5	0.25	0.28

Solid carbide | Standard | WR | 35° | ≠ | ≠ | h6 DIN 6535 HA | G 2.5 | n_{max} | TPC

3 | 4 | 5



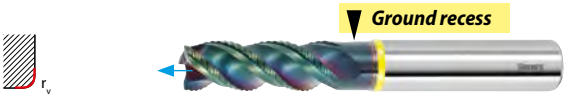
Garant GARANT Master Alu SlotMachine solid carbide roughing end mill HPC/TPC, TPC

For roughing.
Special profile for machining non-ferrous metals. Significant reduction in the chip volume due to targeted chip fragmentation using the **special cutter geometry.**

20 5267 – Improved chip evacuation due to central through-coolant.
20 5282 – As a result of the 5 teeth, even higher feed rates are possible. The end face is supported by an additional **stabilising chamfer,** which leads to **smoother operation during helical plunging.**
20 5274/5275 – **Problem-solver** for **TPC machining.** Ideal for automated production as the risk of chip accumulations in the machine is largely prevented.

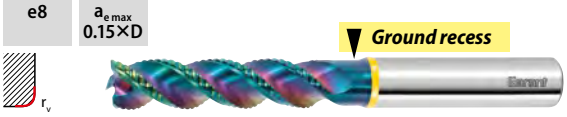
Note:
HB shanks are available at the same price as HA.
20 5267 – For **HB shanks** use order **no. 205268**.
20 5274 – For **HB shanks** use order **no. 205276**.
h_{max}: The values stated in the table are maximum values. ae_{max} is 0.15 × D for TPC machining.
20 5275 – For **HB shanks** use order **no. 205277**.
h_{max}: The values stated in the table are maximum values. ae_{max} is 0.12 × D for TPC machining.
20 5282 – For **HB shanks:** use order **No. 205283**.
20 5267/5282 – h_{max}: The values stated in the table are maximum values. ae_{max} is 0.2 × D for TPC machining.

e8 | TPC $a_{e\,max}$ 0,2×D | HPC | a_e 0.5×D



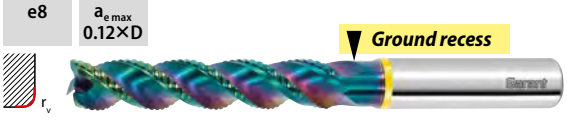
20 5267

e8 | TPC $a_{e\,max}$ 0.15×D



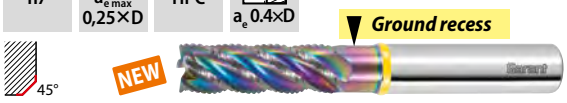
20 5274

e8 | TPC $a_{e\,max}$ 0.12×D



20 5275

h7 | TPC $a_{e\,max}$ 0,25×D | HPC | a_e 0.4×D



20 5282

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 5267	450	400	380			120	100										160	200	●				●
20 5274	400	360	340			110	90										140	180	●	○	○		●
20 5275	360	320	300			100	80										130	160	●	○	○		●
20 5282	500	480	450			120	100										160	200	●				●

Ø e8 D_c	20 5267	No. of teeth Z	L_c	L_1	Ø D_1	L	Ø D_s	Corner rounding r_v	Alu f_z	Alu f_z
	GARANT Master Alu SlotMachine solid carbide roughing end mill with through-coolant HPC / TPC									
mm	DLC		mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	3	18	24	5.5	62	6	0.2	0.08	0.1
8	eShop	3	24	30	7.5	68	8	0.2	0.1	0.12
10	eShop	3	30	38	9.5	80	10	0.32	0.12	0.14
12	eShop	3	36	46	11	93	12	0.32	0.15	0.18
16	eShop	4	48	58	15	108	16	0.32	0.2	0.22
20	eShop	4	60	74	19	126	20	0.5	0.25	0.28

Ø e8 D_c	20 5274	20 5275	No. of teeth Z	L_c		L_1		Ø D_1	L		Ø D_s	Corner rounding r_v	TPC Alu h_{max}	
	GARANT Master Alu SlotMachine solid carbide roughing end mill TPC			20 5274	20 5275	20 5274	20 5275		20 5274	20 5275			20 5274	20 5275
mm	DLC	DLC		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	3	25	31	30	36	5.7	70	75	6	0.2	0.043	0.039
8	eShop	eShop	3	33	41	40	48	7.5	80	90	8	0.2	0.057	0.052
10	eShop	eShop	3	41	51	50	60	9.5	90	104	10	0.32	0.071	0.065
12	eShop	eShop	3	49	61	60	72	11	110	120	12	0.32	0.086	0.078
16	eShop	eShop	4	65	81	80	96	15	130	150	16	0.32	0.114	0.104
20	eShop	–	4	82	–	100	–	19	150	–	20	0.5	0.143	–

Ø h7 D_c	20 5282	No. of teeth Z	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	Alu f_z
	GARANT Master Alu SlotMachine solid carbide roughing end mill HPC / TPC								
mm	DLC		mm	mm	mm	mm	mm	mm	mm
6	eShop	5	20	24	5.5	65	6	0.2	0.08
8	eShop	5	26	30	7.5	70	8	0.2	0.1
10	eShop	5	32	38	9.5	80	10	0.32	0.12
12	eShop	5	39	46	11	93	12	0.32	0.15
16	eShop	5	52	58	15	110	16	0.32	0.2
20	eShop	5	64	74	19	125	20	0.5	0.25

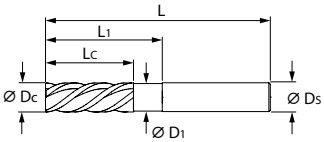
Solid carbide | Standard | WR | d11 | 3 | 30° | a_e 0.5×D

Garant Solid carbide roughing end mill

Dimensions similar to DIN 6527.
Knuckle form profile.
Special profile for machining non-ferrous metals.
20 5331 – With the latest generation of **DLC coating sp²**.



20 5330





20 5331

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Cu	CuZn				
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	N	N				
20 5330		270	250	180													80	100	●	○	○	○
20 5331		400	320	260													150	180	●	○	○	○

Ø d11 D_c	11X 20 5330	11X 20 5331	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide roughing end mill									
mm		DLC	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	11	20	3.8	57	6	0.35	0.035	0.045
5	eShop	eShop	13	20.5	4.8	57	6	0.35	0.035	0.045
6	eShop	eShop	13	21	5.8	57	6	0.35	0.06	0.08
8	eShop	eShop	16	27	7.8	63	8	0.45	0.06	0.08
10	eShop	eShop	22	32	9.8	72	10	0.55	0.07	0.09
12	eShop	eShop	26	38	11.8	83	12	0.65	0.07	0.09
16	eShop	eShop	32	44	15.8	92	16	0.85	0.09	0.11
20	eShop	eShop	38	54	19.8	104	20	1.05	0.12	0.14

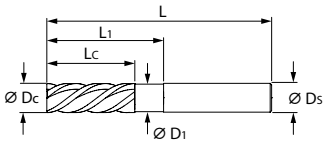
Solid carbide | Standard | WR | d11 | 3 | 30° | a_e 0.5×D

Garant Solid carbide roughing end mill with internal coolant supply

Dimensions similar to DIN 6527.
Knuckle form profile.
Special profile for machining non-ferrous metals.
With through-coolant.
20 5336 – With the latest generation of **DLC coating sp²**.



20 5335





20 5336

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Cu	CuZn				
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	N	N				
20 5335		270	250	180													80	100	●			○
20 5336		400	320	260													150	180	●			○

Ø d11 D_c	11X 20 5335	11X 20 5336	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	Alu f_z	Alu f_z
	Solid carbide roughing end mill with internal coolant supply									
mm		DLC	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	13	21	5.8	57	6	0.35	0.06	0.08
8	eShop	eShop	16	27	7.8	63	8	0.45	0.06	0.08
10	eShop	eShop	22	32	9.8	72	10	0.55	0.07	0.09
12	eShop	eShop	26	38	11.8	83	12	0.65	0.07	0.09
16	eShop	eShop	32	44	15.8	92	16	0.85	0.09	0.11
20	eShop	eShop	38	54	19.8	104	20	1.05	0.12	0.14

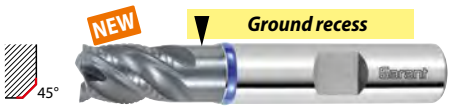
Solid carbide | DIN 6527 | NF | e8 | 4 | 40° | a_e 0.5×D | h6 DIN 6535 HB | HPC

Garant GARANT INOX SlotMachine solid carbide roughing end mill HPC

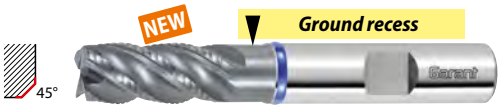
With modified knuckle form profile, optimised flutes and **state-of-the-art high-performance coating.** Exceptionally well suited for roughing machining work on stainless steel materials.
Dimensions similar to DIN 6527.

Advantage: The tool geometry produces particularly tightly rolled swarf that is discharged via flat chip breaker recesses. As a result, the tool maintains an **extremely stable core.**

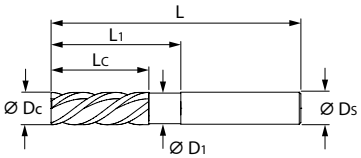
Recommendation: To ensure reliable working, particularly for full slot milling, use arbors with **4 cooling channel bores**.



20 5447



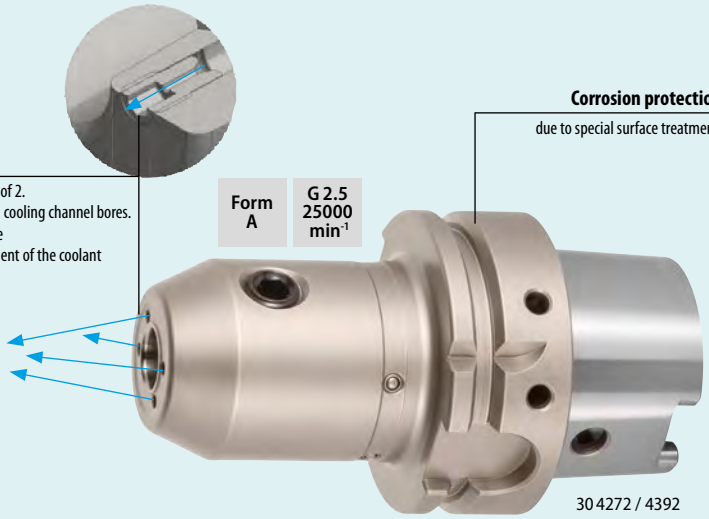
20 5449



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M	S					
20 5447/5449				170	150	130	120	110						105	70	**90**	**80**			●	○		○

Ø e8 D_c	112	20 5447	112	20 5449	L_c		L_1		Ø D_1	L		Ø D_s	Corner chamfer width at 45°	INOX > 900 N f_z	INOX > 900 N f_z
		GARANT INOX SlotMachine solid carbide roughing end mill HPC			20 5447	20 5449	20 5447	20 5449		20 5447	20 5449				
mm		AlTiN		AlTiN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4		eShop		eShop	8	11	–	17	3.8	54	57	6	0.15	0.015	0.023
5		eShop		eShop	9	13	–	19	4.8	54	57	6	0.15	0.02	0.03
6		eShop		eShop	10	13	16	19	5.8	54	57	6	0.15	0.025	0.035
8		eShop		eShop	12	21	20	25	7.7	58	63	8	0.2	0.04	0.05
10		eShop		eShop	14	22	24	30	9.7	66	72	10	0.2	0.045	0.06
12		eShop		eShop	16	26	26	36	11.6	73	83	12	0.25	0.05	0.065
16		eShop		eShop	22	36	32	42	15.5	82	92	16	0.35	0.055	0.075
20		eShop		eShop	26	41	40	52	19.5	92	104	20	0.4	0.075	0.095

Suitable toolholders can be found in the clamping technology section



30 4272 / 4392

Solid carbide | DIN 6527 | HR | d11 | a_e 0.5×D | h6 DIN 6535 HB | HPC | 3 | 4 | 5

Solid carbide roughing end mill HPC

Dimensions similar to DIN 6527.
For high feed rates, very high metal removal rate.

20 5486 – With 20° helix.
20 5492 – Without dynamic twist pitch.
Size **16M MID mills: Dimensions to manufacturer's standard.**
20 5482/5490 – **With special knuckle profile.**

Note:
20 5482 – **NEW GENERATION AVAILABLE! Recommended successor product No. 205548.**
20 5486 – **NEW GENERATION AVAILABLE! Recommended successor product No. 205704.**
20 5490 – **NEW GENERATION AVAILABLE! Recommended successor product No. 205550.**
20 5492 – **NEW GENERATION AVAILABLE! Recommended successor product No. 205706.**



20 5482



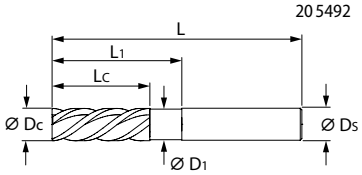
20 5486



20 5490



20 5492



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 5482/5490		280	200	120	105	100	70	60	35					60	50		90	●		●	○	○	○
20 5486/5492		270	190	115	100	95	65	55						55			85	○		●	○	○	○

Solid carbide roughing end mill, short
HPC

Ø d11 D_c	11X 20 5482 Garant TiAlN	12X 20 5486 HOLEX TiAlN	No. of teeth Z 20 5482	No. of teeth Z 20 5486	L_c 20 5482	L_c 20 5486	L_1 20 5482	Ø D_1 20 5482	L	Ø D_s	Corner chamfer width at 45° 20 5482	Corner chamfer width at 45° 20 5486	< 900 N f_z	< 900 N f_z
mm					mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
5	eShop	eShop	3	3	8	10	–	–	54	6	0.3	0.4	0.02	0.023
6	eShop	eShop	3	4	8	10	18	5.5	54	6	0.3	0.4	0.03	0.033
7	eShop	–	3	–	11	–	–	–	58	8	0.3	–	0.03	0.033
8	eShop	eShop	3	4	11	12	22	7.5	58	8	0.3	0.4	0.04	0.045
9	eShop	–	4	–	13	–	–	–	66	10	0.5	–	0.04	0.045
10	eShop	eShop	4	4	13	14	26	9.5	66	10	0.5	0.5	0.05	0.06
12	eShop	eShop	4	4	16	16	28	11	73	12	0.5	0.5	0.06	0.08
14	eShop	–	4	–	16	–	31	13	76	14	0.5	–	0.06	0.08
16	eShop	eShop	4	4	19	22	34	15	82	16	0.5	0.7	0.08	0.1
18	eShop	–	4	–	19	–	36	17	84	18	0.5	–	0.08	0.1
20	eShop	eShop	4	4	20	26	42	19	92	20	0.5	0.7	0.1	0.12

Solid carbide roughing end mill
HPC

Ø d11 D_c	11X 20 5490 Garant TiAlN	12X 20 5492 HOLEX TiAlN	No. of teeth Z 20 5490	No. of teeth Z 20 5492	L_c	L_1 20 5490	Ø D_1 20 5490	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
mm					mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	3	3	8	–	–	57	6	0.3	0.02	0.023
5	eShop	eShop	3	3	13	–	–	57	6	0.3	0.02	0.023
6	eShop	eShop	3	4	13	21	5.5	57	6	0.3	0.03	0.033
7	eShop	–	3	–	16	–	–	63	8	0.3	0.03	0.033
8	eShop	eShop	3	4	16	26	7.5	63	8	0.3	0.04	0.045
9	eShop	–	4	–	19	–	–	72	10	0.5	0.04	0.045
10	eShop	eShop	4	4	22	32	9.5	72	10	0.5	0.05	0.06
11	eShop	–	4	–	26	–	–	83	12	0.5	0.05	0.06
12	eShop	eShop	4	4	26	38	11	83	12	0.5	0.06	0.08
13	eShop	–	4	–	26	–	–	83	14	0.5	0.06	0.08
14	eShop	eShop	4	4	26	38	13	83	14	0.5	0.06	0.08
16	eShop	eShop	4	4	32	44	15	92	16	0.5	0.08	0.1
16M	–	eShop	–	4	48	–	–	110	16	0.5	0.08	0.1
18	eShop	–	4	–	32	44	17	92	18	0.5	0.08	0.1
20	eShop	eShop	4	4	38	54	19	104	20	0.5	0.1	0.12
25	eShop	eShop	5	5	45	65	24	121	25	0.5	0.12	0.14

Solid carbide | DIN 6527 | HR | d11 | 20° | h6 DIN 6535 HB | HPC | 3 | 4

Garant Solid carbide roughing end mill HPC with internal coolant supply

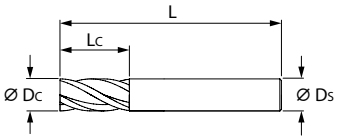
With internal coolant supply.
The coolant is fed directly **to the cutting** edges.
This gives **longer tool-life** and **complete swarf evacuation.**
This is especially **important when milling slots or pockets**.



20 5488



20 5592



20 5488

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 5488/5592		280	200	120	105	100	70	60	35					60	50		90	●		●			●

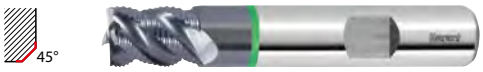
Ø d11 D_c	11X 20 5488	11X 20 5592	No. of teeth Z	L_c		L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide roughing end mill with internal coolant supply			20 5488	20 5592	20 5488	20 5592				
	HPC										
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm
8	eShop	eShop	3	11	16	58	63	8	0.3	0.04	0.045
10	eShop	eShop	4	13	22	66	72	10	0.5	0.05	0.06
12	eShop	eShop	4	16	26	73	83	12	0.5	0.06	0.08
16	eShop	eShop	4	19	32	82	92	16	0.5	0.08	0.1
20	eShop	eShop	4	20	38	92	104	20	0.5	0.1	0.12

Solid carbide | DIN 6527 | HR | d11 | 45° | a_e 0.5×D | h6 DIN 6535 HB | MTC | 4 | 5

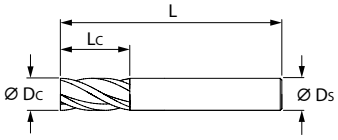
Garant Solid carbide roughing end mill MTC

Dimensions similar to DIN 6527.
Optimised special knuckle profile for roughing.
Very **high rate of metal removal.**
Can be used as a **universal end mill.**

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.



20 5710



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 5710					170	170	140	120						60	50	40	120	●		●	○	○	○

Ø d11 D_c	11X 20 5710	No. of teeth Z	L_c	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide roughing end mill							
	MTC							
mm	TiAlN		mm	mm	mm	mm	mm	mm
6	eShop	4	8	54	6	0.15	0.028	0.03
8	eShop	4	11	58	8	0.2	0.04	0.05
10	eShop	4	13	66	10	0.2	0.05	0.06
12	eShop	4	16	73	12	0.25	0.06	0.07
14	eShop	4	16	75	14	0.3	0.08	0.09
16	eShop	5	19	83	16	0.35	0.08	0.09
18	eShop	5	19	80	18	0.35	0.1	0.12
20	eShop	5	20	93	20	0.4	0.1	0.12

Solid carbide | NR | d11 | 5 | 42° | ≠ | h6 DIN 6535 HB | HPC

Garant GARANT Master Steel SlotMachine solid carbide roughing end mill HPC

With a new-type knurled profile, optimised for higher feed rates. Improved cutting edge protection thanks to slight edge honing. Tremendous bending strength due to the use of ultra-fine grain substrate.

20 5551 – With **internal coolant supply** for reliable swarf evacuation.

20 5548–5551 – Feed rate per tooth up to 0.1 mm up to a depth of 2×D (in the slot milled from solid).

Advantage: The tool geometry produces particularly tightly rolled swarf that is discharged via flat chip breaker recesses. As a result, the tool maintains an extremely stable core. Plunge angle of up to 10° possible thanks to generous recess on the front face.

Application: For roughing machining, particularly suitable for full-slot machining.

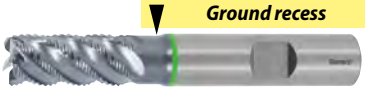
a_e 0.5×D | DIN 6527 | 45°



20 5548

Ground recess

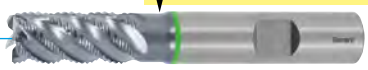
a_e 0.5×D | DIN 6527 | 45°



20 5550

Ground recess

a_e 0.5×D | DIN 6527 | 45°



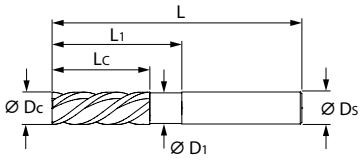
20 5551

Ground recess

a_e 0.4×D | Standard | 45°



20 5552



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 5548/5550				200	180	160	140	110						50	35		200	●		●	○	●	●
20 5551/5552				200	180	160	140	110						50	35		200	●		●			●

Ø d11 D_C	11X 20 5548 GARANT Master Steel SlotMachine solid carbide roughing end mill HPC TiAlN	L_c	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
mm		mm	mm	mm	mm	mm	mm
4	eShop	8	54	6	0.2	0.03	0.04
5	eShop	9	54	6	0.25	0.03	0.04
6	eShop	10	54	6	0.3	0.04	0.05
7	eShop	11	58	8	0.35	0.05	0.06
8	eShop	12	58	8	0.4	0.05	0.06
9	eShop	13	66	10	0.45	0.06	0.08
10	eShop	14	66	10	0.5	0.06	0.08
12	eShop	16	73	12	0.6	0.07	0.09
14	eShop	18	75	14	0.7	0.08	0.1
16	eShop	22	82	16	0.8	0.1	0.12
20	eShop	26	92	20	1	0.12	0.14

Ø d11 D_C	11X 20 5550 GARANT Master Steel SlotMachine solid carbide roughing end mill HPC TiAlN	11X 20 5551 GARANT Master Steel SlotMachine solid carbide roughing end mill with through-coolant HPC TiAlN	11X 20 5552 GARANT Master Steel SlotMachine solid carbide roughing end mill HPC TiAlN	L_c 20 5550 20 5551	L_c 20 5552	L_1 20 5550 20 5551	L_1 20 5552	Ø D_1	L 20 5550 20 5551	L 20 5552	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
mm				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	–	11	–	19	–	3.7	57	–	6	0.2	0.02	0.03
5	eShop	eShop	eShop	13	13	19	24	4.6	57	62	6	0.25	0.02	0.03
6	eShop	eShop	eShop	13	13	19	25	5.6	57	62	6	0.3	0.035	0.045
7	eShop	–	–	16	–	25	–	6.5	63	–	8	0.35	0.035	0.045
8	eShop	eShop	eShop	19	21	25	30	7.4	63	68	8	0.4	0.045	0.06
9	eShop	–	–	19	–	30	–	8.3	72	–	10	0.45	0.045	0.06
10	eShop	eShop	eShop	22	22	30	38	9.3	72	80	10	0.5	0.065	0.09
12	eShop	eShop	eShop	26	26	36	46	11.1	83	93	12	0.6	0.065	0.09
14	eShop	–	eShop	26	26	36	52	13	83	99	14	0.7	0.07	0.1
16	eShop	eShop	eShop	32	36	42	58	14.8	92	108	16	0.8	0.07	0.1
20	eShop	eShop	eShop	38	41	52	74	18.5	104	126	20	1	0.09	0.13

Solid carbide | Standard | NR | d11 | 5 | 42° | h6 DIN 6535 HB | HPC

GARANT Master Steel SlotMachine solid carbide roughing end mill HPC / TPC, solid carbide roughing end mill HPC

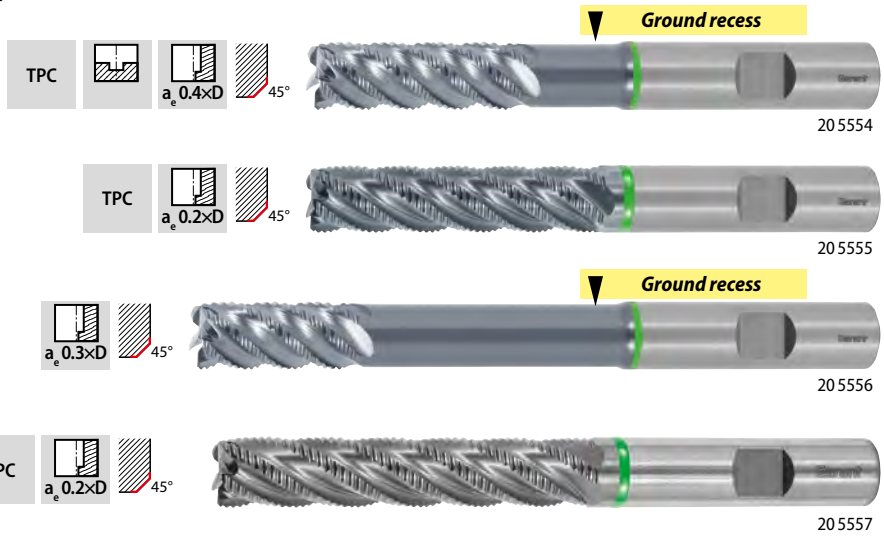
With a new-type knurled profile, optimised for higher feed rates. Improved cutting edge protection thanks to slight edge honing. Tremendous bending strength due to the use of ultra-fine grain substrate.

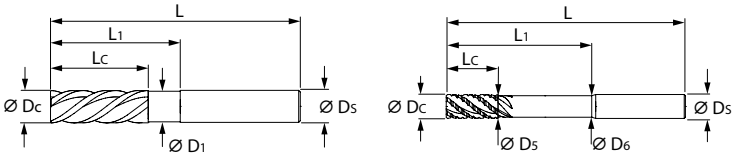
Advantage: The tool geometry produces particularly tightly rolled swarf that is discharged via flat chip breaker recesses. As a result, the tool maintains an extremely stable core.

Application: For roughing machining.

20 5554/5555/5557 – **Problem-solver for TPC machining.**

Note:
20 5556 – Particularly long neck recess for avoiding interference contours. With conically increasing recess to guarantee stability at long overhangs.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 5554				200	180	160	140	110						50	35		200	●		●	○	●	●
20 5555/5556				180	170	150	130	100						45	30		180	●		●	○	●	●
20 5557				160	150	130	110	80						40	25		160	●		●	○	●	●

Ø d11 D_c	11X 20 5554	11X 20 5555	L_c		L_1	Ø D_1	L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	GARANT Master Steel SlotMachine solid carbide roughing end mill											
	HPC / TPC											
			20 5554	20 5555	20 5554	20 5554	20 5554	20 5555				
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
5	eShop	–	17	–	24	4.6	62	–	6	0.25	0.02	0.03
6	eShop	eShop	18	24	25	5.6	62	66	6	0.3	0.03	0.04
8	eShop	eShop	24	32	30	7.4	68	74	8	0.4	0.04	0.06
10	eShop	eShop	30	40	35	9.3	80	89	10	0.5	0.05	0.07
12	eShop	eShop	36	48	45	11.1	93	100	12	0.6	0.06	0.08
14	eShop	–	42	–	50	13	99	–	14	0.7	0.07	0.09
16	eShop	eShop	48	64	55	14.8	108	123	16	0.8	0.07	0.09
20	eShop	eShop ■	60	80	70	18.5	126	140	20	1	0.08	0.1

Ø d11 D_c	11X 20 5556	11X 20 5557	L_c		L_1	Ø D_5	Ø D_6	L		Ø D_s	Corner chamfer width at 45°	< 900 N f_z
	GARANT Master Steel SlotMachine solid carbide roughing end mill											
	HPC	HPC / TPC										
			20 5556	20 5557	20 5556	20 5556	20 5556	20 5556	20 5557			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	–	13	–	42	5.4	5.8	80	–	6	0.3	0.04
8	eShop	eShop	21	40	62	7.2	7.8	100	81	8	0.4	0.05
10	eShop	eShop	22	50	58	9	9.7	100	96	10	0.5	0.06
12	eShop	eShop	26	60	73	10.8	11.6	120	112	12	0.6	0.08
16	eShop	eShop	36	80	100	14.4	15.5	150	136	16	0.8	0.09
20	eShop	–	41	–	98	18	19.4	150	–	20	1	0.09

Solid carbide | DIN 6527 | HR | d11 | h6 DIN 6535 HB | MTC

4 5

Garant

Solid carbide roughing end mill MTC

Dimensions similar to DIN 6527.
Optimised special knuckle profile for roughing.
Very **high rate of metal removal.**

20 5711 – With **semi-roughing knuckle profile** and 45° flutes for superalloys.
20 5712 – With **special internal tooth profile** and 50° flutes for reliable chip breaking in **stainless steels.**

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

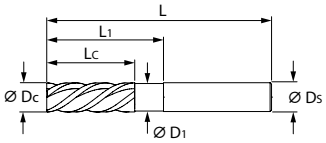
Note:
20 5711 – f_z for a_p max = 0.5×D.



20 5712



20 5711



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N				
20 5711				120	105	100	70									50	90		●	○	○	○
20 5712				180	170	170	140							100	80				●	○	○	○

Ø d11 D_c	11X 20 5712	11X 20 5711	No. of teeth Z	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°		INOX > 900 N f_z		Ti > 850 N f_z		INOX > 900 N f_z		Ti > 850 N f_z	
	Solid carbide roughing end mill MTC								20 5712	20 5711	20 5712		20 5711		20 5712		20 5711	
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm		mm		mm		mm	
6	eShop	eShop	4	12	21	5.5	58	6	0.15	0.3	0.014		0.015		0.02		0.02	
8	eShop	eShop	4	16	26	7.5	64	8	0.2	0.3	0.022		0.02		0.03		0.025	
10	eShop	eShop	4	20	32	9.5	73	10	0.2	0.5	0.025		0.025		0.04		0.03	
12	eShop	eShop	4	24	38	11.5	84	12	0.25	0.5	0.03		0.035		0.05		0.04	
16	eShop	eShop	5	32	44	15.5	93	16	0.35	0.5	0.04		0.045		0.06		0.05	
20	eShop	eShop	5	40	54	19.5	104	20	0.4	0.5	0.05		0.055		0.08		0.06	
25	–	eShop	5	50	65	24	125	25	–	0.5	–		0.055		–		0.06	

Solid carbide | DIN 6527 | HR | d11 | 45° | a_e 0.5×D | h6 DIN 6535 HB | MTC

4 5

Garant

Solid carbide roughing end mill MTC

20 5714 – Dimensions similar to DIN 6527.
Optimised special knuckle profile for roughing.
Very **high rate of metal removal.**

20 5716 – **Optimised special knuckle profile for roughing.**
Very **high rate of metal removal.** Can be used as a **universal end mill.**
Special cooling channel system, to achieve the best possible high performance machining.

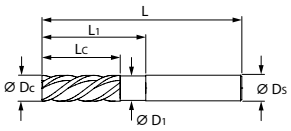
Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.



20 5714



20 5716



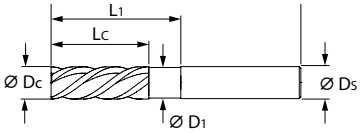
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
20 5714					170	170	140	120						60	45		120	●	●	○	○	●
20 5716				265	195	195	160	140	35					70	50	45	145	●	●			●

Ø d11 D_c	11X 20 5714	11X 20 5716	No. of teeth Z	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide roughing end mill	Solid carbide roughing end mill with internal coolant supply MTC									
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	eShop	4	12	21	5.5	57	6	0.15	0.028	0.03
8	eShop	eShop	4	16	26	7.5	63	8	0.2	0.04	0.05
10	eShop	eShop	4	20	32	9.5	72	10	0.2	0.05	0.06
12	eShop	eShop	4	24	38	11.5	83	12	0.25	0.06	0.07
14	eShop	–	4	28	42	13.5	83	14	0.25	0.06	0.07
16	eShop	eShop	5	32	44	15.5	92	16	0.35	0.08	0.09
18	eShop	–	5	36	44	17.5	92	18	0.35	0.08	0.09
20	eShop	eShop	5	40	54	19.5	104	20	0.4	0.1	0.12
25	eShop	–	5	50	65	24	125	25	0.5	0.1	0.12

Solid carbide | DIN 6527 | HR | d11 | 45° | a_e 0.5×D | h6 DIN 6535 HB

4 5 6

HOLEX Pro Steel solid carbide roughing end mill HPC / solid carbide roughing end mill MTC



Dimensions similar to DIN 6527.
Optimised special knuckle form profile for roughing.
Very **high metal removal rate.**
Application: For roughing machining, particularly suitable for full-slot machining.

HPC 45°



20 5704

Ground recess

HPC 45°



20 5706

MTC 45°



20 5715

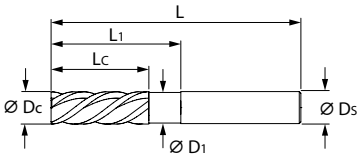
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
20 5704/5706					170	160	135	120						60	45		120	●
20 5715					155	155	125	110						55	40		110	●

Ø d11 D_c	12X 20 5704 HPC	12X 20 5706 HPC	12X 20 5715 MTC	No. of teeth Z	L_c 20 5704	L_c 20 5706 20 5715	L_1 20 5706	Ø D_1 20 5706	L 20 5704	L 20 5706 20 5715	Ø D_s	Corner chamfer width at 45° 20 5704 20 5706	Corner chamfer width at 45° 20 5715	< 900 N f_z	< 900 N f_z
	HOLEX Pro Steel solid carbide roughing end mill		Solid carbide roughing end mill												
	HPC	HPC	MTC												
mm	TiAlN	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	–	4	8	11	19	3.7	54	57	6	0.2	–	0.02	0.028
5	eShop	eShop	–	4	9	13	19	4.6	54	57	6	0.25	–	0.02	0.028
6	eShop	eShop	eShop	4	10	13	19	5.6	54	57	6	0.3	0.15	0.028	0.03
8	eShop	eShop	eShop	4	12	19	25	7.4	58	63	8	0.4	0.2	0.04	0.05
10	eShop	eShop	eShop	4	14	22	30	9.3	66	72	10	0.5	0.2	0.05	0.06
12	eShop	eShop	eShop	4	16	26	36	11.1	73	83	12	0.6	0.25	0.06	0.07
16	eShop	eShop	eShop	5	22	32	42	14.8	82	92	16	0.8	0.35	0.08	0.09
20	eShop	eShop	eShop	6	26	38	52	18.5	92	104	20	1	0.4	0.1	0.12
25	–	–	eShop	6	–	50	–	–	–	125	25	–	0.5	0.1	0.12

Solid carbide | Standard | HR | d11 | 45° | a_e 0.1×D | h6 DIN 6535 HB | MTC

4 5

Garant Solid carbide roughing end mill MTC



Dimensions similar to DIN 6527.
Optimised special knuckle profile for roughing.
Very high rate of metal removal.
Can be used as a **universal end mill.**
Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

Ground recess

45°



20 5718

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	K	
20 5718				120	95	85	80	70					70	60	50	35	70	●

Ø d11 D_c	11X 20 5718 MTC	No. of teeth Z	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	Solid carbide roughing end mill									
	MTC									
mm	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	4	12	40	5.5	80	6	0.15	0.022	0.024
8	eShop	4	16	50	7.5	100	8	0.2	0.03	0.04
10	eShop	4	20	60	9.5	100	10	0.2	0.04	0.048
12	eShop	4	24	60	11.5	120	12	0.25	0.05	0.056
16	eShop	5	32	100	15.5	150	16	0.35	0.065	0.072
20	eShop	5	40	100	19.5	150	20	0.4	0.08	0.096

Solid carbide | Standard | Type W | 0 −0.005 | 2 | a_e 0.5×D | a_e 0.05×D | h5 DIN 6535 HA

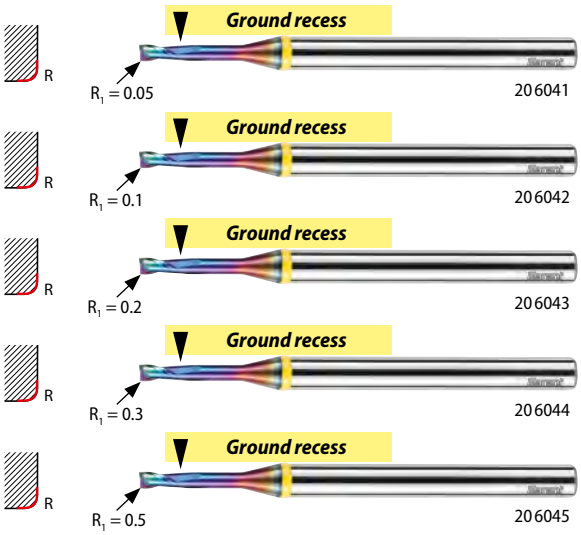
25° ≤ 0.8 mm | 30° ≥ 1 mm

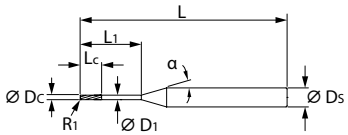
Garant Solid carbide micro precision torus cutter

With **advanced DLC sp² coating.** For the **highest demands regarding performance and precision in aluminium materials. Extremely tight tolerances** ensure maximum accuracy.
Double-relief ground with 2 chamfers hollow ground.
Recess angle α = 16°.
Tolerances:

- Corner radius: **R_1 = ±0.0025 mm.**
- Neck ∅: **D_1 = 0 / -0.01 mm.**

Note: At greater tool overhang lengths, use a reduced value for a_p!
Values for:
slots milled from solid: $a_p = 0.25 \times D \times a_{p\,korr}$
side milling: $a_p = 0.50 \times D \times a_{p\,korr}$
copying: $a_p = 0.25 \times D \times a_{p\,korr}$
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)!
e.g: vf = 18000 [rpm]× fz [mm/Z]× z





Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 6041–20 6045	480	400	400	200	160	200	150	130		180	160	150	130	160			160	200		●	●	○	●

∅ D_c × L_1	11X 20 6041	11X 20 6042	11X 20 6043	11X 20 6044	11X 20 6045	L_c	L_1	∅ D_1	L	∅ D_s	Alu cast > 10 % Si f_z	Alu cast > 10 % Si f_z	Correction factor $a_{p\,corr}$
	Solid carbide torus cutter												
	R_1 0.05	R_1 0.1	R_1 0.2	R_1 0.3	R_1 0.5								
mm	DLC	DLC	DLC	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	
0,2×0,5	eShop	–	–	–	–	0.2	0.5	0.18	50	4	0.012	0.012	1
0,2×1	eShop	–	–	–	–	0.2	1	0.18	50	4	0.012	0.012	1
0,2×2	eShop	–	–	–	–	0.2	2	0.18	50	4	0.007	0.007	0.5
0,2×3	eShop	–	–	–	–	0.2	3	0.18	50	4	0.007	0.007	0.2
0,3×1	eShop	–	–	–	–	0.3	1	0.28	50	4	0.016	0.016	1
0,3×2	eShop	–	–	–	–	0.3	2	0.28	50	4	0.016	0.016	0.9
0,3×3	eShop	–	–	–	–	0.3	3	0.28	50	4	0.012	0.012	0.5
0,3×4	eShop	–	–	–	–	0.3	4	0.28	50	4	0.012	0.012	0.35
0,3×6	eShop	–	–	–	–	0.3	6	0.28	50	4	0.007	0.007	0.08
0,4×1	eShop	eShop	–	–	–	0.4	1	0.38	50	4	0.016	0.016	1
0,4×2	eShop	eShop	–	–	–	0.4	2	0.38	50	4	0.016	0.016	1
0,4×3	eShop	eShop	–	–	–	0.4	3	0.38	50	4	0.016	0.016	0.8
0,4×4	eShop	eShop	–	–	–	0.4	4	0.38	50	4	0.012	0.012	0.5
0,4×6	eShop	eShop	–	–	–	0.4	6	0.38	50	4	0.012	0.012	0.2
0,4×8	eShop	eShop	–	–	–	0.4	8	0.38	50	4	0.007	0.007	0.08
0,5×1	eShop	eShop	–	–	–	0.5	1	0.48	50	4	0.02	0.02	1
0,5×2	eShop	eShop	–	–	–	0.5	2	0.48	50	4	0.02	0.02	1
0,5×3	eShop	eShop	–	–	–	0.5	3	0.48	50	4	0.02	0.02	0.9
0,5×4	eShop	eShop	–	–	–	0.5	4	0.48	50	4	0.02	0.02	0.8
0,5×6	eShop	eShop	–	–	–	0.5	6	0.48	50	4	0.016	0.016	0.35
0,5×8	eShop	eShop	–	–	–	0.5	8	0.48	50	4	0.016	0.016	0.12
0,5×10	eShop	eShop	–	–	–	0.5	10	0.48	50	4	0.012	0.012	0.08
0,6×3	eShop	eShop	–	–	–	0.6	3	0.58	50	4	0.02	0.02	1
0,6×4	eShop	eShop	–	–	–	0.6	4	0.58	50	4	0.02	0.02	0.9
0,6×6	eShop	eShop	–	–	–	0.6	6	0.58	50	4	0.016	0.016	0.5
0,6×8	eShop	eShop	–	–	–	0.6	8	0.58	50	4	0.016	0.016	0.35
0,6×10	eShop	eShop	–	–	–	0.6	10	0.58	50	4	0.016	0.016	0.12
0,8×2	–	eShop	eShop	–	–	0.8	2	0.78	50	4	0.02	0.02	1

∅ $D_C \times L_1$	11X 20 6041	11X 20 6042	11X 20 6043	11X 20 6044	11X 20 6045	L_c	L_1	∅ D_1	L	∅ D_s	Alu cast > 10 % Si f_z	Alu cast > 10 % Si f_z	Correction factor $a_{p\,corr}$
	Solid carbide torus cutter												
	R_1 0.05	R_1 0.1	R_1 0.2	R_1 0.3	R_1 0.5								
mm	DLC	DLC	DLC	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	
0,8×4	–	eShop	eShop	–	–	0.8	4	0.78	50	4	0.02	0.02	1
0,8×6	–	eShop	eShop	–	–	0.8	6	0.78	50	4	0.02	0.02	0.8
0,8×8	–	eShop	eShop	–	–	0.8	8	0.78	50	4	0.016	0.016	0.5
0,8×10	–	eShop	eShop	–	–	0.8	10	0.78	50	4	0.016	0.016	0.35
0,8×12	–	eShop	eShop	–	–	0.8	12	0.78	50	4	0.016	0.016	0.2
1×2	–	eShop	eShop	eShop	–	1	2	0.95	50	4	0.03	0.03	1
1×3	–	eShop	eShop	eShop	–	1	3	0.95	50	4	0.03	0.03	1
1×4	–	eShop	eShop	eShop	–	1	4	0.95	50	4	0.03	0.03	1
1×5	–	eShop	eShop	eShop	–	1	5	0.95	50	4	0.03	0.03	1
1×6	–	eShop	eShop	eShop	–	1	6	0.95	50	4	0.03	0.03	0.9
1×8	–	eShop	eShop	eShop	–	1	8	0.95	50	4	0.03	0.03	0.8
1×10	–	eShop	eShop	eShop	–	1	10	0.95	50	4	0.03	0.03	0.5
1×12	–	eShop	eShop	eShop	–	1	12	0.95	55	4	0.025	0.025	0.35
1×15	–	eShop	eShop	eShop	–	1	15	0.95	60	4	0.025	0.025	0.2
1×16	–	eShop	–	–	–	1	16	0.95	60	4	0.025	0.25	0.15
1×20	–	eShop	eShop	eShop	–	1	20	0.95	60	4	0.02	0.02	0.08
1×25	–	eShop	eShop	eShop	–	1	25	0.95	70	4	0.02	0.02	0.04
1×30	–	eShop	eShop	eShop	–	1	30	0.95	70	4	0.016	0.016	0.02
1,2×5	–	eShop	eShop	eShop	–	1.2	5	1.14	50	4	0.03	0.03	1
1,2×10	–	eShop ■	eShop	eShop	–	1.2	10	1.14	50	4	0.03	0.03	0.8
1,2×15	–	eShop	eShop	eShop	–	1.2	15	1.14	55	4	0.025	0.025	0.35
1,2×20	–	eShop	eShop	eShop	–	1.2	20	1.14	60	4	0.025	0.025	0.12
1,5×4	–	eShop	eShop	eShop	eShop	1.5	4	1.44	50	4	0.03	0.03	1
1,5×6	–	eShop	eShop	eShop	eShop	1.5	6	1.44	50	4	0.03	0.03	1
1,5×8	–	eShop ■	eShop	eShop	eShop	1.5	8	1.44	50	4	0.03	0.03	1
1,5×10	–	eShop	eShop	eShop	eShop	1.5	10	1.44	50	4	0.03	0.03	0.9
1,5×12	–	eShop	eShop	eShop	eShop	1.5	12	1.44	55	4	0.03	0.03	0.8
1,5×15	–	eShop	eShop	eShop	eShop	1.5	15	1.44	55	4	0.025	0.025	0.5
1,5×20	–	eShop	eShop	eShop	eShop	1.5	20	1.44	60	4	0.025	0.025	0.35
1,5×25	–	eShop	eShop	eShop	eShop	1.5	25	1.44	60	4	0.025	0.025	0.12
1,5×30	–	eShop	eShop	eShop	eShop	1.5	30	1.44	70	4	0.02	0.02	0.08
1,8×8	–	eShop	eShop	eShop	eShop	1.8	8	1.74	50	4	0.035	0.035	1
1,8×10	–	eShop	eShop	eShop	eShop	1.8	10	1.74	50	4	0.035	0.035	0.9
1,8×15	–	eShop	eShop	eShop	eShop	1.8	15	1.74	50	4	0.035	0.035	0.8
1,8×20	–	eShop	eShop	eShop	eShop	1.8	20	1.74	55	4	0.03	0.03	0.5
2×4	–	eShop	eShop	eShop	eShop	2	4	1.91	50	4	0.035	0.035	1
2×6	–	eShop	eShop	eShop	eShop	2	6	1.91	50	4	0.035	0.035	1
2×8	–	eShop	eShop	eShop	eShop	2	8	1.91	50	4	0.035	0.035	1
2×10	–	eShop ■	eShop	eShop	eShop	2	10	1.91	50	4	0.035	0.035	1
2×12	–	eShop	eShop	eShop	eShop	2	12	1.91	55	4	0.035	0.035	0.9
2×15	–	eShop ■	eShop	eShop	eShop	2	15	1.91	55	4	0.035	0.035	0.8
2×16	–	–	eShop	–	–	2	16	1.91	55	4	0.035	0.035	0.7
2×20	–	eShop	eShop	eShop	eShop	2	20	1.91	60	4	0.03	0.03	0.5
2×25	–	eShop	eShop	eShop	eShop	2	25	1.91	70	4	0.03	0.03	0.35
2×30	–	eShop	eShop	eShop	eShop	2	30	1.91	70	4	0.03	0.03	0.2
2×35	–	eShop	eShop	eShop	eShop	2	35	1.91	80	4	0.025	0.025	0.08
2×40	–	eShop	eShop	eShop	eShop	2	40	1.91	80	4	0.025	0.025	0.04
2,5×15	–	–	eShop ■	eShop	eShop	2.5	15	2.41	55	4	0.035	0.035	0.9
2,5×20	–	–	eShop	eShop	eShop	2.5	20	2.41	55	4	0.035	0.035	0.8
2,5×25	–	–	eShop	eShop	eShop	2.5	25	2.41	60	4	0.03	0.03	0.5
2,5×30	–	–	eShop	eShop	eShop	2.5	30	2.41	70	4	0.03	0.03	0.35
3×6	–	–	eShop	eShop	eShop	4.5	6	2.91	50	4	0.035	0.035	1
3×8	–	–	eShop	eShop	eShop	4.5	8	2.91	50	4	0.035	0.035	1
3×10	–	–	eShop ■	eShop	eShop	4.5	10	2.91	50	4	0.035	0.035	1
3×12	–	–	eShop	eShop	eShop	4.5	12	2.91	50	4	0.035	0.035	1
3×15	–	–	eShop ■	eShop	eShop	4.5	15	2.91	55	4	0.035	0.035	1
3×20	–	–	eShop ■	eShop	eShop	4.5	20	2.91	55	4	0.035	0.035	0.9
3×25	–	–	eShop	eShop	eShop	4.5	25	2.91	60	4	0.035	0.035	0.8
3×30	–	–	eShop	eShop	eShop	4.5	30	2.91	70	4	0.03	0.03	0.5
3×35	–	–	eShop	eShop	eShop	4.5	35	2.91	80	4	0.03	0.03	0.35
3×40	–	–	eShop	eShop	eShop	4.5	40	2.91	80	4	0.03	0.03	0.35
3×45	–	–	eShop	eShop	eShop	4.5	45	2.91	90	4	0.03	0.03	0.2

Solid carbide | Standard | Type W | e8 | 2 | 30° | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HA

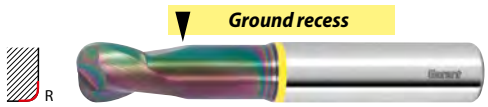
Garant Solid carbide torus cutter

With **double relief ground side clearance angle and corner radius.**
High strength due to **strengthened core.**
Tolerance: **R_1 = ±0.01 mm.**

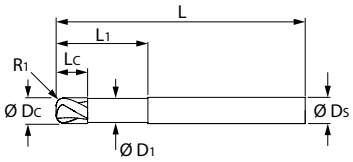
20 6065 – With the latest generation of **DLC coating sp²**.



20 6040



20 6065



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 6040	180	140	105	180	130	150	130	110									80	100		●	○	○	○
20 6065	330	300	230	200	160	200	150	130		180	160	150	130	160		300	100	120		●	●	○	●

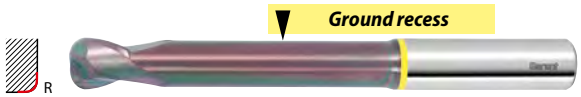
Ø e8 D_c / R_1	11X 20 6040	11X 20 6065	L_c	R_1	L_1	Ø D_1	L	Ø D_s	Alu f_z	Alu f_z
	Solid carbide torus cutter									
mm	uncoated	DLC	mm	mm	mm	mm	mm	mm	mm	mm
3/0,3	eShop	eShop	4	0.3	14	2.7	50	3	0.01	0.011
4/0,3	eShop	eShop	5	0.3	16	3.7	50	4	0.02	0.023
4/1,0	eShop	eShop	5	1	16	3.7	50	4	0.02	0.023
5/0,3	eShop	eShop	6	0.3	18	4.6	54	5	0.02	0.023
5/1,0	eShop	eShop	6	1	18	4.6	54	5	0.02	0.023
6/0,3	eShop	eShop	7	0.3	21	5.5	57	6	0.03	0.034
6/1,0	eShop	eShop	7	1	21	5.5	57	6	0.03	0.034
6/2,0	eShop	eShop	7	2	21	5.5	57	6	0.03	0.034
8/0,3	eShop	eShop	9	0.3	27	7.4	63	8	0.04	0.045
8/1,0	eShop	eShop	9	1	27	7.4	63	8	0.04	0.045
8/2,0	eShop	eShop	9	2	27	7.4	63	8	0.04	0.045
10/0,3	eShop	eShop	11	0.3	32	9.2	72	10	0.05	0.056
10/1,0	eShop	eShop	11	1	32	9.2	72	10	0.05	0.056
10/1,5	eShop	eShop	11	1.5	32	9.2	72	10	0.05	0.056
10/3,0	eShop	eShop	11	3	32	9.2	72	10	0.05	0.056
12/1,0	eShop	eShop	12	1	38	11	83	12	0.07	0.079
12/1,5	eShop	eShop	12	1.5	38	11	83	12	0.07	0.079
12/2,5	eShop	eShop	12	2.5	38	11	83	12	0.07	0.079
12/4,0	eShop	eShop	12	4	38	11	83	12	0.07	0.079
16/1,0	eShop	eShop	16	1	44	15	92	16	0.09	0.1
16/2,0	eShop	eShop	16	2	44	15	92	16	0.09	0.1
16/2,5	eShop	eShop	16	2.5	44	15	92	16	0.09	0.1
16/5,0	eShop	eShop	16	5	44	15	92	16	0.09	0.1
20/5,0	eShop	eShop	20	5	54	19	104	20	0.12	0.15

Solid carbide | Standard | Type W | e8 | 2 | 30° | a_e 0.1×D | a_e 0.05×D | h6 DIN 6535 HA

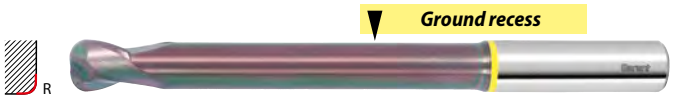
Garant

Solid carbide torus cutter

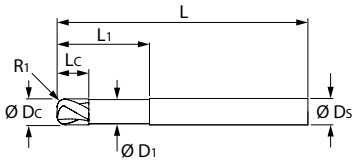
With the latest generation of **DLC coating sp²**.
With **double relief ground side clearance angle and corner radius.**
High stability due to **strengthened core.**
Tolerance: **R_1 = ±0.01 mm.**



20 6071



20 6075



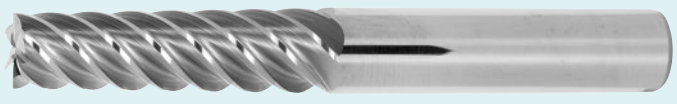
Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 6071	200	160	120	150	100	120	100	90		110	100	90	90	100			100	120	●	●	○	●	
20 6075	180	140	105	130	80	100	80	70		90	80	70	70	80			100	120	●	●	○	●	

Ø e8 D_c / R_1	11X 20 6071	11X 20 6075	L_c	R_1	L_1		Ø D_1	L		Ø D_s	Alu f_z	Alu f_z
	Solid carbide torus cutter				20 6071	20 6075		20 6071	20 6075			
mm	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3/0,3	eShop	–	4	0.3	32	–	2.7	75	–	3	0.01	0.011
4/0,3	eShop	–	5	0.3	36	–	3.7	75	–	4	0.02	0.023
5/0,3	eShop	–	6	0.3	40	–	4.6	75	–	5	0.02	0.023
6/0,3	eShop	eShop	7	0.3	44	80	5.5	80	120	6	0.03	0.034
6/1,0	eShop	eShop	7	1	44	80	5.5	80	120	6	0.03	0.034
6/2,0	eShop	–	7	2	44	–	5.5	80	–	6	0.03	0.034
8/0,3	eShop	eShop	9	0.3	54	90	7.4	100	130	8	0.04	0.045
8/1,0	eShop	eShop	9	1	54	90	7.4	100	130	8	0.04	0.045
8/2,0	eShop	eShop	9	2	54	90	7.4	100	130	8	0.04	0.045
10/0,3	eShop	eShop	11	0.3	60	110	9.2	100	150	10	0.05	0.056
10/1,5	eShop	–	11	1.5	60	–	9.2	100	–	10	0.05	0.056
10/3,0	eShop	eShop	11	3	60	110	9.2	100	150	10	0.05	0.056
12/1,5	eShop	eShop	12	1.5	75	115	11	120	160	12	0.07	0.079
12/2,5	eShop	eShop	12	2.5	75	115	11	120	160	12	0.07	0.079
12/4,0	eShop	eShop	12	4	75	115	11	120	160	12	0.07	0.079
16/2,0	eShop	eShop	16	2	92	140	15	150	200	16	0.09	0.1
16/2,5	eShop	eShop	16	2.5	92	140	15	150	200	16	0.09	0.1
16/5,0	eShop	–	16	5	92	–	15	150	–	16	0.09	0.1

20

Do you need a tapered die-sinking cutter for your production?

Ask the employees / technical advisers of the Hoffmann Group!
We will be happy to prepare our quotation for you.





Solid carbide | Standard | Type H | 0 −0.005 | 2 | a_e 0.1×D | a_e 0.05×D | h5 DIN 6535 HA

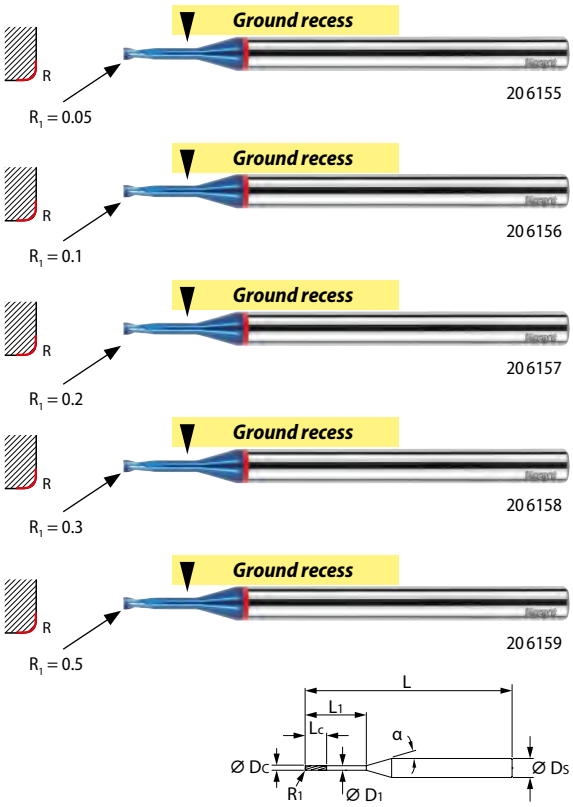
25° ≤0.8 mm | 30° ≥1 mm

Garant GARANT Diabolo solid carbide precision micro torus cutter

GARANT Diabolo:
Special geometry, coating and carbide **for hard machining in the high-performance field.**
Suitable even for machining **electrolytic copper**.
Double-relief ground with 2 chamfers hollow ground for high-precision hard machining.
Recess angle α = 16°.
Tolerances:

- Corner radius: **R_1 = ±0.0025 mm.**
- Neck Ø: **D_1 = 0 / -0.01 mm.**

Note: At greater tool overhang lengths, use a reduced value for a_p!
Values for:
side milling: $a_p = 0.1 \times D \times a_p corr$
copying: $a_p = 0.05 \times D \times a_p corr$
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)!
e.g: vf = 18000 [rpm]× fz [mm/Z]× z

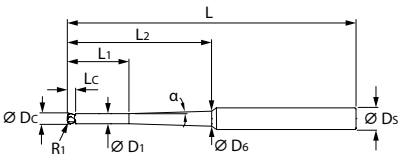


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 6155–20 6159					200	200	190	170	120	100	72	55	50	45	90	80		140		○	○	●	●

Ø $D_c \times L_1$	1TX 20 6155	1TX 20 6156	1TX 20 6157	1TX 20 6158	1TX 20 6159	L_c	L_1	Ø D_1	L	Ø D_s	< 65 HRC f_z	< 65 HRC f_z	Correction factor $a_{p\,corr}$
	GARANT Diabolo solid carbide torus cutter												
	R_1 0.05	R_1 0.1	R_1 0.2	R_1 0.3	R_1 0.5								
mm	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	
0,2×0,5	eShop	–	–	–	–	0.2	0.5	0.18	50	4	0.009	0.009	1
0,2×1	eShop	–	–	–	–	0.2	1	0.18	50	4	0.009	0.009	1
0,2×1,5	eShop	–	–	–	–	0.2	1.5	0.18	50	4	0.009	0.009	0.8
0,2×2	eShop	–	–	–	–	0.2	2	0.18	50	4	0.005	0.005	0.5
0,2×3	eShop	–	–	–	–	0.2	3	0.18	50	4	0.005	0.005	0.2
0,3×1	eShop	–	–	–	–	0.3	1	0.28	50	4	0.012	0.012	1
0,3×2	eShop	–	–	–	–	0.3	2	0.28	50	4	0.012	0.012	0.9
0,3×3	eShop	–	–	–	–	0.3	3	0.28	50	4	0.009	0.009	0.5
0,3×4	eShop	–	–	–	–	0.3	4	0.28	50	4	0.009	0.009	0.35
0,4×1	eShop	eShop	–	–	–	0.4	1	0.38	50	4	0.012	0.012	1
0,4×2	eShop	eShop	–	–	–	0.4	2	0.38	50	4	0.012	0.012	1
0,4×3	eShop	eShop	–	–	–	0.4	3	0.38	50	4	0.012	0.012	0.8
0,4×4	eShop	eShop	–	–	–	0.4	4	0.38	50	4	0.009	0.009	0.5
0,4×5	eShop	eShop	–	–	–	0.4	5	0.38	50	4	0.009	0.009	0.35
0,4×6	eShop	eShop	–	–	–	0.4	6	0.38	50	4	0.009	0.009	0.2
0,5×1	eShop	eShop	–	–	–	0.5	1	0.48	50	4	0.015	0.015	1
0,5×2	eShop	eShop	–	–	–	0.5	2	0.48	50	4	0.015	0.015	1
0,5×3	eShop	eShop	–	–	–	0.5	3	0.48	50	4	0.015	0.015	0.9
0,5×4	eShop	eShop	–	–	–	0.5	4	0.48	50	4	0.015	0.015	0.8
0,5×5	eShop	eShop	–	–	–	0.5	5	0.48	50	4	0.012	0.012	0.5
0,5×6	eShop	eShop	–	–	–	0.5	6	0.48	50	4	0.012	0.012	0.35
0,5×8	eShop	eShop	–	–	–	0.5	8	0.48	50	4	0.012	0.012	0.12
0,5×10	eShop	eShop	–	–	–	0.5	10	0.48	50	4	0.009	0.009	0.08
0,6×2	eShop	eShop	–	–	–	0.6	2	0.58	50	4	0.015	0.015	1
0,6×3	eShop	eShop	–	–	–	0.6	3	0.58	50	4	0.015	0.015	1
0,6×4	eShop	eShop	–	–	–	0.6	4	0.58	50	4	0.015	0.015	0.9
0,6×5	eShop	eShop	–	–	–	0.6	5	0.58	50	4	0.015	0.015	0.8

Ø $D_C \times L_1$	1TX 20 6155	1TX 20 6156	1TX 20 6157	1TX 20 6158	1TX 20 6159	L_c	L_1	Ø D_1	L	Ø D_s	< 65 HRC f_z	< 65 HRC f_z	Correction factor $a_{p\,corr}$
	GARANT Diabolo solid carbide torus cutter												
	R_1 0.05	R_1 0.1	R_1 0.2	R_1 0.3	R_1 0.5								
mm	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	
0,6×6	eShop	eShop	–	–	–	0.6	6	0.58	50	4	0.012	0.012	0.5
0,6×8	eShop	eShop	–	–	–	0.6	8	0.58	50	4	0.012	0.012	0.35
0,6×10	eShop	eShop	–	–	–	0.6	10	0.58	50	4	0.012	0.012	0.12
0,8×2	–	eShop	eShop	–	–	0.8	2	0.78	50	4	0.015	0.015	1
0,8×3	–	eShop	eShop	–	–	0.8	3	0.78	50	4	0.015	0.015	1
0,8×4	–	eShop	eShop	–	–	0.8	4	0.78	50	4	0.015	0.015	1
0,8×5	–	eShop	eShop	–	–	0.8	5	0.78	50	4	0.015	0.015	0.9
0,8×6	–	eShop	eShop	–	–	0.8	6	0.78	50	4	0.015	0.015	0.8
0,8×8	–	eShop	eShop	–	–	0.8	8	0.78	50	4	0.012	0.012	0.5
0,8×10	–	eShop	eShop	–	–	0.8	10	0.78	50	4	0.012	0.012	0.35
1×2	–	eShop	eShop	eShop	–	1	2	0.95	50	4	0.02	0.02	1
1×3	–	eShop	eShop	eShop	–	1	3	0.95	50	4	0.02	0.02	1
1×4	–	eShop	eShop	eShop	–	1	4	0.95	50	4	0.02	0.02	1
1×5	–	eShop	eShop	eShop	–	1	5	0.95	50	4	0.02	0.02	1
1×6	–	eShop	eShop	eShop	–	1	6	0.95	50	4	0.02	0.02	0.9
1×8	–	eShop	eShop	eShop	–	1	8	0.95	50	4	0.02	0.02	0.8
1×10	–	eShop	eShop	eShop	–	1	10	0.95	50	4	0.015	0.015	0.5
1×12	–	eShop	eShop	eShop	–	1	12	0.95	55	4	0.015	0.015	0.35
1×14	–	eShop	eShop	eShop	–	1	14	0.95	55	4	0.015	0.015	0.2
1×16	–	eShop	eShop	eShop	–	1	16	0.95	60	4	0.015	0.015	0.12
1×18	–	eShop	eShop	eShop	–	1	18	0.95	60	4	0.01	0.01	0.08
1×20	–	eShop	eShop	eShop	–	1	20	0.95	60	4	0.01	0.01	0.04
1×25	–	eShop	eShop	eShop	–	1	25	0.95	70	4	0.01	0.01	0.04
1,2×5	–	eShop	eShop	eShop	–	1.2	5	1.14	50	4	0.02	0.02	1
1,2×10	–	eShop	eShop	eShop	–	1.2	10	1.14	50	4	0.02	0.02	0.8
1,2×15	–	eShop	eShop	eShop	–	1.2	15	1.14	55	4	0.015	0.015	0.35
1,2×20	–	eShop	eShop	eShop	–	1.2	20	1.14	60	4	0.015	0.015	0.12
1,5×3	–	eShop	eShop	eShop	eShop	1.5	3	1.44	50	4	0.02	0.02	1
1,5×4	–	eShop	eShop	eShop	eShop	1.5	4	1.44	50	4	0.02	0.02	1
1,5×6	–	eShop	eShop	eShop	eShop	1.5	6	1.44	50	4	0.02	0.02	1
1,5×8	–	eShop	eShop	eShop	eShop	1.5	8	1.44	50	4	0.02	0.02	1
1,5×10	–	eShop	eShop	eShop	eShop	1.5	10	1.44	50	4	0.02	0.02	0.9
1,5×12	–	eShop	eShop	eShop	eShop	1.5	12	1.44	55	4	0.02	0.02	0.8
1,5×14	–	eShop	eShop	eShop	eShop	1.5	14	1.44	55	4	0.02	0.02	0.8
1,5×16	–	eShop	eShop	eShop	eShop	1.5	16	1.44	55	4	0.015	0.015	0.5
1,5×18	–	eShop	eShop	eShop	eShop	1.5	18	1.44	60	4	0.015	0.015	0.35
1,5×20	–	eShop	eShop	eShop	eShop	1.5	20	1.44	60	4	0.015	0.015	0.35
2×4	–	eShop	eShop	eShop	eShop	2	4	1.91	50	4	0.03	0.03	1
2×6	–	eShop	eShop	eShop	eShop	2	6	1.91	50	4	0.03	0.03	1
2×8	–	eShop	eShop	eShop	eShop	2	8	1.91	50	4	0.03	0.03	1
2×10	–	eShop	eShop	eShop	eShop	2	10	1.91	50	4	0.03	0.03	1
2×12	–	eShop	eShop	eShop	eShop	2	12	1.91	55	4	0.03	0.03	0.9
2×15	–	eShop	eShop	eShop	eShop	2	15	1.91	55	4	0.03	0.03	0.9
2×18	–	eShop	eShop	eShop	eShop	2	18	1.91	60	4	0.03	0.03	0.8
2×20	–	eShop	eShop	eShop	eShop	2	20	1.91	60	4	0.03	0.03	0.8
2×22	–	eShop	eShop	eShop	eShop	2	22	1.91	60	4	0.025	0.025	0.5
2×25	–	eShop	eShop	eShop	eShop	2	25	1.91	70	4	0.025	0.025	0.5
2×30	–	eShop	eShop	eShop	eShop	2	30	1.91	70	4	0.025	0.025	0.35
2×35	–	eShop	eShop	eShop	eShop	2	35	1.91	80	4	0.025	0.025	0.2
2×40	–	eShop	eShop	eShop	eShop	2	40	1.91	80	4	0.02	0.02	0.08
2,5×8	–	–	eShop	eShop	eShop	2.5	8	2.41	50	4	0.03	0.03	1
2,5×10	–	–	eShop	eShop	eShop	2.5	10	2.41	50	4	0.03	0.03	1
2,5×15	–	–	eShop	eShop	eShop	2.5	15	2.41	55	4	0.03	0.03	0.9
2,5×20	–	–	eShop	eShop	eShop	2.5	20	2.41	55	4	0.03	0.03	0.8
2,5×25	–	–	eShop	eShop	eShop	2.5	25	2.41	60	4	0.025	0.025	0.5
2,5×30	–	–	eShop	eShop	eShop	2.5	30	2.41	70	4	0.025	0.025	0.35
3×8	–	–	–	eShop	eShop	4.5	8	2.91	50	4	0.03	0.03	1
3×10	–	–	–	eShop	eShop	4.5	10	2.91	50	4	0.03	0.03	1
3×12	–	–	–	eShop	eShop	4.5	12	2.91	50	4	0.03	0.03	1
3×15	–	–	–	eShop	eShop	4.5	15	2.91	55	4	0.03	0.03	1
3×18	–	–	–	eShop	eShop	4.5	18	2.91	55	4	0.03	0.03	0.9
3×20	–	–	–	eShop	eShop	4.5	20	2.91	55	4	0.03	0.03	0.9
3×25	–	–	–	eShop	eShop	4.5	25	2.91	60	4	0.03	0.03	0.8
3×30	–	–	–	eShop	eShop	4.5	30	2.91	70	4	0.02	0.02	0.5
3×35	–	–	–	eShop	eShop	4.5	35	2.91	80	4	0.02	0.02	0.35
3×40	–	–	–	eShop	eShop	4.5	40	2.91	80	4	0.02	0.02	0.35

Solid carbide | Standard | Type H | e8 | 2 | 30° | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA | HPC



Garant GARANT Diabolo solid carbide torus cutter HPC

GARANT Diabolo:
Special geometry, coating and carbide for hard machining.
For copy milling with **angle α: 1° 30'.** Double relief ground side clearance angle.
Tolerances:

- Corner radius: **R_1= ±0.005 mm.**
- Angle **α= ±20'.**

Note: Standard application values: f_z for a_p = 0.1×D.

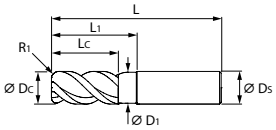


20 6162

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP				
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N				
20 6162									180	170	140	135	100							○	○	●	●

Ø e8 D_c / R_1	11X 20 6162	L_c	R_1	L_1	Ø D_6	Ø D_1	L	Ø D_s	L_2	< 65 HRC f_z	< 65 HRC f_z
	GARANT Diabolo solid carbide torus cutter HPC										
mm	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
0,8/0,08	eShop	1	0.08	1.6	2.1	0.75	75	3	27	0.005	0.005
1/0,1	eShop	1.2	0.1	2	2.3	0.95	75	3	27	0.005	0.005
1/0,25	eShop	2	0.25	4	2.7	0.85	80	6	40	0.005	0.005
1,2/0,12	eShop	1.4	0.12	2.4	2.5	1.15	75	3	27	0.005	0.005
1,5/0,15	eShop	1.8	0.15	3	2.7	1.45	75	3	27	0.005	0.005
2/0,2	eShop	2.4	0.2	4	3	1.95	75	3	27	0.005	0.005
2/0,5	eShop	2	0.5	8	3.5	1.8	80	6	40	0.005	0.005
3/0,3	eShop	3.6	0.3	6	4	2.95	75	4	27	0.019	0.019
3/0,5	eShop	2	0.5	12	4.3	2.8	80	6	40	0.019	0.019
3/1,0	eShop	2	1	12	4.3	2.8	80	6	40	0.019	0.019
4/1,0	eShop	3	1	16	5.1	3.8	80	6	40	0.019	0.019
6/1,0	eShop	4	1	25	7.1	5.8	100	8	50	0.048	0.048
6/2,0	eShop	4	2	25	7.1	5.8	100	8	50	0.048	0.048
8/1,0	eShop	4	1	32	9.3	7.8	120	10	60	0.06	0.06
8/2,0	eShop	4	2	32	9.3	7.8	120	10	60	0.06	0.06
10/1,5	eShop	6	1.5	40	11.9	9.8	160	12	80	0.07	0.07
12/1,5	eShop	8	1.5	50	14.5	11.8	200	16	100	0.08	0.08

Solid carbide | Standard | Type W | f8 | 3 | 45° | a_e 0.3×D | a_e 0.03×D | h6 DIN 6535 HA | G 2.5 ^{n}max | HPC



Garant Solid carbide torus cutter HPC

With strong core, **special chip breaker recesses** and **large polished flutes.**
New generation of high performance end mills in the HPC machining range.
Application: Especially for **high speed machining** in **mould and tool making** for **copy milling.**

Note:
20 6260 – **NEW GENERATION AVAILABLE! Recommended successor product is No. 206255.**



20 6260



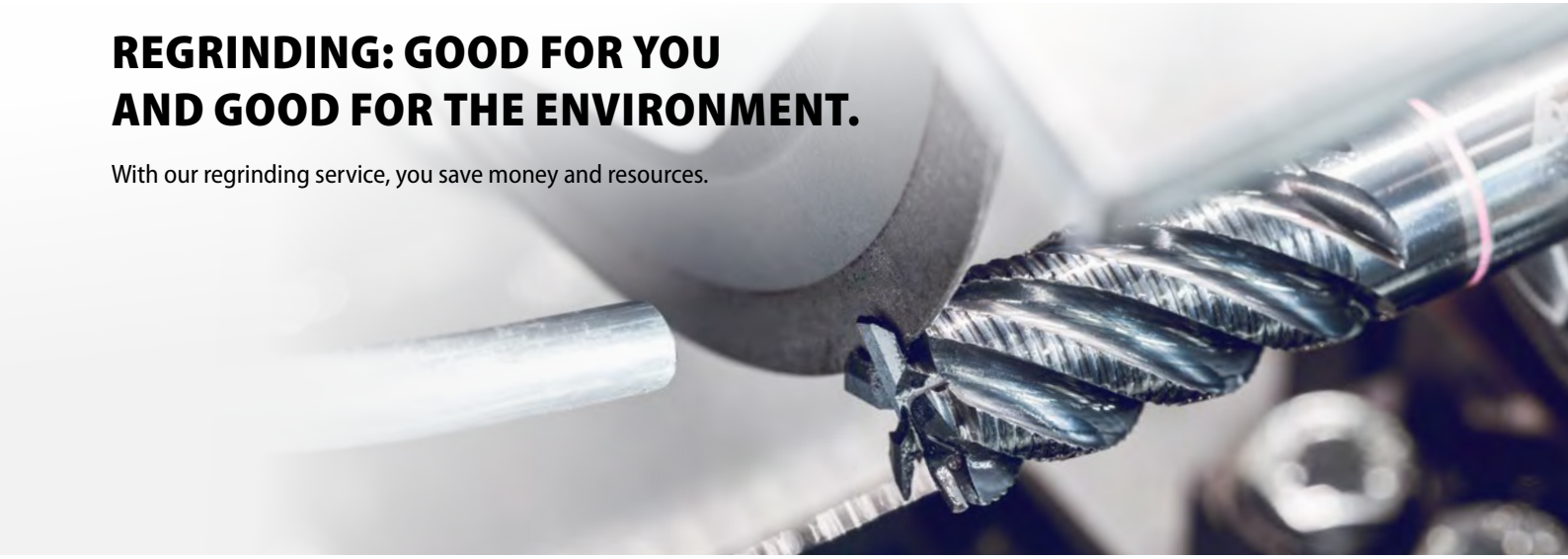
20 6265

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Cu	CuZn				
ISO code	N	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	N	N				
20 6260		500	480	240													200	240	●	○	○	○
20 6265		250	240	120													100	120	●	○	○	○

Ø f8 D_c / R_1	11X 20 6260	11X 20 6265	L_c		R_1	L_1		Ø D_1	L		Ø D_s	Alu f_z	Alu f_z
	Solid carbide torus cutter HPC		20 6260	20 6265		20 6260	20 6265		20 6260	20 6265			
mm	Z0X	Z0X	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
5/0,5	eShop	–	13	–	0.5	18	–	4.7	57	–	6	0.032	0.032
5/1,0	eShop	–	13	–	1	18	–	4.7	57	–	6	0.03	0.03
6/0,5	eShop	eShop	13	10	0.5	18	42	5.7	57	80	6	0.035	0.035
6/1,0	eShop	eShop	13	10	1	18	42	5.7	57	80	6	0.032	0.032
8/0,5	eShop	eShop	21	13	0.5	25	62	7.4	63	100	8	0.055	0.055
8/1,0	eShop	eShop	21	13	1	25	62	7.4	63	100	8	0.05	0.05
10/0,5	eShop	eShop	22	16	0.5	30	58	9.2	72	100	10	0.065	0.065
10/1,0	eShop	eShop	22	16	1	30	58	9.2	72	100	10	0.06	0.06
12/0,5	eShop	eShop	26	19	0.5	36	73	11	83	120	12	0.07	0.07
12/1,0	eShop	eShop	26	19	1	36	73	11	83	120	12	0.065	0.065
16/2,0	eShop	eShop	36	25	2	42	100	15	92	150	16	0.08	0.08
16/4,0	eShop	eShop	36	25	4	42	100	15	92	150	16	0.07	0.07
20/4,0	eShop	eShop	41	32	4	52	98	19	104	150	20	0.1	0.1

REGRINDING: GOOD FOR YOU AND GOOD FOR THE ENVIRONMENT.

With our regrinding service, you save money and resources.



Hoffmann Group
Regrinding service



Good for you

It is already worth it from the first regrind. Overall, you can expect amazing savings of up to 85%. And all with the original regrind quality, to the original geometry and on the original production machines. There are no compromises here.
In addition: Of course, we also provide you with excellent regrinding results for your third-party brands!

Good for the environment

Reusing the tool saves valuable resources and avoids unnecessary waste. In addition, the shorter transport distances also ensure a reduced CO_2 footprint. A good contribution to environmental protection.

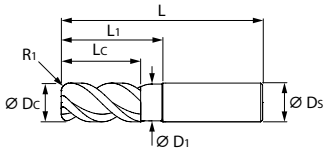
Just good all round

Pick-up and delivery service, coating service, measurement certificate service, labelling service.
An all-round worry-free package has never been so easy – and with maximum cost transparency.
For you, this means the highest precision and reliability as quickly as possible.

> "The efficiency and quality of the reconditioned tools due to the original regrind quality surprised me very positively!"
> **Marin Engelsberger, Bacher GmbH**

Further information on the regrinding service:
Discover all about our services online now.
https://hog.tools/regrinding

Solid carbide | Type W | h6 | 3 | 45° | a_e 0.05×D | h6 DIN 6535 HA | G 2.5 ^{n}max



Garant Solid carbide torus cutter

Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium workpieces.

Tolerances:

- Corner radius

R_1 = 0.5 tolerance ±0.02.
R_1 > 0.5 – 1.5 tolerance ±0.03.
R_1 > 1.5 tolerance ±0.05.

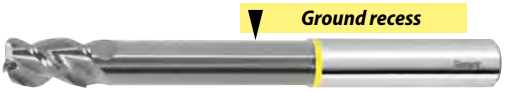
20 6192 – Dimensions to manufacturer's standard.

DIN 6527 | a_e 0.5×D | R



20 6190

Standard | a_e 0.3×D | R



20 6192

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 6190	180	140	105	180	130	150	130	110									80	100	●	○	○	○	
20 6192	130	100	80	130	90	100	90	80									70	90	●	○	○	○	

Ø h6 D_c / R_1	11X 20 6190	11X 20 6192	L_c		R_1	L_1		Ø D_1	L		Ø D_s	Alu f_z	Alu f_z
	Solid carbide torus cutter		20 6190	20 6192		20 6190	20 6192		20 6190	20 6192			
mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
5/0,5	eShop	eShop	13	8	0.5	19	30	4.7	57	80	6	0.02	0.02
5/1,0	eShop	eShop	13	8	1	19	30	4.7	57	80	6	0.02	0.02
6/0,5	eShop	eShop	13	10	0.5	19	42	5.7	57	80	6	0.03	0.03
6/1,0	eShop	eShop	13	10	1	19	42	5.7	57	80	6	0.03	0.03
8/0,5	eShop	eShop	21	13	0.5	25	62	7.4	63	100	8	0.04	0.04
8/1,0	eShop	eShop	21	13	1	25	62	7.4	63	100	8	0.04	0.04
8/2,0	eShop	eShop	21	13	2	25	62	7.4	63	100	8	0.04	0.04
10/0,5	eShop	eShop	22	16	0.5	30	58	9.2	72	100	10	0.05	0.05
10/1,0	eShop	eShop	22	16	1	30	58	9.2	72	100	10	0.05	0.05
10/2,0	eShop	eShop	22	16	2	30	58	9.2	72	100	10	0.05	0.05
10/3,0	eShop	eShop	22	16	3	30	58	9.2	72	100	10	0.05	0.05
12/0,5	eShop	eShop	26	19	0.5	36	73	11	83	120	12	0.07	0.08
12/1,0	eShop	eShop	26	19	1	36	73	11	83	120	12	0.07	0.08
12/2,0	eShop	eShop	26	19	2	36	73	11	83	120	12	0.07	0.08
12/3,0	eShop	eShop	26	19	3	36	73	11	83	120	12	0.07	0.08
16/2,0	eShop	eShop	36	25	2	42	100	15	92	150	16	0.09	0.1
16/3,0	eShop	eShop	36	25	3	42	100	15	92	150	16	0.09	0.1
16/4,0	eShop	eShop	36	25	4	42	100	15	92	150	16	0.09	0.1
20/2,0	eShop	eShop	41	32	2	52	98	19	104	150	20	0.12	0.13
20/3,0	eShop	eShop	41	32	3	52	98	19	104	150	20	0.12	0.13
20/4,0	eShop	eShop	41	32	4	52	98	19	104	150	20	0.12	0.13

Solid carbide | Standard | Type W | h6 | 3 | 45° | ≠ | TPC $a_{e\,max}$ 0.12×D | TPC

h6 DIN 6535 HA | h6 DIN 6535 HB | G 2.5 ^{n}max | G 2.5 ^{n}max

Garant Solid carbide torus cutter TPC

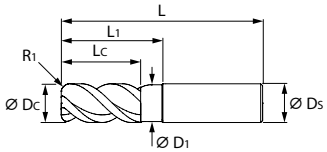
Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium workpieces.
With double chip-breaker for exemplary chip formation.
With the latest generation of **DLC coating sp²**.

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

Note: $a_{e\,max}$ = 0.12×D for TPC machining.
h_{max}: The values stated in the table are maximum values.



20 6211



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 6211	280	270	180	125	110	140	90	80		125	115	105	90	110		120	70	90	●	●	○	●	

Ø h6 D_c / R_1	11X 20 6211	L_c	R_1	L_1	Ø D_1	L	Ø D_s	Shank form	TPC Alu h_{max}
	Solid carbide torus cutter TPC DLC								
mm		mm	mm	mm	mm	mm	mm		mm
6/0,5	eShop	25	0.5	30	5.7	71	6	HA	0.032
6/1,0	eShop	25	1	30	5.7	71	6	HA	0.032

Ø h6 D_c / R_1	11X 20 6211 Solid carbide torus cutter TPC DLC	L_c	R_1	L_1	Ø D_1	L	Ø D_s	Shank form	TPC Alu h_{max}
mm		mm	mm	mm	mm	mm	mm		mm
8/0,5	eShop	33	0.5	40	7.4	80	8	HA	0.045
8/1,0	eShop	33	1	40	7.4	80	8	HA	0.045
8/2,0	eShop	33	2	40	7.4	80	8	HA	0.045
10/0,5	eShop	41	0.5	50	9.2	95	10	HA	0.055
10/1,0	eShop	41	1	50	9.2	95	10	HA	0.055
10/2,0	eShop	41	2	50	9.2	95	10	HA	0.055
10/3,0	eShop	41	3	50	9.2	95	10	HA	0.055
12/0,5	eShop ■	49	0.5	60	11	109	12	HA	0.08
12/1,0	eShop	49	1	60	11	109	12	HA	0.08
12/2,0	eShop	49	2	60	11	109	12	HA	0.08
12/3,0	eShop	49	3	60	11	109	12	HA	0.08
16/2,0	eShop	65	2	80	15	132	16	HB	0.095
16/3,0	eShop	65	3	80	15	132	16	HB	0.095
16/4,0	eShop	65	4	80	15	132	16	HB	0.095
20/2,0	eShop	82	2	100	19	154	20	HB	0.125
20/3,0	eShop	82	3	100	19	154	20	HB	0.125
20/4,0	eShop	82	4	100	19	154	20	HB	0.125

Solid carbide | Type W | h6 | 3 | 45° | a_e 0.05×D | h6 DIN 6535 HA | G 2.5 ^{n}max

Garant Solid carbide torus cutter

With the latest generation of **DLC coating sp²**.
Eccentric relief ground, additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium components.

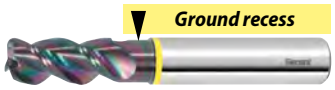
Tolerances:

■ Corner radius

R_1 = 0.5 tolerance ±0.02.
R_1 > 0.5 – 1.5 tolerance ±0.03.
R_1 > 1.5 tolerance ±0.05.

20 6250 – Dimensions to manufacturer's standard.

DIN 6527 | a_e 0.5×D | R — Ground recess



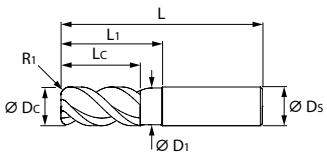
20 6230

Standard | a_e 0.3×D | R — Ground recess



20 6250

Note:
20 6230 – **NEW GENERATION AVAILABLE! Recommended successor product is No. 206255.**
20 6250 – **NEW GENERATION AVAILABLE! Recommended successor product is No. 206261.**



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 6230	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200		●	●	○	●
20 6250	280	260	240	120	100	120	90	80		110	100	90	80	90		180	100	120		●	●	○	●

Ø h6 D_c / R_1	11X 20 6230	11X 20 6250 Solid carbide torus cutter	L_c		R_1	L_1		Ø D_1	L		Ø D_s	Alu f_z	Alu f_z
			20 6230	20 6250		20 6230	20 6250		20 6230	20 6250			
mm	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4/1,0	eShop	eShop	11	6.5	1	17	24	3.7	57	80	6	0.02	0.02
5/0,5	eShop	eShop	13	8	0.5	19	30	4.7	57	80	6	0.02	0.02
5/1,0	eShop	eShop	13	8	1	19	30	4.7	57	80	6	0.02	0.02
6/0,5	eShop	eShop	13	10	0.5	19	42	5.7	57	80	6	0.03	0.03
6/1,0	eShop	eShop	13	10	1	19	42	5.7	57	80	6	0.03	0.03
8/0,5	eShop	eShop	21	13	0.5	25	62	7.4	63	100	8	0.04	0.04
8/1,0	eShop	eShop	21	13	1	25	62	7.4	63	100	8	0.04	0.04
8/2,0	eShop	eShop	21	13	2	25	62	7.4	63	100	8	0.04	0.04
10/0,5	eShop	eShop	22	16	0.5	30	58	9.2	72	100	10	0.05	0.05
10/1,0	eShop	eShop	22	16	1	30	58	9.2	72	100	10	0.05	0.05
10/2,0	eShop	eShop	22	16	2	30	58	9.2	72	100	10	0.05	0.05
10/3,0	eShop	eShop	22	16	3	30	58	9.2	72	100	10	0.05	0.05
12/0,5	eShop	eShop	26	19	0.5	36	73	11	83	120	12	0.07	0.08
12/1,0	eShop	eShop	26	19	1	36	73	11	83	120	12	0.07	0.08
12/2,0	eShop	eShop	26	19	2	36	73	11	83	120	12	0.07	0.08
12/3,0	eShop	eShop	26	19	3	36	73	11	83	120	12	0.07	0.08
16/1,0	eShop	eShop	36	25	1	42	100	15	92	150	16	0.09	0.1
16/2,0	eShop	eShop	36	25	2	42	100	15	92	150	16	0.09	0.1
16/3,0	eShop	eShop	36	25	3	42	100	15	92	150	16	0.09	0.1
16/4,0	eShop	eShop	36	25	4	42	100	15	92	150	16	0.09	0.1
16/5,0	eShop	eShop	36	25	5	42	100	15	92	150	16	0.09	0.1
20/2,0	eShop	eShop	41	32	2	52	98	19	104	150	20	0.12	0.13
20/3,0	eShop	eShop	41	32	3	52	98	19	104	150	20	0.12	0.13
20/4,0	eShop	eShop	41	32	4	52	98	19	104	150	20	0.12	0.13
20/5,0	eShop	eShop	41	32	5	52	98	19	104	150	20	0.12	0.13

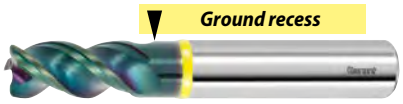
Solid carbide | Type W | e8 | 3 | 42° | ≠ | ≠ | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HA | G 2.5 n_{max} | HPC

Garant GARANT Master Alu PickPocket solid carbide torus cutter HPC

Cutting edge length to DIN 6527.
Tolerance: Corner radius R_1 = ± 0.01 mm.
20 6255 – All dimensions to DIN.

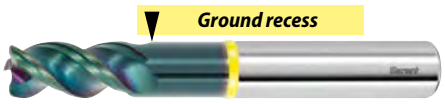
Application: Especially for **high speed machining** in **mould and tool making** for **copy milling.**

DIN 6527 R

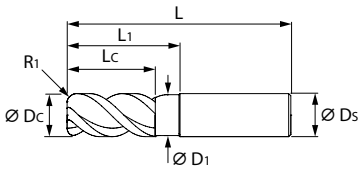


20 6255

Standard R



20 6257



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 6255/6257	550	500	450	200	160	200	150	130		180	160	150	130	160		300	160	200	●	○	○	●	

Ø e8 D_C/ R_1 mm	20 6255 GARANT Master Alu PickPocket solid carbide torus cutter HPC DLC	L_c mm	R_1 mm	L_1 mm	Ø D_1 mm	L mm	Ø D_s mm	Alu f_z mm	Alu f_z mm
4/0,5	eShop	8	0.5	–	–	57	6	0.06	0.07
4/1,0	eShop	8	1	–	–	57	6	0.06	0.07
5/0,5	eShop	9	0.5	–	–	57	6	0.08	0.09
5/1,0	eShop	9	1	–	–	57	6	0.08	0.09
6/0,5	eShop	13	0.5	19	5.8	57	6	0.08	0.09
6/1,0	eShop	13	1	19	5.8	57	6	0.08	0.09
8/0,5	eShop	19	0.5	25	7.8	63	8	0.1	0.12
8/1,0	eShop	19	1	25	7.8	63	8	0.1	0.12
10/0,5	eShop	22	0.5	30	9.8	72	10	0.12	0.14
10/1,0	eShop	22	1	30	9.8	72	10	0.12	0.14
12/0,5	eShop	26	0.5	36	11.8	83	12	0.15	0.16
12/1,0	eShop	26	1	36	11.8	83	12	0.15	0.16
16/1,0	eShop	31	1	42	15.8	92	16	0.18	0.2
16/2,0	eShop	31	2	42	15.8	92	16	0.18	0.2
16/4,0	eShop	31	4	42	15.8	92	16	0.18	0.2
16/5,0	eShop	31	5	42	15.8	92	16	0.18	0.2
20/4,0	eShop	41	4	52	19.8	104	20	0.22	0.25
20/5,0	eShop	41	5	52	19.8	104	20	0.22	0.25

Ø e8 D_C/ R_1 mm	20 6257 GARANT Master Alu PickPocket solid carbide torus cutter HPC DLC	L_c mm	R_1 mm	L_1 mm	Ø D_1 mm	L mm	Ø D_s mm	Alu f_z mm	Alu f_z mm
6/0,5	eShop	13	0.5	24	5.8	62	6	0.06	0.08
6/1,0	eShop	13	1	24	5.8	62	6	0.06	0.08
8/0,5	eShop	19	0.5	30	7.8	68	8	0.07	0.1
8/1,0	eShop	19	1	30	7.8	68	8	0.07	0.1
10/0,5	eShop	22	0.5	38	9.8	80	10	0.08	0.11
10/1,0	eShop	22	1	38	9.8	80	10	0.08	0.11
12/0,5	eShop	26	0.5	46	11.8	93	12	0.1	0.12
12/1,0	eShop	26	1	46	11.8	93	12	0.1	0.12
16/1,0	eShop	31	1	58	15.8	108	16	0.14	0.16
16/2,0	eShop	31	2	58	15.8	108	16	0.14	0.16
16/4,0	eShop	31	4	58	15.8	108	16	0.14	0.16
16/5,0	eShop	31	5	58	15.8	108	16	0.14	0.16
20/4,0	eShop	41	4	74	19.8	126	20	0.18	0.2
20/5,0	eShop	41	5	74	19.8	126	20	0.18	0.2

Solid carbide | Standard | h6 DIN 6535 HA | G 2.5 n_{max} | HPC

GARANT Master Alu SlotMachine solid carbide torus cutter HPC/TPC, GARANT Master Alu PickPocket solid carbide torus cutter HPC, GARANT Master Alu solid carbide torus cutter HPC

Eccentric relief ground, additionally polish ground in the flutes for outstanding chip evacuation in long-chipping non-ferrous materials.

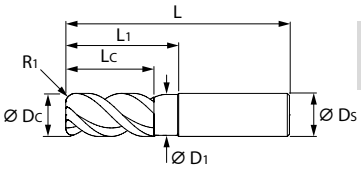
20 6258 – With a new knurled profile, optimised for higher feed rates. Tremendous bending strength due to the use of an innovative micrograin substrate.

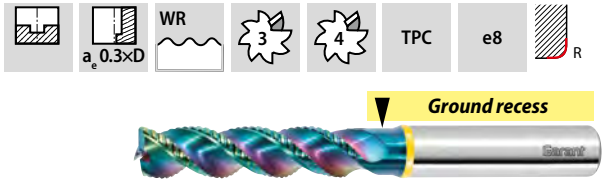
20 6261/6264 – Tolerances:
- Corner radius

R_1 = 0.5 tolerance ±0.02 mm.
R_1 > 0.5 – 1.5 tolerance ±0.03 mm.
R_1 > 1.5 tolerance ±0.05 mm.

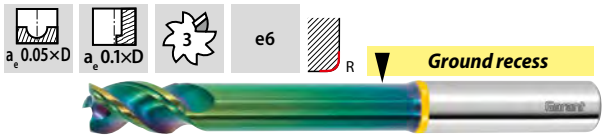
Application:

20 6264 – Particularly suitable for finishing work.

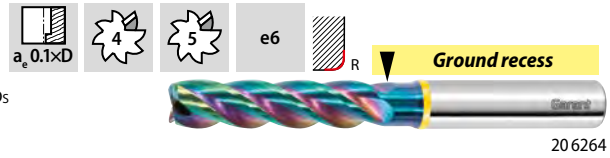




20 6258



20 6261



20 6264

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honeycomb sandwich	Cu	CuZn				
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N				
20 6258	450	400	380			120	100										160	200	●	○	○	●
20 6261	340	320	290	150	120	150	110	100		130	120	110	100	110		220	120	150	●	○	○	●
20 6264	500	450	400	180	140	180	130	110		160	140	120	140	260		260	140	120	●	○	○	●

Ø e8 D_c / R_1	11X 20 6258 GARANT Master Alu SlotMachine solid carbide torus cutter HPC / TPC DLC	No. of teeth Z	L_c	R_1	L_1	Ø D_1	L	Ø D_s	Alu f_z	Alu f_z
mm			mm	mm	mm	mm	mm	mm	mm	mm
6/0,5	eShop	3	25	0.5	30	5.5	65	6	0.07	0.08
6/1,0	eShop	3	25	1	30	5.5	65	6	0.07	0.08
8/0,5	eShop	3	33	0.5	40	7.5	75	8	0.09	0.1
8/1,0	eShop	3	33	1	40	7.5	75	8	0.09	0.1
8/2,0	eShop	3	33	2	40	7.5	75	8	0.09	0.1
10/0,5	eShop	3	41	0.5	50	9.5	90	10	0.1	0.12
10/2,0	eShop	3	41	2	50	9.5	90	10	0.1	0.12
12/1,0	eShop	3	49	1	60	11	100	12	0.13	0.15
12/3,0	eShop	3	49	3	60	11	100	12	0.13	0.15
16/2,0	eShop	4	65	2	80	15	125	16	0.17	0.2
20/2,0	eShop	4	82	2	100	19	150	20	0.2	0.25
20/3,0	eShop	4	82	3	100	19	150	20	0.2	0.25

Ø e6 D_c / R_1	11X 20 6261 GARANT Master Alu PickPocket solid carbide torus cutter HPC DLC	11X 20 6264 GARANT Master Alu solid carbide torus cutter DLC	No. of teeth Z		L_c		R_1	L_1		Ø D_1	L		Ø D_s	Alu f_z		Alu f_z
			20 6261	20 6264	20 6261	20 6264		20 6261	20 6264		20 6261	20 6264		20 6261	20 6264	20 6261
mm					mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4/0,5	eShop	–	3	–	6.5	–	0.5	24	–	3.7	83	–	6	0.03	–	0.035
4/1,0	eShop	–	3	–	6.5	–	1	24	–	3.7	83	–	6	0.03	–	0.035
5/0,5	eShop	–	3	–	8	–	0.5	30	–	4.7	83	–	6	0.035	–	0.04
5/1,0	eShop	–	3	–	8	–	1	30	–	4.7	83	–	6	0.035	–	0.04
6/0,5	eShop	eShop	3	4	10	25	0.5	42	30	5.7	83	65	6	0.04	0.045	0.045
6/1,0	eShop	eShop	3	4	10	25	1	42	30	5.7	83	65	6	0.04	0.045	0.045
8/0,5	eShop	eShop	3	4	13	33	0.5	62	40	7.4	100	75	8	0.045	0.05	0.05
8/1,0	eShop	eShop	3	4	13	33	1	62	40	7.4	100	75	8	0.045	0.05	0.05
8/2,0	eShop	eShop	3	4	13	33	2	62	40	7.4	100	75	8	0.045	0.05	0.05
10/0,5	eShop	eShop	3	4	16	41	0.5	68	50	9.2	110	90	10	0.05	0.06	0.06
10/1,0	eShop	–	3	–	16	–	1	68	–	9.2	110	–	10	0.05	–	0.06
10/2,0	eShop	eShop	3	4	16	41	2	68	50	9.2	110	90	10	0.05	0.06	0.06
10/3,0	eShop	–	3	–	16	–	3	68	–	9.2	110	–	10	0.05	–	0.06
12/0,5	eShop	–	3	–	19	–	0.5	73	–	11	120	–	12	0.05	–	0.06
12/1,0	eShop	eShop	3	4	19	49	1	73	60	11	120	100	12	0.05	0.06	0.06
12/2,0	eShop	–	3	–	19	–	2	73	–	11	120	–	12	0.05	–	0.06
12/3,0	eShop	eShop	3	4	19	49	3	73	60	11	120	100	12	0.05	0.06	0.06
16/1,0	eShop ■	–	3	–	25	–	1	100	–	15	150	–	16	0.06	–	0.07
16/2,0	eShop	eShop	3	5	25	65	2	100	80	15	150	125	16	0.06	0.07	0.07
16/5,0	eShop	–	3	–	25	–	5	100	–	15	150	–	16	0.06	–	0.07
20/2,0	–	eShop	–	5	–	82	2	–	100	19	–	150	20	–	0.08	–
20/3,0	–	eShop	–	5	–	82	3	–	100	19	–	150	20	–	0.08	–

Solid carbide | Standard | Type N | h8 | 20° | h5 DIN 6535 HA | HSC

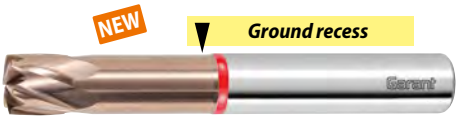
4 | 6

Garant Solid carbide high feed rate milling cutter HSC

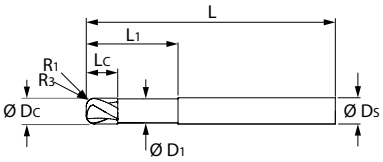
Innovative ultra-fine grain substrate, especially for hard machining up to 70 HRC.
Newly developed high-performance coating for outstanding tool life and optimum metal removal rate.
Tolerance: Corner radius **R1 = +/- 0.01mm**

Application: Especially for high-speed cutting (HSC) in mould and tool making, for copy and traverse milling. Very high machining volume in hard machining.

Note: **Successor product to No. 206273.**



20 6269



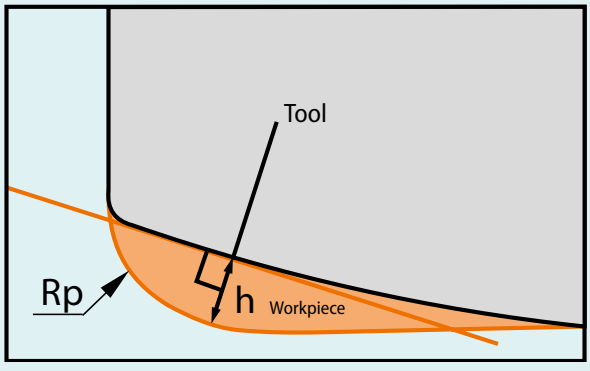
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 6269									105	105	75	64	53	53					○		●		

Ø h8 D_c	117 20 6269 Solid carbide high feed rate milling cutter HSC AlTiSiN	No. of teeth Z	$a_{p\,max}$ transverse	Programming radius	R_1	R_3	L_c	L_1	Ø D_1	L	Ø D_s	< 55 HRC f_z
mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
1	eShop	4	0.12	0.129	0.1	1.2	1	3	0.95	57	6	0.036
2	eShop	4	0.17	0.187	0.11	2.4	2	4	1.95	57	6	0.071
3	eShop	4	0.28	0.308	0.2	3.6	3	8	2.9	57	6	0.111
4	eShop	4	0.33	0.36	0.2	4.8	3	8	3.9	57	6	0.145
5	eShop	6	0.41	0.45	0.25	6	4	15	4.8	57	6	0.191
6	eShop	6	0.49	0.539	0.3	7.2	5	15	5.8	57	6	0.226
8	eShop	6	0.65	0.718	0.4	9.6	7	20	7.8	70	8	0.316
10	eShop	6	0.81	0.898	0.5	12	10	30	9.7	80	10	0.386
12	eShop	6	0.9	1	0.5	14.4	12	30	11.7	90	12	0.444

20

Garant Application notes

Always use the programming radius Rp when programming in the CAM system.



Dc	Programmed radius Rp	max. residual material height h	Ramping angle	Circular interpolation milling D_{min}	Circular interpolation milling D_{max}
mm	mm	mm		mm	mm
Ø 1	0.129	0.021	0.5 degrees or less	1.3	2
Ø 2	0.187	0.059		2.5	3.8
Ø 3	0.308	0.082		3.8	5.8
Ø 4	0.360	0.121		5.2	7.8
Ø 5	0.450	0.151		6.3	9.6
Ø 6	0.539	0.180		7.5	11.5
Ø 8	0.718	0.241		10.2	15.5
Ø 10	0.898	0.301		12.6	19.2
Ø 12	1	0.377		15.2	23

CAD data is available in the Hoffmann Group eShop.

Solid carbide | Standard | Type H | h9 | 12° | h5 DIN 6535 HA | HPC | 2 | 4

Garant GARANT Diabolo solid carbide end torus cutter HPC

GARANT Diabolo:
Special geometry, coating and carbide for hard machining.
Tolerance: Corner radius R_1 = **±0.01 mm.**
Special centre cutting edge geometry for traverse milling at very high feed rates.

Application: **For copy and traverse milling** in hard machining **under HPC / HSC conditions.** Special milling strategies allow **very high metal removal rates.**

Note: **Tools can be reground.**
20 6273 – **Successor product to No. 206276.**
20 6275 – **Successor product to No. 206278.**

Ground recess

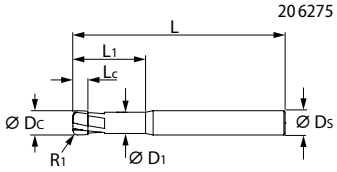


20 6273

Ground recess



20 6275



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N				
20 6273								190	170	150	110	80							○	○	●	●
20 6275								160	145	130	95	70							○	○	●	●

Ø h9 D_c	11X 20 6273	11X 20 6275	No. of teeth Z	$a_{p\,max}$ transverse	Programming radius	L_c	L_1		Ø D_1	L		Ø D_s	< 60 HRC f_z	
	GARANT Diabolo solid carbide end torus cutter HPC						20 6273	20 6275		20 6273	20 6275		20 6273	20 6275
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2	eShop	eShop	2	0.06	0.3	1.5	13	18	1.7	54	75	6	0.024	0.018
3	eShop	eShop	2	0.1	0.3	1.5	15	20	2.7	54	75	6	0.05	0.037
4	eShop	eShop	2	0.15	0.5	2.5	16	24	3.6	58	85	6	0.067	0.049
5	eShop	eShop	4	0.17	0.5	3.5	18	28	4.6	65	100	6	0.078	0.059
6	eShop	eShop	4	0.2	1	3.5	20	28	5.2	65	100	6	0.088	0.065
8	eShop	eShop	4	0.25	1.5	4.8	24	40	7	70	100	8	0.115	0.086
10	eShop	eShop	4	0.3	2	5.8	26	48	9	85	100	10	0.158	0.116
12	eShop	eShop	4	0.4	2	6.8	30	56	11	93	120	12	0.178	0.13
16	eShop	–	4	0.5	2.5	8.8	35	–	14.5	100	–	16	0.229	–

Solid carbide | Standard | Type N | h9 | 15° | h6 DIN 6535 HA | HPC | 2 | 4 | 5

Garant GARANT Master Titan solid carbide end torus cutter HPC

Tolerance: Corner radius R_1 = **±0.01 mm.**
Special centre cutting edge geometry for traverse milling at very high feed rates.

Application: **For copy and traverse milling** of titanium under HPC conditions. Using special milling strategies **very high rates of metal removal can be achieved.**

Note: Regrinding not recommended.

Ground recess

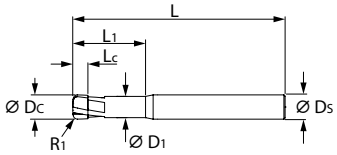


20 6286

Ground recess



20 6288



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
20 6286																90			●			
20 6288																80			●			

Ø h9 D_c	11Z 20 6286	11Z 20 6288	No. of teeth Z	$a_{p\,max}$ transverse	Programming radius	L_c	L_1		Ø D_1	L		Ø D_s	Ti > 850 N f	
	GARANT Master Titan solid carbide end torus cutter HPC						20 6286	20 6288		20 6286	20 6288		20 6286	20 6288
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2	eShop	eShop	2	0.15	0.3	1.5	13	18	1.7	54	75	6	0.018	0.015
4	eShop	eShop	2	0.25	0.5	2.5	16	24	3.6	57	85	6	0.061	0.05
6	eShop	eShop	4	0.4	1	3.5	20	28	5.2	65	100	6	0.082	0.075
8	eShop	eShop	5	0.5	1.5	4.8	24	40	7	70	100	8	0.108	0.1
10	eShop	eShop	5	0.7	2	5.8	26	48	9	85	100	10	0.14	0.12
12	eShop	eShop	5	0.8	2	6.8	30	56	11	93	120	12	0.17	0.15

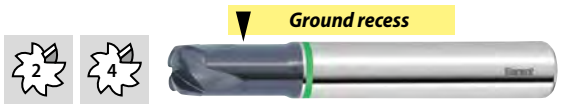
Solid carbide | Standard | Type N | h9 | 15° | h5 DIN 6535 HA | HPC

Garant Solid carbide end torus cutter HPC

Special centre cutting edge geometry for traverse milling at very high feed rates.
Tolerance: Corner radius R_1 = ±0.01 mm.

Application: **For copy and traverse milling** over the full range of hard machining **under HPC/HSC conditions.**
Using special milling strategies **very high rates of metal removal can be achieved.**

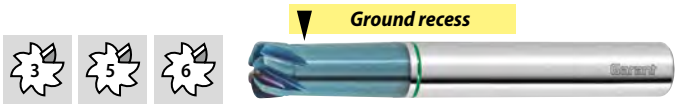
Note: **Tools can be reground.**
20 6266 – **Successor product to No. 206272.**
20 6267 – **Successor product to No. 206274.**
20 6262/6263 – With conically increasing recess to guarantee stability at long overhangs.



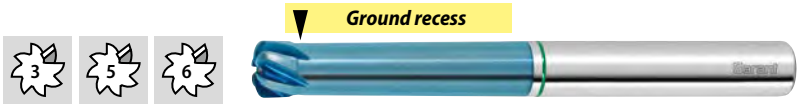
20 6266



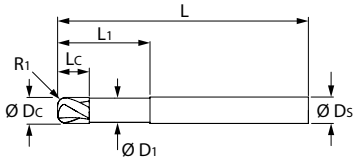
20 6267



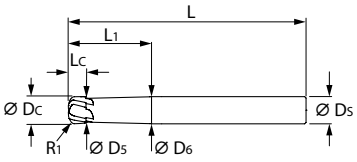
20 6262



20 6263



20 6266, 20 6267



20 6262, 20 6263

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 6262				175	170	155	140	130						100	95			●		●	●	○	○
20 6263				170	150	135	130	125						95	90			●		●	●	○	○
20 6266				155	150	145	140	130						90				●		●	●	○	○
20 6267				150	140	130	125	115						80				●		●	●	○	○

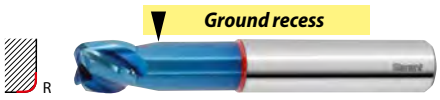
Ø h9 D_C	11X 20 6266	11X 20 6267	No. of teeth Z	$a_{p\,max}$ transverse	Programming radius	L_c	L_1		Ø D_1	L		Ø D_s	< 900 N f_z	
	Solid carbide end torus cutter HPC						20 6266	20 6267		20 6266	20 6267		20 6266	20 6267
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2	eShop	eShop	2	0.15	0.3	1.5	13	18	1.7	54	75	6	0.026	0.019
3	eShop	eShop	2	0.2	0.3	1.5	15	20	2.7	54	75	6	0.056	0.044
4	eShop	eShop	2	0.25	0.5	2.5	16	24	3.6	58	85	6	0.076	0.06
5	eShop	eShop	4	0.35	0.5	3.5	18	28	4.6	65	100	6	0.099	0.079
6	eShop	eShop	4	0.4	1	3.5	20	28	5.2	65	100	6	0.106	0.085
8	eShop	eShop	4	0.5	1.5	4.8	24	40	7	70	100	8	0.158	0.127
10	eShop	eShop	4	0.7	2	5.8	26	48	9	85	100	10	0.216	0.172
12	eShop	eShop	4	0.8	2	6.8	30	56	11	93	120	12	0.266	0.213
16	eShop	–	4	1	2.5	8.8	35	–	14.5	100	–	16	0.344	–

Ø h9 D_C	11X 20 6262	11X 20 6263	No. of teeth Z	$a_{p\,max}$ transverse	Programming radius		L_c	L_1		Ø D_5	Ø D_6	L		Ø D_s	< 900 N f_z	
	Solid carbide end torus cutter HPC				20 6262	20 6263		20 6262	20 6263			20 6262	20 6263		20 6262	20 6263
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2	eShop	–	3	0.15	0.3	–	1.5	13	–	1.7	1.95	54	–	6	0.03	–
4	eShop	eShop	3	0.25	0.5	0.5	2.5	16	24	3.6	3.95	58	85	6	0.07	0.06
5	eShop	–	5	0.35	0.5	–	3.5	18	–	4.6	4.9	65	–	6	0.08	–
6	eShop	eShop	5	0.4	1	1	3.5	20	28	5.2	5.9	65	100	6	0.09	0.07
8	eShop	eShop	5	0.5	1	1.5	4.8	24	40	7	7.9	70	100	8	0.12	0.1
10	eShop	eShop	6	0.7	2	2	5.8	26	48	9	9.9	85	100	10	0.16	0.14
12	eShop	eShop	6	0.8	2	2	6.8	30	56	11	11.9	93	120	12	0.22	0.2

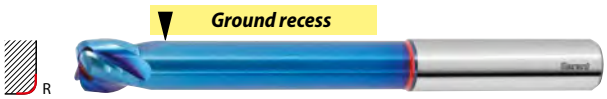
Solid carbide | Standard | Type H | e8 | 4 | 30° | ≠ | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

Garant GARANT Diabolo solid carbide torus cutter HPC

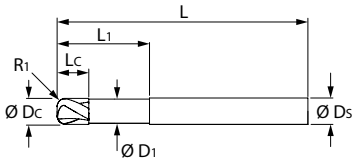
GARANT Diabolo:
Special geometry, coating and carbide, specially for hard machining.
Double relief ground side clearance angle.
Tolerance: Corner radius **R_1 = ±0.005 mm.**



20 6322



20 6342



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 6322								200	190	170	150	110							○	○	●	●	
20 6342								160	150	135	120	90							○	○	●	●	

Ø e8 D_c / R_1	T1X 20 6322	T1X 20 6342	L_c	R_1	L_1		Ø D_1	L		Ø D_s	< 65 HRC f_z	< 65 HRC f_z
	GARANT Diabolo solid carbide torus cutter HPC				20 6322	20 6342		20 6322	20 6342			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
1/0,1	eShop	eShop	1.5	0.1	10	20	0.85	50	75	3	0.005	0.005
1/0,2	eShop	eShop	1.5	0.2	10	20	0.85	50	75	3	0.005	0.005
2/0,2	eShop	eShop	2.5	0.2	12	25	1.8	50	75	3	0.005	0.005
2/0,3	eShop	eShop	2.5	0.3	12	25	1.8	50	75	3	0.005	0.005
2/0,5	eShop	eShop	2.5	0.5	12	25	1.8	50	75	3	0.005	0.005
3/0,25	eShop	eShop	4	0.25	14	32	2.7	50	75	3	0.019	0.019
3/0,3	eShop	eShop	4	0.3	14	32	2.7	50	75	3	0.019	0.019
3/0,5	eShop ■	eShop ■	4	0.5	14	32	2.7	50	75	3	0.019	0.019
3/1,0	eShop	eShop	4	1	14	32	2.7	50	75	3	0.019	0.019
4/0,2	eShop	eShop	5	0.2	16	36	3.7	50	75	4	0.019	0.019
4/0,25	eShop	eShop	5	0.25	16	36	3.7	50	75	4	0.019	0.019
4/0,4	eShop	eShop	5	0.4	16	36	3.7	50	75	4	0.019	0.019
4/0,5	eShop	eShop	5	0.5	16	36	3.7	50	75	4	0.019	0.019
4/1,0	eShop	eShop	5	1	16	36	3.7	50	75	4	0.019	0.019
5/0,25	eShop	eShop	6	0.25	18	40	4.6	54	75	5	0.048	0.048
5/0,5	eShop	eShop	6	0.5	18	40	4.6	54	75	5	0.048	0.048
5/1,0	eShop	eShop	6	1	18	40	4.6	54	75	5	0.048	0.048
6/0,25	eShop	eShop	7	0.25	21	44	5.5	57	80	6	0.048	0.048
6/0,5	eShop	eShop	7	0.5	21	44	5.5	57	80	6	0.048	0.048
6/0,8	eShop	–	7	0.8	21	–	5.5	57	–	6	0.048	0.048
6/1,0	eShop	eShop	7	1	21	44	5.5	57	80	6	0.048	0.048
6/1,5	eShop	eShop	7	1.5	21	44	5.5	57	80	6	0.048	0.048
6/2,0	eShop	–	7	2	21	–	5.5	57	–	6	0.048	0.048
8/0,25	eShop	eShop	9	0.25	27	54	7.4	63	100	8	0.06	0.06
8/0,5	eShop	eShop	9	0.5	27	54	7.4	63	100	8	0.06	0.06
8/0,8	eShop	eShop	9	0.8	27	54	7.4	63	100	8	0.06	0.06
8/1,0	eShop ■	eShop	9	1	27	54	7.4	63	100	8	0.06	0.06
8/1,5	eShop	eShop	9	1.5	27	54	7.4	63	100	8	0.06	0.06
8/2,0	eShop	eShop	9	2	27	54	7.4	63	100	8	0.06	0.06
8/2,5	eShop	–	9	2.5	27	–	7.4	63	–	8	0.06	0.06
8/3,0	eShop	eShop	9	3	27	54	7.4	63	100	8	0.06	0.06
10/0,25	eShop	eShop	11	0.25	32	60	9.2	72	100	10	0.07	0.07
10/0,5	eShop	eShop	11	0.5	32	60	9.2	72	100	10	0.07	0.07
10/0,8	eShop	eShop	11	0.8	32	60	9.2	72	100	10	0.07	0.07
10/1,0	eShop	eShop	11	1	32	60	9.2	72	100	10	0.07	0.07
10/1,5	eShop	eShop	11	1.5	32	60	9.2	72	100	10	0.07	0.07
10/2,0	eShop	eShop	11	2	32	60	9.2	72	100	10	0.07	0.07
10/3,0	eShop	eShop	11	3	32	60	9.2	72	100	10	0.07	0.07
10/3,5	eShop	–	11	3.5	32	–	9.2	72	–	10	0.07	0.07
12/0,5	eShop	eShop	12	0.5	38	75	11	83	120	12	0.08	0.08
12/1,0	eShop	eShop	12	1	38	75	11	83	120	12	0.08	0.08
12/1,5	eShop	eShop	12	1.5	38	75	11	83	120	12	0.08	0.08
12/3,0	eShop	eShop	12	3	38	75	11	83	120	12	0.08	0.08
12/2,0	eShop	eShop	12	2	38	75	11	83	120	12	0.08	0.08
16/2,0	eShop	eShop	16	2	44	92	15	92	150	16	0.09	0.09
16/3,0	eShop	eShop	16	3	44	92	15	92	150	16	0.09	0.09

Solid carbide | Standard | Type H | e8 | 30° | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA | HPC | 4 | 5 | 6

Garant GARANT Master Steel solid carbide torus cutter HPC

HPC milling cutter with **newly developed high-performance coating.** For **outstanding tool life** and **optimum metal removal rates** in a range of materials.
With **double relief ground side clearance angle.**
Tolerance: Corner radius R_1
Radius size 0.1 mm – 1 mm: **R_1 = ± 0.003 mm.**
Radius size > 1.0 mm: **R_1 = ± 0.005 mm.**

Application: Especially for **high speed machining** in **mould and tool making** for **copy milling.** Excellent results for **dry milling.**

Note:
20 6333 – **Successor product to No. 206280.**
20 6335 – **Successor product to No. 206300.**

Additional sizes

Ground recess

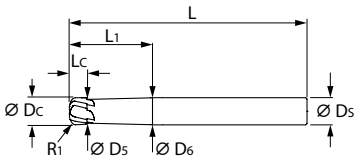


20 6333

Ground recess



20 6335

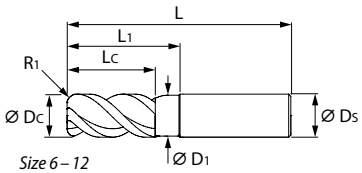


Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 6333				200	170	120	85	70	40					95	85		110	●		●	○	●	●
20 6335				180	150	110	75	65	35					90	80		100	●		●	○	●	●

Ø e8 D_c / R_1	11X 20 6333	11X 20 6335	No. of teeth Z	L_c	R_1	L_1		Ø D_5	Ø D_6	L		Ø D_s	< 1100 N f_z	< 1100 N f_z
	GARANT Master Steel solid carbide torus cutter HPC					20 6333	20 6335			20 6333	20 6335			
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
1/0,1	eShop	eShop	4	1.5	0.1	10	20	0.85	0.95	50	75	3	0.005	0.006
1/0,2	eShop	eShop	4	1.5	0.2	10	20	0.85	0.95	50	75	3	0.005	0.006
2/0,2	eShop	eShop	4	2.5	0.2	12	25	1.8	1.95	50	75	3	0.008	0.01
2/0,3	eShop	eShop	4	2.5	0.3	12	25	1.8	1.95	50	75	3	0.008	0.01
2/0,5	eShop	eShop	4	2.5	0.5	12	25	1.8	1.95	50	75	3	0.008	0.01
3/0,3	eShop	eShop	4	4	0.3	14	32	2.7	2.9	50	75	3	0.01	0.012
3/0,5	eShop	eShop	4	4	0.5	14	32	2.7	2.9	50	75	3	0.01	0.012
3/1,0	eShop	eShop	4	4	1	14	32	2.7	2.9	50	75	3	0.01	0.012
4/0,4	eShop	eShop	5	5	0.4	16	36	3.7	3.9	50	75	4	0.015	0.018
4/0,5	eShop	eShop	5	5	0.5	16	36	3.7	3.9	50	75	4	0.015	0.018
4/1,0	eShop	eShop	5	5	1	16	36	3.7	3.9	50	75	4	0.015	0.018
5/0,5	eShop	eShop	5	6	0.5	18	40	4.6	4.9	54	75	5	0.018	0.02
5/1,0	eShop	eShop	5	6	1	18	40	4.6	4.9	54	75	5	0.018	0.02
6/0,5	eShop	eShop	5	7	0.5	21	44	5.5	5.9	57	83	6	0.022	0.025
6/1,0	eShop	eShop	5	7	1	21	44	5.5	5.9	57	83	6	0.022	0.025
6/1,5	eShop	eShop	5	7	1.5	21	44	5.5	5.9	57	83	6	0.022	0.025
8/0,5	eShop	eShop	5	9	0.5	27	54	7.4	7.9	63	100	8	0.027	0.03
8/1,0	eShop	eShop	5	9	1	27	54	7.4	7.9	63	100	8	0.027	0.03
8/1,5	eShop	eShop	5	9	1.5	27	54	7.4	7.9	63	100	8	0.027	0.03
8/2,0	eShop	eShop	5	9	2	27	54	7.4	7.9	63	100	8	0.027	0.03
10/0,5	eShop	eShop	5	11	0.5	32	60	9.2	9.9	72	100	10	0.035	0.04
10/1,0	eShop	eShop	5	11	1	32	60	9.2	9.9	72	100	10	0.035	0.04
10/1,5	eShop	eShop	5	11	1.5	32	60	9.2	9.9	72	100	10	0.035	0.04
10/2,0	eShop	eShop	5	11	2	32	60	9.2	9.9	72	100	10	0.035	0.04
12/0,5	eShop	eShop	5	12	0.5	38	75	11	11.8	83	119	12	0.045	0.05
12/1,0	eShop	eShop	5	12	1	38	75	11	11.8	83	119	12	0.045	0.05
12/1,5	eShop	eShop	5	12	1.5	38	75	11	11.8	83	119	12	0.045	0.05
12/2,0	eShop	eShop	5	12	2	38	75	11	11.8	83	119	12	0.045	0.05
12/5,0	eShop	eShop	5	12	5	38	75	11	11.8	83	119	12	0.045	0.05
16/1,0	eShop	eShop	6	16	1	44	92	15	15.8	92	150	16	0.06	0.07
16/2,0	eShop	eShop	6	16	2	44	92	15	15.8	92	150	16	0.06	0.07
16/6,0	eShop	eShop	6	16	6	44	92	15	15.8	92	150	16	0.06	0.07
20/1,0	eShop	eShop	6	20	1	55	92	19	19.8	104	150	20	0.08	0.1
20/2,5	–	eShop	6	20	2.5	–	92	19	19.8	–	150	20	0.08	0.1

Solid carbide | Standard | Type H | 0 –0.02 | 4 | 30° | a_e 0.05×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

Garant Solid carbide torus cutter HPC



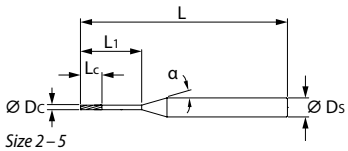
Size 6 – 12

GARANT Diabolo 70:
Special solid carbide substrate with extremely high tensile strength combined with **outstanding wear resistance** for optimum process reliability.
Newly developed **nano-crystalline high-tech coating for hard milling up to 70 HRC.** Very suitable for **continuous use** in tool and mould making.
Sizes 2 – 5: **Recess angle α = 15°.**
Tolerances:
- Corner radius: **R_1 = ±0.01 mm.**

Application: Due to the **special hard geometry** ideal for use on hardened materials from 60 HRC to 70 HRC.



20 6323



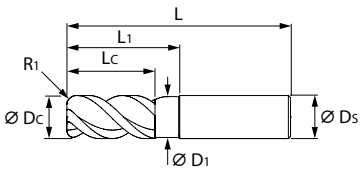
Size 2 – 5

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
20 6323										150	110	90	80								●	●

Ø D_c / R_1	11X	20 6323	L_c	R_1	L_1	Ø D_1	L	Ø D_s	< 70 HRC f_z	< 70 HRC f_z
		Solid carbide torus cutter HPC								
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
2/0,2		eShop	2	0.2	10	1.9	58	6	0.005	0.005
2/0,5		eShop	2	0.5	10	1.9	58	6	0.005	0.005
3/0,3		eShop	3	0.3	14	2.9	58	6	0.019	0.019
3/0,5		eShop	3	0.5	14	2.9	58	6	0.019	0.019
4/0,5		eShop	4	0.5	16	3.9	58	6	0.019	0.019
5/0,5		eShop	5	0.5	16	4.9	58	6	0.048	0.048
6/0,5		eShop	6	0.5	18	5.85	58	6	0.048	0.048
6/1,0		eShop	6	1	18	5.85	58	6	0.048	0.048
8/0,5		eShop	8	0.5	24	7.85	64	8	0.06	0.06
8/1,0		eShop	8	1	24	7.85	64	8	0.06	0.06
10/0,5		eShop	10	0.5	30	9.7	73	10	0.07	0.07
10/1,0		eShop	10	1	30	9.7	73	10	0.07	0.07
12/1,0		eShop	12	1	26	11.7	74	12	0.08	0.08
12/2,0		eShop	12	2	26	11.7	74	12	0.08	0.08

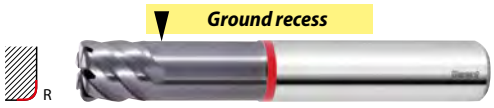
Solid carbide | Standard | Type H | 0 –0.02 | 6 | 45° | a_e 0.05×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

Garant Solid carbide torus cutter HPC



GARANT Diabolo 70:
Special solid carbide substrate with extremely high tensile strength combined with **outstanding wear resistance** for optimum process reliability.
Newly developed **nano-crystalline high-tech coating for hard milling up to 70 HRC.** Very suitable **for continuous use** in tool and mould making.
Tolerances:
- Corner radius: **R_1 = ±0.02 mm.**

Application: Due to the **special hard geometry** ideal for use on hardened materials from 60 HRC to 70 HRC.
For profile milling as a **finishing operation.**
(Plunge milling only to shallow depths).



20 6324

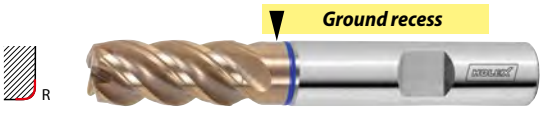
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
20 6324										150	110	90	80								●	●

Ø D_c / R_1	11X	20 6324	L_c	R_1	L_1	Ø D_1	L	Ø D_s	< 70 HRC f_z	< 70 HRC f_z
		Solid carbide torus cutter HPC								
mm		TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
6/0,5		eShop	6	0.5	18	5.85	50	6	0.048	0.048
8/0,5		eShop	8	0.5	24	7.85	60	8	0.06	0.06
10/1,0		eShop	10	1	30	9.7	70	10	0.07	0.07
12/1,0		eShop	12	1	36	11.7	75	12	0.08	0.08

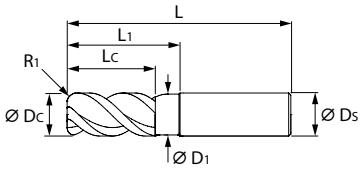
Solid carbide | Standard | Type N | e8 | 4 | 38° | ≠ | a_e 0.3×D | a_e 0.05×D | h6 DIN 6535 HB | HPC

HOLEX Pro INOX M solid carbide torus cutters HPC

Outstanding tool life in its class for machining **corrosion-resistant steels** thanks to **innovative coating and geometry.**
Especially for **stainless steels in the high-performance range,** e.g. duplex.
Optimal metal removal rate due to **high cutting speeds.**
Tolerance: corner radius **R_1 = ±0.005 mm.** Dimensions similar to DIN 6527.



20 6344



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 6344				240	220	180	180	150						115	80	100	85	○		●	●	○	○

$Ø D_c / R_1$	12Y 20 6344 HOLEX Pro Inox M solid carbide torus cutter HPC	L_c	R_1	L_1	$Ø D_1$	L	$Ø D_s$	INOX > 900 N f_z	INOX > 900 N f_z
mm	TiSiN	mm	mm	mm	mm	mm	mm	mm	mm
4/0,5	eShop	11	0.5	17	3.8	57	6	0.015	0.019
4/1,0	eShop	11	1	17	3.8	57	6	0.015	0.019
5/0,5	eShop	13	0.5	19	4.8	57	6	0.03	0.035
5/1,0	eShop	13	1	19	4.8	57	6	0.03	0.035
6/0,5	eShop	13	0.5	19	5.8	57	6	0.04	0.045
6/1,0	eShop	13	1	19	5.8	57	6	0.04	0.045
6/1,5	eShop	13	1.5	19	5.8	57	6	0.04	0.045
8/0,5	eShop	21	0.5	25	7.7	63	8	0.05	0.058
8/1,0	eShop	21	1	25	7.7	63	8	0.05	0.058
8/2,0	eShop	21	2	25	7.7	63	8	0.05	0.058
10/0,5	eShop	22	0.5	30	9.7	72	10	0.055	0.063
10/1,0	eShop	22	1	30	9.7	72	10	0.055	0.063
10/2,0	eShop	22	2	30	9.7	72	10	0.055	0.063
12/0,5	eShop	26	0.5	36	11.6	83	12	0.06	0.072
12/1,0	eShop	26	1	36	11.6	83	12	0.06	0.072
12/2,0	eShop	26	2	36	11.6	83	12	0.06	0.072
12/3,0	eShop	26	3	36	11.6	83	12	0.06	0.072
16/2,0	eShop	36	2	42	15.5	92	16	0.08	0.09

20

Hoffmann Group ToolScout

- Quick application-related tool selection.
- Direct ordering in the eShop.
- Manufacturer and standard-related tool selection.
- Cutting data - direct selection.
- Tool information for reliable engineering.

You can find optimum cutting data, machining strategy and NC programs for your machine programming in the ThreadScout.



Solid carbide | Standard | Type N | HPC | a_e 0.3×D

GARANT Master INOX / HOLEX Pro INOX solid carbide torus cutter HPC

Dimensions similar to DIN 6527.
HPC milling cutter with **newly developed high-performance coating.**
For **outstanding tool life** and **optimum metal removal rate** in a very wide range of stainless steels.

20 6348 – For use at **high cutting speeds**, particularly suitable even for steels up to approx. 1100 N/mm².

20 6345/6347 – Can be used at **high cutting speeds**, particularly suitable even for TOOLOX®.

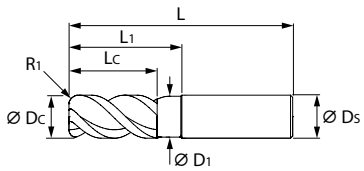
Advantage:

20 6345/6347 – **Greater oxidation resistance and high-temperature hardness.**









Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M						
20 6345/6347				250	230	200	180	170						115	80	110	90	○		●	●	○	●
20 6348				240	220	180	180	150						115	80	100	85	○		●	○	○	○

Ø D_c / R_1	11x 20 6345 Garant GARANT Master INOX solid carbide torus cutter HPC DIN 6535 HA TiAlN	11x 20 6347 Garant GARANT Master INOX solid carbide torus cutter HPC DIN 6535 HB TiAlN	12x 20 6348 HOLEX HOLEX Pro Inox solid carbide torus cutter HPC DIN 6535 HB AlCrN	L_c 20 6345 20 6347	L_c 20 6348	R_1	L_1 20 6345 20 6347	L_1 20 6348	Ø D_1 20 6345 20 6347	Ø D_1 20 6348	L	Ø D_s	INOX > 900 N f_z	INOX > 900 N f_z
mm				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3/0,3	eShop	eShop	–	8	–	0.3	14	–	2.9	–	57	6	0.015	0.018
3/0,5	eShop	eShop	–	8	–	0.5	14	–	2.9	–	57	6	0.015	0.018
4/0,4	eShop	eShop	eShop	11	11	0.4	16	17	3.6	3.8	57	6	0.02	0.025
4/0,5	eShop	eShop	eShop	11	11	0.5	16	17	3.6	3.8	57	6	0.02	0.025
4/1,0	eShop	eShop	eShop	11	11	1	16	17	3.6	3.8	57	6	0.02	0.025
5/0,5	eShop	eShop	eShop	13	13	0.5	18	19	4.6	4.8	57	6	0.025	0.031
5/1,0	eShop	eShop	eShop	13	13	1	18	19	4.6	4.8	57	6	0.025	0.031
6/0,5	eShop	eShop	eShop	13	13	0.5	21	19	5.5	5.8	57	6	0.03	0.037
6/1,0	eShop	eShop	eShop	13	13	1	21	19	5.5	5.8	57	6	0.03	0.037
6/1,5	eShop	eShop	eShop	13	13	1.5	21	19	5.5	5.8	57	6	0.03	0.037
8/0,5	eShop	eShop	eShop	16	21	0.5	27	25	7.5	7.7	63	8	0.035	0.043
8/1,0	eShop	eShop	eShop	16	21	1	27	25	7.5	7.7	63	8	0.035	0.043
8/1,5	eShop	eShop	eShop	16	21	1.5	27	25	7.5	7.7	63	8	0.035	0.043
8/2,0	eShop	eShop	eShop	16	21	2	27	25	7.5	7.7	63	8	0.035	0.043
8/2,5	eShop	eShop	eShop	16	21	2.5	27	25	7.5	7.7	63	8	0.035	0.043
8/3,0	eShop	eShop	eShop	16	21	3	27	25	7.5	7.7	63	8	0.035	0.043
10/0,5	eShop	eShop	eShop	22	22	0.5	32	30	9.5	9.7	72	10	0.04	0.049
10/1,0	eShop	eShop	eShop	22	22	1	32	30	9.5	9.7	72	10	0.04	0.049
10/1,5	eShop	eShop	eShop	22	22	1.5	32	30	9.5	9.7	72	10	0.04	0.049
10/2,0	eShop	eShop	eShop	22	22	2	32	30	9.5	9.7	72	10	0.04	0.049
10/2,5	eShop	eShop	eShop	22	22	2.5	32	30	9.5	9.7	72	10	0.04	0.049
10/3,0	eShop	eShop	eShop	22	22	3	32	30	9.5	9.7	72	10	0.04	0.049
12/0,5	eShop	eShop	eShop	26	26	0.5	38	36	11.5	11.6	83	12	0.05	0.062
12/1,0	eShop	eShop	eShop	26	26	1	38	36	11.5	11.6	83	12	0.05	0.062
12/1,5	eShop	eShop	eShop	26	26	1.5	38	36	11.5	11.6	83	12	0.05	0.062
12/2,0	eShop	eShop	eShop	26	26	2	38	36	11.5	11.6	83	12	0.05	0.062
12/2,5	eShop	eShop	eShop	26	26	2.5	38	36	11.5	11.6	83	12	0.05	0.062
12/3,0	eShop	eShop	eShop	26	26	3	38	36	11.5	11.6	83	12	0.05	0.062
12/4,0	eShop	eShop	eShop	26	26	4	38	36	11.5	11.6	83	12	0.05	0.062
16/0,5	eShop	eShop	eShop	32	36	0.5	44	42	15	15.5	92	16	0.07	0.086
16/1,0	eShop	eShop	eShop	32	36	1	44	42	15	15.5	92	16	0.07	0.086
16/2,0	eShop	eShop	eShop	32	36	2	44	42	15	15.5	92	16	0.07	0.086
16/2,5	eShop	eShop	eShop	32	36	2.5	44	42	15	15.5	92	16	0.07	0.086
16/3,0	eShop	eShop	eShop	32	36	3	44	42	15	15.5	92	16	0.07	0.086
16/4,0	eShop	eShop	eShop	32	36	4	44	42	15	15.5	92	16	0.07	0.086
20/1,0	eShop	eShop	eShop	38	41	1	54	52	19	19.5	104	20	0.09	0.111
20/2,0	eShop	eShop	eShop	38	41	2	54	52	19	19.5	104	20	0.09	0.111
20/3,0	eShop	eShop	eShop	38	41	3	54	52	19	19.5	104	20	0.09	0.111
20/4,0	eShop	eShop	eShop	38	41	4	54	52	19	19.5	104	20	0.09	0.111

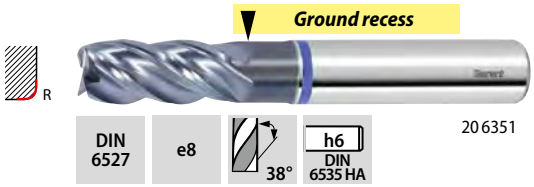
Solid carbide | Type N | HPC

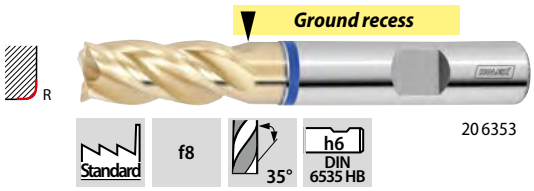
Solid carbide torus cutter HPC

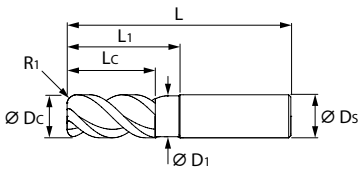
20 6351 – Dimensions to DIN 6527 and 38° flutes.
Tolerance: Corner radius R_1 = **±0.005 mm.**

20 6353 – Dimensions to factory standard and 35° spiral.
Special TiSi coating.
With balancing speed G 2.5.

Note: **NEW GENERATION AVAILABLE!**
20 6351 – **Recommended successor product is No. 206345**
20 6353 – **Recommended successor product is No. 206348**







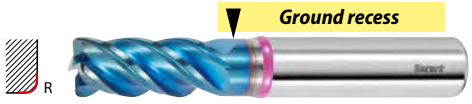
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S						
20 6351				250	230	200	180	170					115	80	90	80	50	○		●	●	○	○
20 6353				250	230	200	180	170					115	80	90	80		○		●	●	○	○

Ø D_c / R_1	11X 20 6351 Garant	12X 20 6353 HOLEX	L_c		R_1	L_1		Ø D_1		L	Ø D_s	INOX > 900 N f_z	INOX > 900 N f_z
	Solid carbide torus cutter												
	HPC DIN 6535 HA	HPC DIN 6535 HB	20 6351	20 6353		20 6351	20 6353	20 6351	20 6353				
mm	TiAlN	TiSi	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4/0,4	eShop	–	12	–	0.4	16	–	3.6	–	57	6	0.016	0.02
4/0,5	eShop	eShop	12	11	0.5	16	17	3.6	3.8	57	6	0.014	0.018
4/1,0	eShop	–	12	–	1	16	–	3.6	–	57	6	0.013	0.016
5/0,5	eShop	–	13	–	0.5	18	–	4.6	–	57	6	0.026	0.032
5/1,0	eShop	eShop	13	13	1	18	19	4.6	4.8	57	6	0.023	0.03
6/0,5	eShop	eShop	13	13	0.5	21	19	5.5	5.8	57	6	0.033	0.04
6/1,0	eShop	eShop	13	13	1	21	19	5.5	5.8	57	6	0.03	0.037
6/1,5	eShop	–	13	–	1.5	21	–	5.5	–	57	6	0.026	0.032
8/0,5	eShop	eShop	16	21	0.5	27	25	7.5	7.7	63	8	0.04	0.048
8/1,0	eShop	eShop	16	21	1	27	25	7.5	7.7	63	8	0.035	0.043
8/1,5	eShop	–	16	–	1.5	27	–	7.5	–	63	8	0.03	0.037
8/2,0	eShop	–	16	–	2	27	–	7.5	–	63	8	0.026	0.032
8/2,5	eShop	–	16	–	2.5	27	–	7.5	–	63	8	0.024	0.03
8/3,0	eShop	–	16	–	3	27	–	7.5	–	63	8	0.022	0.028
10/0,5	eShop	eShop	22	22	0.5	32	30	9.5	9.7	72	10	0.052	0.064
10/1,0	eShop	eShop	22	22	1	32	30	9.5	9.7	72	10	0.048	0.06
10/1,5	eShop	–	22	–	1.5	32	–	9.5	–	72	10	0.043	0.053
10/2,0	eShop	eShop	22	22	2	32	30	9.5	9.7	72	10	0.04	0.048
10/2,5	eShop	–	22	–	2.5	32	–	9.5	–	72	10	0.037	0.044
10/3,0	eShop	–	22	–	3	32	–	9.5	–	72	10	0.035	0.04
12/0,5	eShop	eShop	26	26	0.5	38	36	11.5	11.6	83	12	0.065	0.08
12/1,0	eShop	eShop	26	26	1	38	36	11.5	11.6	83	12	0.06	0.075
12/1,5	eShop	–	26	–	1.5	38	–	11.5	–	83	12	0.058	0.072
12/2,0	eShop	eShop	26	26	2	38	36	11.5	11.6	83	12	0.056	0.07
12/2,5	eShop	–	26	–	2.5	38	–	11.5	–	83	12	0.055	0.068
12/3,0	eShop	–	26	–	3	38	–	11.5	–	83	12	0.054	0.066
12/4,0	eShop	eShop	26	26	4	38	36	11.5	11.6	83	12	0.052	0.064
16/0,5	eShop	–	32	–	0.5	44	–	15	–	92	16	0.078	0.096
16/1,0	eShop	eShop	32	36	1	44	42	15	15.5	92	16	0.078	0.096
16/2,0	eShop	eShop	32	36	2	44	42	15	15.5	92	16	0.072	0.088
16/2,5	eShop	–	32	–	2.5	44	–	15	–	92	16	0.07	0.085
16/3,0	eShop	–	32	–	3	44	–	15	–	92	16	0.067	0.083
16/4,0	eShop	eShop	32	36	4	44	42	15	15.5	92	16	0.065	0.08
20/1,0	eShop	eShop	38	41	1	55	52	19	19.5	104	20	0.09	0.13
20/2,0	eShop	eShop	38	41	2	55	52	19	19.5	104	20	0.085	0.105
20/3,0	eShop	–	38	–	3	55	–	19	–	104	20	0.082	0.1
20/4,0	eShop	eShop	38	41	4	55	52	19	19.5	104	20	0.078	0.096

Solid carbide | Type N | HPC

GARANT Master Titan solid carbide torus cutter HPC / GARANT Master Ni-Based solid carbide torus cutter HPC

DIN 6527 | e8 | 4 | 40° | a_e 0.3×D | h6 DIN 6535 HA



20 6364

20 6364 – Tolerance: Corner radius R_1 = ±0.005 mm.

20 6371/6373 – Innovative substrate specially for machining **nickel-based alloys.** Newly developed coating.

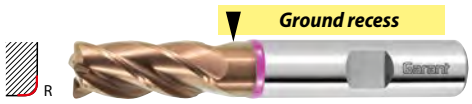
Application:

20 6364 – For milling **titanium and titanium alloys;** with very smooth cutting action for optimum tool life and top metal removal rate.

20 6373 – For finishing operations.

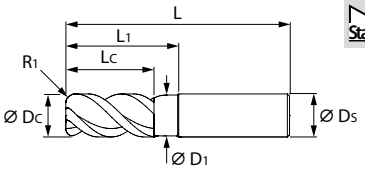
20 6371/6373 – For milling **nickel-based alloys with high red hardness.**

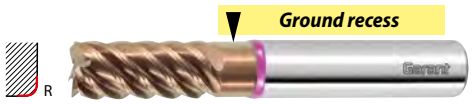
DIN 6527 | f8 | 4 | 5 | 35° | a_e 0.3×D | h6 DIN 6535 HB



20 6371

Standard | f8 | 6 | 8 | 50° | a_e 0.1×D | h6 DIN 6535 HA





20 6373

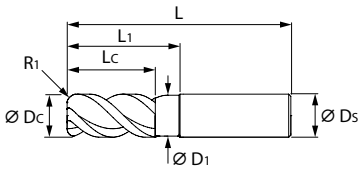
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	N					
20 6364																60			●				
20 6371																	40		●				
20 6373																	50		●				

Ø D_c / R_1	11Z 20 6364 GARANT Master Titan solid carbide torus cutter HPC TiAlN	11Z 20 6371 GARANT Master Ni-Based torus cutter HPC TiAlN	No. of teeth Z		L_c		R_1	L_1	Ø D_1	L	Ø D_s	Ti > 850 N f_z		Inconel® f_z		Ti > 850 N f_z	
			20 6364	20 6371	20 6364	20 6371						20 6364		20 6371		20 6364	
mm					mm	mm	mm	mm	mm	mm	mm	mm		mm		mm	
4/0,5	eShop	eShop	4	4	11	11	0.5	16	3.8	57	6	0.018		0.018		0.02	
5/1,0	eShop	eShop	4	4	13	13	1	18	4.8	57	6	0.022		0.022		0.03	
6/0,5	eShop	eShop	4	4	13	13	0.5	20	5.8	57	6	0.026		0.026		0.03	
6/1,0	eShop	eShop	4	4	13	13	1	20	5.8	57	6	0.026		0.026		0.03	
8/0,5	eShop	–	4	–	19	–	0.5	25	7.7	63	8	0.034		–		0.046	
8/1,0	eShop	eShop	4	4	19	21	1	25	7.7	63	8	0.034		0.034		0.046	
10/0,5	eShop	eShop	4	4	22	22	0.5	32	9.7	72	10	0.042		0.042		0.055	
10/1,0	eShop	eShop	4	4	22	22	1	32	9.7	72	10	0.042		0.042		0.055	
10/2,0	eShop	eShop	4	4	22	22	2	32	9.7	72	10	0.042		0.042		0.055	
12/0,5	eShop	eShop	4	4	26	26	0.5	38	11.6	83	12	0.05		0.05		0.07	
12/1,0	eShop	eShop	4	4	26	26	1	38	11.6	83	12	0.05		0.05		0.07	
12/2,0	eShop	–	4	–	26	–	2	38	11.6	83	12	0.05		–		0.07	
12/2,5	eShop	eShop	4	4	26	26	2.5	38	11.6	83	12	0.05		0.05		0.07	
12/3,0	eShop	–	4	–	26	–	3	38	11.6	83	12	0.05		–		0.07	
16/1,0	eShop	eShop	4	5	32	36	1	44	15.5	92	16	0.065		0.065		0.08	
16/2,0	eShop	–	4	–	32	–	2	44	15.5	92	16	0.065		–		0.08	
16/2,5	eShop	eShop	4	5	32	36	2.5	44	15.5	92	16	0.065		0.065		0.08	
16/3,0	eShop	–	4	–	32	–	3	44	15.5	92	16	0.065		–		0.08	
16/4,0	eShop	–	4	–	32	–	4	44	15.5	92	16	0.065		–		0.08	
20/1,0	eShop	eShop	4	5	41	41	1	54	19.5	104	20	0.08		0.08		0.1	
20/2,0	eShop	–	4	–	41	–	2	54	19.5	104	20	0.08		–		0.1	
20/2,5	eShop	eShop	4	5	41	41	2.5	54	19.5	104	20	0.08		0.08		0.1	

Ø f8 Ø D_c / R_1	11Z 20 6373 GARANT Master Ni-Based torus cutter HPC TiAlN	No. of teeth Z	L_c	R_1	L_1	Ø D_1	L	Ø D_s	Inconel® f_z
mm			mm	mm	mm	mm	mm	mm	mm
6/0,5	eShop	6	19	0.5	25	5.8	63	6	0.03
6/1,0	eShop	6	19	1	25	5.8	63	6	0.03
8/0,5	eShop	6	25	0.5	33	7.8	71	8	0.035
8/1,0	eShop	6	25	1	33	7.8	71	8	0.035
10/0,5	eShop	6	31	0.5	41	9.8	83	10	0.04
10/1,0	eShop	6	31	1	41	9.8	83	10	0.04
12/0,5	eShop	6	37	0.5	47	11.8	94	12	0.05
12/1,0	eShop	6	37	1	47	11.8	94	12	0.05
16/1,0	eShop	8	49	1	61	15.8	111	16	0.06
16/2,0	eShop	8	49	2	61	15.8	111	16	0.06

Solid carbide | Type N | 4 | 38° | ≠ | ≠ | a_e 0.3×D | h6 DIN 6535 HB | HPC

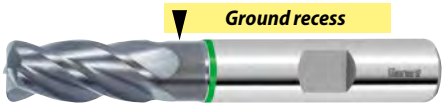
GARANT Master Steel / HOLEX Pro Steel solid carbide torus cutter HPC



20 6357 – Tolerance: Corner radius R_1 = ±0.03 mm.
20 6354/6359 – Tolerance: Corner radius R_1 = ±0.01 mm.

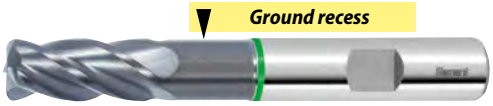
Advantage: HPC milling cutters will with various corner radii for all radial transitions.
Optimised flute form, eccentric relief ground, wide chip space.

DIN 6527 | f8 | R



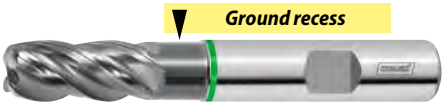
20 6354

Standard | f8 | R



20 6359

Standard | 0 −0.03 | R



20 6357

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 6354/6359				260	240	190	180	150						80	70		250	●		●	○	●	●
20 6357				260	240	180	160							80			250	●		●	○	●	●

Ø D_c / R_1	11X 20 6354 Garant GARANT Master Steel solid carbide torus cutter HPC	11X 20 6359 Garant GARANT Master Steel solid carbide torus cutter HPC	12X 20 6357 HOLEX HOLEX Pro Steel solid carbide torus cutter HPC	L_c		R_1	L_1			Ø D_1			L		Ø D_s	< 900 N f_z	< 900 N f_z
				20 6354 20 6359	20 6357		20 6354	20 6359	20 6357	20 6354	20 6359	20 6357	20 6354 20 6357	20 6359			
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4/0,4	eShop	–	–	11	–	0.4	–	–	–	–	–	–	57	–	6	0.02	0.025
4/0,5	eShop	eShop	eShop	11	11	0.5	–	22	15	–	3.8	3.8	57	62	6	0.02	0.025
4/1,0	eShop	eShop	eShop	11	11	1	–	22	15	–	3.8	3.8	57	62	6	0.02	0.025
5/0,5	eShop	eShop	eShop	13	13	0.5	–	24	17	–	4.8	4.8	57	62	6	0.03	0.04
5/1,0	eShop	eShop	eShop	13	13	1	–	24	17	–	4.8	4.8	57	62	6	0.03	0.04
6/0,5	eShop	eShop	eShop	13	13	0.5	20	25	21	5.8	5.8	5.5	57	62	6	0.04	0.05
6/1,0	eShop	eShop	eShop	13	13	1	20	25	21	5.8	5.8	5.5	57	62	6	0.04	0.05
6/1,5	eShop	–	eShop	13	13	1.5	20	–	21	5.8	–	5.5	57	–	6	0.04	0.05
6/2,0	eShop	eShop	eShop	13	13	2	20	25	21	5.8	5.8	5.5	57	62	6	0.04	0.05
8/0,5	eShop	–	eShop	21	19	0.5	25	–	27	7.8	–	7.5	63	–	8	0.05	0.06
8/1,0	eShop	eShop	eShop	21	19	1	25	30	27	7.8	7.7	7.5	63	68	8	0.05	0.06
8/1,5	eShop	–	eShop	21	19	1.5	25	–	27	7.8	–	7.5	63	–	8	0.05	0.06
8/2,0	eShop	eShop	eShop	21	19	2	25	30	27	7.8	7.7	7.5	63	68	8	0.05	0.06
8/2,5	eShop	–	–	21	–	2.5	25	–	–	7.8	–	–	63	–	8	0.05	0.06
8/3,0	eShop	–	–	21	–	3	25	–	–	7.8	–	–	63	–	8	0.05	0.06
10/0,5	eShop	eShop	eShop	22	22	0.5	30	38	32	9.8	9.7	9.5	72	80	10	0.06	0.08
10/1,0	eShop	eShop	eShop	22	22	1	30	38	32	9.8	9.7	9.5	72	80	10	0.06	0.08
10/1,5	eShop	eShop	eShop	22	22	1.5	30	38	32	9.8	9.7	9.5	72	80	10	0.06	0.08
10/2,0	eShop	eShop	eShop	22	22	2	30	38	32	9.8	9.7	9.5	72	80	10	0.06	0.08
10/2,5	eShop	–	–	22	–	2.5	30	–	–	9.8	–	–	72	–	10	0.06	0.08
10/3,0	eShop	eShop	–	22	–	3	30	38	–	9.8	9.7	–	72	80	10	0.06	0.08
12/0,5	eShop	eShop	eShop	26	26	0.5	36	46	38	11.8	11.6	11.5	83	93	12	0.07	0.09
12/1,0	eShop	eShop	eShop	26	26	1	36	46	38	11.8	11.6	11.5	83	93	12	0.07	0.09
12/1,5	eShop	eShop	eShop	26	26	1.5	36	46	38	11.8	11.6	11.5	83	93	12	0.07	0.09
12/2,0	eShop	eShop	eShop	26	26	2	36	46	38	11.8	11.6	11.5	83	93	12	0.07	0.09
12/2,5	eShop	–	–	26	–	2.5	36	–	–	11.8	–	–	83	–	12	0.07	0.09
12/3,0	eShop	eShop	eShop	26	26	3	36	46	38	11.8	11.6	11.5	83	93	12	0.07	0.09
12/4,0	eShop	–	–	26	–	4	36	–	–	11.8	–	–	83	–	12	0.07	0.09
16/0,5	eShop	eShop	eShop	36	32	0.5	42	58	44	15.8	15.5	15.5	92	108	16	0.08	0.1
16/1,0	eShop	eShop	eShop	36	32	1	42	58	44	15.8	15.5	15.5	92	108	16	0.08	0.1
16/2,0	eShop	eShop	eShop	36	32	2	42	58	44	15.8	15.5	15.5	92	108	16	0.08	0.1
16/2,5	eShop	–	–	36	–	2.5	42	–	–	15.8	–	–	92	–	16	0.08	0.1
16/3,0	eShop	–	–	36	–	3	42	–	–	15.8	–	–	92	–	16	0.08	0.1
16/4,0	eShop	eShop	eShop	36	32	4	42	58	44	15.8	15.5	15.5	92	108	16	0.08	0.1
20/1,0	eShop	eShop	eShop	41	38	1	52	74	54	19.8	19.5	19.5	104	126	20	0.1	0.13
20/2,0	eShop	eShop	eShop	41	38	2	52	74	54	19.8	19.5	19.5	104	126	20	0.1	0.13
20/3,0	eShop	–	–	41	–	3	52	–	–	19.8	–	–	104	–	20	0.1	0.13
20/4,0	eShop	eShop	eShop	41	38	4	52	74	54	19.8	19.5	19.5	104	126	20	0.1	0.13

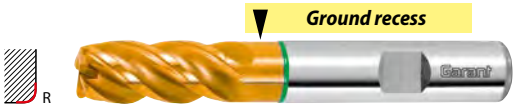
Solid carbide | Standard | Type N | e8 | 4 | 42° | ≠ | a_e 0.3×D | a_e 0.05×D | h6 DIN 6535 HB | HPC

GARANT Master Uni solid carbide torus cutter HPC / HOLEX Pro UNI solid carbide torus cutter HPC

For **roughing and finishing at very high feed rates** with smooth cutting action.
Newly developed geometry and high-performance coating for outstanding production results and very long tool life with a variety of materials.
Unequal spacing gives **high intrinsic stability** and smooth cutting action.
Tolerance: corner radius **R_1 = ±0.005 mm.**
Dimensions similar to **DIN 6527.**

Advantage:

20 6367 –
- Particularly low vibration running.
- Special flute profile, large flutes.
- Specially matched edge honing.
- Optimised substrate for hardness and toughness.



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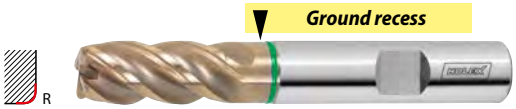
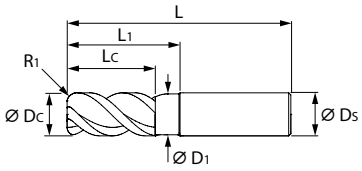


20 6368



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 6367		280		260	240	190	180	150						90	80	40	250	●		●	○	●	●
20 6368		250		240	220	180	170	140						90	80	35	240	●		●	○	●	●

Ø D_c / R_1	117 20 6367 Garant GARANT Master UNI solid carbide torus cutter TiSiN	127 20 6368 HOLEX HOLEX Pro UNI solid carbide torus cutter TiSiN	L_c	R_1	L_1 20 6367	L_1 20 6368	Ø D_1	L	Ø D_s	INOX < 900 N f_z	INOX > 900 N f_z	< 900 N f_z	INOX > 900 N f_z
mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4/0,5	eShop	eShop	11	0.5	17	17	3.8	57	6	0.025	0.015	0.03	0.19
4/1,0	eShop	eShop	11	1	17	17	3.8	57	6	0.025	0.015	0.03	0.19
5/0,5	eShop	–	13	0.5	19	–	4.8	57	6	0.04	0.03	0.045	0.035
5/1,0	eShop	–	13	1	19	–	4.8	57	6	0.04	0.03	0.045	0.035
6/0,5	eShop	eShop	13	0.5	21	19	5.8	57	6	0.05	0.035	0.058	0.04
6/1,0	eShop	eShop	13	1	21	19	5.8	57	6	0.05	0.035	0.058	0.04
6/1,5	eShop	–	13	1.5	21	–	5.8	57	6	0.05	0.035	0.058	0.04
6/2,0	eShop	eShop	13	2	21	19	5.8	57	6	0.05	0.035	0.058	0.04
8/0,5	eShop	eShop	21	0.5	27	25	7.7	63	8	0.06	0.04	0.07	0.045
8/1,0	eShop	eShop	21	1	27	25	7.7	63	8	0.06	0.04	0.07	0.045
8/1,5	eShop	–	21	1.5	27	–	7.7	63	8	0.06	0.04	0.07	0.045
8/2,0	eShop	eShop	21	2	27	25	7.7	63	8	0.06	0.04	0.07	0.045
8/2,5	eShop	–	21	2.5	27	–	7.7	63	8	0.06	0.04	0.07	0.045
8/3,0	eShop	–	21	3	27	–	7.7	63	8	0.06	0.04	0.07	0.045
10/0,5	eShop	eShop	22	0.5	32	30	9.7	72	10	0.08	0.05	0.09	0.058
10/1,0	eShop	eShop	22	1	32	30	9.7	72	10	0.08	0.05	0.09	0.058
10/1,5	eShop	–	22	1.5	32	–	9.7	72	10	0.08	0.05	0.09	0.058
10/2,0	eShop	eShop	22	2	32	30	9.7	72	10	0.08	0.05	0.09	0.058
10/3,0	eShop	–	22	3	32	–	9.7	72	10	0.08	0.05	0.09	0.058
12/0,5	eShop	eShop	26	0.5	38	36	11.6	83	12	0.09	0.055	0.11	0.067
12/1,0	eShop	eShop	26	1	38	36	11.6	83	12	0.09	0.055	0.11	0.067
12/1,5	eShop	–	26	1.5	38	–	11.6	83	12	0.09	0.055	0.11	0.067
12/2,0	eShop	eShop	26	2	38	36	11.6	83	12	0.09	0.055	0.11	0.067
12/3,0	eShop	eShop	26	3	38	36	11.6	83	12	0.09	0.055	0.11	0.067
12/4,0	eShop	–	26	4	38	–	11.6	83	12	0.09	0.055	0.11	0.067
16/0,5	eShop	–	36	0.5	44	–	15.5	92	16	0.1	0.06	0.125	0.075
16/1,0	eShop	–	36	1	44	–	15.5	92	16	0.1	0.06	0.125	0.075
16/2,0	eShop	eShop	36	2	44	42	15.5	92	16	0.1	0.06	0.125	0.075

Solid carbide | Type H | e8 | a_e 0.05×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

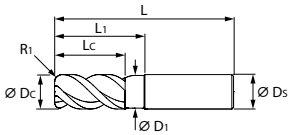
6 | 8 | 10

Garant GARANT Diabolo solid carbide torus cutter HRC 62 / GARANT Diabolo solid carbide torus cutter HPC

GARANT Diabolo:
Special geometry, coating and carbide for hard machining.
Tolerance: Corner radius R_1 = **±0.005 mm.**

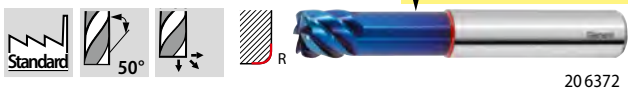
20 6421/6372 – Without dynamic twist pitch.
20 6372 – Dimensions according to factory standard and 50° helix. Double relief ground side clearance angle.
20 6421 – Dimensions according to factory standard and 50° helix. Double relief ground side clearance angle.
20 6422/6442 – Tolerance: Corner radius **RS_1 = ± 0.005 mm.**

Application:
20 6422/6442 – **For peripheral milling** as a **finishing operation** (plunge milling only to shallow depths).

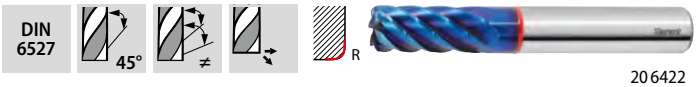




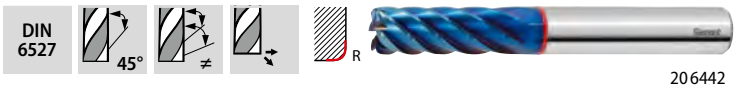
20 6421



20 6372



20 6422



20 6442

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N				
20 6372								**200**	**190**	**170**	**150**	110							○	○	●	●
20 6421								170	150	**130**	**100**	**80**	65							○	●	●
20 6422								**170**	**170**	**170**	**145**	100							○	○	●	●
20 6442								**150**	**150**	**150**	**125**	80							○	○	●	●

Ø e8 D_c / R_1	11Z 20 6421 GARANT Diabolo solid carbide torus cutter HRC 62 HPC TiSiN	11X 20 6372 GARANT Diabolo solid carbide torus cutter HPC TiAlN	No. of teeth Z	L_c	R_1	L_1	Ø D_1	L	Ø D_s	< 60 HRC f_z 20 6421	< 60 HRC f_z 20 6421	< 65 HRC f_z
mm				mm	mm	mm	mm	mm	mm	mm	mm	mm
6/0,5	eShop	eShop	6	7	0.5	21	5.5	57	6	0.035	0.05	0.048
6/0,8	–	eShop	6	7	0.8	21	5.5	57	6	–	–	0.048
6/1,0	eShop	eShop ■	6	7	1	21	5.5	57	6	0.035	0.05	0.048
6/1,5	eShop	eShop	6	7	1.5	21	5.5	57	6	0.035	0.05	0.048
8/0,5	eShop	eShop	6	9	0.5	27	7.4	63	8	0.04	0.06	0.06
8/0,8	–	eShop	6	9	0.8	27	7.4	63	8	–	–	0.06
8/1,0	eShop	eShop	6	9	1	27	7.4	63	8	0.04	0.06	0.06
8/1,5	eShop	eShop	6	9	1.5	27	7.4	63	8	0.04	0.06	0.06
8/2,0	eShop	eShop	6	9	2	27	7.4	63	8	0.04	0.06	0.06
8/3,0	–	eShop	6	9	3	27	7.4	63	8	–	–	0.06
10/0,5	eShop	eShop	6	11	0.5	32	9.2	72	10	0.045	0.07	0.07
10/0,8	–	eShop	6	11	0.8	32	9.2	72	10	–	–	0.07
10/1,0	eShop	eShop	6	11	1	32	9.2	72	10	0.045	0.07	0.07
10/1,5	–	eShop	6	11	1.5	32	9.2	72	10	–	–	0.07
10/2,0	eShop	eShop	6	11	2	32	9.2	72	10	0.045	0.07	0.07
10/3,0	–	eShop	6	11	3	32	9.2	72	10	–	–	0.07
12/0,5	eShop	eShop	6	12	0.5	38	11	83	12	0.05	0.075	0.08
12/1,0	eShop	eShop	6	12	1	38	11	83	12	0.05	0.075	0.08
12/1,5	–	eShop	6	12	1.5	38	11	83	12	–	–	0.08
12/2,0	eShop	eShop	6	12	2	38	11	83	12	0.05	0.075	0.08
12/3,0	–	eShop	6	12	3	38	11	83	12	–	–	0.08
16/2,0	eShop	eShop	6	16	2	44	15	92	16	0.06	0.085	0.09
16/3,0	–	eShop	6	16	3	44	15	92	16	–	–	0.09

Ø e8 D_c / R_1	11X 20 6422 GARANT Diabolo solid carbide torus cutter HPC TiAlN	11X 20 6442 GARANT Diabolo solid carbide torus cutter HPC TiAlN	No. of teeth Z	L_c 20 6422	L_c 20 6442	R_1	L 20 6422	L 20 6442	Ø D_s	< 65 HRC f_z
mm				mm	mm	mm	mm	mm	mm	mm
6/0,5	eShop	eShop	6	16	18	0.5	57	65	6	0.015
6/1,0	eShop	eShop	6	16	18	1	57	65	6	0.015
8/0,5	eShop	eShop	6	19	24	0.5	63	70	8	0.018
8/1,0	eShop	eShop	6	19	24	1	63	70	8	0.018
10/0,5	eShop	eShop	6	25	30	0.5	72	85	10	0.019
10/1,0	eShop	eShop	6	25	30	1	72	85	10	0.019
10/1,5	eShop	eShop	6	25	30	1.5	72	85	10	0.019
12/0,5	eShop	eShop	6	28	36	0.5	83	93	12	0.023
12/1,0	eShop ■	eShop	6	28	36	1	83	93	12	0.023
12/1,5	eShop	–	6	28	–	1.5	83	–	12	0.023
16/1,0	eShop	eShop	8	36	48	1	92	110	16	0.025
16/2,0	eShop	eShop	8	36	48	2	92	110	16	0.025
20/1,0	eShop	eShop	10	41	60	1	104	126	20	0.03

Solid carbide | Standard | Type W | 0 −0.005 | 2 | a_e 0.05×D | h5 DIN 6535 HA

25° 30°
≤ 0.8 mm ≥ 1 mm

Garant Solid carbide micro precision copy slot drill

With **advanced DLC sp² coating.** For the **highest demands regarding performance and precision in aluminium materials. Extremely tight tolerances** ensure maximum accuracy. Double-relief ground with 2 chamfers.

Tolerances:

- Corner radius: **Radius contour = 0 / -0.005 mm.**
- Neck ∅: **D_1 = 0 / -0.01 mm.**

20 7023 – Recess angle α = 16°.
20 7025 – Recess angle α = 16°.
Extra-sturdy shank to reduce the tendency to vibrate.

Note: At greater tool overhang lengths, use a reduced value for a_p!
values for:
copying: $a_p = 0.25 \times D \times a_{p\,korr}$
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)!
e.g: vf = 18000 [rpm]× fz [mm/Z]× z

Ground recess

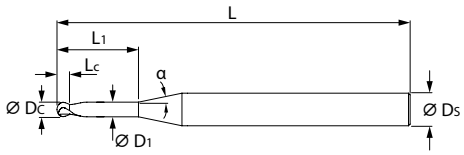


20 7023_2×10

Ground recess



20 7025_2×10



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 7023/7025	480	440	400	200	160	200	150	130		180	160	150	130	160		300	160	200		●	●	○	●

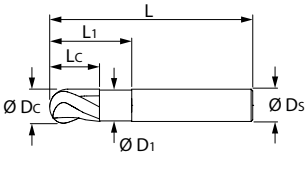
∅ D_c × L_1	11X 20 7023	11X 20 7025	L_c	L_1	∅ D_1	L		∅ D_s		Alu cast > 10 % Si f_z		Correction factor $a_{p\,corr}$
	Solid carbide copy slot drill					20 7023	20 7025	20 7023	20 7025	20 7023	20 7025	
mm	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm	mm	
0,1×0,3	eShop	–	0.08	0.3	0.08	45	–	4	–	0.012	–	1
0,1×0,5	eShop	–	0.08	0.5	0.08	45	–	4	–	0.012	–	1
0,1×1	eShop	–	0.08	1	0.08	45	–	4	–	0.07	–	0.5
0,2×0,5	eShop	–	0.16	0.5	0.17	45	–	4	–	0.012	–	1
0,2×1	eShop	–	0.16	1	0.17	45	–	4	–	0.012	–	1
0,2×2	eShop	–	0.16	2	0.17	45	–	4	–	0.007	–	0.5
0,2×3	eShop	–	0.16	3	0.17	45	–	4	–	0.007	–	0.2
0,3×0,5	eShop	–	0.24	0.5	0.27	45	–	4	–	0.016	–	1
0,3×1	eShop	–	0.24	1	0.27	45	–	4	–	0.016	–	1
0,3×2	eShop	–	0.24	2	0.27	45	–	4	–	0.016	–	0.9
0,3×3	eShop	–	0.24	3	0.27	45	–	4	–	0.012	–	0.5
0,3×4	eShop	–	0.24	4	0.27	45	–	4	–	0.012	–	0.35
0,3×6	eShop	–	0.24	6	0.27	45	–	4	–	0.007	–	0.08
0,4×1	eShop	–	0.32	1	0.37	45	–	4	–	0.016	–	1
0,4×2	eShop	–	0.32	2	0.37	45	–	4	–	0.016	–	1
0,4×3	eShop	–	0.32	3	0.37	45	–	4	–	0.016	–	0.8
0,4×4	eShop	–	0.32	4	0.37	45	–	4	–	0.012	–	0.5
0,4×6	eShop	–	0.32	6	0.37	45	–	4	–	0.012	–	0.2
0,4×8	eShop	–	0.32	8	0.37	45	–	4	–	0.007	–	0.08
0,5×1	eShop	eShop	0.4	1	0.47	45	55	4	6	0.02	0.024	1
0,5×2	eShop	–	0.4	2	0.47	45	–	4	–	0.02	–	1
0,5×3	eShop	eShop ■	0.4	3	0.47	45	55	4	6	0.02	0.024	0.9
0,5×4	eShop	–	0.4	4	0.47	45	–	4	–	0.02	–	0.8
0,5×6	eShop	–	0.4	6	0.47	45	–	4	–	0.016	–	0.35
0,5×8	eShop	–	0.4	8	0.47	45	–	4	–	0.016	–	0.12
0,5×10	eShop	–	0.4	10	0.47	50	–	4	–	0.012	–	0.08
0,6×2	eShop	eShop	0.48	2	0.57	45	55	4	6	0.02	0.024	1
0,6×3	eShop	–	0.48	3	0.57	45	–	4	–	0.02	–	1
0,6×4	eShop	–	0.48	4	0.57	45	–	4	–	0.02	–	0.9
0,6×6	eShop	eShop	0.48	6	0.57	45	55	4	6	0.016	0.02	0.5
0,6×8	eShop	–	0.48	8	0.57	45	–	4	–	0.016	–	0.35
0,6×10	eShop	–	0.48	10	0.57	50	–	4	–	0.016	–	0.12
0,8×2	eShop	eShop	0.64	2	0.77	45	55	4	6	0.02	0.024	1
0,8×3	eShop	–	0.64	3	0.77	45	–	4	–	0.02	–	1
0,8×4	eShop	–	0.64	4	0.77	45	–	4	–	0.02	–	1
0,8×6	eShop	–	0.64	6	0.77	45	–	4	–	0.02	–	0.8
0,8×8	eShop	–	0.64	8	0.77	45	–	4	–	0.016	–	0.5

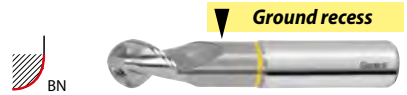
$\varnothing D_c \times L_1$	1 ℄ 20 7023	1 ℄ 20 7025	L_c	L_1	$\varnothing D_1$	L		$\varnothing D_s$		Alu cast > 10 % Si f_z		Correction factor $a_{p\,corr}$
	Solid carbide copy slot drill					20 7023	20 7025	20 7023	20 7025	20 7023	20 7025	
mm	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm	mm	
0,8×10	eShop	–	0.64	10	0.77	50	–	4	–	0.016	–	0.35
0,8×12	eShop	–	0.64	12	0.77	50	–	4	–	0.016	–	0.2
1×2	eShop	eShop	0.8	2	0.96	45	55	4	6	0.03	0.036	1
1×2,5	eShop	–	0.8	2.5	0.96	45	–	4	–	0.03	–	1
1×3	eShop	–	0.8	3	0.96	45	–	4	–	0.03	–	1
1×4	eShop	eShop	0.8	4	0.96	45	55	4	6	0.03	0.036	1
1×5	eShop	eShop ■	0.8	5	0.96	45	55	4	6	0.03	0.036	1
1×6	eShop	eShop	0.8	6	0.96	45	55	4	6	0.03	0.036	0.9
1×8	eShop	eShop	0.8	8	0.96	45	55	4	6	0.03	0.036	0.8
1×10	eShop	eShop	0.8	10	0.96	50	55	4	6	0.03	0.036	0.5
1×12	eShop	eShop	0.8	12	0.96	50	55	4	6	0.025	0.03	0.35
1×15	eShop	eShop	0.8	15	0.96	50	55	4	6	0.025	0.03	0.2
1×16	eShop	–	0.8	16	0.96	50	–	4	–	0.025	–	0.2
1×20	eShop	eShop	0.8	20	0.96	60	57	4	6	0.02	0.024	0.08
1×25	eShop	–	0.8	25	0.96	60	–	4	–	0.02	–	0.04
1×30	eShop	–	0.8	30	0.96	70	–	4	–	0.016	–	0.02
1,2×3	eShop	–	0.96	3	1.16	45	–	4	–	0.03	–	1
1,2×4	eShop	–	0.96	4	1.16	45	–	4	–	0.03	–	1
1,2×6	eShop	–	0.96	6	1.16	45	–	4	–	0.03	–	1
1,2×8	eShop	–	0.96	8	1.16	45	–	4	–	0.03	–	0.9
1,2×10	eShop	–	0.96	10	1.16	45	–	4	–	0.03	–	0.8
1,2×12	eShop	–	0.96	12	1.16	50	–	4	–	0.025	–	0.5
1,2×15	eShop	–	0.96	15	1.16	55	–	4	–	0.025	–	0.35
1,2×20	eShop	–	0.96	20	1.16	55	–	4	–	0.02	–	0.12
1,5×3	eShop	–	1.2	3	1.44	45	–	4	–	0.03	–	1
1,5×4	eShop	–	1.2	4	1.44	45	–	4	–	0.03	–	1
1,5×6	eShop	eShop ■	1.2	6	1.44	45	55	4	6	0.03	0.036	1
1,5×8	eShop	–	1.2	8	1.44	45	–	4	–	0.03	–	1
1,5×10	eShop	eShop	1.2	10	1.44	45	55	4	6	0.03	0.036	0.9
1,5×12	eShop	eShop	1.2	12	1.44	50	55	4	6	0.03	0.036	0.8
1,5×15	eShop	eShop	1.2	15	1.44	50	55	4	6	0.025	0.03	0.5
1,5×16	eShop	–	1.2	16	1.44	50	–	4	–	0.025	–	0.4
1,5×20	eShop	–	1.2	20	1.44	60	–	4	–	0.025	–	0.35
1,5×25	eShop	–	1.2	25	1.44	60	–	4	–	0.025	–	0.12
1,5×30	eShop	–	1.2	30	1.44	70	–	4	–	0.02	–	0.08
1,8×8	eShop	–	1.44	8	1.74	45	–	4	–	0.035	–	1
1,8×10	eShop	–	1.44	10	1.74	45	–	4	–	0.035	–	0.9
1,8×12	eShop	–	1.44	12	1.74	50	–	4	–	0.035	–	0.9
1,8×15	eShop	–	1.44	15	1.74	50	–	4	–	0.03	–	0.8
1,8×20	eShop	–	1.44	20	1.74	55	–	4	–	0.03	–	0.5
2×3	eShop	–	1.6	3	1.94	45	–	4	–	0.04	–	1
2×4	eShop	–	1.6	4	1.94	45	–	4	–	0.035	–	1
2×6	eShop	eShop	1.6	6	1.94	45	55	4	6	0.035	0.04	1
2×8	eShop	eShop	1.6	8	1.94	45	55	4	6	0.035	0.04	1
2×10	eShop	eShop ■	1.6	10	1.94	45	55	4	6	0.035	0.04	1
2×12	eShop	eShop	1.6	12	1.94	50	55	4	6	0.035	0.04	0.9
2×14	eShop	–	1.6	14	1.94	50	–	4	–	0.035	–	0.9
2×15	eShop	eShop	1.6	15	1.94	50	55	4	6	0.035	0.04	0.8
2×16	eShop	eShop	1.6	16	1.94	50	55	4	6	0.035	0.04	0.8
2×20	eShop	eShop	1.6	20	1.94	60	57	4	6	0.03	0.036	0.5
2×25	eShop	eShop	1.6	25	1.94	60	65	4	6	0.03	0.036	0.35
2×30	eShop	–	1.6	30	1.94	70	–	4	–	0.03	–	0.2
2×35	eShop	–	1.6	35	1.94	80	–	4	–	0.025	–	0.08
2×40	eShop	–	1.6	40	1.94	80	–	4	–	0.025	–	0.04
2,5×15	eShop ■	–	2	15	2.41	50	–	4	–	0.035	–	0.9
2,5×20	eShop	–	2	20	2.41	55	–	4	–	0.035	–	0.8
2,5×25	eShop	–	2	25	2.41	60	–	4	–	0.03	–	0.5
2,5×30	eShop	–	2	30	2.41	70	–	4	–	0.03	–	0.35
3×6	eShop	–	3.5	6	2.92	45	–	4	–	0.035	–	1
3×8	eShop	–	3.5	8	2.92	45	–	4	–	0.035	–	1
3×10	eShop	–	3.5	10	2.92	45	–	4	–	0.035	–	1
3×12	eShop	–	3.5	12	2.92	45	–	4	–	0.035	–	1
3×15	eShop	–	3.5	15	2.92	50	–	4	–	0.035	–	1
3×20	eShop	–	3.5	20	2.92	55	–	4	–	0.035	–	0.9
3×25	eShop	–	3.5	25	2.92	60	–	4	–	0.035	–	0.8
3×30	eShop	–	3.5	30	2.92	70	–	4	–	0.03	–	0.5
3×35	eShop	–	3.5	35	2.92	70	–	4	–	0.03	–	0.35
3×40	eShop	–	3.5	40	2.92	80	–	4	–	0.03	–	0.35
3×45	eShop	–	3.5	45	2.92	80	–	4	–	0.03	–	0.2

Solid carbide | Standard | Type W | f8 | 2 | 45° | a_e 0.03×D | h6 DIN 6535 HA | G 2.5 n_{max}

Garant Solid carbide ball nose milling cutter

Additionally **polish ground** in the flutes for **outstanding chip evacuation** in long-chipping aluminium components.
Dimensions similar to **DIN 6527.**





20 7026



20 7028

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 7026	230	180	140	200	160	200	150	130								300	160	200
20 7028	220	170	130	180	140	180	130	120								180	140	180

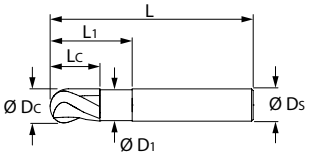
Ø f8 D_C	11X 20 7026	11X 20 7028	L_c		L_1		Ø D_1	L		Ø D_s	Alu f_z
	Solid carbide ball nose slot drill		20 7026	20 7028	20 7026	20 7028		20 7026	20 7028		
mm	uncoated	uncoated	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	6	10	16	32	2.7	50	75	3	0.03
4	eShop	eShop	7	13	17	36	3.7	54	75	4	0.03
5	eShop	eShop	8	15	18	40	4.6	54	75	5	0.06
6	eShop	eShop	10	16	21	44	5.5	54	100	6	0.06
8	eShop	eShop	12	22	27	54	7.5	59	100	8	0.06
10	eShop	eShop	13	25	32	60	9.4	67	100	10	0.08
12	eShop	eShop	16	26	38	60	11.4	73	100	12	0.08
14	eShop	eShop	16	26	38	60	13.2	75	100	14	0.15
16	eShop	eShop	20	30	44	92	15	83	150	16	0.15
20	eShop	eShop	25	40	50	92	19	93	150	20	0.2

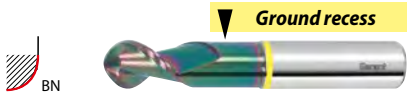
Solid carbide | Standard | Type W | f8 | 2 | 45° | a_e 0.03×D | h6 DIN 6535 HA | G 2.5 n_{max}

Garant Solid carbide ball nose milling cutter

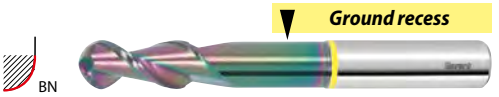
With the latest generation of **DLC coating sp²**.
Tolerances: Radius contour = **±0.01 mm.**

Note:
20 7032 – **Successor product to No. 207030.**
20 7072 – **Successor product to No. 207070.**
20 7092 – **Successor product to No. 207090.**





20 7032



20 7072



20 7092

Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 7032	600	550	500	220	180	220	170	150		200	180	170	140	180		320	180	220
20 7072	500	450	400	200	160	200	150	130		180	160	150	120	160		300	160	200
20 7092	400	375	325	190	150	190	140	120		160	150	140	110	150		280	150	180

Ø f8 D_C	11X 20 7032	11X 20 7072	11X 20 7092	L_c		L_1			Ø D_1	L			Ø D_s	Alu f_z
	Solid carbide ball nose slot drill			20 7032	20 7072 20 7092	20 7032	20 7072	20 7092		20 7032	20 7072	20 7092		
mm	DLC	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	eShop	6	10	16	32	82	2.7	50	75	125	3	0.03
4	eShop	eShop	eShop	7	13	17	36	86	3.7	54	75	125	4	0.03
5	eShop	eShop	–	8	15	18	40	–	4.6	54	75	–	5	0.06
6	eShop	eShop	eShop	10	16	21	44	94	5.5	54	100	150	6	0.06
8	eShop	eShop	eShop	12	22	27	54	104	7.5	59	100	150	8	0.06
10	eShop	eShop	eShop	13	25	32	60	110	9.4	67	100	150	10	0.08
12	eShop	eShop	eShop	16	26	38	60	105	11.4	73	100	150	12	0.08
14	eShop	eShop	–	16	26	38	60	–	13.2	75	100	–	14	0.15
16	eShop	eShop	–	20	30	44	92	–	15	83	150	–	16	0.15
20	eShop	eShop	–	25	40	50	92	–	19	93	150	–	20	0.2

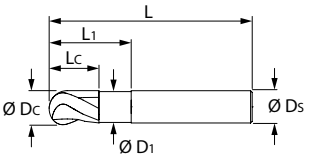
Solid carbide | Standard | Type W | −0.007 +0.002 | 2 | 45° | a_e 0.03×D | h6 DIN 6535 HA | G 2.5 n_{max}

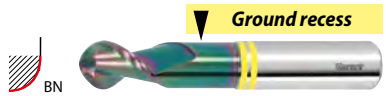
Garant

Solid carbide high precision ball nose slot drill

With **DLC coating sp²** of the latest generation.
High precision ball nose slot drills in respect of **radius Ø and contour variations within the µm range.**
Tolerances: radius contour = **±0.005 mm.**
For the highest demands on dimensional accuracy of the workpiece.

Note: **Successor product to No. 207095.**





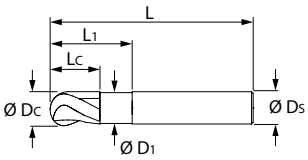
207097

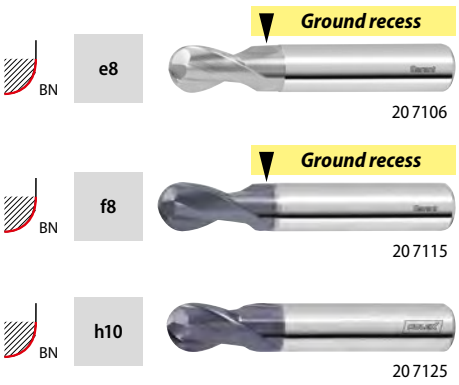
Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
207097	600	550	500	220	180	220	170	150		200	180	170	140	180		320	180	220		●	●	○	●

Ø D_c	11X 207097 Solid carbide high precision ball nose slot drill	L_c	L_1	Ø D_1	L	Ø D_s	Alu f_z
mm	DLC	mm	mm	mm	mm	mm	mm
3	eShop	6	16	2.7	50	3	0.03
4	eShop	7	17	3.7	54	4	0.03
5	eShop	8	18	4.6	54	5	0.06
6	eShop	10	21	5.5	54	6	0.06
8	eShop	12	27	7.5	59	8	0.06
10	eShop	13	32	9.4	67	10	0.08
12	eShop	16	38	11.4	73	12	0.08

Solid carbide | Standard | Type N | 2 | 30° | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HA

Solid carbide ball nose milling cutter





207106
207115
207125

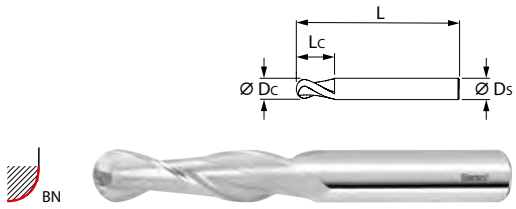
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
207106	230	180	140	90	80	70	45							40	35	70	160	●		●	○		
207115/7125		350	250	160	140	130	80	70	50					80	70	120	320	●		●	○	○	○

Ø D_c	11X 207106 Garant	11X 207115 Garant	12X 207125 HOLEX	L_c		L_1	Ø D_1	L	Ø D_s	< 900 N f_z	< 900 N f_z
	Solid carbide ball nose slot drill			207106 207115	207125	207106 207115	207106 207115				
mm		TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
1	eShop	eShop	eShop	2	3	3	0.95	50	6	0.006	0.006
1,2	eShop	eShop	eShop	2	3	3	1.15	50	6	0.006	0.006
1,5	eShop	eShop	eShop	2	4	5	1.44	50	6	0.006	0.006
1,8	–	eShop	eShop	2	5	5.5	1.74	50	6	0.006	0.006
2	eShop	eShop	eShop	2	5	6	1.92	50	6	0.011	0.013
2,5	–	eShop	–	5	–	9	2.42	50	6	0.011	0.013
3	eShop	eShop	eShop	5	5	9	2.9	50	6	0.011	0.013
4	eShop	eShop	eShop	8	8	12	3.9	54	6	0.023	0.025
5	eShop	eShop	eShop	9	9	15	4.9	54	6	0.023	0.025
6	eShop	eShop	eShop	10	10	17	5.9	54	6	0.033	0.037
8	eShop	eShop	eShop	11	12	19	7.8	58	8	0.045	0.051
10	eShop	eShop	eShop	14	14	26	9.8	66	10	0.06	0.068
12	eShop	eShop	eShop	16	16	28	11.8	73	12	0.08	0.09
14	–	eShop	–	18	–	30	13.8	75	14	0.08	0.09
16	eShop	eShop	eShop	22	22	32	15.7	82	16	0.1	0.113
18	–	eShop	–	24	–	35	17.7	84	18	0.1	0.113
20	eShop	eShop	eShop	26	26	40	19.7	92	20	0.12	0.135

Solid carbide | Standard | Type N | f8 | 2 | 30° | a_e 0.3×D | a_e 0.05×D | h6 DIN 6535 HA

Garant Solid carbide ball nose milling cutter

Full radius ball nose slot drill with long main flutes.



207135

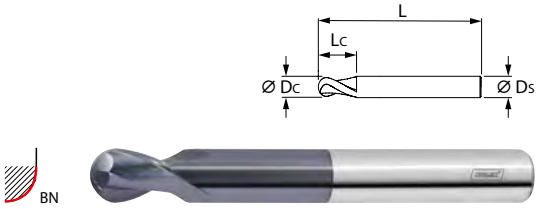
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
207135	230	180	140	90	80	70	45							40		70	160	●		●	○		

Ø f8 D_c	11X	207135	L_c	L	Ø D_s	< 900 N f_z	< 900 N f_z
mm		Solid carbide ball nose slot drill	mm	mm	mm	mm	mm
3		eShop	20	60	3	0.011	0.013
4		eShop	30	75	4	0.023	0.025
5		eShop	30	75	5	0.023	0.025
6		eShop	40	100	6	0.033	0.037
8		eShop	40	100	8	0.045	0.051
10		eShop	40	100	10	0.06	0.068
12		eShop	45	100	12	0.08	0.09
16		eShop	75	150	16	0.1	0.113
20		eShop	75	150	20	0.12	0.135

Solid carbide | Standard | Type N | h10 | 2 | 30° | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HA

HOLEX Solid carbide ball nose milling cutter

Note: **Successor product to No. 207155.**



207154

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N						
207154		350	250	160	140	130	80	70	50					80	70	120	320	●		●	○	○	○

Ø h10 D_c	12X	207154	L_c	L	Ø D_s	< 900 N f_z	< 900 N f_z
mm		Solid carbide ball nose slot drill	mm	mm	mm	mm	mm
		TiAlN					
3		eShop	8	63	3	0.011	0.013
4		eShop	8	75	4	0.023	0.025
5		eShop	9	75	5	0.023	0.025
6		eShop	10	100	6	0.033	0.037
8		eShop	12	100	8	0.045	0.051
10		eShop	14	100	10	0.06	0.068
12		eShop	16	100	12	0.08	0.09
16		eShop	22	150	16	0.1	0.113
20		eShop	26	150	20	0.12	0.135

Solid carbide | Standard | Type H | 2 | 30° | a_e 0.03×D | h5 DIN 6535 HA

Garant Solid carbide ball nose slot drill

Exact **radius form without profile distortion**.
Double relief ground side clearance angle.
Tolerance: Radius contour = **±0.01 mm.**

207175 – With enclosed angle **220°**.
207176 – With enclosed angle **260°**.

207175 Size 1–10 – Size nominal ∅: **D_c = f8**
207176 Size 1–5 – Size nominal ∅: **D_c = 0 / -0.01 mm**.
207176 Size 6–10 – Size nominal ∅: **D_c = -0.01 / -0.025 mm**.

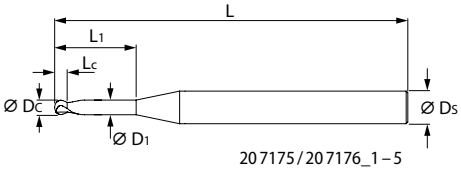
f8



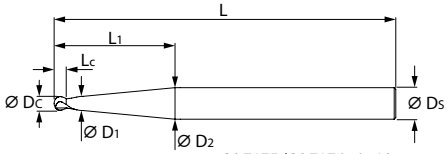
207175



207176



207175 / 207176_1 – 5



207175 / 207176_6 – 10

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
207175/7176				575	390	390	280	200						200			575	●		●	○	●	●

∅ D_c	11X 207175 220° TiAlN	11X 207176 260° TiAlN	L_c 207175	L_c 207176	L_1	∅ D_1 207175	∅ D_1 207176	∅ D_2	L	∅ D_s	< 1100 N f_z
mm	Solid carbide ball nose slot drill		mm	mm	mm	mm	mm	mm	mm	mm	mm
1	eShop	eShop	0.7	0.7	5	0.85	0.7	–	58	6	0.006
2	eShop	eShop	1.5	1.7	10	1.7	1.4	–	58	6	0.01
3	eShop	eShop	2.3	2.6	15	2.7	2.1	–	65	6	0.01
4	eShop	eShop	3	3.5	20	3.7	2.8	–	70	6	0.032
5	eShop	eShop	3.5	4.3	25	4.7	3.5	–	80	6	0.032
6	eShop	eShop	4	5.2	30	5.3	4.2	5.9	100	6	0.044
8	eShop	eShop	5.4	7	40	6.2	5.6	7.9	100	8	0.052
10	eShop	eShop	6.7	8.7	50	7.7	7.1	9.9	120	10	0.062

20

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Solid carbide | Standard | Type H | f8 | 2 | 30° | a_e 0.5×D | a_e 0.03×D | h6 DIN 6535 HA | HPC

Garant Solid carbide ball nose milling cutter HPC

Precision ground for very high accuracy requirements.
Tolerance: Radius contour = **±0.005 mm.**

Note:
20 7240 – **Recommended successor product is No. 207242.**
20 7280 – **Recommended successor product is No. 207244.**
20 7320 – **Recommended successor product is No. 207246.**



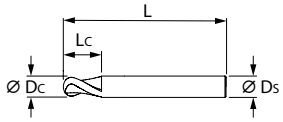
20 7240



20 7280



20 7320



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
20 7240				225	210	180	145	140						85	70		350	400		●	○	●	●
20 7280				210	190	175	140	135						80	65		300	350		●	○	●	●
20 7320				200	180	170	130	125						70	60		280	300		●	○	●	●

Ø f8 D_c / D_s	1 1X 20 7240	1 1X 20 7280	1 1X 20 7320	L_c	L			Ø D_s	< 1100 N f_z	< 1100 N f_z	Correction factor for v_c
	Solid carbide ball nose slot drill										
	HPC				20 7240	20 7280	20 7320				
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	
0,1	eShop	–	–	0.2	38	–	–	3	0.0035	0.004	–
0,2	eShop	–	–	0.4	38	–	–	3	0.0035	0.004	–
0,25	eShop	–	–	0.5	38	–	–	3	0.0035	0.004	–
0,3	eShop	–	–	1	38	–	–	3	0.0035	0.004	–
0,4	eShop	–	–	1	38	–	–	3	0.0035	0.004	–
0,5	eShop	–	–	1.5	38	–	–	3	0.0044	0.005	–
0,5/6	eShop	–	–	1.5	54	–	–	6	0.0044	0.005	–
0,6	eShop	–	–	1.5	38	–	–	3	0.0044	0.005	–
0,7	eShop	–	–	2	38	–	–	3	0.0044	0.005	–
0,8	eShop	–	–	2	38	–	–	3	0.0044	0.005	–
0,9	eShop	–	–	2.5	38	–	–	3	0.0044	0.005	–
1	eShop	–	–	2	50	–	–	3	0.006	0.007	–
1/6	eShop	eShop	–	2	54	80	–	6	0.006	0.007	1.25
1,1	eShop	–	–	3	50	–	–	3	0.006	0.007	–
1,2	eShop	–	–	3	50	–	–	3	0.006	0.007	–
1,4	eShop	–	–	3	50	–	–	3	0.006	0.007	–
1,5	eShop	–	–	3	50	–	–	3	0.006	0.007	–
1,5/6	eShop	eShop	–	3	54	80	–	6	0.006	0.007	–
1,6	eShop	–	–	4	50	–	–	3	0.006	0.007	–
1,8	eShop	–	–	4	50	–	–	3	0.006	0.007	–
2	eShop	–	–	4	50	–	–	3	0.0095	0.011	–
2/6	eShop	eShop	–	4	54	80	–	6	0.0095	0.011	1.25
2,5	eShop	–	–	5	50	–	–	3	0.0095	0.011	–
2,5/6	eShop	eShop	–	5	54	80	–	6	0.0095	0.011	–
3	eShop	eShop	eShop	5	50	75	100	3	0.0095	0.011	–
3/6	eShop	eShop	–	5	54	80	–	6	0.0095	0.011	1.25
4	eShop	eShop	eShop	8	54	75	100	4	0.032	0.037	–
4/6	eShop	eShop	eShop	8	54	80	120	6	0.032	0.037	1.25
5	eShop	eShop	eShop	9	54	75	100	5	0.032	0.037	–
5/6	eShop	eShop	–	9	54	100	–	6	0.032	0.037	1.25
6	eShop	eShop	eShop	10	54	100	120	6	0.044	0.051	–
6/8	–	–	eShop	10	–	–	120	8	0.044	0.051	1.25
7	eShop	–	–	12	59	–	–	8	0.044	0.051	–
8	eShop	eShop	eShop	12	59	100	120	8	0.052	0.06	–
8/10	–	–	eShop	12	–	–	120	10	0.052	0.06	1.25
9	eShop	–	–	14	66	–	–	10	0.052	0.06	–
10	eShop	eShop	eShop	14	66	100	120	10	0.062	0.071	–
12	eShop	eShop	eShop	16	73	100	150	12	0.073	0.084	–
14	eShop	–	–	18	75	–	–	14	0.073	0.084	–
16	eShop	eShop	–	22	82	150	–	16	0.102	0.117	–
20	eShop	eShop	–	26	92	150	–	20	0.12	0.138	–

Solid carbide | Standard | Type H | 2 | 30° | a_e 0.05×D | a_e 0.05×D | HPC

GARANT Diabolo solid carbide ball nose slot drill HRC 62 / GARANT solid carbide ball nose slot drill HPC / GARANT Diabolo solid carbide high-precision ball nose slot drill

GARANT Diabolo:
Special geometry, coating and carbide for hard machining.
Tolerance: Radius contour = **±0.005 mm.**

20 7341 – **Specialist for steels up to 62 HRC.** Reliable process and longer service life thanks to optimised cutter geometry and state-of-the-art high-performance coating.

20 7347 – **Solid carbide high precision ball nose slot drill** with **radius Ø and contour variations within the µm range.**

BN | h7 | h6 DIN 6535 HA



20 7341

BN | f8 | h6 DIN 6535 HA

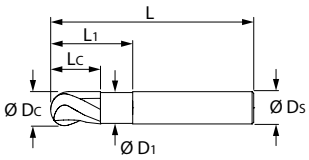


20 7342

BN | f8 | h6 DIN 6535 HA



20 7362



BN | −0.007 +0.002 | h5 DIN 6535 HA



Tolerance in the µm range. 20 7347

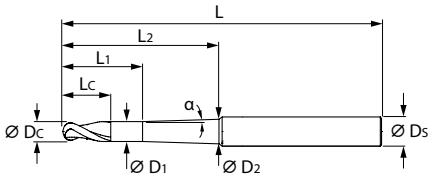
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 7341								195	180	**160**	**125**	**110**	85							○	●	●	
20 7342–20 7362								**200**	**190**	**170**	**150**	**110**							○	○	●	●	

Ø D_c / D_s	11Z 20 7341 GARANT Diabolo solid carbide ball nose slot drill HRC 62	11X 20 7342 GARANT Diabolo solid carbide ball nose slot drill	L_c	L		Ø D_s		< 60 HRC f_z	< 65 HRC f_z	< 60 HRC f_z	< 65 HRC f_z
	HPC			20 7341	20 7342	20 7341	20 7342	20 7341	20 7342	20 7341	20 7342
mm	TiSiN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm
0,1	eShop	eShop	0.2	50	38	4	3	0.007	0.005	0.008	0.005
0,2	eShop	eShop	0.4	50	38	4	3	0.01	0.005	0.012	0.005
0,25	eShop	eShop	0.5	50	38	4	3	0.01	0.005	0.012	0.005
0,3	eShop	eShop	1	50	38	4	3	0.011	0.005	0.013	0.005
0,4	eShop	eShop	1	50	38	4	3	0.012	0.005	0.014	0.005
0,5	eShop	eShop	1.5	50	38	4	3	0.016	0.005	0.019	0.005
0,5/6	–	eShop	1.5	–	54	–	6	–	0.005	–	0.005
0,6	eShop	eShop	1.5	50	38	4	3	0.016	0.005	0.019	0.005
0,7	eShop	eShop	2	50	38	4	3	0.016	0.005	0.019	0.005
0,8	eShop	eShop	2	50	38	4	3	0.018	0.005	0.021	0.005
0,9	eShop	eShop	2.5	50	38	4	3	0.018	0.005	0.021	0.005
1	eShop	eShop	2	54	50	6	3	0.02	0.005	0.024	0.005
1/6	–	eShop	2	–	54	–	6	–	0.005	–	0.005
1,1	eShop	eShop	3	54	50	6	3	0.02	0.005	0.024	0.005
1,2	eShop	eShop	3	54	50	6	3	0.022	0.005	0.026	0.005
1,4	eShop	eShop	3	54	50	6	3	0.022	0.005	0.026	0.005
1,5	eShop	eShop	3	54	50	6	3	0.024	0.005	0.028	0.005
1,5/6	–	eShop	3	–	54	–	6	–	0.005	–	0.005
1,6	eShop	eShop	4	54	50	6	3	0.024	0.005	0.028	0.005
1,8	eShop	eShop	4	54	50	6	3	0.026	0.005	0.03	0.005
2	eShop	eShop	4	54	50	6	3	0.026	0.005	0.03	0.005
2/6	–	eShop	4	–	54	–	6	–	0.005	–	0.005
2,5	eShop	eShop	5	54	50	6	3	0.026	0.019	0.03	0.019
2,5/6	–	eShop	5	–	54	–	6	–	0.019	–	0.019
3	eShop	eShop	5	54	50	6	3	0.03	0.019	0.035	0.019
3/6	–	eShop	5	–	54	–	6	–	0.019	–	0.019
4	eShop	eShop	8	54	54	6	4	0.038	0.019	0.045	0.019
4/6	–	eShop	8	–	54	–	6	–	0.019	–	0.019
5	eShop	eShop	9	54	54	6	5	0.051	0.048	0.06	0.048
5/6	–	eShop	9	–	54	–	6	–	0.048	–	0.048
6	eShop	eShop	10	54	54	6	6	0.06	0.048	0.07	0.048
8	eShop	eShop	12	58	58	8	8	0.077	0.06	0.09	0.06
10	eShop	eShop	14	66	66	10	10	0.085	0.07	0.1	0.07
12	eShop	eShop	16	73	73	12	12	0.094	0.08	0.11	0.08
14	eShop	eShop	18	75	75	14	14	0.11	0.085	0.11	0.085
16	eShop	eShop	22	82	82	16	16	0.102	0.09	0.12	0.09
20	eShop	eShop	26	92	92	20	20	0.111	0.1	0.13	0.1

D_c / D_s	11X 20 7362	11X 20 7347	L_c		L_1	Ø D_1	L		Ø D_s	< 65 HRC f_z	< 65 HRC f_z
	GARANT Diabolo solid carbide ball nose slot drill	GARANT Diabolo solid carbide high-precision ball nose slot drill									
	HPC										
mm	TiAlN	TiAlN	20 7362 mm	20 7347 mm	20 7347 mm	20 7347 mm	20 7362 mm	20 7347 mm	mm	mm	mm
0,1	–	eShop	–	0.1	–	–	–	38	3	0.005	0.005
0,2	–	eShop	–	0.2	–	–	–	38	3	0.005	0.005
0,3	–	eShop	–	0.3	–	–	–	38	3	0.005	0.005
0,4	–	eShop	–	0.4	–	–	–	38	3	0.005	0.005
0,5	–	eShop	–	0.5	–	–	–	38	3	0.005	0.005
0,6	–	eShop	–	0.6	–	–	–	38	3	0.005	0.005
0,8	–	eShop	–	0.8	–	–	–	38	3	0.005	0.005
1	–	eShop	–	1	2	0.96	–	50	3	0.005	0.005
1/6	eShop	–	2	–	–	–	80	–	6	0.005	0.005
1,5	–	eShop	–	1.5	2.5	1.44	–	50	3	0.005	0.005
1,5/6	eShop	–	3	–	–	–	80	–	6	0.005	0.005
2	–	eShop	–	2	4	1.92	–	50	3	0.005	0.005
2/6	eShop	–	4	–	–	–	80	–	6	0.005	0.005
2,5	–	eShop	–	2.5	4	2.4	–	50	3	0.019	0.019
2,5/6	eShop	–	5	–	–	–	80	–	6	0.019	0.019
3	eShop	eShop	5	3	5	2.85	75	50	3	0.019	0.019
3/6	eShop	–	5	–	–	–	80	–	6	0.019	0.019
4	eShop	eShop	8	4	9	3.8	75	54	4	0.019	0.019
4/6	eShop	–	8	–	–	–	80	–	6	0.019	0.019
5	eShop	eShop	9	5	10	4.8	75	54	5	0.048	0.048
5/6	eShop	–	9	–	–	–	100	–	6	0.048	0.048
6	eShop	eShop	10	6	11	5.8	100	54	6	0.048	0.048
8	eShop	–	12	–	–	–	100	–	8	0.06	0.06
10	eShop	–	14	–	–	–	100	–	10	0.07	0.07
12	eShop	–	16	–	–	–	100	–	12	0.08	0.08
14	eShop	–	18	–	–	–	100	–	14	0.085	0.085
16	eShop	–	22	–	–	–	150	–	16	0.09	0.09
20	eShop	–	26	–	–	–	150	–	20	0.1	0.1

Solid carbide | Standard | Type H | f8 | 2 | 30° | a_e 0.05×D | h6 DIN 6535 HA | HPC

Garant GARANT Diabolo solid carbide ball nose slot drill HPC



GARANT Diabolo:
Special geometry, coating and carbide for hard machining.
Taper transition with 1.5° (angle α).
Tolerance: Radius contour = **±0.005 mm.**



20 7372

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 7372								180	170	150	135	95							○	○	●	●	

Ø f8 D_c	11X 20 7372	L_c	L_1	Ø D_1	L	Ø D_s	L_2	Ø D_2	< 65 HRC f_z
	GARANT Diabolo solid carbide ball nose slot drill								
	HPC								
mm	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
0,6	eShop	0.8	1.4	0.55	75	3	27	1.9	0.005
0,8	eShop	1	1.6	0.75	75	3	27	2.1	0.005
1	eShop	1.2	2	0.95	75	3	27	2.3	0.005
1,2	eShop	1.4	2.4	1.15	75	3	27	2.5	0.005
1,5	eShop	1.8	3	1.45	75	3	27	2.7	0.005
2	eShop	2.4	4	1.95	75	3	27	3	0.005
3	eShop	4	12	2.8	80	6	40	4.3	0.019
4	eShop	5	16	3.8	80	6	40	5.1	0.019
5	eShop	6	20	4.8	80	6	40	5.9	0.048
6	eShop	6	25	5.8	100	8	50	7.1	0.048
8	eShop	7	32	7.8	120	10	60	9.3	0.06
10	eShop	9	40	9.8	160	12	80	11.9	0.07
12	eShop	11	50	11.8	200	16	100	14.5	0.08

Solid carbide | Standard | Type H | 0 −0.005 | 2 | a_e 0.05×D | h5 DIN 6535 HA

25° 30°
≤ 0.8 mm ≥ 1 mm

Garant GARANT Diabolo solid carbide precision micro copy slot drill

GARANT Diabolo:
Special geometry, coating and carbide **for hard machining in the high-performance field.**
Suitable even for **machining electrolytic copper.**
Tolerances:

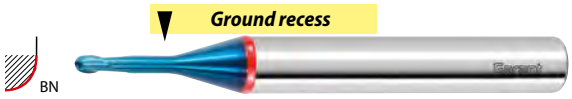
- Corner radius: **Radius contour = 0 / -0.005 mm.**
- Neck ∅: **D_1 = 0 / -0.01 mm.**

20 7373 – Recess angle α = 16°.
20 7377 – Recess angle α = 16°.
Extra-sturdy shank for achieving longer tool life.

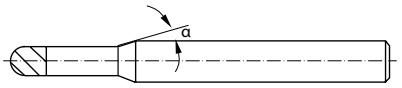
Note: At greater tool overhang lengths, use a reduced value for a_p!
values for:
copying: $a_p = 0.05 \times D \times a_{p\,korr}$
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)!
e.g: vf = 18000 [rpm]× fz [mm/Z]× z

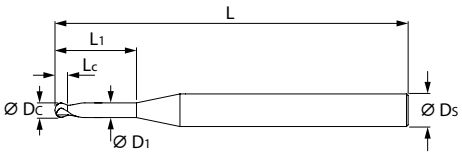


20 7373_2×10



20 7377_2×10





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N					
20 7373/7377					200	200	190	170	120	100	72	55	50	45	90	80		140		○	○	●	●

∅ $D_c \times L_1$	11X 20 7373	11X 20 7377	L_c	L_1	∅ D_1	L		∅ D_s		< 65 HRC f_z		Correction factor $a_{p\,corr}$
	GARANT Diabolo solid carbide copy slot drill					20 7373	20 7377	20 7373	20 7377	20 7373	20 7377	
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	
0,1×0,3	eShop	–	0.08	0.3	0.08	45	–	4	–	0.009	–	1
0,1×0,5	eShop	–	0.08	0.5	0.08	45	–	4	–	0.009	–	1
0,1×1	eShop	–	0.08	1	0.08	45	–	4	–	0.005	–	0.5
0,2×0,5	eShop	eShop	0.16	0.5	0.17	45	54	4	6	0.009	0.01	1
0,2×1	eShop	eShop	0.16	1	0.17	45	54	4	6	0.009	0.01	1
0,2×1,5	eShop	–	0.16	1.5	0.17	45	–	4	–	0.009	–	0.8
0,2×2	eShop	–	0.16	2	0.17	45	–	4	–	0.005	–	0.5
0,2×3	eShop	–	0.16	3	0.17	45	–	4	–	0.005	–	0.2
0,3×0,5	eShop	eShop	0.24	0.5	0.27	45	54	4	6	0.012	0.014	1
0,3×1	eShop	eShop	0.24	1	0.27	45	54	4	6	0.012	0.014	1
0,3×2	eShop	eShop	0.24	2	0.27	45	54	4	6	0.012	0.014	0.9
0,3×3	eShop	–	0.24	3	0.27	45	–	4	–	0.009	–	0.5
0,3×4	eShop	–	0.24	4	0.27	45	–	4	–	0.009	–	0.35
0,4×1	eShop	eShop	0.32	1	0.37	45	54	4	6	0.012	0.014	1
0,4×1,5	eShop	–	0.32	1.5	0.37	45	–	4	–	0.012	–	1
0,4×2	eShop	eShop	0.32	2	0.37	45	54	4	6	0.012	0.014	1
0,4×3	eShop	–	0.32	3	0.37	45	–	4	–	0.012	–	0.8
0,4×3,5	eShop	–	0.32	3.5	0.37	45	–	4	–	0.01	–	0.7
0,4×4	eShop	–	0.32	4	0.37	45	–	4	–	0.009	–	0.5
0,4×5	eShop	–	0.32	5	0.37	45	–	4	–	0.009	–	0.35
0,4×6	eShop	–	0.32	6	0.37	45	–	4	–	0.009	–	0.2
0,5×1	eShop	eShop	0.4	1	0.47	45	54	4	6	0.015	0.018	1
0,5×2	eShop	eShop	0.4	2	0.47	45	54	4	6	0.015	0.018	1
0,5×3	eShop	eShop	0.4	3	0.47	45	54	4	6	0.015	0.018	0.9
0,5×4	eShop	eShop	0.4	4	0.47	45	54	4	6	0.015	0.018	0.8
0,5×5	eShop	eShop	0.4	5	0.47	45	54	4	6	0.012	0.014	0.5
0,5×6	eShop	–	0.4	6	0.47	45	–	4	–	0.012	–	0.35
0,5×8	eShop	–	0.4	8	0.47	45	–	4	–	0.012	–	0.12
0,5×10	eShop	–	0.4	10	0.47	50	–	4	–	0.009	–	0.08
0,6×1	eShop	eShop	0.48	1	0.57	45	54	4	6	0.015	0.018	1
0,6×2	eShop	eShop	0.48	2	0.57	45	54	4	6	0.015	0.018	1
0,6×3	eShop	eShop	0.48	3	0.57	45	54	4	6	0.015	0.018	1
0,6×4	eShop	eShop	0.48	4	0.57	45	54	4	6	0.015	0.018	0.9
0,6×5	eShop	eShop	0.48	5	0.57	45	54	4	6	0.015	0.018	0.8
0,6×6	eShop	eShop	0.48	6	0.57	45	54	4	6	0.012	0.014	0.5
0,6×8	eShop	–	0.48	8	0.57	45	–	4	–	0.012	–	0.35
0,6×10	eShop	–	0.48	10	0.57	50	–	4	–	0.012	–	0.12
0,8×2	eShop	eShop	0.64	2	0.77	45	54	4	6	0.015	0.018	1
0,8×3	eShop	eShop	0.64	3	0.77	45	54	4	6	0.015	0.018	1
0,8×4	eShop	eShop	0.64	4	0.77	45	54	4	6	0.015	0.018	1
0,8×5	eShop	–	0.64	5	0.77	45	–	4	–	0.015	–	0.9
0,8×6	eShop	eShop	0.64	6	0.77	45	54	4	6	0.015	0.018	0.8
0,8×8	eShop	eShop	0.64	8	0.77	45	54	4	6	0.012	0.014	0.5

∅ $D_c \times L_1$	11X 20 7373	11X 20 7377	L_c	L_1	∅ D_1	L		∅ D_s		< 65 HRC f_z		Correction factor $a_{p\,corr}$
	GARANT Diabolo solid carbide copy slot drill					20 7373	20 7377	20 7373	20 7377	20 7373	20 7377	
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	
0,8×10	eShop	–	0.64	10	0.77	50	–	4	–	0.012	–	0.35
1×2	eShop	eShop	0.8	2	0.96	45	54	4	6	0.02	0.022	1
1×2,5	eShop	–	0.8	2.5	0.96	45	–	4	–	0.02	–	1
1×3	eShop	eShop	0.8	3	0.96	45	54	4	6	0.02	0.022	1
1×4	eShop	eShop	0.8	4	0.96	45	54	4	6	0.02	0.022	1
1×5	eShop	eShop	0.8	5	0.96	45	54	4	6	0.02	0.022	1
1×6	eShop	eShop	0.8	6	0.96	45	54	4	6	0.02	0.022	0.9
1×8	eShop	eShop	0.8	8	0.96	45	45	4	4	0.02	0.02	0.8
1×10	eShop	eShop	0.8	10	0.96	50	54	4	6	0.015	0.018	0.5
1×12	eShop	eShop	0.8	12	0.96	50	54	4	6	0.015	0.018	0.35
1×14	eShop	–	0.8	14	0.96	50	–	4	–	0.015	–	0.2
1×16	eShop	eShop	0.8	16	0.96	60	54	4	6	0.015	0.018	0.12
1×18	eShop	–	0.8	18	0.96	60	–	4	–	0.01	–	0.08
1×20	eShop	–	0.8	20	0.96	60	–	4	–	0.01	–	0.04
1×25	eShop	–	0.8	25	0.96	60	–	4	–	0.01	–	0.04
1,2×2	eShop	–	0.96	2	1.16	45	–	4	–	0.02	–	1
1,2×4	eShop	–	0.96	4	1.16	45	–	4	–	0.02	–	1
1,2×6	eShop	eShop	0.96	6	1.16	45	54	4	6	0.02	0.022	1
1,2×8	eShop	eShop	0.96	8	1.16	45	54	4	6	0.02	0.022	0.9
1,2×10	eShop	eShop	0.96	10	1.16	45	54	4	6	0.02	0.022	0.8
1,2×12	eShop	–	0.96	12	1.16	45	–	4	–	0.015	–	0.5
1,2×14	eShop	–	0.96	14	1.16	55	–	4	–	0.015	–	0.35
1,2×16	eShop	–	0.96	16	1.16	55	–	4	–	0.015	–	0.35
1,2×18	eShop	–	0.96	18	1.16	55	–	4	–	0.015	–	0.2
1,2×20	eShop	–	0.96	20	1.16	55	–	4	–	0.015	–	0.12
1,5×3	eShop	eShop	1.2	3	1.44	45	54	4	6	0.02	0.022	1
1,5×4	eShop	eShop	1.2	4	1.44	45	54	4	6	0.02	0.022	1
1,5×6	eShop	eShop	1.2	6	1.44	45	54	4	6	0.02	0.022	1
1,5×8	eShop	eShop	1.2	8	1.44	45	54	4	6	0.02	0.022	1
1,5×10	eShop	eShop	1.2	10	1.44	45	54	4	6	0.02	0.022	0.9
1,5×12	eShop	eShop	1.2	12	1.44	45	54	4	6	0.02	0.022	0.8
1,5×14	eShop	–	1.2	14	1.44	50	–	4	–	0.02	–	0.8
1,5×16	eShop	–	1.2	16	1.44	50	–	4	–	0.015	–	0.5
1,5×18	eShop	–	1.2	18	1.44	60	–	4	–	0.015	–	0.35
1,5×20	eShop	–	1.2	20	1.44	60	–	4	–	0.015	–	0.35
1,6×4	eShop	–	1.28	4	1.54	45	–	4	–	0.03	–	1
1,6×8	eShop	–	1.28	8	1.54	45	–	4	–	0.03	–	1
1,6×12	eShop	–	1.28	12	1.54	50	–	4	–	0.03	–	0.8
1,6×16	eShop	–	1.28	16	1.54	50	–	4	–	0.025	–	0.5
1,6×20	eShop	–	1.28	20	1.54	60	–	4	–	0.025	–	0.35
1,8×8	eShop	–	1.44	8	1.74	45	–	4	–	0.03	–	1
1,8×12	eShop	–	1.44	12	1.74	45	–	4	–	0.03	–	0.9
1,8×16	eShop	–	1.44	16	1.74	50	–	4	–	0.03	–	0.8
1,8×20	eShop	–	1.44	20	1.74	55	–	4	–	0.025	–	0.5
2×4	eShop	eShop	1.6	4	1.94	45	54	4	6	0.03	0.033	1
2×6	eShop	eShop	1.6	6	1.94	45	54	4	6	0.03	0.033	1
2×8	eShop	eShop	1.6	8	1.94	45	54	4	6	0.03	0.033	1
2×10	eShop	eShop	1.6	10	1.94	45	54	4	6	0.03	0.033	1
2×12	eShop	eShop	1.6	12	1.94	45	54	4	6	0.03	0.033	0.9
2×14	eShop	eShop	1.6	14	1.94	50	54	4	6	0.03	0.033	0.9
2×16	eShop	eShop	1.6	16	1.94	50	54	4	6	0.03	0.033	0.8
2×18	eShop	–	1.6	18	1.94	60	–	4	–	0.03	–	0.8
2×20	eShop	eShop	1.6	20	1.94	60	58	4	6	0.025	0.028	0.5
2×22	eShop	–	1.6	22	1.94	60	–	4	–	0.025	–	0.5
2×25	eShop	–	1.6	25	1.94	60	–	4	–	0.025	–	0.35
2×30	eShop	–	1.6	30	1.94	70	–	4	–	0.025	–	0.2
2×35	eShop	–	1.6	35	1.94	80	–	4	–	0.02	–	0.08
2×40	eShop	–	1.6	40	1.94	80	–	4	–	0.02	–	0.08
2,5×6	eShop	–	2	6	2.41	45	–	4	–	0.03	–	1
2,5×8	eShop	–	2	8	2.41	45	–	4	–	0.03	–	1
2,5×10	eShop	–	2	10	2.41	45	–	4	–	0.03	–	1
2,5×15	eShop	–	2	15	2.41	50	–	4	–	0.03	–	0.9
2,5×20	eShop	–	2	20	2.41	55	–	4	–	0.03	–	0.8
2,5×25	eShop	–	2	25	2.41	60	–	4	–	0.025	–	0.5
2,5×30	eShop	–	2	30	2.41	70	–	4	–	0.025	–	0.35
3×6	eShop	eShop	3.5	6	2.92	45	54	4	6	0.03	0.033	1
3×8	eShop	–	3.5	8	2.92	45	–	4	–	0.03	–	1
3×10	eShop	eShop	3.5	10	2.92	45	54	4	6	0.03	0.033	1
3×12	eShop	eShop	3.5	12	2.92	45	54	4	6	0.03	0.033	1
3×14	eShop	–	3.5	14	2.92	50	–	4	–	0.03	–	1
3×16	eShop	eShop	3.5	16	2.92	50	54	4	6	0.03	0.033	1
3×18	eShop	–	3.5	18	2.92	55	–	4	–	0.03	–	0.9
3×20	eShop	–	3.5	20	2.92	55	–	4	–	0.03	–	0.9
3×25	eShop	–	3.5	25	2.92	60	–	4	–	0.03	–	0.8
3×30	eShop	–	3.5	30	2.92	70	–	4	–	0.025	–	0.5
3×35	eShop	–	3.5	35	2.92	70	–	4	–	0.025	–	0.35
3×40	eShop	–	3.5	40	2.92	80	–	4	–	0.025	–	0.35

Solid carbide | Standard | Type N | f8 | 2 | 28° | a_e 0.5×D | a_e 0.03×D | h6 DIN 6535 HA | HPC

Garant GARANT Master Steel solid carbide ball nose milling cutter HPC

Precision ground for very high accuracy requirements.
Tolerance: Radius contour = **±0.005 mm.**
Improved cutting edge protection thanks to slight edge honing.
Tremendous bending strength due to the use of ultra-fine grain substrate.



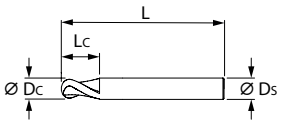
20 7242



20 7244



20 7246



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 7242				270	240	220	190	170	140					90	80		400	●		●	○	●	●
20 7244				260	230	210	180	160	130					85	75		350	●		●	○	●	●
20 7246				250	220	200	170	150	120					75	70		300	●		●	○	●	●

Ø f8 D_c / D_s	11X 20 7242	11X 20 7244	11X 20 7246	L_c	L			Ø D_s	< 900 N f_z	< 900 N f_z
	GARANT Master Steel solid carbide ball nose slot drill HPC				20 7242	20 7244	20 7246			
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm
0,1	eShop	–	–	0.2	38	–	–	3	0.005	0.007
0,2	eShop	–	–	0.4	38	–	–	3	0.005	0.007
0,25	eShop	–	–	0.5	38	–	–	3	0.005	0.007
0,4	eShop	–	–	1	38	–	–	3	0.005	0.007
0,5	eShop	–	–	1	38	–	–	3	0.008	0.01
0,5/6	eShop	–	–	1.5	54	–	–	6	0.008	0.01
0,6	eShop	–	–	1.5	38	–	–	3	0.008	0.01
0,7	eShop	–	–	1.5	38	–	–	3	0.008	0.01
0,8	eShop	–	–	2	38	–	–	3	0.008	0.01
0,9	eShop	–	–	2	38	–	–	3	0.008	0.01
1	eShop	–	–	2.5	50	–	–	3	0.012	0.015
1/6	eShop	eShop	–	2	54	80	–	6	0.012	0.015
1,1	eShop	–	–	2	50	–	–	3	0.012	0.015
1,2	eShop	–	–	3	50	–	–	3	0.012	0.015
1,4	eShop	–	–	3	50	–	–	3	0.012	0.015
1,5	eShop	–	–	3	50	–	–	3	0.012	0.015
1,5/6	eShop	eShop	–	3	54	80	–	6	0.02	0.025
1,6	eShop	–	–	4	50	–	–	3	0.025	0.03
1,8	eShop	–	–	4	50	–	–	3	0.025	0.03
2	eShop	–	–	4	50	–	–	3	0.03	0.04
2/6	eShop	eShop	–	4	54	80	–	6	0.03	0.04
2,5	eShop	–	–	5	50	–	–	3	0.03	0.04
2,5/6	eShop	eShop	–	5	54	80	–	6	0.03	0.04
3	eShop	eShop	eShop	5	50	75	100	3	0.04	0.06
3/6	eShop	eShop	–	5	54	80	–	6	0.04	0.06
4	eShop	eShop	eShop	8	54	75	100	4	0.04	0.06
4/6	eShop	eShop	–	8	54	80	–	6	0.04	0.06
5	eShop	eShop	eShop	9	54	75	100	5	0.04	0.06
5/6	eShop	eShop	–	9	54	100	–	6	0.06	0.08
6	eShop	eShop	eShop	10	54	100	120	6	0.06	0.08
7	eShop	–	–	12	58	–	–	8	0.08	0.1
8	eShop	eShop	eShop	12	58	100	120	8	0.1	0.12
9	eShop	–	–	14	66	–	–	10	0.1	0.12
10	eShop	eShop	eShop	14	66	100	120	10	0.1	0.12
12	eShop	eShop	eShop	16	73	100	150	12	0.1	0.12
14	eShop	–	–	18	75	–	–	14	0.1	0.12
16	eShop	eShop	–	22	82	150	–	16	0.12	0.15
20	eShop	–	–	26	92	–	–	20	0.15	0.2

Solid carbide | Standard | 3 | h6 DIN 6535 HA

Type N | e8 | 35° | a_e 0.5×D | a_e 0.1×D

Garant Solid carbide full radius ball nose end mill / GARANT Diabolo solid carbide full radius ball nose end mill HPC

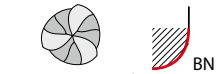
20 7381 – Tolerance: Radius contour = **±0.01 mm.**

20 7424 – Special geometry, coating and carbide for hard machining. 3 end face edges up to the centre. Can therefore be used as a true 3-flute drill in all cutting depths. Tolerance: Radius contour = **±0.005 mm.**



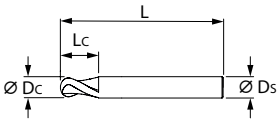
20 7381

Type H | f8 | 30° | a_e 0.2×D | a_e 0.05×D | HPC





20 7424



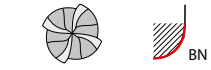
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	K					
20 7381				160	140	130									80	70	50	120		●	○	○	○
20 7424								200	190	170	150	110								○	○	●	●

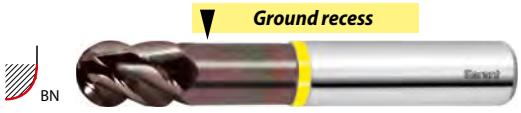
Ø D_C	11X 20 7381	11X 20 7424	L_c		L		Ø D_s	f_z < 500 N	f_z < 65 HRC	f_z < 500 N	f_z < 65 HRC
	Solid carbide ball nose end mill	GARANT Diabolo solid carbide ball nose end mill HPC	20 7381	20 7424	20 7381	20 7424		20 7381	20 7424	20 7381	20 7424
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop ■	7	8	57	65	6	0.011	0.019	0.013	0.019
4	eShop	eShop	8	8	57	75	6	0.023	0.019	0.025	0.019
5	eShop	eShop	10	10	57	75	6	0.023	0.048	0.025	0.048
6	eShop	eShop ■	10	12	57	100	6	0.033	0.048	0.037	0.048
8	eShop	eShop	16	14	63	100	8	0.045	0.06	0.051	0.06
10	eShop	eShop ■	19	18	72	100	10	0.06	0.07	0.068	0.07
12	eShop	eShop	22	22	83	120	12	0.08	0.08	0.09	0.08
16	eShop	–	26	–	92	–	16	0.1	–	0.113	–
18	eShop	–	26	–	92	–	18	0.1	–	0.113	–

Solid carbide | Standard | Type W | f8 | 4 | 45° | a_e 0.1×D | h6 DIN 6535 HA

Garant Solid carbide ball nose milling cutter

With **the latest generation of DLC coating sp²**.
For **high-performance milling of aluminium materials.**
4 centre cutting edges to the centre.
Can therefore be used as a true **4-edge drill** in all cutting depths; for hardened steel.
Tolerance: Radius contour = **±0.005 mm.**

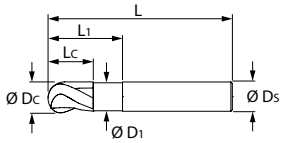




20 7441



20 7443



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honeycomb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 7441	600	550	500	220	180	220	170	150		200	180	170	140	180		320	180	220		●	●	○	●
20 7443	500	450	400	200	160	200	150	130		180	160	150	120	160		300	160	200		●	●	○	●

Ø f8 D_C	11X 20 7441	11X 20 7443	L_c		L_1		Ø D_1	L		Ø D_s	Alu cast > 10 % Si f_z
	Solid carbide ball nose end mill		20 7441	20 7443	20 7441	20 7443		20 7441	20 7443		
mm	DLC	DLC	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	6	10	16	32	2.7	50	75	3	0.03
4	eShop	eShop	7	13	17	36	3.7	54	75	4	0.03
5	eShop	eShop	8	15	18	40	4.6	54	75	5	0.06
6	eShop	eShop	10	16	21	44	5.5	54	100	6	0.06
8	eShop	eShop	12	22	27	54	7.5	59	100	8	0.06
10	eShop	eShop	13	25	32	60	9.4	67	100	10	0.08
12	eShop	eShop	16	26	38	60	11.4	73	100	12	0.08
16	eShop	eShop	20	30	44	92	15	83	150	16	0.15
20	eShop	eShop	25	40	50	92	19	93	150	20	0.2

Solid carbide | DIN 6527 | Type N | f8 | 4 | 45° | a_e 0.3×D | a_e 0.03×D | h6 DIN 6535 HA | MTC

Garant Solid carbide ball nose end mill MTC

Ball nose slot drills with corrected cutting form, without profile distortion.
With double relief ground side clearance angle.
Tolerance: Radius contour = **±0.005 mm.**

Application: Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres.

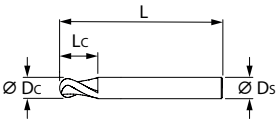
Note:
20 7450 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 207490.
20 7460 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 207492.



20 7450



20 7460



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
20 7450/7460				225	210	180	145	140						85			350	●

Ø f8 D_c	20 7450	20 7460	L_c	L		Ø D_s	< 900 N f_z	< 900 N f_z
	Solid carbide ball nose end mill							
	MTC			20 7450	20 7460			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
3	eShop	eShop	5	50	75	3	0.009	0.011
4	eShop	eShop	8	54	75	4	0.03	0.037
5	eShop	eShop	9	54	75	5	0.03	0.037
6	eShop	eShop	10	54	100	6	0.041	0.051
8	eShop	eShop	12	58	100	8	0.05	0.06
10	eShop	eShop	14	66	100	10	0.058	0.071
12	eShop	eShop	16	73	100	12	0.068	0.084
14	eShop	–	18	75	–	14	0.095	0.117
16	eShop	eShop	22	82	150	16	0.095	0.117
20	eShop	eShop	26	92	150	20	0.112	0.138

Solid carbide | Standard | Type H | f8 | 4 | 30° | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

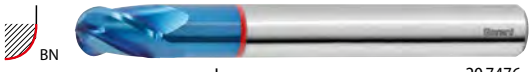


20 7472

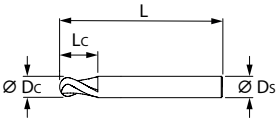
Garant GARANT Diabolo solid carbide ball nose end mill HPC

GARANT Diabolo:
Special geometry, newly developed coating and carbide for hard machining.
4 centre cutting edges to the centre.
Therefore can be used as a true **4-edge drill** at all depths of cut.
Tolerance: Radius contour = **±0.005 mm.**


Centre cutting teeth



20 7476



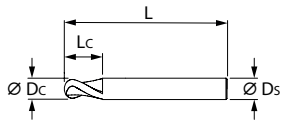
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	N
20 7472/7476								200	190	170	150	110						

Ø f8 D_c / D_s	20 7472	20 7476	L_c	L		Ø D_s	< 65 HRC f_z	< 65 HRC f_z
	GARANT Diabolo solid carbide ball nose end mill							
	HPC			20 7472	20 7476			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
2	eShop	–	4	50	–	3	0.005	0.005
2/6	eShop ■	eShop	4	54	80	6	0.005	0.005
2,5/6	–	eShop	5	–	80	6	0.019	0.019
3	eShop	eShop	5	50	75	3	0.019	0.019
3/6	eShop	eShop	5	54	80	6	0.019	0.019
4	eShop	eShop	8	54	75	4	0.019	0.019
4/6	eShop	eShop	8	54	80	6	0.019	0.019
5	eShop	eShop	9	54	75	5	0.048	0.048
5/6	eShop	eShop	9	54	100	6	0.048	0.048
6	eShop	eShop	10	54	100	6	0.048	0.048
7	eShop	–	12	58	–	8	0.06	0.06
8	eShop	eShop	12	58	100	8	0.06	0.06
9	eShop	–	14	66	–	10	0.07	0.07
10	eShop	eShop	14	66	100	10	0.07	0.07
12	eShop	eShop	16	73	100	12	0.08	0.08
16	eShop	eShop	22	82	150	16	0.09	0.09
20	eShop	eShop	26	92	150	20	0.1	0.1

Solid carbide | Standard | Type N | f8 | 4 | 45° | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

Garant GARANT Master INOX solid carbide ball nose milling cutter HPC

HPC milling cutters with **newly developed high-performance coating** for **outstanding service life** and **optimum metal removal rates** in a wide range of stainless steels.
Greater oxidation resistance and **high-temperature hardness**.
Can be used at **high cutting speeds**, particularly suitable even for TOOLOX®.
Tolerance: Radius contour = **±0.005 mm.**





207473



207474

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M	
207473/7474				250	230	200	180	170						115	80	110	90	○

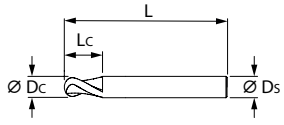
Ø f8 D_c / D_s	11X 207473	11X 207474	L_c	L		Ø D_s	INOX < 900 N f_z	INOX < 900 N f_z
	GARANT Master INOX solid carbide ball nose end mill HPC			207473	207474			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
2	eShop	eShop	4	50	60	3	0.006	0.007
2/6	eShop	eShop	4	54	80	6	0.006	0.007
3	eShop	eShop	5	50	60	3	0.006	0.007
3/6	eShop	eShop	5	54	80	6	0.006	0.007
4	eShop	eShop	8	54	80	4	0.012	0.013
4/6	eShop	eShop	8	54	80	6	0.012	0.013
5	eShop	eShop	9	54	80	5	0.012	0.013
5/6	eShop	eShop	9	54	80	6	0.012	0.013
6	eShop	eShop	10	54	100	6	0.017	0.019
8	eShop	eShop	12	58	100	8	0.025	0.028
10	eShop	eShop	14	66	100	10	0.032	0.036
12	eShop	eShop	16	73	100	12	0.045	0.051
16	eShop	eShop	20	82	120	16	0.06	0.068
20	eShop	eShop	26	92	120	20	0.075	0.084

Solid carbide | Standard | Type N | f8 | 4 | 45° | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

Garant Solid carbide ball nose milling cutter HPC

Special geometry and **coating** for machining **stainless and acid-resistant steels.**
4 end faces up to the centre.
Therefore can be used as a true **4-edge drill** at all depths of cut.
Tolerance: Radius contour = **±0.005 mm.**

Note:
207477 – **New generation available!** Successor product is No. 207473.
207478 – **New generation available!** Successor product is No. 207474.





Centre cutting teeth

207477



207478

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
207477/7478				250	230	200	160							95	85			

Ø f8 D_c / D_s	11X 207477	11X 207478	L_c	L		Ø D_s	INOX < 900 N f_z	INOX < 900 N f_z
	Solid carbide ball nose end mill HPC			207477	207478			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
2	eShop	–	4	50	–	3	0.006	0.007
2/6	eShop	eShop	4	54	80	6	0.006	0.007
3	eShop	–	5	50	–	3	0.006	0.007
3/6	eShop	eShop	5	54	80	6	0.006	0.007
4	eShop	–	8	54	–	4	0.012	0.013
4/6	eShop	eShop	8	54	80	6	0.012	0.013
5	eShop	–	9	54	–	5	0.012	0.013
5/6	eShop	eShop	9	54	80	6	0.012	0.013
6	eShop	eShop	10	54	100	6	0.017	0.019
8	eShop	eShop	12	58	100	8	0.025	0.028
10	eShop	eShop	14	66	100	10	0.032	0.036
12	eShop	eShop	16	73	100	12	0.045	0.051
16	eShop	–	20	82	–	16	0.06	0.068
20	eShop	–	26	92	–	20	0.075	0.084

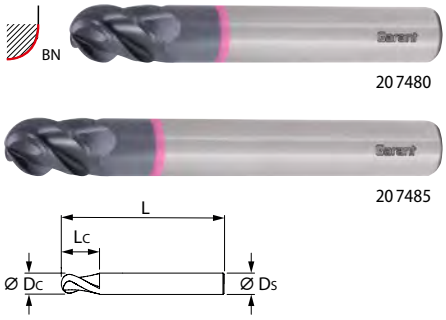
Solid carbide | Standard | Type N | f8 | 4 | 45° | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

Garant Solid carbide ball nose milling cutter HPC

Special geometry for machining **titanium and titanium alloys**.
4 end face edges up to the centre.
Thus can be used as a **true 4-flute slot drill** at all depths of cut.
Tolerance: Radius contour = **±0.005 mm.**

Note:
20 7480 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 207482.
20 7485 – **NEW GENERATION AVAILABLE!**
Recommended successor product is No. 207487.


Centre cutting teeth.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	N					
20 7480																55	35		●				
20 7485																50	30		●				

Ø f8 D_c / D_s	11X 20 7480	11X 20 7485	L_c	L		Ø D_s	Ti > 850 N f_z	Ti > 850 N f_z
	Solid carbide ball nose end mill HPC			20 7480	20 7485			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
2/6	eShop	eShop	4	54	80	6	0.008	0.01
3/6	eShop	eShop	5	54	80	6	0.008	0.01
4/6	eShop	eShop	8	54	80	6	0.016	0.02
5/6	eShop	eShop	9	54	80	6	0.016	0.02
6	eShop	eShop	10	54	100	6	0.024	0.03
8	eShop	eShop	12	58	100	8	0.032	0.039
10	eShop	eShop	14	66	100	10	0.04	0.048
12	eShop	eShop	16	73	100	12	0.05	0.057

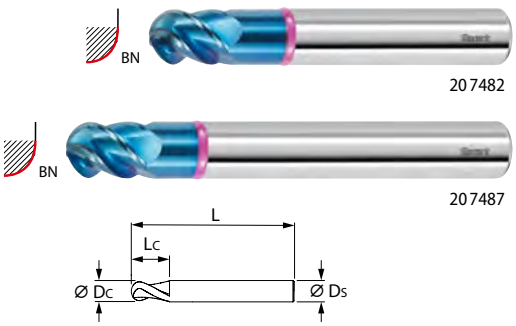
Solid carbide | Standard | Type N | f8 | 4 | 45° | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HA | HPC

Garant GARANT Master Titan solid carbide ball nose milling cutter HPC

Special geometry for machining **titanium and titanium alloys.**
4 centre cutting edges to the centre.
Therefore can be used as a **true 4-edge cutter** at all depths of cut.
Tolerance: Radius contour = **±0.005 mm.**

Note: Regrinding not recommended.


Centre cutting teeth.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 7482																60			●				
20 7487																50			●				

Ø f8 D_c / D_s	11Z 20 7482	11Z 20 7487	L_c	L		Ø D_s	Ti > 850 N f_z	Ti > 850 N f_z
	GARANT Master Titan solid carbide ball nose end mill HPC			20 7482	20 7487			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm
1	eShop	eShop	2	54	80	6	0.01	0.012
2	eShop	eShop	4	54	80	6	0.012	0.014
3	eShop	eShop	5	54	80	6	0.015	0.018
4	eShop	eShop	8	54	80	6	0.018	0.021
5	eShop	eShop	9	54	80	6	0.02	0.024
6	eShop	eShop	10	54	80	6	0.02	0.024
8	eShop	eShop	12	58	100	8	0.04	0.048
10	eShop	eShop	14	66	100	10	0.06	0.072
12	eShop	eShop	16	73	100	12	0.07	0.084

Solid carbide | Standard | Type N | f8 | 4 | 30° | a_e 0.3×D | a_e 0.03×D | h6 DIN 6535 HA | HPC

Garant GARANT Master Steel solid carbide ball nose end mill HPC

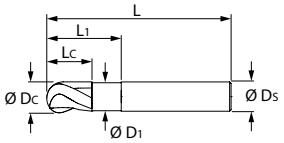
Precision ground for very high accuracy requirements.
Tolerance: Radius contour = **±0.005 mm.**
Improved cutting edge protection thanks to slight edge honing.
Tremendous bending strength due to the use of ultra-fine grain substrate.



207490



207492



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
207490/7492				270	240	220	190	170	140					90	80		400	●		●	○	○	○

Ø f8 D_C	11X 207490	11X 207492	L_c	L_1	Ø D_1	L		Ø D_s	< 900 N f_z	< 900 N f_z
	GARANT Master Steel solid carbide ball nose end mill HPC					207490	207492			
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm
2	eShop	–	4	8	1.8	50	–	4	0.015	0.02
3	eShop	eShop	5	12	2.8	50	75	4	0.02	0.025
4	eShop	eShop	8	18	3.8	50	75	4	0.03	0.035
5	eShop	eShop	9	18	4.8	50	75	6	0.035	0.04
6	eShop	eShop	10	21	5.8	57	100	6	0.045	0.05
8	eShop	eShop	12	27	7.8	63	100	8	0.06	0.065
10	eShop	eShop	14	32	9.5	72	100	10	0.065	0.07
12	eShop	eShop	16	38	11.5	83	150	12	0.07	0.075
14	eShop	–	18	44	13.5	83	–	14	0.1	0.12
16	eShop	eShop	22	44	15.5	92	150	16	0.1	0.12
20	eShop	–	26	50	19.5	104	–	20	0.15	0.18

Solid carbide | DIN 6527 | HR | d11 | 45° | a_e 0.5×D | a_e 0.05×D | h6 DIN 6535 HB

Garant Solid carbide ball nose roughing end mill

Round **knuckle form profile** for roughing, **including machining radii**.

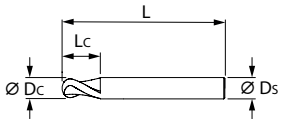
Note: **Successor product to No. 207512**



207505



207507



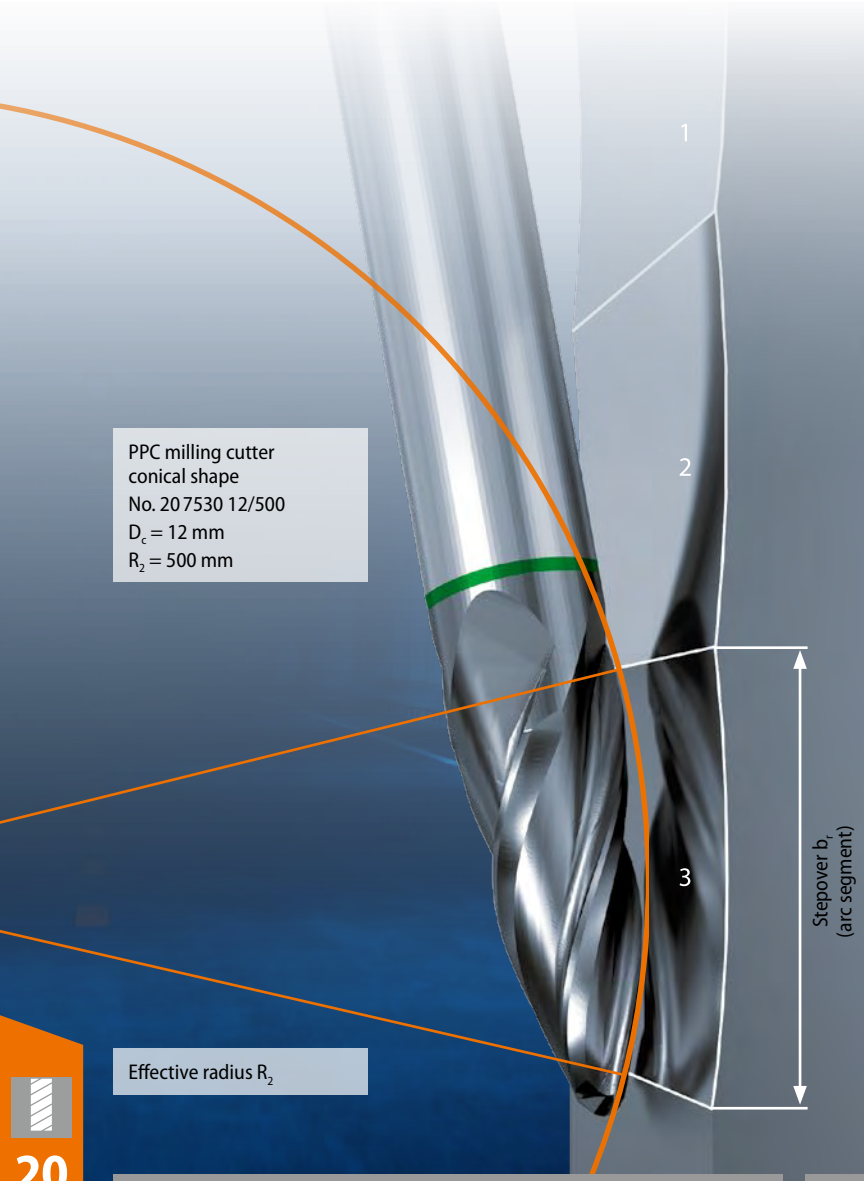
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
207505/7507		350	250	160	140	130	80							80			120	●		●	○	○	○

Ø d11 D_C	11X 207505	11X 207507	L_c	L	Ø D_s	< 900 N f_z	< 900 N f_z
	Solid carbide ball nose roughing end mill						
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm
5	eShop	eShop	13	57	6	0.023	0.025
6	eShop	eShop	13	57	6	0.033	0.037
8	eShop	eShop	16	63	8	0.045	0.051
10	eShop	eShop	22	72	10	0.06	0.068
12	eShop	eShop	26	73	12	0.08	0.09
14	eShop	eShop	26	83	14	0.08	0.09
16	eShop	eShop	32	92	16	0.1	0.113
18	eShop	eShop	32	92	18	0.1	0.113
20	eShop	eShop	38	104	20	0.12	0.135

Garant **PPC – Parabolic Performance Cutting**

Dynamic 5-axis milling.

Reduce process times and increase surface quality.



PPC milling cutter
conical shape
No. 20 7530 12/500
D_c = 12 mm
R_2 = 500 mm

Effective radius R_2

PPC

Advantages of the PPC process:

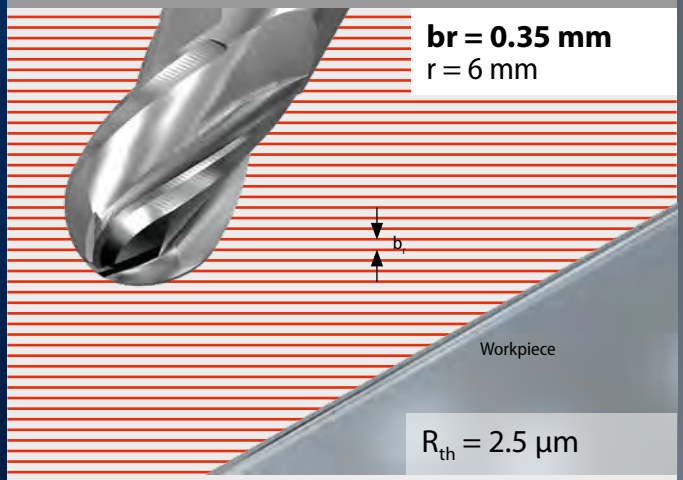
- Shorter machining times due to the large stepover.
- Lower set-up costs.
- Higher surface qualities at shorter cycle times.
- Outstanding process reliability.
- Extreme wear resistance.
- Increased productivity.



The right tool
for every application

20

Ball nose end mill



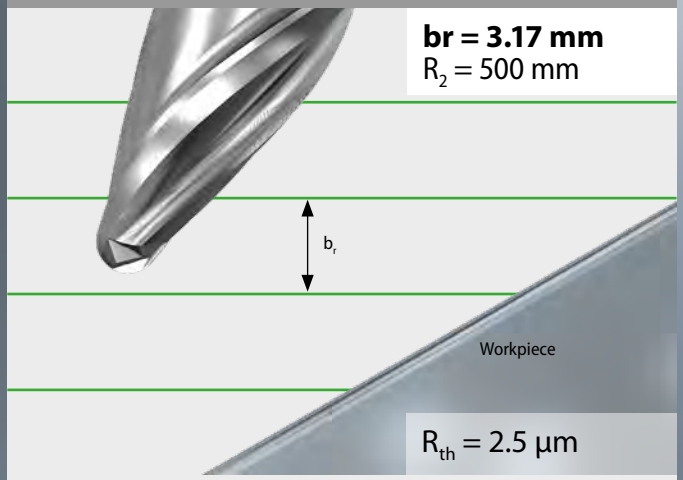
br = 0.35 mm
r = 6 mm

R_{th} = 2.5 µm

$$b_r = 2 \times \sqrt{R_{th}(2 \times r - R_{th})}$$

$$b_r = 2 \times \sqrt{\frac{2{,}5\ \mu m}{1000}(2 \times 6\ mm - \frac{2{,}5\ \mu m}{1000})} = 0{,}35\ mm$$

Barrel milling cutter, conical form



br = 3.17 mm
R_2 = 500 mm

R_{th} = 2.5 µm

$$b_r = 2 \times \sqrt{R_{th}(2 \times R_2 - R_{th})}$$

$$b_r = 2 \times \sqrt{\frac{2{,}5\ \mu m}{1000}(2 \times 500\ mm - \frac{2{,}5\ \mu m}{1000})} = 3{,}17\ mm$$

Solid carbide | Standard | Type N | f8 | 30° | a_e 0.05×D | a_e 0.05×D | h6 DIN 6535 HA | PPC

Garant Solid carbide barrel milling cutter, PPC

High-performance tool for **exceptionally efficient finish machining of free-form surfaces.**
For outstanding surface qualities in a **very short machining time.**
For use on modern 5-axis milling machines with CAD / CAM support.
Recommendation: We recommend 0.05 to 0.2mm as an allowance for finishing operations.

Note: R_2 represents the effective radius on the tool.
Cannot be reground!

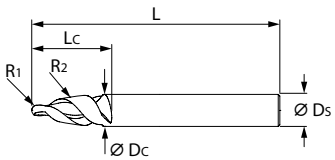
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	S	K						
20 7514/7517/7529 7531/7533/7542 7545/7548	330	300	230																●	○	○	●	
20 7520/7525/7530 7532/7534/7543 7546/7549		200	200	250	200	180	150	130	90				130	120	60		300	●	●	○	○	○	
20 7523/7540/7541 7544/7551/7553								200	170	150	110								○		●	●	
20 7535–20 7539		200	200										150	140	70	60			●	○	○	○	

Solid carbide barrel milling cutter, tangential form

The end face geometry is designed so that the chips, especially those formed by the end radius, are of optimum shape and have optimum evacuation characteristics. For this purpose the number of cutting edges is reduced to the number of effective end face cutting edges.

20 7523 – Innovative coating concept for **machining hardened materials.**

Note:
20 7523 – **Successor product to No. 207522.**





20 7517



20 7523



20 7525

Ø f8 D_c / R_2	11X	20 7517 Solid carbide barrel milling cutter, tangential form PPC DLC	L_c	R_2	R_1	L	Ø D_s	Alu f_z	Alu f_z
mm			mm	mm	mm	mm	mm	mm	mm
6/100		eShop	20.8	100	1	62	6	0.04	0.05
10/90		eShop	24.5	90	2	80	10	0.06	0.08
12/85		eShop	27	85	2	93	12	0.07	0.09

Ø f8 D_c / R_2	11X	20 7523 Solid carbide barrel milling cutter, tangential form PPC TiAlN	No. of teeth Z	L_c	R_2	R_1	L	Ø D_s	< 60 HRC f_z	< 60 HRC f_z
mm				mm	mm	mm	mm	mm	mm	mm
6/45		eShop	4	14	45	1	60	6	0.02	0.025
8/45		eShop	4	16	45	1.5	80	8	0.025	0.03
10/40		eShop	6	16.5	40	2	80	10	0.03	0.035
12/40		eShop	6	18.5	40	2	90	12	0.035	0.04

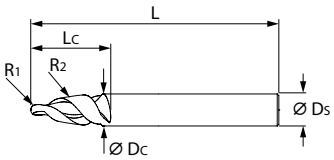
Ø f8 D_c / R_2	11X	20 7525 Solid carbide barrel milling cutter, tangential form PPC TiAlN	L_c	R_2	R_1	L	Ø D_s	< 900 N f_z	< 900 N f_z
mm			mm	mm	mm	mm	mm	mm	mm
6/100		eShop	20.5	100	1	62	6	0.04	0.05
8/95		eShop	22	95	1.5	70	8	0.05	0.06
10/90		eShop	24.5	90	2	80	10	0.06	0.08
12/85		eShop	27	85	2	93	12	0.07	0.09

Solid carbide barrel milling cutter, conical form

The end face geometry is designed so that the chips, especially those formed by the end radius, are of optimum shape and have optimum evacuation characteristics.
For this purpose the number of cutting edges is reduced to the number of effective end face cutting edges.

20 7540–7544 – Innovative coating concept for **machining hardened materials.**

Note: For machining walls and overcoming obstructions.
20 7540 – **Successor product to No. 207526.**
20 7541 – **Successor product to No. 207527.**
20 7544 – **Successor product to No. 207528.**





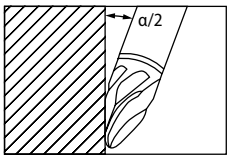
20 7531



20 7541



20 7537





20 7532

Ø f8 D_c / R_2	11X 20 7529	11X 20 7531	11X 20 7533	No. of teeth Z	L_c		R_2	R_1		L	Ø D_s	Alu f_z	Alu f_z
	Solid carbide barrel milling cutter, conical form α/2=9°	Solid carbide barrel milling cutter, conical form α/2=18°	Solid carbide barrel milling cutter, conical form α/2=27°										
	PPC				20 7529 20 7533	20 7531		20 7529 20 7533	20 7531				
mm	DLC	DLC	DLC		mm	mm	mm	mm	mm	mm	mm	mm	mm
6/250	–	eShop	–	4	–	8	250	–	0.5	60	6	0.04	0.05
12/500	eShop	eShop	–	4	22	14.5	500	3	2	90	12	0.07	0.09
16/1000	–	eShop	eShop	4	12.5	16	1000	3	4	90	16	0.09	0.11

Ø f8 D_c / R_2	11X 20 7540	11X 20 7541	11X 20 7544	No. of teeth Z	L_c		R_2	R_1		L	Ø D_s	< 60 HRC f_z	< 60 HRC f_z
	Solid carbide barrel milling cutter, conical form α/2 = 9°	Solid carbide barrel milling cutter, conical form α/2 = 18°	Solid carbide barrel milling cutter, conical form α/2 = 27°										
	PPC				20 7540 20 7544	20 7541		20 7540 20 7544	20 7541				
mm	TiAlN	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm
6/100	–	eShop	–	4	–	8.5	100	–	0.5	60	6	0.02	0.025
12/200	eShop	eShop	–	6	22	14.5	200	3	2	90	12	0.035	0.04
16/300	–	eShop	eShop	6	12.5	16	300	3	4	90	16	0.05	0.06

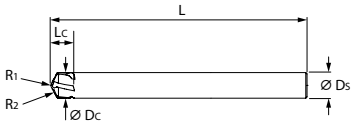
Ø f8 D_c / R_2	11X 20 7535	11X 20 7537	11X 20 7539	No. of teeth Z	L_c		R_2	R_1		L	Ø D_s	INOX > 900 N f_z	INOX > 900 N f_z
	Solid carbide barrel milling cutter, conical form α/2 = 9°	Solid carbide barrel milling cutter, conical form α/2 = 18°	Solid carbide barrel milling cutter, conical form α/2 = 27°										
	PPC				20 7535 20 7539	20 7537		20 7535 20 7539	20 7537				
mm	TiAlN	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm
12/500	eShop	eShop	–	6	22	14.5	500	3	2	90	12	0.052	0.064
16/1000	–	eShop	eShop	6	12.5	16	1000	3	4	90	16	0.065	0.08

Ø f8 D_c / R_2	11X 20 7530	11X 20 7532	11X 20 7534	No. of teeth Z	L_c		R_2	R_1		L	Ø D_s	< 900 N f_z	< 900 N f_z
	Solid carbide barrel milling cutter, conical form α/2 = 9°	Solid carbide barrel milling cutter, conical form α/2 = 18°	Solid carbide barrel milling cutter, conical form α/2 = 27°										
	PPC				20 7530 20 7534	20 7532		20 7530 20 7534	20 7532				
mm	TiAlN	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm
6/250	–	eShop	–	4	–	8	250	–	0.5	60	6	0.04	0.05
12/500	eShop	eShop	–	4	22	14.5	500	3	2	90	12	0.07	0.09
16/1000	–	eShop	eShop	4	12.5	16	1000	3	4	90	16	0.09	0.11

Solid carbide barrel milling cutter, short conical form

207551/7553 – Innovative coating concept for **machining hardened materials.**

Note: For surface machining and avoidance of interferences.
207551 – **Successor product to No. 207556.**
207553 – **Successor product to No. 207559.**





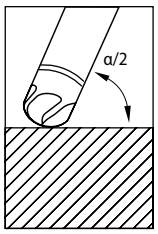
207542



207553



207543



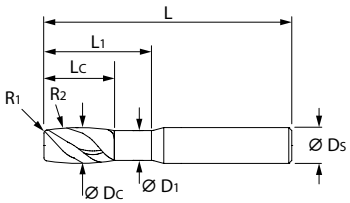
Ø f8 D_c / R_2	11X 207542	11X 207545	11X 207548	No. of teeth Z	L_c			R_2	R_1		L	Ø D_s	Alu f_z	Alu f_z
	Solid carbide barrel milling cutter, short conical form α/2 = 63°	Solid carbide barrel milling cutter, short conical form α/2 = 72°	Solid carbide barrel milling cutter, short conical form α/2 = 81°											
	PPC				207542	207545	207548		207542 207545	207548				
mm	DLC	DLC	DLC		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
8/180	eShop	eShop	eShop	3	2.4	1.9	1.4	180	1.5	3	80	8	0.055	0.065
12/220	eShop	eShop	eShop	5	3.5	2.5	1.4	220	2	4	120	12	0.07	0.09

Ø f8 D_c / R_2	11X 207551	11X 207553	No. of teeth Z	L_c		R_2	R_1		L	Ø D_s	< 60 HRC f_z	< 60 HRC f_z
	Solid carbide barrel milling cutter, short conical form α/2 = 72°	Solid carbide barrel milling cutter, short conical form α/2 = 81°										
	PPC			207551	207553		207551	207553				
mm	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm
12/100	eShop	eShop	5	2.5	1.7	100	2	4	100	12	0.035	0.04

Ø f8 D_c / R_2	11X 207543	11X 207546	11X 207549	No. of teeth Z	L_c			R_2	R_1		L	Ø D_s	< 900 N f_z	< 900 N f_z
	Solid carbide barrel milling cutter, short conical form α/2 = 63°	Solid carbide barrel milling cutter, short conical form α/2 = 72°	Solid carbide barrel milling cutter, short conical form α/2 = 81°											
	PPC				207543	207546	207549		207543 207546	207549				
mm	TiAlN	TiAlN	TiAlN		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
8/180	eShop	eShop	eShop	3	2.4	1.9	1.4	180	1.5	3	80	8	0.055	0.065
12/220	eShop	eShop	eShop	5	3.5	2.5	1.4	220	2	4	120	12	0.07	0.09

Solid carbide barrel milling cutter, straight form







207514



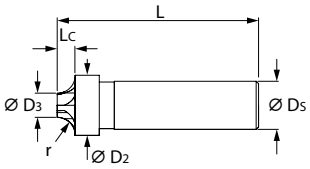
207520

Ø f8 D_c / R_2	11X 207514	11X 207520	L_c	R_2	R_1	L_1	Ø D_1	L	Ø D_s	Alu f_z	< 900 N f_z	Alu f_z	< 900 N f_z
	Solid carbide barrel milling cutter, straight form												
	PPC									207514	207520	207514	207520
mm	DLC	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
10/60	eShop	eShop	21.5	60	1	30	8	72	10	0.06	0.06	0.08	0.08
12/70	eShop	eShop	23	70	1	36	10	83	12	0.07	0.07	0.09	0.09

Solid carbide	Standard	Type N	±0.01		h6 DIN 6535 HA	r

Solid carbide corner rounding cutter / solid carbide corner rounding cutter HPC

Straight fluted, without profile distortion.
Tolerance: **r = ±0.01 mm.**
Application: For rounding and deburring **edges.**





20 8020



20 8022



20 8021



20 8023

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8020/8022	800	600	400	190	170	160	95							90	75		120	●		●	○	○	○
20 8021/8023	800	600	400	200	180	170	100							90	80			●		●	○	●	●

Radius r	11X 20 8020 Garant	12X 20 8022 HOLEX	Ø D_3	Ø D_2	L		Ø D_s	< 900 N f_z
	Solid carbide corner rounding cutter				20 8020	20 8022		
mm	TiAlN	TiSiN	mm	mm	mm	mm	mm	mm
0,2	eShop	–	5.6	6	58	–	6	0.018
0,3	eShop	–	5.4	6	58	–	6	0.018
0,4	eShop	–	5.2	6	58	–	6	0.018
0,5	eShop	eShop	7	8	70	70	8	0.02
0,6	eShop	–	6.8	8	70	–	8	0.02
0,8	eShop	–	6.4	8	70	–	8	0.02
1	eShop	eShop	6	8	70	70	8	0.023
1,5	eShop	–	7	10	75	–	10	0.023
2	eShop	eShop	6	10	75	80	10	0.025
2,5	eShop	–	7	12	75	–	12	0.025
3	eShop	eShop	6	12	75	82	12	0.025
3,5	eShop	–	9	16	80	–	16	0.025
4	eShop	eShop	8	16	80	82	16	0.035
4,5	eShop	–	7	16	80	–	16	0.035
5	eShop	eShop	10	20	80	92	20	0.035
6	eShop	–	8	20	80	–	20	0.045
8	eShop	–	9	25	100	–	25	0.05
10	eShop	–	5	25	100	–	25	0.06

Radius r	11X 20 8021 Garant	11X 20 8023 Garant	No. of teeth Z		Ø D_3		Ø D_2		L		Ø D_s		< 900 N f_z	
	Solid carbide corner rounding cutter HPC		20 8021	20 8023	20 8021	20 8023	20 8021	20 8023	20 8021	20 8023	20 8021	20 8023	20 8021	20 8023
mm	TiAlN	TiAlN			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
0,2	eShop	eShop	3	6	0.5	5.6	1	6	50	58	3	6	0.01	0.02
0,25	eShop	–	3	–	0.5	–	1	–	50	–	3	–	0.01	–
0,3	eShop	eShop	3	6	0.5	5.4	1.2	6	50	58	3	6	0.01	0.02
0,4	eShop	eShop	3	6	0.5	5.2	1.4	6	50	58	3	6	0.01	0.02
0,5	eShop	eShop	3	6	0.5	7	1.6	8	50	70	3	8	0.01	0.02
0,6	eShop	eShop	3	6	0.5	6.8	1.8	8	50	70	3	8	0.01	0.02
0,7	eShop	–	3	–	0.5	–	2.1	–	50	–	3	–	0.01	–
0,8	eShop	eShop	3	6	0.8	6.4	2.5	8	50	70	3	8	0.01	0.025
0,9	eShop	–	3	–	0.8	–	2.9	–	50	–	3	–	0.01	–
1	eShop	eShop	3	6	0.8	6	2.9	8	50	70	3	8	0.01	0.025
1,25	eShop	–	4	–	0.8	–	3.4	–	50	–	6	–	0.02	–
1,5	eShop	eShop	4	6	1.5	7	4.6	10	50	75	6	10	0.02	0.03
1,75	eShop	–	4	–	1.5	–	5.6	–	50	–	6	–	0.02	–
2	eShop	eShop	4	6	1.5	6	5.6	10	50	75	6	10	0.02	0.03
2,25	eShop	–	5	–	1.5	–	6.6	–	50	–	8	–	0.02	–
2,5	eShop	eShop	5	6	1.5	7	6.6	12	50	75	8	12	0.02	0.035
3	–	eShop	–	6	–	6	–	12	–	75	–	12	–	0.035
3,5	–	eShop	–	6	–	9	–	16	–	80	–	16	–	0.04
4	–	eShop	–	6	–	8	–	16	–	80	–	16	–	0.04
4,5	–	eShop	–	6	–	7	–	16	–	80	–	16	–	0.04
5	–	eShop	–	6	–	10	–	20	–	80	–	20	–	0.05
6	–	eShop	–	6	–	8	–	20	–	80	–	20	–	0.06
8	–	eShop	–	6	–	9	–	25	–	100	–	25	–	0.07
10	–	eShop	–	6	–	5	–	25	–	100	–	25	–	0.07

Solid carbide | Standard | Type N | ±0.04 | 3 | h6 DIN 6535 HA

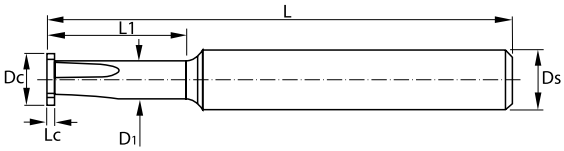
Garant Solid carbide micro Woodruff keyseating cutter

Particularly suitable for slot milling and circular milling in holes. With optimised coating for universal application in virtually all materials.
Tolerance, nominal diameter D_c = +/- 0.04 mm.
Tolerance, cutter length L_c = +/- 0.02 mm.
Size 5,8×0,5–5,8×1,5 – Minimum hole diameter is 6 mm.
Size 7,8×0,7–7,8×2,0 – Minimum hole diameter is 8 mm.

Note: Always use climb milling. Engage loop of 180° to achieve the full depth of cut. Make sure the depth of the slot is linear.
ae_{max} = 0.1×D.



20 8033



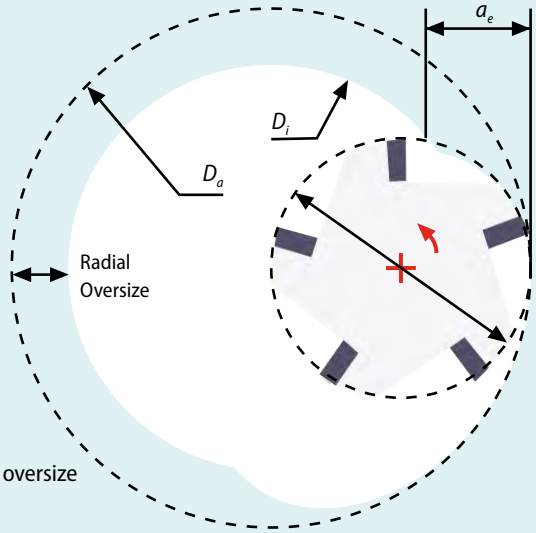
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8033		300		220	190	160	150	100						100			180	●		●			

Ø D_c × L_c	117	20 8033	L_1	Ø D_1	L	Ø D_s	< 900 N f_z
		Solid carbide micro Woodruff keyseating cutter					
mm		AlTiN	mm	mm	mm	mm	mm
5,8×0,5		eShop	15	3.8	58	6	0.02
5,8×0,6		eShop	15	3.8	58	6	0.02
5,8×0,7		eShop	15	3.8	58	6	0.02
5,8×0,8		eShop	15	3.8	58	6	0.025
5,8×0,9		eShop	15	3.8	58	6	0.025
5,8×1,0		eShop	15	3.8	58	6	0.03
5,8×1,5		eShop	15	3.8	58	6	0.03
7,8×0,7		eShop	25	5	68	8	0.02
7,8×0,8		eShop	25	5	68	8	0.025
7,8×0,9		eShop	25	5	68	8	0.025
7,8×1,0		eShop	25	5	68	8	0.03
7,8×1,5		eShop	25	5	68	8	0.03
7,8×2,0		eShop	25	5	68	8	0.03

Garant Application instructions for solid carbide micro Woodruff keyseating cutters

Due to the unfavourable contact ratio of milling cutter (D_c) to hole, particularly in the case of small hole diameters, please note the following:

- Always use climb milling.
- Use engage loop of 180° to achieve the full depth of cut.
- Make sure the depth of the slot is linear.



a_e > radial oversize

$$a_e = \frac{D_a^2 - D_i^2}{4\,(D_i - D_{wz})}$$

a_e cutting width
radial cutting depth [mm]
D_a external (enlarged)
diameter [mm]
D_i internal (existing)
bore diameter [mm]
D_{wz} milling tool diameter [mm]

Solid carbide | DIN 850 D/F | e8 | h6 DIN 6535 HB | Type N | Type NF | 6 | 8 | 10

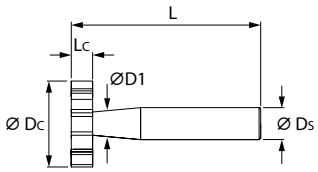
Garant Solid carbide high performance Woodruff keyseating cutter

With new high-performance coating for very long tool life. Peripheral cutting, alternate set teeth (staggered). The sides of the teeth are ground to give clearance
Size 38,5×10; 45,5×10 – With chip separators – type NF.

Note: Suitable for milling Woodruff keyways to DIN 6888.
f_z for $a_p = 0.1 \times D$.
Successor product to No. 208025.



20 8024



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
20 8024				70	67	65	63	60						40				●		●		

Ø $D_c \times L_c$ h11 × e8	11X 20 8024 Solid carbide Woodruff keyseating cutter	No. of teeth Z	for Woodruff keyways to DIN 6888	Ø D_1	L	Ø D_s	< 900 N f_z
mm	TiAlN		mm	mm	mm	mm	mm
10,5×2	eShop	6	2.0×3.7	4	50	6	0.025
10,5×3	eShop	6	3.0×3.7	4.2	50	6	0.025
13,5×2	eShop	8	2.0×5.0	4.6	56	10	0.03
13,5×3	eShop	8	3.0×5.0	4.6	56	10	0.03
13,5×4	eShop	8	4.0×5.0	4.6	56	10	0.03
16,5×3	eShop	10	3.0×6.5	4.6	56	10	0.03
16,5×4	eShop	10	4.0×6.5	4.6	56	10	0.03
19,5×3	eShop	10	3.0×7.5	5.6	63	10	0.035
19,5×4	eShop	10	4.0×7.5	5.6	63	10	0.035
22,5×4	eShop	10	4.0×9.0	6	63	10	0.035
25,5×5	eShop	10	5.0×10.0	7.5	63	10	0.04
28,5×5	eShop	10	5.0×11.0	8.5	63	10	0.04
32,5×5	eShop	10	5.0×13.0	8.5	71	12	0.04
38,5×10	eShop	10	10.0×15.0	11.8	71	12	0.045
45,5×10	eShop	10	10.0×16.0	11.8	71	12	0.045

Solid carbide | DIN 851 | Type N | d11 | 6 | 10° | h6 DIN 6535 HB

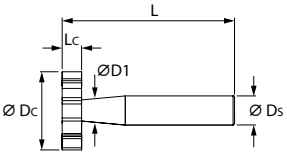
Garant Solid carbide T-slot cutter

With new high-performance coating for very long tool life.
The mill cuts on all three sides. Due to alternate set teeth (staggered).

Note: Suitable for milling T-slots according to DIN 650.
Feed at 50 % f_z until full engagement.
Successor product to No. 208032.



20 8026



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N					
20 8026				105	90	90	80	60										●		●		

Ø $D_c \times L_c$ d11 × d11	11X 20 8026 Solid carbide T-slot cutter	for T-slots DIN 650	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z
mm	TiAlN	mm	mm	mm	mm	mm	mm
12,5×6	eShop	6	5	57	10	0.2	0.033
16×8	eShop	8	7	62	10	0.2	0.034
18×8	eShop	10	8	70	12	0.2	0.034
21×9	eShop	12	10	74	12	0.2	0.034
25×11	eShop	14	12	82	16	0.2	0.034
28×12	eShop	16	13	85	16	0.2	0.035
32×14	eShop	18	15	90	16	0.2	0.045

Solid carbide | DIN 851 | Type NF | d11 | 6 | 10° | h6 DIN 6535 HB

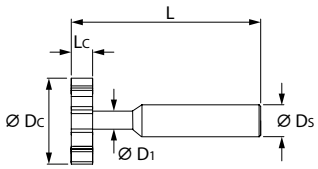
Garant Solid carbide T-slot cutter with semi-roughing profile

With new high-performance coating for very long tool life. The sides of the teeth are ground to give clearance and thus cannot jam in the component. With semi-roughing profile.

Note: For milling T-slots to DIN 650.
Feed at 50 % f_z until full engagement.
Successor product to No. 208034.



20 8027



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
20 8027				105	90	90	80	60										●

Ø $D_C \times L_c$ d11 × d11	11X 20 8027	for T-slots DIN 650	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z
	Solid carbide T-slot cutter, semi-roughing						
mm	TiAlN	mm	mm	mm	mm	mm	mm
12,5×6	eShop	6	5	57	10	0.2	0.033
16×8	eShop	8	7	62	10	0.2	0.034
18×8	eShop	10	8	70	12	0.2	0.034
21×9	eShop	12	10	74	12	0.2	0.034
25×11	eShop	14	12	82	16	0.2	0.034
28×12	eShop	16	13	85	16	0.2	0.035
32×14	eShop	18	15	90	16	0.2	0.035

Solid carbide | DIN 1833 | Type N | js16 | h6 DIN 6535 HB

6 | 8 | 9 | 10

Garant Solid carbide dovetail milling cutter

With new high-performance coating for very long tool life.
Angular tolerance ±8 arc minutes.

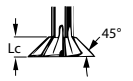
Note: For milling dovetails in tool making and machine building.
Feed at 50 % f_z until full engagement.
20 8028 – **Successor product to No. 208035.**
20 8029 – **Successor product to No. 208036.**
20 8030 – **Successor product to No. 208037.**
20 8031 – **Successor product to No. 208038.**



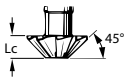
20 8028/8030



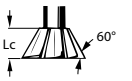
20 8029/8031



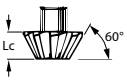
Form C 20 8028



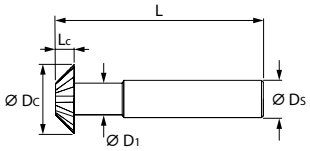
Form D 20 8029

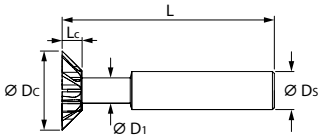


Form C 20 8030



Form D 20 8031





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
20 8028–20 8031				105	90	90	80	60										●

Ø js16 D_C	11X 20 8028	11X 20 8029	11X 20 8030	11X 20 8031	No. of teeth Z		Ø D_1				L	Ø D_s	L_c		< 900 N f_z
	Solid carbide dovetail milling cutter Form C 45°	Solid carbide dovetail milling cutter Form D 45°	Solid carbide dovetail milling cutter Form C 60°	Solid carbide dovetail milling cutter Form D 60°	20 8028 20 8030	20 8029 20 8031	20 8028	20 8029	20 8030	20 8031			20 8028 20 8029	20 8030 20 8031	
mm	TiAlN	TiAlN	TiAlN	TiAlN			mm	mm	mm	mm	mm	mm	mm	mm	mm
12	(eShop)	(eShop)	(eShop)	(eShop)	6	6	5	5	5	5	55	10	3	5	0.04
16	eShop	eShop	eShop	eShop	6	6	6.7	8	6	8.2	60	10	4	6.3	0.042
20	eShop	eShop	eShop	eShop	8	8	7	10	7.8	10.5	63	12	5	8	0.042
22	eShop	eShop	eShop	eShop	8	8	8	10.2	10	10.2	67	12	6	9	0.043
25	eShop	eShop	eShop	eShop	8	8	8	11	9	11.5	67	12	6.3	10	0.045
28	eShop	eShop	eShop	eShop	9	10	8.5	14	13	14	80	16	7.5	11	0.045
32	eShop	eShop	eShop	eShop	9	10	13	15	15	15	71	16	8	12.5	0.045
38	eShop	eShop	eShop	eShop	9	10	15	15	15	15	80	16	10	16	0.045

Solid carbide | Standard | Type N | h6 | 1 | 60° | h6 DIN 6535 HA

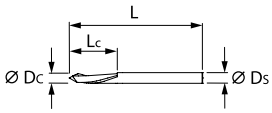
Garant Solid carbide engraving cutter

Application: For engraving contours.

Note: f_z for $a_e = 1.0 \times D$



20 8040



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8040	180	140	105	70	60	55	35							40			55	●		○	○	●	●

Ø h6 D_C	11X 20 8040	L_c	L	Ø D_s	< 900 N f_z
	Solid carbide engraving cutter				
	60°				
mm		mm	mm	mm	mm
3	eShop	15	50	3	0.01
4	eShop	18	50	4	0.02
6	eShop	20	54	6	0.03

Solid carbide | Standard | Type N | e8 | 2 | 30° | a_e 0.5×D

Garant Universal solid carbide chamfer mill

Tolerance: Point angle ±1°.

Application:

20 8065 –
- Countersinking
- Chamfering

20 8070/8080 –
- Slot milling
- Countersinking
- Milling
- Can also be used as a NC spotting drill.

Note: HB shanks are available at the same price as HA.

20 8065 – For **HB** shanks use order **No. 208068.**

20 8070 – For **HB** shanks use order **No. 208071.**

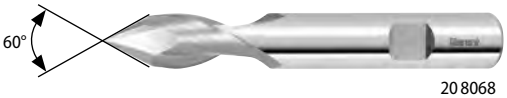
20 8080 – For **HB** shanks use order **No. 208081.**

h6 DIN 6535 HA | 30° | 60°



20 8065

h6 DIN 6535 HB | 30° | 60°



20 8068

h6 DIN 6535 HA | 45° | 90°



20 8070

h6 DIN 6535 HB | 45° | 90°



20 8071

h6 DIN 6535 HA | 60° | 120°

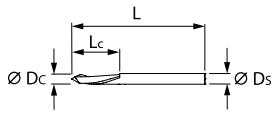


20 8080

h6 DIN 6535 HB | 60° | 120°



20 8081



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8065–20 8080	180	140	105	70	60	55	35							40			55	●		●	○		○

Ø e8 D_C	11X 20 8065	11X 20 8070	11X 20 8080	L_c	L	Ø D_s	< 900 N f_z
	Solid carbide chamfer mill						
mm	60°	90°	120°	mm	mm	mm	mm
3	eShop	eShop	eShop	8	57	6	0.01
4	eShop	eShop	eShop	11	57	6	0.02
5	eShop	eShop	eShop	13	57	6	0.02
6	eShop	eShop	eShop	13	57	6	0.03
8	eShop	eShop	eShop	19	63	8	0.04
10	eShop	eShop	eShop	22	72	10	0.05
12	eShop	eShop	eShop	26	83	12	0.06
16	eShop	eShop	eShop	32	92	16	0.08
20	eShop	eShop	eShop	38	104	20	0.1

Solid carbide | Standard | Type N | h6 | 2 | 35° | 60° | h6 DIN 6535 HA

Garant Solid carbide engraving cutter, spiral flutes

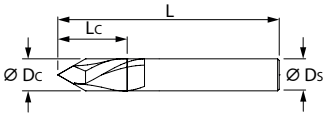
Outstanding surface qualities thanks to the **35° helix angle.** For **higher feed rates** due to **2 cutting edges.** Engraving cutter for **universal use** in virtually all materials. The newly developed coating effectively prevents built-up edges, even in aluminium or stainless steel.

Application: For engraving contours.

Note: f_z for $a_e = 1.0 \times D$



20 8086



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8086	180	300	220	130	115	110	80	65	35					90	70	50	100	●		●	○	○	○

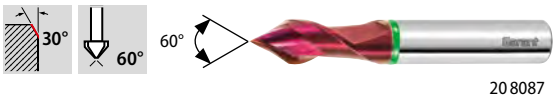
Ø h6 D_c	11X 20 8086	L_c	L	Ø D_s	< 900 N f_z
	Solid carbide engraving cutter, spiral flutes 60°				
mm	TiAlN	mm	mm	mm	mm
3	eShop	3	50	3	0.03
4	eShop	5	50	4	0.04
6	eShop	7	54	6	0.05

Solid carbide | Standard | Type N | e8 | 2 | 35° | a_e 0.5×D | h6 DIN 6535 HA

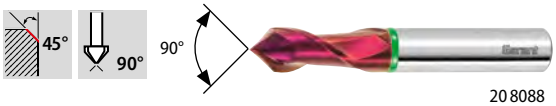
Garant Solid carbide chamfer mill, spiral flutes

Tolerance: Point angle ±5 arc minutes.
Outstanding surface qualities thanks to the **35° helix angle.** Chamfer mill for **universal application** in virtually all materials. The newly developed coating effectively prevents built-up edges, even in aluminium or stainless steel.

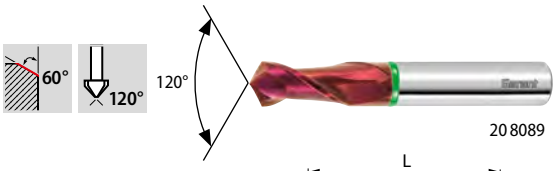
Application:
- Centring
- Drilling
- Countersinking
- Chamfering



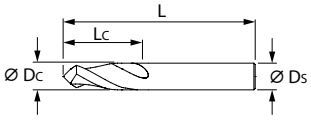
20 8087



20 8088



20 8089



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8087–20 8089	180	300	220	130	115	110	80	65	35					90	70	50	100	●		●	○	○	○

Ø e8 D_c	11X 20 8087	11X 20 8088	11X 20 8089	L_c	L	Ø D_s	< 900 N f_z	INOX > 900 N f_z
	Solid carbide chamfer mill, spiral flutes							
	60°	90°	120°					
mm	TiAlN	TiAlN	TiAlN	mm	mm	mm	mm	mm
3	eShop	eShop	eShop	8	57	6	0.02	0.018
4	eShop	eShop	eShop	11	57	6	0.03	0.027
5	eShop	eShop	–	13	57	6	0.04	0.036
6	eShop	eShop	eShop	13	57	6	0.05	0.045
8	eShop	eShop	eShop	19	63	8	0.06	0.054
10	eShop	eShop	eShop	22	72	10	0.07	0.063
12	eShop	eShop	eShop	26	83	12	0.08	0.072
16	–	eShop	–	32	92	16	0.1	0.08
20	–	eShop	–	38	104	20	0.12	0.11

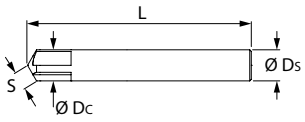
Solid carbide | Standard | Type N | h6 | 120° | h6 DIN 6535 HA | 60°

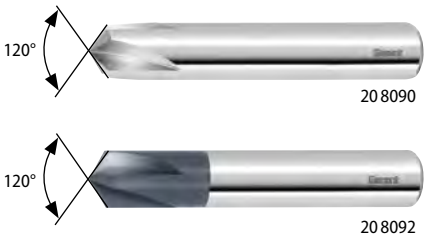
3 4

Garant Solid carbide deburrer

Tolerance: **Dimension S = ±0.1 mm, point angle ±10 arc minutes.**
With special flute geometry for smooth cutting.

Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.





20 8090
20 8092

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
20 8090	180	140	105	70	60	55	35							40	30		55	●
20 8092		280	200	120	105	100	70	60	35					80	60		90	●

Ø h6 D_c	11X 20 8090	11X 20 8092	No. of teeth Z	Dimension S	L	Ø D_s	< 900 N f_z
	Solid carbide deburrer 120°						
		TiAlN					
mm				mm	mm	mm	mm
1	–	eShop	3	0.5	50	3	0.005
2	–	eShop	3	1.1	50	3	0.01
3	–	eShop	3	1.6	50	3	0.01
4	–	eShop	4	2.2	54	4	0.02
6	eShop	eShop	4	3.4	57	6	0.03
8	eShop	eShop	4	4.4	63	8	0.04
10	eShop	eShop	4	5.5	72	10	0.05
12	eShop	eShop	4	6.6	83	12	0.06
16	eShop	eShop	4	8.9	93	16	0.08

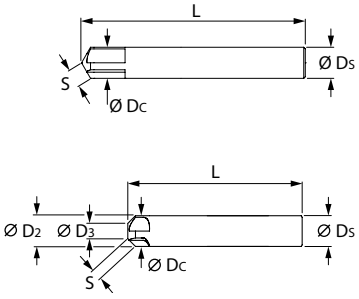
Solid carbide | Standard | Type N | h6 | 90° | h6 DIN 6535 HA | 45°

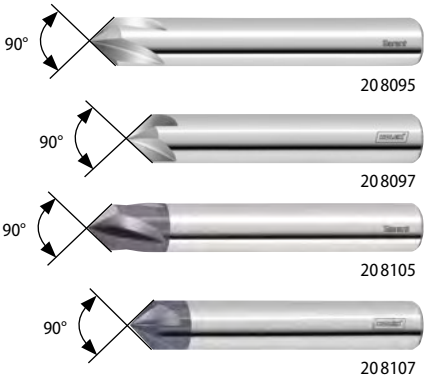
3 4

Solid carbide deburrer

Tolerance: **Dimension S = ±0.1 mm, point angle ±10 arc minutes.**
20 8095/8105 – With special flute geometry for smooth cutting.
Size 6M; 10M; 12M – Extra long. For outstanding deburring results on particularly difficult-to-access contours. Tools without tip.

Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.





20 8095
20 8097
20 8105
20 8107

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
20 8095/8097	180	140	105	70	60	55	35							40	30		55	●
20 8105/8107		280	200	120	105	100	70	60	35					80	60		90	●

Ø h6 D_c	11X 20 8095 Garant	12X 20 8097 HOLEX	11X 20 8105 Garant	12X 20 8107 HOLEX	Ø D_3	Ø D_2	No. of teeth Z	Dimension S	L 20 8095 20 8105	L 20 8097 20 8107	Ø D_s	< 900 N f_z
	Solid carbide deburrer 90°											
			TiAlN	TiAlN								
mm					mm	mm		mm	mm	mm	mm	mm
1	eShop	eShop	eShop	eShop	–	–	3	0.7	50	38	3	0.005
2	eShop	eShop	eShop	eShop	–	–	3	1.4	50	38	3	0.01
3	eShop	eShop	eShop	eShop	–	–	3	2.1	50	38	3	0.01
4	eShop	eShop	eShop	eShop	–	–	4	2.8	54	50	4	0.02
6	eShop	eShop	eShop	eShop	–	–	4	4.2	57	54	6	0.03
6M	eShop	–	eShop	–	3	6	4	2.1	100	–	6	0.025
8	eShop	eShop	eShop	eShop	–	–	4	5.6	63	59	8	0.04
10	eShop	eShop	eShop	eShop	–	–	4	7	72	67	10	0.05
10M	eShop	–	eShop	–	5	10	4	3.5	100	–	10	0.045
12	eShop	eShop	eShop	eShop	–	–	4	8.5	83	74	12	0.06
12M	eShop	–	eShop	–	6	12	4	4.2	120	–	12	0.05
16	eShop	eShop	eShop	eShop	–	–	4	11.2	93	80	16	0.08

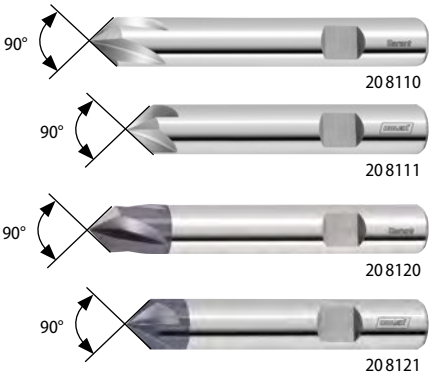
Solid carbide | Standard | Type N | h6 | 4 | 90° | h6 DIN 6535 HB | 45°

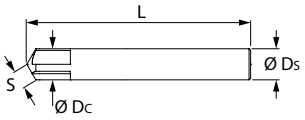
Solid carbide deburrer

Tolerance: **Dimension S = ±0.1 mm, point angle ±10 arc minutes.**

20 8110/8120 – With special flute geometry for smooth cutting.

Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8110/8111	180	140	105	70	60	55	35							40	30		55	●		●	○		○
20 8120/8121		280	200	120	105	100	70	60	35					80	60		90	●		●	○	○	○

Ø h6 D_C	11X 20 8110 Garant	12X 20 8111 HOLEX	11X 20 8120 Garant	12X 20 8121 HOLEX	Dimension S	L		Ø D_s	< 900 N f_z
	Solid carbide deburrer 90°					20 8110 20 8120	20 8111 20 8121		
mm			TiAlN	TiAlN	mm	mm	mm	mm	mm
6	eShop	eShop	eShop	eShop	4.2	57	54	6	0.03
8	eShop	eShop	eShop	eShop	5.6	63	59	8	0.04
10	eShop	eShop	eShop	eShop	7	72	67	10	0.05
12	eShop	eShop	eShop	eShop	8.5	83	74	12	0.06
16	eShop	–	eShop	–	11.2	93	–	16	0.08

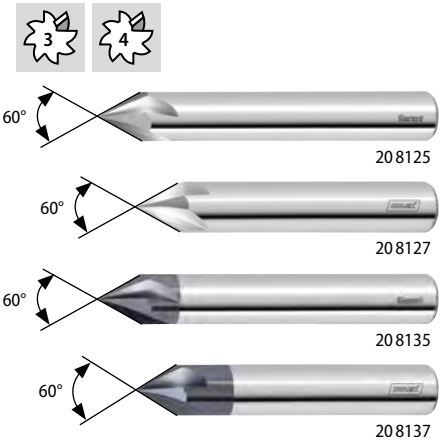
Solid carbide | Standard | Type N | h6 | 60° | h6 DIN 6535 HA | 30°

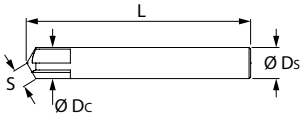
Solid carbide deburrer

Tolerance: **Dimension S = ±0.1 mm, point angle ±10 arc minutes.**

20 8125/8135 – With special flute geometry for smooth cutting.

Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8125/8127	180	140	105	70	60	55	35							40	30		55	●		●	○		○
20 8135/8137		280	200	120	105	100	70	60	35					80	60		90	●		●	○	○	○

Ø h6 D_C	11X 20 8125 Garant	12X 20 8127 HOLEX	11X 20 8135 Garant	12X 20 8137 HOLEX	No. of teeth Z	Dimension S	L		Ø D_s	< 900 N f_z
	Solid carbide deburrer 60°						20 8125 20 8135	20 8127 20 8137		
mm			TiAlN	TiAlN		mm	mm	mm	mm	mm
1	–	–	eShop	eShop	3	0.9	50	38	3	0.005
2	eShop	–	eShop	eShop	3	1.9	50	38	3	0.01
3	eShop	eShop	eShop	eShop	3	2.9	50	38	3	0.01
4	eShop	eShop	eShop	eShop	4	3.9	54	50	4	0.02
6	eShop	eShop	eShop	eShop	4	5.9	57	54	6	0.03
8	eShop	eShop	eShop	eShop	4	7.9	63	59	8	0.04
10	–	eShop	eShop	eShop	4	9.9	72	67	10	0.05
12	eShop	eShop	eShop	eShop	4	11.9	83	74	12	0.06
16	–	–	eShop	eShop	4	15.8	93	80	16	0.08

Solid carbide | Standard | Type N | h6 | 4 | 60° | h6 DIN 6535 HB | 30°

Solid carbide deburrer

Tolerance: **Dimension S = ±0.1 mm, point angle ±10 arc minutes.**

20 8140/8160 – With special flute geometry for smooth cutting.

Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.



20 8140



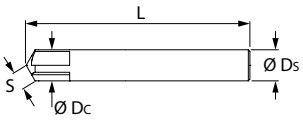
20 8141



20 8160



20 8161



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8140/8141	180	140	105	70	60	55	35							40	30		55	●		●	○		○
20 8160/8161		280	200	120	105	100	70	60	35					80	60		90	●		●	○	○	○

Ø h6 D_c	11X 20 8140 Garant	12X 20 8141 HOLEX	11X 20 8160 Garant	12X 20 8161 HOLEX	Dimension S	L 20 8140 20 8160	L 20 8141 20 8161	Ø D_s	< 900 N f_z
	Solid carbide deburrer 60°								
			TiAlN	TiAlN					
mm					mm	mm	mm	mm	mm
6	eShop	eShop	eShop	eShop	5.9	57	54	6	0.03
8	eShop	eShop	eShop	eShop	7.9	63	59	8	0.04
10	eShop	eShop	eShop	eShop	9.9	72	67	10	0.05
12	eShop	eShop	eShop	eShop	11.9	83	74	12	0.06
16	eShop	–	eShop	–	15.8	93	–	16	0.08

Solid carbide | Standard | Type N | h6 | 30° | h6 DIN 6535 HA | 15°

3 | 4

Garant

Solid carbide deburrer

Tolerance: **Dimension S = ±0.1 mm, point angle ±10 arc minutes.**
With special flute geometry for smooth cutting.

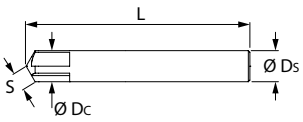
Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.



20 8150



20 8152



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8150	180	140	105	70	60	55	35							40	30		55	●		●	○		○
20 8152		280	200	120	105	100	70	60	35					80	60		90	●		●	○	○	○

Ø h6 D_c	11X 20 8150	11X 20 8152	No. of teeth Z	Dimension S	L	Ø D_s	< 900 N f_z
	Solid carbide deburrer 30°						
		TiAlN					
mm				mm	mm	mm	mm
1	eShop	eShop	3	1.8	50	3	0.005
2	eShop	eShop	3	3.7	50	3	0.01
3	eShop	eShop	3	5.6	50	3	0.01
4	eShop	eShop	4	7.5	54	4	0.02
6	eShop	eShop	4	11.2	57	6	0.03
8	eShop	eShop	4	14.9	63	8	0.04
10	eShop	eShop	4	18.6	72	10	0.05
12	eShop	eShop	4	22.4	83	12	0.06
16	eShop	eShop	4	30	93	16	0.08

Solid carbide | Standard | Type N | h6 | 35° | 90° | h6 DIN 6535 HA | 45°

3 4

Garant Solid carbide deburrer, spiral flutes

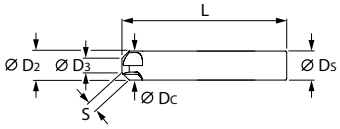
For aluminium and plastics

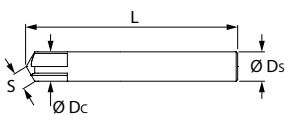
Deburrer with **polished flutes** and **sharp cutting edges** especially for machining aluminium and plastic.
Tolerance: **Dimension S = +/- 0.2 mm.**
Point angle = +/- 5 arc minutes.
Outstanding surface qualities thanks to the 35° **helix angle.**
Size 6M; 10M; 12M – Extra-long deburrers for outstanding deburring results on particularly difficult-to-access contours. Tools without tip.

Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.



20 8154





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 8154	480	440	400	210			150			150	150	150	130	160		300	160	200	●				

Ø h6 D_c	11X	20 8154	Ø D_3	Ø D_2	No. of teeth Z	Dimension S	L	Ø D_s	Alu f_z	PMMA acrylic f_z
		Solid carbide deburrer, spiral flutes 90°								
mm			mm	mm		mm	mm	mm	mm	mm
0,5		eShop	–	–	3	0.3	50	3	0.01	0.01
0,8		eShop	–	–	3	0.5	50	3	0.01	0.01
1		eShop	–	–	3	0.7	50	3	0.01	0.01
2		eShop	–	–	4	1.4	50	3	0.02	0.02
3		eShop	–	–	4	2.1	50	3	0.02	0.02
4		eShop	–	–	4	2.8	50	4	0.03	0.03
6		eShop	–	–	4	4.2	57	6	0.045	0.045
6M		eShop	3	6	4	2.1	100	6	0.045	0.045
8		eShop	–	–	4	5.6	63	8	0.055	0.055
10		eShop	–	–	4	7	72	10	0.07	0.07
10M		eShop	5	10	4	3.5	100	10	0.07	0.07
12		eShop	–	–	4	8.5	83	12	0.085	0.085
12M		eShop	6	12	4	4.2	120	12	0.085	0.085
16		eShop	–	–	4	11.2	92	16	0.1	0.1

Solid carbide | Standard | Type N | h6 | 35° | 90° | h6 DIN 6535 HA | 45°

3 4

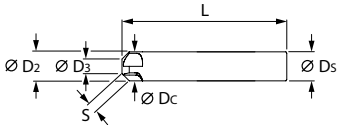
Garant Solid carbide deburrer, spiral flutes

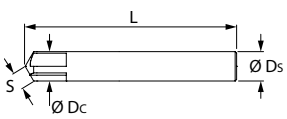
Deburrer for **universal application** on virtually all materials. The newly developed coating effectively prevents built-up edges, even in aluminium or stainless steel.
Tolerance: **Dimension S = +/- 0.2 mm.**
Point angle = +/- 5 arc minutes.
Outstanding surface qualities thanks to the 35° **helix angle.**
Size 6M; 10M; 12M – Extra-long deburrers for outstanding deburring results on particularly difficult-to-access contours. Tools without tip.

Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.



20 8156





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8156	180	300	220	130	115	110	80	65	35					90	70	50	100	●	●	○	○	○	

Ø h6 D_c	11X	20 8156	Ø D_3	Ø D_2	No. of teeth Z	Dimension S	L	Ø D_s	< 900 N f_z
		Solid carbide deburrer, spiral flutes 90°							
mm		TiSiN	mm	mm		mm	mm	mm	mm
0,5		eShop	–	–	3	0.3	50	3	0.02
0,8		eShop	–	–	3	0.5	50	3	0.02
1		eShop	–	–	3	0.7	50	3	0.02
2		eShop	–	–	4	1.4	50	3	0.03
3		eShop	–	–	4	2.1	50	3	0.03
4		eShop	–	–	4	2.8	50	4	0.04
6		eShop	–	–	4	4.2	57	6	0.05
6M		eShop	3	6	4	2.1	100	6	0.03
8		eShop	–	–	4	5.6	63	8	0.06
10		eShop	–	–	4	7	72	10	0.07
10M		eShop	5	10	4	3.5	100	10	0.05
12		eShop	–	–	4	8.5	83	12	0.08
12M		eShop	6	12	4	4.2	120	12	0.06
16		eShop	–	–	4	11.2	93	16	0.1

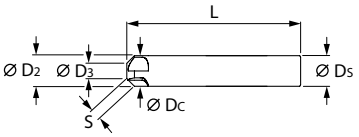
Solid carbide | Standard | Type H | h6 | 6 | 35° | 90° | h6 DIN 6535 HA | 45°

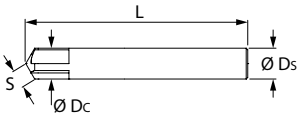
Garant GARANT Diabolo solid carbide deburrer, spiral flutes

Deburrer specially developed for **hard machining**. The further development of the Diabolo coating permits even longer tool life and improved surface quality.
Tolerance: **Dimension S = ± 0.2 mm.**
Point angle = ±5 arc minutes.
Outstanding surface qualities thanks to the 35° **helix angle.**
Size 6M; 10M; 12M – Extra-long deburrers for outstanding deburring results on particularly difficult-to-access contours. Tools without tip.
Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.



20 8158





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
20 8158							140	120	100	90	60	35									○	●	●

Ø h6 D_C	11X 20 8158	Ø D_3	Ø D_2	No. of teeth Z	Dimension S	L	Ø D_s	< 60 HRC f_z
	GARANT Diabolo solid carbide deburrer, spiral flutes 90°							
mm	TiAlN	mm	mm		mm	mm	mm	mm
6	eShop	–	–	6	4.2	57	6	0.03
6M	eShop	3	6	6	2.1	100	6	0.02
8	eShop	–	–	6	5.6	63	8	0.04
10	eShop	–	–	6	7	72	10	0.045
10M	eShop	5	10	6	3.5	100	10	0.035
12	eShop	–	–	6	8.5	83	12	0.055
12M	eShop	6	12	6	4.2	120	12	0.045
16	eShop	–	–	6	11.2	93	16	0.07

Solid carbide | Standard | Type N | h6 | 90° | h6 DIN 6535 HB | 45° | 6 | 8

Garant Solid carbide deburrer

With special flute geometry, smooth cutting. Tolerance: **Dimension S = ± 0.2 mm.**
Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.



20 8162



20 8164



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8162	180	140	105	70	60	55	35							40	30		55	●		●	○		○
20 8164		280	200	120	105	100	70	60	35					80	60		90	●		●	○	○	○

Ø h6 D_C	11X 20 8162	11X 20 8164	No. of teeth Z	Dimension S	L	Ø D_s	< 900 N f_z
	Solid carbide deburrer 90°						
mm		TiAlN		mm	mm	mm	mm
6	eShop	eShop	6	4.2	57	6	0.03
8	eShop	eShop	6	5.6	63	8	0.04
10	eShop	eShop	6	7	72	10	0.05
12	eShop	eShop	6	8.5	83	12	0.06
16	eShop	eShop	8	11.2	92	16	0.08
20	–	eShop	8	14	104	20	0.1

Solid carbide | Standard | h6 | 60° | 30°

Garant Solid carbide deburrer, spiral flutes / GARANT Diabolo solid carbide deburrer, spiral flutes

20 8165 – Deburrer for **universal application** on virtually all materials. The newly developed coating effectively prevents built-up edges, even in aluminium or stainless steel.

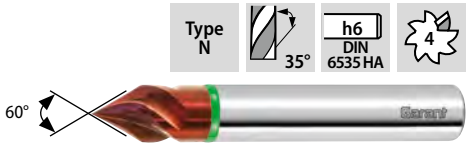
20 8167 – Deburrer specially developed for **hard machining**. The further development of the DIABOLO coating permits even longer tool life and improved surface quality.

20 8165/8167 – **Outstanding surface qualities** thanks to the **35° helix angle.** Tolerance: **Dimension S = ± 0.2 mm. Point angle ±5 arc minutes.**

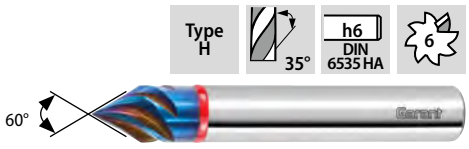
Size 6M; 10M; 12M – Extra-long deburrers for outstanding deburring results on particularly difficult-to-access contours. Tools without tip.

20 8166/8168 – With special flute geometry, smooth cutting. Tolerance: **Dimension S = ± 0.2 mm.**

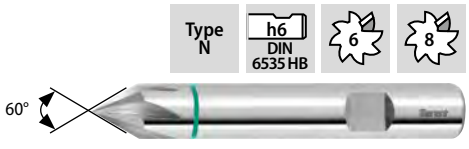
Application: Perfectly suitable for **chamfering** and **deburring** component edges and for **contouring applications**.



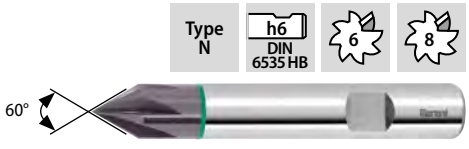
20 8165



20 8167

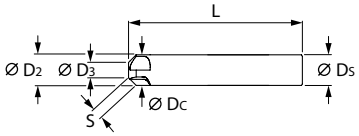


20 8166



20 8168





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8165	180	300	220	130	115	110	80	65	35					90	70	50	100	●		●	○	○	○
20 8166	180	140	105	70	60	55	35							40	30		55	●		●	○		○
20 8167							140	120	100	90	60	35									○	●	●
20 8168		280	200	120	105	100	70	60	35					80	60		90	●		●	○	○	○

Ø h6 D_c	11X 20 8165 Solid carbide deburrer, spiral flutes 60°	11X 20 8167 GARANT Diabolo solid carbide deburrer, spiral flutes 60°	Ø D_3	Ø D_2	No. of teeth Z		Dimension S	L	Ø D_s	< 900 N f_z	< 60 HRC f_z
					20 8165	20 8167				20 8165	20 8167
mm	TiSiN	TiAlN	mm	mm			mm	mm	mm	mm	mm
6	eShop	eShop	–	–	4	6	5.9	57	6	0.05	0.03
6M	eShop	eShop	3	6	4	6	2.9	100	6	0.03	0.02
8	eShop	eShop	–	–	4	6	7.9	63	8	0.06	0.04
10	eShop	eShop	–	–	4	6	9.9	72	10	0.07	0.045
10M	eShop	eShop	5	10	4	6	4.9	100	10	0.05	0.035
12	eShop	eShop	–	–	4	6	11.9	83	12	0.08	0.055
12M	eShop	eShop	6	12	4	6	5.9	120	12	0.06	0.045
16	eShop	eShop	–	–	4	6	15.8	93	16	0.1	0.07

Ø h6 D_c	11X 20 8166 Solid carbide deburrer 60°	11X 20 8168 Solid carbide deburrer 60°	No. of teeth Z	Dimension S	L	Ø D_s	< 900 N f_z
mm		TiAlN		mm	mm	mm	mm
6	eShop	eShop	6	5.9	57	6	0.03
8	eShop	eShop	6	7.9	63	8	0.04
10	eShop	eShop	6	9.9	72	10	0.05
12	eShop	eShop	6	11.9	83	12	0.06
16	–	eShop	8	15.8	92	16	0.08
20	–	eShop	8	19.9	104	20	0.1

Solid carbide | Standard | Type N | ±0.05 | a_e 0.5×r | h6 DIN 6535 HA | r r

Garant

Solid carbide forward / reverse corner rounding cutter



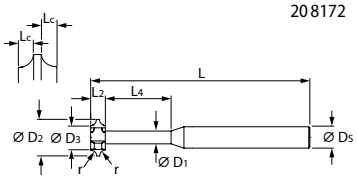
20 8170



20 8172

Extra long shank.
Double ground head **with quadrant profile.**
Tolerance: Size = **Radius r ±0.05 mm.**

Application: For **front** and **back deburring** of edges with contours.
20 8172 – For **universal application** in virtually all materials.
The newly developed coating **effectively prevents formation of built-up edges** – even in aluminium and stainless steel.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8170		115	70	65	65	40	35							35			40	○		●	○	●	●
20 8172		125	75	70	70	45	40							35	30		45	●		●	○	●	●

Radius r	11X 20 8170	11X 20 8172	$Ø D_3$	$Ø D_2$	L_2 +0.5	L_4 +0.5	$Ø D_1$ +0.05	L_c	L	$Ø D_s$		< 900 N f_z
	Solid carbide forward / reverse corner rounding cutter					20 8172	20 8172			20 8170	20 8172	
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
0,2	eShop	eShop	7.6	8	2	26	6	0.2	100	6	8	0.01
0,3	eShop	eShop	7.4	8	2	26	6	0.3	100	6	8	0.01
0,4	eShop	eShop	7.2	8	2	26	6	0.4	100	6	8	0.01
0,5	eShop	eShop	7	8	2	26	6	0.5	100	6	8	0.01
0,8	eShop	eShop	8.4	10	4	31	6	0.8	100	6	10	0.01
1	eShop	eShop	8	10	4	31	6	1	100	6	10	0.01
1,2	eShop	eShop	7.6	10	5	31	6	1.2	100	6	10	0.01
1,5	eShop	eShop	7	10	5	31	6	1.5	100	6	10	0.01
1,8	eShop	eShop	8.4	12	6	37	6	1.8	100	6	12	0.01
2	eShop	eShop	8	12	7	37	6	2	100	6	12	0.01
2,5	eShop	eShop	7	12	8	37	6	2.5	100	6	12	0.01

Solid carbide | Standard | Type N | ±0.05 | 90° | a_e 0.25×L_2 | h6 DIN 6535 HA | 45° 45°

Garant

Solid carbide forward / reverse deburring tool



taper 20 8180_3–6



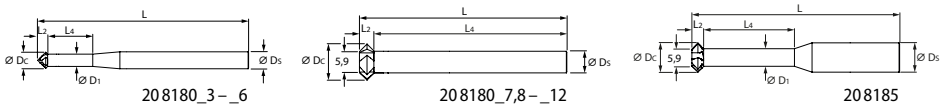
flat 20 8180_7.8–12



flat 20 8185

Extra long shank.
Double ground head **with 45° angle.**

Application: For **forward** and **reverse deburring** and **chamfering** even where access is difficult.
Particularly suitable for **contouring applications.**
20 8185 – For **universal application** in virtually all materials.
The newly developed coating **effectively prevents formation of built-up edges** – even in aluminium and stainless steel.



20 8180_3 – _6 | 20 8180_7,8 – _12 | 20 8185

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
20 8180		115	70	65	65	40	35							35			40	○		●	○	●	●
20 8185		125	75	70	70	45	40							35	30		45	●		●	○	●	●

$Ø D_c$	11X 20 8180	11X 20 8185	L_2 +0.5	L_4 +0.5		$Ø D_1$ +0.05		L	Shape	$Ø D_s$		< 900 N f_z
	Solid carbide forward / reverse deburring tool			20 8180	20 8185	20 8180	20 8185			20 8180	20 8185	
mm	TiAlN	TiAlN	mm	mm	mm	mm	mm	mm		mm	mm	mm
3	eShop	–	2	10	–	2,2	–	75	pointed	4	–	0.01
3,8	eShop	–	2.7	13	–	2.9	–	75	pointed	4	–	0.01
4	eShop	–	2.7	13	–	2.9	–	75	pointed	4	–	0.01
4,8	eShop	–	3	15	–	3.9	–	75	pointed	5	–	0.01
5	eShop	–	3	15	–	3.9	–	75	pointed	5	–	0.01
5,8	eShop	–	4	15	–	3.9	–	100	pointed	6	–	0.01
6	eShop	–	4	15	–	3.9	–	100	pointed	6	–	0.01
7,8	eShop	eShop	2	98	26	–	6	100	flat	6	8	0.012
8	eShop	eShop	2	98	26	–	6	100	flat	6	8	0.012
9,8	eShop	eShop	4	96	31	–	6	100	flat	6	10	0.014
10	eShop	eShop	4	96	31	–	6	100	flat	6	10	0.014
11,8	eShop	eShop	6	94	37	–	6	100	flat	6	12	0.017
12	eShop	eShop	6	94	37	–	6	100	flat	6	12	0.017

Solid carbide | Standard | Type N | ±0.05 | 5° | 90° | a_e 0.25×L_2 | h6 DIN 6535 HA | 45° 45°

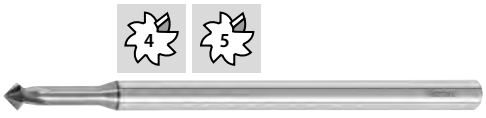
Garant Solid carbide forward and reverse deburring tool with helix angle

Extra-long shank.
Double ground head with **45° angle.**
The **helix angle ground into the head on both sides** produces a **much softer cut** and thus an **excellent surface quality.** For **universal application** in virtually all materials. The newly developed coating **effectively prevents the formation of built-up edges** – even in aluminium and corrosion-resistant steels (INOX).

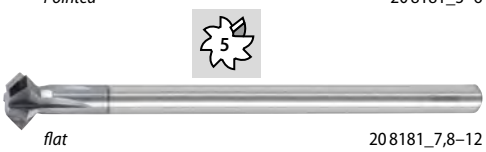
Size 3–6 – Pointed version
Size 7,8–12 – Flat version

Application: For **forward** and **reverse deburring** and **chamfering** even where access is difficult.
Particularly suitable for **contouring applications.**

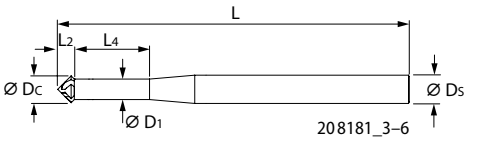
Note:	**Successor product to No. 208180.**



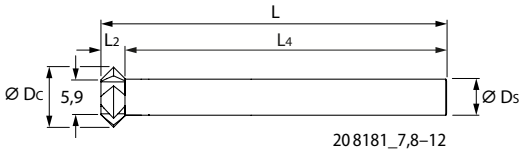
Pointed 208181_3–6



flat 208181_7,8–12



208181_3–6

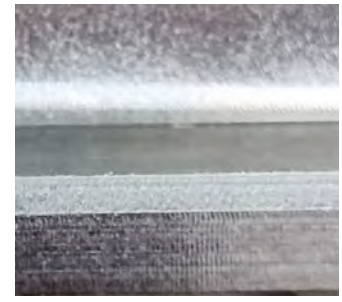


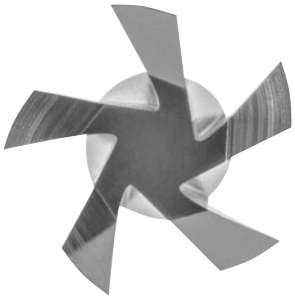
208181_7,8–12

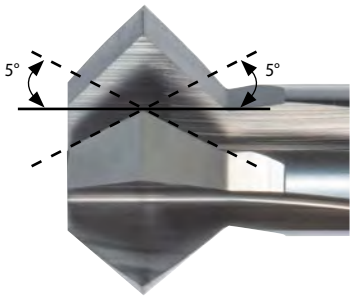
*Material C45 machined with **208180.***



*Material C45 machined with **208181.***







Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
208181		130	80	75	75	50	45							40	30	20	50	●		●	○	●	●

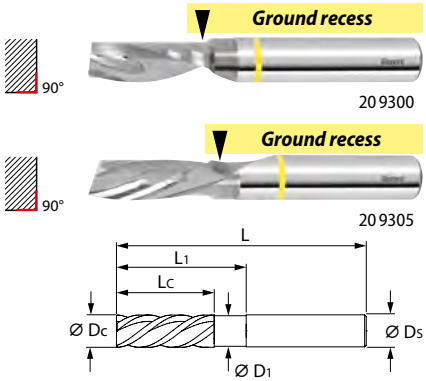
Ø D_c mm	11X 20 8181 Solid carbide forward / reverse deburring tool with helix angle TiSiN	No. of teeth Z	L_2 +0.5 mm	L_4 +0.5 mm	Ø D_1 +0.05 mm	L mm	Shape	Ø D_s mm	< 900 N f_z mm
3	eShop	4	2	10	2.2	75	Pointed	4	0.025
3,8	eShop	4	2.7	13	2.9	75	Pointed	4	0.03
4	eShop	4	2.7	13	2.9	75	Pointed	4	0.03
4,8	eShop	5	3	15	3.9	75	Pointed	5	0.035
5	eShop	5	3	15	3.9	75	Pointed	5	0.035
5,8	eShop	5	4	15	3.9	100	Pointed	6	0.04
6	eShop	5	4	15	3.9	100	Pointed	6	0.04
7,8	eShop	5	2	98	6	100	Flat	6	0.045
8	eShop	5	2	98	6	100	Flat	6	0.045
9,8	eShop	5	4	96	6	100	Flat	6	0.05
10	eShop	5	4	96	6	100	Flat	6	0.05
11,8	eShop	5	6	94	6	100	Flat	6	0.055
12	eShop	5	6	94	6	100	Flat	6	0.055

Solid carbide | Standard | Type W | h10 | 1 | 23° | h5 DIN 6535 HA

Garant Solid carbide milling cutter

Large flutes for unobstructed swarf evacuation.
Special geometry **for machining plastic.**
20 9305 – Left-hand flutes, right-hand cutting.
Application: Especially for milling **plastics, plunging** and **contour milling.**

Note:
20 9300 – **Successor product to No. 209310.**
20 9305 – **Successor product to No. 209315.**



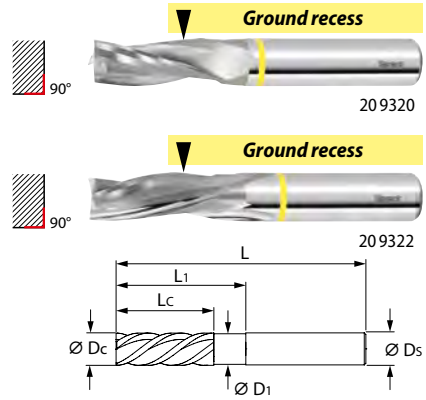
Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9300/9305	180	140	105	**190**	**140**	**160**	**140**	**120**								180	**150**	180

Ø h10 D_c	11X 20 9300	11X 20 9305	L_c	L_1	Ø D_1	L	Ø D_s	PMMA acrylic f_z
	Solid carbide slot drill							
mm		Left-hand flutes	mm	mm	mm	mm	mm	mm
1,5	eShop	eShop	6	10	1.3	50	3	0.004
2	eShop	eShop	8	12	1.8	50	3	0.008
3	eShop	eShop	12	17	2.8	50	3	0.008
4	eShop	eShop	15	20	3.8	60	4	0.015
5	eShop	eShop	17	22	4.8	60	5	0.015
6	eShop	eShop	20	25	5.8	65	6	0.025
8	eShop	eShop	22	27	7.8	70	8	0.03
10	eShop	eShop	25	32	9.8	75	10	0.04
12	eShop	eShop	30	38	11.8	83	12	0.05

Solid carbide | Standard | Type W | e8 | 20° | a_e 0.5×D | h6 DIN 6535 HA | 2 | 3

Garant Solid carbide milling cutter

Special geometry for machining aluminium and plastics.
20 9322 – Left-hand flutes, right-hand cutting.
Application: Extremely sharp cutting edges, **especially for machining plastics.**



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Honey-comb sandwich	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9320/9322	180	140	105	**190**	**140**	**160**	**140**	**120**								180	**150**	180

Ø e8 D_c	11X 20 9320	11X 20 9322	No. of teeth Z	L_c	L_1	Ø D_1	L	Ø D_s	PMMA acrylic f_z	PMMA acrylic f_z
	Solid carbide slot drill									
mm		Left-hand flutes		mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	2	13	16	3.8	54	4	0.015	0.02
5	eShop	eShop	2	15	18	4.8	54	5	0.015	0.02
6	eShop	eShop	2	16	21	5.8	64	6	0.025	0.03
8	eShop	eShop	2	22	27	7.8	70	8	0.03	0.04
10	eShop	eShop	2	25	32	9.8	72	10	0.04	0.05
12	eShop	eShop	3	28	38	11.8	83	12	0.05	0.07
14	eShop	–	3	30	42	13.8	83	14	0.05	0.07
16	eShop	eShop	3	36	44	15.8	92	16	0.065	0.09
20	eShop	eShop	3	41	54	19.8	104	20	0.085	0.12

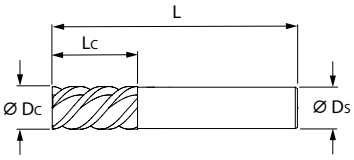
Solid carbide | Standard | h10 | a_e 0.5×D | h6 DIN 6535 HA | G 2.5 n_{max}

Garant Solid carbide router cutter for GRP and CRP

High performance diamond-pattern cut for efficient roughing of fibre-reinforced composites.



20 9512



Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	CRP	Graphite GRP CRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9512							200	190	170	150	180	160	●			190	190		●			●	●

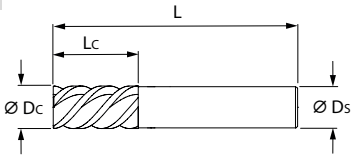
Ø h10 D_c	10Y	20 9512	L_c	L	Ø D_s	GRP CRP f
		Solid carbide router cutter compacting cut fine				
mm		Diamond	mm	mm	mm	mm/rev.
4		eShop	16	50	4	0.21
5		eShop	16	50	5	0.21
6		eShop	19	60	6	0.28
8		eShop	25	63	8	0.35
10		eShop	25	72	10	0.42
12		eShop	32	83	12	0.42
16		eShop	36	92	16	0.49
20		eShop	45	104	20	0.56

Solid carbide | Standard | h10 | a_e 0.5×D | h6 DIN 6535 HA

Garant Solid carbide milling cutter for GRP, CRP, and graphite

Twisted and curved cutting edges, which enable **burr-free milling** of both the upper and lower edges of fibre-reinforced composites.
Delamination is prevented because the cutter performs a cut which is simultaneously dragging and compacting. The cutter must be positioned centrally to the cross section of the material.

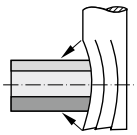






20 9515

Workpiece centre



The helical curved flute profile prevents delamination and permits burr-free milling.



20 9517

Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9515/9517							200	190	170	150	180	160	●	350		190	190	340		●		●	●

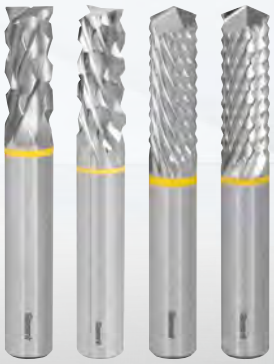
Ø h10 D_c	10Y	20 9515	10Y	20 9517	No. of teeth Z	L_c		Cutting section dragging L_A		L		Ø D_s	GRP CRP f_z
		Solid carbide milling cutter											
						20 9515	20 9517	20 9515	20 9517	20 9515	20 9517		
mm		Diamond		Diamond		mm	mm	mm	mm	mm	mm	mm	mm
6		eShop		eShop	4	16	21	8	10	58	65	6	0.06
8		eShop		eShop	6	22	28	11	14	70	85	8	0.07
10		eShop		eShop	6	25	32	12	16	73	85	10	0.08
12		eShop		eShop	6	28	36	14	18	84	93	12	0.1

GARANT COMPOSITE SOLID CARBIDE MILLING CUTTERS.

The highest performance for composite materials.

Compared to GARANT router tools, our GARANT composite solid carbide milling cutters are especially designed for the machining of composite materials and offer a longer tool life and higher metal removal rate.

GARANT router tools



20 9410 / 20 9420 / 20 9415 / 20 9435

GARANT Composite solid carbide milling cutter

+100%

- Tool life **plus 100 %**.
- **Extremely improved** smooth running.
- **4x higher** cutting quality.

Uncoated



20 9542 **20 9540**

+100%

- Tool life **plus 100 %**.
- **Increased** smooth running.
- **Twice the** cutting quality.

Diamond-coated



20 9548 **20 9546**

The further development of the GARANT composite cutters guarantees clear advantages:

+30 %

Increased productivity

- Problem-solver in unfavourable process conditions.
- Extreme cutting edge sharpness for excellent cutting quality.

Optimum cutting edge quality

- 40 %

Reduced axial forces

- Process conditions, ideal for use in hard-to-machine outer layers.
- Increased layer thickness for maximum tool lives.

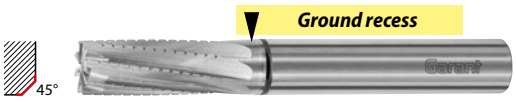
Very high productivity

Solid carbide | DIN 6527 | h10 | 8 | 8° | h6 DIN 6535 HA

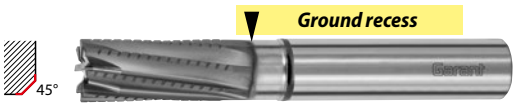
Garant Solid carbide milling cutter Composite

Specifically **developed Tool cutting edge has been specifically developed further** for optimum machining of composite materials.
Length similar to **DIN 6527 long.**

20 9540/9546 – Right-hand helix, **dragging cut** for standard applications.
20 9542/9548 – Left-hand helix, **compacting cut.** The material is pushed down on to the substrate. Highly suitable for thin materials.



20 9540



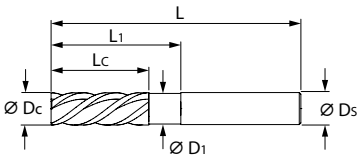
20 9546



20 9542



20 9548



Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	CRP	GRP CRP	Graphite					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9540/9542							80	80	80	80	80	80	●	165		120	120	180		●		●	●
20 9546/9548							100	100	100	100	100	100	●	195		145	145	200		●		●	●

Ø h10 D_c	100 20 9540	100 20 9546	100 20 9542	100 20 9548	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	GRP CRP f_z
	Solid carbide milling cutter Composite, dragging cut		Solid carbide milling cutter Composite, compacting cut								
	uncoated	Diamond	uncoated	Diamond							
mm					mm	mm	mm	mm	mm	mm	mm
4	eShop	eShop	eShop	eShop	11	19	3.9	57	6	0.08	0.021
5	eShop	eShop	eShop	eShop	13	19	4.9	57	6	0.1	0.021
6	eShop	eShop	eShop	eShop	13	19	5.8	57	6	0.12	0.026
6M	eShop	eShop	eShop	eShop	21	27	5.8	65	6	0.12	0.026
8	eShop	eShop	eShop	eShop	19	25	7.8	63	8	0.16	0.031
8M	eShop	eShop	eShop	eShop	22	32	7.8	70	8	0.16	0.031
10	eShop	eShop	eShop	eShop	22	30	9.7	72	10	0.2	0.035
12	eShop	eShop	eShop	eShop	26	36	11.6	83	12	0.24	0.038
16	eShop	eShop	eShop	eShop	32	42	15.5	92	16	0.32	0.042

Hoffmann Group ToolScout

- Quick application-related tool selection.
- Direct ordering in the eShop.
- Manufacturer and standard-related tool selection.
- Cutting data - direct selection.
- Tool information for reliable engineering.

You can find optimum cutting data, machining strategy and NC programs for your machine programming in the ThreadScout.



PCD | Standard | h10 | 2 | a_e 0.2×D | h6 DIN 6535 HA

Garant PCD slot drill with internal cooling

High performance PCD slot drill for **high metal removal rates.**

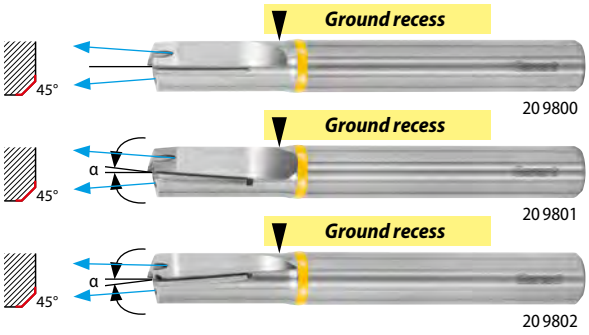
20 9800 – **Axial angle 0°.**
Straight flutes for a neutral cut.

20 9801 Size 3–8 – **Axial angle positive. α = 2°.**
Dragging cut for standard applications.

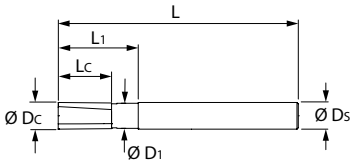
20 9801 Size 10–16 – **Axial angle positive. α = 4°.**
Dragging cut for standard applications.

20 9802 Size 3–8 – **Axial angle negative. α = -2°.**
Compacting cut.
The material is pushed down on to the substrate. Highly suitable for thin materials.

20 9802 Size 10–16 – **Axial angle negative. α = -4°.**
Compacting cut.
The material is pushed down on to the substrate. Highly suitable for thin materials.



Improved version!



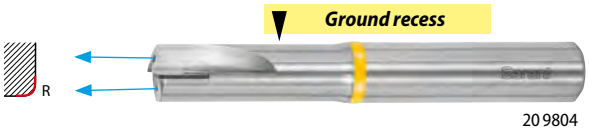
Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	MMC	GRP	CRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9800–20 9802	2400	2000	1500	1000	900	900	800		1200	1200	1000	1000	1000	800	●	400	500	500		●	●	●	●

Ø h10 D_c	100 20 9800	100 20 9801	100 20 9802	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	Alu cast > 10 % Si f_z	Graphite f_z	Alu cast > 10 % Si f_z	Graphite f_z
	PCD slot drill with internal cooling												
	straight cut	dragging cut	compacting cut										
mm	PCD	PCD	PCD	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	eShop	2.5	15	2.8	60	6	0.1	0.01	0.05	0.02	0.05
4	eShop	eShop	eShop	2.5	15	3.8	60	6	0.1	0.01	0.07	0.02	0.07
5	eShop	eShop	eShop	3	15	4.6	60	6	0.1	0.02	0.09	0.03	0.09
6	eShop	eShop	eShop	15	20	5.4	60	6	0.1	0.03	0.1	0.04	0.1
8	eShop	eShop	eShop	20	30	7.4	80	8	0.1	0.04	0.11	0.05	0.11
10	eShop	eShop	eShop	20	30	9.4	90	10	0.1	0.06	0.12	0.07	0.12
12	eShop	eShop	eShop	20	30	11	100	12	0.1	0.08	0.14	0.09	0.14
16	eShop	eShop	eShop	20	30	15	125	16	0.1	0.1	0.15	0.11	0.15

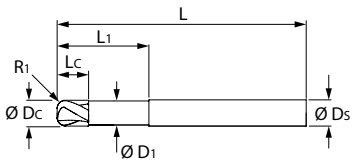
PCD | Standard | e8 | 2 | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA

Garant PCD torus cutter with internal cooling

High performance PCD slot drill for **high metal removal rates.**
Straight flutes for a neutral cut.
Tolerance for corner radius R_1 = **±0.01 mm.**



Improved version!



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	MMC	GRP	CRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9804	2400	2000	1500	1000	900	900	800		1200	1200	1000	1000	1000	800	●	400	500	500		●	●	●	●

Ø e8 D_c / R_1	100 20 9804	L_c	R_1	L_1	Ø D_1	L	Ø D_s	Alu cast > 10 % Si f_z	Graphite f_z	Alu cast > 10 % Si f_z	Graphite f_z
	PCD torus cutter with internal cooling										
	straight cut										
mm	PCD	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3/0,3	eShop	2.5	0.3	14	2.8	50	6	0.03	0.06	0.05	0.1
4/0,5	eShop	2.5	0.5	14	3.8	50	6	0.03	0.06	0.05	0.1
5/0,5	eShop	3	0.5	18	4.6	54	6	0.04	0.07	0.07	0.12
6/0,5	eShop	6	0.5	21	5.5	57	6	0.04	0.07	0.07	0.12
6/1,0	eShop	6	1	21	5.5	57	6	0.04	0.07	0.07	0.12
8/0,5	eShop	7	0.5	27	7.4	63	8	0.05	0.09	0.08	0.14
10/0,5	eShop	8	0.5	32	9.2	72	10	0.06	0.1	0.09	0.14
10/1,0	eShop	8	1	32	9.2	72	10	0.06	0.1	0.09	0.14

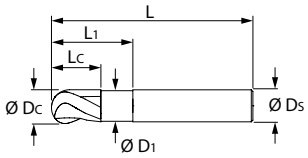
PCD | Standard | e8 | 2 | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA

Garant PCD ball nose slot drill with internal cooling

High-performance PCD slot drill for the **highest demands in respect to material removal rates. Straight flutes** for a neutral cut.



20 9806



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	MMC	GRP	CRP					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9806	2400	2000	1500	1000	900	900	800		1200	1200	1000	1000	1000	800	●	400	500	500	●	●	●	●	

Ø e8 D_C	100	20 9806	L_c	L_1	Ø D_1	L	Ø D_s	Alu cast > 10 % Si f_z	Graphite f_z	Alu cast > 10 % Si f_z	Graphite f_z
		PCD ball nose slot drill with internal cooling straight cut									
mm		PCD	mm	mm	mm	mm	mm	mm	mm	mm	mm
3		eShop	2.5	9	2.8	60	6	0.03	0.06	0.05	0.1
4		eShop	2.5	15	3.8	60	6	0.03	0.06	0.05	0.1
5		eShop	3	15	4.6	60	6	0.04	0.08	0.07	0.12
6		eShop	6	15	5.5	80	6	0.04	0.08	0.07	0.12
8		eShop	10	20	7.4	80	8	0.05	0.09	0.08	0.14
10		eShop	10	26	9.4	80	10	0.06	0.1	0.09	0.14
12		eShop	10	35	11.2	100	12	0.06	0.1	0.09	0.14
16		eShop	10	35	15	125	16	0.07	0.11	0.1	0.15

PCD | Standard | Type N | ±0.05 | 3 | h6 DIN 6535 HA | HPC

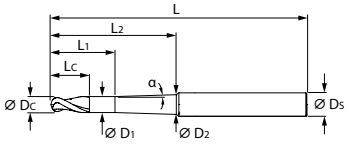
Garant PCD milling cutter with internal cooling

High-performance PCD milling cutter designed for **high-volume machining. High rigidity** due to conical design. Very well suited for structural components made of aluminium. Axial angle approx. 10° positive.

Size 16 – Taper transition with 2.2° (angle α).
Size 20 – Taper transition with 1.5° (angle α).



20 9808



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9808	900	900	900	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000		900	900	●	●	●	●	●

Ø D_C	11Y	20 9808	L_c	R_1	L_1	Ø D_1	L	Ø D_s	L_2	Ø D_2	Alu cast > 10 % Si f_z
		PCD milling cutter with internal cooling HPC									
mm		PCD	mm	mm	mm	mm	mm	mm	mm	mm	mm
16		eShop	11.4	3	19.6	12.8	105	16	56	15.5	0.2
20		eShop	14.2	3	22.6	17	120	20	70	19.4	0.2

PCD | Standard | ±0.02

4 5 6 7

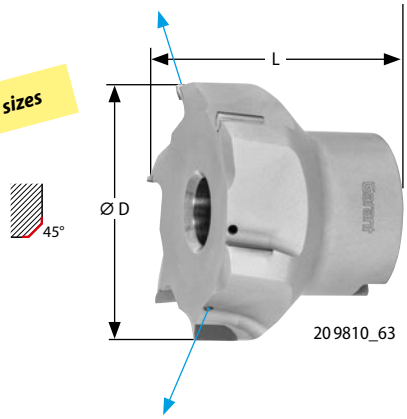
Garant PCD face mill

High-performance PCD face mill for **roughing and finish machining. Generous flutes** for reliable evacuation of the chips. Coolant directly on the cutting edge. Axial angle 6° positive.

Supplied with: Special fastening screw for optimal coolant feed.

Note: Matching face mill arbors are located in the clamping device area, e.g. No. 306530 22. PCD face mill with corner radius 0.1 mm – 1.5 mm are available on request.

new sizes



Suitable for/ v_c [m/min]	Alu	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Cu	CuZn
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9810	6000	6000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000		6000	2000

Ø D	11Y 20 9810 PCD face mill with bore	L	Bore Ø	No. of teeth Z	Corner chamfer width at 45°	Alu cast > 10 % Si f_z
mm	PCD	mm			mm	mm
32	(eShop)	40	16	4	0.1	0.2
40	(eShop)	40	16	4	0.1	0.2
50	eShop	48	22	5	0.1	0.2
63	eShop	48	22	6	0.1	0.2
80	(eShop)	50	27	7	0.1	0.2

Solid carbide | Standard | 0 −0.005 | 2 | a_e 0.5×D | h5 DIN 6535 HA

25° 30°

≤ 0.8 mm ≥ 1 mm

Garant Solid carbide micro precision slot drill for CRP, GRP and graphite

With **crystalline diamond sp³ coating.** For the **highest demands regarding performance and precision in** fibre-reinforced composites, CRP, GRP, and graphite. **Extremely tight tolerances** ensure maximum accuracy. Double relief ground with 2 hollow-ground chamfers. **Recess angle α = 16°.**

Tolerances:

- Neck Ø: **D_1 = 0 / -0.01 mm.**

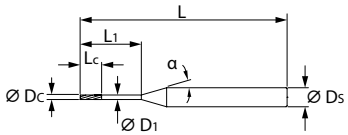
Note: At greater tool overhang lengths, use a reduced value for a_p!
Values for:
slots milled from solid: $a_p = 0.1 \times D \times a_{p\,korr}$
side milling: $a_p = 0.2 \times D \times a_{p\,korr}$
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)!
e.g: vf = 18000 [rpm]× fz [mm/Z]× z

90°

Ground recess



20 9700



Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honeycomb sandwich	MMC	GRP	GRP CRP	Graphite
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9700							200	190	170	150	180	160	●	350		190	190	340

Ø D_c × L_1	10Y 20 9700 Solid carbide micro slot drill	L_c	L_1	Ø D_1	L	Ø D_s	Graphite f_z	Graphite f_z	Correction factor $a_{p\,corr}$
mm	Diamond	mm	mm	mm	mm	mm	mm	mm	
0,1×0,3	eShop	0.15	0.3	0.08	45	4	0.008	0.012	1
0,1×0,5	eShop	0.15	0.5	0.08	45	4	0.008	0.012	1
0,1×1	eShop	0.15	1	0.08	45	4	0.005	0.007	0.5
0,2×0,5	eShop	0.3	0.5	0.18	45	4	0.008	0.012	1
0,2×1	eShop	0.3	1	0.18	45	4	0.008	0.012	1
0,2×2	eShop	0.3	2	0.18	45	4	0.005	0.007	0.5
0,2×3	eShop	0.3	3	0.18	45	4	0.005	0.007	0.2

∅ D_c × L_1	10Y 20 9700 Solid carbide micro slot drill	L_c	L_1	∅ D_1	L	∅ D_s	Graphite f_z	Graphite f_z	Correction factor $a_{p\,corr}$
mm	**Diamond**	mm	mm	mm	mm	mm	mm	mm	
0,3×1	eShop	0.4	1	0.28	45	4	0.012	0.016	1
0,3×2	eShop	0.4	2	0.28	45	4	0.012	0.016	0.9
0,3×4	eShop	0.4	4	0.28	45	4	0.008	0.012	0.35
0,3×6	eShop	0.4	6	0.28	45	4	0.005	0.007	0.08
0,4×2	eShop	0.6	2	0.38	45	4	0.012	0.016	1
0,4×4	eShop	0.6	4	0.38	45	4	0.008	0.012	0.5
0,4×6	eShop	0.6	6	0.38	45	4	0.008	0.012	0.2
0,4×8	eShop	0.6	8	0.38	45	4	0.005	0.007	0.08
0,5×2	eShop	0.7	2	0.48	45	4	0.016	0.02	1
0,5×4	eShop	0.7	4	0.48	45	4	0.016	0.02	0.8
0,5×6	eShop	0.7	6	0.48	45	4	0.012	0.016	0.35
0,5×8	eShop	0.7	8	0.48	45	4	0.012	0.016	0.12
0,5×10	eShop	0.7	10	0.48	45	4	0.008	0.012	0.08
0,5×12	eShop	0.7	12	0.48	50	4	0.008	0.012	0.04
0,6×2	eShop	0.9	2	0.58	45	4	0.016	0.02	1
0,6×4	eShop	0.9	4	0.58	45	4	0.016	0.02	0.9
0,6×6	eShop	0.9	6	0.58	45	4	0.012	0.016	0.5
0,6×8	eShop	0.9	8	0.58	45	4	0.012	0.016	0.35
0,6×10	eShop	0.9	10	0.58	50	4	0.012	0.016	0.12
0,6×15	eShop	0.9	15	0.58	60	4	0.008	0.012	0.04
0,8×4	eShop	1.2	4	0.78	45	4	0.016	0.02	1
0,8×6	eShop	1.2	6	0.78	45	4	0.016	0.02	0.8
0,8×8	eShop	1.2	8	0.78	45	4	0.012	0.016	0.8
0,8×10	eShop	1.2	10	0.78	50	4	0.012	0.016	0.35
0,8×15	eShop	1.2	15	0.78	60	4	0.012	0.016	0.08
0,8×20	eShop	1.2	20	0.78	60	4	0.008	0.012	0.04
1×4	eShop	1.5	4	0.95	45	4	0.025	0.03	1
1×6	eShop	1.5	6	0.95	45	4	0.025	0.03	0.9
1×8	eShop	1.5	8	0.95	45	4	0.025	0.03	0.8
1×10	eShop	1.5	10	0.95	50	4	0.02	0.025	0.5
1×12	eShop	1.5	12	0.95	50	4	0.02	0.025	0.35
1×15	eShop	1.5	15	0.95	50	4	0.02	0.025	0.2
1×20	eShop	1.5	20	0.95	60	4	0.016	0.02	0.08
1×25	eShop	1.5	25	0.95	70	4	0.016	0.02	0.04
1×30	eShop	1.5	30	0.95	70	4	0.012	0.016	0.02
1,2×5	eShop	1.8	5	1.14	45	4	0.025	0.03	1
1,2×10	eShop	1.8	10	1.14	45	4	0.025	0.03	0.8
1,2×15	eShop	1.8	15	1.14	50	4	0.02	0.025	0.35
1,2×20	eShop	1.8	20	1.14	60	4	0.02	0.025	0.12
1,2×25	eShop	1.8	25	1.14	70	4	0.016	0.02	0.04
1,2×30	eShop	1.8	30	1.14	70	4	0.012	0.016	0.04
1,4×6	eShop	2.1	6	1.34	45	4	0.025	0.03	1
1,5×5	eShop	2.3	5	1.44	45	4	0.025	0.03	1
1,5×10	eShop	2.3	10	1.44	45	4	0.025	0.03	0.9
1,5×15	eShop	2.3	15	1.44	50	4	0.02	0.025	0.5
1,5×20	eShop	2.3	20	1.44	60	4	0.02	0.025	0.35
1,5×25	eShop	2.3	25	1.44	60	4	0.02	0.025	0.12
1,5×30	eShop	2.3	30	1.44	70	4	0.016	0.02	0.08
1,6×5	eShop	2.4	5	1.51	45	4	0.025	0.03	1
1,6×10	eShop	2.4	10	1.51	45	4	0.025	0.03	0.9
1,6×15	eShop	2.4	15	1.51	50	4	0.02	0.025	0.5
1,6×20	eShop	2.4	20	1.51	60	4	0.02	0.025	0.35
1,8×6	eShop	2.7	6	1.71	45	4	0.03	0.035	1
2×5	eShop	3	5	1.91	45	4	0.03	0.035	1
2×6	eShop	3	6	1.91	45	4	0.03	0.035	1
2×10	eShop	3	10	1.91	45	4	0.03	0.035	1
2×15	eShop	3	15	1.91	50	4	0.03	0.035	0.8
2×20	eShop	3	20	1.91	60	4	0.025	0.03	0.5
2×25	eShop	3	25	1.91	60	4	0.025	0.03	0.35
2×30	eShop	3	30	1.91	70	4	0.025	0.03	0.2
2×40	eShop	3	40	1.91	80	4	0.02	0.025	0.08
2×50	eShop	3	50	1.91	90	4	0.02	0.025	0.08
2,5×8	eShop	3.7	8	2.41	45	4	0.03	0.035	1
2,5×5	eShop	3.7	5	2.41	45	4	0.03	0.035	1
2,5×10	eShop	3.7	10	2.41	45	4	0.03	0.035	1
2,5×12	eShop	3.7	12	2.41	45	4	0.03	0.035	1
2,5×15	eShop	3.7	15	2.41	50	4	0.03	0.035	0.9
2,5×20	eShop	3.7	20	2.41	60	4	0.03	0.035	0.8
2,5×25	eShop	3.7	25	2.41	60	4	0.025	0.03	0.5
2,5×30	eShop	3.7	30	2.41	70	4	0.025	0.03	0.35
2,5×40	eShop	3.7	40	2.41	80	4	0.02	0.025	0.12
2,5×50	eShop	3.7	50	2.41	90	4	0.016	0.02	0.04
3×15	eShop	4.5	15	2.91	50	4	0.03	0.035	1
3×20	eShop	4.5	20	2.91	60	4	0.03	0.035	0.9
3×25	eShop	4.5	25	2.91	60	4	0.03	0.035	0.8
3×30	eShop	4.5	30	2.91	70	4	0.025	0.03	0.5
3×40	eShop	4.5	40	2.91	80	4	0.025	0.03	0.35
3×50	eShop	4.5	50	2.91	90	4	0.025	0.03	0.35
3×60	eShop	4.5	60	2.91	100	4	0.02	0.025	0.04

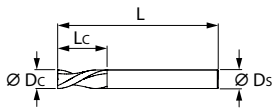
Solid carbide | Standard | h10 | 2 | 15° | h6 DIN 6535 HA

Garant Solid carbide milling cutter for GRP, CRP, and graphite

With the latest generation of **crystalline diamond coating sp³**, for process reliability in machining **fibre-reinforced composites, CRP, GRP, and graphite.**
Dynamic cutter geometry.
Relief ground with 2 hollow-ground chamfers.
High-precision and **stable** version due to the 15° helix angle.



20 9711



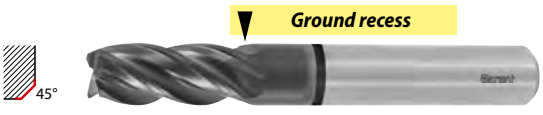
Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9711							200	190	170	150	180	160	●	350		190	190	340

Ø h10 D_c	10Y	20 9711	L_c	L	Ø D_s	Corner chamfer width at 45°	GRP CRP f_z	Graphite f_z
		Solid carbide slot drill						
mm		Diamond	mm	mm	mm	mm	mm	mm
3		eShop	8	57	6	0.06	0.03	0.03
4		eShop	11	57	6	0.08	0.03	0.03
5		eShop	13	57	6	0.1	0.03	0.03
6		eShop	13	57	6	0.12	0.04	0.04
8		eShop	19	63	8	0.16	0.05	0.05
10		eShop	22	72	10	0.2	0.06	0.06
12		eShop	26	83	12	0.2	0.06	0.06
16		eShop	32	92	16	0.2	0.07	0.07
20		eShop	38	104	20	0.2	0.08	0.08

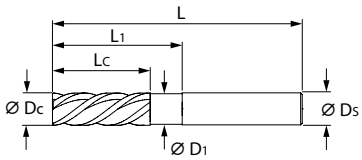
Solid carbide | Standard | f8 | 4 | 45° | ≠ | h6 DIN 6535 HA | G 2.5 nmax

Garant Solid carbide milling cutter for GRP, CRP, and graphite

With the latest generation of **crystalline diamond coating sp³**, for process reliability in machining **fibre-reinforced composites, CRP, GRP, and graphite.**
Dynamic cutter geometry.



20 9713



Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9713							200	190	170	150	180	160	●	350		190	190	340

Ø f8 D_c	10Y	20 9713	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	GRP CRP f_z	Graphite f_z
		Solid carbide milling cutter								
mm		Diamond	mm	mm	mm	mm	mm	mm	mm	mm
6		eShop	13	19	5.9	57	6	0.1	0.04	0.04
8		eShop	19	25	7.8	63	8	0.2	0.05	0.05
10		eShop	22	30	9.7	72	10	0.2	0.06	0.06
12		eShop	26	36	11.7	83	12	0.3	0.06	0.06
16		eShop	32	42	15.5	92	16	0.3	0.07	0.07
20		eShop	38	52	19.5	104	20	0.3	0.08	0.08

Solid carbide | Standard | 0 −0.005 | 2 | a_e 0.5×D | a_e 0.05×D | h5 DIN 6535 HA

25° ≤ 0.8 mm | 30° ≥ 1 mm

Garant

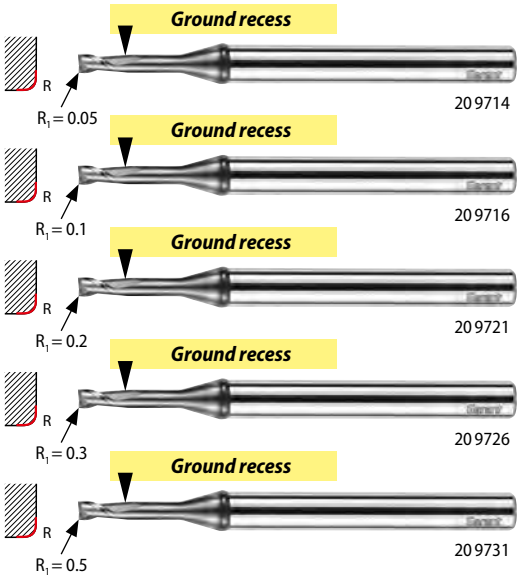
Solid carbide micro precision torus cutter for CRP, GRP and graphite

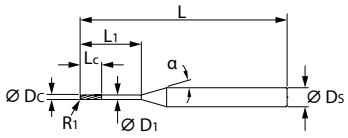
With **crystalline diamond sp³ coating**. For the **highest demands regarding performance and precision** in fibre-reinforced composites, CRP, GRP, and graphite. **Extremely tight tolerances** ensure maximum accuracy. Double relief ground with 2 hollow-ground chamfers.
Recess angle α = 16°.

Tolerances:

- Corner radius: **R_1 = ±0.0025 mm**
- Neck Ø: **D_1 = 0 / -0.01 mm**

Note: At greater tool overhang lengths, use a reduced value for a_p!
Values for:
copying: $a_p = 0.10 \times D \times a_{p\,korr}$
side milling: $a_p = 0.20 \times D \times a_{p\,korr}$
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)!
e.g: vf = 18000 [rpm]× fz [mm/Z]× z





Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9714–20 9731							200	190	170	150	180	160	●	350		190	190	340

Ø $D_c \times L_1$	10Y 20 9714	10Y 20 9716	10Y 20 9721	10Y 20 9726	10Y 20 9731	L_c	L_1	Ø D_1	L	Ø D_s	Graphite f_z	Graphite f_z	Correction factor $a_{p\,corr}$
	Solid carbide torus cutter												
	R_1 0.05	R_1 0.1	R_1 0.2	R_1 0.3	R_1 0.5								
mm	Diamond	Diamond	Diamond	Diamond	Diamond	mm	mm	mm	mm	mm	mm	mm	
0,2×1	eShop	–	–	–	–	0.2	1	0.18	50	4	0.012	0.012	1
0,2×2	eShop	–	–	–	–	0.2	2	0.18	50	4	0.007	0.007	0.5
0,2×3	eShop	–	–	–	–	0.2	3	0.18	50	4	0.007	0.007	0.2
0,3×1	eShop	–	–	–	–	0.3	1	0.28	50	4	0.016	0.016	1
0,3×2	eShop	–	–	–	–	0.3	2	0.28	50	4	0.016	0.016	0.9
0,3×4	eShop	–	–	–	–	0.3	4	0.28	50	4	0.012	0.012	0.35
0,3×6	eShop	–	–	–	–	0.3	6	0.28	50	4	0.007	0.007	0.08
0,4×2	eShop	eShop	–	–	–	0.4	2	0.38	50	4	0.016	0.016	1
0,4×4	eShop	eShop	–	–	–	0.4	4	0.38	50	4	0.012	0.012	0.5
0,4×6	eShop	eShop	–	–	–	0.4	6	0.38	50	4	0.012	0.012	0.2
0,4×8	eShop	eShop	–	–	–	0.4	8	0.38	50	4	0.007	0.007	0.08
0,5×2	eShop	eShop	–	–	–	0.5	2	0.48	50	4	0.02	0.02	1
0,5×4	eShop	eShop	–	–	–	0.5	4	0.48	50	4	0.02	0.02	0.8
0,5×6	eShop	eShop	–	–	–	0.5	6	0.48	50	4	0.016	0.016	0.35
0,5×8	eShop	eShop	–	–	–	0.5	8	0.48	50	4	0.016	0.016	0.12
0,5×10	eShop	eShop	–	–	–	0.5	10	0.48	50	4	0.012	0.012	0.08
0,5×12	eShop	eShop	–	–	–	0.5	12	0.48	50	4	0.012	0.012	0.04
0,6×2	eShop	eShop	–	–	–	0.6	2	0.58	50	4	0.02	0.02	1
0,6×4	eShop	eShop	–	–	–	0.6	4	0.58	50	4	0.02	0.02	0.9
0,6×6	eShop	eShop	–	–	–	0.6	6	0.58	50	4	0.016	0.016	0.5
0,6×8	eShop	eShop	–	–	–	0.6	8	0.58	50	4	0.016	0.016	0.35

Ø $D_C \times L_1$	10Y 20 9714	10Y 20 9716	10Y 20 9721	10Y 20 9726	10Y 20 9731	L_c	L_1	Ø D_1	L	Ø D_s	Graphite f_z	Graphite f_z	Correction factor $a_{p\,corr}$
	Solid carbide torus cutter												
	R_1 0.05	R_1 0.1	R_1 0.2	R_1 0.3	R_1 0.5								
	Diamond	Diamond	Diamond	Diamond	Diamond								
mm						mm	mm	mm	mm	mm	mm	mm	
0,6×10	eShop	eShop	–	–	–	0.6	10	0.58	50	4	0.016	0.016	0.12
0,6×15	eShop	eShop	–	–	–	0.6	15	0.58	60	4	0.012	0.012	0.04
0,8×4	eShop	eShop	eShop	–	–	0.8	4	0.78	50	4	0.02	0.02	1
0,8×6	eShop	eShop	eShop	–	–	0.8	6	0.78	50	4	0.02	0.02	0.8
0,8×8	eShop	eShop	eShop	–	–	0.8	8	0.78	50	4	0.016	0.016	0.8
0,8×10	eShop	eShop	eShop	–	–	0.8	10	0.78	50	4	0.016	0.016	0.35
0,8×15	eShop	eShop	eShop	–	–	0.8	15	0.78	60	4	0.016	0.016	0.08
0,8×20	eShop	eShop	eShop	–	–	0.8	20	0.78	60	4	0.012	0.012	0.04
1×4	eShop	eShop	eShop	eShop	–	1	4	0.95	50	4	0.03	0.03	1
1×6	eShop	eShop	eShop	eShop	–	1	6	0.95	50	4	0.03	0.03	0.9
1×8	eShop	eShop	eShop	eShop	–	1	8	0.95	50	4	0.03	0.03	0.8
1×10	eShop	eShop	eShop	eShop	–	1	10	0.95	50	4	0.025	0.025	0.5
1×15	eShop	eShop	eShop	eShop	–	1	15	0.95	60	4	0.025	0.025	0.2
1×20	eShop	eShop	eShop	eShop	–	1	20	0.95	60	4	0.02	0.02	0.08
1×25	eShop	eShop	eShop	eShop	–	1	25	0.95	70	4	0.02	0.02	0.04
1×30	eShop	eShop	eShop	eShop	–	1	30	0.95	70	4	0.016	0.016	0.02
1,2×5	–	–	eShop	eShop	–	1.2	5	1.14	50	4	0.03	0.03	1
1,2×10	–	–	eShop	eShop	–	1.2	10	1.14	50	4	0.03	0.03	0.8
1,2×15	–	–	eShop	eShop	–	1.2	15	1.14	60	4	0.025	0.025	0.35
1,2×20	–	–	eShop	eShop	–	1.2	20	1.14	60	4	0.025	0.025	0.12
1,2×25	–	–	eShop	eShop	–	1.2	25	1.14	70	4	0.02	0.02	0.04
1,2×30	–	–	eShop	eShop	–	1.2	30	1.14	70	4	0.016	0.016	0.04
1,5×10	–	–	eShop	eShop	eShop	1.5	10	1.44	50	4	0.03	0.03	0.9
1,5×15	–	–	eShop	eShop	eShop	1.5	15	1.44	60	4	0.025	0.025	0.5
1,5×20	–	–	eShop	eShop	eShop	1.5	20	1.44	60	4	0.025	0.025	0.35
1,5×25	–	–	eShop	eShop	eShop	1.5	25	1.44	60	4	0.025	0.025	0.12
1,5×30	–	–	eShop	eShop	eShop	1.5	30	1.44	70	4	0.02	0.02	0.08
1,6×5	–	–	eShop	eShop	eShop	1.6	5	1.54	50	4	0.03	0.03	1
1,6×10	–	–	eShop	eShop	eShop	1.6	10	1.54	50	4	0.03	0.03	0.9
1,6×15	–	–	eShop	eShop	eShop	1.6	15	1.54	60	4	0.025	0.025	0.5
1,6×20	–	–	eShop	eShop	eShop	1.6	20	1.54	60	4	0.025	0.025	0.35
2×5	–	eShop	eShop	eShop	eShop	2	5	1.91	50	4	0.035	0.035	1
2×10	–	eShop	eShop	eShop	eShop	2	10	1.91	50	4	0.035	0.035	1
2×15	–	eShop	eShop	eShop	eShop	2	15	1.91	60	4	0.035	0.035	0.8
2×20	–	eShop	eShop	eShop	eShop	2	20	1.91	60	4	0.03	0.03	0.5
2×25	–	eShop	eShop	eShop	eShop	2	25	1.91	70	4	0.03	0.03	0.35
2×30	–	eShop	eShop	eShop	eShop	2	30	1.91	70	4	0.03	0.03	0.2
2×40	–	eShop	eShop	eShop	eShop	2	40	1.91	80	4	0.025	0.025	0.08
2×50	–	eShop	eShop	eShop	eShop	2	50	1.91	90	4	0.025	0.025	0.08
2,5×5	–	eShop	eShop	eShop	eShop	2.5	5	2.41	50	4	0.035	0.035	1
2,5×10	–	eShop	eShop	eShop	eShop	2.5	10	2.41	50	4	0.035	0.035	1
2,5×15	–	eShop	eShop	eShop	eShop	2.5	15	2.41	60	4	0.035	0.035	0.9
2,5×20	–	eShop	eShop	eShop	eShop	2.5	20	2.41	60	4	0.035	0.035	0.8
2,5×25	–	eShop	eShop	eShop	eShop	2.5	25	2.41	70	4	0.03	0.03	0.5
2,5×30	–	eShop	eShop	eShop	eShop	2.5	30	2.41	70	4	0.03	0.03	0.35
2,5×40	–	eShop	eShop	eShop	eShop	2.5	40	2.41	80	4	0.025	0.025	0.12
2,5×50	–	eShop	eShop	eShop	eShop	2.5	50	2.41	90	4	0.02	0.02	0.04
3×15	–	–	eShop	eShop	eShop	4.5	15	2.91	60	4	0.035	0.035	1
3×20	–	–	eShop	eShop	eShop	4.5	20	2.91	60	4	0.035	0.035	0.9
3×25	–	–	eShop	eShop	eShop	4.5	25	2.91	70	4	0.035	0.035	0.8
3×30	–	–	eShop	eShop	eShop	4.5	30	2.91	70	4	0.03	0.03	0.5
3×40	–	–	eShop	eShop	eShop	4.5	40	2.91	80	4	0.03	0.03	0.35
3×50	–	–	eShop	eShop	eShop	4.5	50	2.91	90	4	0.03	0.03	0.35
3×60	–	–	eShop	eShop	eShop	4.5	60	2.91	100	4	0.025	0.025	0.04

Solid carbide | Standard | e8 | 4 | 30° | ≠ | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA

Garant

Solid carbide torus cutter for GRP, CRP, and graphite

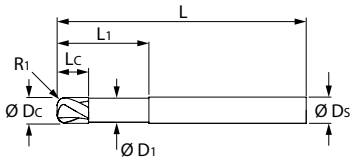
With the latest generation of **crystalline diamond coating sp³**, for process reliability in machining **fibre-reinforced composites, CRP, GRP and graphite.** Double relief ground side clearance angle.
Tolerance: Corner radius **R_1 = ±0.01 mm.**



20 9755



20 9758



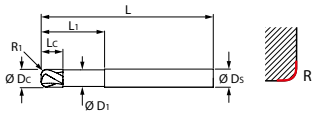
Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9755/9758							200	190	170	150	180	160	●	350		190	190	340			●	●	●

Ø e8 D_c / R_1	10Y 20 9755	10Y 20 9758	L_c	R_1	L_1		Ø D_1	L		Ø D_s	Graphite f_z	Graphite f_z
	Solid carbide torus cutter				20 9755	20 9758		20 9755	20 9758			
mm	Diamond	Diamond	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3/0,3	eShop	eShop	4	0.3	14	32	2.7	50	75	3	0.02	0.02
3/0,5	eShop	eShop	4	0.5	14	32	2.7	50	75	3	0.02	0.02
3/1,0	eShop	eShop	4	1	14	32	2.7	50	75	3	0.02	0.02
4/0,4	eShop	eShop	5	0.4	16	36	3.7	50	75	4	0.02	0.02
4/0,5	eShop	eShop	5	0.5	16	36	3.7	50	75	4	0.02	0.02
4/1,0	eShop	eShop	5	1	16	36	3.7	50	75	4	0.02	0.02
5/0,5	eShop	eShop	6	0.5	18	40	4.6	54	75	5	0.052	0.052
5/1,0	eShop	eShop	6	1	18	40	4.6	54	75	5	0.052	0.052
6/0,5	eShop	eShop	7	0.5	21	44	5.5	57	80	6	0.052	0.052
6/1,0	eShop	eShop	7	1	21	44	5.5	57	80	6	0.052	0.052
6/1,5	eShop	eShop	7	1.5	21	44	5.5	57	80	6	0.052	0.052
8/0,5	eShop	eShop	9	0.5	27	54	7.4	63	100	8	0.078	0.078
8/1,0	eShop	eShop	9	1	27	54	7.4	63	100	8	0.078	0.078
8/1,5	eShop	eShop	9	1.5	27	54	7.4	63	100	8	0.078	0.078
8/2,0	eShop	eShop	9	2	27	54	7.4	63	100	8	0.078	0.078
10/0,5	eShop	eShop	11	0.5	32	60	9.2	72	100	10	0.091	0.091
10/1,0	eShop	eShop	11	1	32	60	9.2	72	100	10	0.091	0.091
10/1,5	eShop	eShop	11	1.5	32	60	9.2	72	100	10	0.091	0.091
10/2,0	eShop	eShop	11	2	32	60	9.2	72	100	10	0.091	0.091
12/0,5	eShop	eShop	12	0.5	38	75	11	83	120	12	0.105	0.105
12/1,0	eShop	eShop	12	1	38	75	11	83	120	12	0.105	0.105
12/1,5	eShop	eShop	12	1.5	38	75	11	83	120	12	0.105	0.105
12/2,0	eShop	eShop	12	2	38	75	11	83	120	12	0.105	0.105

Solid carbide | Standard | e8 | 4 | 30° | ≠ | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA

Garant Solid carbide torus cutter for GRP, CRP, and graphite

With the latest generation of **crystalline diamond coating sp³**, for process reliability in machining **fibre-reinforced composites, CRP, GRP and graphite.**
Double relief ground side clearance angle.
Tolerance: **Corner radius R_1 = ±0.01 mm.**





20 9760

Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9760							200	190	170	150	180	160	●	350		190	190	340

Ø e8 D_C / R_1	10Y 20 9760	L_c	R_1	L_1	Ø D_1	L	Ø D_s	Graphite f_z	Graphite f_z
	Solid carbide torus cutter								
mm	Diamond	mm	mm	mm	mm	mm	mm	mm	mm
4/0,4	eShop	5	0.4	60	3.7	100	4	0.02	0.02
6/0,5	eShop	7	0.5	70	5.5	120	6	0.052	0.052
8/0,5	eShop	9	0.5	75	7.4	120	8	0.078	0.078
10/0,5	eShop	11	0.5	80	9.2	120	10	0.091	0.091
10/1,0	eShop	11	1	80	9.2	120	10	0.091	0.091
12/0,5	eShop	12	0.5	100	11	160	12	0.105	0.105
12/2,0	eShop	12	2	100	11	160	12	0.105	0.105

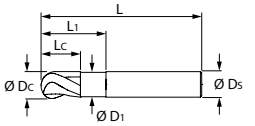
Solid carbide | Standard | f8 | 2 | 30° | a_e 0.2×D | a_e 0.05×D | h6 DIN 6535 HA

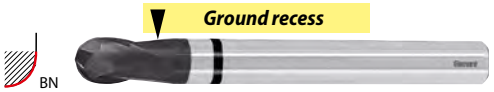
Garant Solid carbide ball nose milling cutter for GRP, CRP, and graphite

With the latest generation of **crystalline diamond coating sp³**, for process reliability in machining **fibre-reinforced composites, CRP, GRP and graphite.**
Double relief ground side clearance angle.
Tolerance: Radius contour = **±0.01 mm.**



20 9776





20 9781

Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 9776/9781							200	190	170	150	180	160	●	350		190	190	340

Ø f8 D_C / D_S	10Y 20 9776	10Y 20 9781	L_c	L_1		Ø D_1	L		Ø D_s	Graphite f_z	Graphite f_z	Correction factor for v_c
	Solid carbide ball nose slot drill			20 9776	20 9781		20 9776	20 9781				
mm	Diamond	Diamond	mm	mm	mm	mm	mm	mm	mm	mm	mm	
1	eShop	–	2	3	–	0.95	50	–	3	0.011	0.011	–
1/6	eShop	eShop	2	3	16	0.95	54	80	6	0.011	0.011	1.25
1,2	eShop	–	3	4	–	1.05	50	–	3	0.011	0.011	–
1,4	eShop	–	3	4	–	1.15	50	–	3	0.011	0.011	–
1,5	eShop	–	3	5	–	1.35	50	–	3	0.011	0.011	–
1,5/6	eShop	eShop	3	5	22	1.44	54	80	6	0.011	0.011	–
1,6	eShop	–	4	6	–	1.54	50	–	3	0.011	0.011	–
1,8	eShop	–	4	7	–	1.74	50	–	3	0.022	0.022	–
2	eShop	–	4	8	–	1.92	50	–	3	0.022	0.022	–
2/6	eShop	eShop	4	8	28	1.92	54	80	6	0.022	0.022	1.25
2,5	eShop	–	5	9	–	2.4	50	–	3	0.022	0.022	–
2,5/6	eShop	–	5	9	–	2.4	54	–	6	0.022	0.022	–
3	eShop	eShop	5	9	33	2.9	50	75	3	0.023	0.023	–
3/6	eShop	eShop	5	9	33	2.9	54	80	6	0.023	0.023	1.25
4	eShop	eShop	8	12	36	3.9	54	75	4	0.023	0.023	–
4/6	eShop	eShop	8	12	36	3.9	54	80	6	0.023	0.023	1.25
5	eShop	eShop	9	16	40	4.9	54	75	5	0.05	0.05	–
5/6	eShop	–	9	16	–	4.9	54	–	6	0.05	0.05	1.25
6	eShop	eShop	10	17	46	5.9	54	100	6	0.05	0.05	–
8	eShop	eShop	12	20.5	54	7.8	58	100	8	0.075	0.075	–
10	eShop	eShop	14	26	60	9.8	66	100	10	0.09	0.09	–
12	eShop	eShop	16	28	60	11.8	73	100	12	0.105	0.105	–
16	eShop	eShop	22	32	92	15.7	82	150	16	0.115	0.115	–
20	eShop	eShop	26	36	92	19.7	92	150	20	0.13	0.13	–

Solid carbide | Standard | 0 –0.005 | 2 | a_e 0.05×D | h5 DIN 6535 HA

25° 30°
≤ 0.8 mm ≥ 1 mm

Garant

Solid carbide micro precision copy slot drill for CRP, GRP and graphite

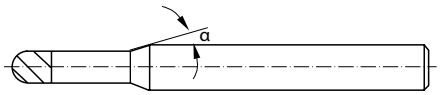
With **crystalline diamond sp³ coating.**
For the **highest demands regarding performance and precision in** fibre-reinforced composites, CRP, GRP, and graphite. **Extremely tight tolerances** ensure maximum accuracy. Double relief ground with 2 hollow-ground chamfers. **Recess angle α = 16°.**
Tolerances:

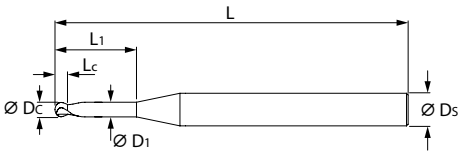
- Corner radius: **Radius contour 0 /-0.005 mm.**
- Neck ∅: **D_1 = 0 / -0.01 mm.**

Note: At greater tool overhang lengths, use a reduced value for a_p!
values for:
copying: $a_p = 0.15 \times D \times a_{p\,korr}$
To calculate the feed rate vf please use the actual speed of the machine (the maximum possible speed)!
e.g: vf = 18000 [rpm]× fz [mm/Z]× z



20 9791





Suitable for/ v_c [m/min]	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	PTFE CF25	PEEK CF30	Hybrid	Honey-comb sandwich	MMC	GRP	GRP CRP	Graphite					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N					
20 9791							200	190	170	150	180	160	●	350		190	190	340			●	●	●

∅ $D_c \times L_1$	10Y 20 9791 Solid carbide copy slot drill	L_c	L_1	∅ D_1	L	∅ D_s	Graphite f_z	Correction factor $a_{p\,corr}$
mm	Diamond	mm	mm	mm	mm	mm	mm	
0,2×0,5	eShop	0.16	0.5	0.17	45	4	0.012	1
0,2×1	eShop	0.16	1	0.17	45	4	0.012	1
0,2×2	eShop	0.16	2	0.17	45	4	0.007	0.5
0,2×3	eShop	0.16	3	0.17	45	4	0.007	0.2
0,3×1	eShop	0.24	1	0.27	45	4	0.016	1
0,3×2	eShop	0.24	2	0.27	45	4	0.016	0.9
0,3×4	eShop	0.24	4	0.27	45	4	0.012	0.35
0,3×6	eShop	0.24	6	0.27	45	4	0.007	0.08
0,4×2	eShop	0.32	2	0.37	45	4	0.016	1
0,4×4	eShop	0.32	4	0.37	45	4	0.012	0.5
0,4×6	eShop	0.32	6	0.37	45	4	0.012	0.2
0,4×8	eShop	0.32	8	0.37	45	4	0.007	0.08
0,5×2	eShop	0.4	2	0.47	45	4	0.02	1
0,5×4	eShop	0.4	4	0.47	45	4	0.02	0.8
0,5×6	eShop	0.4	6	0.47	45	4	0.016	0.35
0,5×8	eShop	0.4	8	0.47	45	4	0.016	0.12
0,5×10	eShop	0.4	10	0.47	50	4	0.012	0.08
0,5×12	eShop	0.4	12	0.47	50	4	0.012	0.04
0,6×2	eShop	0.48	2	0.57	45	4	0.02	1
0,6×4	eShop	0.48	4	0.57	45	4	0.02	0.9
0,6×6	eShop	0.48	6	0.57	45	4	0.016	0.5
0,6×8	eShop	0.48	8	0.57	45	4	0.016	0.35
0,6×10	eShop	0.48	10	0.57	50	4	0.016	0.12
0,6×15	eShop	0.48	15	0.57	60	4	0.012	0.08
0,8×4	eShop	0.64	4	0.77	45	4	0.02	1
0,8×6	eShop	0.64	6	0.77	45	4	0.02	0.8
0,8×8	eShop	0.64	8	0.77	45	4	0.016	0.5
0,8×10	eShop	0.64	10	0.77	50	4	0.016	0.35

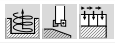
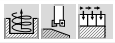
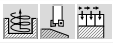
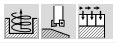
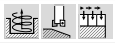
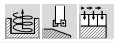
∅ $D_c \times L_1$	10V 20 9791 Solid carbide copy slot drill	L_c	L_1	∅ D_1	L	∅ D_s	Graphite f_z	Correction factor $a_{p\,corr}$
mm	Diamond	mm	mm	mm	mm	mm	mm	
0,8×15	eShop	0.64	15	0.77	60	4	0.016	0.2
0,8×20	eShop	0.64	20	0.77	60	4	0.012	0.08
1×4	eShop	0.8	4	0.96	45	4	0.03	1
1×6	eShop	0.8	6	0.96	45	4	0.03	0.9
1×8	eShop	0.8	8	0.96	45	4	0.03	0.8
1×10	eShop	0.8	10	0.96	50	4	0.025	0.5
1×12	eShop	0.8	12	0.96	50	4	0.025	0.35
1×15	eShop	0.8	15	0.96	60	4	0.025	0.2
1×16	eShop	0.8	16	0.96	60	4	0.025	0.15
1×20	eShop	0.8	20	0.96	60	4	0.02	0.08
1×25	eShop	0.8	25	0.96	70	4	0.02	0.04
1×30	eShop	0.8	30	0.96	70	4	0.016	0.02
1,2×5	eShop	0.96	5	1.16	45	4	0.03	1
1,2×10	eShop	0.96	10	1.16	45	4	0.03	0.8
1,2×15	eShop	0.96	15	1.16	50	4	0.025	0.35
1,2×20	eShop	0.96	20	1.16	60	4	0.025	0.12
1,2×25	eShop	0.96	25	1.16	60	4	0.02	0.08
1,2×30	eShop	0.96	30	1.16	70	4	0.016	0.04
1,5×10	eShop	1.2	10	1.44	45	4	0.03	0.9
1,5×15	eShop	1.2	15	1.44	50	4	0.025	0.5
1,5×20	eShop	1.2	20	1.44	60	4	0.025	0.35
1,5×25	eShop	1.2	25	1.44	70	4	0.025	0.12
1,5×30	eShop	1.2	30	1.44	70	4	0.02	0.08
1,6×5	eShop	1.28	5	1.54	45	4	0.03	1
1,6×10	eShop	1.28	10	1.54	45	4	0.03	0.9
1,6×15	eShop	1.28	15	1.54	50	4	0.025	0.5
1,6×20	eShop	1.28	20	1.54	60	4	0.025	0.35
2×5	eShop	1.6	5	1.94	45	4	0.035	1
2×10	eShop	1.6	10	1.94	45	4	0.035	1
2×15	eShop	1.6	15	1.94	50	4	0.035	0.8
2×16	eShop	1.6	16	1.94	50	4	0.035	0.7
2×20	eShop	1.6	20	1.94	60	4	0.03	0.5
2×25	eShop	1.6	25	1.94	70	4	0.03	0.35
2×30	eShop	1.6	30	1.94	70	4	0.03	0.2
2×40	eShop	1.6	40	1.94	80	4	0.025	0.04
2×50	eShop	1.6	50	1.94	90	4	0.025	0.02
2,5×5	eShop	2	5	2.41	45	4	0.035	1
2,5×10	eShop	2	10	2.41	45	4	0.035	1
2,5×15	eShop	2	15	2.41	50	4	0.035	0.9
2,5×20	eShop	2	20	2.41	60	4	0.035	0.8
2,5×25	eShop	2	25	2.41	70	4	0.03	0.5
2,5×30	eShop	2	30	2.41	70	4	0.03	0.35
2,5×40	eShop	2	40	2.41	80	4	0.025	0.12
2,5×50	eShop	2	50	2.41	90	4	0.02	0.08
3×15	eShop	3.5	15	2.92	60	4	0.035	1
3×20	eShop	3.5	20	2.92	60	4	0.035	0.9
3×25	eShop	3.5	25	2.92	60	4	0.035	0.8
3×30	eShop	3.5	30	2.92	70	4	0.03	0.5
3×40	eShop	3.5	40	2.92	80	4	0.03	0.35
3×50	eShop	3.5	50	2.92	90	4	0.03	0.12
3×60	eShop	3.5	60	2.92	100	4	0.025	0.08

Overview – milling cutters range Group 21 / 22



Type	Copy mill							
Designation >								5720VZ16
Brand	Garant	Garant	Garant	Garant	Garant	Garant	Garant	KENNAMETAL
Art. no.	211806–211852	212534–212542	212003	212006/212015	212009/212018	212070–212170	212590–212620	220800–220806
Diameter (mm)	16 – 80	16 – 66	20 – 25	20 – 42	35 – 125	10 – 125	8 – 32	25 – 80
$a_{p\,max}$ (mm)	5 – 15	2,5 – 3	5 – 6	5 – 6	5 – 6	1,1 – 5	0,3 – 5,5	16
Approach angle	90° / 93°							90°
Number of cutting edges	2 – 5	3 – 8	2 – 3	2 – 5	3 – 10	2 – 10	2	2 – 5
Interface	Weldon shank / thread / bore	Thread / bore	Weldon shank	Thread	Bore	Plain shank / Weldon shank / thread / bore	Plain shank / thread	Plain shank / thread / bore
Coolant channels IC	IC	IC	IC	IC	IC	IC	IC	IC
Suitable insert								
Insert type / ISO	VDGT / VCG.	CPHX06 / 09	RPK.10T3	RPK.10T3/RPK.1204	RPK.10T3/RPK.1204	RD..		ZDET 16
Art. no.	211853–211864	212552–212578	212032–212042	212032–212062	212032–212062	212178–212310	212630–212756	220810–220832
Further application								
ISO-Code	N _ _ _ _ _	_ P H M _ K	_ P H M S K	_ P H M S K	_ P H M S K	N P H M S K	N P H M S K	N _ _ _ _ _
Side	590 – 592	600 – 601	593 – 594	593 – 594	593 – 594	595 – 599	602 – 603	681



Type	High feed rate milling cutter							
Designation >	Power Q Mini	Power Q	Power Q	Power Q	Power Q Double	Power Q Double	FeedKing	Hi5
Brand	Garant	Garant	Garant	Garant	Garant	Garant	Garant	Garant
Art. no.	213052–213058	212802–212804	212807–212812	212813–212817	213000–213006	213014	212900–212910	213110–213210
Diameter (mm)	40 – 66	16 – 22	25 – 52	30 – 100	25 – 66	50 – 100	18 – 100	25 – 125
$a_{p\,max}$ (mm)	1	0.5 – 1.1	0.7 – 1.3	0.8 – 1.5	0.6 – 1.2	0.8 – 1.5	0.85 – 1.8	1.4 – 2.2
Approach angle								
Number of cutting edges	2 – 8	2 – 3	2 – 5	2 – 7	2 – 7	4 – 8	2 – 9	2 – 10
Interface	Plain shank / Weldon shank / thread / bore	Plain shank / Weldon shank / thread /	Plain shank / Weldon shank / thread / bore		Plain shank / Weldon shank / thread / bore	Bore	Plain shank / Weldon shank / thread / bore	Weldon shank / thread / bore
Coolant channels IC	IC	IC	IC	IC	IC	IC	IC	IC
Suitable insert								
Insert type / ISO	ANGX10T3	XOM.0603	XDM.0904	XDM.1205	XOMU094812	XOMU146714	XDL. / XDP.	POMX
Art. no.	213064–213075	212819–212854	212860–212885	212887–212899	213024 – 213036	213038 – 213050	212921–212991	213122–213193
Further application								
ISO-Code	_ P H M S K	_ P H M S K	_ P H M S K	_ P H M S K	P H M S K	P H M S K	N P H M S K	_ P H M S K
Side	604 – 605	606 – 608	606 – 608	607 – 608	609 – 611	610 – 611	612 – 615	616 – 617

Overview – milling cutters range Group 21 / 22



Type	High feed rate milling cutter								Face mill
Designation >	Softcut® HSI12	LOGIQ4Feed	LOGIQ4Feed	LOGIQ4Feed	MFH micro	MFH mini	MFH	7792VX	43° Octo
Brand	Garant	Iscar	Iscar	Iscar	KYOCERA	KYOCERA	KYOCERA	KENNAMETAL	Garant
Art. no.	214848	221100–221101	221104	221106	221941–221943	221950–221965	222050–222065	221900–221908	213300
Diameter (mm)	40 – 63	16 – 32	20 – 42	32 – 52	8 – 16	16 – 52	25 – 160	16 – 160	32 – 125
$a_{p\,max}$ (mm)		0.8	0.8	0.8	0.5	1	1.5 – 5	0.9 – 3.5	2.2 – 3.5
Approach angle									43°
Number of cutting edges	3 – 5	2 – 5	3 – 6	5 – 7	1 – 4	2 – 8	2 – 8	2 – 12	3 – 8
Interface	Bore	Parallel shank / Weldon shank	Thread	Bore	Plain shank / Weldon shank / thread	Plain shank / Weldon shank / thread / bore	Plain shank / Weldon shank / thread / bore	Plain shank / Weldon shank / thread / bore	Bore
Coolant channels IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
Suitable insert									
Insert type / ISO	SO.T1205	XNMU0403	XNMU0403	XNMU0403	LPGT 0102	LOGU 0303	SOMT	X.L.	OF..0504
Art. no.	214860–214890	221201–221214	221201–221214	221201–221214	221945–221949	221971–221976	222071–222092	221920–221939	213320–213362
Further application									
ISO – code	NP_M_K	_P_MSK	_P_MSK	_P_MSK	_P_MSK	_P_MSK	_P_MSK	NP_MSK	NPHMSK
Side	627 – 628	682 – 683	682 – 683	682 – 683	686	687	688 –689	684 – 685	618



Type	Shoulder mill							
Designation >		Aluking	Softcut®HSI12	Softcut®HSI08	NEODO			
Brand	Garant	Garant	Garant	Garant	Iscar	Garant HOLEX	Garant	HOLEX
Art. no.	211755 – 211759	214515	214853 – 214857	214902 – 214908	225750 – 225760	215045 – 215055	215101	215102
Diameter (mm)	25 – 80	40 – 125	32 – 160	20 – 100	25 – 125	25 – 100	40 – 100	40 – 100
$a_{p\,max}$ (mm)	13.5	5 – 10	10	6	5	5	4	4
Approach angle	90°	90°	90°	90°	90°	90°	90°	90°
Number of cutting edges	2 – 5	2 – 8	2 – 14	2 – 10	3 – 18	2 – 8	4 – 8	4 – 8
Interface	Plain shank / thread / bore	Bore	Thread / bore	Weldon shank / thread / bore	Plain shank / Weldon shank / bore	Weldon shank / bore	Bore	Bore
Coolant channels IC	IC	IC	IC	IC	IC	IC	IC	IC
Suitable insert								
Insert type / ISO	ZDHT1505	BGHX 15L5	SO.T 1205	SO.T 0836	SZMU 0804	SOMT 09T3	XNEX 0806	XNEX 0806
Art. no.	211762–211777	214525 – 214565	214860 – 214890	214914 – 214956	225800 – 225813	215065 – 215080	215104 – 215192	215104 – 215192
Further application								
ISO – code	N_____	NP_M_K	NP_M_K	NP_M_K	_P_MSK	NP_MSK	NP_M__	NP_M__
Side	588 – 589	626	627 – 628	629 – 630	696	631	632	632

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Overview – milling cutters range Group 21 / 22



	Face mill								
	TwinCut	**Softcut®45**				**DOVEIQMILL**	**MFPN45**	**MSRS**	**MFK**
	Garant	Garant	Garant	Garant HOLEX	Garant	ISCAR	KYOCERA	KYOCERA	KYOCERA
	213410–213420	**213555**	**213890**	**214200/214202/214205**	**214395–214400**	**222500**	**222800**	**224000**	**223300**
	40 – 250	32 – 250	50 – 250	32 – 250	16 – 125	50 – 160	63 – 250	80 – 315	80 – 315
	3 – 6	4	3.5	1.5 – 3.5	3	4.6	6	12	6
	45°	45°	45°	45°	45°	50°	47.5°	75°	70°
	3 – 18	3 – 16	4 – 13	3 – 16	2 – 14	4 – 11	4 – 20	4 – 16	8 – 44
	Bore	Bore	Bore	Bore	Weldon shank / bore	Bore	Bore	Bore	Bore
	IC	IC	IC	(IC)	IC	IC			
	ON.U05 / SN.U14	SE.T1305	SE..1203	SE..1204	SD..0903	SYHU 0704	PN.U 1205	SMPT 1806	PN..1106
	213424–213470	**213564–213596**	**213905–213961**	**214240 – 214353**	**214438–214479**	**222510–222522**	**222805 – 222826**	**224012 – 224031**	**223306 – 223332**
	N P _ M _ K	N P _ M _ K	N P H M S K	N P H M S K	N P _ M S K	N P _ M S K	_ P _ M S K	_ P _ _ _ K	_ _ _ _ _ K
	619 – 620	621	622	623 – 624	625	690	691	693	692



	Shoulder mill							
				Power Tang	**Power Tang**	**Softcut®18**	**Softcut®90°**	**Softcut®06**
	Garant	Garant	Garant	Garant	Garant	Garant	Garant	Garant
	215176/215177	**215178**	**215182**	**215122**	**215950 – 215968**	**215155 – 215160**	**215405 – 215411**	**215605 – 215620**
	20 – 32	20 – 32	32 – 63	40 – 125	20 – 63	25 – 160	14 – 80	10 – 63
	2	2	2	12	8	9	3 – 5.5	2.5 – 4
	90°	90°	90°	90°	90°	90°	90°	90°
	3 – 5	3 – 5	6 – 9	4 – 15	2 – 9	2 – 10	1 – 10	2 – 12
	Weldon shank / plain shank	Thread	Bore	Bore	Plain shank / Weldon shank / thread / bore	Plain shank / Weldon shank / bore	Plain shank / Weldon shank / thread / bore	Plain shank / Weldon shank / thread / bore
	IC	IC	IC	IC	IC	(IC)	IC	IC
	XNEX 0403	XNEX 0403	XNEX 0403	LO.U 130708	LO.U 090408	AP.T. 1805	AO.T. 1104	AP.T. 0602
	215195 – 215199	**215195 – 215199**	**215195 – 215199**	**215131 – 215151**	**215980 – 215996**	**215202 – 215276**	**215422 – 215487**	**215621 – 215692**
	_ P _ M _ _	_ P _ M _ _	_ P _ M _ _	_ P _ M S K	_ P _ M S K	N P _ M S K	N P _ M S K	N P _ M S K
	633	633	633	634	635 - 636	637 – 639	641 – 643	644 – 646

Overview – milling cutters range Group 21 / 22



Type	Shoulder mill								
Designation >			MEW	MFWN	MEV	HELI3MILL	HELI3MILL	MECX	MEC11T/MEC17
Brand	Garant HOLEX	Garant HOLEX	KYOCERA	KYOCERA	KYOCERA	ISCAR	ISCAR	KYOCERA	KYOCERA
Art. no.	215705 – 215717	215800 – 215870	225200 – 225210	225600 – 225615	226400 – 226420	226480 – 226486	226488 – 226490	227100 – 227115	227300 – 227515
Diameter (mm)	25 – 160	10 – 100	16 – 80	50 – 250	20 – 50	25 – 80	40 – 125	8 – 63	16 – 160
$a_{p\,max}$ (mm)	7	4.8	10 – 15	8	6	8	13	6	10 – 15.7
Approach angle	90°	90°	90°	90°	90°	90°	90°	90°	90°
Number of cutting edges	2 – 10	1 – 12	2 – 6	3 – 18	2 – 5	3 – 11	4 – 9	1 – 14	2 – 14
Interface	Plain shank / Weldon shank / bore	Weldon shank / thread / bore	Plain shank / bore	Plain shank / bore	Parallel shank / Thread / bore	Plain shank / Weldon shank / thread / bore	Plain shank / bore	Plain shank / Weldon shank / bore	Plain shank / Weldon shank / thread / bore
Coolant channels IC	(IC)	(IC)	IC	IC	IC	IC	IC	IC	IC
Suitable insert									
Insert type / ISO	AP.. 16	AP.. 10	LO..10 / LO.. 15	WNMU 0806	TOMT 0605	TP.T 1003	TD.T 1505	BDMT 0703	BD.T 11/BD.T17
Art. no.	215720 – 215781	215879 – 215947	225220 – 225240	225620 – 225630	226430 – 226445	226499 – 226517	226560 – 226589	227135 – 227160	227325 – 227568
Further application									
ISO – code	N P H M S K	N P _ M S K	_ P _ M S K	_ P _ M S K	_ P _ M S _	N P _ M S K	_ P _ M S K	_ P _ M _ K	N P _ M S K
Side	647 – 648	649 – 650	694	695	697	698/700	699 – 700	701	702 – 704



Type	Chamfer mill	Radius Milling Tool	Engraver / deburrer	Circular mill	Side milling and T-slot milling cutter					
Designation >									HELISLOT	HELISLOT
Brand	Garant HOLEX	Garant	Garant	Garant	Garant	Garant	Garant	mimatic	ISCAR	ISCAR
Art. no.	216100 – 216635	216825	217202 – 217225	217250 – 217405	218300	218408 – 218444	218540 – 218569	218205 – 218210	227700 – 227716	227718 – 227722
Diameter (mm)	2 – 33.5	22	6 – 10	7.9 – 23	21 – 50	50 – 160	50 – 160	32 – 80	40 – 200	31.7 – 160
$a_{p\,max}$ (mm)						1.5 – 3.1	4 – 16	1 – 5	14 – 20	9.9 – 12
Approach angle	30° – 60°									
Number of cutting edges	1 – 6	2	1 – 6	3 – 6	1 – 2	4 – 15	2 – 8	16 – 40	1 – 12	2 – 18
Interface	Weldon shank / plain shank / thread	Weldon shank	Plain shank	Plain shank / Weldon shank / thread	Weldon shank	Plain shank / thread / bore	Thread/ bore	Weldon shank / bore	Weldon shank / bore / flange	Weldon shank / flange
Coolant channels IC	(IC)			IC	IC			IC		
Suitable insert										
Insert type / ISO	TO../TC../SD../SC..	Special	Special		SPMT	Special	SNHX		XNMU1306	XNMU0904
Art. no.	216408 – 216770	216841	217210 – 217229	217255 – 217510	218305 – 218360	218450 – 218484	218571 – 218625	218220 – 218236	227739 – 227747	227782 – 227784
Further application										
ISO – code	N P _ M S K	_ P _ M _ K	N P _ M _ K	N P H M S K	N P _ M _ K	N P _ M _ K	N P _ M _ K	N P _ M _ K	_ P _ M S K	_ P _ M _ _
Side	651 – 655	656	657	658 – 664	666	667 – 668	669 – 671	665	707/709	708 – 709

Overview – milling cutters range Group 21 / 22



	Porcupine mill						Chamfer mill				
	Power Tang	**Softcut®18**	**Softcut®90°**	**Softcut®06**		**MEC11/MEC17**	**Softcut®HSI12**	**Softcut®HSI08**	**Softcut®18**	**Softcut®90°**	
	Garant	Garant	Garant	Garant	Garant	KYOCERA	Garant	Garant	Garant	Garant	Garant
	215972 / 5974 – 215126	**215161**	**215413 – 215415**	**215622**	**215840 – 215860**	**227450 – 227655**	**214851**	**214911**	**215152**	**215403**	**215700/ 215795**
	25 – 100	50 – 80	20 – 50	16 – 25	20 – 32	25 – 100	59.3	16 – 25	35 – 92	17 – 69	17 – 94
	32 – 81	28 – 55	20 – 39.5	22.5 – 33.5	17 – 38	30 – 74					
	90°	90°	90°	90°	90°	90°	45°	45°	15° – 75°	15° – 75°	15° – 75°
	2 – 6	3 – 6	2 – 5	2 – 5	2 – 3	2 – 6	3	3 – 5	3	3	3
	Weldon shank / thread / bore	Bore	Weldon shank / bore	Weldon shank	Weldon shank	Plain shank / Weldon shank / bore	Bore	Weldon shank	Bore	Bore	Bore
	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC	IC
											
	LO.U 0904 / LO.U 1307	AP.T. 1805	AO.T 1104	AP.T. 0602	AP.. 1003	BD.T11/BD.T17	SO.T 1205	SO.T 0836	AP.T 1805	AO.T 1104	AP.. 10/AP.. 16
	215980 – 5996 / 215131 – 5151	**215202 – 215276**	**215422 – 215487**	**215623 – 215692**	**215880 – 215948**	**227472 – 227683**	**214860 – 214890**	**214914 – 214956**	**215202 – 215276**	**215422 – 215487**	**215720 – 215947**
	_ P _ M S K	N P _ M S K	N P _ M S K	N P _ M _ K	N P _ M S K	_ P _ _ _ K	N P _ M _ K	N P _ M _ K	N P _ M S K	N P _ M S K	N P H M S K
	634/636	638 – 639	642 – 643	645 – 646	649 – 650	705 – 706	627 – 628	630	637/639	641/643	647 – 650

Solid carbide mill for general-purpose machining

P M K



Milling cutter type	End mill		Torus cutter	
DIN >	6527	6527	6527	6527
Art. no.	220286 220289 220292	220288 220290 220294	220296	220298
Milling cutter type	N	N	N	N
Application recommendation				
Size range (∅ mm)	2 – 20	2 – 20	4 – 20	4 – 20
Cutting edge length (mm)	7 – 60	7 – 60	11 – 38	11 – 38
Number of cutting edges	4	4	4	4
Coolant channels IC				
HSC / HPC / MTC / TPC / PPC	HPC	HPC	HPC	HPC
Coating	AlTiN	AlTiN	AlTiN	AlTiN
Type of shank	HA	SAFE-LOCK®	HA	SAFE-LOCK®
Secondary application to DIN ISO 513	NPMK	NPMK	NPMK	NPMK
Side	673	673	674	674

HAIMER DUO-LOCK®

Interchangeable head system

can be found on pages 675 – 679.

The advantages at a glance!

Maximum concentricity and length repetition accuracy due to the modular interface with double taper on a wide variety of carbide tool heads. Unsurpassed productivity and stability due to a protected unique thread design and third support area. Process reliability without loss of performance due to the finest, virtually unbreakable carbide grade.



Superior riigidity of the interface which allows up to 1 × D cutting depth for slot milling and 3 × D cutting depth for side milling.

With the 3 precise mating faces of the interfaces, the Duo-Lock® has become established as the most accurate and most stable interchangeable head system.

The double cone contact surfaces in combination with the third support surface in the rear area result in high rigidity and precision.

Conclusion

Quick and precise changing of the Duo-Lock® milling heads:

- Saves time.
- Saves material as the shank remains in place.
- Higher metal removal rate with very high process reliability.



220334 220327

220376 220353

Furthermore:

Also increase safety with HAIMER Safe-Lock®. The innovative shank shape can also be used on the Duo-Lock® extensions. This ensures consistent pull-out protection for reliable load capacity.

Garant Milling / tool materials

Carbide coated

Grade description	P (steel) P01	P10	P20	P30	P40	M (Inox) M10	M20	M30	M40	K GG(G) K01	K10	K20	K30	N (Alu) (Alu)	(Alu)	S (Ti) (Ti)	(Ti)	H (HRC) < 55	< 60	< 67	
Highly wear-resistant grade for machining unalloyed tool steels and high-tensile materials up to 56 HRC		HB4015					HB4015				HB4015										
Suitable for machining low-tensile steels. PVD coated.		HB4020																			
Outstandingly suitable for high-alloy tool steels. Ultra-fine grain grade with multi-layer coating.			HB4030																		
Extremely wear-resistant grade with AlTiCrN coating for hard machining.										HB4715								HB4715			
Tool material with AlTiCrN multi-layer PVD coating, developed for use on stainless steels.								HB4130													
High-performance tool material for machining Inconel and heat resistant superalloys (HRSA). Multi-layer PVD coating.																HB4420					
Tool material for machining titanium. Multi-layer PVD coating.																HB4430					
Wide-range grade. General-purpose tool material.		HB415				HB415															
Highly wear-resistant grade for hard machining up to 60 HRC. TiC / TiN-CVD multi-layer coating.	HB7505									HB7505								HB7505			
Wear-resistant grade for high-speed machining in steel.	HB7510 HB7510																				
Grades update for grade HB 7510.	HB7510-1																				NEW
Machining of heat-treatable and tool steels, and also cast iron. Ti(C, N)+Al_2O_3.		HB7515									HB7515										
Micro-grain grade with TiC / TiN and nano-layer coating.		HB7520 HB7520				HB7520 HB7520															
Grades update for grade HB 7520.		HB7520-1				HB7520-1															NEW
Grade for wet and dry machining and high cutting speeds. TiC / TiN-CVD multi-layer coating or Ti(C, N)+Al_2O_3 coating. For NC spotting drills with TiCN coating.		HB7525 HB7525 HB7525				HB7525 HB7525 HB7525															
Wide-range grade for machining steel. Especially suitable for low tensile strength steels. Tough substrate means low susceptibility to fracture.			HB7530																		
Ideal for use in difficult conditions and on stainless steels. (P30/40) (M20/35) micro–grain grade with TiAlN/TiN–PVD multi–layer coating.			HB7535 HB7535				HB7535 HB7535									HB7535 HB7535					
Highly wear-resistant grade for machining hardened materials. PVD coated.	HB7605									HB7605								HB7605			
Special grade for stainless steels.						HB7625															
Micro-crystalline grade with balanced basic toughness and nano-layer coating.							HB7630														
Tough carbide with CVD multi-layer coating especially for stainless steels. For 45° chamfer mills, with PVD coating.								HB7635 HB7635													
Highly wear-resistant grade for hard machining up to 60 HRC. TiC / TiN-CVD multi-layer coating.										HB7705								HB7705			
Wear-resistant grade for machining cast iron. (P10) (K10/20) carbide with TiAlN-CVD coating.	HB7710										HB7710										
Wear-resistant grade for high alloy tool steels, cast iron, and nickel alloys.		HB7720									HB7720										
(P20/30) (K20/30) Grades for high cutting speeds. Ideal for dry machining. Specially suited for hard machining, mounted on TopCut indexable face mills.			HB7730									HB7730									
Grades update for grade HB 7730.			HB7730-1									HB7730-1									NEW
Machining of low tensile strength materials. (P30/40) (M20) carbide with TiAlN-CVD coating.				HB7735			HB7735									HB7735					
Specially for machining aluminium at high cutting speeds.														HB7805							
Nano-crystalline high performance coating for aluminium, aluminium alloys and composite materials. Some are diamond-coated.														HB7810							
Grades update for grade HB 7810.														HB7810-1							NEW
PVD multi-layer coating based on AlTiCrBN. For finishing, semi-roughing and roughing machining.			HB7830-1					HB7830-1													NEW
PVD-coated carbide substrate for general-purpose machining.			HB7835					HB7835													
Wear-resistant grade for machining titanium and cast iron.												HB7930				HB7930					
Grades update for grade HB 7930.												HB7930-1				HB7930-1					NEW
Micro-grain grade with high toughness. Suitable for machining stainless steels and materials that are difficult to machine.																HB7935					
Exceptionally wear-resistant grade, PVD-coated.																HB7940					
Micro-crystalline carbide with multi-layer coating for wet machining of stainless steels.							HB8630														
Wear-resistant PVD-coated tool material grade for machining steels.			HB9520																		

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Garant HAIMER Member IMC Group Milling / tool materials

	Grade description	P (steel) P01	P10	P20	P30	P40	M (Inox) M10	M20	M30	M40	K GG(G) K01	K10	K20	K30	N (Alu) (Alu)	(Alu)	S (Ti) (Ti)	(Ti)	H (HRC) < 55	< 60	< 67
Carbide coated	Fine-grain substrate for machining steel with CVD-Al_2O_3coating. Suitable to a limited extent for machining stainless steels.		HB9525				HB9525														
	Carbide grade with fine grain size and PVD multi-layer coating for use on steels.			HB9540																	
	Tool material for general use, very tough. Substrate with thin CVD-Al_2O_3coating.			HB9640				HB9640					HB9640				HB9640				
	Tool grade with PVD multi-layer coating, developed for use on stainless steels. Suitable for unstable machining conditions.				HB9645			HB9645									HB9645				
	Extremely wear-resistant grade for machining cast iron.										HB9710										
	Tool material grade with PVD, TiAlN and TiAlSiN coatings, with high abrasion resistance and relatively low cobalt content for use under stable machining conditions.											HB9715							HB9715		
	Fine-grain solid carbide with nano-layer coating (PVD). Specially for machining stainless steels.								HB9740												
	PVD-coated fine-grain solid carbide with exceptional toughness. Specially for machining titanium.																HB9745				
	Wide-range grade for steel, stainless materials, cast materials.			HB725				HB725					HB725								
	All-round grade for wet and dry machining in steel and stainless steel, also cast iron.			HB735				HB735					HB735				HB735				
	High-performance fine-grain substrate for ALU and plastics														HU7705						
Carbide uncoated	Especially for aluminium, non-ferrous metals and plastics, often in highly polished versions (K10/20).														HU7710						
	Extremely wear-resistant grade for aluminium.														HU7805						
	K10 fine grain. High wear resistance grade for aluminium, aluminium alloys and non-ferrous metals.														HU7810						
	Grades update for grade HU 7810.														HU7810-1						NEW
	Uncoated polished tool material type for machining non-ferrous metals.														HU7815						
	Grade for machining non-ferrous metals including titanium.														HU7830		HU7830				
	Uncoated carbide grade for machining non-ferrous metals.														HU9815						
Cermet	Micro-grain solid carbide for machining aluminium.			CU7530																	
	Uncoated. Very tough and highly wear-resistant Cermet for dry machining at low cutting depths.	CU7725					CU7725														
CBN	Wear-resistant CBN grade. Coated.																		CBN925		
CERA-MIC	Uncoated Sialon ceramic for machining castings at high cutting speeds.										KU7710										
PCD	Suitable for both non-ferrous metals and also non-metallic materials. For uninterrupted cutting, high cutting speeds and low feed rates. Particle size 5 µm.														PCD						
HAIMER																					
Carbide coated	Coated carbide grade for general-purpose use. High wear resistance for processing steel.			AlTiN				AlTiN					AlTiN			AlTiN		AlTiN			
Member IMC Group																					
Coated carbide	CVD-coated, for rough grinding at medium and high cutting speeds.	IC5400																			
	CVD-coated, for rough grinding and finishing in stable conditions.		IC5600																		
	PVD-coated, for finishing at medium to high cutting speeds.		IC808				IC808														
	PVD-coated, universal carbide grade, highly suitable for initial tests.				IC830		IC830														
	PVD-coated, for rough grinding at high feed rates, interrupted cutting.				IC845																
	CVD-coated, thick coating for high cutting speeds in grey cast iron.											IC5100									
	PVD-coated, 1st choice for low and medium cutting speeds.												IC810								
	CVD-coated, extremely temperature-resistant, contains ruthenium.																IC5820				
	PVD-coated, rough grinding and finishing in unstable conditions.																IC380				
	PVD-coated, rough grinding and finishing on titanium alloys.																IC716				
	PVD-coated, rough grinding and finishing on HTSA materials.																	IC882			
un-coated	Rough grinding on aluminium alloys and non-ferrous metals at high feed rates.														IC28						

KENNAMETAL KYOCERA mimatic HOLEX Milling / tool materials

	Grade description	P (steel) P01	P10	P20	P30	P40	M (Inox) M10	M20	M30	M40	K GG(G) K01	K10	K20	K30	N (Alu) (Alu)	(Alu)	S (Ti) (Ti)	(Ti)	H (HRC) < 55	< 60	< 67
KENNAMETAL																					
Carbide coated	Wear-resistant grade for cast iron. TiN-TiCN-Al_2O_3-CVD multi-layered coating.											SC3025									
	Wear-resistant grade for steel at high cutting speeds and feed rates. TiN-TiCN-Al_2O_3.		SC6525																		
	Grade for machining steel at higher cutting speeds		KCMP30																		
	High wear resistance coupled with high toughness. Nano-structured TiAlN-PVD coating.		SP6519					SP6519					SP6519					SP6519			
	Machining with a heavily interrupted cut. For use in alloyed, tool and high-temperature steels. TiAlN-PVD coating.		X400																X400		
	High performance grade with exceptionally high toughness. For machining alloy steels, stainless steels, and high-temperature steels. TiN-TiC-TiN-CVD multi-layer coating.			X500				X500					X500					X500			
Carbide uncoated	Uncoated micro-grain grade with high wear resistance for aluminium and non-ferrous metals. Also for roughing and finish machining of cast iron and heat-resistant alloys.											GH1				GH1		GH1			
	Uncoated micro-grain grade for applications in aluminium and cast iron.											GH2				GH2					
KYOCERA																					
Carbide coated	**Megacoat**-NanoEX. 1st choice for cast materials.											PR1810						PR1810			
	Megacoat coating (PVD) on a fine-grain substrate. For general-purpose applications in steel and stainless steels.		PR1225					PR1225													
	Megacoat-NanoEX. 1st choice for steel.		PR1825					PR1825													
	Megacoat multilayer coating (PVD) and substrate for machining cast iron.											PR1510						PR1510			
	Megacoat multi-layer coating (PVD) on a fine-grain substrate. First choice for general-purpose applications in steel and stainless steels.		PR1525					PR1525													
	Megacoat multilayer coating (PVD) on a fine-grain substrate. For stainless steels and titanium alloys.								PR1535									PR1535			
	Megacoat-NanoEX. 1st choice for stainless materials.								PR1835									PR1835			
	α-Al_2O_3coating CCRD, as first choice for Ni-based heat resistant alloys and martensitic stainless steels.								CA6535									CA6535			
	CVD-coated substrate of very high toughness for high protection against wear when machining cast iron.												CA420M								
Carbide uncoated	Uncoated wear-resistant micro-grain grade for machining aluminium. High hardness and toughness.															GW25					
Cermet	Tough Cermet with high resistance to oxidation and thermal shock. For productive applications in steel.	TN100M						TN100M													
Ceramic	Ceramic grade for high cutting speeds.											CS7050									
	Ceramic grade for the highest cutting speeds.											KS6050									
mimatic																					
Car-bide	Wear-resistant micro-grain carbide with Tinamatic coating.		TiAlN					TiAlN					TiAlN			TiAlN					
HOLEX																					
Carbide coated	Optimised wide-range grade for machining steel. CVD coating.		HBM015																		
	Special carbide grade for machining stainless steels. Ideal for use under difficult machine conditions.							HBM130													
	Coated carbide grade for general-purpose use.		HBM020					HBM020					HBM020								
	General-purpose CVD-coated multi-range grade.		HBM20					HBM20													
	PVD-coated multi-range grade for a wide range of applications.			HBM025				HBM025										HBM025			
Carbide uncoated	Uncoated highly wear-resistant tool material type for machining non-ferrous metals.															HUM310					

NEW

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Shape	Clearance angle	ISO	Insert size	Garant	Iscar	Kennametal / Kyocera	Holex
				Side			
A . . Rhomboid 85°	AN . . 0°	ANGT	10 / 16	672			
		ANGX	10	605			
A . . Rhomboid 85°	AO . . special	AO.T	11	643			
	AP . . 11°	APET	18	639			
		APEX	16	648			
		APFT	16	648			
		APHT	06 / 10 / 16	646–650		648	
		APKT	10 / 16	648		648	648/650
		APKX	16	648			
		APMT	06 / 10 / 18	646–650			
		APMX	16	648			
		APXT	16	648			
B . . Rhomboid 82°	BD . . 15°	BDGT	11 / 17			704	
		BDMT	07 / 11 / 17			701 / 704–706	
	BG . . 30°	BGHX	15	626			
C . . Rhombus 80°	CP . . 11°	CPHX	06	601			
		CPHX	09	601			
L . . Orthogon 90°	LO . . special	LOEU	09 / 13	634 / 636			
		LOMU	09 / 10 / 13 / 15	634 / 636		694	
		LOGU	03			687	
	LP . . 11°	LPGT	01			686	
M . . Rhombus 86°	MP . . 11°	MPHX	06 / 11	672			
							
O . . Octagon 135°	ON . . 0°	ONEU	05	620			
		ONMU	05	620			
	OF . . 25°	OFEW	05	618			
		OFMT	05	618			
P . . Pentagon 108°	PN . . 0°	PN.U	12			691	
		PN..	11			692	
	PO . . special	POMX	07 / 10	616 / 617			
R . . Round	RD . . 15°	RDHT	05 – 16	598–599			
		RDHW	05 – 16				
		RDHX	05 – 16				
		RDMT	10 / 12				
		RDMW	12 / 16				
		RDNX	07 / 10 / 12 / 16				
	RP 11°	RPK.	10	594			
		RPK.	12	594			
S . . Square 90°	SN . . 0°	SNEU	14	620			
		SNHX	11 / 12	671			
		SNMU	14	620			
	SC . . 7°	SCLT	05	652			
	SP . . 11°	SPGT	06 / 09 / 12	666			
		SPKN	12	672			
		SPLR	12	672			
		SPMT	06 / 09 / 12 / 18	666		693	
		SPUN	12	672			
	SD . . 15°	SDGT	09	651			
		SDHT	09	625			
		SDHW	09	625			
		SDHX	09	625			
		SDLT	09	651			
		SDMX	09	625			

Shape	Clearance angle	ISO	Insert size	Garant	Iscar	Kennametal / Kyocera	Kennametal	Holex
				Side				
	SE . . 20°	SECN	12	622				
		SEEN	12	622				
		SEET	12 / 13	621 / 624				
		SEHT	12	624				
		SEHW	12	624				
		SEKA	12	624				
		SEKN	12	622				
		SEKR	12	622				
		SEKT	12	624				
		SEKW	12	624				
		SEMT	13	621				
	SO . . special	SOET	08 / 12	628 / 630				
		SOMT	08 / 09 / 12 / 10 / 14	628–631		689		
		SYHU	07		690			
		SZMU	08		696			
T . . Triangle 60°	TO . . special	TOHT	16				653	
		TOHX	09 / 14				653	
		TOMT	06			697		
		TP.R	10		700			
		TP.T	10		700			
		TD.R	15		700			
		TD.T	15		700			
V . . Rhombus 35°	VC . . 7°	VCGT	22	592				
		VCGX	22	592				
		VDGT	11	593				
W . . Trigon 80°	WN . . 15°	WNEU	08			695		
		WNMU	08			695		
Z . . Special shape	ZD . . 0°	ZDET	16			681		
		ZDHT	15	589				
X . . Special shape	XN . . 0°	XNEU	05 / 14	620				
		XNMU	04 / 09 / 13		683 / 709			
	XP . . 15°	XPLT	06			685		
	XD . . 11°	XDHW	06 / 10	672				
		XD.T	07 / 09 / 12	614 / 615				
		XDLW	07 / 09 / 12	614 / 615		685		
		XDMT	09 / 12	608				
		XDMW	09 / 12	608				
		XDPW	07 / 09 / 12	614 / 615				
	XE . . 15°	XEEW	13	621				
		XELT	16			685		
		XELW	16			685		
		XNEX	04	633				
	XO . . special	XNEX	08	632				632
		XOEW	08 / 12	628 / 630				
		XOMT	06	608				
		XOMU	09	611				
	X . . 20°	XOMU	14	611				
		XOMW	06	608				
		Copy	08 – 32	603				
		Polygon	Type P12 / P16 / P26	658–662				
		3-square	Type 1 / 2 / 3 / 4	663–664				
		Cutting	a_p = 1.0 – 5.0	665 / 668–671				
		Radii	1–5	656				
		Engraving		657				

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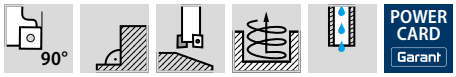
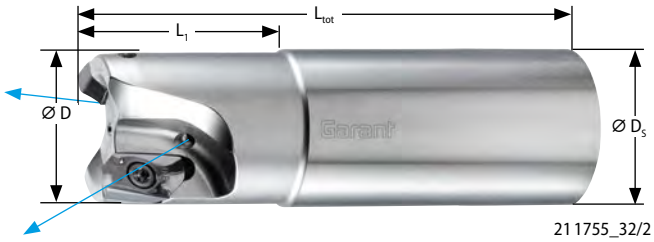


Garant Aluminium shoulder mill for ZDHT 1505

High-performance milling system for high cutting speeds. Absolutely precise insert bedding. Exceptional torsional stiffness thanks to optimised protection against centrifugal force.

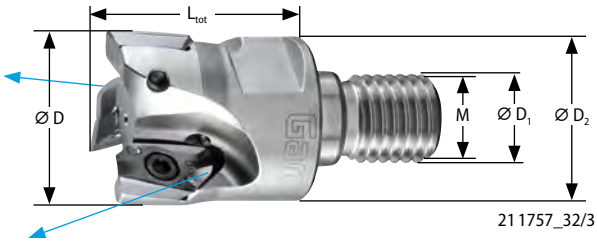
Attention: Before using the indexable insert No. 211776 ALU (r = 5.0 mm) and 211777 ALU (r = 6.0 mm), the insert seats of the carrier must be modified.

Note: The **recommended torque** for fastening the insert screws No. 219878 4 and 219878 5 is **3.2 Nm.**



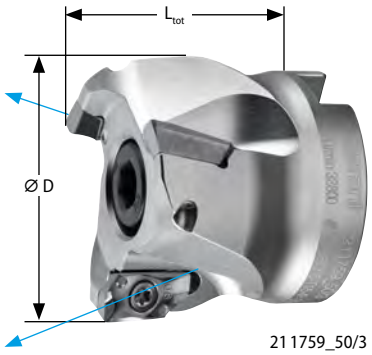
21 1755_32/2

Ø D / number of effective cutting edges Z	210 21 1755 Aluminium shoulder mill **Plain shank**	L_1 mm	L_{tot} mm	Ø D_s h6 mm	Circular interpolation milling Ø D_{min} mm	Circular interpolation milling Ø D_{max} mm	Circular interpolation milling a_p mm	Ramping angle α_{max} degrees	Ramping length L for α_{max} mm	Set of insert screws
25/2	eShop	32	88	25	40	48	7.6	6.81	12.56	219878 4 (15IP)
32/2	eShop	40	100	32	54	62	8	4.39	19.56	219878 4 (15IP)
32/3	eShop	40	100	32	54	62	8	4.39	19.56	219878 4 (15IP)
40/3	eShop	50	110	32	70	78	9	3.12	27.56	219878 4 (15IP)



21 1757_32/3

Ø D / number of effective cutting edges Z	210 21 1757 Aluminium shoulder mill **with threaded shank**	L_{tot} mm	Ø D_1 h6 mm	Ø D_2 mm	Mounting thread M	Circular interpolation milling Ø D_{min} mm	Circular interpolation milling Ø D_{max} mm	Circular interpolation milling a_p mm	Ramping angle α_{max} degrees	Ramping length L for α_{max} mm	Set of insert screws
25/2	eShop	35	12.5	21	M12	40	48	7.6	6.81	12.56	219878 4 (15IP)
32/2	eShop	35	17	29	M16	54	62	8	4.39	19.56	219878 4 (15IP)
32/3	eShop	35	17	29	M16	54	62	8	4.39	19.56	219878 4 (15IP)
42/3	eShop	40	17	29	M16	74	82	9	2.9	29.56	219878 4 (15IP)
42/4	eShop	40	17	29	M16	74	82	9	2.9	29.56	219878 4 (15IP)



21 1759_50/3

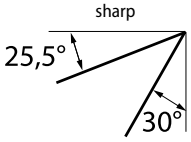
Ø D / number of effective cutting edges Z	210 21 1759 Aluminium shoulder mill **with bore**	L_{tot} mm	Mounting bore Ø mm	Circular interpolation milling Ø D_{min} mm	Circular interpolation milling Ø D_{max} mm	Circular interpolation milling a_p mm	Ramping angle α_{max} degrees	Ramping length L for α_{max} mm	Set of insert screws
40/3	eShop	40	16	70	78	9	3.12	27.56	219878 4 (15IP)
50/3	eShop	40	22	90	98	8.4	2.29	37.56	219878 5 (15IP)
50/4	eShop	40	22	90	98	8.4	2.29	37.56	219878 5 (15IP)
63/4	eShop	40	22	116	124	8	1.7	50.56	219878 5 (15IP)
63/5	eShop	40	22	116	124	8	1.7	50.56	219878 5 (15IP)
80/5	eShop	50	27	150	158	7.6	1.27	67.56	219878 5 (15IP)

Garant Indexable milling inserts ZDHT1505.. for aluminium shoulder mill No. 211755 – 211759

Indexable inserts ground all round for a precise fit in the tool body. High-performance micro-grain substrate from the latest generation of tool materials. Optimised preparation of cutting edges for use in materials that are easy to machine.

Note:
21 1776/1777 – A carrier modification (insert seats) is required before use.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
21 1762/ 1764–21 1777	2400	2200	1100																	●		○	
21 1765	2400	2400	1700																	●		○	





21 1762 21 1764 21 1765 21 1768 21 1772 21 1774 21 1777

Type			ALU	
21A 21 1762	ZDHT 150504FR-F10	HU7705	eShop	10
21A 21 1764	ZDHT 150508FR-F10	HU7705	eShop	10
21A 21 1765	ZDHT 150508FR-F10 **DLC coated**	HB7805	eShop	1
21A 21 1766	ZDHT 150512 FR-F10	HU7705	eShop	10
21A 21 1767	ZDHT 150516 FR-F10	HU7705	eShop	10
21A 21 1768	ZDHT 150520FR-F10	HU7705	eShop	10
21A 21 1771	ZDHT 150530FR-F10	HU7705	eShop	10
21A 21 1772	ZDHT 150532FR-F10	HU7705	eShop	10
21A 21 1774	ZDHT 150540FR-F10	HU7705	eShop	10
21A 21 1776	ZDHT 150550FR-F10	HU7705	eShop	10
21A 21 1777	ZDHT 150560FR-F10	HU7705	eShop	10
f_z		mm	0.1 – 0.25	

Garant

VERSATILE ALUMINIUM SHOULDER MILL.

The aluminium shoulder mill can also be used for machining plastics and aluminium composite materials.
We have the answer to your machining requirements.

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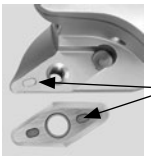
https://hog.tools/toolscout

MTC POWER CARD Garant

Garant Plunge milling cutters 90° and 93° MTC for VCG. 2205..

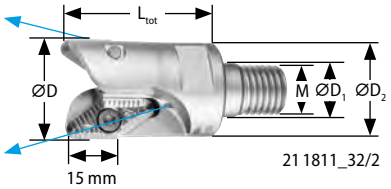
Greater tool stiffness by elimination of twist between indexable insert and insert seat.

Note: Use GARANT torque screwdriver TQ No. **211750 size 5.7** with bit No. **674252 size 20IP**.



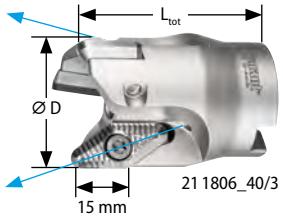
Plunge milling cutter 90° for VCG. 2205..

90°



21 1811_32/2

Ø D / number of teeth Z	210 21 1811 Plunge milling cutter 90° with threaded shank	Ø D_1 h6	Ø D_2	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm		mm	mm	mm		mm	mm	mm	degrees	mm		
32/2	eShop	17	29	47	M16	58	62	4	7.65	22.34	VCG. 2205	219800 (20IP; 5.7 Nm)
40/3	eShop	17	29	47	M16	74	78	8	5.65	30.34	VCG. 2205	219800 (20IP; 5.7 Nm)
42/3	eShop	17	29	47	M16	78	82	8	5.3	32.34	VCG. 2205	219800 (20IP; 5.7 Nm)

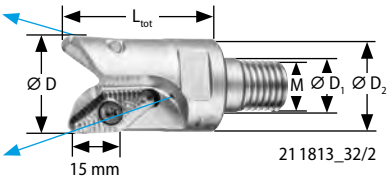


21 1806_40/3

Ø D / number of teeth Z	210 21 1806 Plunge milling cutter 90° with bore	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm		mm	mm	mm	mm	mm	degrees	mm		
40/3	eShop	55	16	74	78	8	5.65	30.34	VCG. 2205	219800 (20IP; 5.7 Nm)
42/3	eShop	55	16	78	82	8	5.3	32.34	VCG. 2205	219800 (20IP; 5.7 Nm)
50/4	eShop	55	22	94	98	10	4.25	40.34	VCG. 2205	219800 (20IP; 5.7 Nm)
52/3	eShop	55	22	98	102	10	4.05	42.34	VCG. 2205	219800 (20IP; 5.7 Nm)
63/4	eShop	55	22	120	124	10	3.22	53.34	VCG. 2205	219800 (20IP; 5.7 Nm)
66/4	eShop	55	27	126	130	10	3.05	56.34	VCG. 2205	219800 (20IP; 5.7 Nm)
80/5	eShop	55	27	154	158	10	2.44	70.34	VCG. 2205	219800 (20IP; 5.7 Nm)

Plunge milling cutter 93° for VCG. 2205..

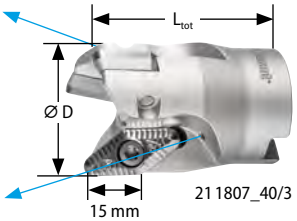
93°



21 1813_32/2

Application: To prevent chips jamming, especially when milling deep pockets.

Ø D / number of teeth Z	210 21 1813 Plunge milling cutter 93° with threaded shank	Ø D_1 h6	Ø D_2	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm		mm	mm	mm		mm	mm	mm	degrees	mm		
32/2	eShop	17	29	47	M16	58	62	4	7.65	22.34	VCG. 2205	219800 (20IP; 5.7 Nm)
40/3	eShop	17	29	47	M16	74	78	8	5.65	30.34	VCG. 2205	219800 (20IP; 5.7 Nm)
42/3	eShop	17	29	47	M16	78	82	8	5.3	32.34	VCG. 2205	219800 (20IP; 5.7 Nm)



21 1807_40/3

Ø D / number of teeth Z	210 21 1807 Plunge milling cutter 93° with bore	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm		mm	mm	mm	mm	mm	degrees	mm		
40/3	eShop	55	16	74	78	8	5.65	30.34	VCG. 2205	219800 (20IP; 5.7 Nm)
42/3	eShop	55	16	78	82	8	5.3	32.34	VCG. 2205	219800 (20IP; 5.7 Nm)
50/4	eShop	55	22	94	98	10	4.25	40.34	VCG. 2205	219800 (20IP; 5.7 Nm)
52/3	eShop	55	22	98	102	10	4.05	42.34	VCG. 2205	219800 (20IP; 5.7 Nm)
63/4	eShop	55	22	120	124	10	3.22	53.34	VCG. 2205	219800 (20IP; 5.7 Nm)
66/4	eShop	55	27	126	130	10	3.05	56.34	VCG. 2205	219800 (20IP; 5.7 Nm)
80/5	eShop	55	27	154	158	10	2.44	70.34	VCG. 2205	219800 (20IP; 5.7 Nm)

Garant Milling inserts for plunge milling cutters No. 211806 – 211813

21 1860 – **Diamond-coated** milling insert for higher cutting speeds and longer tool life in materials with silicon content.

21 1853–1861 – Fine-grain substrate, polished chip breaker steps – extreme reduction in the tendency to edge build-up.

Note: a_p max = 7 mm for roughing with a_e = 1×D.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
21 1853–59/ 21 1861	1900	1900	500														400	100		●		○	
21 1860	1900	1900	680															●		●		○	



21 1853 21 1856 21 1857 21 1859 21 1861 21 1860

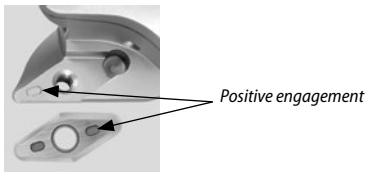
Type			ALU	
21A 21 1853	VCGX 220505 FR	HU7810	eShop	10
21A 21 1856	VCGX 220508 FR	HU7810	eShop	10
21A 21 1857	VCGX 220516 FR	HU7810	eShop	10
21A 21 1859	VCGX 220520 FR	HU7810	eShop	10
21A 21 1861	VCGT 220530 FN	HU7810	eShop	10
21B 21 1860	VCGT 220530 FN **diamond-coated**	HB7810	eShop	1
f_z		mm	0.25	

MTC POWER CARD Garant

Garant Plunge milling cutter 90° and 93° MTC for VDGT 11T2..

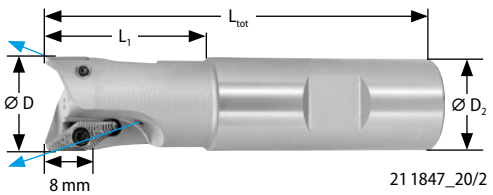
Greater tool stiffness by elimination of twist between indexable insert and insert seat.

Note: Use GARANT torque screwdriver TQ No. **211750 size 0.9** with bit No. **674252 size 7IP**.



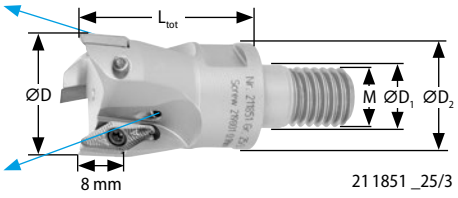
Plunge milling cutter 90° for VDGT 11T2..

90°



21 1847_20/2

Ø D / number of teeth Z	210 21 1847 Plunge milling cutter 90° Weldon shank	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm		mm	mm	mm	mm	mm	mm	degrees	mm		
16/2	eShop	30	80	16	30	30	3.5	6.9	12.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)
20/2	eShop	35	85	20	38	38	3.5	5.23	16.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)
25/3	eShop	35	90	25	48	48	3.5	4.01	21.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)



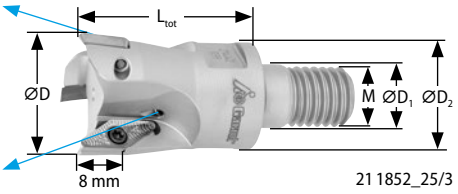
21 1851 _25/3

∅ D / number of teeth Z	210 21 1851 Plunge milling cutter 90° with threaded shank	∅ D_1 h6	∅ D_2	L_{tot}	Mounting thread M	Circular interpolation milling ∅ D_{min}	Circular interpolation milling ∅ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm		mm	mm	mm		mm	mm	mm	degrees	mm		
16/2	eShop	8.5	12.7	35	M8	30	30	3.5	6.9	12.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)
20/2	eShop	10.5	17.7	35	M10	38	38	3.5	5.23	16.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)
25/3	eShop	12.5	20.7	35	M12	48	48	3.5	4.01	21.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)
32/4	eShop	17	28.7	42	M16	62	62	3.5	3.02	28.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)

Plunge milling cutter 93° for VDGT 11T2..



Application: To prevent chips jamming, especially when milling deep pockets.



21 1852_25/3

∅ D / number of teeth Z	210 21 1852 Plunge milling cutter 93° with threaded shank	∅ D_1 h6	∅ D_2	L_{tot}	Mounting thread M	Circular interpolation milling ∅ D_{min}	Circular interpolation milling ∅ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm		mm	mm	mm		mm	mm	mm	degrees	mm		
16/2	eShop	8.5	12.7	35	M8	30	30	3.5	6.9	12.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)
20/2	eShop	10.5	17.7	35	M10	38	38	3.5	5.23	16.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)
25/3	eShop	12.5	20.7	35	M12	48	48	3.5	4.01	21.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)
32/4	eShop	17	28.7	42	M16	62	62	3.5	3.02	28.4	VDGT 11T2..	219801 (7IP; 0.9 Nm)

Garant Milling inserts for plunge milling cutters No. 211847 – 211852

21 1864 – **Diamond-coated** milling insert for higher cutting speeds and longer tool life in materials with silicon content.

21 1865–1868 – Fine-grain substrate, polished chip breaker steps – extreme reduction of the tendency to edge build-up.

Note: a_p max = 3 mm for roughing with a_e = 1×D.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
21 1864	**1900**	**1900**	**680**															●		●		○	
21 1865–21 1868	**1900**	**1900**	**500**														**400**	100		●		○	


21 1867


21 1868


21 1865


21 1864

Type			ALU	
21A **21 1867**	VDGT 11T204 FR	**HU7810**	eShop	**10**
21A **21 1868**	VDGT 11T208 FR	**HU7810**	eShop	**10**
21A **21 1865**	VDGT 11T210 FN	**HU7810**	eShop	**10**
21B **21 1864**	VDGT 11T210 FN **diamond coated**	**HB7810**	eShop	**1**
f_z		mm	0.17	

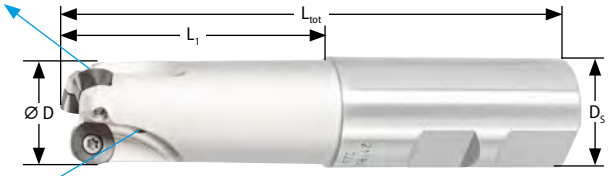
POWER CARD Garant

Garant Copy and face mills, indexed for RPK.10T3, RPK.1204

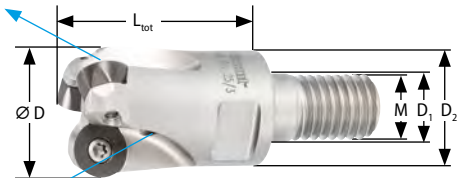
The latest generation of copy and face milling cutters. Indexed round inserts ensure stable conditions and secure the insert against accidental twisting during use. The optimised form fit between the indexable insert and insert seat ensures exceptional process reliability.

Copy and face mills, indexed for RPK.10T3

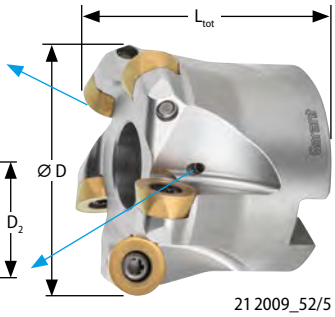
Note: $a_{p\,max}$ = **5.0 mm.**
Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size 9IP**.



21 2003_25/3



21 2006_25/3



21 2009_52/5

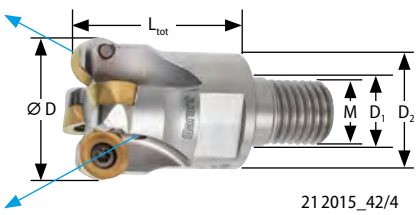
Ø D / number of effective cutting edges Z	210 21 2003 Copy and face mills, indexed	Number of cutting edges Z	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	Set of insert screws
mm	**Weldon shank**		mm	mm	mm	mm	mm	mm	degrees	mm	
20/2	eShop	2	55	105	20	30	38	0.7	5.37	7.45	219878 2 (9IP; 2.2 Nm)
20/2L	eShop	2	100	155	20	30	38	0.7	5.37	7.45	219878 2 (9IP; 2.2 Nm)
25/3	eShop	3	59	115	25	40	48	1.6	3.22	12.45	219878 2 (9IP; 2.2 Nm)

Ø D / number of effective cutting edges Z	210 21 2006 Copy and face mills, indexed	Number of cutting edges Z	Ø D_1 h6	Ø D_2	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	Set of insert screws
mm	**with threaded shank**		mm	mm	mm		mm	mm	mm	degrees	mm	
20/2	eShop	2	10.5	17.7	30	M10	30	38	0.7	5.37	7.45	219878 2 (9IP; 2.2 Nm)
25/3	eShop	3	12.5	20.7	35	M12	40	48	1.6	3.22	12.45	219878 2 (9IP; 2.2 Nm)
32/4	eShop	4	17	28.7	42	M16	54	62	2.5	2.06	19.45	219878 2 (9IP; 2.2 Nm)
35/3	eShop	3	17	28.7	42	M16	60	68	2.5	1.79	22.45	219878 2 (9IP; 2.2 Nm)
35/5	eShop	5	17	28.7	42	M16	60	68	2.5	1.79	22.45	219878 2 (9IP; 2.2 Nm)
42/5	eShop	5	17	28.7	42	M16	74	82	2.5	1.36	29.45	219878 2 (9IP; 2.2 Nm)

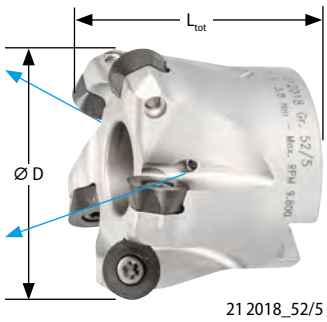
Ø D / number of effective cutting edges Z	210 21 2009 Copy and face mills, indexed	Number of cutting edges Z	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	Set of insert screws
mm	**with bore**		mm	mm	mm	mm	mm	degrees	mm	
35/3	eShop	3	40	16	60	68	2.5	1.79	22.45	219878 2 (9IP; 2.2 Nm)
35/4	eShop	4	40	16	60	68	2.5	1.79	22.45	219878 2 (9IP; 2.2 Nm)
52/5	eShop	5	40	22	94	102	2.5	1.02	39.45	219878 2 (9IP; 2.2 Nm)
52/6	eShop	6	40	22	94	102	2.5	1.02	39.45	219878 2 (9IP; 2.2 Nm)

Copy and face mills, indexed for RPK.1204

Note: $a_{p\,max}$ = **6.0 mm.**
Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.



21 2015_42/4



21 2018_52/5

Ø D / number of effective cutting edges Z	210 21 2015 Copy and face mills, indexed	Number of cutting edges Z	Ø D_1 h6	Ø D_2	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	Set of insert screws
mm	**with threaded shank**		mm	mm	mm		mm	mm	mm	degrees	mm	
25/2	eShop	2	12.5	20.7	35	M12	38	48	1.7	4.83	9.94	219878 3 (15IP; 3.8 Nm)
32/3	eShop	3	17	28.7	42	M16	52	62	4	2.84	16.94	219878 3 (15IP; 3.8 Nm)
35/3	eShop	3	17	28.7	42	M16	58	68	4	2.41	19.94	219878 3 (15IP; 3.8 Nm)
42/4	eShop	4	17	28.7	42	M16	72	82	4	1.79	26.94	219878 3 (15IP; 3.8 Nm)

∅ D / number of effective cutting edges Z	210 21 2018 Copy and face mills, indexed	Number of cutting edges Z	L_{tot}	Mounting bore ∅	Circular interpolation milling ∅ D_{min}	Circular interpolation milling ∅ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	Set of insert screws
mm	with bore		mm	mm	mm	mm	mm	degrees	mm	
42/4	eShop	4	40	16	72	82	4	1.79	26.94	219878 3 (15IP; 3.8 Nm)
52/5	eShop	5	40	22	92	102	4	1.3	36.94	219878 3 (15IP; 3.8 Nm)
63/6	eShop	6	40	22	114	124	4	1	47.94	219878 3 (15IP; 3.8 Nm)
66/6	eShop	6	50	27	120	130	4	0.94	50.94	219878 3 (15IP; 3.8 Nm)
80/7	eShop	7	50	27	148	158	4	0.74	64.94	219878 3 (15IP; 3.8 Nm)
100/9	eShop	9	50	32	188	198	4	0.57	84.94	219878 3 (15IP; 3.8 Nm)
125/10	eShop	10	63	40	238	248	4	0.44	109.94	219878 3 (15IP; 3.8 Nm)

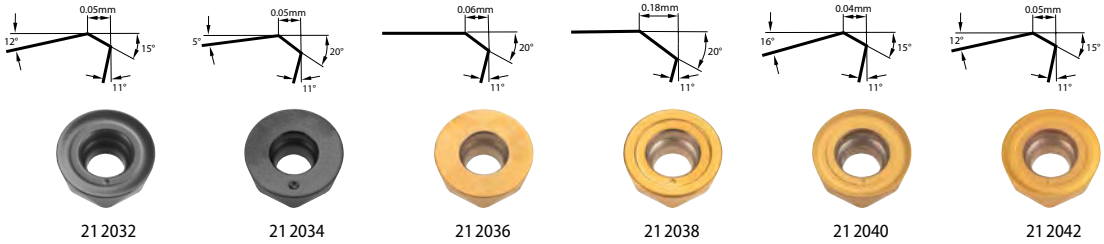
Garant Milling inserts RPK.10T3 and RPK.1204 for copy and face mills, indexed No. 212003 – 212018

Round inserts with sixfold indexing. Taking the maximum cutting depth into account, six fully functional cutting edges are produced.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
21 2032/2052				360	290	250	200												○	○	●	●
21 2034/2054					330	260	230	180									220		○	○	●	●
21 2036/2056									120	100	70	55					200		○		●	
21 2038/2058								160	110	90	65	50					200		○		●	
21 2040/2060														220	160	60			○		●	
21 2042/2062				330	255	210	180	150						180	120		130	●	●	●	●	●

Milling inserts RPK.10T3 MOT

Note: Standard application values for $a_e = 0.3 \times D$ / $a_p = 1$ mm.
In order to use all six cutting edges, an a_p of 2.5 mm must not be exceeded.

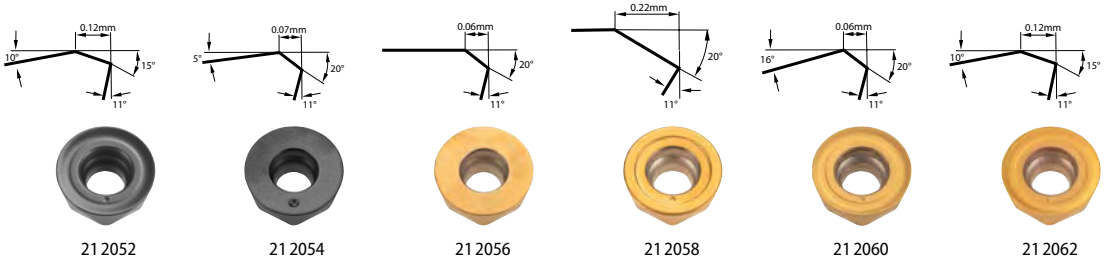


21 2032 21 2034 21 2036 21 2038 21 2040 21 2042

Type			ST900	ST1400	HART	INOX	UNI		f_z mm
21A 21 2032	RPKT 10T3MOT	HB7525	eShop	–	–	–	–	10	0.3
21A 21 2034		HB7515	–	eShop	–	–	–	10	0.35
21A 21 2036	RPKW 10T3MOT	HB7605	–	–	eShop	–	–	10	0.2
21A 21 2038		HB7605	–	–	eShop	–	–	10	0.25
21A 21 2040	RPKT 10T3MOT	HB7635	–	–	–	eShop	–	10	0.15
21A 21 2042		HB7635	–	–	–	–	eShop	10	–

Milling inserts RPK.1204 MOT

Note: Standard application values for $a_e = 0.3 \times D$ / $a_p = 1.2$ mm.
In order to use all six cutting edges, an a_p of 3 mm must not be exceeded.



21 2052 21 2054 21 2056 21 2058 21 2060 21 2062

Type			ST900	ST1400	HART	INOX	UNI		f_z mm
21A 21 2052	RPKT 1204MOT	HB7525	eShop	–	–	–	–	10	0.35
21A 21 2054		HB7515	–	eShop	–	–	–	10	0.35
21A 21 2056	RPKW 1204MOT	HB7605	–	–	eShop	–	–	10	0.2
21A 21 2058		HB7605	–	–	eShop	–	–	10	0.15
21A 21 2060	RPKT 1204MOT	HB7635	–	–	–	eShop	–	10	0.15
21A 21 2062		HB7635	–	–	–	–	eShop	10	–

POWER CARD Garant

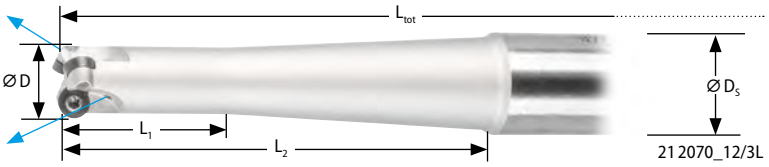
Garant Copy and face mills for RD..0501, RD..0702

Milling body with irregular pitch for smooth cutting.

- High axial run-out accuracy and concentricity
- Stepless repositioning of the insert as the cutting edge wears.

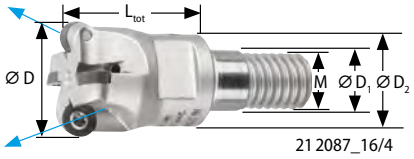
Copy and face mills for RD..0501

Note: $a_{p\,max}$ = 1.1 mm.
Use GARANT torque screwdriver TQ No. **211750 size 0.6** with bit No. **674252 size 6IP**.



21 2070_12/3L

Ø D / number of effective cutting edges Z mm	210 21 2070 Copy mill 0° negative Plain shank	Number of cutting edges Z	L_1 mm	L_2 mm	L_{tot} mm	Ø D_s h6 mm	Circular interpolation milling Ø D_{min} mm	Circular interpolation milling Ø D_{max} mm	Circular interpolation milling a_p mm	Ramping angle α_{max} degrees	Ramping length L for α_{max} mm	Set of insert screws
10	eShop	2	30	–	70	10	15	18	1.1	5.37	3.72	219802 (6IP; 0.6 Nm)
10/2	eShop	2	14	–	70	8	15	18	1.1	5.37	3.72	219802 (6IP; 0.6 Nm)
10/2L	eShop	2	39	–	110	12	15	18	1.1	5.37	3.72	219802 (6IP; 0.6 Nm)
12	eShop	3	30	–	75	12	19	22	1.1	3.5	5.72	219802 (6IP; 0.6 Nm)
12/3	eShop	3	15	–	75	10	19	22	1.1	3.5	5.72	219802 (6IP; 0.6 Nm)
12/3L	eShop	3	30	70	120	16	19	22	1.1	3.5	5.72	219802 (6IP; 0.6 Nm)
15	eShop	4	30	–	80	16	25	28	1.1	2.3	8.72	219802 (6IP; 0.6 Nm)
16	eShop	4	30	–	80	16	27	30	1.1	2.06	9.72	219802 (6IP; 0.6 Nm)
16/4	eShop	4	20	–	80	14	27	30	1.1	2.06	9.72	219802 (6IP; 0.6 Nm)

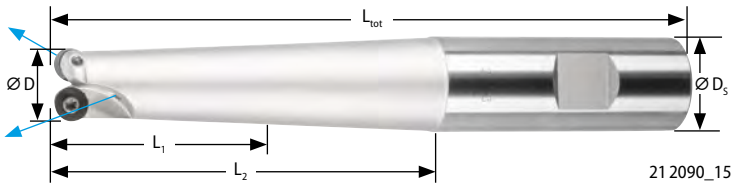


21 2087_16/4

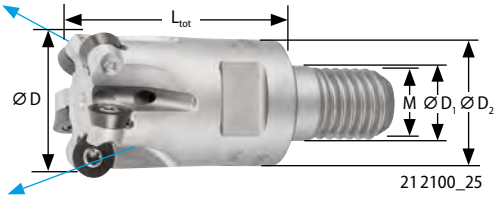
Ø D / number of teeth Z mm	210 21 2087 Copy mill 0° negative with threaded shank	Number of cutting edges Z	Ø D_1 h6 mm	Ø D_2 mm	L_{tot} mm	Mounting thread M	Circular interpolation milling Ø D_{min} mm	Circular interpolation milling Ø D_{max} mm	Circular interpolation milling a_p mm	Ramping angle α_{max} degrees	Ramping length L for α_{max} mm	Set of insert screws
10/2	eShop	2	5.5	9.75	20	M5	15	18	1.1	5.37	3.72	219802 (6IP; 0.6 Nm)
12/3	eShop	3	8.5	11.75	20	M8	19	22	1.1	3.5	5.72	219802 (6IP; 0.6 Nm)
16/4	eShop	4	8.5	12.7	20	M8	27	30	1.1	2.06	9.72	219802 (6IP; 0.6 Nm)

Copy and face mills for RD..0702

Note: $a_{p\,max}$ = 1.5 mm.
Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit shank No. **674252 size 8IP**.



21 2090_15



21 2100_25

Ø D mm	210 21 2090 Copy mill 0° negative Weldon shank	Number of cutting edges Z	L_1 mm	L_2 mm	L_{tot} mm	Ø D_s h6 mm	Circular interpolation milling Ø D_{min} mm	Circular interpolation milling Ø D_{max} mm	Circular interpolation milling a_p mm	Ramping angle α_{max} degrees	Ramping length L for α_{max} mm	Set of insert screws
15	eShop	2	24.5	40	90	16	23	28	1.5	4.51	6.23	219803 (8IP; 1.2 Nm)
15L	eShop	2	26	80	135	20	23	28	1.5	4.51	6.23	219803 (8IP; 1.2 Nm)
16L	eShop	2	26	80	135	20	25	30	1.5	3.89	7.23	219803 (8IP; 1.2 Nm)

Ø D mm	210 21 2100 Copy mill 0° negative with threaded shank	Number of cutting edges Z	Ø D_1 h6 mm	Ø D_2 mm	L_{tot} mm	Mounting thread M	Circular interpolation milling Ø D_{min} mm	Circular interpolation milling Ø D_{max} mm	Circular interpolation milling a_p mm	Ramping angle α_{max} degrees	Ramping length L for α_{max} mm	Set of insert screws
15	eShop	2	8.5	12.7	23	M8	23	28	1.5	4.51	6.21	219803 (8IP; 1.2 Nm)
16	eShop	3	8.5	12.7	23	M8	25	30	1.5	3.89	7.21	219803 (8IP; 1.2 Nm)
20	eShop	4	10.5	17.7	30	M10	33	38	1.5	2.5	11.21	219803 (8IP; 1.2 Nm)
25	eShop	5	12.5	20.7	35	M12	43	48	1.5	1.73	16.21	219803 (8IP; 1.2 Nm)
32	eShop	5	17	28.7	42	M16	57	62	1.5	1.21	23.21	219803 (8IP; 1.2 Nm)
35	eShop	6	17	28.7	42	M16	63	68	1.5	1.07	26.21	219803 (8IP; 1.2 Nm)

POWER CARD Garant

Garant Copy and face mills for RD..1003

Milling body with irregular pitch for smooth cutting.

- High axial run-out accuracy and concentricity
- Stepless repositioning of the insert as the cutting edge wears.

21 2115/2130/2140 – Vibration reduction and soft cutter edge entry due to 7° positive setting of the indexable inserts.

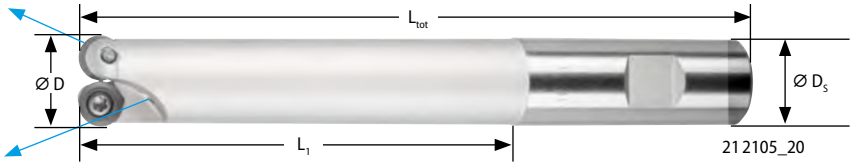
Note: $a_{p\ max}$ = 2 mm.
Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.



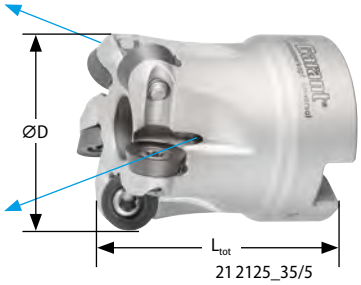
Indexable insert set to 0° negative.



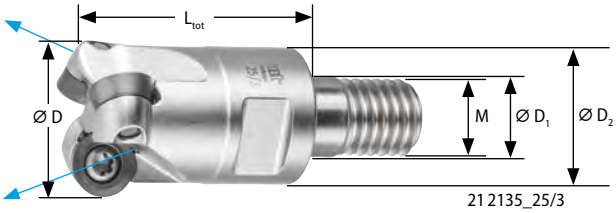
Indexable insert set to 7° positive.



Ø D	210 21 2105	210 21 2115	Number of cutting edges Z	L 1		L tot		Ø D s h6	Circular interpolation milling Ø D min	Circular interpolation milling Ø D max	Circular interpolation milling a p	Ramping angle α max	Ramping length L for α max	Set of insert screws
	Copy mill													
	0° negative Weldon shank	7° positive Weldon shank		21 2105	21 2115	21 2105	21 2115		21 2105	21 2105	21 2105	21 2105	21 2105	
mm				mm	mm	mm	mm	mm	mm	mm	mm	degrees	mm	
20	eShop	eShop	2	60	47	115	100	20	30	38	2	5.37	7.45	219804 (15IP; 3.8 Nm)
20L	eShop	–	2	100	–	155	–	20	30	38	2	5.37	7.45	219804 (15IP; 3.8 Nm)
25	eShop	eShop	3	35	48	107	100	20	40	48	2	3.22	12.45	219804 (15IP; 3.8 Nm)
25L	eShop	–	2	70	–	180	–	25	40	48	2	3.22	12.45	219804 (15IP; 3.8 Nm)



Ø D / number of teeth Z	210 21 2125	210 21 2130	L tot	Mounting bore Ø	Circular interpolation milling Ø D min	Circular interpolation milling Ø D max	Circular interpolation milling a p	Ramping angle α max	Ramping length L for α max	Set of insert screws
	Copy mill									
	0° negative with bore	7° positive with bore			21 2125	21 2125	21 2125	21 2125	21 2125	
mm			mm	mm	mm	mm	mm	degrees	mm	
35/3	eShop	–	40	16	60	68	2	1.79	22.45	219804 (15IP; 3.8 Nm)
35/5	eShop	eShop	40	16	60	68	2	1.79	22.45	219804 (15IP; 3.8 Nm)
42/6	eShop	eShop	40	16	74	82	2	1.36	29.45	219804 (15IP; 3.8 Nm)
52/5	eShop	eShop	50	22	94	102	2	1.02	39.45	219804 (15IP; 3.8 Nm)
52/7	eShop	–	50	22	94	102	2	1.02	39.45	219804 (15IP; 3.8 Nm)



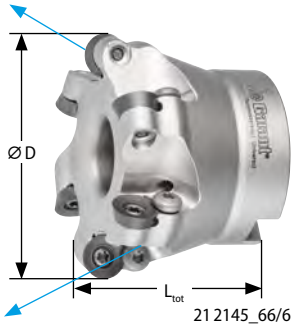
Ø D / number of teeth Z	210 21 2135	210 21 2140	Ø D 1 h6	L tot	Ø D 2	Mounting thread M	Circular interpolation milling Ø D min	Circular interpolation milling Ø D max	Circular interpolation milling a p	Ramping angle α max	Ramping length L for α max	Set of insert screws
	Copy mill											
	0° negative with threaded shank	7° positive with threaded shank					21 2135	21 2135	21 2135	21 2135	21 2135	
mm			mm	mm	mm		mm	mm	mm	degrees	mm	
20/2	eShop	eShop	10.5	30	17.7	M10	30	38	2	5.37	7.45	219804 (15IP; 3.8 Nm)
25/2	eShop	–	12.5	35	20.7	M12	40	48	2	3.22	12.45	219804 (15IP; 3.8 Nm)
25/3	eShop	eShop	12.5	35	20.7	M12	40	48	2	3.22	12.45	219804 (15IP; 3.8 Nm)
32/4	eShop	–	17	42	28.7	M16	54	62	2	2.06	19.45	219804 (15IP; 3.8 Nm)
35/5	eShop	eShop	17	42	28.7	M16	60	68	2	1.79	22.45	219804 (15IP; 3.8 Nm)
42/5	eShop	eShop	17	42	28.7	M16	74	82	2	1.36	29.45	219804 (15IP; 3.8 Nm)
42/6	eShop	eShop	17	42	28.7	M16	74	82	2	1.36	29.45	219804 (15IP; 3.8 Nm)

POWER CARD Garant

Garant Copy and face mills for RD..12T3, RD..1604

Milling body with irregular pitch for smooth cutting.
- High axial run-out accuracy and concentricity
- Stepless repositioning as the cutting edge wears.

Attention: Retaining screws and retaining washers should **not** be used for inserts with positive geometry.



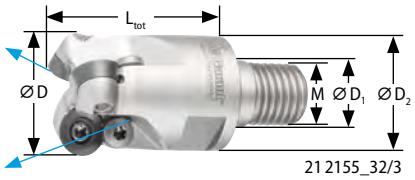
21 2145_66/6

Copy and face mills for RD..12T3

21 2150/2160 – Vibration reduction and soft cutter edge entry due to 7° positive setting of the indexable inserts.

Note: $a_{p\,max}$ = 2.5 mm.
Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.

Ø D / number of teeth Z	210 21 2145 Copy mill 0° negative with bore	210 21 2150 Copy mill 7° positive with bore	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min} 21 2145	Circular interpolation milling Ø D_{max} 21 2145	Circular interpolation milling a_p 21 2145	Ramping angle α_{max} 21 2145	Ramping length L for α_{max} 21 2145	Set of insert screws	Set of retaining screws
mm			mm	mm	mm	mm	mm	degrees	mm		
42/4	eShop	–	40	16	72	82	2.5	1.79	26.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
48/4	eShop	–	50	22	84	94	2.5	1.46	32.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
52/5	eShop	eShop	50	22	92	102	2.5	1.3	36.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
63/6	eShop	eShop	50	22	114	124	2.5	1	47.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
66/6	eShop	eShop	50	27	120	130	2.5	0.94	50.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
80/7	eShop	eShop	50	27	148	158	2.5	0.74	64.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
100/9	eShop	–	50	32	188	198	2.5	0.57	84.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
125/10	eShop	–	63	40	238	248	2.5	0.44	109.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)



21 2155_32/3

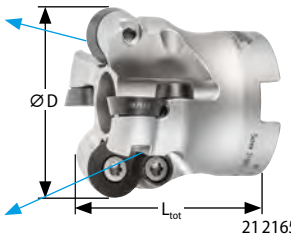
Ø D / number of teeth Z	210 21 2155 Copy mill 0° negative with threaded shank	210 21 2160 Copy mill 7° positive with threaded shank	Ø D_1 h6	L_{tot}	Ø D_2	Mounting thread M	Circular interpolation milling Ø D_{min} 21 2155	Circular interpolation milling Ø D_{max} 21 2155	Circular interpolation milling a_p 21 2155	Ramping angle α_{max} 21 2155	Ramping length L for α_{max} 21 2155	Set of insert screws	Set of retaining screws
mm			mm	mm	mm		mm	mm	mm	degrees	mm		
24/2	eShop	–	12.5	35	20.7	M12	36	46	2.5	5.37	8.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
32/3	eShop	eShop	17	42	28.7	M16	52	62	2.5	2.84	16.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
35/3	eShop	eShop	17	42	28.7	M16	58	68	2.5	2.41	19.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
35/4	eShop	–	17	42	28.7	M16	58	68	2.5	2.41	19.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)
42/4	eShop	eShop	17	42	28.7	M16	72	82	2.5	1.79	26.94	219805 (15IP; 3.8 Nm)	219807 (15IP; 3.8 Nm)

Copy and face mills for RD..1604

21 2167 – Vibration reduction and soft cutter edge entry due to 7° positive setting of the indexable inserts.

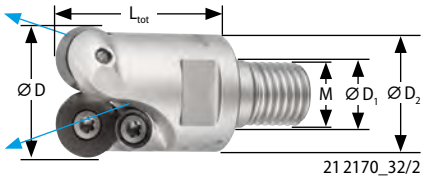
Application: With pack of insert screws No. 219800 - for securing indexable inserts and retaining washers.

Note: $a_{p\,max}$ = 3.5 mm.
Use GARANT torque screwdriver TQ No. **211750 size 5.7** with bit No. **674252 size 20IP**.



21 2165_52/4

Ø D / number of teeth Z	210 21 2165 Copy mill 0° negative with bore	210 21 2167 Copy mill 7° positive with bore	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min} 21 2165	Circular interpolation milling Ø D_{max} 21 2165	Circular interpolation milling a_p 21 2165	Ramping angle α_{max} 21 2165	Ramping length L for α_{max} 21 2165	Set of insert screws	Set of retaining washers
mm			mm	mm	mm	mm	mm	degrees	mm		
52/4	eShop	eShop	50	22	88	102	3.5	2.01	31.92	219800 (20IP; 5.7 Nm)	219955
66/5	eShop	eShop	50	27	116	130	3.5	1.4	45.92	219800 (20IP; 5.7 Nm)	219955
80/6	eShop	eShop	50	27	144	158	3.5	1.07	59.92	219800 (20IP; 5.7 Nm)	219955
100/7	eShop	eShop	50	32	184	198	3.5	0.8	79.92	219800 (20IP; 5.7 Nm)	219955



21 2170_32/2

Ø D / number of teeth Z	210 21 2170 Copy mill 0° negative with threaded shank	Ø D_1 h6	L_{tot}	Ø D_2	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	Set of insert screws	Set of retaining washers
mm		mm	mm	mm		mm	mm	mm	degrees	mm		
32/2	eShop	17	42	28.7	M16	48	62	3.5	5.37	11.92	219800 (20IP; 5.7 Nm)	219955

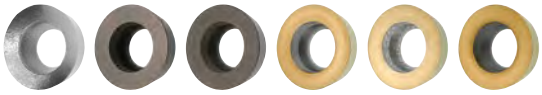
Milling inserts RD 05/07/10/12/16 for indexable copy and face mills No. 212070 – 212170

All indexable inserts are suitable for use with carriers that are 0° negative and also with carriers that are 7° positive.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
HU7710	400	300	300														○			●		○	
HB7810	400	400	400														●			●		○	
HB7525				380	290	240	210	170					240	170		200			●	●	●	●	●
HB7515				430	330	270	230	200					300	210		230			●	○	○	●	●
HB7505				275	275	250	160	125	155	140		110				240				○		●	
HB7635													190	120						○		●	
HB7535				175	175	160							160	140	60					○		●	
HB7520				275	275	250	160	125					260	210		240		●		○		●	
CBN925									350	300		300				500					●	●	●
HB735				330	255	210	180	150					220	160		180				●		●	
HB7605							180	140	170	160		130								○		●	
HBM025				260	240	220	150	120					220	180				●		○		●	

Milling inserts RDH. 0501 MO.N, RD.. 0702 MO..

Note: Standard application values for $a_e = 0.3 \times D$ / a_{pmax} = 1.1 mm.



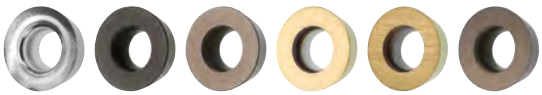
21 2178 21 2181 21 2184 21 2185 21 2189 21 2195

Type				ALU	ST900	ST1400	HART	INOX	UNI		f_z mm	
21A 21 2178		RDHT 0501 MOFN **positive**	HU7710	eShop	–	–	–	–	–	10	0.15	
21B 21 2179		RDHX 0501 MOFN **diamond-coated, positive**	HB7810	eShop	–	–	–	–	–	1	0.15	NEW
21A 21 2181		RDHW 0501 MOT	HB7525	–	eShop	–	–	–	–	10	0.15	
21A 21 2182	Garant	RDHX 0501 MOTN	HB7525	–	eShop	–	–	–	–	10	0.15	
21A 21 2184			HB7515	–	–	eShop	–	–	–	10	0.15	
21A 21 2185			HB7505	–	–	–	eShop	–	–	10	0.08	
21A 21 2189		RDHX 0501 MOSN **positive**	HB7635	–	–	–	–	eShop	–	10	0.12	
21A 21 2190		RDEX 0501 MOSN	HB7535	–	–	–	–	eShop	–	10	0.12	
21A 21 2195		RDHX 0501 MOTN	HB7520	–	–	–	–	–	eShop	10	–	

21 2218 – With coating to visually detect wear.

Note: Standard application values for $a_e = 0.3 \times D$ / a_{pmax} = 1.5 mm.

21 2218 – Mount with tightening value 0.9 Nm.



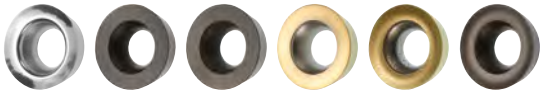
21 2200 21 2211 21 2213 21 2215 21 2219 21 2224

Type				ALU	ST900	ST1400	HART	INOX	UNI		f_z mm	
21A 21 2200		RDHT 0702 MOFN **positive**	HU7710	eShop	–	–	–	–	–	10	0.18	
21B 21 2202		RDHT 0702 MOFN **diamond-coated, positive**	HB7810	eShop	–	–	–	–	–	1	0.18	NEW
21A 21 2211		RDHW 0702 MOT	HB7525	–	eShop	–	–	–	–	10	0.18	
21A 21 2212		RDHX 0702 MOTN	HB7525	–	eShop	–	–	–	–	10	0.18	
21A 21 2213			HB7515	–	–	eShop	–	–	–	10	0.18	
21A 21 2215	Garant		HB7505	–	–	–	eShop	–	–	10	0.13	
21A 21 2218			CBN925	–	–	–	eShop	–	–	1	0.13	
21A 21 2219		RDHX 0702 MOSN **positive**	HB7635	–	–	–	–	eShop	–	10	0.18	
21A 21 2220		RDEX 0702 MOSN	HB7535	–	–	–	–	eShop	–	10	0.18	
21A 21 2222		RDNX 0702 MOEN **Positive**	HB7635	–	–	–	–	eShop	–	10	0.18	
21A 21 2224		RDHX 0702 MO	HB735	–	–	–	–	–	eShop	10	–	
21A 21 2225		RDHX 0702 MOTN	HB7520	–	–	–	–	–	eShop	10	–	

Milling inserts RD.. 1003 MO.., RD.. 12T3 MO.., RD.. 1604 MO..

21 2248 – With coating to visually detect wear.

Note: Standard application values for $a_e = 0.3 \times D$ / a_{pmax} = 2 mm.
21 2248 – Mount with tightening value 3.0 Nm.


21 2230 21 2241 21 2243 21 2251 21 2249 21 2254

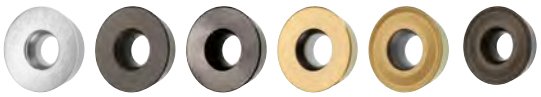
Type				ALU	ST900	ST1400	HART	INOX	UNI		f_z mm
21A 21 2230		RDHT 1003 MOFN **positive**	HU7710	eShop	–	–	–	–	–	10	0.22
NEW 21B 21 2232		RDHT 1003 **diamond-coated, positive**	HB7810	eShop	–	–	–	–	–	1	0.22
21A 21 2241		RDHW 1003 MOT	HB7525	–	eShop	–	–	–	–	10	0.22
21A 21 2242		RDHX 1003 MOTN	HB7525	–	eShop	–	–	–	–	10	0.22
21A 21 2243			HB7515	–	–	eShop	–	–	–	10	0.22
21A 21 2245		RDHW 1003 MOTN	HB7505	–	–	–	eShop	–	–	10	0.16
21A 21 2251	Garant	RDHW 1003 MOT	HB7605	–	–	–	eShop	–	–	10	0.16
21A 21 2248		RDHX 1003 MOTN	CBN925	–	–	–	eShop	–	–	1	0.16
21A 21 2249		RDHX 1003 MOT **positive**	HB7635	–	–	–	–	eShop	–	10	0.22
21A 21 2250		RDEX 1003 MOSN	HB7535	–	–	–	–	eShop	–	10	0.22
21A 21 2252		RDNX 1003 MOEN **Positive**	HB7635	–	–	–	–	eShop	–	10	0.22
21A 21 2254		RDHX 1003 MOT	HB735	–	–	–	–	–	eShop	10	–
21A 21 2255		RDHW 1003 MOTN	HB7520	–	–	–	–	–	eShop	10	–
NEW 22A 21 2257	HOLEX	RDMX 1003 MOT	HBM025	–	–	–	–	–	eShop	10	–

Note: Standard application values for $a_e = 0.3 \times D$ / a_{pmax} = 2.5 mm.


21 2260 21 2271 21 2273 21 2277 21 2279 21 2284

Type				ALU	ST900	ST1400	HART	INOX	UNI		f_z mm
21A 21 2260		RDHT 12T3 MOFN **positive**	HU7710	eShop	–	–	–	–	–	10	0.22
NEW 21B 21 2262		RDHT 12T3 **diamond-coated, positive**	HB7810	eShop	–	–	–	–	–	1	0.22
21A 21 2271		RDHW 12T3 MOT	HB7525	–	eShop	–	–	–	–	10	0.22
21A 21 2272		RDHX 12T3 MOTN	HB7525	–	eShop	–	–	–	–	10	0.22
21A 21 2273			HB7515	–	–	eShop ■	–	–	–	10	0.22
21A 21 2275	Garant	RDMW 12T3 MOTN	HB7505	–	–	–	eShop ■	–	–	10	0.16
21A 21 2277		RDMW 12T3 MOT	HB7605	–	–	–	eShop	–	–	10	0.16
21A 21 2279		RDHX 12T3 MOT **positive**	HB7635	–	–	–	–	eShop	–	10	0.22
21A 21 2280		RDEX 12T3 MOSN	HB7535	–	–	–	–	eShop	–	10	0.22
21A 21 2282		RDNX 12T3 MOEN **Positive**	HB7635	–	–	–	–	eShop	–	10	0.22
21A 21 2284		RDHX 12T3 MOT	HB735	–	–	–	–	–	eShop	10	–
21A 21 2285		RDMW 12T3 MOTN	HB7520	–	–	–	–	–	eShop	10	–
NEW 22A 21 2287	HOLEX	RDMX 12T3 MOT	HBM025	–	–	–	–	–	eShop	10	–

Note: Standard application values for $a_e = 0.3 \times D$ / a_{pmax} = 3.5 mm.


21 2288 21 2296 21 2298 21 2300 21 2304 21 2309

Type				ALU	ST900	ST1400	HART	INOX	UNI		f_z mm
21A 21 2288		RDHT 1604 MOFN **positive**	HU7710	eShop	–	–	–	–	–	10	0.4
NEW 21B 21 2290		RDHT 1604 **diamond-coated, positive**	HB7810	eShop	–	–	–	–	–	1	0.4
21A 21 2296		RDHW 1604 MOT	HB7525	–	eShop	–	–	–	–	10	0.3
21A 21 2297		RDHX 1604 MOTN	HB7525	–	eShop	–	–	–	–	10	0.3
21A 21 2298			HB7515	–	–	eShop	–	–	–	10	0.3
21A 21 2300	Garant	RDMW 1604 MOTN	HB7505	–	–	–	eShop	–	–	10	0.2
21A 21 2304		RDHX 1604 MOT **positive**	HB7635	–	–	–	–	eShop	–	10	0.3
21A 21 2305		RDEX 1604 MOSN	HB7535	–	–	–	–	eShop	–	10	0.3
21A 21 2307		RDNX 1604 MOEN **Positive**	HB7635	–	–	–	–	eShop	–	10	0.3
21A 21 2309		RDHX 1604 MOT	HB735	–	–	–	–	–	eShop	10	–
21A 21 2310		RDMW 1604 MOTN	HB7520	–	–	–	–	–	eShop	10	–

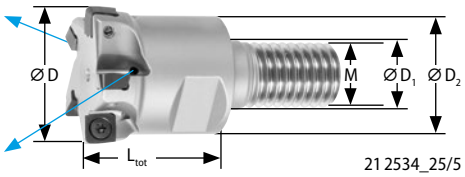
HPC | POWER CARD Garant

Garant Precision finishing mills for CPHX0602.. / CPHX09T3..

Precision finish milling for **extremely efficient en pre-finish machining and finish machining.**
Due to the revised wiper geometry, suitable for **outstanding surface quality** in **ground finish standard**.
Extreme time saving available due to a **large line skip** and a **high feed rate per tooth**.
Application: Typical tool for tool and die manufacturing.

Precision finishing mills for CPHX0602..

Note: GARANT torque screwdriver TQ No. **211750 size 1.0** with bit No. **674252 size 7IP**.

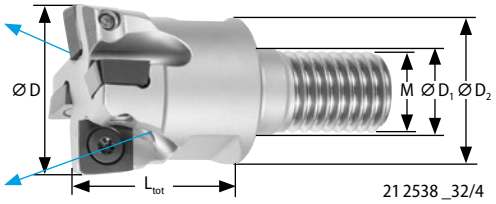


21 2534_25/5

Ø D / number of teeth Z	210 21 2534 Finishing mill with threaded shank	maximum cutting depth $a_{p\,max}$	Ø D_1 h6	L_{tot}	Ø D_2	Mounting thread M	suitable indexable insert	Set of insert screws
mm		mm	mm	mm	mm			
16/3	eShop	2.5	8.5	23	13	M8	CPHX 0602..	219799 3 (7IP; 1.0 Nm)
20/4	eShop	2.5	10.5	30	18	M10	CPHX 0602..	219799 3 (7IP; 1.0 Nm)
25/5	eShop	2.5	12.5	35	21	M12	CPHX 0602..	219799 3 (7IP; 1.0 Nm)

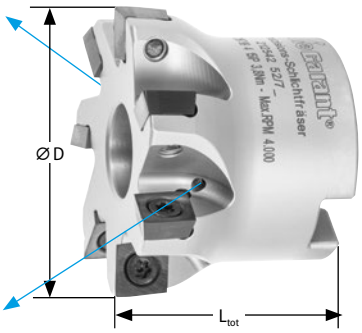
Precision finishing mills for CPHX09T3..

Note: GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.



21 2538 _32/4

Ø D / number of teeth Z	210 21 2538 Finishing mill with threaded shank	maximum cutting depth $a_{p\,max}$	Ø D_1 h6	L_{tot}	Ø D_2	Mounting thread M	suitable indexable insert	Set of insert screws
mm		mm	mm	mm	mm			
25/3	eShop	3	12.5	35	21	M12	CPHX 09T3..	219799 4 (15IP; 3.8 Nm)
32/4	eShop	3	17	42	29	M16	CPHX 09T3..	219799 4 (15IP; 3.8 Nm)
35/4	eShop	3	17	42	29	M16	CPHX 09T3..	219799 4 (15IP; 3.8 Nm)
42/5	eShop	3	17	42	29	M16	CPHX 09T3..	219799 4 (15IP; 3.8 Nm)



21 2542_52/7

Ø D / number of teeth Z	210 21 2542 Finishing mill with bore	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	suitable indexable insert	Set of insert screws
mm		mm	mm	mm		
42/5	eShop	3	40	16	CPHX 09T3..	219799 4 (15IP; 3.8 Nm)
52/7	eShop	3	40	22	CPHX 09T3..	219799 4 (15IP; 3.8 Nm)
66/8	eShop	3	50	27	CPHX 09T3..	219799 4 (15IP; 3.8 Nm)

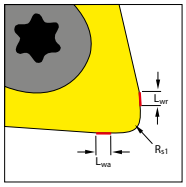
Garant Milling inserts for precision finishing mills No. 212534 /212538 /212542

- Inserts with improved wiper geometry for **more efficient machine processes in tool and die manufacture.**
- Extreme **time saving** available due to large stepover and high feed rate per tooth.
- Milling inserts with **radial** and **axial** wiper geometry.

Concentricity ± 0.020 mm.

Recommendation: For pure face milling operations, reduce Vc by 30%.

Note: Standard application values for ae 0.2 mm.
L_{wa} represents the axial wiper length.
L_{wr} represents the radial wiper length.



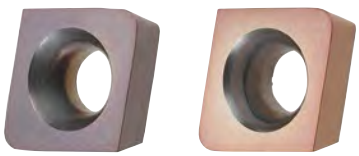
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	TOOLOX® 33 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	GGG					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	H	M	M	K					
HB4015				400	380	360	340	320	200					250	200	320	300	320		●	●	●	●
HB7705								320	200	180	160							300			○	●	●

Milling inserts CPHX0602..



Type			ST1400	HART		L_{wa} mm	L_{wr} mm	R_1 mm	< 1400 N f_z mm	< 65 HRC f_z mm
21A 21 2552	CPHX 060205 ER	HB4015	eShop	–	10	1	1.5	0.5	0.25	–
21A 21 2554	CPHX 060210 ER	HB4015	eShop	–	10	1	1.5	1	0.25	–
21A 21 2558		HB7705	–	eShop	10	0.5	0.8	1	–	0.15

Milling inserts CPHX09T3..



Type			ST1400	HART		L_{wa} mm	L_{wr} mm	R_1 mm	< 1400 N f_z mm	< 65 HRC f_z mm
21A 21 2572	CPHX 09T305 ER	HB4015	eShop	–	10	1	2	0.5	0.25	–
21A 21 2574	CPHX 09T310 ER	HB4015	eShop	–	10	1	2	1	0.25	–
21A 21 2578		HB7705	–	eShop	10	0.5	0.8	1	–	0.15

POWER CARD Garant

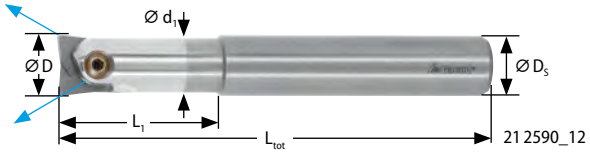
Garant Precision copy mill

Exactly accurate insert bedding due to optimised design of insert and insert seat tolerances.
Highest interchange accuracy guaranteed: ± 0.015 mm.

Size 8 – Without through–coolant feed.
21 2620 – Without through–coolant feed.

Application: General use for finishing and semi-finishing operations.
21 2590/2592 – **Solid carbide –** for large depths of cut and to minimise vibration.
21 2601–2620 – **Steel –** for general use in machining drop-forgings, and in tool and mould making.

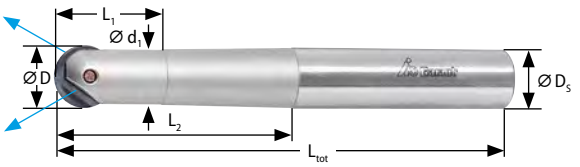
Note: Calculate the speed based on the effective Ø D_w.
Size 8 – Use GARANT torque screwdriver TQ No. **211750 size 0.9** with bit No. **674252 size 7IP**.
Size 10 – Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.
Size 12 – Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size 10IP**.
Size 16 – Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.
Size 20 – Use GARANT torque screwdriver TQ No. **211750 size 5.0** with bit No. **674252 size 20IP**.



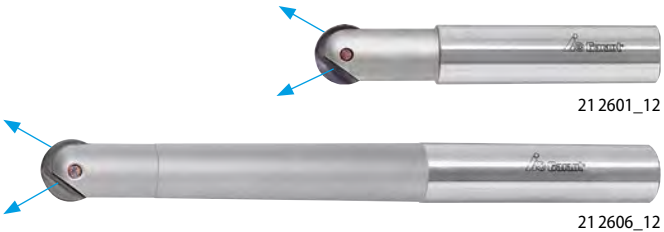
21 2590_12


21 2592_12

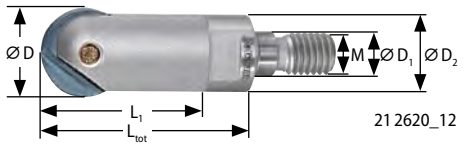
Ø D	210 21 2590	210 21 2592	L_1		L_{tot}		Ø d_1	Ø D_s h6	Insert screw
	Solid carbide copy mill								
	long	extra long							
mm	Plain shank	Plain shank	21 2590 mm	21 2592 mm	21 2590 mm	21 2592 mm	mm	mm	
8	eShop	eShop	25	40	100	150	7.2	8	219870 (7IP; 0.9 Nm)
10	eShop	eShop	35	50	120	150	8.8	10	219871 (8IP; 1.2 Nm)
12	eShop	eShop	35	50	120	160	10.4	12	219872 (10IP; 2.2 Nm)
16	eShop	eShop	40	55	140	175	14	16	219873 (15IP; 3.0 Nm)
20	eShop	eShop	50	75	140	190	17.5	20	219874 (20IP; 5.0 Nm)



21 2603_12


21 2601_12
21 2606_12

Ø D	210 21 2601	210 21 2603	210 21 2606	L_1		L_2		L_{tot}			Ø d_1	Ø D_s h6	Insert screw
	Copy mill												
	short	long	extra long										
mm	Plain shank	Plain shank	Plain shank	21 2601 mm	21 2603 21 2606 mm	21 2603 mm	21 2606 mm	21 2601 mm	21 2603 mm	21 2606 mm	mm	mm	
8	eShop	eShop	–	32	18.5	53	–	92	110	–	7.2	12	219870 (7IP; 0.9 Nm)
10	eShop	eShop	eShop	32	21	53	75	92	110	132	8	12	219871 (8IP; 1.2 Nm)
12	eShop	eShop	eShop	32	22	53	85	92	110	145	10	12	219872 (10IP; 2.2 Nm)
16	eShop	eShop	eShop	32	28	63	100	92	123	166	14	16	219873 (15IP; 3.0 Nm)
20	eShop	eShop	eShop	38	34	75	115	104	141	191	17	20	219874 (20IP; 5.0 Nm)
25	eShop	–	–	45	–	–	–	121	–	–	22	25	219875 (25IP; 6.0 Nm)
32	eShop	–	–	100	–	–	–	186	–	–	27	32	219876 (30IP. 6.0 Nm)



21 2620_12

Ø D	210 21 2620	Ø D_1 h6	L_{tot}	Ø D_2	L_1	Mounting thread M	Insert screw
	Copy mill						
mm	with threaded shank	mm	mm	mm	mm		
8	eShop	5.5	23	9.5	13	M5	219870 (7IP; 0.9 Nm)
10	eShop	5.5	23	9.5	23	M5	219871 (8IP; 1.2 Nm)
12	eShop	8.5	25	13.5	16.5	M8	219872 (10IP; 2.2 Nm)
16	eShop	8.5	28	13.5	28	M8	219873 (15IP; 3.0 Nm)
20	eShop	10.5	28	18.5	28	M10	219874 (20IP; 5.0 Nm)
25	eShop	12.5	35	21	35	M12	219875 (25IP; 6.0 Nm)
32	eShop	17	45	30	45	M16	219876 (30IP; 6.0 Nm)

Garant Precision milling inserts for copy mills No. 212590 – 212620

Detailed application values can be found in the GARANT machining handbook No. 110020.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
HU7810 / HU7830	1400	700	500													60				●		●	●
HB7520				360	300	240	180	120						180	160		240	●		●		●	●
HB7530				200	180	160	140	120						140	120		160	●				●	●
HB7705									280	260	200	160	140	180	160		240		●	●		●	●
HB7935														180	160	60				●		●	●

■ Maximum concentricity and interchange accuracy: ±0.015 mm.



Helix

Type		ALU	ST1400	HART	TI		Alu f_z mm	< 1400 N f_z mm	< 60 HRC f_z mm	Ti > 850 N f_z mm
21A 21 2630	Milling insert Ø 8 mm	eShop	eShop	–	eShop	10	0.15	0.15	–	0.15
21A 21 2640	Milling insert Ø 10 mm	eShop	eShop	–	eShop	10	0.2	0.2	–	0.2
21A 21 2650	Milling insert Ø 12 mm	eShop	eShop	eShop	eShop	10	0.2	0.2	0.15	0.2
21A 21 2660	Milling insert Ø 16 mm	eShop	eShop	eShop	eShop	10	0.25	0.28	0.2	0.25
21A 21 2665	Milling insert Ø 16 mm **Helix**	–	eShop	–	–	10	–	0.25	–	–
21A 21 2670	Milling insert Ø 20 mm	eShop	eShop	eShop	eShop	10	0.25	0.28	0.2	0.25
21A 21 2675	Milling insert Ø 20 mm **Helix**	–	eShop	–	–	10	–	0.25	–	–
21A 21 2680	Milling insert Ø 25 mm	eShop	eShop	eShop	eShop	10	0.3	0.33	0.25	0.3
21A 21 2685	Milling insert Ø 25 mm **Helix**	–	eShop	–	–	10	–	0.3	–	–
21A 21 2690	Milling insert Ø 32 mm	eShop	eShop	–	eShop	5	0.35	0.36	–	0.35
21A 21 2695	Milling insert Ø 32 mm **Helix**	–	eShop	–	–	5	–	0.35	–	–
Type		HU7810	HB7520	HB7705	HB7935					

■ Maximum concentricity and interchange accuracy: ±0.015 mm.



Type		ALU	ST1400	HART		Corner radius Rmm	Alu f_z mm	< 1400 N f_z mm	< 60 HRC f_z mm
21A 21 2705	Milling insert Ø 8 mm	eShop	eShop	–	10	0.5	0.15	0.15	–
21A 21 2708		eShop	eShop	–	10	1	0.15	0.15	–
21A 21 2711	Milling insert Ø 10 mm	eShop	eShop	–	10	0.5	0.2	0.2	–
21A 21 2714		eShop	eShop	–	10	1	0.2	0.2	–
21A 21 2717	Milling insert Ø 12 mm	eShop	eShop	eShop	10	1	0.25	0.25	0.2
21A 21 2721		eShop	eShop	–	10	2	0.25	0.25	–
21O 21 2724	Milling insert Ø 16 mm	eShop	eShop	eShop	10	1	0.3	0.3	0.2
21O 21 2727		eShop	eShop	–	10	3	0.3	0.3	–
21A 21 2731	Milling insert Ø 20 mm	eShop	eShop	eShop	10	1	0.35	0.35	0.25
21A 21 2734		eShop	eShop	–	10	4	0.35	0.35	–
Type		HU7810	HB7520	HB7705					

■ Radius, concentricity: ± 0.015 mm.
■ Interchange accuracy from insert to insert: ±0.025 mm.



Type		ALU	ST1400		$a_{p\,max}$ mm	Programming radius at a_p max mm	Alu f_z mm	< 1400 N f_z mm
21A 21 2746	Milling insert Ø 8 mm **Highfeed**	eShop	eShop	10	0.4	1	0.3	0.4
21A 21 2749	Milling insert Ø 10 mm **Highfeed**	eShop	eShop	10	0.5	1.4	0.4	0.5
21A 21 2752	Milling insert Ø 12 mm **Highfeed**	eShop	eShop	10	0.6	1.4	0.5	0.6
21A 21 2756	Milling insert Ø 16 mm **Highfeed**	eShop	eShop	10	0.8	1.6	0.6	0.8
Type		HU7830	HB7530					

HPC POWER CARD Garant

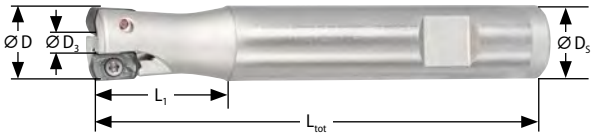
Garant GARANT Power Q Mini high feed rate indexable milling cutter for ANGX10T308

High feed rate milling system for **smaller machining diameters** and **greater operating depths.** Particularly **effective due to the large number of cutting edges.**

Spare part: Pack of insert screws No. 269028 18 (7IP; 1.2Nm).

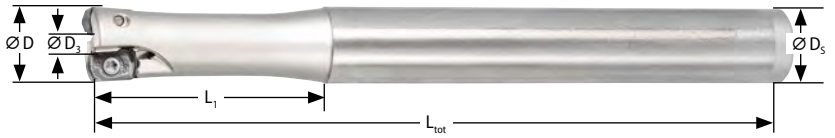
Note: Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 7IP**.

21 3056 – When working with extensions, always use internal cooling.



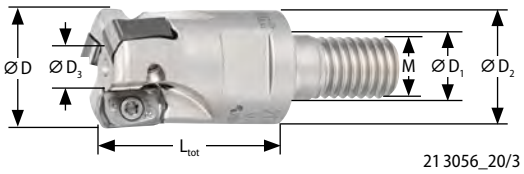
21 3052_16/2

⌀ D / number of effective cutting edges Z	210 21 3052 GARANT Power Q Mini high feed rate indexable milling cutter	⌀ D_3	L_1	L_{tot}	⌀ D_s h6	Circular interpolation milling ⌀ D_{min}	Circular interpolation milling ⌀ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	**Weldon shank**	mm	mm	mm	mm	mm	mm	mm	degrees	mm
16/2	eShop	10	30	100	16	26	30	1	2.39	8.4
20/3	eShop	14	50	130	20	34	38	1	1.62	12.4
25/4	eShop	19	60	140	25	44	48	1	1.15	17.4
32/5	eShop	26	70	150	32	58	62	1	0.82	24.4



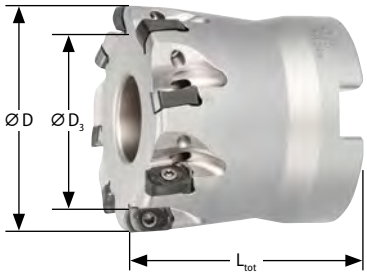
21 3054_16/2L

⌀ D / number of effective cutting edges Z	210 21 3054 GARANT Power Q Mini high feed rate indexable milling cutter	⌀ D_3	L_1	L_{tot}	⌀ D_s h6	Circular interpolation milling ⌀ D_{min}	Circular interpolation milling ⌀ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	**Plain shank**	mm	mm	mm	mm	mm	mm	mm	degrees	mm
16/2	eShop	10	30	100	16	26	30	1	2.39	8.4
16/2L	eShop	10	50	150	16	26	30	1	2.39	8.4
20/3	eShop	14	50	130	20	34	38	1	1.62	12.4
20/3L	eShop	14	80	160	20	34	38	1	1.62	12.4
25/4	eShop	19	100	180	25	44	48	1	1.15	17.4
32/5	eShop	26	120	200	32	58	62	1	0.82	24.4



21 3056_20/3

⌀ D / number of effective cutting edges Z	210 21 3056 GARANT Power Q Mini high feed rate indexable milling cutter	⌀ D_1 h6	⌀ D_2	⌀ D_3	L_{tot}	Mounting thread M	Circular interpolation milling ⌀ D_{min}	Circular interpolation milling ⌀ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	**with threaded shank**	mm	mm	mm	mm		mm	mm	mm	degrees	mm
16/2	eShop	8.5	13	10	25	M8	26	30	1	2.39	8.4
20/3	eShop	10.5	18	14	30	M10	34	38	1	1.62	12.4
22/3	eShop	10.5	18	16	30	M10	38	42	1	1.39	14.4
25/4	eShop	12.5	21	19	35	M12	44	48	1	1.15	17.4
32/5	eShop	17	29	26	40	M16	58	62	1	0.82	24.4
35/5	eShop	17	29	29	40	M16	64	68	1	0.73	27.4
42/5	eShop	17	29	36	40	M16	78	82	1	0.58	34.4
42/7	eShop	17	29	36	40	M16	78	82	1	0.58	34.4



21 3058_52/8

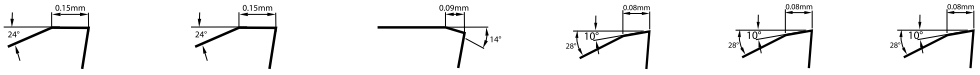
⌀ D / number of effective cutting edges Z	210 21 3058 GARANT Power Q Mini high feed rate indexable milling cutter with bore	⌀ D_3	L_{tot}	Mounting bore ⌀	Circular interpolation milling ⌀ D_{min}	Circular interpolation milling ⌀ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm		mm	mm	mm	mm	mm	mm	degrees	mm
40/5	eShop	34	40	16	74	78	1	0.62	32.4
40/7	eShop	34	40	16	74	78	1	0.62	32.4
42/7	eShop	36	40	16	78	82	1	0.58	34.4
50/5	eShop	44	50	22	94	98	1	0.47	42.4
50/8	eShop	44	50	22	94	98	1	0.47	42.4
52/8	eShop	46	50	22	98	102	1	0.45	44.4
63/7	eShop	57	40	22	120	124	1	0.36	55.4
66/8	eShop	60	40	22	126	130	1	0.34	58.4

GARANT Power Q Mini milling inserts for high feed rate indexable milling cutter No. 213052 to 213058

Double-sided 2-edge inserts. High-performance substrates and innovative cutter geometries guarantee the best possible production results.

Note: Standard application values for $a_e = 0.5...1 \times D/a_{p\,max}$.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 3064				330	280	240																●	●
21 3066					260	240	220	180												○			●
21 3068									80	50	35						355						●
21 3070														180	150					○			●
21 3072																50				○			●
21 3075					260	220	200	160						140	120			●					●





21 3064_ST900 | 21 3066_ST1400 | 21 3068_HART | 21 3070_INOX | 21 3072_TI | 21 3075_UNI

Type			ST900	ST1400	HART	INOX	TI	UNI		recommended cutting depth $a_{p\,max}$	maximum cutting depth a_p max	Programming radius at $a_{p\,max}$
										mm	mm	mm
21A 21 3064	ANGX 10T308ZEER	HB9640	eShop	–	–	–	–	–	10	0.8	1	1.6
21A 21 3066		HB9540	–	eShop ■	–	–	–	–	10	0.8	1	1.6
21A 21 3068	ANGX 10T308ZESR	HB9715	–	–	eShop	–	–	–	10	0.4	1	1.6
21A 21 3070	ANGX 10T308ZEER	HB9740	–	–	–	eShop	–	–	10	0.8	1	1.6
21A 21 3072		HB9745	–	–	–	–	eShop	–	10	0.6	1	1.6
21A 21 3075		HB9540	–	–	–	–	–	eShop	10	0.8	1	1.6
f_z		mm	0.9	0.9	0.5	0.8	0.5	–				

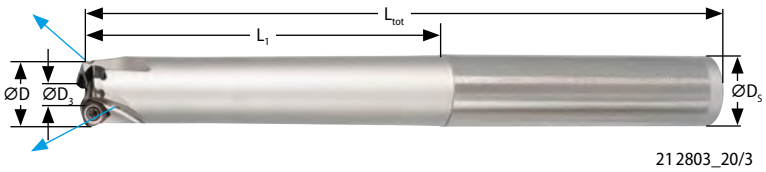
HPC POWER CARD Garant

GARANT Power Q high feed rate indexable milling cutter for XOM.060310 / XDM.090416 / XDM.120516

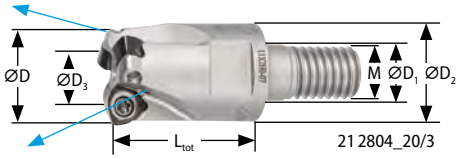
GARANT Power Q high feed rate indexable milling cutter for XOM.060310

Spare part: Pack of insert screws No. 219799 1 (8IP; 1.2Nm).

Note: Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.
21 2804 – When working with extensions, always use internal cooling.



21 2803_20/3



21 2804_20/3

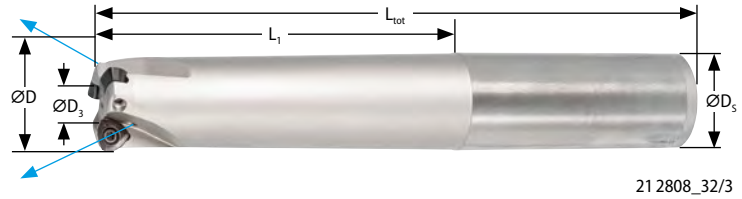
Ø D / number of effective cutting edges Z	210 21 2802	210 21 2803	Ø D_3	L_1		L_{tot}		Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
	GARANT Power Q high feed rate indexable milling cutter			21 2802	21 2803	21 2802	21 2803						
mm	Weldon shank	Plain shank	mm	mm	mm	mm	mm	mm	mm	mm	mm	degrees	mm
16/2	eShop	eShop	8	30	70	80	150	16	24	30	0.3	3.73	6.13
18/2	eShop	eShop	10	30	20	80	150	16	28	34	0.3	2.82	8.13
20/3	eShop	eShop	12	35	100	85	180	20	32	38	0.3	2.26	10.13
22/3	eShop	eShop	14	35	30	85	180	20	36	42	0.3	1.89	12.13

Ø D / number of effective cutting edges Z	210 21 2804	Number of cutting edges Z	Ø D_1 h6	Ø D_2	Ø D_3	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
	GARANT Power Q high feed rate indexable milling cutter											
mm	with threaded shank		mm	mm	mm	mm		mm	mm	mm	degrees	mm
16/2	eShop	2	8.5	13	8	25	M8	24	30	0.3	3.73	6.13
18/2	eShop	2	8.5	13	10	25	M8	28	34	0.3	2.82	8.13
20/3	eShop	3	10.5	18	12	28	M10	32	38	0.3	2.26	10.13
22/3	eShop	3	10.5	18	14	28	M10	36	42	0.3	1.89	12.13
25/4	eShop	4	12.5	21	17	36	M12	42	48	0.3	1.51	15.13

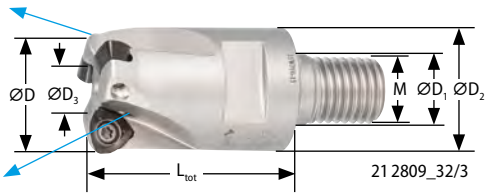
GARANT Power Q high feed rate indexable milling cutter for XDM.090416

Spare part: Pack of insert screws No. 219799 2 (10IP; 2.2Nm).

Note: Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size 10IP**.
21 2809 – When working with extensions, always use internal cooling.



21 2808_32/3

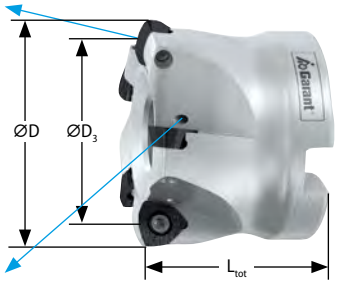


21 2809_32/3

Ø D / number of effective cutting edges Z	210 21 2807	210 21 2808	Ø D_3	L_1		L_{tot}		Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
	GARANT Power Q high feed rate indexable milling cutter			21 2807	21 2808	21 2807	21 2808						
mm	Weldon shank	Plain shank	mm	mm	mm	mm	mm	mm	mm	mm	mm	degrees	mm
25/2	eShop	eShop	13	39	120	95	200	25	38	48	1	3.29	10.43
28/2	eShop	eShop	16	39	40	95	200	25	44	54	1	2.56	13.43
30/3	eShop	eShop	18	40	120	100	200	32	48	58	1	2.23	15.43
32/3	eShop	eShop	20	40	120	100	200	32	52	62	1	1.97	17.43
35/3	eShop	eShop	23	40	50	100	200	32	58	68	1	1.68	20.43
40/4	eShop	eShop	28	50	50	110	250	32	68	78	1	1.35	25.43

Ø D / number of effective cutting edges Z	210 21 2809	Number of cutting edges Z	Ø D_1 h6	Ø D_2	Ø D_3	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
	GARANT Power Q high feed rate indexable milling cutter											
mm	with threaded shank		mm	mm	mm	mm		mm	mm	mm	degrees	mm
25/2	eShop	2	12.5	21	13	36	M12	38	48	1	3.29	10.43
28/2	eShop	2	12.5	21	16	36	M12	44	54	1	2.56	13.43
30/3	eShop	3	17	29	18	47	M16	48	58	1	2.23	15.43
32/3	eShop	3	17	29	20	47	M16	52	62	1	1.97	17.43
35/3	eShop	3	17	29	23	47	M16	58	68	1	1.68	20.43
40/4	eShop	4	17	29	28	47	M16	68	78	1	1.35	25.43
42/4	eShop	4	17	29	30	47	M16	72	82	1	1.25	27.43

Ø D / number of effective cutting edges Z	210 21 2812 GARANT Power Q high feed rate indexable milling cutter	Ø D_3	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
	with bore	mm	mm	mm	mm	mm	mm	degrees	mm
50/5	eShop	38	40	22	88	98	1	0.97	35.43
52/5	eShop	40	40	22	92	102	1	0.92	37.43

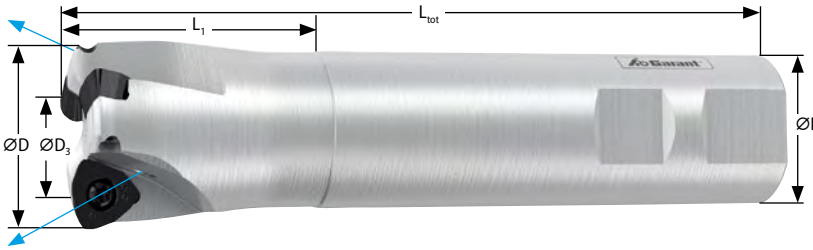


21 2812_52/5

GARANT Power Q high feed rate indexable milling cutter for XDM.120516

Spare part: Pack of insert screws No. 219812 (15IP; 5.0Nm).

Note: Use GARANT torque screwdriver TQ No. **211750 size 5.0** with bit No. **674252 size 15IP**.
21 2816 – When working with extensions, always use internal cooling.



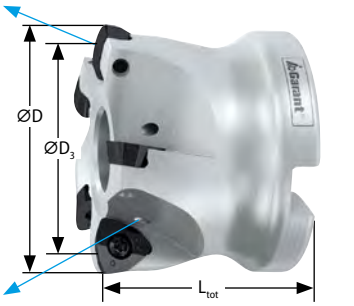
21 2813_40/3



21 2816_40/3

Ø D / number of effective cutting edges Z	210 21 2813 Weldon shank	210 21 2814 Plain shank	Ø D_3	L_1 21 2813	L_1 21 2814	L_{tot} 21 2813	L_{tot} 21 2814	Ø D_5 h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	GARANT Power Q high feed rate indexable milling cutter		mm	mm	mm	mm	mm	mm	mm	mm	mm	degrees	mm
30/2	eShop	eShop	14	40	120	100	200	32	44	58	1.5	4.42	10.34
32/2	eShop	eShop	16	40	120	100	200	32	48	62	1.5	3.71	12.34
35/2	eShop	eShop	19	40	50	100	200	32	54	68	1.5	2.99	15.34
40/3	eShop	eShop	24	50	50	110	250	32	64	78	1.5	2.25	20.34

Ø D / number of effective cutting edges Z	210 21 2816 GARANT Power Q high feed rate indexable milling cutter	Number of cutting edges Z	Ø D_1 h6	Ø D_2	Ø D_3	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	with threaded shank		mm	mm	mm	mm		mm	mm	mm	degrees	mm
30/2	eShop	2	17	29	14	47	M16	44	58	1.5	4.42	10.34
32/2	eShop	2	17	29	16	47	M16	48	62	1.5	3.71	12.34
35/2	eShop	2	17	29	19	47	M16	54	68	1.5	2.99	15.34
40/3	eShop	3	17	29	24	60	M16	64	78	1.5	2.25	20.34
42/3	eShop	3	17	29	26	60	M16	68	82	1.5	2.05	22.34



21 2817_63/5

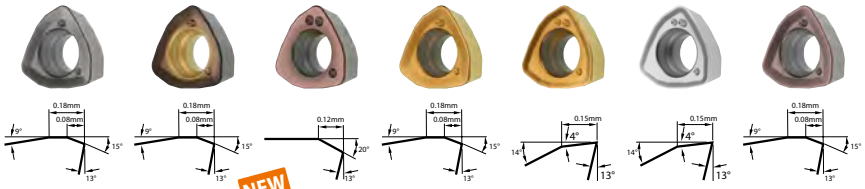
Ø D / number of effective cutting edges Z	210 21 2817 GARANT Power Q high feed rate indexable milling cutter	Ø D_3	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	with bore	mm	mm	mm	mm	mm	mm	degrees	mm
50/3	eShop	34	40	22	84	98	1.5	1.51	30.34
50/4	eShop	34	40	22	84	98	1.5	1.51	30.34
52/3	eShop	36	40	22	88	102	1.5	1.42	32.34
52/4	eShop	36	40	22	88	102	1.5	1.42	32.34
63/5	eShop	47	50	27	110	124	1.5	1.06	43.34
66/5	eShop	50	50	27	116	130	1.5	0.99	46.34
80/6	eShop	64	50	32	144	158	1.5	0.76	60.34
100/7	eShop	84	63	32	184	198	1.5	0.57	80.34

GARANT Power Q milling inserts for high feed rate indexable milling cutter No. 212802 to 212817

Note: Standard application values for $a_e = 0.5...1 \times D$ / $a_{p\ max}$

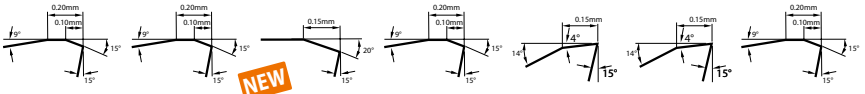
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel*	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	S	K						
21 2819/2860/2887				330	280	240													○	○	●	●	
21 2826/2868/2890							240	220											○	○	●	●	
21 2830/2877/2891									110	80	50						200				●	●	
21 2836/2879/2893													190	170					○	○	●	●	
21 2842/2881/2895													180	160	50				●				
21 2852/2883/2897																30			●				
21 2854/2885/2899				280	260	220	200	180					150	130				●	○	○	●	●	

Milling inserts XOM.060310



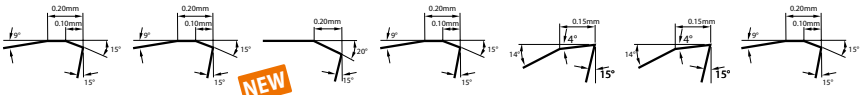
Type			ST900	ST1400	HART	INOX	TI	S	UNI		recommended cutting depth $a_{p\ max}$ mm	maximum cutting depth $a_{p\ max}$ mm	Programming radius at $a_{p\ max}$ mm
21A 21 2819	XOMT060310ZZSR	HB4020	eShop	–	–	–	–	–	–	10	1	1	2
21A 21 2826		HB4030	–	eShop	–	–	–	–	–	10	1	1	2
21A 21 2830	XOMW060310ZZSR	HB4715	–	–	eShop	–	–	–	–	10	0.5	1	2
21A 21 2836	XOMT060310ZZSR	HB4130	–	–	–	eShop	–	–	–	10	0.9	1	2
21A 21 2842		HB4430	–	–	–	–	eShop	–	–	10	0.6	1	2
21A 21 2852	XOMT060310ZZER	HB4420	–	–	–	–	–	eShop	–	10	0.6	1	2
21A 21 2854		HB415	–	–	–	–	–	–	eShop	10	1	1	2
f_z		mm	0.8	0.8	0.4	0.8	0.5	0.4	–				

Milling inserts XDM.090416



Type			ST900	ST1400	HART	INOX	TI	S	UNI		recommended cutting depth $a_{p\ max}$ mm	maximum cutting depth $a_{p\ max}$ mm	Programming radius at $a_{p\ max}$ mm
21A 21 2860	XDMT090416ZDSR	HB4020	eShop	–	–	–	–	–	–	10	1.3	1.5	3
21A 21 2868		HB4030	–	eShop	–	–	–	–	–	10	1.2	1.5	3
21A 21 2877	XDMW090416ZDSR	HB4715	–	–	eShop	–	–	–	–	10	0.7	1.5	3
21A 21 2879	XDMT090416ZDSR	HB4130	–	–	–	eShop	–	–	–	10	1.1	1.5	3
21A 21 2881		HB4430	–	–	–	–	eShop	–	–	10	0.7	1.5	3
21A 21 2883	XDMT090416ZDER	HB4420	–	–	–	–	–	eShop	–	10	0.7	1.5	3
21A 21 2885	XDMT090416ZDSR	HB415	–	–	–	–	–	–	eShop	10	1.2	1.5	3
f_z		mm	1.1	1.1	0.8	1.1	0.6	0.45	–				

Milling inserts XDM.120516



Type			ST900	ST1400	HART	INOX	TI	S	UNI		recommended cutting depth $a_{p\ max}$ mm	maximum cutting depth $a_{p\ max}$ mm	Programming radius at $a_{p\ max}$ mm
21A 21 2887	XDMT120516ZDSR	HB4020	eShop	–	–	–	–	–	–	10	1.5	2	3
21A 21 2890		HB4030	–	eShop	–	–	–	–	–	10	1.3	2	3
21A 21 2891	XDMW120516ZDSR	HB4715	–	–	eShop	–	–	–	–	10	0.8	2	3
21A 21 2893	XDMT120516ZDSR	HB4130	–	–	–	eShop	–	–	–	10	1.2	2	3
21A 21 2895		HB4430	–	–	–	–	eShop	–	–	10	0.9	2	3
21A 21 2897	XDMT120516ZDER	HB4420	–	–	–	–	–	eShop	–	10	0.9	2	3
21A 21 2899	XDMT120516ZDSR	HB415	–	–	–	–	–	–	eShop	10	1.3	2	3
f_z		mm	1.2	1.2	0.9	1.2	0.8	0.5	–				

HPC POWER CARD Garant

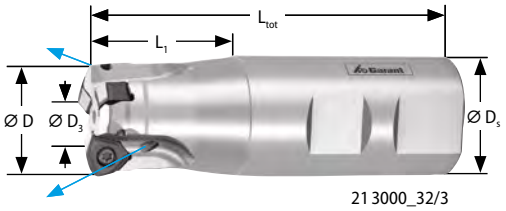
GARANT Power Q Double high feed rate indexable milling cutter for XOMU094812 I XOMU146715

Tool system with **extremely stable embedding for the inserts** for **working to high process reliability.**
Tool geometries to reduce the cutting forces contribute significantly to **reducing the load on the headstock**.

GARANT Power Q Double high feed rate indexable milling cutter for XOMU094812

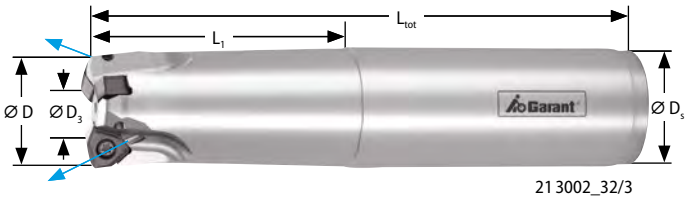
Spare part: Pack of insert screws No. 219799 7 (10IP; 2.8Nm).

Note: Use GARANT torque screwdriver TQ No. **211750 size 2.8** with bit No. **674252 size 10IP**.
21 3004 – When working with extensions, always use internal cooling.



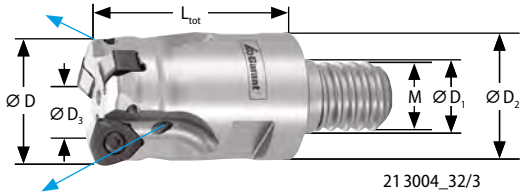
21 3000_32/3

Ø D / number of effective cutting edges Z	210 21 3000 GARANT Power Q Double high feed rate indexable milling cutter	Ø D_3	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	**Weldon shank**	mm	mm	mm	mm	mm	mm	mm	degrees	mm
25/2	eShop	15	39	95	25	40	48	1.2	2.74	12.55
30/3	eShop	20	40	100	32	50	58	1.2	1.96	17.55
32/3	eShop	22	40	100	32	54	62	1.2	1.76	19.55
40/4	eShop	30	50	110	32	70	78	1.2	1.25	27.55



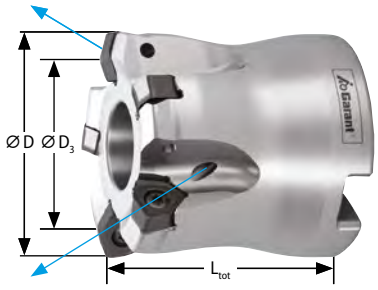
21 3002_32/3

Ø D / number of effective cutting edges Z	210 21 3002 GARANT Power Q Double high feed rate indexable milling cutter	Ø D_3	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	**Plain shank**	mm	mm	mm	mm	mm	mm	mm	degrees	mm
25/2	eShop	15	70	150	25	40	48	1.2	2.74	12.55
30/3	eShop	20	70	150	32	50	58	1.2	1.96	17.55
32/3	eShop	22	70	150	32	54	62	1.2	1.76	19.55
35/4	eShop	25	70	150	32	60	68	1.2	1.52	22.55
40/4	eShop	30	120	200	32	70	78	1.2	1.25	27.55



21 3004_32/3

Ø D / number of effective cutting edges Z	210 21 3004 GARANT Power Q Double high feed rate indexable milling cutter	Ø D_1 h6	Ø D_2	Ø D_3	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	**with threaded shank**	mm	mm	mm	mm		mm	mm	mm	degrees	mm
25/2	eShop	12.5	21	15	36	M12	40	48	1.2	2.74	12.55
30/3	eShop	17	29	20	47	M16	50	58	1.2	1.96	17.55
32/3	eShop	17	29	22	47	M16	54	62	1.2	1.76	19.55
35/4	eShop	17	29	25	47	M16	60	68	1.2	1.52	22.55
40/4	eShop	17	29	30	47	M16	70	78	1.2	1.25	27.55
42/4	eShop	17	29	32	47	M16	74	82	1.2	1.16	29.55



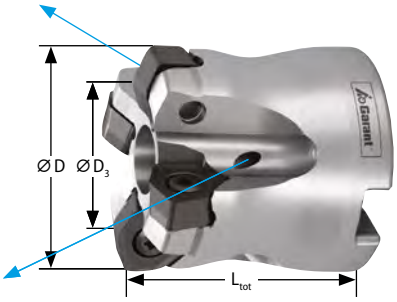
21 3006_50/5

∅ D / number of effective cutting edges Z	210 21 3006 GARANT Power Q Double high feed rate indexable milling cutter	∅ D_3	L_{tot}	Mounting bore ∅	Circular interpolation milling ∅ D_{min}	Circular interpolation milling ∅ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	with bore	mm	mm	mm	mm	mm	mm	degrees	mm
50/5	eShop	40	50	22	90	98	1.2	0.92	37.55
52/5	eShop	42	50	22	94	102	1.2	0.87	39.55
63/6	eShop	53	50	27	116	124	1.2	0.68	50.55
66/7	eShop	56	50	27	122	130	1.2	0.64	53.55

GARANT Power Q Double high feed rate indexable milling cutter for XOMU146715

Spare part: Pack of insert screws No. 219799 8 (20IP; 5.7Nm).

Note: Use GARANT torque screwdriver TQ No. **211750 size 5.7** with bit No. **674252 size 20IP**.

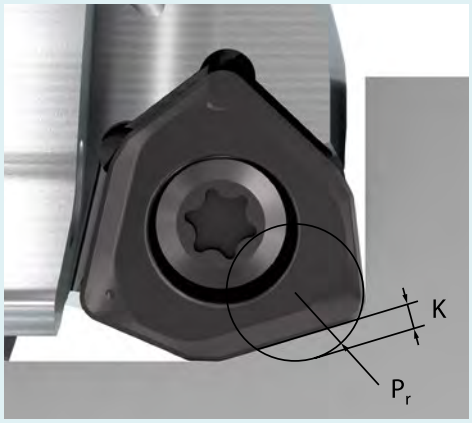


21 3014_50/4

∅ D / number of effective cutting edges Z	210 21 3014 GARANT Power Q Double high feed rate indexable milling cutter	∅ D_3	L_{tot}	Mounting bore ∅	Circular interpolation milling ∅ D_{min}	Circular interpolation milling ∅ D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm	with bore	mm	mm	mm	mm	mm	mm	degrees	mm
50/4	eShop	34	50	22	84	98	2	1.47	31.07
52/4	eShop	36	50	22	88	102	2	1.39	33.07
63/5	eShop	47	50	27	110	124	2	1.04	44.07
66/5	eShop	50	50	27	116	130	2	0.97	47.07
80/6	eShop	64	50	32	144	158	2	0.75	61.07
100/8	eShop	84	63	32	184	198	2	0.57	81.07

21

Garant Application notes for GARANT Power Q Double



Indexable insert	Programming radius P_r (mm)	Unmachined area K (mm)
XOMU094812 ZZER	2.0	0.91
XOMU146715 ZZER	3.0	1.41

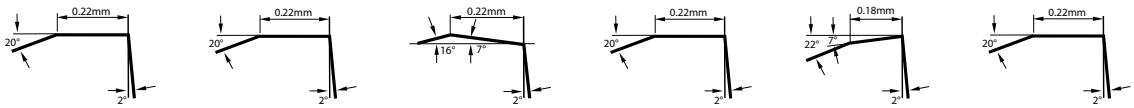
GARANT Power Q Double milling inserts for high feed rate indexable milling cutter No. 213000 to 213014

Innovative indexable insert concept with **double-sided** indexable inserts with 3 cutting edges (2×3 cutting edges).
High-performance tool material for particularly high **cost-effectiveness.**

Note: Standard application values for $a_e = 0.5...1 \times D$ / $a_{p\ max}$

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
213024/3038				330	280	240														○	○	●	●
213025/3040							240	220												○	○	●	●
213028/3042									110	80	50						200					●	●
213030/3044														190	170					○	○	●	●
213032/3046														180	160	50				●			
213036/3050				280	260	220	200	180						150	130			●		○	○	●	●

Milling inserts XOMU094812

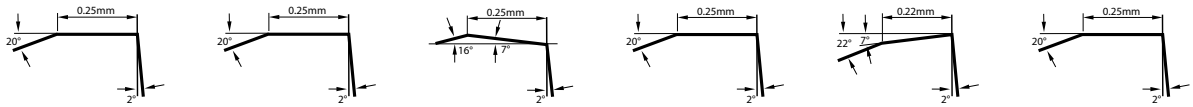




21 3024 | 21 3025 | 21 3028 | 21 3030 | 21 3032 | 21 3036

Type			ST900	ST1400	HART	INOX	TI	UNI		recommended cutting depth $a_{p\ max}$ mm	maximum cutting depth $a_{p\ max}$ mm	Programming radius at $a_{p\ max}$ mm
21A 21 3024	XOMU094812ZZER	HB4020	eShop	–	–	–	–	–	10	1.2	1.5	2
21A 21 3025		HB4030	–	eShop	–	–	–	–	10	1	1.5	2
21A 21 3028		HB4715	–	–	eShop	–	–	–	10	0.6	1.5	2
21A 21 3030		HB4130	–	–	–	eShop	–	–	10	0.8	1.5	2
21A 21 3032		HB4430	–	–	–	–	eShop	–	10	0.8	1.5	2
21A 21 3036		HB415	–	–	–	–	–	eShop	10	1	1.5	2
f_z		mm	1.1	1.1	0.8	1.1	0.6	–				

Milling inserts XOMU146715





21 3038 | 21 3040 | 21 3042 | 21 3044 | 21 3046 | 21 3050

Type			ST900	ST1400	HART	INOX	TI	UNI		recommended cutting depth $a_{p\ max}$ mm	maximum cutting depth $a_{p\ max}$ mm	Programming radius at $a_{p\ max}$ mm
21A 21 3038	XOMU146715ZZER	HB4020	eShop	–	–	–	–	–	10	1.5	3	3
21A 21 3040		HB4030	–	eShop	–	–	–	–	10	1.3	3	3
21A 21 3042		HB4715	–	–	eShop	–	–	–	10	0.8	3	3
21A 21 3044		HB4130	–	–	–	eShop	–	–	10	1	3	3
21A 21 3046		HB4430	–	–	–	–	eShop	–	10	0.8	3	3
21A 21 3050		HB415	–	–	–	–	–	eShop	10	1.3	3	3
f_z		mm	1.3	1.3	0.9	1.2	0.8	–				

HPC POWER CARD Garant

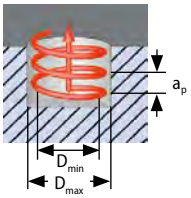
Garant Feedking high feed rate indexable milling cutter HPC for XD.. 070308 / 09T308 / 120408

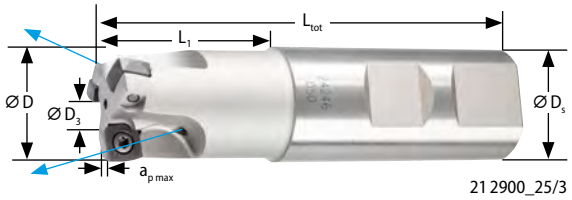
Dynamic cutting edge geometry for highest feed rates. Extremely smooth cutting due to **self-stabilising insert bedding.**
Optimised geometry for reduced cutting forces, thereby reducing the stress on the main spindle.
Advantage: Particularly cost-effective due to **exceptionally sturdy 4-edge** inserts.

Note:
21 2905 – When working with extensions, always use internal cooling.

Feedking high feed rate indexable milling cutter for XD.. 070308

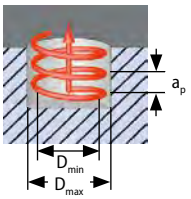
Note: Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size 9IP**.

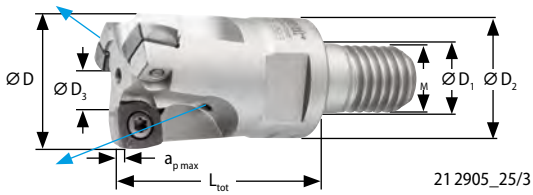




21 2900_25/3

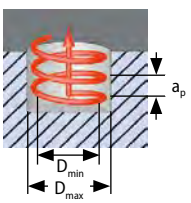
Ø D / number of teeth Z	210 21 2900	210 21 2902	Ø D_3	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
	FeedKing high feed rate indexable milling cutter													
mm	Weldon shank	Plain shank	mm	mm	mm	mm	mm	mm	mm	mm	degrees	mm		
18/2	eShop	–	5	0.85	30	80	16	23	34	0.85	4.29	4	XD.. 070308	219810 (9IP; 2.2 Nm)
18/2L	–	eShop	5	0.85	30	160	16	23	34	0.85	4.29	4	XD.. 070308	219810 (9IP; 2.2 Nm)
20/2	eShop	–	7	0.85	35	85	20	27	38	0.85	2.86	6	XD.. 070308	219810 (9IP; 2.2 Nm)
20/2L	–	eShop	7	0.85	35	160	18	27	38	0.85	2.86	6	XD.. 070308	219810 (9IP; 2.2 Nm)
25/3	eShop	–	12	0.85	39	95	25	37	48	0.85	1.56	11	XD.. 070308	219810 (9IP; 2.2 Nm)
25/3L	–	eShop	12	0.85	35	180	20	37	48	0.85	1.56	11	XD.. 070308	219810 (9IP; 2.2 Nm)
35/5L	–	eShop	22	0.85	35	220	32	57	68	0.85	0.82	21	XD.. 070308	219810 (9IP; 2.2 Nm)

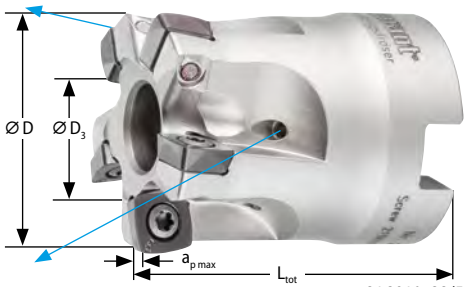




21 2905_25/3

Ø D / number of teeth Z	210 21 2905	Ø D_1 h6	Ø D_2	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable nsert	Set of insert screws
	FeedKing high feed rate indexable milling cutter													
mm	with threaded shank	mm	mm	mm	mm	mm		mm	mm	mm	degrees	mm		
18/2	eShop	10.5	17	5	0.85	30	M10	23	34	0.85	4.29	4	XD.. 070308	219810 (9IP; 2.2 Nm)
20/2	eShop	10.5	17.7	7	0.85	30	M10	27	38	0.85	2.86	6	XD.. 070308	219810 (9IP; 2.2 Nm)
25/3	eShop	12.5	20.7	12	0.85	35	M12	37	48	0.85	1.56	11	XD.. 070308	219810 (9IP; 2.2 Nm)
32/5	eShop	17	28.7	19	0.85	42	M16	51	62	0.85	0.95	18	XD.. 070308	219810 (9IP; 2.2 Nm)
35/5	eShop	17	28.7	22	0.85	42	M16	57	68	0.85	0.82	21	XD.. 070308	219810 (9IP; 2.2 Nm)
42/6	eShop	17	28.7	29	0.85	42	M16	71	82	0.85	0.61	28	XD.. 070308	219810 (9IP; 2.2 Nm)



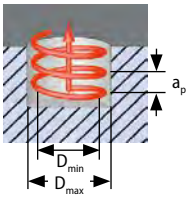


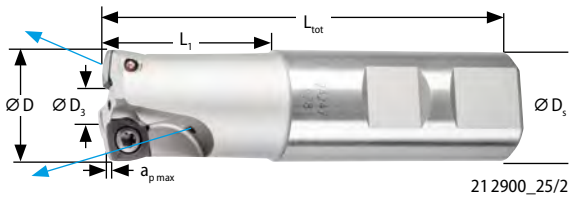
21 2910_32/5

Ø D / number of teeth Z	210 21 2910	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
	FeedKing high feed rate indexable milling cutter											
mm	with bore	mm	mm	mm	mm	mm	mm	mm	degrees	mm		
32/5	eShop	19	0.85	40	16	51	62	0.85	0.95	18	XD.. 070308	219810 (9IP; 2.2 Nm)
35/5	eShop	22	0.85	40	16	57	68	0.85	0.82	21	XD.. 070308	219810 (9IP; 2.2 Nm)
40/6	eShop	27	0.85	40	16	67	78	0.85	0.66	26	XD.. 070308	219810 (9IP; 2.2 Nm)
50/7	eShop	37	0.85	40	22	87	98	0.85	0.48	36	XD.. 070308	219810 (9IP; 2.2 Nm)
63/9	eShop	50	0.85	50	27	113	124	0.85	0.35	49	XD.. 070308	219810 (9IP; 2.2 Nm)

Feedking high feed rate indexable milling cutter for XD.. 09T308

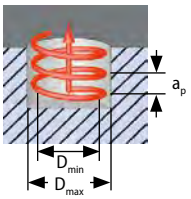
Note: Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.

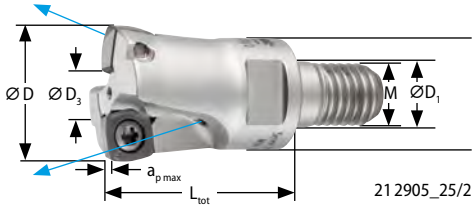




21 2900_25/2

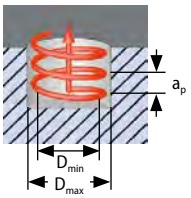
Ø D / number of teeth Z	210 21 2900 FeedKing high feed rate indexable milling cutter	Ø D_3	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm	**Weldon shank**	mm	mm	mm	mm	mm	mm	mm	mm	degrees	mm		
25/2	eShop	9	1.15	39	95	25	34	48	1.15	2.02	8.5	XD.. 09T308	219933 (15IP; 3.8 Nm)

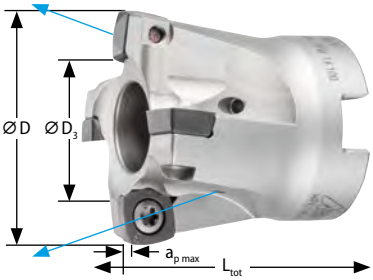




21 2905_25/2

Ø D / number of teeth Z	210 21 2905 FeedKing high feed rate indexable milling cutter	Ø D_1 h6	Ø D_2	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm	**with threaded shank**	mm	mm	mm	mm	mm		mm	mm	mm	degrees	mm		
25/2	eShop	12.5	20.7	9	1.15	35	M12	34	48	1.15	2.02	8.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
32/3	eShop	17	28.7	16	1.15	42	M16	48	62	1.15	1.11	15.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
35/3	eShop	17	28.7	19	1.15	42	M16	54	68	1.15	0.93	18.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
40/4	eShop	17	28.7	24	1.15	42	M16	64	78	1.15	0.73	23.5	XD.. 09T308	219933 (15IP; 3.8 Nm)



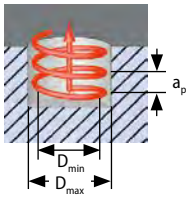


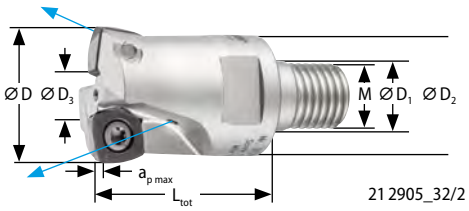
21 2910_40/4

Ø D / number of teeth Z	210 21 2910 FeedKing high feed rate indexable milling cutter	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm	**with bore**	mm	mm	mm	mm	mm	mm	mm	degrees	mm		
35/3	eShop	19	1.15	40	16	54	68	1.15	0.93	18.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
40/4	eShop	24	1.15	40	16	64	78	1.15	0.73	23.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
42/4	eShop	26	1.15	40	16	68	82	1.15	0.67	25.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
50/5	eShop	34	1.15	40	22	84	98	1.15	0.51	33.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
52/5	eShop	36	1.15	40	22	88	102	1.15	0.48	35.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
63/6	eShop	47	1.15	50	27	110	124	1.15	0.37	46.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
66/6	eShop	50	1.15	50	27	116	130	1.15	0.35	49.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
80/7	eShop	64	1.15	50	32	144	158	1.15	0.27	63.5	XD.. 09T308	219933 (15IP; 3.8 Nm)
100/8	eShop	84	1.15	50	32	184	198	1.15	0.21	83.5	XD.. 09T308	219933 (15IP; 3.8 Nm)

Feedking high feed rate indexable milling cutter for XD.. 120408

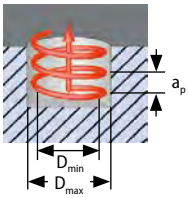
Note: Use GARANT torque screwdriver TQ No. **211750 size 5.7** with bit No. **674252 size 20IP**.

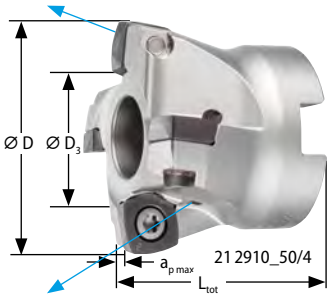




21 2905_32/2

Ø D / number of teeth Z	210 21 2905 FeedKing high feed rate indexable milling cutter	Ø D_1 h6	Ø D_2	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm	**with threaded shank**	mm	mm	mm	mm	mm		mm	mm	mm	degrees	mm		
32/2	eShop	17	28.7	11	1.8	42	M16	43	62	1.85	1.64	10.5	XD.. 120408	219800 (20IP; 5.7 Nm)
35/3S	eShop	17	28.7	14	1.8	42	M16	49	68	1.85	1.27	13.5	XD.. 120408	219800 (20IP; 5.7 Nm)
42/4	eShop	17	28.7	21	1.8	42	M16	63	82	1.85	0.84	20.5	XD.. 120408	219800 (20IP; 5.7 Nm)





Ø D / number of teeth Z	210 21 2910 FeedKing high feed rate indexable milling cutter	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm	with bore	mm	mm	mm	mm	mm	mm	mm	degrees	mm		
50/4	eShop	29	1.8	40	22	79	98	1.85	0.6	28.5	XD.. 120408	219800 (20IP; 5.7 Nm)
52/4	eShop	31	1.8	40	22	83	102	1.85	0.56	30.5	XD.. 120408	219800 (20IP; 5.7 Nm)
63/5	eShop	42	1.8	50	27	105	124	1.85	0.41	41.5	XD.. 120408	219800 (20IP; 5.7 Nm)
66/5	eShop	45	1.8	50	27	111	130	1.85	0.39	44.5	XD.. 120408	219800 (20IP; 5.7 Nm)
66/6S	eShop	45	1.8	50	27	111	130	1.85	0.39	44.5	XD.. 120408	219800 (20IP; 5.7 Nm)
80/6	eShop	59	1.8	50	32	139	158	1.85	0.29	58.5	XD.. 120408	219800 (20IP; 5.7 Nm)
100/7	eShop	79	1.8	50	32	179	198	1.85	0.22	78.5	XD.. 120408	219800 (20IP; 5.7 Nm)

Garant Milling inserts for Feedking HPC high feed rate milling cutters No. 212900 – 212910

Note: Standard application values for $a_e = 0.5 \ldots 1 \times D$ / $a_{p\,max}$

a_e / D	0.5 . . . 1.0	0.3	0.1
Correction factor f_z	1	1.4	2.2

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	TOOLOX® 44 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	H	M	M	S	K					
21 2921/2943/2966	1200	1500	1100																●	○		○	
21 2923/2924/2946 2947/2968/2969				320	270	230													○		●	●	
21 2925/2950/2975							170	150											○	○	●	○	
21 2928/2929/2951 2952/2974/2978														140					○		●		
21 2930/2955/2980									120	110	90	70	60	140					○	○	●	○	
21 2931/2953/2971							180	160											○	○	●	●	
21 2932/2933/2954 2956/2977/2982									100	80	50								○		●		
21 2934/2936/2959 2961/2979/2984															150	110	45		○		●		
21 2937/2962/2987															150	110	45		○		●	○	
21 2940/2963/2990																		165	○		●	○	
21 2941/2964/2991																		600	●		●		

Milling inserts XD..070308

Note:
21 2941 – Do not tighten insert screw No. 219810 to more than 1.5 Nm!

KU7710 = ceramic



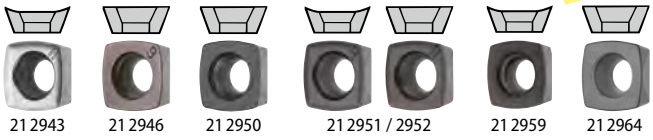
21 2921 | 21 2923 | 21 2925 | 21 2928 / 2932 | 21 2934 | 21 2941

Type			ALU	ST900	ST1400	HART	INOX	GGG		$a_{p\,max}$ mm	f_z mm
21A 21 2921	XDLT 070308 ER	HU7810	eShop	–	–	–	–	–	10	0.85	0.65
21A 21 2923	XDLW 070308 SR	HB7530	–	eShop	–	–	–	–	10	0.85	0.72
21A 21 2924	XDPW 070308 SR	HB7530	–	eShop	–	–	–	–	10	0.85	0.72
21A 21 2925	XDLW 070308 TN	HB7720	–	–	eShop	–	–	–	10	0.85	0.65
21A 21 2931	XDLW 070308 SR NEW	HB4025	–	–	eShop	–	–	–	10	0.85	0.65
21A 21 2928	XDLT 070308 ER	HB7720	–	–	–	eShop	–	–	10	0.85	0.36
21A 21 2929	XDPT 070308 ER	HB7720	–	–	–	eShop	–	–	10	0.85	0.36
21A 21 2930	XDLW 070308 TN	HB7705	–	–	–	eShop	–	–	10	0.85	0.36
21A 21 2932	XDLW 070308 ER	HB7720	–	–	–	eShop	–	–	10	0.85	0.36
21A 21 2933	XDPW 070308 SR	HB7720	–	–	–	eShop	–	–	10	0.85	0.36
21A 21 2934	XDLT 070308 ER	HB7635	–	–	–	–	eShop	–	10	0.85	0.72
21A 21 2936	XDPT 070308 ER	HB7635	–	–	–	–	eShop	–	10	0.85	0.72
21A 21 2937	XDLT 070308 TN	HB7535	–	–	–	–	eShop	–	10	0.85	0.72
21A 21 2940	XDPW 070308 SR NEW	HB4225	–	–	–	–	–	eShop	10	0.85	0.65
21H 21 2941	XDLW 070308 TN	KU7710	–	–	–	–	–	eShop	10	0.6	0.36
Programming radius at $a_{p\,max}$		mm	1.58								

Milling inserts XD..09T308

Note:
21 2964 – Do not tighten insert screw No. 219933 to more than 2.2 Nm!

KU7710 = ceramic



21 2943 | 21 2946 | 21 2950 | 21 2951 / 2952 | 21 2959 | 21 2964

Type			ALU	ST900	ST1400	HART	INOX	GGG		$a_{p\,max}$ mm	f_z mm
21A 21 2943	XDLT 09T308 ER	HU7810	eShop	–	–	–	–	–	10	1.15	0.79
21A 21 2946	XDLW 09T308 SR	HB7530	–	eShop	–	–	–	–	10	1.15	0.86
21A 21 2947	XDPW 09T308 SR	HB7530	–	eShop	–	–	–	–	10	1.15	0.86
21A 21 2950	XDLW 09T308 TN	HB7720	–	–	eShop	–	–	–	10	1.15	0.79
21A 21 2953	XDLW 09T308 SR NEW	HB4025	–	–	eShop	–	–	–	10	1.15	0.79
21A 21 2951	XDLT 09T308 ER	HB7720	–	–	–	eShop	–	–	10	1.15	0.43
21A 21 2952	XDPT 09T308 ER	HB7720	–	–	–	eShop	–	–	10	1.15	0.43
21A 21 2955	XDLW 09T308 TN	HB7705	–	–	–	eShop	–	–	10	1.15	0.43
21A 21 2954	XDLW 09T308 ER	HB7720	–	–	–	eShop	–	–	10	1.15	0.43
21A 21 2956	XDPW 09T308 SR	HB7720	–	–	–	eShop	–	–	10	1.15	0.43
21A 21 2959	XDLT 09T308 ER	HB7635	–	–	–	–	eShop	–	10	1.15	0.86
21A 21 2961	XDPT 09T308 ER	HB7635	–	–	–	–	eShop	–	10	1.15	0.86
21A 21 2962	XDLT 09T308 TN	HB7535	–	–	–	–	eShop	–	10	1.15	0.86
21A 21 2963	XDPW 09T308 SR NEW	HB4225	–	–	–	–	–	eShop	10	1.15	0.79
21H 21 2964	XDLW 09T308 TN	KU7710	–	–	–	–	–	eShop	10	0.8	0.43
Programming radius at $a_{p\,max}$		mm	1.99								

Milling inserts XD..120408

Note:
21 2991 – Do not tighten insert screw No. 219800 to more than 3.8 Nm!

KU7710 = ceramic



21 2966 | 21 2968 | 21 2975 | 21 2974 /2978 | 21 2979 | 21 2991

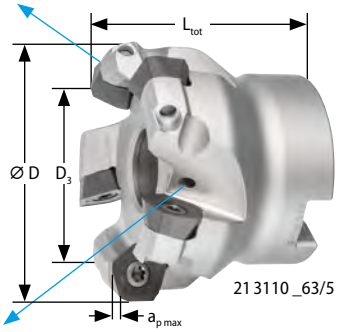
Type			ALU	ST900	ST1400	HART	INOX	GGG		$a_{p\,max}$ mm	f_z mm
21A 21 2966	XDLT 120408 ER	HU7810	eShop	–	–	–	–	–	10	1.8	1
21A 21 2968	XDLW 120408 SR	HB7530	–	eShop	–	–	–	–	10	1.8	1.07
21A 21 2969	XDPW 120408 SR	HB7530	–	eShop	–	–	–	–	10	1.8	1.07
21A 21 2975	XDLW 120408 TN	HB7720	–	–	eShop	–	–	–	10	1.8	1
21A 21 2971	XDLW 120408 SR NEW	HB4025	–	–	eShop	–	–	–	10	1.8	1
21A 21 2974	XDLT 120408 ER	HB7720	–	–	–	eShop	–	–	10	1.8	0.57
21A 21 2978	XDPT 120408 ER	HB7720	–	–	–	eShop	–	–	10	1.8	0.57
21A 21 2980	XDLW 120408 TN	HB7705	–	–	–	eShop	–	–	10	1.8	0.57
21A 21 2977	XDLW 120408 ER	HB7720	–	–	–	eShop	–	–	10	1.8	0.57
21A 21 2982	XDPW 120408 SR	HB7720	–	–	–	eShop	–	–	10	1.8	0.57
21A 21 2979	XDLT 120408 ER	HB7635	–	–	–	–	eShop	–	10	1.8	1.07
21A 21 2984	XDPT 120408 ER	HB7635	–	–	–	–	eShop	–	10	1.8	1.07
21A 21 2987	XDLT 120408 TN	HB7535	–	–	–	–	eShop	–	10	1.8	1.07
21A 21 2990	XDPW 120408 SR NEW	HB4225	–	–	–	–	–	eShop	10	1.8	1
21H 21 2991	XDLW 120408 TN	KU7710	–	–	–	–	–	eShop	10	1	0.57
Programming radius at $a_{p\,max}$		mm	2.6								

POWER CARD Garant

Garant Hi5 high feed rate indexable face mills for milling inserts POMX 10T5..

Description: Powerful and smooth-cutting high feed rate indexable face mill.
Particularly smooth-running, due to unequal spacing of the teeth.
Can also be used for semi-finishing.
Cost-efficiency due to 5-edge inserts.

Note: Use GARANT torque screwdriver TQ No. **211750 size 5.7** with bit No. **674252 size 20IP**.



Ø D / number of teeth Z	210 21 3110 Hi5 high feed rate indexable face mill with bore	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Set of insert screws
mm		mm	mm	mm	mm	
42/3	eShop	22.7	2.2	50	16	219889 (20IP; 5.7 Nm)
50/4	eShop	30.6	2.2	40	22	219889 (20IP; 5.7 Nm)
52/4	eShop	32.6	2.2	40	22	219889 (20IP; 5.7 Nm)
63/5	eShop	43.6	2.2	50	27	219889 (20IP; 5.7 Nm)
66/5	eShop	46.6	2.2	50	27	219889 (20IP; 5.7 Nm)
80/6	eShop	60.6	2.2	50	32	219889 (20IP; 5.7 Nm)
100/8	eShop	80.78	2.2	50	32	219889 (20IP; 5.7 Nm)
125/10	eShop	105.85	2.2	63	40	219889 (20IP; 5.7 Nm)

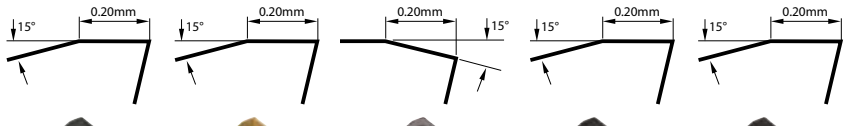
Garant Milling inserts for Hi5 high feed rate indexable face mill No. 213110

Sturdy insert version (thickness = 5.9 mm).
Positive geometry for high feed rates.
Flat cutting edge length: 2 mm for high surface quality.
Special cost-effectiveness due to 5 cutting edges.
21 3184/3193 – Preferred solution for difficult applications (interrupted cutting).

Note: Standard application values for a_e = 0.5 ... 1×D / a_p max = 2.2 mm.

a_e / D	0.5 . . . 1.0	0.3	0.1
Correction factor f_z	1	1.4	2.2

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 3169				420	400	380																●	●
21 3172/3193					360	310	260	200						170	130			●				●	●
21 3178									50	40	35	30					300					●	●
21 3181/3190				360	320	280								180	150	80		●		○			●
21 3184														150	120	70				○			●



21 3169 21 3172 21 3178 21 3181 21 3190

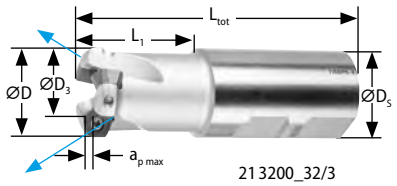
Type			ST900	ST1400	HART	INOX	UNI	
21A 21 3169	POMX 10T5ZEER M	HB9525	eShop	–	–	–	–	10
21A 21 3172		HB9540	–	eShop	–	–	–	10
21A 21 3178	POMX 10T5ZESR R	HB9715	–	–	eShop	–	–	10
21A 21 3181	POMX 10T5ZEER M	HB9640	–	–	–	eShop	–	10
21A 21 3184		HB9645	–	–	–	eShop	–	10
21A 21 3190	POMX 10T5ZEER U	HB9640	–	–	–	–	eShop	10
21A 21 3193		HB9540	–	–	–	–	eShop	10
Programming radius at $a_{p\,max}$		mm			4.8			
f_z		mm	1.1	1	0.6	1	–	

POWER CARD Garant

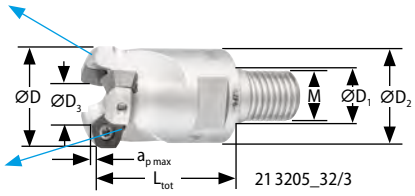
Garant Hi5 high feed rate indexable face mills for milling inserts POMX 0704..

Particularly smooth-running, due to unequal spacing of the teeth.

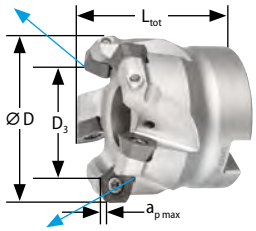
Note: Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size 10IP**.



21 3200_32/3



21 3205_32/3



21 3210_50/5

Ø D / number of teeth Z	210	21 3200 Hi5 high feed rate indexable face mill	Ø D_3	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	Ø D_5 h6	Set of insert screws
mm		**Weldon shank**	mm	mm	mm	mm	mm	
25/2		eShop	10.6	1.4	36	92	25	219883 (10IP; 2.2 Nm)
32/3		eShop	17.6	1.4	40	100	32	219884 (10IP; 2.2 Nm)
40/4		eShop	25.6	1.4	50	110	32	219884 (10IP; 2.2 Nm)

Ø D / number of teeth Z	210	21 3205 Hi5 high feed rate indexable face mill	Ø D_3	maximum cutting depth $a_{p\,max}$	Ø D_1 h6	L_{tot}	Ø D_2	Mounting thread M	Set of insert screws
mm		**with threaded shank**	mm	mm	mm	mm	mm		
25/2		eShop	10.6	1.4	12.5	35	21	M12	219883 (10IP; 2.2 Nm)
32/3		eShop	17.6	1.4	17	43	29	M16	219884 (10IP; 2.2 Nm)
40/4		eShop	25.6	1.4	17	43	29	M16	219884 (10IP; 2.2 Nm)

Ø D / number of teeth Z	210	21 3210 Hi5 high feed rate indexable face mill	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Set of insert screws
mm		**with bore**	mm	mm	mm	mm	
40/4		eShop	25.6	1.4	40	16	219884 (10IP; 2.2 Nm)
50/5		eShop	35.6	1.4	40	22	219884 (10IP; 2.2 Nm)
52/5		eShop	37.6	1.4	40	22	219884 (10IP; 2.2 Nm)
63/6		eShop	48.6	1.4	50	27	219884 (10IP; 2.2 Nm)
66/6		eShop	51.6	1.4	50	27	219884 (10IP; 2.2 Nm)

Garant Milling inserts for Hi5 high feed rate indexable face mills No. 213200 – 213210

Flat cutting edge length: 1.5 mm, for high surface quality.

21 3137/3144 – Preferred solution for difficult applications (interrupted cutting).

Note: Standard application values for a_e = 0.5 ... 1×D / a_p max = 1.4 mm.

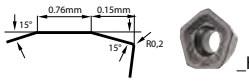
a_e / D	0.5 . . . 1.0	0.3	0.1
Correction factor f_z	1	1.4	2.2

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 3125				**420**	**400**	**380**																●	●
21 3128/3144					**360**	**310**	**260**	**200**						**170**	**130**			●				●	●
21 3131									**50**	**40**	**35**	**30**					**300**					●	●
21 3134/3141				**360**	**320**	**280**								**180**	**150**	**80**		●		○			●
21 3137														**150**	**120**	**70**				○			●



_ST900


_ST1400



_HART


_INOX


_UNI

Type			ST900	ST1400	HART	INOX	UNI	
21A **21 3125**	POMX 0704ZEER M	HB9525	eShop	–	–	–	–	10
21A **21 3128**		HB9540	–	eShop	–	–	–	10
21A **21 3131**	POMX 0704ZESR R	HB9715	–	–	eShop	–	–	10
21A **21 3134**	POMX 0704ZEER M	HB9640	–	–	–	eShop	–	10
21A **21 3137**		HB9645	–	–	–	eShop	–	10
21A **21 3141**	POMX 0704ZEER U	HB9640	–	–	–	–	eShop	10
21A **21 3144**		HB9540	–	–	–	–	eShop	10
Programming radius at $a_{p\,max}$		mm	3.61					
f_z		mm	1	0.9	0.5	0.9	–	

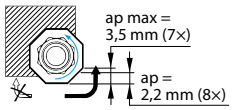
43° POWER CARD Garant

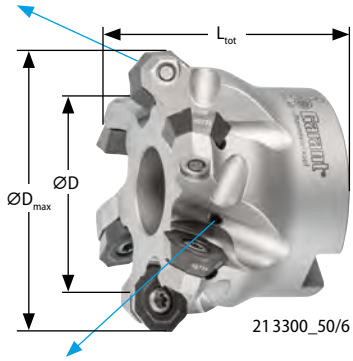
Garant Indexable face mill 43° Octo for milling inserts OF.. 050405

43° indexable face mill with up to 8 edges per milling insert.

Application: Very good surface finishes are obtained due to the positive geometry. Smooth-cutting face mills.

Note: To use all **8 cutting edges**, the insert **always has to be turned in the indicated direction.**
Standard application values for a_e = 0.5 ... 1×D.
$a_{p\,max}$ 2.2 mm: **(Z = 8),**
$a_{p\,max}$ 3.5 mm: **(Z = 7).**
Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.





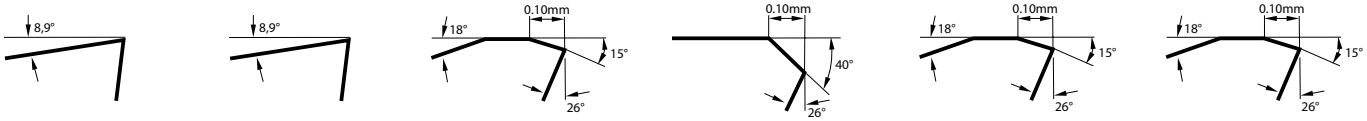
a_e / D	0.5 . . . 1.0	0.3	0.1
Correction factor f_z	1	1.4	2.2

∅ D / number of teeth Z	210 21 3300 Indexable face mill 43° Octo with bore	∅ D_{max}	L_{tot}	Mounting bore ∅	Set of insert screws
mm		mm	mm	mm	
32/3	eShop	41	40	16	219808 (15IP; 3.8 Nm)
40/5	eShop	49	40	16	219808 (15IP; 3.8 Nm)
50/4	eShop	59	40	22	219808 (15IP; 3.8 Nm)
50/6	eShop	59	40	22	219808 (15IP; 3.8 Nm)
63/5	eShop	72	40	22	219808 (15IP; 3.8 Nm)
63/7	eShop	72	40	22	219808 (15IP; 3.8 Nm)
80/6	eShop	89	50	27	219808 (15IP; 3.8 Nm)
100/7	eShop	109	50	32	219808 (15IP; 3.8 Nm)
125/8	eShop	134	63	40	219808 (15IP; 3.8 Nm)

Garant Milling inserts OF.. 050405 for indexable face mill No. 213300

Extremely strong inserts to the standard ISO dimensions, precision sintered and ground.
Micro-grain substrates ensure high toughness and good wear resistance.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
21 3320				**280**	**260**	**200**	135	110				160	145		170					○		●	
21 3321				**350**	**240**	**210**	200	180				220	140		160				●	●	●	●	●
21 3325				390	275	245	**230**	**210**				280	180		180				●	○	○	●	●
21 3340	795	720	645	260	185	150	140	135				**190**	**120**	45	120				○	●	○		
21 3345				**300**	**210**	**180**	170	160				**210**	130	45	140			●	●	●	●	●	○
21 3358	**1350**	**1150**	**700**													**690**				●	○	○	
21 3362	**1350**	**1350**	**950**														●			●		○	





21 3358 21 3362 21 3321 21 3325 21 3340 21 3345

Type			ALU	ST900	ST1400	INOX	UNI	
21A 21 3358	OFMT 050405 TN	HU7815	eShop	–	–	–	–	10
21B 21 3362	OFMT 050405 **diamond coated**	HB7810	eShop	–	–	–	–	1
21A 21 3320	OFMT 050405 TR	HB7525	–	eShop	–	–	–	10
21A 21 3321		HB7525	–	eShop	–	–	–	10
21A 21 3325	OFEW 050405 TN	HB7515	–	–	eShop	–	–	10
21A 21 3340	OFMT 050405 TR	HB7635	–	–	–	eShop	–	10
21A 21 3345	OFMT 050405	HB735	–	–	–	–	eShop	10
f_z		mm	0.18	0.17	0.14	0.14	–	

45° ≠ POWER CARD Garant

Garant TwinCut high-performance indexable face mills 45°, wide, normal and close pitch

From ∅ 160 mm for arbors to DIN 2079, with 4 additional attachment holes and without internal cooling.

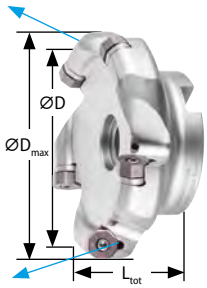
Application: With double-sided 8-edge inserts (ON.U) or 4-edge inserts (SN.U).

Spare part: Shim No. 219897 for use with both types of indexable insert.

Note: Do not mix different types of insert ON.U and SN.U.
Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.



SN.U

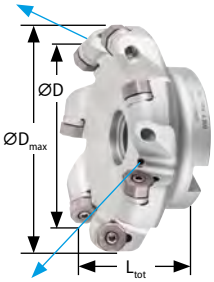


21 3410_100/5 **ON.U**

∅ D / number of teeth Z	210 **21 3410** TwinCut indexable face mill 45° **wide pitch with bore**	∅ D_{max} ON.U	∅ D_{max} SN.U	L_{tot} SN.U	L_{tot} ON.U	Mounting bore ∅	suitable indexable insert	Set of insert screws	Shim	Clamp screw for shim
mm		mm	mm	mm	mm	mm				
50/3	eShop	61.8	65.2	40	38.3	22	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
63/4	eShop	74.8	78.2	40	38.3	22	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
80/4	eShop	91.8	95.2	50	48.3	27	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
100/5	eShop	111.8	115.2	50	48.3	32	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
125/6	eShop	136.8	140.2	63	61.3	40	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
160/7	eShop	171.8	175.2	63	61.3	40	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
200/8	eShop	211.8	215.2	63	61.3	60	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
250/10	eShop	261.8	265.2	63	61.3	60	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899



SN.U

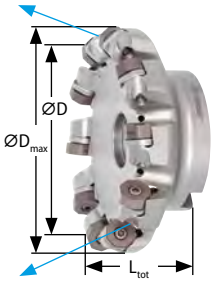


21 3415_100/7 **ON.U**

∅ D / number of teeth Z	210 **21 3415** TwinCut indexable face mill 45° **normal pitch with bore**	∅ D_{max} ON.U	∅ D_{max} SN.U	L_{tot} SN.U	L_{tot} ON.U	Mounting bore ∅	suitable indexable insert	Set of insert screws	Shim	Clamp screw for shim
mm		mm	mm	mm	mm	mm				
50/4	eShop	61.8	65.2	40	38.3	22	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
63/5	eShop	74.8	78.2	40	38.3	22	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
80/6	eShop	91.8	95.2	50	48.3	27	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
100/7	eShop	111.8	115.2	50	48.3	32	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
125/8	eShop	136.8	140.2	63	61.3	40	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
160/10	eShop	171.8	175.2	63	61.3	40	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
200/12	eShop	211.8	215.2	63	61.3	60	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
250/14	eShop	261.8	265.2	63	61.3	60	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899



SN.U



21 3420_100/10 **ON.U**

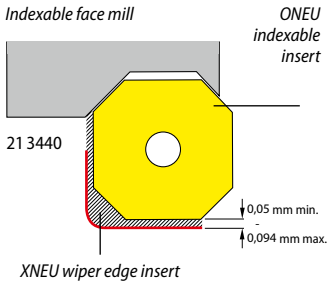
∅ D / number of teeth Z	210 **21 3420** TwinCut indexable face mill 45° **close pitch with bore**	∅ D_{max} ON.U	∅ D_{max} SN.U	L_{tot} SN.U	L_{tot} ON.U	Mounting bore ∅	suitable indexable insert	Set of insert screws	Shim	Clamp screw for shim
mm		mm	mm	mm	mm	mm				
40/3	eShop	51.8	55.2	40	38.3	16	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
50/5	eShop	61.8	65.2	40	38.3	22	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
63/6	eShop	74.8	78.2	40	38.3	22	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
80/8	eShop	91.8	95.2	50	48.3	27	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
100/10	eShop	111.8	115.2	50	48.3	32	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
125/12	eShop	136.8	140.2	63	61.3	40	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
160/14	eShop	171.8	175.2	63	61.3	40	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
200/16	eShop	211.8	215.2	63	61.3	60	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899
250/18	eShop	261.8	265.2	63	61.3	60	SN.U; ON.U	219898 (15IP; 3.8 Nm)	219897	219899

Garant Milling inserts ON.U, SN.U and XNEU for TwinCut indexable face mills No. 213410 - 213420

21 3424–3438 – Double-sided with 2×8 cutting edges.
21 3440/3468/3470 – Wiper edge insert with 1 cutting edge.
21 3444–3466 – Double-sided with 2×4 cutting edges.

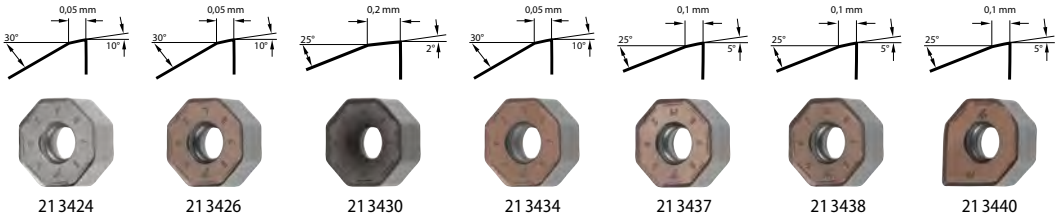
Recommendation: For the best surface quality choose insert tolerance E in combination with wiper edge insert(s).

Note: Standard application values for $a_e = 0.5 \ldots 1 \times D$ / $a_{p\,max}$
21 3440 – Length of the flat chamfer 7.6 mm.
21 3468/3470 – Length of the wiper flat 8 mm.



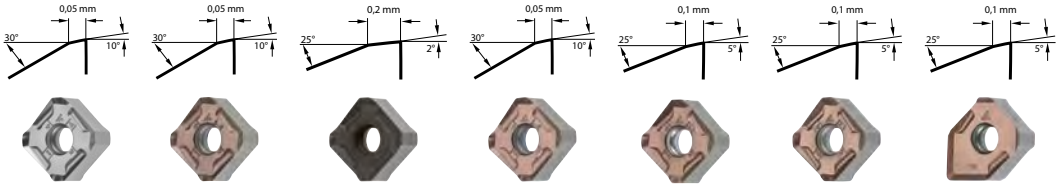
a_e / D	0.5 ... 1.0	0.3	0.1
Correction factor f_z	1.0	1.4	2.2

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
213424/3444	750	750	500															
213426/3446				300	280	260												
213430/3452							220	200										
213432							170	150										
213433–213435/ 3458/3460														200	160			
213437/3464																	200	
213438/3466				280	260	240								140	120			●



21 3424 21 3426 21 3430 21 3434 21 3437 21 3438 21 3440

Type			ALU	ST900	ST1400	INOX	GG	UNI		$a_{p\,max}$ mm
21A 21 3424	ONEU 05T6 ANER	HU7810	eShop	–	–	–	–	–	10	3
21A 21 3426	ONMU 05T6 ANER	HB7520	–	eShop	–	–	–	–	10	3
21A 21 3430		HB7510	–	–	eShop	–	–	–	10	3
21A 21 3432	ONEU 05T6 ANER	HB7520	–	–	eShop	–	–	–	10	3
21A 21 3434	ONMU 05T6 ANER	HB7630	–	–	–	eShop	–	–	10	3
21A 21 3433	ONEU 05T6 ANER	HB7630	–	–	–	eShop	–	–	10	3
21A 21 3435	ONMU 05T6 ANER	HB8630	–	–	–	eShop	–	–	10	3
21A 21 3437		HB7730	–	–	–	–	eShop	–	10	3
21A 21 3438		HB7520	–	–	–	–	–	eShop	10	3
21A 21 3440	XNEU 05T6 ANEN-W **Wiper edge insert**	HB7730	–	–	–	–	–	eShop	10	3
f_z		mm	0.23	0.3	0.25	0.2	0.3	–		

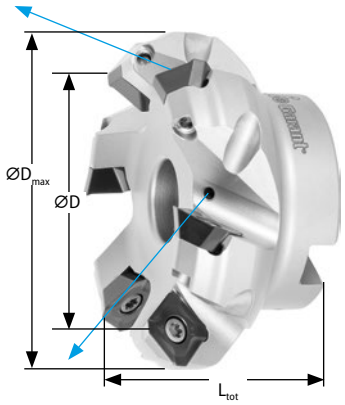


21 3444 21 3446 21 3452 21 3458 21 3464 21 3466 21 3470

Type			ALU	ST900	ST1400	INOX	GG	UNI		$a_{p\,max}$ mm
21A 21 3444	SNEU 14T7 ANER	HU7810	eShop	–	–	–	–	–	10	6
21A 21 3446	SNMU 14T7 ANER	HB7520	–	eShop	–	–	–	–	10	6
21A 21 3452		HB7510	–	–	eShop	–	–	–	10	6
21A 21 3458		HB7630	–	–	–	eShop	–	–	10	6
21A 21 3460		HB8630	–	–	–	eShop	–	–	10	6
21A 21 3464		HB7730	–	–	–	–	eShop	–	10	6
21A 21 3466		HB7520	–	–	–	–	–	eShop	10	6
21A 21 3468	XNEU 14T7 ANEN-W **Wiper edge insert**	HB7520	–	–	–	–	–	eShop	10	6
21A 21 3470		HB7730	–	–	–	–	–	eShop	10	6
f_z		mm	0.23	0.3	0.25	0.2	0.3	–		

45° ≠ MTC POWER CARD Garant

Garant GARANT Softcut® 45° high-performance indexable face mill for SE.T1305 and XEEW inserts



High number of cutting edges for very high productivity.
Positive rake for soft cut and low power consumption.
Individual tool geometry ensures very smooth cutting.
Size 160/12–250/16 – For arbors to DIN 2079, with 4 additional attachment holes and without internal cooling.

Note: Use GARANT torque screwdriver TQ No. **211750 3.0** with bit No. **674252 15IP**.

Ø D / number of effective cutting edges Z	210 21 3555 GARANT Softcut 45° high-performance face mill with bore	Ø D_{max}	L_{tot}	Mounting bore Ø	suitable indexable insert	Set of insert screws
mm		mm	mm	mm		
32/3	eShop	44	40	16	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
40/3	eShop	52.2	40	16	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
40/4	eShop	52.2	40	16	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
50/4	eShop	62.1	40	22	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
50/5	eShop	62.1	40	22	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
63/4	eShop	75	40	22	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
63/6	eShop	75	40	22	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
80/6	eShop	92.1	50	27	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
80/8	eShop	92.1	50	27	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
100/8	eShop	112.2	50	32	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
100/10	eShop	112.2	50	32	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
125/10	eShop	137.3	63	40	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
125/12	eShop	137.3	63	40	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
160/12	eShop	172.3	63	40	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
200/14	eShop	212.3	63	60	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)
250/16	eShop	262.3	63	60	SE.T1305; XEEW1305	219833 (15IP; 3.0 Nm)

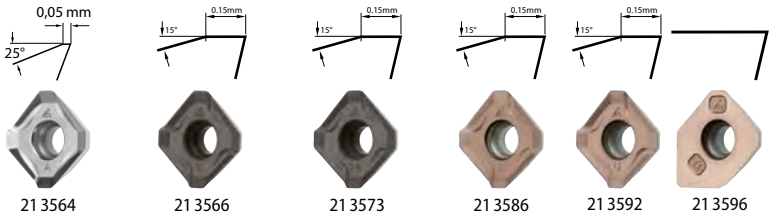
Garant Milling inserts SE.T1305 and XEEW1305 for GARANT Softcut® 45 high-performance indexable face mill

Increased insert thickness for the highest metal removal rates.
Protected against wear by the latest coating.

Note: Standard application values for a_e = 0.5... 1×D / a_{pmax} = 4 mm.
21 3596 – For the best surface quality, use at least one wiper edge insert. Length of the flat chamfer 7.2 mm.
21 3566/3573/3586 – For the best surface quality, use together with No. 213596 UNI.

a_e / D	0.5 ... 1.0	0.3	0.1
Correction factor f_z	1.0	1.4	2.2

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
21 3564	700	700	650																○			●	
21 3566/3568				240	200	180													○			●	
21 3573/3577							130	120											○			●	
21 3586/3588														170	130	30			○			●	
21 3592				220	180	160	90	90						150	120		90		○			●	



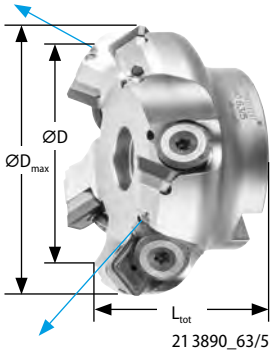
21 3564 21 3566 21 3573 21 3586 21 3592 21 3596

Type			ALU	ST900	ST1400	INOX	UNI	
21A 21 3564	SEET 1305 AGFR	HU7810	eShop	–	–	–	–	10
21A 21 3566	SEET 1305 AGSR	HB7520	–	eShop	–	–	–	10
21A 21 3568	SEMT 1305 AGSR	HB7520	–	eShop	–	–	–	10
21A 21 3573	SEET 1305 AGSR	HB7510	–	–	eShop	–	–	10
21A 21 3577	SEMT 1305 AGSR	HB7510	–	–	eShop	–	–	10
21A 21 3586	SEET 1305 AGSR	HB8630	–	–	–	eShop	–	10
21A 21 3588	SEMT 1305 AGSR	HB8630	–	–	–	eShop ■	–	10
21A 21 3592		HB7520	–	–	–	–	eShop	10
21A 21 3596	XEEW 1305 AGER **Wiper edge insert**	HB7730	–	–	–	–	eShop	10
f_z		mm	0.2	0.2	0.22	0.22	–	

45° ≠ POWER CARD Garant

Garant Indexable face mill 45° for milling inserts SE..1203..

45° indexable face mill with unequal pitch for smooth cutting.
Precision insert pockets due to special carbide shims.
Size 160/7–250/13 – For arbors to DIN 2079, with 4 additional attachment holes.



21 3890_63/5

∅ D / number of teeth Z	210 21 3890 Indexable face mill 45° with bore	∅ D_{max}	L_{tot}	Mounting bore ∅	suitable indexable insert	Clamp screw for insert	Shim	Clamp screw for shim
mm		mm	mm	mm				
50/4	eShop	63	48	22	SE.. 1203..	219862 (25IP; 6 Nm)	219860	219861 (TX8)
63/5	eShop	76	40	22	SE.. 1203..	219862 (25IP; 6 Nm)	219860	219861 (TX8)
80/6	eShop	93	50	27	SE.. 1203..	219862 (25IP; 6 Nm)	219860	219861 (TX8)
100/6	eShop	113	50	32	SE.. 1203..	219862 (25IP; 6 Nm)	219860	219861 (TX8)
125/7	eShop	138	63	40	SE.. 1203..	219862 (25IP; 6 Nm)	219860	219861 (TX8)
160/7	eShop	178	63	40	SE.. 1203..	219862 (25IP; 6 Nm)	219860	219861 (TX8)
200/10	eShop	213	63	60	SE.. 1203..	219862 (25IP; 6 Nm)	219860	219861 (TX8)
250/13	eShop	263	63	60	SE.. 1203..	219862 (25IP; 6 Nm)	219860	219861 (TX8)

Garant Milling inserts SE.. 1203.. for indexable face mill No. 213890

Note: Standard application values for a_e = 0.5 ... 1×D / $a_{p\,max}$ = 3.5 mm.

a_e / D	0.5 . . . 1.0	0.3	0.1
Correction factor f_z	1	1.4	2.2

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
21 3900				**300**	**250**	220																●	
21 3905																**130**				●		●	
21 3906			650	**260**	**200**	**160**	140	120					**170**	**120**	40	140		●		●		●	
21 3909				**215**	**205**	**200**	95	95					**90**			130		●		●		○	
21 3921				235	**230**	**220**	105	105					170			130				○		●	
21 3922/3923				**260**	**180**	**150**	140	130					170	110		120		●	●	●	●	●	●
21 3925				215	205	200	95	95					**90**	**80**	**65**					●		○	
21 3950				290	230	170	**105**	**105**												○		●	
21 3951				290	210	170	**160**	**150**					210	140		130			●	○	○	●	●
21 3960	**725**	**500**	**350**																			○	
21 3961	**725**	**650**	**480**														●			●		○	


21 3960 21 3900 21 3922 21 3950 21 3925 21 3905 21 3906

Type			ALU	ST500	ST900	ST1400	INOX	GG	UNI	
21A 21 3960	SEKR 1203 AFFN	HU7710	eShop	–	–	–	–	–	–	10
21B 21 3961	SEKR 1203 AFFN **diamond-coated**	HB7810	eShop	–	–	–	–	–	–	1
21A 21 3900	SEEN 1203 AFTN	CU7725	–	eShop	–	–	–	–	–	10
21A 21 3921	SEKR 1203 AFTN	HB7525	–	–	eShop	–	–	–	–	10
21A 21 3922	SEKN 1203 AFTN	HB7525	–	–	eShop	–	–	–	–	10
21A 21 3923	SEKR 1203 AFTN	HB7525	–	–	eShop	–	–	–	–	10
21A 21 3950	SECN 1203 AFSN	HB7735	–	–	–	eShop	–	–	–	10
21A 21 3951	SEKN 1203 AFTN	HB7515	–	–	–	eShop	–	–	–	10
21A 21 3925	SEKR 1203 AFTN	HB7635	–	–	–	–	eShop	–	–	10
21A 21 3905		HB7710	–	–	–	–	–	eShop ■	–	10
21A 21 3906	SEKN 1203 AFTN	HB735	–	–	–	–	–	–	eShop	10
21A 21 3909		HB7525	–	–	–	–	–	–	eShop	10
f_z		mm	0.24	0.19	0.19	0.19	0.19	0.15	–	

45° ≠ MTC

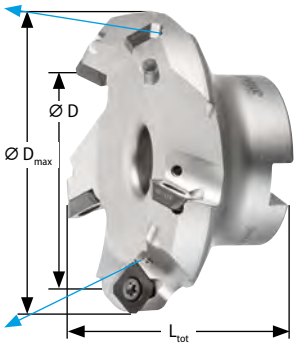
Garant Indexable face mill 45° MTC for milling inserts SE.. 1204..

Size 160/7–250/16 – For arbors to DIN 2079, with 4 additional attachment holes.

Note: Use GARANT torque screwdriver TQ No. **211750 size 5.7** with bit shank No. **674252 size 20IP**.
Size 160/7–250/16 – For technical reasons **without internal coolant supply.**

∅ D / number of teeth Z	210 21 4200 Indexable face mill 45° right-hand cutting	∅ D_{max}	L_{tot}	Mounting bore ∅	suitable indexable insert	Set of insert screws
mm	**with bore**	mm	mm	mm		
32/3	eShop	44	40	16	SE.. 1204..	219800 (20IP; 5.7 Nm)
40/3	eShop	53	40	16	SE.. 1204..	219800 (20IP; 5.7 Nm)
40/4	eShop	53	40	16	SE.. 1204..	219800 (20IP; 5.7 Nm)
50/4	eShop	63	40	22	SE.. 1204..	219800 (20IP; 5.7 Nm)
50/5	eShop	63	40	22	SE.. 1204..	219800 (20IP; 5.7 Nm)
63/4	eShop	75	40	22	SE.. 1204..	219800 (20IP; 5.7 Nm)
63/6	eShop	75	40	22	SE.. 1204..	219800 (20IP; 5.7 Nm)
80/5	eShop	93	50	27	SE.. 1204..	219800 (20IP; 5.7 Nm)
80/6	eShop	93	50	27	SE.. 1204..	219800 (20IP; 5.7 Nm)
80/8	eShop	93	50	27	SE.. 1204..	219800 (20IP; 5.7 Nm)
100/6	eShop	113	50	32	SE.. 1204..	219800 (20IP; 5.7 Nm)
100/8	eShop	113	50	32	SE.. 1204..	219800 (20IP; 5.7 Nm)
125/7	eShop	138	63	40	SE.. 1204..	219800 (20IP; 5.7 Nm)
125/10	eShop	138	63	40	SE.. 1204..	219800 (20IP; 5.7 Nm)
160/7	eShop	173	63	40	SE.. 1204..	219800 (20IP; 5.7 Nm)
160/12	eShop	173	63	40	SE.. 1204..	219800 (20IP; 5.7 Nm)
200/14	eShop	216	63	40	SE.. 1204..	219800 (20IP; 5.7 Nm)
250/16	eShop	263	63	60	SE.. 1204..	219800 (20IP; 5.7 Nm)

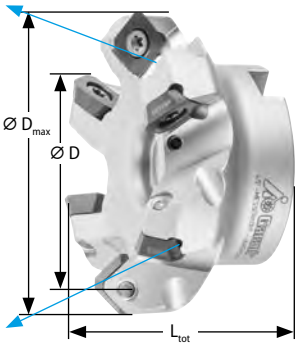
POWER CARD Garant



21 4200_80/5

POWER CARD Garant

∅ D / number of teeth Z	210 21 4205 Indexable face mill 45° left-hand cutting	∅ D_{max}	L_{tot}	Mounting bore ∅	suitable indexable insert	Set of insert screws
mm	**with bore**	mm	mm	mm		
50/5	eShop	63	40	22	SE.. 1204..	219800 (20IP; 5.7 Nm)
63/6	eShop	75	40	22	SE.. 1204..	219800 (20IP; 5.7 Nm)
80/6	eShop	93	50	27	SE.. 1204..	219800 (20IP; 5.7 Nm)
100/8	eShop	113	50	32	SE.. 1204..	219800 (20IP; 5.7 Nm)



21 4205_80/6

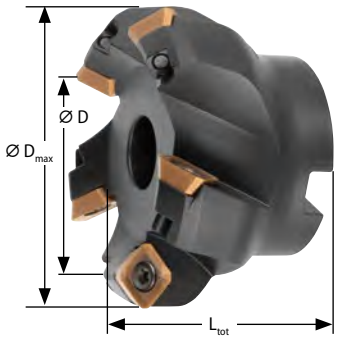
45° ≠ MTC

HOLEX Indexable face mill 45° for milling inserts SE.. 1204..

Without through-coolant feed.

Note: Use GARANT torque screwdriver TQ No. **211750 size 5.7** with bit No. **674252 size 20IP**.

∅ D / number of effective cutting edges Z	220 21 4202 Indexable face mill 45°	∅ D_{max}	L_{tot}	Mounting bore ∅	Set of insert screws
mm	**with bore**	mm	mm	mm	
50/4	eShop	63	48	22	219848 (20IP; 5.7 Nm)
63/5	eShop	76	48	22	219848 (20IP; 5.7 Nm)
80/6	eShop	93	50	27	219848 (20IP; 5.7 Nm)
100/6	eShop	113	50	32	219848 (20IP; 5.7 Nm)

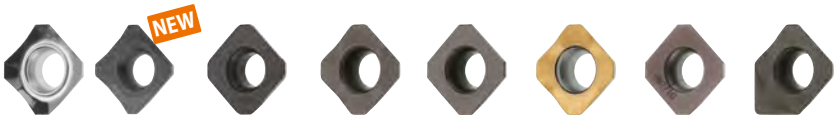


21 4202_63/5

Garant Milling inserts SE.. 1204.. for indexable face mills No. 214200 / 214202 / 214205

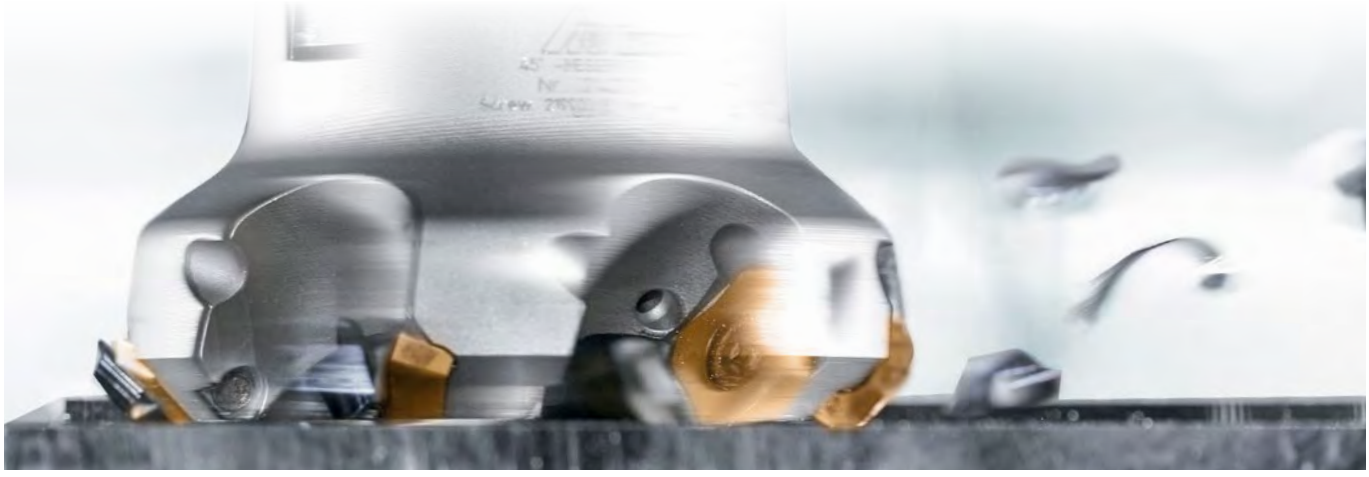
Note:
21 4348/4349/4240/4242/4270/4292/4241/4243/4245/4340/4310/4312/4315/4319 – Standard application values for a_e = 0.5 ... 1×D / $a_{p\,max}$ = 3.5 mm.
21 4321 – Cermet wiper edge insert
21 4353 – Standard application values for a_e = 0.5 ... 1×D / $a_{p\,max}$ = 1.5 mm.
21 4319/4321 – For the best surface quality use at least **one wiper edge insert**.
Length of the flat chamfer 8 mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
21 4240				**450**	**350**	300						230	190									●	
21 4241												**160**	**110**	40						○		●	
21 4242				**290**	**200**	**170**	160	150				190	120		130			●	●	●	●	●	●
21 4243/4245				215	205	200						**90**	**80**	**40**						●		○	
21 4270				235	230	220	**105**	**105**				170			130					○		●	
21 4292				320	230	190	**180**	**170**				230	150		150				●	○	○	●	●
21 4310				**260**	**220**	**200**						**170**	150					●		○		●	
21 4312			450	**280**	**260**	**240**	**160**	**120**	30			**190**	**130**	45	170					○		●	
21 4315			650	**260**	**200**	**160**	**140**	**120**				**170**	**120**	40	140			●		●		●	
21 4340															**200**					●		●	
21 4348	**725**	**500**	**350**																	●		○	
21 4349	**725**	**650**	**480**														●			●		○	
21 4353	**1500**	**1200**	**1200**													**1000**				●		●	



21 4348 21 4349 21 4240 21 4242 21 4292 21 4243 21 4340 21 4319

Type			ALU	ST500	ST900	ST1400	INOX	GG	UNI	
21A **21 4348**	SEHT 1204 AFFN	**HU7815**	eShop	–	–	–	–	–	–	**10**
21B **21 4349**	SEHT 1204 AFFN **diamond coated**	**HB7810**	eShop	–	–	–	–	–	–	**1**
21L **21 4353**	SEHW 1204 AFFN	**PCD**	eShop	–	–	–	–	–	–	**1**
21A **21 4240**	SEHT 1204 AFTN	**CU7725**	–	eShop	–	–	–	–	–	**10**
21A **21 4242**	SEKT 1204 AFTN	**HB7525**	–	–	eShop	–	–	–	–	**10**
21A **21 4270**	SEKA 1204 AFTN	**HB7720**	–	–	–	eShop	–	–	–	**10**
21A **21 4292**	SEKW 1204 AFTN	**HB7515**	–	–	–	eShop	–	–	–	**10**
21A **21 4241**	SEKT 1204 AFTN	**HB7625**	–	–	–	–	eShop	–	–	**10**
21A **21 4243**	SEET 1204 AFTN	**HB7635**	–	–	–	–	eShop	–	–	**10**
21A **21 4245**	SEKT 1204 AFTN	**HB7635**	–	–	–	–	eShop	–	–	**10**
21A **21 4340**	SEKA 1204 AFTN	**HB7710**	–	–	–	–	–	eShop	–	**10**
21A **21 4310**	SEHT 1204 AFSN	**HB7535**	–	–	–	–	–	–	eShop	**10**
21A **21 4312**	SEKT 1204 AFTN	**HB725**	–	–	–	–	–	–	eShop	**10**
21A **21 4315**		**HB735**	–	–	–	–	–	–	eShop	**10**
21A **21 4319**	SEET 1204 ZZTN	**HB7515**	–	–	–	–	–	–	eShop	**10**
21A **21 4321**	**Wiper edge insert**	**CU7525**	–	–	–	–	–	–	eShop	**10**
Corner radius (21 4353)		mm	0.4	–	–	–	–	–	–	
f_z		mm	0.24	0.19	0.19	0.19	0.19	0.15	–	

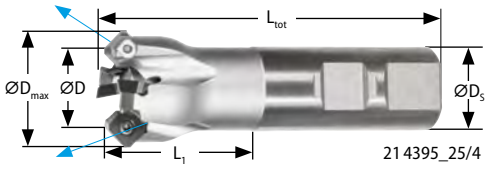


45° POWER CARD Garant

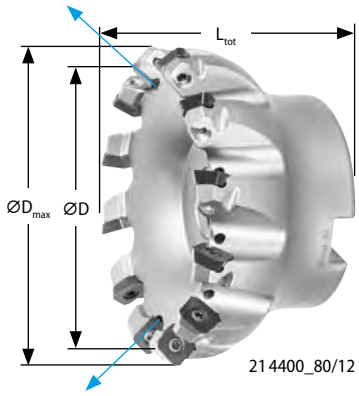
Garant Indexable face mill 45° for milling inserts SD.. 0903..

High number of cutting edges for very high productivity. Positive rake for soft cut and low power consumption.

Note: Use GARANT torque screwdriver TQ No. **211750 size 1.5** with bit No. **674252 size 8IP**.



21 4395_25/4



21 4400_80/12

∅ D / number of teeth Z	210 21 4395 Indexable face mill 45°	$Ø D_{max}$	L_1	L_{tot}	$Ø D_s$ h6	suitable indexable insert	Circular interpolation milling $Ø D_{min}$	Circular interpolation milling $Ø D_{max}$	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	Set of insert screws
mm	**Weldon shank**	mm	mm	mm	mm		mm	mm	mm	mm	mm	
16/2	eShop	24.2	40	90	20	SD... 0903	40	46	1.5	2.12	13.5	219809 (8IP; 1.5 Nm)
20/3	eShop	28.2	40	90	20	SD... 0903	48	54	1.5	1.64	17.5	219809 (8IP; 1.5 Nm)
25/4	eShop	33.2	44	100	25	SD... 0903	58	64	1.5	1.27	22.5	219809 (8IP; 1.5 Nm)

∅ D / number of teeth Z	210 21 4400 Indexable face mill 45°	$Ø D_{max}$	L_{tot}	Mounting bore ∅	Circular interpolation milling $Ø D_{min}$	Circular interpolation milling $Ø D_{max}$	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm	**with bore**	mm	mm	mm	mm	mm	mm	mm	mm		
32/4	eShop	40.2	40	16	72	78	1.5	0.97	29.5	SD... 0903	219809 (8IP; 1.5 Nm)
40/6	eShop	48.2	40	16	88	94	1.5	0.76	37.5	SD... 0903	219809 (8IP; 1.5 Nm)
50/6	eShop	58.2	40	22	108	114	1.5	0.6	47.5	SD... 0903	219809 (8IP; 1.5 Nm)
50/8	eShop	58.2	40	22	108	114	1.5	0.6	47.5	SD... 0903	219809 (8IP; 1.5 Nm)
63/5	eShop	71.2	40	22	134	140	1.5	0.47	60.5	SD... 0903	219809 (8IP; 1.5 Nm)
63/8	eShop	71.2	40	22	134	140	1.5	0.47	60.5	SD... 0903	219809 (8IP; 1.5 Nm)
63/10	eShop	71.2	40	22	134	140	1.5	0.47	60.5	SD... 0903	219809 (8IP; 1.5 Nm)
80/10	eShop	88.2	50	27	168	174	1.5	0.37	77.5	SD... 0903	219809 (8IP; 1.5 Nm)
80/12	eShop	88.2	50	27	168	174	1.5	0.37	77.5	SD... 0903	219809 (8IP; 1.5 Nm)
100/12	eShop	108.2	50	32	208	214	1.5	0.29	97.5	SD... 0903	219809 (8IP; 1.5 Nm)
100/14	eShop	108.2	50	32	208	214	1.5	0.29	97.5	SD... 0903	219809 (8IP; 1.5 Nm)
125/14	eShop	133.2	63	40	258	264	1.5	0.23	122.5	SD... 0903	219809 (8IP; 1.5 Nm)

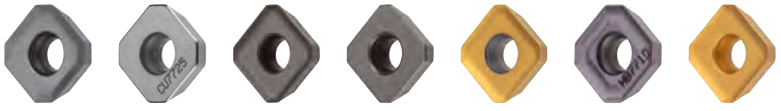
Garant Milling inserts SD.. 0903.. for 45° indexable face mills No. 214395 / 214400

- Indexable inserts for higher cutting speeds and feed rates.
- Precision sintered and ground for best surface finish quality.

Note: Standard application values for a_e = 0.5 ... 1×D / $a_{p\,max}$ = 3 mm.

a_e / D	0.5 ... 1.0	0.3	0.1
Correction factor f_z	1.0	1.4	2.2

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
21 4439				410	290	240	**220**	**190**					300	190		190			●	○	○	●	●
21 4440				**350**	**255**	**230**	180	130					**165**	130		235		●		○		●	
21 4441			650	**260**	**200**	**160**	**140**	**120**					**170**	120	40	140				●		●	
21 4460				270	220	220	150	105					**100**	**80**	**50**					●		●	
21 4470																**235**						●	
21 4475				**350**	**255**	230																●	
21 4477				**360**	**255**	**215**	190	170					230	150		160		●	●	●	●	●	●
21 4478	**1500**	**1000**	**500**																	●		●	
21 4479	**1500**	**1300**	**680**														●			●		○	

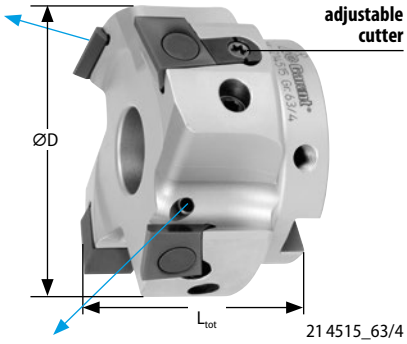

21 4479 21 4440

Type			ALU	ST500	ST900	ST1400	INOX	GG	UNI	
21A **21 4478**	SDHT 0903 AFFN	**HU7815**	eShop	–	–	–	–	–	–	**10**
NEW 21B **21 4479**	SDHT 0903 AEFN **diamond coated**	**HB7810**	eShop	–	–	–	–	–	–	**1**
21A **21 4475**	SDHW 0903 AESN	**CU7725**	–	eShop	–	–	–	–	–	**10**
21A **21 4477**	SDMX 0903 AFEN	**HB7525**	–	–	eShop	–	–	–	–	**10**
21A **21 4439**	SDHX 0903 AFTN	**HB7515**	–	–	–	eShop	–	–	–	**10**
21A **21 4460**	SDMX 0903 AFEN	**HB7635**	–	–	–	–	eShop	–	–	**10**
21A **21 4470**	SDHT 0903 AEEN	**HB7710**	–	–	–	–	–	eShop	–	**10**
21A **21 4440**	SDMX 0903 AFEN	**HB7520**	–	–	–	–	–	–	eShop	**10**
21A **21 4441**		**HB735**	–	–	–	–	–	–	eShop	**10**
f_z		mm	0.19	0.19	0.14	0.14	0.14	0.17	–	

90° HPC POWER CARD Garant

Garant Aluking 90° tangential high-performance indexable face / shoulder mill adjustable HPC

Tangential indexable face/shoulder mill for milling **exact 90° corners.**
Cutters partially adjustable in the vertical sense for very high accuracies.
Precise insert seating thanks to clamping stud locking.



21 4515_63/4

Ø D / number of teeth Z	21P 21 4515 Aluking indexable face / shoulder mill 90° HPC	Inserts adjustable	L_{tot}	Mounting bore Ø	suitable indexable insert	Adjustment screw	Clamping studs	Pin tightening screw
mm	with bore		mm	mm				
40/2	eShop	–	40	16	BG.. 15L5..	–	219893	219894 (3AF; 5.0 Nm)
50/3	eShop	–	40	22	BG.. 15L5..	–	219893	219894 (3AF; 5.0 Nm)
63/4	eShop	1	40	22	BG.. 15L5..	219892	219893	219894 (3AF; 5.0 Nm)
80/5	eShop	1	50	27	BG.. 15L5..	219892	219893	219894 (3AF; 5.0 Nm)
100/6	eShop	2	50	32	BG.. 15L5..	219892	219893	219894 (3AF; 5.0 Nm)
125/8	eShop	2	63	40	BG.. 15L5..	219892	219893	219894 (3AF; 5.0 Nm)

Garant BGHX.. indexable inserts for Aluking tangential high performance indexable face / shoulder mill No. 214515

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	GG(G)	GRP	CRP	Graphite					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	K	N	N	N					
21 4525	750	750	300																	●		●	
21 4531	900	600	350																	●		●	
21 4540	3500	3500	1000													1000	1000	500		●		●	
21 4543				240	220	220	200	200														●	
21 4545													120	100								●	
21 4547															220							●	

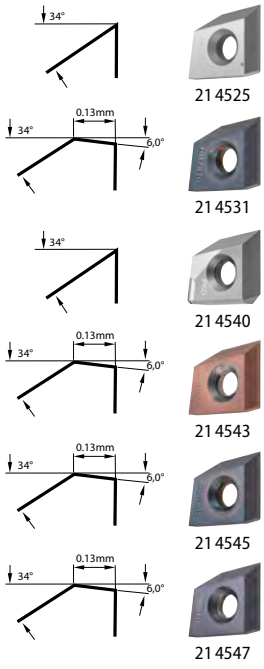
Milling inserts

21 4540 – With additional wide smooth flat chamfer.
21 4525/4531 – Precision ground carbide indexable inserts, ideal for machining thin-walled aluminium material.
21 4543/4545 – Precision-ground carbide indexable insert for high surface qualities when face milling.

Application:

21 4540 – For high cutting speeds and high surface quality. Preferably for use in adjustable insert seatings. Different types of inserts can be mixed.
21 4543/4547 – For surfaces with roughness less than R_z 3 µm. Only for dry machining.

Note:
21 4525/4531 – Standard application values for $a_e = 1 \times D$ / $a_p = 5$ mm, $a_{p\,max} = 10$ mm.
21 4540–4547 – Standard application values for $a_e = 1 \times D$ / $a_p = 3$ mm, $a_{p\,max} = 5$ mm.

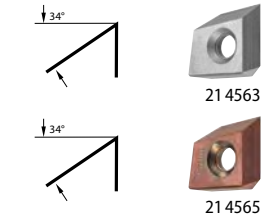


21 4525
21 4531
21 4540
21 4543
21 4545
21 4547

Type			ALU	ST1400	INOX	GG	
21B 21 4525	BGHX 15L5 PCFR	HU7810	eShop	–	–	–	10
21B 21 4531	BGHX 15L5 PCTR	HB7810	eShop	–	–	–	10
21L 21 4540	BGHX 15L5 PCER	PCD	eShop	–	–	–	1
21B 21 4543		HB7535	–	eShop	–	–	10
21B 21 4545	BGHX 15L5 PCTR	HB7635	–	–	eShop	–	10
21B 21 4547		HB9710	–	–	–	eShop	10
f_z	mm		0.25	0.2	0.14	0.2	

Wiper edge inserts

Carbide indexable inserts with wide wiper edge for fitting on adjustable insert seatings.
Length of the flat chamfer: 5 mm.



21 4563
21 4565

Type			ALU	ST1400
21B 21 4563	Wiper edge insert	HU7810	eShop	–
21B 21 4565		HB7535	–	eShop

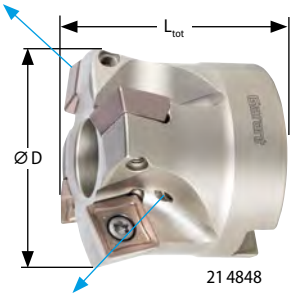
15° ≠ POWER CARD Garant

Garant GARANT Softcut® HSI high feed rate milling cutter for inserts SO.T 1205

The indexable inserts are positioned at 15° in the tool body.

Application: Select f_z value 0.8 mm.

Note: Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.



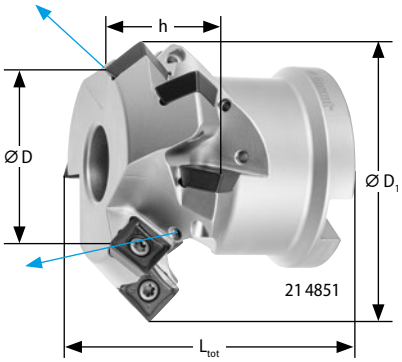
Ø D / number of teeth Z	210 21 4848 GARANT Softcut HSI high feed rate milling cutter with bore	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Ramping angle α_{max}	Ramping length L for α_{max}	Set of insert screws
mm		mm	mm	mm	mm	mm	mm	mm	mm	
42/3	eShop	17.4	2.8	40	16	56.5	78.3	1.75	15	219833 (15IP; 3Nm)
50/4	eShop	27.4	2.8	40	22	76.5	98.3	1.25	25	219833 (15IP; 3Nm)
52/4	eShop	29.4	2.8	40	22	80.5	102.3	1.25	27	219833 (15IP; 3Nm)
63/5	eShop	40.4	2.8	40	22	102.3	124.3	0.75	38	219833 (15IP; 3Nm)

≠ POWER CARD Garant

Garant GARANT Softcut® HIS chamfer mill 45° for inserts SO.T 1205

Application: Suitable for front and back chamfering.

Note: Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.



Ø D	210 21 4851 GARANT Softcut HSI 45° chamfer mill with bore	Number of effective inserts Z_{eff}	Number of indexable inserts	L_{tot}	smallest Ø D	largest Ø D_1	achievable chamfer length l	achievable chamfer height h	Mounting bore Ø	Set of insert screws
mm				mm	mm	mm	mm	mm	mm	
53,9	eShop	3	9	65	53.9	85	22	15	27	219833 (15IP; 3.0 Nm)

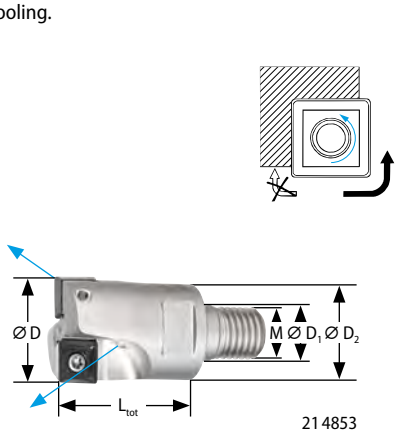
90° ≠ POWER CARD Garant

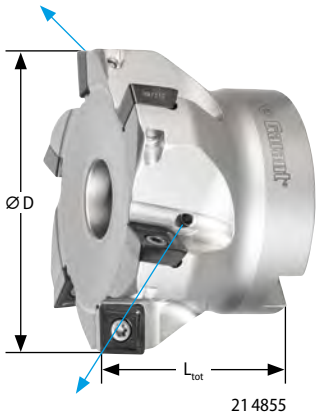
Garant GARANT Softcut® HSI for milling inserts SO.T 1205.. and XOEW

Individual tool geometry ensures very smooth cutting.
Exceptionally sturdy insert design for best feed rates.
Indexable inserts are secured by special screws with high shear resistance.
21 4855 Size 160/10/4857 Size 160/14 – For arbors to DIN 2079, with 4 additional attachment holes and without internal cooling.

Application: For outstanding surface quality. Burr-free milling.

Note: **For exact 90° corners, select a_p = 8 mm.**
To use all **4 cutting edges**, the insert must **always be turned in the direction shown (anticlockwise).**
Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.
21 4857 – For a_e > 0.5×D, reduce $a_{p\,max}$ to 6 mm.





Ø D / number of teeth Z	210 21 4853 GARANT Softcut HSI with threaded shank	maximum cutting depth $a_{p\,max}$	L_{tot}	Ø D_1 h6	Ø D_2	Mounting thread M	suitable indexable insert	Set of insert screws
mm		mm	mm	mm	mm			
32/2	eShop	10	42	17	28.7	M16	SO.. 1205..	219833 (15IP; 3.0 Nm)

Ø D / number of teeth Z	210 21 4855 GARANT Softcut HSI wide pitch	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	suitable indexable insert	Set of insert screws
mm	**with bore**	mm	mm	mm		
50/4	eShop	10	40	22	SO.. 1205..	219833 (15IP; 3.0 Nm)
63/4	eShop	10	40	22	SO.. 1205..	219833 (15IP; 3.0 Nm)
80/6	eShop	10	50	27	SO.. 1205..	219833 (15IP; 3.0 Nm)
100/8	eShop	10	50	32	SO.. 1205..	219833 (15IP; 3.0 Nm)
125/8	eShop	10	63	40	SO.. 1205..	219833 (15IP; 3.0 Nm)
160/10	eShop	10	63	40	SO.. 1205..	219833 (15IP; 3.0 Nm)

Ø D / number of teeth Z	210 21 4857 GARANT Softcut HSI close pitch	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	suitable indexable insert	Set of insert screws
mm	**with bore**	mm	mm	mm		
40/3	eShop	10	40	16	SO.. 1205..	219833 (15IP; 3.0 Nm)
50/5	eShop	10	40	22	SO.. 1205..	219833 (15IP; 3.0 Nm)
63/6	eShop	10	40	22	SO.. 1205..	219833 (15IP; 3.0 Nm)
80/8	eShop	10	50	27	SO.. 1205..	219833 (15IP; 3.0 Nm)
100/10	eShop	10	50	32	SO.. 1205..	219833 (15IP; 3.0 Nm)
125/12	eShop	10	63	40	SO.. 1205..	219833 (15IP; 3.0 Nm)
160/14	eShop	10	63	40	SO.. 1205..	219833 (15IP; 3.0 Nm)

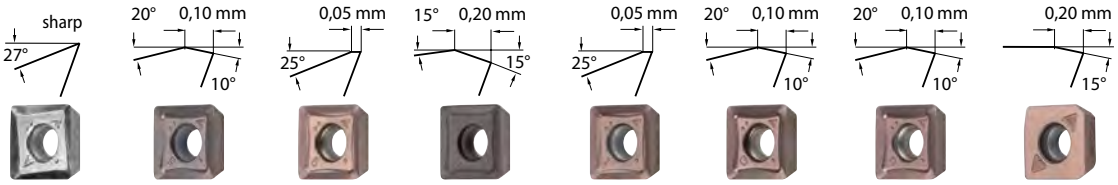
Garant Milling inserts SO.T 1205.. and XOEW for GARANT Softcut® HSI No. 214848 – 214857

Increased insert thickness for the highest metal removal rates.
Protected against wear by the latest coating.

21 4864 – Cermet.

Note: Standard application values for $a_e = 0.3 \times D$.
21 4890 – Length of the wiper flat 6.5 mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
21 4860/4862	**700**	**700**	**650**																○		●	
21 4864				**270**	**260**	**210**								**100**					○		●	
21 4865/4866				**320**	**300**	**260**													○		●	
21 4867/4868							**240**	**180**											○		●	
21 4870							**160**	**130**											○		●	
21 4874–21 4878														**120**	**100**				○		●	
21 4880																	**200**		○		●	
21 4884/4885				**260**	**240**	**190**	120	110						**90**	**70**			●	○		●	



21 4862 21 4864 21 4865 21 4868 21 4875 21 4880 21 4885 21 4890

Type			ALU	ST500	ST900	ST1400	INOX	GGG	UNI	
21A **21 4860**	SOET 120504 PDER	**HU7810**	eShop	–	–	–	–	–	–	**10**
21A **21 4862**	SOET 120508 PDER	**HU7810**	eShop	–	–	–	–	–	–	**10**
21A **21 4864**	SOMT 120508 PDER	**CU7530**	–	eShop	–	–	–	–	–	**10**
21A **21 4866**	SOMT 120504 PDER	**HB7520**	–	–	eShop	–	–	–	–	**10**
21A **21 4865**	SOMT 120508 PDER	**HB7520**	–	–	eShop	–	–	–	–	**10**
21A **21 4867**	SOMT 120504 PDER	**HB7510**	–	–	–	eShop	–	–	–	**10**
21A **21 4868**	SOMT 120508 PDER	**HB7510**	–	–	–	eShop	–	–	–	**10**
21A **21 4870**		**HB7520**	–	–	–	eShop	–	–	–	**10**
21A **21 4874**	SOMT 120504 PDER	**HB7630**	–	–	–	–	eShop	–	–	**10**
21A **21 4875**	SOMT 120508 PDER	**HB7630**	–	–	–	–	eShop	–	–	**10**
21A **21 4877**	SOMT 120504 PDER	**HB8630**	–	–	–	–	eShop	–	–	**10**
21A **21 4878**	SOMT 120508 PDER	**HB8630**	–	–	–	–	eShop	–	–	**10**
21A **21 4880**		**HB7730**	–	–	–	–	–	eShop	–	**10**
21A **21 4884**	SOMT 120504 PDER	**HB7520**	–	–	–	–	–	–	eShop	**10**
21A **21 4885**	SOMT 120508 PDER	**HB7520**	–	–	–	–	–	–	eShop	**10**
21A **21 4890**	XOEW 120508 PDER-W **Wiper edge insert**	**HB7730**	–	–	–	–	–	–	eShop	**10**
f_z		mm	0.2	0.2	0.2	0.22	0.17	0.2	–	

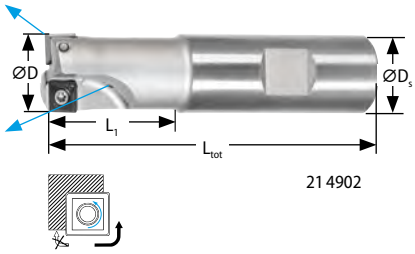
90° POWER CARD Garant

Garant GARANT Softcut® HSI for milling inserts SO.T 0836.. and XOEW

Wear-resistant heat-treated steel with corrosion-inhibiting coating. Precise indexable insert seating by use of appropriate torque. Wide and close tooth pitches for individual milling strategies.

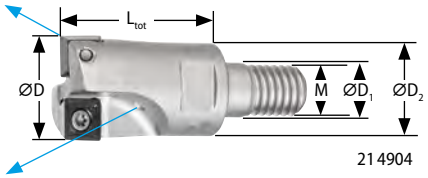
Application: Particularly suitable for machines with lower drive power and for machining at greater depths and small entry diameters.

Note: **For exact 90° corners, select a_p = 6 mm.**
To use all **4 cutting edges**, the insert must **always be turned in the direction shown (anticlockwise).**
Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size 8IP**.

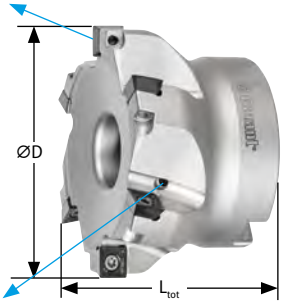


21 4902

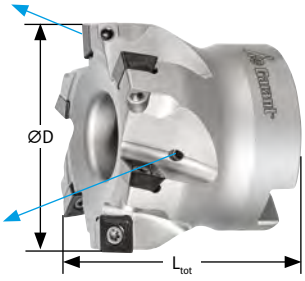
∅ D / number of teeth Z	210 21 4902 GARANT Softcut HSI	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	∅ D_s h6	suitable indexable insert	Set of insert screws
mm	**Weldon shank**	mm	mm	mm	mm		
20/2	eShop	6	35	85	20	SO.. 0836..	219863 (8IP; 2.2 Nm)
25/3	eShop	6	39	95	25	SO.. 0836..	219863 (8IP; 2.2 Nm)
32/4	eShop	6	45	105	32	SO.. 0836..	219863 (8IP; 2.2 Nm)



21 4904



21 4906



21 4908

∅ D / number of teeth Z	210 21 4904 GARANT Softcut HSI	maximum cutting depth $a_{p\,max}$	∅ D_1 h6	L_{tot}	∅ D_2	Mounting thread M	suitable indexable insert	Set of insert screws
mm	**with threaded shank**	mm	mm	mm	mm			
20/2	eShop	6	10.5	30	17.7	M10	SO.. 0836..	219863 (8IP; 2.2 Nm)
25/3	eShop	6	12.5	35	20.7	M12	SO.. 0836..	219863 (8IP; 2.2 Nm)
32/4	eShop	6	17	40	28.7	M16	SO.. 0836..	219863 (8IP; 2.2 Nm)
40/5	eShop	6	17	40	28.7	M16	SO.. 0836..	219863 (8IP; 2.2 Nm)

∅ D / number of teeth Z	210 21 4906 GARANT Softcut HSI wide pitch	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore ∅	suitable indexable insert	Set of insert screws
mm	**with bore**	mm	mm	mm		
40/4	eShop	6	40	16	SO.. 0836..	219863 (8IP; 2.2 Nm)
50/5	eShop	6	40	22	SO.. 0836..	219863 (8IP; 2.2 Nm)
63/6	eShop	6	40	22	SO.. 0836..	219863 (8IP; 2.2 Nm)
80/7	eShop	6	50	27	SO.. 0836..	219863 (8IP; 2.2 Nm)
100/8	eShop	6	50	32	SO.. 0836..	219863 (8IP; 2.2 Nm)

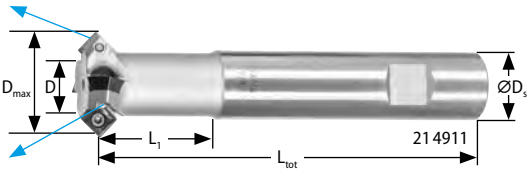
∅ D / number of teeth Z	210 21 4908 GARANT Softcut HSI close pitch	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore ∅	suitable indexable insert	Set of insert screws
mm	**with bore**	mm	mm	mm		
40/5	eShop	6	40	16	SO.. 0836..	219863 (8IP; 2.2 Nm)
50/6	eShop	6	40	22	SO.. 0836..	219863 (8IP; 2.2 Nm)
63/7	eShop	6	40	22	SO.. 0836..	219863 (8IP; 2.2 Nm)
80/8	eShop	6	50	27	SO.. 0836..	219863 (8IP; 2.2 Nm)
100/10	eShop	6	50	32	SO.. 0836..	219863 (8IP; 2.2 Nm)



Garant GARANT Softcut ® HSI 45° indexable chamfer mill for SO.T0836..

Very high performance milling tool for forwards and reverse machining.

Note: D_{max} for use with indexable inserts r = 0.4 mm.
Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size 8IP**.



Ø D / number of effective cutting edges Z	210 21 4911 GARANT Softcut HSI chamfer mill Weldon shank	Number of cutting edges Z	Ø D	Ø D_{max}	L_1	L_{tot}	Ø D_s h6	suitable indexable insert	Set of insert screws
mm			mm	mm	mm	mm	mm		
16/3	eShop	3	16	26.3	35	110	16	SO.T 0836..	219863 (8IP; 2.2 Nm)
20/4	eShop	4	20	30.3	40	120	20	SO.T 0836..	219863 (8IP; 2.2 Nm)
25/5	eShop	5	25	35.1	45	130	25	SO.T 0836..	219863 (8IP; 2.2 Nm)

Garant Milling inserts SO.T 0836.. and XOEW for GARANT Softcut® HSI No. 214902 / 4904 / 4906 / 4908 / 4911

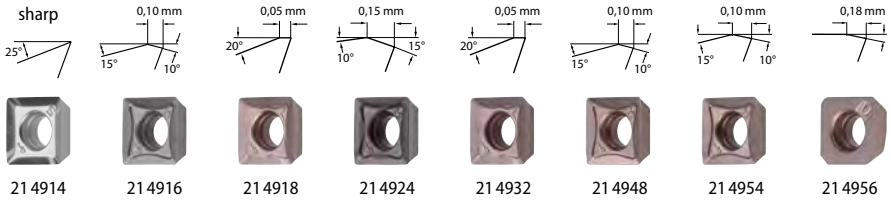
Increased insert thickness permits markedly deep trough geometry for positive cutting action, and minimises the susceptibility to fracture.

Tool material:

21 4916 – Cermet.

Note: Standard application values for a_e = 0.3×D.
21 4956 – Length of the flat chamfer 3.4 mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
21 4914	700	700	650																○	○	●	
21 4916				270	220	180													○		●	
21 4918				320	250	210													○		●	
21 4924/4925							220	180											○		●	
21 4928/4929							180	140											○		●	
21 4932–21 4937														150	120				○		●	
21 4948																	200		○		●	
21 4954/4955				260	240	190	120	110						90	70			●	○		●	



21 4914 21 4916 21 4918 21 4924 21 4932 21 4948 21 4954 21 4956

Type			ALU	ST500	ST900	ST1400	INOX	GGG	UNI	
21A 21 4914	SOET 083604 PDER	HU7810	eShop	–	–	–	–	–	–	10
21A 21 4916		CU7530	–	eShop	–	–	–	–	–	10
21A 21 4918	SOMT 083604 PDER	HB7520	–	–	eShop	–	–	–	–	10
21A 21 4924		HB7510	–	–	–	eShop	–	–	–	10
21A 21 4925	SOMT 083608 PDER	HB7510	–	–	–	eShop	–	–	–	10
21A 21 4928	SOMT 083604 PDER	HB7520	–	–	–	eShop	–	–	–	10
21A 21 4929	SOMT 083608 PDER	HB7520	–	–	–	eShop	–	–	–	10
21A 21 4932	SOMT 083604 PDER	HB7630	–	–	–	–	eShop	–	–	10
21A 21 4933	SOMT 083608 PDER	HB7630	–	–	–	–	eShop	–	–	10
21A 21 4935	SOMT 083604 PDER	HB8630	–	–	–	–	eShop	–	–	10
21A 21 4937	SOMT 083608 PDER	HB8630	–	–	–	–	eShop	–	–	10
21A 21 4948	SOMT 083604 PDER	HB7730	–	–	–	–	–	eShop	–	10
21A 21 4954		HB7520	–	–	–	–	–	–	eShop	10
21A 21 4955	SOMT 083608 PDER	HB7520	–	–	–	–	–	–	eShop	10
21A 21 4956	XOEW 0836 PDER-W **Wiper edge insert**	HB7730	–	–	–	–	–	–	eShop	10
f_z		mm	0.15	0.12	0.15	0.17	0.15	0.15	–	

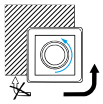
Indexable face / shoulder mill 90° for indexable inserts SOMT 09T304

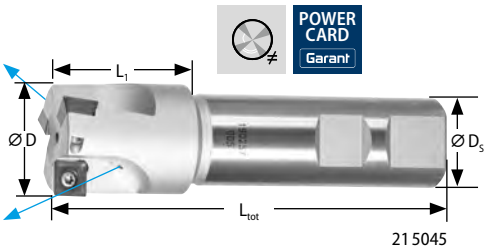
Made of hardened special steel for low vibration and long life. Very good surface finishes are obtained due to projecting flat cutting edge.

Attention:

21 5055 – Without a PowerCard!

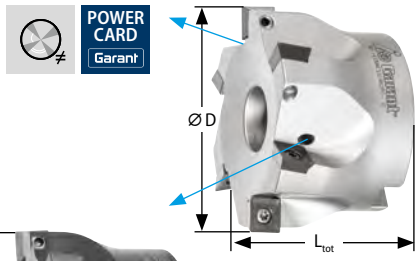
Note: To use all **4 cutting edges**, the insert **always has to be turned in the indicated direction.**
Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size 9IP**.





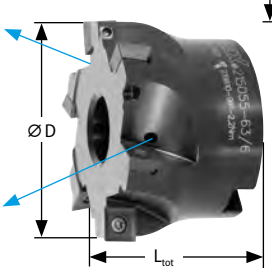
21 5045

Ø D / number of teeth Z	210 21 5045 Garant	L_1	L_{tot}	Ø D_s h6	suitable indexable insert	Set of insert screws
mm	Indexable face / shoulder mill 90° **Weldon shank**	mm	mm	mm		
25/2	eShop	31	105	25	SOMT 09T304	219810 (9IP; 2.2 Nm)
32/3	eShop	41	110	25	SOMT 09T304	219810 (9IP; 2.2 Nm)



21 5050

Ø D / number of teeth Z	210 21 5050 Garant	220 21 5055 HOLEX	L_{tot}	Mounting bore Ø	suitable indexable insert	Set of insert screws
mm	Indexable face / shoulder mill 90° **with bore**	**with bore**	mm	mm		
40/4	eShop	eShop	40	16	SOMT 09T304	219810 (9IP; 2.2 Nm)
50/5	eShop	eShop	40	22	SOMT 09T304	219810 (9IP; 2.2 Nm)
63/6	eShop	eShop	40	22	SOMT 09T304	219810 (9IP; 2.2 Nm)
80/6	eShop	eShop	50	27	SOMT 09T304	219810 (9IP; 2.2 Nm)
100/8	eShop	eShop	50	32	SOMT 09T304	219810 (9IP; 2.2 Nm)



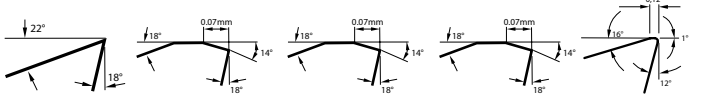
21 5055

Milling inserts SOMT 09T304 for indexable face / shoulder mills No. 215045 / 215050 / 215055

Extremely **strong inserts** to the standard ISO dimensions, precision sintered and ground. High strength and wear resistance due to micro-grain structure.

Note: Standard application values for $a_e = 0.3 \times D$ / $a_{p\,max} = 5$ mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
21 5065	**780**	**700**	**610**													**480**				●	○	○	
21 5066	**780**	**780**	**780**														●			●		○	
21 5068				**250**	**180**	**170**	110					120	100							○		●	
21 5069				**360**	**250**	**210**	200	180				**230**	140		160				●	●	●	●	●
21 5073				400	280	235	**220**	**205**				290	180		180				●	○	○	●	●
21 5075				270	190	160	150	140				**190**	**120**		120				○	○	○	●	
21 5078				**320**	**215**	**180**	170	160				**210**	140	40	140			●	●	●	●	●	○
21 5080				**280**	**210**	**180**	160	140				**180**	**140**					●		○	●		





21 5065 | 21 5069 | 21 5073 | 21 5075 | 21 5080

Type				ALU	ST900	ST1400	INOX	UNI	
21A 21 5065	Garant	SOMT 09T304 FR	HU7710	eShop	–	–	–	–	10
21B 21 5066	Garant	SOMT 09T304 FR **diamond-coated**	HB7810	eShop	–	–	–	–	1
21A 21 5068	Garant	SOMT 09T304 TR	HB7525	–	eShop	–	–	–	10
21A 21 5069	Garant	SOMT 09T304 TR	HB7525	–	eShop	–	–	–	10
21A 21 5073	Garant	SOMT 09T304 TR	HB7515	–	–	eShop	–	–	10
21A 21 5075	Garant	SOMT 09T304 TR	HB7635	–	–	–	eShop	–	10
21A 21 5078	Garant	SOMT 09T304 TR	HB735	–	–	–	–	eShop	10
22A 21 5080	HOLEX	SOMT 09T304 ER	HBM025	–	–	–	–	eShop	10
Corner radius			mm			0.4			
f_z			mm	0.13	0.14	0.12	0.11	–	



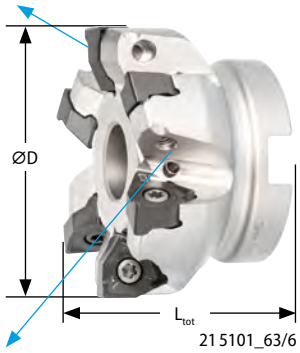
POWER CARD Garant

Shoulder mill 90° for inserts XNEX0806..

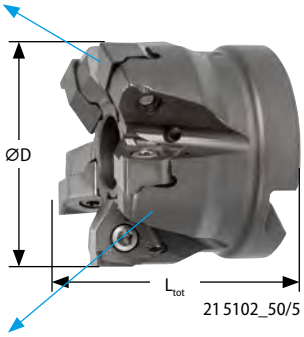
Robust shoulder milling cutter. Insert seats enclose the inserts on several sides for stable machining conditions.
For use in combination with indexable insert 215117 UNI as a **high feed rate indexable face mill**.

Application: With double-sided 3-edge inserts XNEX0806.. or single-sided 3-edge inserts XNEX0806.. **High feed rate.**

Note: GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.



21 5101_63/6



21 5102_50/5

∅ D / number of teeth Z	210 21 5101 Garant	220 21 5102 HOLEX	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore ∅	suitable indexable insert	Set of insert screws
	Shoulder mill 90°						
mm	with bore	with bore	mm	mm	mm		
40/4	eShop	eShop	4	40	16	XNEX 0806..	219798 1 (15IP; 3.8 Nm)
50/5	eShop	eShop	4	40	22	XNEX 0806..	219798 1 (15IP; 3.8 Nm)
63/6	eShop	eShop	4	40	22	XNEX 0806..	219798 1 (15IP; 3.8 Nm)
80/7	eShop	eShop	4	50	27	XNEX 0806..	219798 1 (15IP; 3.8 Nm)
100/8	eShop	eShop	4	50	32	XNEX 0806..	219798 1 (15IP; 3.8 Nm)

Milling inserts XNEX 0806.. for shoulder mill No. 215101 - 215102

6 edges ensure good value for money, due to a low price per cutting edge.
21 5184 – 21 5112 – Double-sided 2×3-edge carbide indexable insert for **shoulder milling operations.**
21 5117 – Single-sided 3-edge carbide indexable insert with special **geometry for high feed rates.**
Programming radius at $a_{p\,max}$ of 2.4 mm.

Note: Standard application values for $a_e = 0.3 \times D$ / $a_p = 3$mm.
21 5117 – $a_e = 0.6 \times D$ / $a_p = 0.8$ mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 5104	1100	1100	900																○	○	●	●	
21 5106						250	220	200											○	○	●	●	
21 5108														160	120				○	○	●	●	
21 5112/5117				280	240	220	200	180						120	95			●	○	○	●	●	
21 5184	1320	1320	1100																●		●		
21 5185				335	300	280													○	○	●	●	
21 5186						270	250	230											○	○	●	●	
21 5188														190	130				○	○	●	●	
21 5190						240	200	180									290		○		●		
21 5192				300	260	240	220	200						140	110			●	●	●	●	●	


21 5184


21 5185


21 5186


21 5188


21 5190


21 5192


21 5117

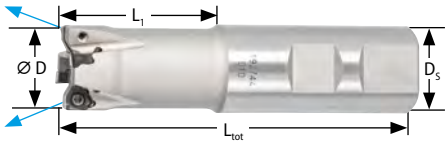
Type				ALU	ST900	ST1400	INOX	GGG	UNI		$a_{p\,max}$ mm
21A 21 5184	Garant	XNEX 080608	HU7710	eShop	–	–	–	–	–	10	4
22A 21 5104	HOLEX		HUM310	eShop	–	–	–	–	–	10	4
21A 21 5185	Garant		HB7525	–	eShop	–	–	–	–	10	4
21A 21 5186			HB7515	–	–	eShop	–	–	–	10	4
22A 21 5106	HOLEX		HBM015	–	–	eShop	–	–	–	10	4
21A 21 5188	Garant		HB7635	–	–	–	eShop	–	–	10	4
22A 21 5108	HOLEX		HBM130	–	–	–	eShop	–	–	10	4
21A 21 5190	Garant		HB7710	–	–	–	–	eShop	–	10	4
21A 21 5192			HB735	–	–	–	–	–	eShop	10	4
22A 21 5112			HBM20	–	–	–	–	–	eShop ■	10	4
22A 21 5117	HOLEX	XNEX 080610 **High feed rate**	HBM20	–	–	–	–	–	eShop	10	1
f_z (21 5184, 21 5104, 21 5185, 21 5186, 21 5106, 21 5108, 21 5190)			mm	0.15	0.18	0.21	0.12	0.23	–		
f_z (21 5188)			mm	–	–	–	0.13	–	–		

90° POWER CARD Garant

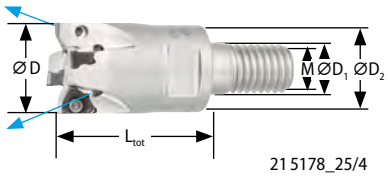
Garant Shoulder mill 90° for insert XNEX040308

The corner milling system for **stepless shoulder milling**. The compact insert size ensures **immense stability** with an extra-high number of cutting edges – resulting in **very high productivity.**

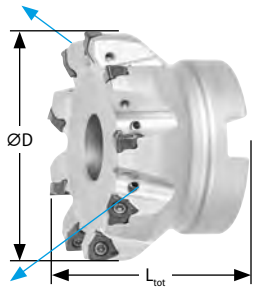
Note: Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 7IP**.



21 5176_25/4



21 5178_25/4



21 5182_63/9

Ø D / number of teeth Z	210 21 5176	210 21 5177	maximum cutting depth $a_{p\,max}$	L_1		L_{tot}		Ø D_s h6	suitable indexable insert	Set of insert screws
	Shoulder mill 90°			21 5176	21 5177	21 5176	21 5177			
mm	**Weldon shank**	**Plain shank**	mm	mm	mm	mm	mm	mm		
20/3	eShop	eShop	2	40	40	90	150	20	XNEX 040308	219878 1 (7IP; 1.2 Nm)
25/4	eShop	eShop	2	44	50	100	170	25	XNEX 040308	219878 1 (7IP; 1.2 Nm)
32/5	eShop	eShop	2	50	70	110	195	32	XNEX 040308	219878 1 (7IP; 1.2 Nm)

Ø D / number of teeth Z	210 21 5178	maximum cutting depth $a_{p\,max}$	L_{tot}	Ø D_1 h6	Ø D_2	Mounting thread M	suitable indexable insert	Set of insert screws
	Shoulder mill 90°							
mm	**with threaded shank**	mm	mm	mm	mm			
20/3	eShop	2	30	10.5	17.7	M10	XNEX 040308	219878 1 (7IP; 1.2 Nm)
25/4	eShop	2	35	12.5	20.7	M12	XNEX 040308	219878 1 (7IP; 1.2 Nm)
32/5	eShop	2	40	17	28.7	M16	XNEX 040308	219878 1 (7IP; 1.2 Nm)

Ø D / number of teeth Z	210 21 5182	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	suitable indexable insert	Set of insert screws
	Shoulder mill 90°					
mm	**with bore**	mm	mm	mm		
32/6	eShop	2	40	16	XNEX 040308	219878 1 (7IP; 1.2 Nm)
40/6	eShop	2	40	16	XNEX 040308	219878 1 (7IP; 1.2 Nm)
50/8	eShop	2	40	22	XNEX 040308	219878 1 (7IP; 1.2 Nm)
63/9	eShop	2	40	22	XNEX 040308	219878 1 (7IP; 1.2 Nm)

Garant Milling inserts XNEX040308 for shoulder mill No. 215176 - 215182

Double-sided 3-edged indexable inserts. High-performance tool materials for **extremely reliable processes.**

Note: Standard application values for $a_e = 0.3 \times D$ / $a_p = 2$mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
21 5195				**335**	**300**	**280**	240	220											○	○	●	●	
21 5198														**190**	**130**				○	○	●	●	
21 5199				**300**	**260**	**240**	**220**	**200**						**140**	**110**			●	●	●	●	●	







Type			ST900	INOX	UNI		$a_{p\,max}$ mm
21A **21 5195**	XNEX 040308	HB7525	eShop	–	–	**10**	2
21A **21 5198**		HB7635	–	eShop	–	**10**	2
21A **21 5199**		HB735	–	–	eShop	**10**	2
f_z		mm	0.12	0.1	–		

90° POWER CARD Garant

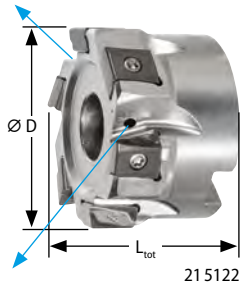
Garant GARANT Power Tang 90° tangential high-performance shoulder mill for LO.U1307...

Maximum stability due to tangentially arranged inserts. High feed rate values for maximum metal removal rate due to optimum indexable insert with stability in the direction of the cutting force.

Note: Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.

Single-row

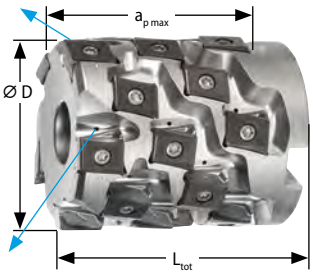
∅ D / number of effective cutting edges Z	210 21 5122 GARANT Power Tang 90° tangential high-performance shoulder mill	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore ∅	Set of insert screws
mm	**with bore**	mm	mm	mm	
40/4	eShop	12	40	16	219882 (15IP; 3.0 Nm)
40/5	eShop	12	40	16	219882 (15IP; 3.0 Nm)
50/5	eShop	12	40	22	219882 (15IP; 3.0 Nm)
50/6	eShop	12	40	22	219882 (15IP; 3.0 Nm)
63/6	eShop	12	40	27	219882 (15IP; 3.0 Nm)
63/8	eShop	12	40	27	219882 (15IP; 3.0 Nm)
80/7	eShop	12	50	27	219882 (15IP; 3.0 Nm)
80/10	eShop	12	50	27	219882 (15IP; 3.0 Nm)
100/9	eShop	12	50	32	219882 (15IP; 3.0 Nm)
100/12	eShop	12	50	32	219882 (15IP; 3.0 Nm)
125/12	eShop	12	63	40	219882 (15IP; 3.0 Nm)
125/15	eShop	12	63	40	219882 (15IP; 3.0 Nm)



21 5122

Multi-row

∅ D / Z_{eff}	210 21 5126 GARANT Power Tang 90° tangential high-performance shoulder mill	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore ∅	Set of insert screws
mm	**with bore**			mm	mm	mm	
50/3	eShop	3	12	47	70	27	219882 (15IP; 3.0 Nm)
50/4	eShop	4	20	59	80	27	219882 (15IP; 3.0 Nm)
63/4	eShop	4	16	47	65	27	219882 (15IP; 3.0 Nm)
63/4L	eShop	4	28	81	93	27	219882 (15IP; 3.0 Nm)
63/5	eShop	5	25	59	75	27	219882 (15IP; 3.0 Nm)
80/5	eShop	5	30	70	90	32	219882 (15IP; 3.0 Nm)
100/6	eShop	6	42	81	93	40	219882 (15IP; 3.0 Nm)

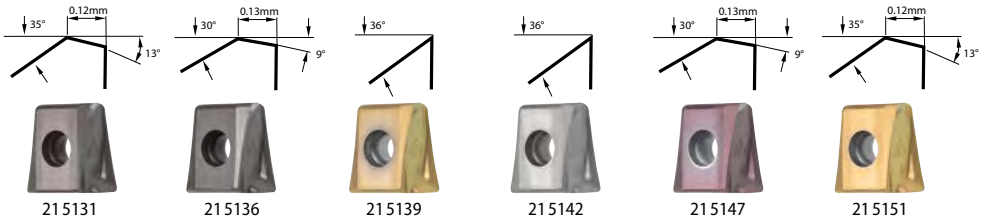


21 5126

Garant Milling inserts LO.U130708.. for GARANT Power Tang No. 215122 / 215126

Note:
21 5131/5133/5147/5151 – Standard application values for $a_e = 0.3 \times D$ / $a_p = 10$ mm
21 5136–5142 – Standard application values for $a_e = 0.3 \times D$ / $a_p = 8$ mm

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 5131				**255**	**190**	**160**	130	90											○	○	●	●	
21 5133				**190**	**150**	**125**	95	65						100	85				○	○	●	●	
21 5136							**135**	**95**	45								250		○	○	●	●	
21 5139														**120**	**95**	**45**			●	●	○	○	
21 5142														130	105	**50**			●	●	○	○	
21 5147																	**300**		●	●	●	●	
21 5151				**200**	**160**	**130**	**100**	**70**						**110**	**90**	**40**	**200**	●	●	●	●	●	



21 5131 21 5136 21 5139 21 5142 21 5147 21 5151

Type			ST900	ST1400	INOX	TI	GG	UNI	
21A 21 5131	LOEU 130708 TR-M	HB7525	eShop	–	–	–	–	–	10
21A 21 5133	LOMU 130708 TR-M	HB9520	eShop	–	–	–	–	–	10
21A 21 5136	LOEU 130708 TR-H	HB7515	–	eShop	–	–	–	–	10
21A 21 5139	LOEU 130708 R-L	HB7635	–	–	eShop	–	–	–	10
21A 21 5142		HB7940	–	–	–	eShop	–	–	10
21A 21 5147	LOEU 130708 TR-H	HB7710	–	–	–	–	eShop	–	10
21A 21 5151	LOEU 130708 TR-M	HB735	–	–	–	–	–	eShop	10
f_z		mm	0.2	0.22	0.14	0.12	0.24	–	

GARANT Power Tang 90° tangential high-performance shoulder mill for LO.U0904...

Single-row

Maximum stability due to tangentially arranged inserts.
High feed rate values for maximum metal removal rate due to optimum indexable insert with stability in the direction of the cutting force.

Note: Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.



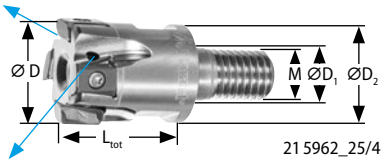
21 5956_25/4



21 5952_25/3

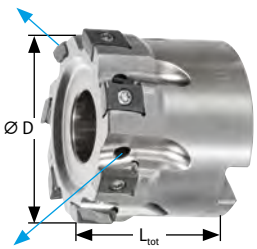
Ø D / number of effective cutting edges Z	210 21 5950	210 21 5952	maximum cutting depth a_p max	L_1	L_{tot}		Ø D_s h6	Set of insert screws
	GARANT Power Tang 90° tangential high-performance shoulder mill							
	wide pitch				21 5950	21 5952		
mm	Weldon shank	Plain shank	mm	mm	mm	mm	mm	
20/2	eShop	eShop	8	30	101	160	20	219868 2 (8IP; 1.2 Nm)
25/3	eShop	eShop	8	30	105	180	25	219868 2 (8IP; 1.2 Nm)
32/3	eShop	eShop	8	30	105	200	32	219868 2 (8IP; 1.2 Nm)

Ø D / number of effective cutting edges Z	210 21 5954	210 21 5956	maximum cutting depth a_p max	L_1		L_{tot}		Ø D_s h6	Set of insert screws
	GARANT Power Tang 90° tangential high-performance shoulder mill								
	close pitch			21 5954	21 5956	21 5954	21 5956		
mm	Weldon shank	Plain shank	mm	mm	mm	mm	mm	mm	
16/2	eShop	eShop	8	25	30	78	90	16	219868 1 (8IP; 1.2 Nm)
20/3	eShop	eShop	8	30	30	90	110	20	219868 2 (8IP; 1.2 Nm)
25/4	eShop	eShop	8	30	30	105	120	25	219868 2 (8IP; 1.2 Nm)
32/5	eShop	eShop	8	30	30	105	130	32	219868 2 (8IP; 1.2 Nm)



21 5962_25/4

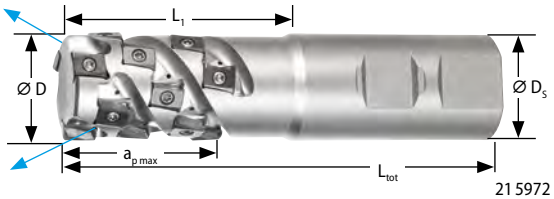
Ø D / number of effective cutting edges Z	210 21 5960	210 21 5962	maximum cutting depth a_p max	L_{tot}	Ø D_1 h6	Ø D_2	Mounting thread M	Set of insert screws
	GARANT Power Tang 90° tangential high-performance shoulder mill							
	wide pitch with threaded shank	close pitch with threaded shank						
mm			mm	mm	mm	mm		
16/2	–	eShop	8	23	8.5	13.5	M8	219868 1 (8IP; 1.2 Nm)
20/2	eShop	–	8	28	10.5	18.5	M10	219868 2 (8IP; 1.2 Nm)
20/3	–	eShop	8	28	10.5	18.5	M10	219868 2 (8IP; 1.2 Nm)
25/3	eShop	–	8	30	12.5	23	M12	219868 2 (8IP; 1.2 Nm)
25/4	–	eShop	8	30	12.5	23	M12	219868 2 (8IP; 1.2 Nm)
32/3	eShop	–	8	35	17	30	M16	219868 2 (8IP; 1.2 Nm)
32/5	–	eShop	8	35	17	30	M16	219868 2 (8IP; 1.2 Nm)



21 5968_50/7

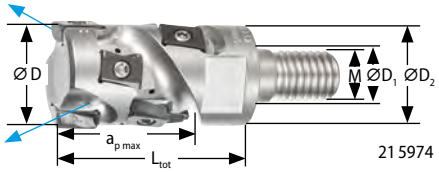
Ø D / number of effective cutting edges Z	210 21 5966	210 21 5968	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Set of insert screws
	GARANT Power Tang 90° tangential high-performance shoulder mill					
	wide pitch with bore	close pitch with bore				
mm			mm	mm	mm	
40/4	eShop	–	8	40	16	219868 2 (8IP; 1.2 Nm)
40/6	–	eShop	8	40	16	219868 2 (8IP; 1.2 Nm)
50/5	eShop	–	8	40	22	219868 2 (8IP; 1.2 Nm)
50/7	–	eShop	8	40	22	219868 2 (8IP; 1.2 Nm)
63/7	eShop	–	8	40	27	219868 2 (8IP; 1.2 Nm)
63/9	–	eShop	8	40	27	219868 2 (8IP; 1.2 Nm)

Multi-row



21 5972

Ø D / Zeff	210 21 5972 GARANT Power Tang 90° tangential high-performance shoulder mill	Number of effective inserts Zeff	Number of indexable inserts	maximum cutting depth ap max	L1	Ltot	Ø Ds h6	Set of insert screws
mm	**Weldon shank**			mm	mm	mm	mm	
25/2	eShop	2	10	39	54	112	25	219868 2 (8IP; 1.2 Nm)
32/3	eShop	3	18	47	69	131	32	219868 2 (8IP; 1.2 Nm)
40/4	eShop	4	24	47	69	131	32	219868 2 (8IP; 1.2 Nm)



21 5974

Ø D / Zeff	210 21 5974 GARANT Power Tang 90° tangential high-performance shoulder mill	Number of effective inserts Zeff	Number of indexable inserts	maximum cutting depth ap max	Ltot	Ø D1 h6	Ø D2	Mounting thread M	Set of insert screws
mm	**with threaded shank**			mm	mm	mm	mm		
25/2	eShop	2	8	32	45	12.5	23	M12	219868 2 (8IP; 1.2 Nm)
32/3	eShop	3	15	39	50	17	30	M16	219868 2 (8IP; 1.2 Nm)

Garant Milling inserts LO.U0904.. for GARANT Power Tang 215950 - 215974

Note:
21 5990 – Standard application values for $a_e = 0.3 \times D$ / $a_p = 3.5$mm
21 5980–5982/5992–5996 – Standard application values for $a_e = 0.3 \times D$ / $a_p = 4.5$mm
21 5986/5988 – Standard application values for $a_e = 0.3 \times D$ / $a_p = 4$mm

Suitable for/ vc [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 5980				**280**	**210**	**175**	145	100											○	○	●	●	
21 5982				**210**	**165**	**140**	105	70						100	95				○	○	●	●	
21 5986							**150**	**105**	50								275		○	○	●	●	
21 5988														**130**	**105**	50			●	●	○	○	
21 5990														145	115	**55**			●	●	○	○	
21 5992																	**330**		●	●	●	●	
21 5994/5996				**220**	**175**	**145**	**110**	**75**						**120**	**100**	**45**	**220**	●	●	●	●	●	




21 5980 21 5986 21 5988 21 5990 21 5992 21 5994

Type			ST900	ST1400	INOX	TI	GG	UNI	
21A 21 5980	LOEU 090408 TR-M	HB7525	eShop	–	–	–	–	–	10
21A 21 5982	LOMU 090408 TR-M	HB9520	eShop	–	–	–	–	–	10
21A 21 5986	LOEU 090408 TR-M	HB7515	–	eShop	–	–	–	–	10
21A 21 5988	LOEU 090408 R-L	HB7635	–	–	eShop	–	–	–	10
21A 21 5990		HB7940	–	–	–	eShop	–	–	10
21A 21 5992	LOEU 090408 TR-H	HB7710	–	–	–	–	eShop	–	10
21A 21 5994	LOEU 090404 R-L	HB735	–	–	–	–	–	eShop	10
21A 21 5996	LOEU 090408 TR-M	HB735	–	–	–	–	–	eShop	10
f_z		mm	0.11	0.1	0.08	0.07	0.13	–	

MTC POWER CARD Garant

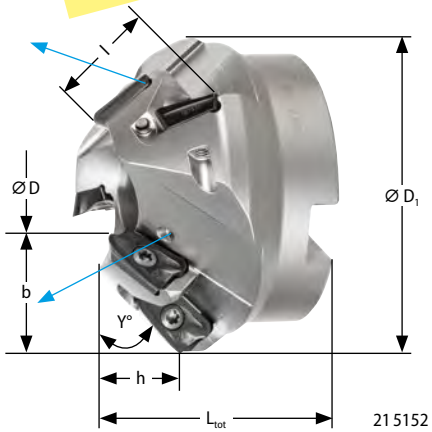
GARANT Softcut® high-performance indexable chamfer mill for AP.T 1805..

Robust plug-in chamfer mill. Insert seat enclosed on several sides for stabilisation of the cutters and to take up the vertical and radial forces.

Application: For wide chamfers in steel fabrications.
Outstandingly suitable for roughing and semi-roughing applications.

Note: Stepless surfaces are achieved.
Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.

Other configurations on request



γ°	75	60	45	30	15
Correction factor fz	1	1.2	1.4	2	3.5

Angle γ	210 21 5152 GARANT Softcut chamfer mill MTC with bore	Number of effective inserts Z_{eff}	Number of indexable inserts	L_{tot}	smallest Ø D	largest Ø D_1	achievable chamfer width b	achievable chamfer length l	achievable chamfer height h	Mounting bore Ø	Feed rate per tooth at h_{max}	Set of insert screws
degrees				mm	mm	mm	mm	mm	mm	mm	mm	
15	eShop	3	6	50	35	92	27.8	29.5	7.5	27	0.4	219808 (15IP; 3.8 Nm)
30	eShop	3	6	50	35	85	24.3	29.5	14	27	0.2	219808 (15IP; 3.8 Nm)
45	eShop	3	6	50	35	76	20	29.5	20	27	0.14	219808 (15IP; 3.8 Nm)
60	eShop	3	6	50	35	64	14	29.5	24.3	27	0.12	219808 (15IP; 3.8 Nm)
75	eShop	3	6	60	35	50	7.5	29.5	27.8	22	0.11	219808 (15IP; 3.8 Nm)

90° MTC POWER CARD Garant

GARANT Softcut® high-performance indexable shoulder mill 90° MTC for indexable inserts AP.T 1805..

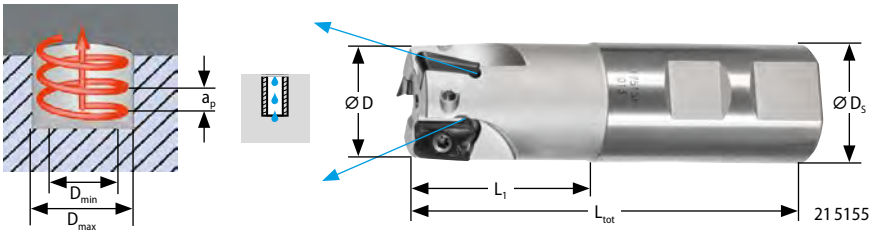
High precision square shoulder milling cutter with irregular pitch for very smooth cutting, very high precision and cutting power. High performance indexable square shoulder milling cutter **with special geometry for reduced cutting forces for MTC applications** under **unstable conditions** or **for spindles with low drive power.**

Application: For face milling to large depths, also slotting.
General use in all steels including stainless steels.
Especially for **MTC (Multi Task Cutting)** use on the new generation of turning / milling centres **(MTM).**

Note: The insert pocket must be modified when using indexable inserts with a radius greater than 3.1 mm.
Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.

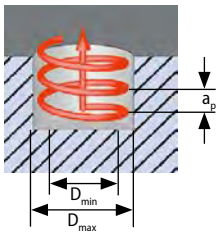
Single-row

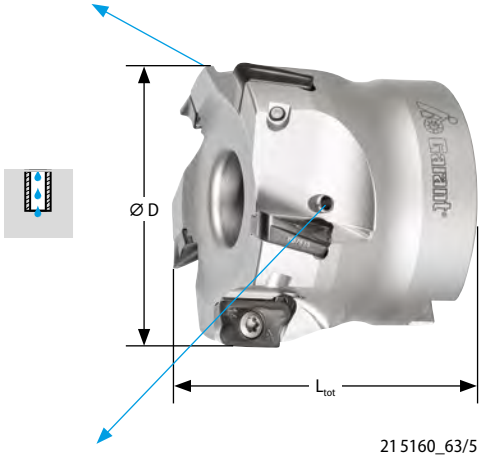
21 5157 – Without internal cooling.



Ø D / number of teeth Z	210 21 5155 GARANT Softcut 90° shoulder mill MTC short Weldon shank	210 21 5157 MTC long Plain shank	L_1 21 5155	L_1 21 5157	L_{tot} 21 5155	L_{tot} 21 5157	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm			mm	mm	mm	mm	mm	mm	mm	mm	degrees	mm		
25/2	eShop	eShop	44	45	100	200	25	44	48	1	1.69	16.95	AP.. 1805..	219824 (15IP; 3.8 Nm)
32/3	eShop	eShop	50	50	110	250	32	58	62	1	1.2	23.95	AP.. 1805..	219824 (15IP; 3.8 Nm)
40/4	eShop	–	55	–	115	–	32	74	78	1	0.9	31.95	AP.. 1805..	219808 (15IP; 3.8 Nm)

Size 160/10 – For arbors to DIN 2079, with 4 additional attachment holes.
Without internal cooling.

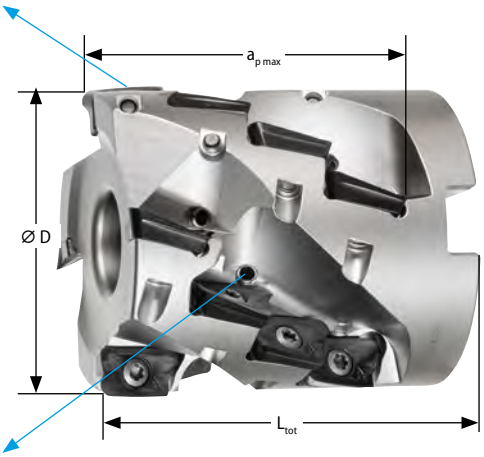




21 5160_63/5

Ø D / number of teeth Z	210 21 5160 GARANT Softcut 90° shoulder mill MTC with bore	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}	suitable indexable insert	Set of insert screws
mm		mm	mm	mm	mm	mm	degrees	mm		
40/3	eShop	40	16	74	78	1	0.9	31.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
40/4	eShop	40	16	74	78	1	0.9	31.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
50/4	eShop	40	22	94	98	0.9	0.68	41.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
50/5	eShop	40	22	94	98	0.9	0.68	41.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
52/5	eShop	40	22	98	102	0.9	0.65	43.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
63/5	eShop	50	27	120	124	0.8	0.52	54.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
63/6	eShop	50	27	120	124	0.8	0.52	54.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
66/6	eShop	50	27	126	130	0.8	0.49	57.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
80/6	eShop	50	27	154	158	0.8	0.4	71.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
80/7	eShop	50	27	154	158	0.8	0.4	71.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
100/7	eShop	50	32	194	198	0.85	0.31	91.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
100/8	eShop	50	32	194	198	0.85	0.31	91.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
125/8	eShop	63	40	244	248	0.85	0.24	116.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
125/9	eShop	63	40	244	248	0.85	0.24	116.95	AP.. 1805..	219808 (15IP; 3.8 Nm)
160/10	eShop	63	40	314	318	0.85	0.19	151.95	AP.. 1805..	219808 (15IP; 3.8 Nm)

Multi-row



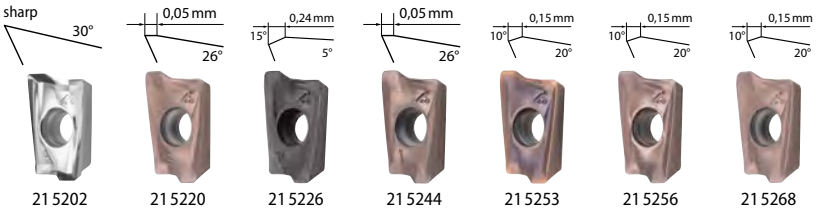
21 5161_63/4

Ø D / Z_{eff}	210 21 5161 GARANT Softcut 90° shoulder mill MTC with bore	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Set of insert screws
mm				mm	mm	mm	
50/3	eShop	3	12	55	72	22	219808 (15IP; 3.8 Nm)
50/4	eShop	4	8	28	50	22	219808 (15IP; 3.8 Nm)
63/4	eShop	4	16	55	72	27	219808 (15IP; 3.8 Nm)
63/5	eShop	5	10	28	50	27	219808 (15IP; 3.8 Nm)
80/5	eShop	5	20	55	82	32	219808 (15IP; 3.8 Nm)
80/6	eShop	6	12	28	50	32	219808 (15IP; 3.8 Nm)

Garant Milling inserts AP.T 1805.. for GARANT Softcut® milling cutters No. 215152 – 215161

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
21 5202–21 5212	600	500	400																○		●		
21 5214	600	600	550														●		○		●		
21 5220				340	300	260													○		●		
21 5223–21 5229							220	200											○		●		
21 5231–21 5242							170	150											○		●		
21 5243–21 5252/ 5255/5280–21 5285													170	130					○		●		
21 5253/5254															40				○		●		
21 5256/5257																250			○		●		
21 5262–21 5277				330	290	250							150	120				●	○		●		

Note: Standard application values for $a_e = 0.3 \times D$ / $a_p = 5$ mm, $a_{p\,max} = 9$ mm.



21 5202 | 21 5220 | 21 5226 | 21 5244 | 21 5253 | 21 5256 | 21 5268

Type			ALU	ST900	ST1400	INOX	TI	GG	UNI	
21A 21 5202	APET 180505 FR	HU7810	eShop	–	–	–	–	–	–	10
21A 21 5208	APET 180508 FR	HU7810	eShop	–	–	–	–	–	–	10
21A 21 5210	APET 180520 FR	HU7810	eShop	–	–	–	–	–	–	10
21A 21 5211	APET 180531 FR	HU7810	eShop	–	–	–	–	–	–	10
21A 21 5212	APET 180540 FR	HU7810	eShop	–	–	–	–	–	–	10
21B 21 5214	APET 180508 FR **diamond-coated**	HB7810	eShop	–	–	–	–	–	–	1
21A 21 5220	APMT 180508 ER	HB7520	–	eShop	–	–	–	–	–	10
21A 21 5225	APMT 180504 SR	HB7510	–	–	eShop	–	–	–	–	10
21A 21 5226	APMT 180508 SR	HB7510	–	–	eShop	–	–	–	–	10
21A 21 5227	APMT 180512 SR	HB7510	–	–	eShop	–	–	–	–	10
21A 21 5223	APMT 180516 SR	HB7510	–	–	eShop	–	–	–	–	10
21A 21 5228	APMT 180520 SR	HB7510	–	–	eShop	–	–	–	–	10
21A 21 5224	APMT 180524 SR	HB7510	–	–	eShop	–	–	–	–	10
21A 21 5229	APMT 180531 SR	HB7510	–	–	eShop	–	–	–	–	10
21A 21 5231	APMT 180504 SR	HB7520	–	–	eShop	–	–	–	–	10
21A 21 5232	APMT 180508 SR	HB7520	–	–	eShop	–	–	–	–	10
21A 21 5238	APMT 180512 SR	HB7520	–	–	eShop	–	–	–	–	10
21A 21 5240	APMT 180516 SR	HB7520	–	–	eShop	–	–	–	–	10
21A 21 5239	APMT 180520 SR	HB7520	–	–	eShop	–	–	–	–	10
21A 21 5242	APMT 180524 SR	HB7520	–	–	eShop	–	–	–	–	10
21A 21 5241	APMT 180531 SR	HB7520	–	–	eShop	–	–	–	–	10
21A 21 5243	APMT 180504 ER	HB7630	–	–	–	eShop	–	–	–	10
21A 21 5244	APMT 180508 ER	HB7630	–	–	–	eShop	–	–	–	10
21A 21 5250	APMT 180512 ER	HB7630	–	–	–	eShop	–	–	–	10
21A 21 5251	APMT 180516 ER	HB7630	–	–	–	eShop	–	–	–	10
21A 21 5252	APMT 180520 ER	HB7630	–	–	–	eShop	–	–	–	10
21A 21 5255	APMT 180524 ER	HB7630	–	–	–	eShop	–	–	–	10
21A 21 5280	APMT 180504 ER	HB8630	–	–	–	eShop	–	–	–	10
21A 21 5281	APMT 180508 ER	HB8630	–	–	–	eShop	–	–	–	10
21A 21 5282	APMT 180512 ER	HB8630	–	–	–	eShop	–	–	–	10
21A 21 5283	APMT 180516 ER	HB8630	–	–	–	eShop	–	–	–	10
21A 21 5284	APMT 180520 ER	HB8630	–	–	–	eShop	–	–	–	10
21A 21 5285	APMT 180524 ER	HB8630	–	–	–	eShop	–	–	–	10
21A 21 5253		HB7930	–	–	–	–	eShop	–	–	10
21A 21 5254	APMT 180508 ER	HB7935	–	–	–	–	eShop	–	–	10
21A 21 5256		HB7730	–	–	–	–	–	eShop ■	–	10
21A 21 5257	APMT 180512 ER	HB7730	–	–	–	–	–	eShop	–	10
21A 21 5262	APMT 180508 TR	HB7520	–	–	–	–	–	–	eShop	10
21A 21 5268	APMT 180512 TR	HB7520	–	–	–	–	–	–	eShop	10
21A 21 5274	APMT 180516 TR	HB7520	–	–	–	–	–	–	eShop	10
21A 21 5275	APMT 180520 TR	HB7520	–	–	–	–	–	–	eShop	10
21A 21 5277	APMT 180524 TR	HB7520	–	–	–	–	–	–	eShop	10
21A 21 5276	APMT 180531 TR	HB7520	–	–	–	–	–	–	eShop	10
f_z		mm	0.2	0.15	0.25	0.2	0.17	0.2	–	

Garant GARANT SOFTCUT® 90° HIGH-PERFORMANCE SHOULDER MILL.



Marking indicating suitability for heavy-duty cutting.

Reliable and profitable

- Very good perpendicularity for shoulder cuts.
- Impressive surface quality.
- Suitable for circular interpolation milling, plunging, ramping.
- Optimised chip breaker geometry for machining tempered steels (21 5444 – 21 5453 ST1400).
- Highly positive surface geometry for a soft cut in all materials.
- First-rate innovative tool materials and coatings.



Application example

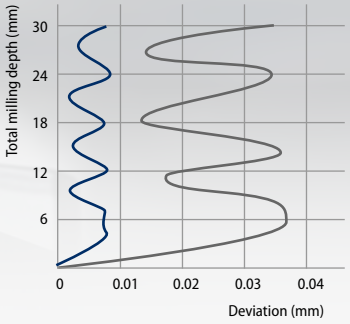
SIDE MILLING a workpiece, material C45

Technology data:

- v_c = 160 m/min
- f_z = 0.15 mm
- a_p = 6 mm
- a_e = 3 mm
- Tool: GARANT Softcut® 90° shoulder mill 21 5411 50/7
- Insert: GARANT Softcut® 90° 21 5438 ST900

90° accuracy – comparison

Test result with a_p = 6 mm (shoulder height 30 mm)

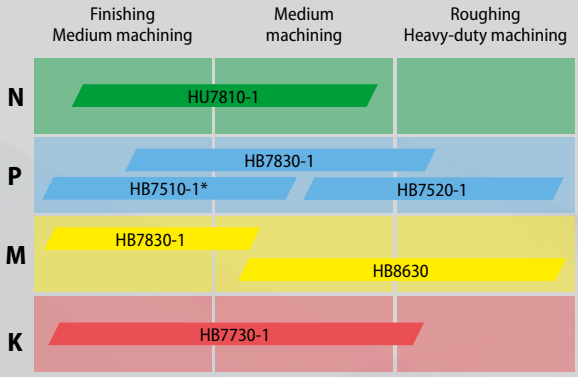


GARANT Softcut® 90° 21 5438 ST900
Step joint offset of less than 0.01 mm

Competitors
Step joint offset of up to 0.035 mm

Tool material selection

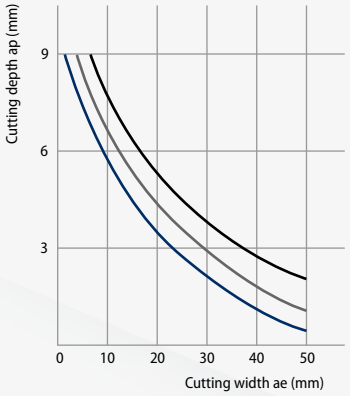
Carbide tool materials with PVD coating



* CVD-coated

Recommended cutting conditions for shoulder milling

Using the example of 21 5411_50/7 and chip breaker ST900



f_z = 0.05 mm/z

f_z = 0.10 mm/z

f_z = 0.15 mm/z

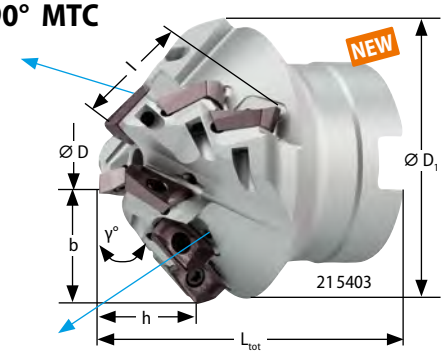
MTC POWER CARD Garant

GARANT Softcut® high-performance indexable chamfer mill 90° MTC for AO.T1104..

Robust plug-in chamfer mill. Insert seat enclosed on several sides for stabilisation of the cutters and to take up the vertical and radial forces.

Application: For wide chamfers in steel fabrications.
Outstandingly suitable for roughing and semi-roughing applications.

Note: Stepless surfaces are achieved with indexable inserts No. 215431-215487.
Use GARANT torque screwdriver TQ No. **211750 size 1.5** with bit No. **674252 size 8IP**.



γ°	75	60	45	30	15
Correction factor fz	1	1.2	1.4	2	3.5

Angle γ	210 21 5403 GARANT Softcut indexable chamfer mill 90° MTC with bore	Number of effective inserts Z_{eff}	Number of indexable inserts	L_{tot}	smallest Ø D	largest Ø D_1	achievable chamfer width b	achievable chamfer length l	achievable chamfer height h	Mounting bore Ø	Feed rate per tooth at h_{max}	Set of insert screws
degrees				mm	mm	mm	mm	mm	mm	mm	mm	
15	eShop	3	9	55	17	69	26.4	27.5	7	22	0.4	219799 10 (8IP; 1.5 Nm)
30	eShop	3	9	55	17	66	24.5	27.5	14	22	0.2	219799 10 (8IP; 1.5 Nm)
45	eShop	3	9	55	17	57	20.1	27.5	20	22	0.14	219799 10 (8IP; 1.5 Nm)
60	eShop	3	9	52	17	45	14.4	27.5	25	16	0.12	219799 10 (8IP; 1.5 Nm)
75	eShop	3	9	60	21	36	7.5	27.5	28	16	0.11	219799 10 (8IP; 1.5 Nm)

90° MTC POWER CARD Garant

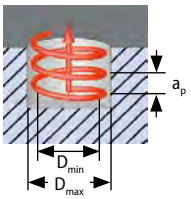
GARANT Softcut® high-performance indexable shoulder mill 90° MTC for AO.T1104..

High precision square shoulder mill with irregular pitch for very smooth cutting, very high precision and cutting power.
With special geometry for reduced cutting forces for MTC applications under **unstable conditions** or for spindles with low drive power.

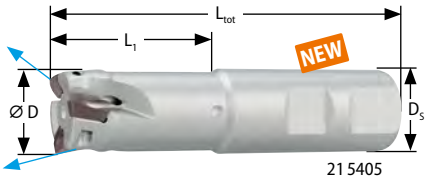
Application: For shoulder milling in large depths, also slotting. General use in all steel materials as well as stainless and acid-resistant steels.

Note: Use GARANT torque screwdriver TQ No. **211750 size 1.5**
with bit No. **674252 size 8IP**.

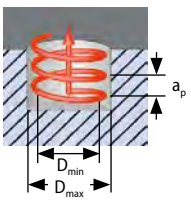
Single-row

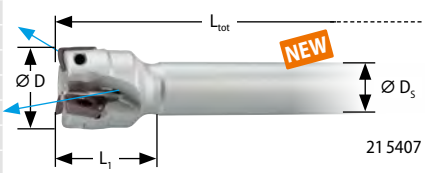


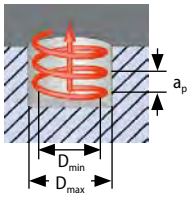
Ø D / number of effective cutting edges Z	210 21 5405 GARANT Softcut indexable shoulder mill 90° MTC Weldon shank	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Set of insert screws
mm		mm	mm	mm	mm	mm	mm	degrees	
14/1	eShop	37	85	16	19	25.3	5	8	219799 11 (8IP; 1.5 Nm)
16/2	eShop	37	100	16	21.7	29.3	7.6	10.5	219799 11 (8IP; 1.5 Nm)
18/2	eShop	40	90	20	25.2	33.3	6.7	8.1	219799 11 (8IP; 1.5 Nm)
20/2	eShop	40	90	20	29.1	37.3	6	6.5	219799 10 (8IP; 1.5 Nm)
20/3	eShop	40	90	20	29.1	37.3	6	6.5	219799 10 (8IP; 1.5 Nm)
25/3	eShop	49	105	25	38.9	47.3	4.8	4.1	219799 10 (8IP; 1.5 Nm)
25/4	eShop	49	105	25	38.9	47.3	4.8	4.1	219799 10 (8IP; 1.5 Nm)
32/5	eShop	50	110	32	52.8	61.3	4	2.7	219799 10 (8IP; 1.5 Nm)



Ø D / number of effective cutting edges Z	210 21 5407 GARANT Softcut indexable shoulder mill 90° MTC Plain shank	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Set of insert screws
mm		mm	mm	mm	mm	mm	mm	degrees	
16/2	eShop	50	140	16	29	30	7.6	10.5	219799 11 (8IP; 1.5 Nm)
18/2	eShop	30	140	16	23	34	6.7	8.1	219799 11 (8IP; 1.5 Nm)
20/2L	eShop	30	160	18	37	38	6	6.5	219799 10 (8IP; 1.5 Nm)
20/2	eShop	50	160	20	37	38	6	6.5	219799 10 (8IP; 1.5 Nm)
20/3	eShop	25	160	16	37	38	6	6.5	219799 10 (8IP; 1.5 Nm)
25/2L	eShop	35	180	20	47	48	4.8	4.1	219799 10 (8IP; 1.5 Nm)
25/2	eShop	60	180	25	47	48	4.8	4.1	219799 10 (8IP; 1.5 Nm)
25/3	eShop	30	180	16	47	48	4.8	4.1	219799 10 (8IP; 1.5 Nm)
25/4	eShop	25	180	20	47	48	4.8	4.1	219799 10 (8IP; 1.5 Nm)

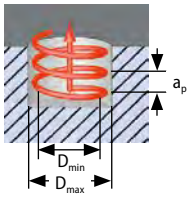


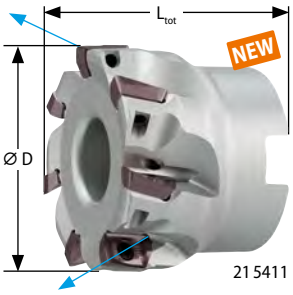






Ø D / number of effective cutting edges Z	210 21 5409 GARANT Softcut indexable shoulder mill 90° MTC with threaded shank	L_{tot}	Ø D_1 h6	Ø D_2	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Set of insert screws
mm		mm	mm	mm		mm	mm	mm	degrees	
15,7/2	eShop	26	8.5	14.5	M8	21.1	28.7	7.6	10.5	219799 11 (8IP; 1.5 Nm)
16/2	eShop	26	8.5	14.5	M8	21.7	29.3	7.6	10.5	219799 11 (8IP; 1.5 Nm)
19,7/3	eShop	30	10.5	18	M10	28.5	36.7	6	6.5	219799 11 (8IP; 1.5 Nm)
20/3	eShop	30	10.5	18	M10	29.1	37.3	6	6.5	219799 10 (8IP; 1.5 Nm)
24,7/4	eShop	35	12.5	23	M12	38.3	46.7	4.8	4.1	219799 10 (8IP; 1.5 Nm)
25/3	eShop	35	12.5	23	M12	38.9	47.3	4.8	4.1	219799 10 (8IP; 1.5 Nm)
25/4	eShop	35	12.5	23	M12	38.9	47.3	4.8	4.1	219799 10 (8IP; 1.5 Nm)
32/4	eShop	40	17	28.5	M16	52.8	61.3	4	2.7	219799 10 (8IP; 1.5 Nm)
32/5	eShop	40	17	28.5	M16	52.8	61.3	4	2.7	219799 10 (8IP; 1.5 Nm)

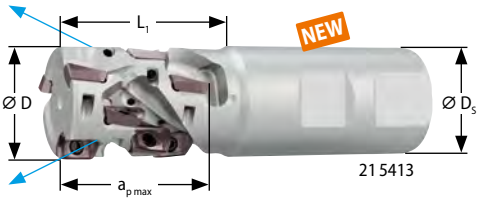




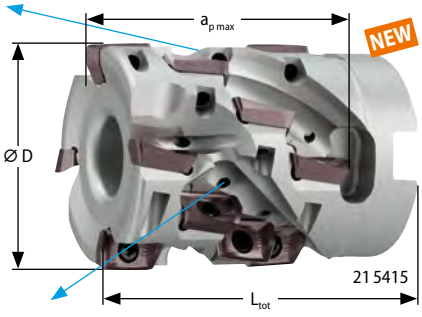
Ø D / number of effective cutting edges Z	210 21 5411 GARANT Softcut indexable shoulder mill 90° MTC with bore	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Set of insert screws
mm		mm	mm	mm	mm	mm	degrees	
40/4	eShop	40	16	68.8	77.3	3.4	1.8	219799 10 (8IP; 1.5 Nm)
40/5	eShop	40	16	68.8	77.3	3.4	1.8	219799 10 (8IP; 1.5 Nm)
40/6	eShop	40	16	68.8	77.3	3.4	1.8	219799 10 (8IP; 1.5 Nm)
42/5	eShop	40	16	72.2	81.3	3	1.2	219799 10 (8IP; 1.5 Nm)
50/6	eShop	40	22	88.8	97.3	3	1.2	219799 10 (8IP; 1.5 Nm)
50/7	eShop	40	22	88.8	97.3	2.8	0.8	219799 10 (8IP; 1.5 Nm)
52/6	eShop	40	22	92.8	101.3	2.8	0.8	219799 10 (8IP; 1.5 Nm)
63/8	eShop	50	27	114.7	123.3	2.8	0.8	219799 10 (8IP; 1.5 Nm)
63/9	eShop	50	27	114.7	123.3	2.8	0.8	219799 10 (8IP; 1.5 Nm)
80/10	eShop	50	27	–	–	–	–	219799 10 (8IP; 1.5 Nm)

Multi-row

Note: Not for ramping or circular plunging!



Ø D / Z_{eff}	210 21 5413 GARANT Softcut indexable shoulder mill 90° MTC Weldon shank	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	Ø D_s h6	Set of insert screws
mm				mm	mm	mm	mm	
20/2	eShop	2	6	30	45	95	20	219799 10 (8IP; 1.5 Nm)
25/2	eShop	2	6	30	45	101	25	219799 10 (8IP; 1.5 Nm)
25/3	eShop	3	9	30	45	101	25	219799 10 (8IP; 1.5 Nm)
32/3	eShop	3	12	40	52	112	32	219799 10 (8IP; 1.5 Nm)



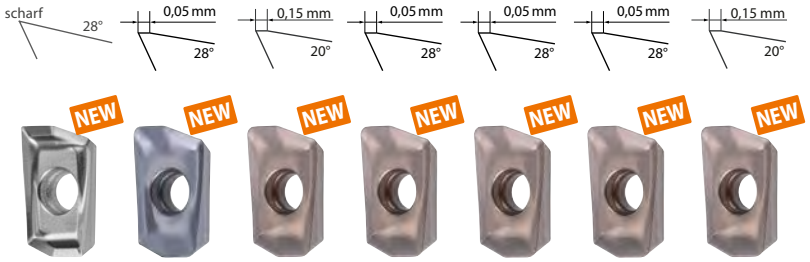
Ø D / Z_{eff}	210 21 5415 GARANT Softcut indexable shoulder mill 90° MTC with bore	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Set of insert screws
mm				mm	mm	mm	
40/4	eShop	4	16	39.5	55	16	219799 10 (8IP; 1.5 Nm)
40/5	eShop	5	10	20	50	16	219799 10 (8IP; 1.5 Nm)
50/4	eShop	4	16	39.5	55	22	219799 10 (8IP; 1.5 Nm)

Garant Milling inserts AO.T1104.. for GARANT Softcut® 90° No. 215403 – 215415

21 5428 – PCD milling insert with one cutting edge.

Note: Standard application values for $a_e = 0.5 \times D$ / $a_p = 3$ mm, $a_{p\,max} = 5.5$ mm.
21 5428 – **$a_{p\,max} = 3$ mm.**

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni				
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K					
HU7810-1	850	750	600																	○		●
HB7810-1	850	850	750																	○		●
PKD	1500	1500	1000																			●
HB7510-1				340	300	260														○		●
HB7520-1						220	220	200												○		●
HB8630														170	150					○		●
HB7930-1																40				○		●
HB7730-1																	250			○		●
HB7830-1				330	290	250	200							150	120			●		○		●



Type			ALU	ST900	ST1400	INOX	TI	GG	UNI	
2A1 21 5422	AOET110402 FR	HU7810-1	eShop	–	–	–	–	–	–	10
2A1 21 5423	AOET110404 FR	HU7810-1	eShop	–	–	–	–	–	–	10
2A1 21 5424	AOET110408 FR	HU7810-1	eShop	–	–	–	–	–	–	10
21B 21 5427	AOET110404 FR **DLC coated**	HB7810-1	eShop	–	–	–	–	–	–	10
21L 21 5428	AOET110404 FR	PCD	eShop	–	–	–	–	–	–	1
2A1 21 5431	AOMT110404 ER	HB7510-1	–	eShop	–	–	–	–	–	10
2A1 21 5432	AOMT110408 ER	HB7510-1	–	eShop	–	–	–	–	–	10
2A1 21 5433	AOMT110412 ER	HB7510-1	–	eShop	–	–	–	–	–	10
2A1 21 5437	AOMT110404 ER	HB7520-1	–	eShop	–	–	–	–	–	10
2A1 21 5438	AOMT110408 ER	HB7520-1	–	eShop	–	–	–	–	–	10
2A1 21 5439	AOMT110412 ER	HB7520-1	–	eShop	–	–	–	–	–	10
2A1 21 5444	AOMT110404 SR	HB7510-1	–	–	eShop	–	–	–	–	10
2A1 21 5445	AOMT110408 SR	HB7510-1	–	–	eShop	–	–	–	–	10
2A1 21 5446	AOMT110412 SR	HB7510-1	–	–	eShop	–	–	–	–	10
2A1 21 5451	AOMT110404 SR	HB7520-1	–	–	eShop	–	–	–	–	10
2A1 21 5452	AOMT110408 SR	HB7520-1	–	–	eShop	–	–	–	–	10
2A1 21 5453	AOMT110412 SR	HB7520-1	–	–	eShop	–	–	–	–	10
2A1 21 5461	AOMT110404 ER	HB8630	–	–	–	eShop	–	–	–	10
2A1 21 5462	AOMT110408 ER	HB8630	–	–	–	eShop	–	–	–	10
2A1 21 5463	AOMT110412 ER	HB8630	–	–	–	eShop	–	–	–	10
2A1 21 5471	AOMT110404 ER	HB7930-1	–	–	–	–	eShop	–	–	10
2A1 21 5472	AOMT110408 ER	HB7930-1	–	–	–	–	eShop	–	–	10
2A1 21 5476	AOMT110404 ER	HB7730-1	–	–	–	–	–	eShop	–	10
2A1 21 5477	AOMT110408 ER	HB7730-1	–	–	–	–	–	eShop	–	10
2A1 21 5478	AOMT110412 ER	HB7730-1	–	–	–	–	–	eShop	–	10
2A1 21 5485	AOMT110404 TR	HB7830-1	–	–	–	–	–	–	eShop	10
2A1 21 5486	AOMT110408 TR	HB7830-1	–	–	–	–	–	–	eShop	10
2A1 21 5487	AOMT110412 TR	HB7830-1	–	–	–	–	–	–	eShop	10
f_z		mm	0.1	0.15	0.18	0.13	0.12	0.15	–	

90° MTC POWER CARD Garant

Garant

GARANT Softcut® high-performance indexable shoulder mill 90° MTC for indexable inserts AP.T 0602..

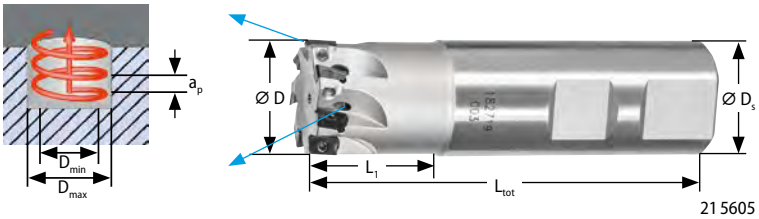
High precision indexable shoulder mill with irregular pitch for very smooth cutting, very high precision and very high metal removal rate.
New generation of high performance indexable shoulder mills **with special geometry for reduced cutting forces for MTC applications** under **unstable conditions** or **for spindles with low drive power. Suitable inserts APMT 0602..**

Application: For shoulder milling to large depths, also slotting.
General use in all steels including stainless and acid-resistant steels.

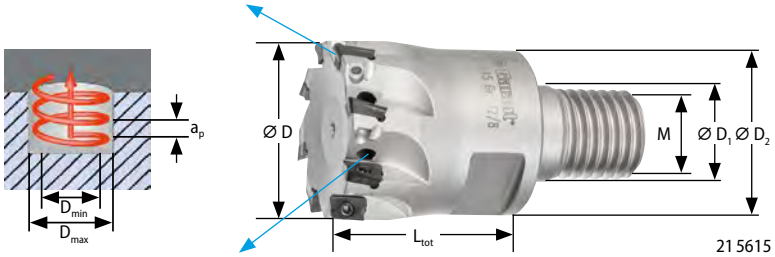
Spare part: Pack of insert screws No. 219827 (6IP; 0.45 Nm).

Note: GARANT torque screwdriver TQ No. **211750 size 0.45**, use bit No. **674252 size 6IP**.
The insert pocket must be modified when using indexable inserts with a radius of 2 mm.

Single-row

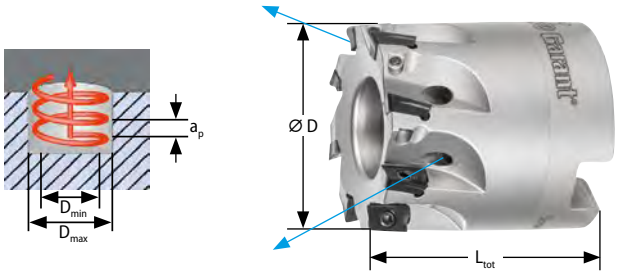


Ø D / number of teeth Z	210 21 5605	210 21 5609	L_1		L_{tot}		Ø D_s h6		Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
	GARANT Softcut 90° shoulder mill												
	MTC short	MTC long	21 5605	21 5609	21 5605	21 5609	21 5605	21 5609					
	Weldon shank	Plain shank											
mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	Degrees	mm
10/2L	–	eShop	–	17	–	100	–	8	18	18	0.7	1.67	6.85
10/2	–	eShop	–	17	–	57	–	10	18	18	0.7	1.67	6.85
12/2L	–	eShop	–	20	–	120	–	10	22	22	0.8	1.29	8.85
12/2	–	eShop	–	20	–	80	–	12	22	22	0.8	1.29	8.85
12/3	–	eShop	–	17	–	62	–	12	22	22	0.8	1.29	8.85
14/3L	–	eShop	–	20	–	145	–	12	26	26	0.9	1.06	10.85
16/3L	–	eShop	–	20	–	160	–	14	30	30	0.9	0.89	12.85
16/3	eShop	eShop	20	20	75	90	16	16	30	30	0.9	0.89	12.85
16/4	eShop	eShop	20	20	75	90	16	16	30	30	0.9	0.89	12.85
18/4L	–	eShop	–	20	–	180	–	16	34	34	0.9	0.77	14.85
20/4S	–	eShop	–	20	–	90	–	16	38	38	0.9	0.68	16.85
20/4L	–	eShop	–	25	–	200	–	18	38	38	0.9	0.68	16.85
20/4	eShop	eShop	25	22	85	105	20	20	38	38	0.9	0.68	16.85
20/5	–	eShop	–	22	–	105	–	20	38	38	0.9	0.68	16.85
25/7S	–	eShop	–	30	–	180	–	16	48	48	0.9	0.52	21.85
25/7	eShop	eShop	30	25	90	115	25	20	48	48	0.9	0.52	21.85
32/8	–	eShop	–	30	–	130	–	25	62	62	1.5	0.4	28.85
40/10	–	eShop	–	30	–	140	–	32	78	78	0.8	0.31	36.85



21 5615

Ø D / number of teeth Z	210 21 5615 GARANT Softcut 90° shoulder mill MTC with threaded shank	L_{tot}	Ø D_1 h6	Ø D_2	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm		mm	mm	mm		mm	mm	mm	degrees	mm
10/2	eShop	20	6.5	9.4	M6	18	18	0.7	1.67	6.85
12/3	eShop	20	6.5	10.7	M6	22	22	0.8	1.29	8.85
16/4	eShop	23	8.5	12.7	M8	30	30	0.9	0.89	12.85
20/5	eShop	30	10.5	17.7	M10	38	38	0.9	0.68	16.85
25/7	eShop	35	12.5	20.7	M12	48	48	0.9	0.52	21.85
32/8	eShop	35	17	28.7	M16	62	62	0.9	0.4	28.85
40/10	eShop	35	17	28.7	M16	78	78	0.8	0.31	36.85

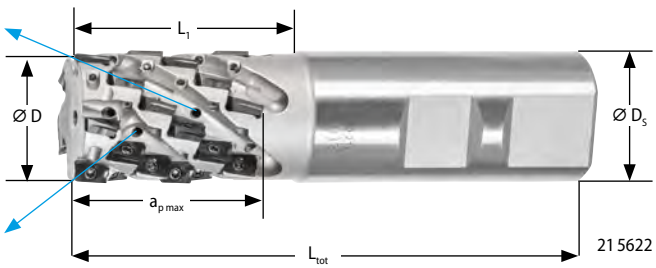


21 5620

Ø D / number of teeth Z	210 21 5620 GARANT Softcut 90° shoulder mill MTC with bore	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm		mm	mm	mm	mm	mm	degrees	mm
32/8	eShop	35	16	62	62	0.9	0.4	28.85
40/10	eShop	35	16	78	78	0.8	0.31	36.85
50/11	eShop	40	22	98	98	0.8	0.24	46.85
63/12	eShop	40	22	124	124	0.8	0.19	59.85

Multi-row

Note:	Not for ramping or circular plunging!



21 5622

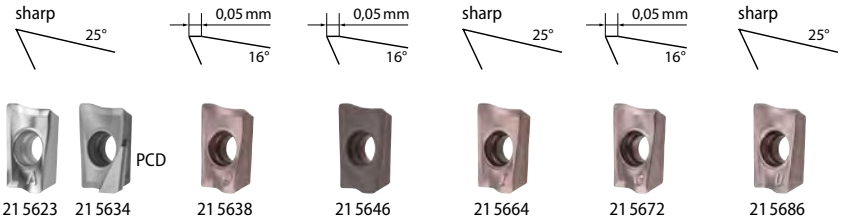
Ø D / Z_{eff}	210 21 5622 GARANT Softcut 90° shoulder mill Weldon shank	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	Ø D_s h6	Set of insert screws
mm				mm	mm	mm	mm	
16/2	eShop	2	8	22.5	32	80	16	219827 (6IP; 0.45 Nm)
20/3	eShop	3	15	28	40	90	20	219827 (6IP; 0.45 Nm)
25/5	eShop	5	30	33.5	44	100	25	219827 (6IP; 0.45 Nm)

Garant MTC milling inserts AP.T 0602.. for GARANT Softcut® indexable milling cutters No. 215605 – 215622

21 5634 – PCD milling insert with one cutting edge.

Note: Standard application values for $a_e = 0.25 \times D$. $a_p = 3$ mm, a_p max = 4 mm.
21 5634 – **$a_{p\,max} = 2.5$ mm.**

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	K	N	N	
21 5621–21 5626	600	500	400															
21 5630	600	600	550														●	
21 5634	1500	1500	1000													800		
21 5638/5641				340	300	260												
21 5643–21 5652							220	200										
21 5654–21 5659							170	150										
21 5663–21 5671													170	130				
21 5672/5674															250			
21 5680–21 5692				330	290	250							150	120				●



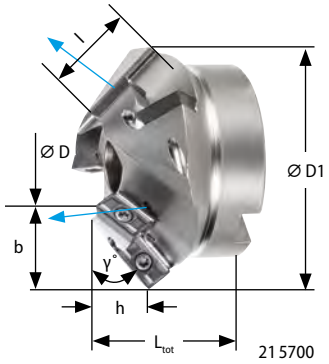
21 5623 21 5634 21 5638 21 5646 21 5664 21 5672 21 5686

Type			ALU	ST900	ST1400	INOX	GG	UNI	
21A 21 5621	APMT 060202 FR	HU7810	eShop	–	–	–	–	–	10
21A 21 5623	APMT 060204 FR	HU7810	eShop	–	–	–	–	–	10
21A 21 5626	APMT 060220 FR	HU7810	eShop	–	–	–	–	–	10
21B 21 5630	APMT 060204 FR **diamond-coated**	HB7810	eShop	–	–	–	–	–	1
21L 21 5634	APHT 060204 FR	PCD	eShop	–	–	–	–	–	1
21A 21 5638	APMT 060204 ER	HB7520	–	eShop	–	–	–	–	10
21A 21 5641	APMT 060220 ER	HB7520	–	eShop	–	–	–	–	10
21A 21 5643	APMT 060202 ER	HB7510	–	–	eShop	–	–	–	10
21A 21 5646	APMT 060204 ER	HB7510	–	–	eShop	–	–	–	10
21A 21 5650	APMT 060208 ER	HB7510	–	–	eShop	–	–	–	10
21A 21 5652	APMT 060220 ER	HB7510	–	–	eShop	–	–	–	10
21A 21 5654	APMT 060202 ER	HB7520	–	–	eShop	–	–	–	10
21A 21 5656	APMT 060204 ER	HB7520	–	–	eShop	–	–	–	10
21A 21 5657	APMT 060208 ER	HB7520	–	–	eShop	–	–	–	10
21A 21 5659	APMT 060220 ER	HB7520	–	–	eShop	–	–	–	10
21A 21 5663	APMT 060202 ER	HB7630	–	–	–	eShop	–	–	10
21A 21 5664	APMT 060204 ER	HB7630	–	–	–	eShop	–	–	10
21A 21 5665	APMT 060208 ER	HB7630	–	–	–	eShop	–	–	10
21A 21 5667	APMT 060220 ER	HB7630	–	–	–	eShop	–	–	10
21A 21 5668	APMT 060202 ER	HB8630	–	–	–	eShop	–	–	10
21A 21 5669	APMT 060204 ER	HB8630	–	–	–	eShop	–	–	10
21A 21 5670	APMT 060208 ER	HB8630	–	–	–	eShop	–	–	10
21A 21 5671	APMT 060220 ER	HB8630	–	–	–	eShop	–	–	10
21A 21 5672	APMT 060204 ER	HB7730	–	–	–	–	eShop	–	10
21A 21 5674	APMT 060220 ER	HB7730	–	–	–	–	eShop	–	10
21A 21 5680	APMT 060202 ER	HB7520	–	–	–	–	–	eShop	10
21A 21 5686	APMT 060204 ER	HB7520	–	–	–	–	–	eShop	10
21A 21 5690	APMT 060208 ER	HB7520	–	–	–	–	–	eShop	10
21A 21 5692	APMT 060220 ER	HB7520	–	–	–	–	–	eShop	10
f_z		mm	0.1	0.1	0.1	0.08	0.08	–	

POWER CARD Garant

Garant Indexable chamfer mill for AP.. 1604..

Note:
- **Recommended milling inserts for chamfering: No. 215720; 215724; 215728; 215744; 215758.**
- If other milling inserts are used, the tool life may be less and surface quality may suffer.
- Use GARANT torque screwdriver TQ No. **211750 size 5.0** with bit No. **674252 size 15IP**.



γ°	75	60	50	45	40	30	20	15
Correction factor f_z	1.0	1.2	1.3	1.4	1.6	2	3	3.5

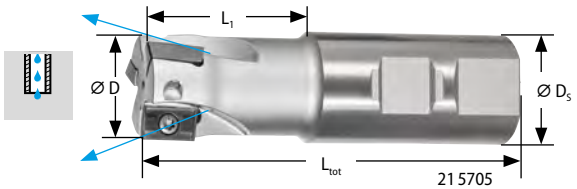
Angle γ	210 21 5700 Chamfer mill	Number of effective inserts Z_{eff}	Number of indexable inserts	L_{tot}	smallest Ø D	largest Ø D_1	achievable chamfer width b	achievable chamfer length l	achievable chamfer height h	Mounting bore Ø	Feed rate per tooth at h_{max}	Set of insert screws
degrees	with bore			mm	mm	mm	mm	mm	mm	mm	mm	
15	eShop	3	6	50	35.4	94	29.5	30	8	27	0.4	219811 (15IP; 5.0 Nm)
20	eShop	3	6	50	35	91	28.5	30	10	27	0.3	219811 (15IP; 5.0 Nm)
30	eShop	3	6	50	35	84.6	26.5	30	15.1	27	0.2	219811 (15IP; 5.0 Nm)
40	eShop	3	6	50	35	84	24.5	30	19	27	0.16	219811 (15IP; 5.0 Nm)
45	eShop	3	6	50	35	77.8	21.4	30	21.4	27	0.14	219811 (15IP; 5.0 Nm)
50	eShop	3	6	50	35	73	18	30	23	27	0.13	219811 (15IP; 5.0 Nm)
60	eShop	3	6	50	34.8	65	15.1	30	26.5	27	0.12	219811 (15IP; 5.0 Nm)
75	eShop	3	6	60	35	50.7	8	30	29.5	22	0.11	219811 (15IP; 5.0 Nm)

90°

Shoulder mill 90° for AP.. 16..

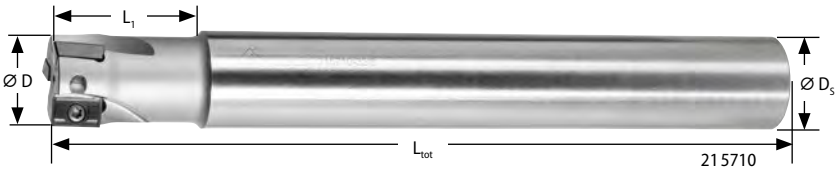
Indexable shoulder mill with irregular pitch for very smooth cutting.

Note: Use GARANT torque screwdriver TQ No. **211750 size 5.0** with bit No. **674252 size 15IP**.



POWER CARD Garant

21 5710 – Without through-coolant feed.

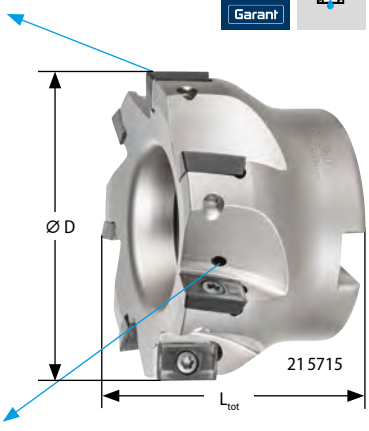


Ø D / number of teeth Z	210 21 5705 Garant	210 21 5710 Garant	L_1	L_{tot}		Ø D_s h6	suitable indexable insert	Set of insert screws
	Shoulder mill 90°							
	short	long		21 5705	21 5710			
mm	Weldon shank	Plain shank	mm	mm	mm	mm		
25/2	eShop	eShop	44	100	200	25	AP.. 16..	219811 (15IP; 5.0 Nm)
32/3	eShop	eShop	50	110	250	32	AP.. 16..	219812 (15IP; 5.0 Nm)
40/4	eShop	–	55	115	–	32	AP.. 16..	219812 (15IP; 5.0 Nm)

Size 160/10 – For arbors to DIN 2079, with 4 additional attachment holes. For technical reasons without internal coolant supply.

21 5717 – Without through-coolant feed.

POWER CARD Garant



Ø D / number of teeth Z	210 21 5715 Garant	220 21 5717 HOLEX	L_{tot}	Mounting bore Ø	suitable indexable insert	Set of insert screws
	Shoulder mill 90°					
mm	with bore	with bore	mm	mm		
40/4	eShop	eShop	40	16	AP.. 16..	219812 (15IP; 5.0 Nm)
50/5	eShop	eShop	40	22	AP.. 16..	219812 (15IP; 5.0 Nm)
52/5	eShop	–	40	22	AP.. 16..	219812 (15IP; 5.0 Nm)
63/5	eShop	–	40	22	AP.. 16..	219812 (15IP; 5.0 Nm)
63/6	eShop	eShop	40	22	AP.. 16..	219812 (15IP; 5.0 Nm)
66/6	eShop	–	40	22	AP.. 16..	219812 (15IP; 5.0 Nm)
80/7	eShop	–	50	27	AP.. 16..	219812 (15IP; 5.0 Nm)
100/8	eShop	–	50	32	AP.. 16..	219812 (15IP; 5.0 Nm)
125/9	eShop	–	63	40	AP.. 16..	219812 (15IP; 5.0 Nm)
160/10	eShop	–	63	40	AP.. 16..	219812 (15IP; 5.0 Nm)

Milling inserts AP.. 16.. for milling cutters No. 215700, 215705, 215710, 215715 and 215717

Note: Standard application values apply for milling cutters No. 215705 to 215717: $a_e = 0.3 \times D$ / $a_{p\,max} = 7$ mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 5720–21 5728	**700**	**500**	**350**																	●		○	
21 5731/5733				**340**	**235**	**195**	190	175						220	140		150		●	●	●	●	●
21 5732				**250**	**250**	**185**	140							140	140					○		●	
21 5743/5745/5746				380	265	220	**210**	**195**						270	170		170		●	○	○	●	●
21 5744						170	**120**	**90**									**140**			○		●	
21 5747–21 5756	700	500	350	230	230	170	120	90						**160**	**150**	35				●		●	
21 5758				**295**	**190**	**170**	**125**	**80**	55	40				**170**	**140**		**140**			○		●	
21 5759/5762				**270**	**205**	**170**	**150**	**125**						**175**	**150**	50	140			●		●	
21 5760				**250**	**250**	**185**	140	110						**140**	140		**140**	●		○		●	
21 5764			220	**290**	**160**	**140**	110	70						**160**	150		150	●				●	


21 5724


21 5732


21 5744


21 5747


21 5764

Type				ALU	ST900	ST1400	INOX	UNI		Insert thickness mm
21A 21 5720		APEX 160404 PDFR	HB7510	eShop	–	–	–	–	10	4.76
21A 21 5724		APKT 16..04 PDFR	HU7710	eShop	–	–	–	–	10	5.05
21A 21 5728		APKT 16..08 PDFR	HU7710	eShop	–	–	–	–	10	5.05
21A 21 5732		APXT 16..08 PDSR	HB7525	–	eShop	–	–	–	10	5.76
21A 21 5731		APMX 16..04 TR	HB7525	–	eShop	–	–	–	10	5.76
21A 21 5733		APMX 16..08 TR	HB7525	–	eShop	–	–	–	10	5.76
21A 21 5744		APFT 160408 PDTR	HB7720	–	–	eShop	–	–	10	4.76
21A 21 5743		APMX 16..04 TR	HB7515	–	–	eShop	–	–	10	5.76
21A 21 5745		APMX 16..08 TR	HB7515	–	–	eShop	–	–	10	5.76
21A 21 5746	Garant	APMX 16..12 TR	HB7515	–	–	eShop	–	–	10	5.76
21A 21 5747		APMX 16..04 PDER	HB7635	–	–	–	eShop	–	10	5.76
21A 21 5748		APMX 16..08 PDER	HB7635	–	–	–	eShop	–	10	5.76
21A 21 5749		APMX 16..12 PDER	HB7635	–	–	–	eShop	–	10	5.76
21A 21 5752		APKX 16..16 PDER	HB7635	–	–	–	eShop	–	10	5.76
21A 21 5756		APKX 16..24 PDER	HB7635	–	–	–	eShop	–	10	5.76
21A 21 5758		APKT 1604 PDTR	HB7525	–	–	–	–	eShop	10	4.76
21A 21 5759		APMX 16..08 TR	HB735	–	–	–	–	eShop	10	5.76
21A 21 5760		APMX 16..08 PDTR	HB7520	–	–	–	–	eShop	10	5.76
21A 21 5762		APMX 16..12 TR	HB735	–	–	–	–	eShop	10	5.76
22A 21 5764	HOLEX	APKT 1604 PDER	HBM025	–	–	–	–	eShop	10	5.76
f_z			mm	0.18	0.18	0.14	0.15	–		

21

KENNAMETAL Milling inserts AP.T 1604.. for milling cutters No. 215705, 215710, 215715 and 215717

Note: Please use these indexable inserts **only with screw No. 229908 (15 IP; 5.0 Nm)**. The insert seating must be modified when indexable inserts with r ≥ 3.2 mm are used on milling cutters No. 215705, 215710, 215715 and 215717.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 5768																	280					●	
21 5771–21 5778				**250**	**200**	**170**	**130**	**110**						**180**	**155**	**45**	**200**	●		○		●	●
21 5780/5781						**150**	**110**							**170**	**150**	**55**	**180**	●		●	○	●	●







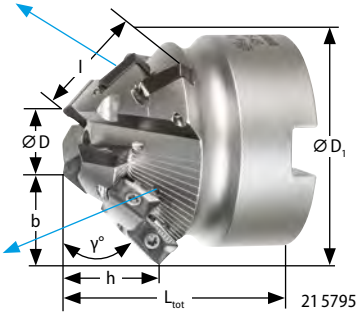
Type			GG	UNI	
28E 21 5768	APKT 1604PDER-43	SC3025	eShop	–	10
28E 21 5771	APHT 160408ER-46	SP6519	–	eShop	10
28E 21 5773	APHT 160416ER-46	SP6519	–	eShop	10
28E 21 5775	APHT 160424ER-46	SP6519	–	eShop	10
28E 21 5776	APHT 160432ER-46	SP6519	–	eShop	10

Type			UNI	
28E 21 5777	APHT 160440ER-46	SP6519	eShop	10
28E 21 5778	APHT 160450ER-46	SP6519	eShop	10
28F 21 5780	APKT 1604PDER-45	X500	eShop	10
28F 21 5781	APHT 160408ER-46	X500	eShop	10

POWER CARD Garant

Garant Indexable chamfer mill for AP.. 1003..

Note: Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.



γ°	75	60	45	40	30	20	15
Correction factor fz	1	1.2	1.4	1.6	2	3	3.5

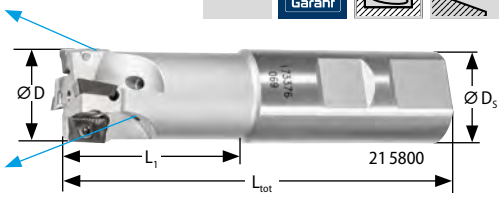
Angle γ	210 21 5795 Chamfer mill	Number of effective inserts Z_{eff}	Number of indexable inserts	L_{tot}	smallest Ø D	largest Ø D_1	achievable chamfer width b	achievable chamfer length l	achievable chamfer height h	Mounting bore Ø	Feed rate per tooth at h_{max}	Set of insert screws
degrees	with bore			mm	mm	mm	mm	mm	mm	mm	mm	
15	eShop	3	9	52	17	70	27	27.5	7	22	0.4	219814 (8IP; 1.2 Nm)
20	eShop	3	9	52	17	69	26	27.5	9	22	0.3	219814 (8IP; 1.2 Nm)
30	eShop	3	9	52	17	65	24	27.5	13	22	0.2	219814 (8IP; 1.2 Nm)
40	eShop	3	9	52	17	59	19	27.5	17.8	22	0.16	219814 (8IP; 1.2 Nm)
45	eShop	3	9	52	17	56	17.8	27.5	19	22	0.14	219814 (8IP; 1.2 Nm)
60	eShop	3	9	52	17	45	13	27.5	24	16	0.12	219814 (8IP; 1.2 Nm)
75	eShop	3	9	60	19	33	7	27.5	27	16	0.11	219814 (8IP; 1.2 Nm)

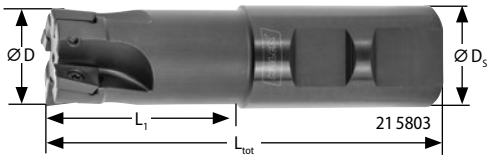
90° MTC

POWER CARD Garant

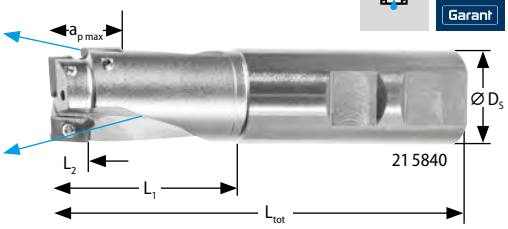
Shoulder mill 90° for AP.. 1003..

Note: Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.





POWER CARD Garant



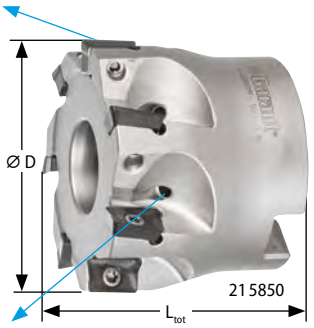
Ø D / number of teeth Z	210 21 5800 Garant	220 21 5803 HOLEX	L_1	L_{tot}	Ø D_s h6	suitable indexable insert	Set of insert screws
	Shoulder mill 90°						
mm	Weldon shank	Weldon shank	mm	mm	mm		
10/1	eShop	–	28	80	16	AP.. 1003..	219814 (8IP; 1.2 Nm)
12/1	eShop	–	28	80	16	AP.. 1003..	219814 (8IP; 1.2 Nm)
14/1	eShop	–	37	85	16	AP.. 1003..	219814 (8IP; 1.2 Nm)
16/2	eShop	eShop	37	85	16	AP.. 1003..	219814 (8IP; 1.2 Nm)
18/2	eShop	–	40	90	20	AP.. 1003..	219814 (8IP; 1.2 Nm)
20/2L	eShop	–	50	150	20	AP.. 1003..	219814 (8IP; 1.2 Nm)
20/2	eShop	–	40	90	20	AP.. 1003..	219814 (8IP; 1.2 Nm)
20/3	eShop	eShop	40	90	20	AP.. 1003..	219814 (8IP; 1.2 Nm)
25/2L	eShop	–	55	170	25	AP.. 1003..	219814 (8IP; 1.2 Nm)
25/3	eShop	–	49	105	25	AP.. 1003..	219814 (8IP; 1.2 Nm)
25/4	eShop	eShop	49	105	25	AP.. 1003..	219814 (8IP; 1.2 Nm)
32/3L	eShop	–	55	195	25	AP.. 1003..	219814 (8IP; 1.2 Nm)
32/5	eShop	–	54	110	25	AP.. 1003..	219814 (8IP; 1.2 Nm)

Application:

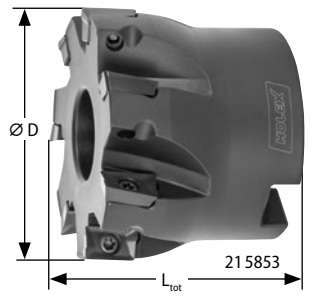
21 5840 – For drilling and for machining of slots.

Ø D / number of effective cutting edges Z	210 21 5840 Garant	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_1	L_2	L_{tot}	Ø D_s h6	Set of insert screws
	Shoulder mill 90°							
mm	Weldon shank		mm	mm	mm	mm	mm	
20/2	eShop	3	17	35	9	90	20	219814 (8IP; 1.2 Nm)
25/2	eShop	3	19	50	9	110	25	219814 (8IP; 1.2 Nm)

POWER CARD Garant



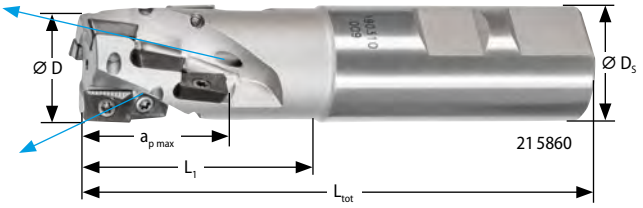
Ø D / number of teeth Z	210 21 5850 Garant	220 21 5853 HOLEX	L_{tot}	Mounting bore Ø	suitable indexable insert	Set of insert screws
	Shoulder mill 90°					
mm	with bore	with bore	mm	mm		
40/4	eShop	–	40	16	AP.. 1003..	219814 (8IP; 1.2 Nm)
40/6	eShop	eShop	40	16	AP.. 1003..	219814 (8IP; 1.2 Nm)
50/6	eShop	–	40	22	AP.. 1003..	219814 (8IP; 1.2 Nm)
50/7	eShop	eShop	40	22	AP.. 1003..	219814 (8IP; 1.2 Nm)
63/8	eShop	–	40	22	AP.. 1003..	219814 (8IP; 1.2 Nm)
63/9	eShop	–	40	22	AP.. 1003..	219814 (8IP; 1.2 Nm)
80/10	eShop	–	50	27	AP.. 1003..	219814 (8IP; 1.2 Nm)
100/12	eShop	–	50	32	AP.. 1003..	219814 (8IP; 1.2 Nm)



POWER CARD Garant

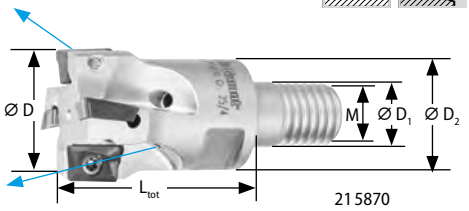
Application:

21 5860 – For peripheral milling and side milling.
21 5870 – General application in all materials and for slot milling.



Ø D / Z_{eff}	210 21 5860 Garant Shoulder mill 90° Weldon shank	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	Ø D_s h6	Set of insert screws
mm				mm	mm	mm	mm	
25/2	eShop	2	6	28	52	110	25	219814 (8IP; 1.2 Nm)
25/3	eShop	3	9	28	52	110	25	219814 (8IP; 1.2 Nm)
32/2	eShop	2	8	38	54	114	32	219814 (8IP; 1.2 Nm)
32/3	eShop	3	12	38	54	114	32	219814 (8IP; 1.2 Nm)

Ø D / number of teeth Z	210 21 5870 Garant Shoulder mill 90° with threaded shank	L_{tot}	Ø D_1 h6	Ø D_2	Mounting thread M	Set of insert screws
mm		mm	mm	mm		
15,7/2	eShop	23	8.5	12.7	M8	219814 (8IP; 1.2 Nm)
16/2	eShop	23	8.5	12.7	M8	219814 (8IP; 1.2 Nm)
19,7/3	eShop	30	10.5	17.7	M10	219814 (8IP; 1.2 Nm)
20/3	eShop	30	10.5	17.7	M10	219814 (8IP; 1.2 Nm)
24,7/4	eShop	35	12.5	20.7	M12	219814 (8IP; 1.2 Nm)
25/3	eShop	35	12.5	20.7	M12	219814 (8IP; 1.2 Nm)
25/4	eShop	35	12.5	20.7	M12	219814 (8IP; 1.2 Nm)
32/5	eShop	43	17	28.7	M16	219814 (8IP; 1.2 Nm)



MTC milling inserts AP.. 1003.. for milling cutters No. 215795 – 215870

Inserts with highly positive geometry and helical cutting edges.

Note: Standard application values apply for indexable milling cutters No. 215800, 215803, 215850, 215853 and 215870.
For $a_e = 0.3 \times D$ / a_p max = 4.8 mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
21 5879/5885				440	310	260	250	**230**				320	210		210				●	○	○	●	●
21 5880				**300**	**250**	**240**	160	125				**180**	160		**220**			●	●	○		●	
21 5882				**330**	**255**	**205**	**175**	**150**				**220**	155	50						●		●	
21 5886			220	**290**	**160**	**140**	110	70				**160**	150		**150**			●				●	
21 5918–21 5928	700	600		180	160	150	130	110				**90**	**80**	**50**						●		●	
21 5935/5939	**700**	**600**	**400**													**500**	**400**			●			
21 5946/5947				**390**	**270**	**230**	220	200				**250**	160		180			●	●	●	●	●	●



Type				ALU	ST900	ST1400	INOX	UNI		Insert thickness mm
21A 21 5935		APHT 100302 FR	HU7815	eShop	–	–	–	–	10	3.5
21A 21 5939		APHT 100305 FR	HU7815	eShop	–	–	–	–	10	3.5
21A 21 5946		APMT 100305 TR	HB7525	–	eShop	–	–	–	10	3.5
21A 21 5947		APMT 100308 TR	HB7525	–	eShop	–	–	–	10	3.5
21A 21 5879		APMT 100305 TR	HB7515	–	–	eShop	–	–	10	3.5
21A 21 5885		APMT 100308 TR	HB7515	–	–	eShop	–	–	10	3.5
21A 21 5918	Garant	APMT 100302 TR	HB7635	–	–	–	eShop	–	10	3.5
21A 21 5920		APMT 100305 TR	HB7635	–	–	–	eShop	–	10	3.5
21A 21 5922		APMT 100308 TR	HB7635	–	–	–	eShop	–	10	3.5
21A 21 5924		APMT 100312 TR	HB7635	–	–	–	eShop	–	10	3.5
21A 21 5928		APMT 100320 TR	HB7635	–	–	–	eShop	–	10	3.5
21A 21 5880		APMT 100305 TR	HB7520	–	–	–	–	eShop	10	3.55
21A 21 5882			HB735	–	–	–	–	eShop	10	3.5
22A 21 5886	HOLEX	APKT 1003 PDER	HBM025	–	–	–	–	eShop	10	3.5
f_z			mm	0.12	0.12	0.1	0.12	–		

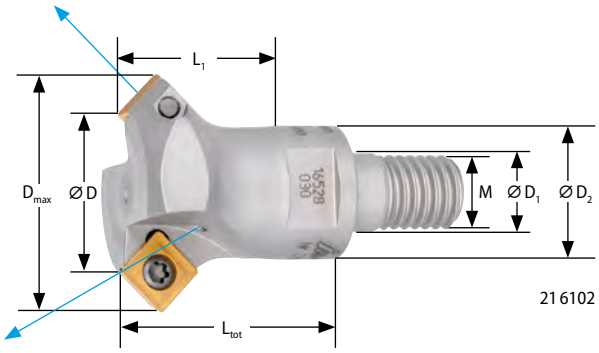
POWER CARD Garant

Garant Indexable chamfer mill 45° positive for SD.T 090308

Note: Use GARANT torque screwdriver TQ No. **211750 size 3.8** with bit No. **674252 size 15IP**.



Ø D	210 21 6100 Chamfer mill 45° Weldon shank	Number of cutting edges Z	Ø D_{max}	L_1	L_{tot}	Ø D_s h6	suitable indexable insert	Set of insert screws
mm			mm	mm	mm	mm		
8	eShop	1	20.2	17	80	16	SD.. 090308	219804 (15IP; 3.8 Nm)
16	eShop	2	28.3	20.5	110	16	SD.. 090308	219805 (15IP; 3.8 Nm)
17,5	eShop	3	29.8	25	110	16	SD.. 090308	219805 (15IP; 3.8 Nm)
23,5	eShop	4	35.8	30	130	20	SD.. 090308	219805 (15IP; 3.8 Nm)
25	eShop	2	37.3	27	130	25	SD.. 090308	219805 (15IP; 3.8 Nm)
33,5	eShop	5	45.8	30	140	25	SD.. 090308	219805 (15IP; 3.8 Nm)

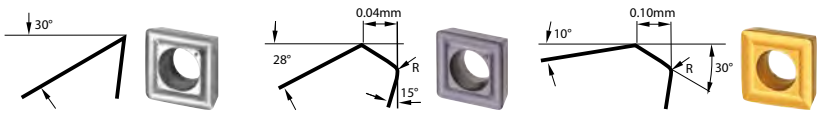


Ø D	210 21 6102 Chamfer mill 45° with threaded shank	Number of cutting edges Z	Ø D_{max}	L_1	Ø D_1 h6	L_{tot}	Ø D_2	Mounting thread M	suitable indexable insert	Set of insert screws
mm			mm	mm	mm	mm	mm			
8	eShop	1	20.2	14	6.5	23	9.75	M6	SD.. 090308	219804 (15IP; 3.8 Nm)
16	eShop	2	28.3	18	10.5	28	17.7	M10	SD.. 090308	219805 (15IP; 3.8 Nm)
17,5	eShop	3	29.8	18	10.5	30	17.7	M10	SD.. 090308	219805 (15IP; 3.8 Nm)
23,5	eShop	4	35.8	23	12.5	35	20.7	M12	SD.. 090308	219805 (15IP; 3.8 Nm)
25	eShop	2	37.3	23	12.5	35	20.7	M12	SD.. 090308	219805 (15IP; 3.8 Nm)
33,5	eShop	5	45.8	24	17	40	28.7	M16	SD.. 090308	219805 (15IP; 3.8 Nm)

Garant Milling inserts SD.T 090308 for 45° chamfer mills No. 216100 / 216102

Strong milling inserts, **precision sintered with positive chip breakers. Face and seating surfaces precision ground.**

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N						
21 6408	**250**	**250**	**120**														**250**			●		○	
21 6409													**150**	**120**						○		●	
21 6410	250	250	120	**260**	**220**	**170**	**100**	**80**					**120**	**90**	100	150		●		○		●	



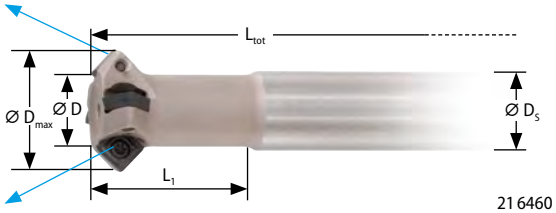
Type			ALU	INOX	UNI	
21A **21 6408**	SDGT 090308 FN	**HU7815**	eShop	–	–	**10**
21A **21 6409**	SDGT 090308	**HB7630**	–	eShop	–	**10**
21A **21 6410**	SDLT 090308 EN	**HB7535**	–	–	eShop	**10**
f_z		mm	0.15	0.11	–	

POWER CARD Garant

Garant High-performance chamfer mill 45° for SCLT 05T104

Application: For effective machining especially for small chamfering operations. For forwards and reverse chamfering at high speeds.
Reverse chamfering possible from size 6.

Note: Use GARANT torque screwdriver TQ No. **211750 size 0.6** with bit No. **674252 size 6IP**.



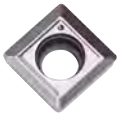
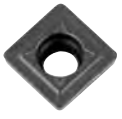
21 6460

Ø D mm	210 21 6460 High-performance chamfer mill 45° **Plain shank**	Number of cutting edges Z	Ø D_{max} mm	L_1 mm	L_{tot} mm	Ø D_s h6 mm	suitable indexable insert	Set of insert screws
2	eShop	1	8.5	20	80	10	SC.. 05T104	219828 (6IP; 0.6 Nm)
6	eShop	1	12.5	20	80	10	SC.. 05T104	219828 (6IP; 0.6 Nm)
9	eShop	2	15.7	24	90	10	SC.. 05T104	219828 (6IP; 0.6 Nm)
12	eShop	4	18.5	24	100	12	SC.. 05T104	219828 (6IP; 0.6 Nm)
16	eShop	5	22.7	20	110	12	SC.. 05T104	219828 (6IP; 0.6 Nm)
20	eShop	6	26.7	20	120	16	SC.. 05T104	219828 (6IP; 0.6 Nm)

Garant Milling inserts SCLT 05T104 for high-performance 45° chamfer mill No. 216460

21

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
21 6465	1000	700	400																●	●	●	○	
21 6463	1000	900	550														●			●		○	
21 6470														160	120	60				○		●	
21 6475	410	410	280	240	205	200	150	120						110	95	60		●		○		●	




21 6463

Type			ALU	INOX	UNI	
21A 21 6465	SCLT 05T104	HU7810	eShop	–	–	10
21B 21 6463	SCLT 05T104 **diamond-coated**	HB7810	eShop	–	–	1
21A 21 6470	SCLT 05T104	HB7635	–	eShop	–	10
21A 21 6475	SCLT 05T104	HB7735	–	–	eShop	10
f_z		mm	0.08 – 0.18	0.06 – 0.15	–	

POWER CARD Garant

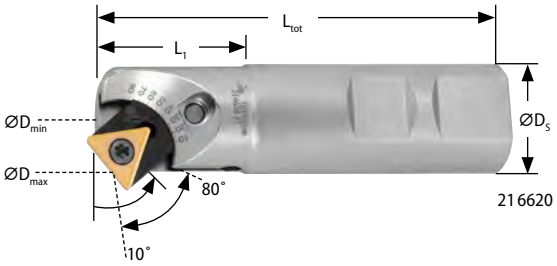
10-80°

Garant Adjustable indexable countersinking mill (10° – 80°) for TOH. 0902.. / 1604..

Quiet running due to **sturdy design.**

Application: For deburring edges, round holes, and long holes, and for countersinking. Rigid mounting is required (not suitable for power drills).
Steplessly adjustable for angles of 10° - 80°.

Note: Scale tolerance ±2.5°. **For setting to an exact angular value please use a pre-setting device.**
Size 20 – Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.
Size 25 – Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.



Shank Ø D_s h6	210 21 6620 Adjustable indexable countersinking mill Weldon shank	Number of cutting edges Z	L_1	L_{tot}	Ø D_s h6	suitable indexable insert	Indexable insert No. 216700; No. 216740; No. 216770	Insert screw	Case	Clamp screw for cartridge
mm			mm	mm	mm					
20	eShop	1	30	95	20	TO.. 0902	14-660	219843 (8IP; 1.2 Nm)	219957	219945
25	eShop	1	30	95	25	TO.. 1604	32-050	219844 (15IP; 3.0 Nm)	219958	219946

Angle α		10	20	30	40	45	50	60	70	80
20	D_{min} (Ø)	5	8	10	13	14	15	17	19	20
	D_{max} (Ø)	26	27	27	27	27	27	26	25	24
25	D_{min} (Ø)	5	6	7	10	11	13	16	19	23
	D_{max} (Ø)	32	33	34	33	33	32	31	29	27

KOMET Trigon milling inserts TOH. 0902.. / 1403.. / 1604..

With all-round chip breaker groove.
Size 14-6603 – With additional rake for free cutting. Clearance angle 15°.

Suitable for: Countersinking mill No. 216600 and 216620.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
21 6700	**250**	**250**		**250**	**200**	**200**								120					●				
21 6740																	**150**		●			●	
21 6770	250	250	120	**250**	**200**	**200**	**150**	**120**						**120**	100	100	150		●			○	



21 6700 21 6770 21 6770 21 6770

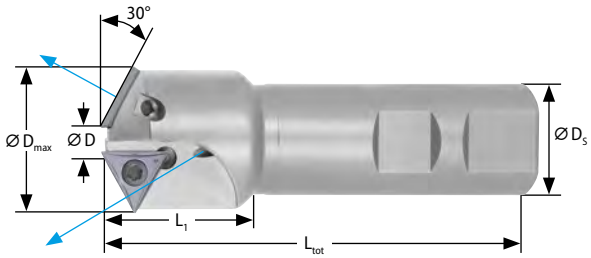
Designation			14-6603	14-660	26-660	32-050	
24T 21 6700	KOMET® indexable insert P25M	P25M	eShop	eShop	eShop	eShop	10
24T 21 6740		K10	eShop	eShop	eShop	–	10
24T 21 6770		BK8425	eShop	eShop	eShop	eShop	10
ISO code indexable insert			TOHX 090204 EN	TOHX 090204 EN	TOHX 140305 EN	TOHT 160408 EN	




POWER CARD Garant

Garant Indexable chamfer mill 30° for TC.T 16T304

Note: Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.



21 6548

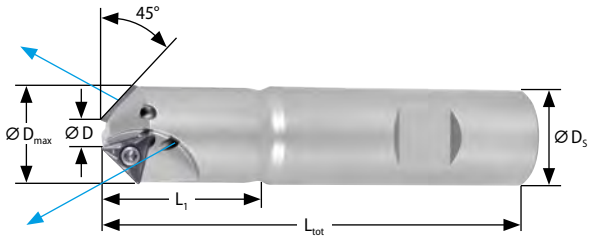
Type	210 21 6548 Chamfer mill 30° Weldon shank	Number of cutting edges Z	Ø D mm	Ø D_{max} mm	L_1 mm	L_{tot} mm	Ø D_s h6 mm	suitable indexable insert	Insert screw
6	eShop	2	6	32	38	100	25	260986 HB725-1	219844 (15IP; 3.0 Nm)




POWER CARD Garant

Garant Indexable chamfer mill 45° for TC.T 110204 / 16T304

Note:
Size 10 – Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.
Size 1; 6 – Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.



21 6550

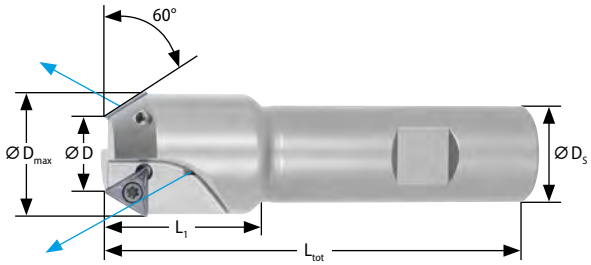
Type	210 21 6550 Chamfer mill45° Weldon shank	Number of cutting edges Z	Ø D mm	Ø D_{max} mm	L_1 mm	L_{tot} mm	Ø D_s h6 mm	suitable indexable insert	Insert screw
1	eShop	1	1.2	16	20	70	12	260982 HB725-1	219795 1 (8IP; 1.2 Nm)
6	eShop	2	6.2	21	35	90	20	260982 HB725-1	219795 1 (8IP; 1.2 Nm)
10	eShop	2	10.4	32.5	42	100	25	260986 HB725-1	219844 (15IP; 3.0 Nm)




POWER CARD Garant

Garant Indexable chamfer mill 60° for TC.T 110204 / 16T304

Note:
Size 20 – Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.
Size 5; 16 – Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.

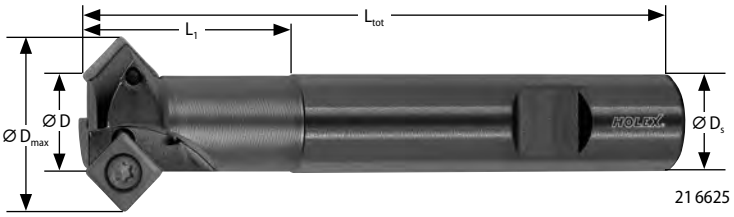


21 6552

Type	210 21 6552 Chamfer mill 60° Weldon shank	Number of cutting edges Z	Ø D mm	Ø D_{max} mm	L_1 mm	L_{tot} mm	Ø D_s h6 mm	suitable indexable insert	Insert screw
5	eShop	1	5.4	16	20	70	12	260982 HB725-1	219795 1 (8IP; 1.2 Nm)
16	eShop	2	15.8	26	35	90	20	260982 HB725-1	219795 1 (8IP; 1.2 Nm)
20	eShop	2	20	35	39	100	25	260986 HB725-1	219844 (15IP; 3.0 Nm)



Chamfer mill 45° for SP.T 060304 and SP.T 09T308



21 6625

Type	220 21 6625 Chamfer mill 45° Weldon shank	Number of cutting edges Z	Ø D mm	Ø D_{max} mm	L_1 mm	L_{tot} mm	Ø D_s h6 mm	suitable indexable insert	Set of insert screws
4	eShop	1	4	10	28	80	12	SP..060304	219840 (8IP; 1.2 Nm)
11	eShop	2	11	20	32	80	12	SP..060304	219840 (8IP; 1.2 Nm)
12	eShop	1	12	23.7	37	100	20	SP..09T308	219841 (15IP; 3.0 Nm)
16	eShop	2	16	28.8	32	100	16	SP..09T308	219841 (15IP; 3.0 Nm)
30	eShop	3	30	42.3	32	100	20	SP..09T308	219841 (15IP; 3.0 Nm)

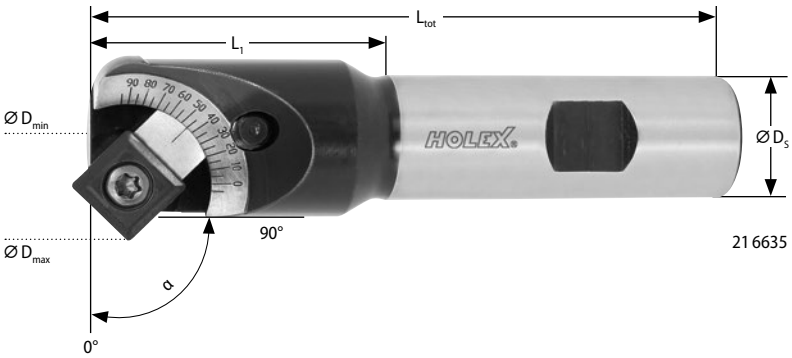


Adjustable indexable countersinking mill (0 – 90°) for SP.T 09T308 / 120408

Made of hardened tool steel. Deeply engraved scale.
Two exposed insert edges

Application: For forwards and reverse deburring, chamfering and countersinking.
Suitable for oblique plunging.
Steplessly adjustable for angles of 0° - 90°.

Note: **For setting to an exact angular value, use a pre-setting device.**



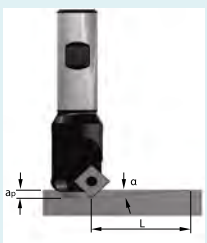
21 6635

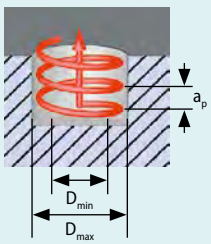
Shank Ø D_s h6 mm	220 21 6635 Adjustable indexable countersinking mill Weldon shank	L_1 mm	L_{tot} mm	suitable indexable insert	Set of insert screws	Adjustment element	Clamping screw for adjustment element
16	eShop	37	86	SP.T09T3..	219841 (15IP; 3.0 Nm)	219885	219887
20	eShop	44	98	SP.T1204..	219848 (20IP; 5.5 Nm)	219886	219888
25	eShop	49	105	SP.T1204..	219848 (20IP; 5.5 Nm)	219886	219888

Angle α		0	10	20	30	40	45	50	60	70	80	90
16	D_{min} (Ø)	2.8	4.7	6.8	9.0	11.2	12.3	13.4	15.6	17.7	19.4	3.5
	D_{max} (Ø)	20.4	21.8	22.9	23.7	24.1	24.2	24.1	23.8	23.2	22.6	21.0
20	D_{min} (Ø)	3.1	5.7	8.4	11.6	14.3	16	17.3	20.3	23.1	25.4	3.9
	D_{max} (Ø)	26.9	28.8	30.3	31.4	31.9	32	31.9	31.6	30.7	29.4	27.6
25	D_{min} (Ø)	6.7	9.4	11.8	14.8	17.7	19.4	20.7	23.7	26.4	28.9	7.1
	D_{max} (Ø)	30.4	32.3	33.7	34.8	35.3	35.4	35.3	34.9	34.0	32.7	30.9

Operating instructions circular plunging and oblique plunging for No. 21 6635

Mill Ø D mm	Adjustment angle of the indexable insert degrees	Circular plunging (interpolation) D_{min} mm	D_{max} mm	Plunge angle α degrees	$a_{p\,max}$	Oblique plunging (ramping) Plunge angle α degrees	Ramp distance L mm	$a_{p\,max}$
16	30	31	38.5	4	1.6	3	32.0	1.6
	45	34.5	39	3	1.6	3	36.0	1.6
	60	37	40	2	1.6	2	38.0	1.6
20	30	41.5	52	3	2.0	5	21.0	2.0
	45	46	53	3	2.0	4	26.0	2.0
	60	49.5	54	2	2.0	4	26.0	2.0
25	30	49	56.5	3	2.0	5	25.0	2.0
	45	53.5	58.5	2	2.0	4	27.0	2.0
	60	57	60.5	2	2.0	4	29.0	2.0

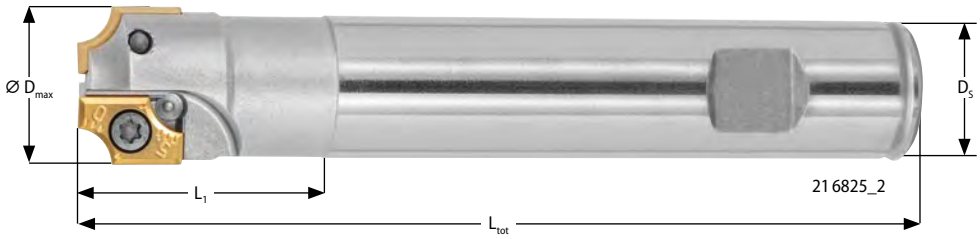




POWER CARD Garant

Garant Radius cutter for inserts No. 216841

Application: For producing convex radii on components. The slim and compact design permits a wide variety of applications and is particularly suitable for use in deep cavities.



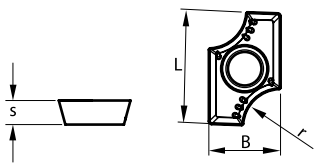
Type	210 21 6825 Radius cutter Weldon shank	Number of cutting edges Z	Ø D_s mm	Ø D_{max} mm	L_1 mm	L_{tot} mm	r_{min} mm	r_{max} mm	suitable indexable insert	Insert screw
1	eShop	2	20	22	35	120	1	2.5	216841 1 - 2.5	219879 1 (TX15; 3Nm)
2	eShop	2	20	22	35	120	3	5	216841 3 - 5	219879 1 (TX15; 3Nm)

Garant Radius indexable inserts for radius cutter No. 216825

Application: General-purpose indexable insert, preferred for steel, high-alloy steels and cast iron. Optimised chip breaker for unobstructed chip flow.

Note: Can also be used on radius turning tool No. 294500.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 6841				390	300	220	160	90						280	180		110	●		●		●	





Radius r			1	1,5	2	2,5	3	3,5	4	4,5	5	
21A 21 6841	Radius indexable insert	HB7525	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
f_z		mm	0.1 – 0.4									
L		mm	15									
B		mm	9.52									
S		mm	3.18									
suitable radius cutter			216825 1	216825 1	216825 1	216825 1	216825 2	216825 2	216825 2	216825 2	216825 2	

Garant Engraving and deburring system

2-cutter system with t_{max} = 2.0 mm

∅ D_s h6		mm	6
21Y 21 7202	Steel shank for engraving		eShop
21Y 21 7204	Carbide shank for engraving		eShop
L_{tot} (21 7202)		mm	40
L_{tot} (21 7204)		mm	60
Insert screw			219877 (T7; 0.9 Nm)
suitable indexable insert			217210 - 217216; 217234



21 7202



21 7204

4-cutter system with t_{max} = 0.8 mm

∅ D_s		mm	10
21Y 21 7225	Steel shank for engraving		eShop
L_{tot}		mm	90
Insert screw			231540_TX8 (2.0 Nm)
suitable indexable insert			217229



21 7225

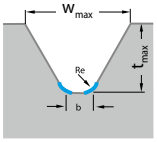
Garant Indexable inserts for engraving and deburring systems

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 7210/7215	180	140	100																	●	○		○
21 7211/7216/7234				70	60	50	40							40	30		60	●		●	○		○
21 7229				80	60	50	30	20									80			●	○		○

Inserts for engraving for 2-cutter system



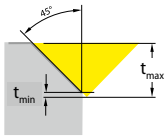




Type			ALU	UNI		Point angle degrees	R_e mm	Shoulder length b mm	t_{max} mm	w_{max} mm
2Y 21 7210	Insert for engraving	HU7805	eShop	–	10	45	0.08	0.4	2	2.06
2Y 21 7211		HB7525	–	eShop	10	45	0.08	0.4	2	2.06
2Y 21 7215		HU7805	eShop	–	10	60	0.08	0.4	2	2.71
2Y 21 7216		HB7525	–	eShop	10	60	0.08	0.4	2	2.71
f		mm	0.005- 0.03	0.003-0.03						

Inserts for deburring for 2-cutter system

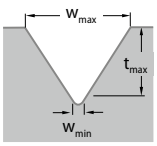




Type			UNI		t_{min} mm	t_{max} mm	Z
21Y 21 7234	Insert for deburring	HB7525	eShop	10	0.25	1.75	6
f		mm	0.005-0.03				

Inserts for engraving for 4-cutter system





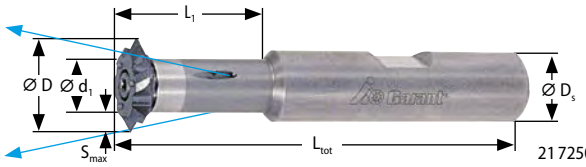
Type			UNI		Point angle degrees	w_{min} mm	w_{max} mm	t_{max} mm
21Y 21 7229	Insert for engraving	HB7525	eShop	2	90	0.25	1.8	0.8
f		mm	0.008 – 0.03					

POWER CARD Garant

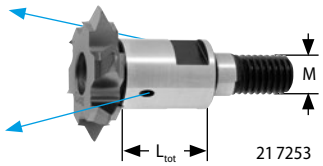
Garant Circular mill for polygon milling inserts

21 7253 Size 16/M5; 27/M8 – **Extra-slim version** for thread milling.

Note: The actual groove depth S_{max} is calculated as follows: $(D-d_1) / 2$.



21 7250



21 7253

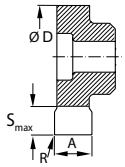
Type	21C 21 7250 Steel	21C 21 7252 Carbide	21C 21 7253 with thread steel	for insert type	Ø D mm	M mm	Ø d_1 mm	S_{max} mm	L_1 mm	L_{tot} mm	Ø D_s h6 mm	Shank type	Set of insert screws
	Circular mill												
12	eShop	–	–	P12	9.6 – 11.7	–	7	2.35	22	69.5	12	Weldon	219832 (8IP; 1.0 Nm)
12L	–	eShop	–	P12	9.6 – 11.7	–	7	2.35	32	82	12	cylindrical	219832 (8IP; 1.0 Nm)
12/M5	–	–	eShop	P12	9.6 – 11.7	M5	9.5	1.1	10	13.5	–	with thread	219832 (8IP; 1.0 Nm)
16/M5	–	–	eShop	P16	14 – 22	M5	9.5	6.5	15	18.5	–	with thread	219818 (8IP; 1.2 Nm)
18	eShop	eShop	–	P16	14 – 22	–	9	6.5	25	71.5	12	Weldon	219818 (8IP; 1.2 Nm)
18L	–	eShop	–	P16	14 – 22	–	12	5	37.4	86.5	12	cylindrical	219818 (8IP; 1.2 Nm)
18XL	–	eShop	–	P16	14 – 22	–	12	5	77.5	126.6	12	cylindrical	219818 (8IP; 1.2 Nm)
18/M6	–	–	eShop	P16	14 – 22	M6	11	5.5	15	18.5	–	with thread	219818 (8IP; 1.2 Nm)
27	eShop	–	–	P26	22 – 37	–	13.6	11.5	35	84.2	16	Weldon	219819 (20IP; 5.7 Nm)
27L	–	eShop	–	P26	22 – 37	–	15.5	10.75	25	109.6	16	cylindrical	219819 (20IP; 5.7 Nm)
27XL	–	eShop	–	P26	22 – 37	–	15.5	10.75	25	180	20	cylindrical	219819 (20IP; 5.7 Nm)
27/M8	–	–	eShop	P26	22 – 37	M8	13.6	11.5	18	22.6	–	with thread	219819 (20IP; 5.7 Nm)
27/M10	–	–	eShop	P26	22 – 37	M10	18	9.5	18	22.6	–	with thread	219819 (20IP; 5.7 Nm)

Garant Polygon milling inserts for circular mills No. 217250 / 217252 / 217253

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
21 7255–21 7346	500	400	250	250	180	120	120	100	60	45	35	30		120	120	80	180	●

Milling inserts, unprofiled, ground ready for use — Type P12 / P16 / P26

21 7259 – With extra-large groove depth S_{max}.





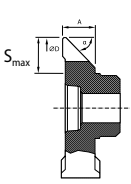
21 7255


21 7256

Milling width A		mm	1	1,5	2	2,5	3	4	5	6,5		Type	Z
21C 21 7255	Milling insert without profile	HB7720	–	eShop	eShop	eShop	eShop	–	–	–	3	P12	3
21C 21 7256		HB7720	–	eShop	eShop	eShop	eShop	eShop	eShop	–	3	P16	6
21C 21 7258		HB7720	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	3	P26	6
21C 21 7259		HB7720	eShop	eShop	eShop	eShop	eShop	–	–	–	3	P26	6
Radius R (21 7255, 21 7256, 21 7258)		mm	–	0.1	0.1	0.15	0.15	0.15	0.15	0.15			
Radius R (21 7259)		mm	0.15	0.15	0.15	0.15	0.15	–	–	–			
Ø D (21 7255)		mm	–	11.7	11.7	11.7	11.7	–	–	–			
Ø D (21 7256)		mm	–	17.7	17.7	17.7	16	16	16	–			
Ø D (21 7258)		mm	–	27.7	27.7	27.7	26	26	26	26			
Ø D (21 7259)		mm	37	37	37	37	37	–	–	–			

Milling inserts for dovetail grooves — Type P16/P26

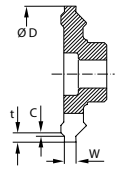
With trailing chamfer, suitable for face machining.




21 7263_45

Angle α		degrees	30	45		Ø D mm	Type	Z
21C 21 7263	Milling insert for dovetail groove	HB7720	eShop	eShop	3	16	P16	6
21C 21 7264		HB7720	eShop	eShop	3	26	P26	6
A (21 7263)		mm	4.5	3.6				
A (21 7264)		mm	6.1	5.9				
S_{max} (21 7263)		mm	2.45	3.3				
S_{max} (21 7264)		mm	3.4	5.6				

Milling inserts for retaining ring grooves, with chamfer — Type P16 / P26

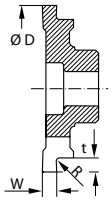


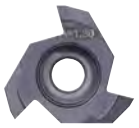


21 7261

Nominal ring thickness		mm	1,3	1,6	1,85	2,15		Ø D mm	Type	Z
21C 21 7261	Milling inserts for retaining ring grooves with chamfer	HB7720	eShop	eShop	–	–	3	16	P16	6
21C 21 7265		HB7720	–	–	eShop	eShop	3	26	P26	6
Slot width W –0.03		mm	1.38	1.68	1.93	2.23				
Depth t		mm	0.85	1	1.25	1.5				
Chamfer C		mm	0.15×45°	0.15×45°	0.2×45°	0.2×45°				

Milling inserts for retaining ring grooves, without chamfer — Type P12 / P16 / P26





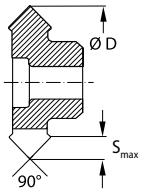
21 7269



21 7270

Nominal ring thickness		mm	0,9	1,1	1,3	1,6	2,15	2,65	3,15		Ø D mm	Type	Z
21C 21 7267	Milling inserts for retaining ring grooves without chamfer	HB7720	eShop	–	–	–	–	–	–	3	9.6	P12	3
21C 21 7269		HB7720	–	eShop	eShop	eShop	–	–	–	3	11.7	P12	3
21C 21 7270		HB7720	–	–	eShop	eShop	–	–	–	3	16	P16	6
21C 21 7275		HB7720	–	–	–	–	eShop	eShop	eShop	3	26	P26	6
Slot width W –0.03		mm	0.98	1.18	1.38	1.68	2.23	2.73	3.23				
Depth t for P12 (21 7267, 21 7269)		mm	1.2	0.9	1.1	1	–	–	–				
Depth t for P16/P26 (21 7270, 21 7275)		mm	–	–	1.1	1.25	1.75	1.75	2.2				
Radius R		mm				0.3							

90° milling inserts for chamfering and deburring — Type P12 / P16 / P26





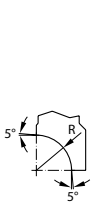
21 7277



21 7277

maximum milling depth S_{max}	21C 21 7277 Milling insert 90° for chamfering and deburring		Ø D	Minimum tapping drill Ø	Type	Z
mm	HB7720		mm	mm		
1,2	eShop	3	9.6	12	P12	3
1,5	eShop	3	11.7	12	P12	3
1,9	eShop	3	16	18	P16	6
2,1	eShop	3	26	28	P26	6

Radius milling inserts — Type P26

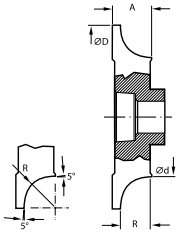




21 7278

Radius R		mm	0,5	1	1,5	2	2,5	3	4	5		Ø D mm	Type	Z
21C 21 7278	Radius milling insert	HB7720	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	3	26	P26	6
A		mm	3	3	4	4	4	4	6.5	6.5				
Ø d		mm	25	24	23	22	21	20	18	16				

Radius milling inserts, reverse machining — Type P26

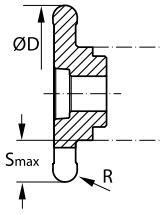




21 7282_4

Radius R		mm	0,5	1	1,5	2	2,5	3	4	5		Ø D mm	Type	Z
21C 21 7282	Radius milling insert	HB7720	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	3	26	P26	6
A		mm	3	3	3	3	4	5	6.5	6.5				
Ø d		mm	24.3	23.3	22.3	21.3	20.3	19.3	17.3	15.7				

Full radius milling inserts — Type P16 / P26



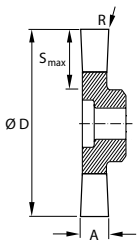


21 7297

Radius R		mm	1	1,5	2	2,5		Ø D mm	Type	Z
21C 21 7297	Full radius milling insert	HB7720	eShop	eShop	eShop	eShop	3	16	P16	6
Radius R		mm	1	1.5	2	2.5				
S_{max}		mm	2	3.5	3.5	3.5				

Radius R		mm	1,5	2	2,5	3		Ø D mm	Type	Z
21C 21 7298	Full radius milling insert	HB7720	eShop	eShop	eShop	eShop	3	26	P26	6
Radius R		mm	1.5	2	2.5	3				
S_{max}		mm	6.2							

Milling inserts for parting off, with staggered toothing — Type P26

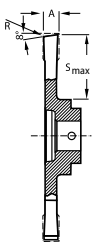



21 7271

Milling width A		mm	1	1,5	2	2,5	3		Ø D mm	Type	Z
21C 21 7271	Milling inserts for parting off, with staggered toothing	HB7720	eShop	eShop	eShop	eShop	eShop	3	37	P26	6
Radius R		mm	0.15								
S_{max}		mm	11.5								

Milling inserts for parting off, with 8° bevel — Type P26

Note: The 8° bevel facilitates process reliability when parting off components and helps to avoid vibration. Furthermore, it makes manual parting-off easier.



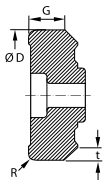

21 7276_2,5

Additional size

Milling width A		mm	1,5	2	2,5		Ø D mm	Type	Z
21C 21 7276	Milling insert for parting off, with 8° bevel	HB7720	eShop	eShop	eShop	3	37	P26	6
Radius R		mm	0.1						
S_{max}		mm	11.5						

Milling inserts for thread undercuts similar to DIN76-1

Type P12 / P16 / P26




21 7272


21 7273

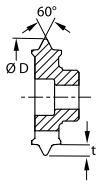
Pitch		mm	1-1,5	1,75-2,5	3-3,5		Ø D mm	Type	Z
21C 21 7272	Milling insert for metric thread undercuts	HB7720	eShop	–	–	3	11.7	P12	3
21C 21 7273		HB7720	eShop	eShop	–	3	16	P16	6
21C 21 7274		HB7720	–	–	eShop	3	26	P26	6
G (21 7272, 21 7274)		mm	17	–	3.6				
G (21 7273)		mm	2,2	2.9	–				
Depth t (21 7272, 21 7274)		mm	1.1	–	2.3				
Depth t (21 7273)		mm	1.5	1.7	–				
Radius R		mm	0.7	1.1	1.6				

60° milling inserts for thread milling

Type P12 / P16 / P26

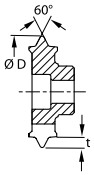


Note: **Corrected profile threading inserts** eliminate the need to program a correction to the diameter. Therefore use these inserts only for the specified thread sizes.
When using the circular mill No. 217252 size 18L and 18XL, the partial profile insert No. 217281 size 1–4 can be used only up to pitch 3.0.



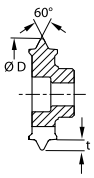

21 7279

Pitch		mm	1	1,5	2	1-3		Type	Z
21C 21 7279	Milling insert 60°	HB7720	eShop	eShop	eShop	eShop	3	P12	3
Insert geometry			Full profile	Full profile	Full profile	Partial profile			
Application			Internal	Internal	Internal	Internal and external			
Ø D		mm	9.6	9.6	10.5	11.7			
Depth t		mm	0.57	0.88	1.16	1.81			
for threads ≥			M12×1	M14×1.5	M16×2	M14×1; M16×1.5			




21 7281

Pitch		mm	1,5	2	2,5	M20×2,5	3	1-4	2,5-4		Type	Z
21C 21 7281	Milling insert 60°	HB7720	eShop	eShop	eShop	eShop	eShop	eShop	eShop	3	P16	6
Insert geometry			Full profile	Full profile	Full profile	Full profile	Full profile	Partial profile	Partial profile			
Application			Internal	Internal	Internal	Internal	Internal	Internal and external	Internal and external			
Ø D		mm	16									
Depth t		mm	0.864	1.159	1.444	1.444	1.702	2.308	2.6			
for threads ≥			M20×1.5	M22×2	M24×2.5	only M20×2.5/ M22×2.5 corrected profile	M27×3	M20	M22			




21 7285

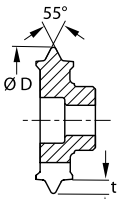
Pitch		mm	1,5	2	3	3,5	M30×3,5	4	M36×4	4,5	5	1-3	2,5-5		Type	Z
21C 21 7285	Milling insert 60°	HB7720	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	3	P26	6
Insert geometry			Full profile	Full profile	Full profile	Full profile	Full profile	Full profile	Full profile	Full profile	Full profile	Partial profile	Partial profile			
Application			Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal	Internal and external	Internal and external			
Ø D		mm	26	26	26	26	24	26	26	26	26	26	26			
Depth t		mm	0.864	1.159	1.728	2.023	2.023	2,262	2.262	2.602	2.887	3.7	3.2			
for threads ≥			M30×1.5	M33×2	M39×3	M36×3.5	only M30×3.5/ M33×3.5 corrected profile	M36×4	only M36-M54×4 corrected profile	M42×4.5	M48×5	M32	M36			

55° milling inserts for thread milling

Type P12 / P16 / P26

BSW | BSW-LH | G | G-LH | 55°

21 7295 Size 11 – For thread >1 inch.





21 7288



21 7290

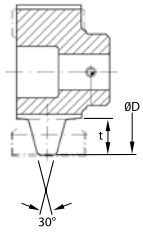
Threads per inch			11	14	19		Type	Z
21C 21 7288	Milling insert 55°	HB7720	–	–	eShop	3	P12	3
21C 21 7290		HB7720	eShop	eShop	–	3	P16	6
21C 21 7295		HB7720	eShop	–	–	3	P26	6
Insert geometry			Full profile					
Application			Internal and external					
Ø D (21 7288, 21 7290)		mm	16	16	9.6			
Ø D (21 7295)		mm	26	–	–			
Depth t (21 7288, 21 7290)		mm	1.494	1.179	0.87			
Depth t (21 7295)		mm	1.478	–	–			

30° milling inserts for thread milling

Type P12 / P16 / P26

TR | TR-LH | 30°

Note: Do not use with circular mill No. 217252 size 27L.





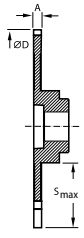
21 7302

Pitch		mm	2	3	5	6	7	8		Type	Z
21C 21 7302	Milling insert 30°	HB7720	eShop	–	–	–	–	–	3	P12	3
21C 21 7305		HB7720	–	eShop	–	–	–	–	3	P12	3
21C 21 7308		HB7720	–	eShop	–	–	–	–	3	P16	3
21C 21 7311		HB7720	–	–	eShop	–	–	–	3	P26	3
21C 21 7314		HB7720	–	–	–	eShop	–	–	3	P16	3
21C 21 7317		HB7720	–	–	–	eShop	–	–	3	P16	3
21C 21 7321		HB7720	–	–	–	–	eShop	–	3	P26	3
21C 21 7324		HB7720	–	–	–	–	–	eShop	3	P26	3
21C 21 7327		HB7720	–	–	–	–	–	eShop	3	P26	3
Insert geometry			Full profile								
Application			Internal								
Ø D (21 7302, 21 7305, 21 7311, 21 7314, 21 7317, 21 7321, 21 7324, 21 7327)		mm	11.7	11	25	16.2	22	25			
Ø D (21 7308)		mm	–	14	–	–	–	–			
Depth t		mm	1.25	1.75	2.75	3.5	4	4.5			
for threads ≥ (21 7302, 21 7305, 21 7311, 21 7314, 21 7321, 21 7324)			Tr16×2 – Tr20×2	Tr18×3 – Tr20×3	Tr44×5 – Tr48×5	Tr30×6 – Tr32×6	Tr38×7 – Tr42×7	Tr46×8 – Tr48×8			
for threads ≥ (21 7308, 21 7317, 21 7327)			–	Tr24×3 – Tr32×3	–	Tr34×6 – Tr42×6	–	Tr50×8 – Tr52×8			

Milling inserts for parting off, high number of cutting edges

Type P16/P26

For particularly high feed rates. Ideal for effective series production.





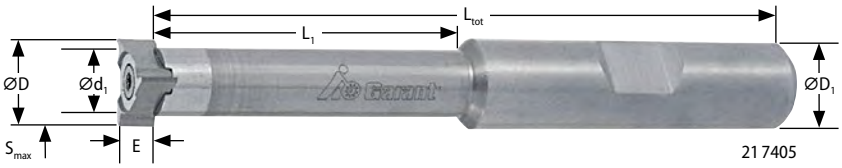
21 7344 _1,5

Milling width A		mm	1,5		Ø D mm	Type	Z
21C 21 7344	Milling insert for parting off, high number of cutting edges	HB7720	eShop	3	22	P16	9
21C 21 7346		HB7720	eShop	3	37	P26	9
S_{max} (21 7344)		mm	6.4				
S_{max} (21 7346)		mm	11.5				

POWER CARD Garant

Garant Circular mills for triangular milling inserts

No. 217400 sizes 8 and 11 as well as No. 217405 size 11L without internal cooling.

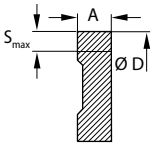


21 7405

Type	21Q 21 7400 Circular mill (without insert) Steel	21Q 21 7405 Circular mill (without insert) Carbide	for insert type	Ø D mm	Ø d 1 mm	S max mm	L 1 mm	L tot mm	Ø D s h6 mm	Shank type	Set of insert screws
8	eShop	–	04	7.9	7.1	0.35	17.2	57.2	10	Weldon	219820 (6 IP; 0.6 Nm)
11	eShop	–	03	10.6	7.4	1.6	17.2	57.2	10	Weldon	219820 (6 IP; 0.6 Nm)
20	eShop	–	02	17.5	12.2	2.6	28.7	74.05	12	Weldon	219821 (15 IP; 3.0 Nm)
25	eShop	–	01	23	16	3.45	38.5	87	16	Weldon	219822 (20 IP; 5.0 Nm)
25L	eShop	–	01	23	16	3.45	67.5	116	16	Weldon	219822 (20 IP; 5.0 Nm)
11L	–	eShop	03	10.6	7.4	1.6	34.2	74.2	10	Weldon	219820 (6 IP; 0.6 Nm)
11XL	–	eShop	03	10.6	8	1.25	–	77.66	8	cylindrical	219820 (6 IP; 0.6 Nm)
20XL	–	eShop	02	17.5	12.2	2.6	–	121.5	12	cylindrical	219821 (15 IP; 3.0 Nm)
20L	–	eShop	02	17.5	12.2	2.6	63.7	108.7	12	Weldon	219821 (15 IP; 3.0 Nm)
25XL	–	eShop	01	23	16	3	–	148.58	16	cylindrical	219822 (20 IP; 5.0 Nm)

Garant Triangular milling inserts for circular mills No. 217400 / 217405

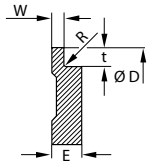
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
21 7420–21 7462	600	500	400	260	220	180	100	80	60	45	35	30		130	120	100	120	●		●		●	
21 7490–21 7510	600	500	400	260	220	180	100	80	60	45	35	30		130	120	100	120	●		●		○	





21 7420

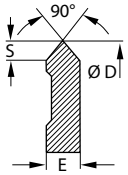
Milling width A			mm	2,34	3	3,5	4		Ø D mm	Type	Z
21C 21 7420	Milling inserts without profile		HB7720	eShop	eShop	–	–	10	10.6	03	3
21C 21 7424			HB7720	–	–	eShop	–	5	17.5	02	3
21C 21 7428			HB7720	–	–	–	eShop	5	23	01	3
S_{max}			mm	1.6	1.6	2.6	3.45				





21 7450

Nominal ring thickness			mm	0,9	1,1	1,3	1,6	1,85	2,15	2,65	3,15		Ø D mm	E mm	Type	Z
21C 21 7450	Milling inserts for retaining ring grooves without chamfer		HB7720	eShop	–	–	–	–	–	–	–	10	7.9	2.34	04	3
21C 21 7454			HB7720	–	eShop	eShop	–	eShop	–	–	–	10	10.6	2.34	03	3
21C 21 7458			HB7720	–	eShop	eShop	eShop	–	–	eShop	eShop	5	17.5	3.5	02	3
21C 21 7462			HB7720	–	–	–	eShop	–	eShop	eShop	eShop	5	23	4	01	3
Slot width W –0.03			mm	0.98	1.18	1.38	1.68	1.93	2.23	2.73	3.23					
Depth t			mm	0.3	0.9	1.1	1.25	1.25	1.75	1.75	2.2					
Radius R			mm	0.3												



21 7490

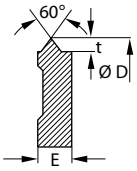


21 7490

maximum milling depth S_{max}	21C 21 7490 Milling insert 90°		Insert thickness E	Ø D	Type	Z
mm	HB7720		mm	mm		
0,9	eShop	10	2.34	7.9	04	3
1,5	eShop	10	3	10.6	03	3
2,5	eShop	5	5	17.5	02	3
3,25	eShop	5	6.5	23	01	3

60° milling inserts for thread milling

M | M-LH | MF | MF-LH | 60°

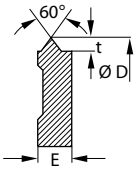


21 7500



21 7500

Pitch	mm	1,5	2		Type	Z
21C 21 7500 Milling insert 60°	HB7720	eShop	eShop	10	03	3
Insert geometry		Full profile Internal				
Ø D	mm	10.6				
Depth t	mm	0.864	1.159			
Insert thickness E	mm	2.34				
for threads ≥		M16				

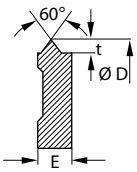


21 7500



21 7505

Pitch	mm	1,5	2	M20×2,5	2,5	3	1-3,5		Type	Z
21C 21 7505 Milling insert 60°	HB7720	eShop	eShop	eShop	eShop	eShop	eShop	5	02	3
Insert geometry		Full profile Internal	Full profile Internal	Full profile Internal	Full profile Internal	Full profile Internal	Partial profile Internal and external			
Ø D	mm	17.5	17.5	16	17.5	17.5	17.5			
Depth t	mm	0.864	1.159	1.444	1.444	1.728	0.578 - 2.023			
Insert thickness E	mm	3.5								
for threads ≥		M24×1.5	M24×2	only M20×2.5 corrected profile	M24×2.5	M24×3	M22			



21 7500



21 7510

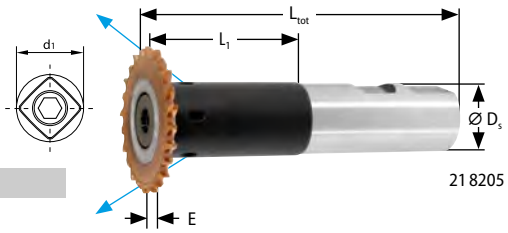
Pitch	mm	2	3,5		Type	Z
21C 21 7510 Milling insert 60°	HB7720	eShop	eShop	5	01	3
Insert geometry		Full profile Internal				
Ø D	mm	23				
Depth t	mm	1.159	2.023			
Insert thickness E	mm	4				
for threads ≥		M30×2	M33×3.5			

mimatic Tool Systems

PolySAW-G / DeepMILL-G

Saw blades secured by a single screw in the centre. **Quadrogon interface** for improved torque transmission and torsional stiffness.

Supplied with: Supplied with clamping washer and clamping screw.



21 8205

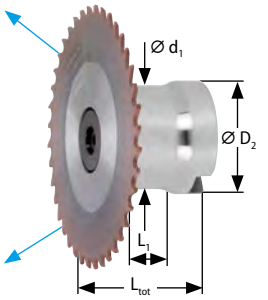
PolySAW-G / DeepMill-G basic holders with Weldon shank

Type	29B 21 8205 Toolholder Weldon shank	Ø d_1 mm	L_1 mm	L_{tot} mm	Ø D_s h6 mm	Clamping washer	Clamping screw
09/16	eShop	16.8	35	92	20	–	219834 (SW3; 3.8 Nm)
11/18	eShop	18.8	40	97	20	–	219835 (SW3; 10.5 Nm)
13/21	eShop	21.6	45	111	25	–	219836 (4AF; 24.5 Nm)
16/26	eShop	26	50	116	25	219845	219837 (SW3; 6.0 Nm)
19/30	eShop	30	55	128	32	219846	219838 (SW3; 10.5 Nm)
25/38	eShop	38.2	60	133	32	219847	219839 (SW4; 24.5 Nm)

PolySAW-G basic holders with bore

Application: With combination face mill adapter.
Only with PolySAW-G saw blades.

Type	29B 21 8210 PolySAW toolholder with bore	Ø d_1 mm	Ø d_2 mm	L_1 mm	L_{tot} mm	Mounting bore Ø mm	Clamping washer	Clamping screw
16/26	eShop	26	32	20	42.5	16	219845	219837 (SW3; 6.0 Nm)
19/30	eShop	30	32	20	42.5	16	219846	219838 (SW3; 10.5 Nm)



21 8210

mimatic Tool Systems

PolySAW-G saw blades / DeepMILL-G milling discs

Note: Standard application values for a_e max.

a_e / D	25 %	20 %	15 %	10 %
f_z factor	0.85	0.9	1.00	1.15

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
21 8220/8224/ 8230–21 8236	300	200	150	160	120	100								100	80		120		●		●		
21 8222/8226	600	500	400																●		○		

PolySAW-G saw blades

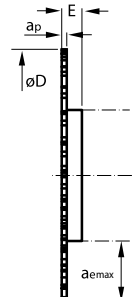
For parting off, sawing, and slitting.
PolySAW-G permits cutting to the full depth.

Also available with DLC coating


21 8220


21 8222

Ø D mm	29C 21 8220 Saw blades PolySAW-G Width a_p = 1 mm TiAlN	29C 21 8222 Saw blades PolySAW-G Width a_p = 1 mm TiAlN	29C 21 8224 Saw blades PolySAW-G Width a_p = 1.5 mm TiAlN	29C 21 8226 Saw blades PolySAW-G Width a_p = 1.5 mm TiAlN	Type of toolholder	Number of cutting edges Z 21 8220 21 8224	Number of cutting edges Z 21 8222 21 8226	Insert width E mm	$a_{e\,max}$ mm
32	eShop	eShop	eShop	eShop	09/16	18	16	6	7.6
40	eShop	eShop	eShop	eShop	11/18	24	20	6	10.5
50	eShop	eShop	eShop	eShop	13/21	32	20	6	14.2
63	eShop	eShop	eShop	eShop	16/26	40	24	6	18.5
80	eShop	eShop	eShop	eShop	19/30	40	24	6	25
f_z mm	0.015	0.02	0.02	0.025					

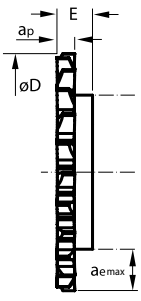


Deep-MILL-G milling discs

Slot milling, grooving, ribbed structures.
DeepMill-G permits cutting to the full depth.


21 8230

Ø D mm	29C 21 8230 Milling disc DeepMILL-G Width a_p = 2 mm TiAlN	29C 21 8232 Milling disc DeepMILL-G Width a_p = 3 mm TiAlN	29C 21 8234 Milling disc DeepMILL-G Width a_p = 4 mm TiAlN	29C 21 8236 Milling disc DeepMILL-G Width a_p = 5 mm TiAlN	Type of toolholder	Number of effective inserts Z_{eff}	Number of cutting edges Z	Insert width E mm	$a_{e\,max}$ mm
32	eShop	eShop	eShop	eShop	11/18	8	16	6	6.6
40	eShop	eShop	eShop	eShop	13/21	9	18	6	9.2
50	eShop	eShop	eShop	eShop	16/26	12	24	6	12
63	eShop	eShop	eShop	eShop	19/30	12	24	6	16.5
80	eShop	eShop	eShop	eShop	25/38	12	24	6	20.9
f_z mm	0.025	0.025	0.03	0.03					



POWER CARD Garant

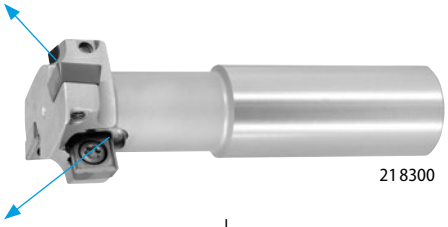
Garant T-slot cutter for SP.T 0603.. / 09T3.. / 1204..

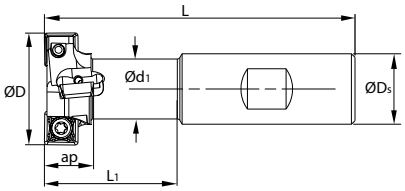
End mill with clamping face and internal coolant supply. Deeply recessed at the cutting area to allow working in very deep slots. Anti-corrosion surface treatment.

Application: For slots to DIN 650.

Note: Coolant feed via the internal coolant supply is preferable in order to achieve optimum chip clearance.

Size 50/2 – Use GARANT torque screwdriver TQ No. **211750 size 5.7** with bit No. **674252 size 20IP**.
Size 21/1; 25/2 – Use GARANT torque screwdriver TQ No. **211750 size 1.2** with bit No. **674252 size 8IP**.
Size 32/2; 40/2 – Use GARANT torque screwdriver TQ No. **211750 size 3.0** with bit No. **674252 size 15IP**.

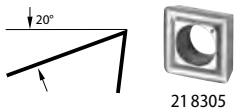




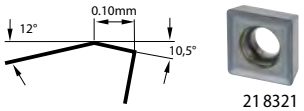
Ø D / Z_{eff} mm	210 21 8300 T-slot cutter **Weldon shank**	Number of effective inserts Z_{eff}	Number of indexable inserts	Slot depth a_p mm	Ø d_1 mm	L_1 mm	L_{tot} mm	Ø D_s h6 mm	suitable indexable insert	Set of insert screws
21/1	eShop	1	2	9	11	26	76	16	SP.T 060304	219840 (8IP; 1.2 Nm)
25/2	eShop	2	4	11	13	31	82	16	SP.T 060304	219840 (8IP; 1.2 Nm)
32/2	eShop	2	4	14	17	38	88	20	SP.T 09T308	219841 (15IP; 3.0 Nm)
40/2	eShop	2	4	17	21	50	108	25	SP.T 09T308	219841 (15IP; 3.0 Nm)
50/2	eShop	2	4	22	27	56	120	32	SP.T 120408	219848 (20IP; 5.5 Nm)

Garant Milling inserts SP.T 0603.. / 09T3.. / 1204..

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
HU7815	750	700	600																●		○		
HB7035				220	200	180	140	120						180	160		170	●	●		○		



21 8305

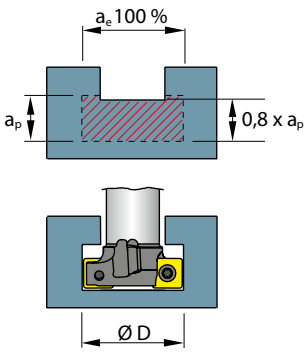


21 8321

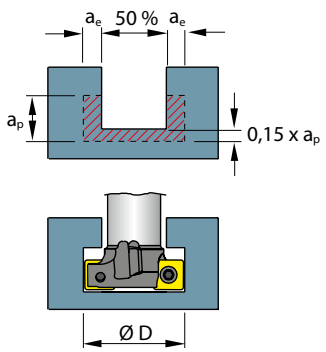
Type			ALU	UNI	
21A 21 8305	SPGT 060304	HU7815	eShop	–	10
21A 21 8321	SPMT 060304	HB7035	–	eShop	10
21A 21 8325	SPGT 09T308	HU7815	eShop	–	10
21A 21 8341	SPMT 09T308	HB7035	–	eShop	10
21A 21 8345	SPGT 120408	HU7815	eShop	–	10
21A 21 8361	SPMT 120408	HB7035	–	eShop	10
f_z (21 8305, 21 8321)		mm	0.12	0.09	
f_z (21 8325, 21 8341)		mm	0.14	0.11	
f_z (21 8345, 21 8361)		mm	0.15	0.12	

Application notes for T-slot cutter No. 21 8300

T-slot milling in the case of a_e = 100%



T-slot milling in the case of a_e = 50%



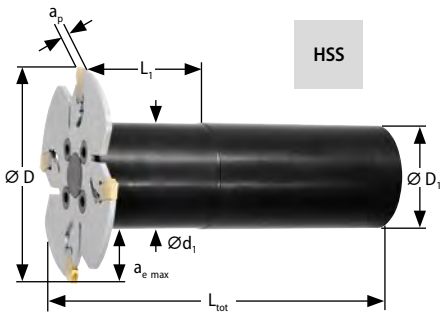
Garant Side / parting off milling cutter for clamped inserts

High-performance parting-off milling cutter system with choice of either collar and **low-cost steel blade** or collar and **high-precision temperature-resistant HSS blade.**

Application: For slitting and parting off milling. For high repetition accuracy in series production it is preferable to use the HSS blade.

Attention: Please order the assembly key No. 279940 separately.

Note: Side and parting-off milling cutters available up to Ø D = 200 mm.
HSS spare blades can be reordered as accessories.



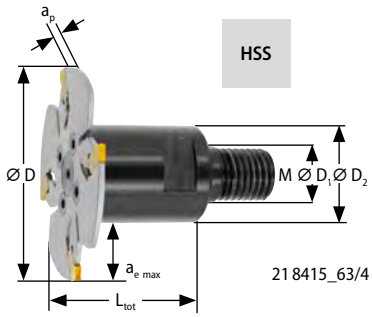
21 8412_63/4

Side / parting off milling cutter with plain shank

Ø D / number of teeth Z	21P 21 8408	21P 21 8410	21P 21 8412	21P 21 8414	$a_{e\ max}$	Ø d_1	L_1	L_{tot} a_p 1.5 mm	L_{tot} a_p 2.2 mm	Ø D_s h6
	Side / parting off milling cutter with plain shank									
	HSS width a_p = 1.5 mm	Steel width a_p = 1.5 mm	HSS width a_p = 2.2 mm	Steel width a_p = 2.2 mm						
mm					mm	mm	mm	mm	mm	mm
50/4	eShop	eShop	eShop	eShop	12.75	24.5	36	94.9	95.5	25
63/4	eShop	eShop	eShop	eShop	15.75	31.5	37	99.9	100.5	32

Side / parting off milling cutter with thread

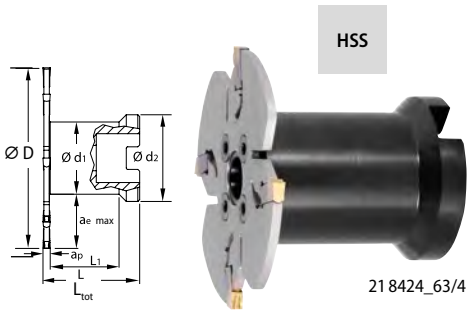
Specially for use in deep cavities.



21 8415_63/4

Ø D / number of effective cutting edges Z	21P 21 8415	21P 21 8416	21P 21 8417	21P 21 8418	$a_{e\ max}$	Ø D_1 h6	L_{tot} a_p 1.5 mm	L_{tot} a_p 2.2 mm	Ø D_2	Mounting thread M
	Side / parting off milling cutter with thread									
	HSS width a_p = 1.5 mm	Steel width a_p = 1.5 mm	HSS width a_p = 2.2 mm	Steel width a_p = 2.2 mm						
mm					mm	mm	mm	mm	mm	
50/4	eShop	eShop	eShop	eShop	12.75	12.5	31.4	32	25	M12
63/4	eShop	eShop	eShop	eShop	15.75	17	33.4	40	29	M16

Side / parting off milling cutter with collar



21 8424_63/4

Ø D / number of teeth Z	21P 21 8420	21P 21 8422	21P 21 8424	21P 21 8426	21P 21 8428	21P 21 8430	$a_{e\ max}$	Ø d_1	Ø d_2	L_1	L_{tot} a_p 1.5 mm	L_{tot} a_p 2.2 mm	L_{tot} a_p 3.1 mm	Mounting bore Ø
	Side / parting off milling cutter with collar													
	HSS width a_p = 1.5 mm	Steel width a_p = 1.5 mm	HSS width a_p = 2.2 mm	Steel width a_p = 2.2 mm	HSS width a_p = 3.1 mm	Steel width a_p = 3.1 mm								
mm							mm	mm	mm	mm	mm	mm	mm	mm
63/4	eShop	eShop	eShop	eShop	eShop	eShop	15.5	32	40	38	51.4	52	52.8	22
80/5	eShop	eShop	eShop	eShop	eShop	eShop	20	40	40	–	51.4	52	52.8	22
100/8	eShop	eShop	eShop	eShop	eShop	eShop	26	48	48	–	51.4	52	52.8	27
125/10	eShop	eShop	eShop	eShop	eShop	eShop	33.5	58	58	–	64.4	65	65.8	32
160/15	–	–	eShop	eShop	eShop	eShop	40	80	80	–	–	65	65.8	40

HSS blade accessories for side / parting off milling cutters No. 218408 – 218430

HSS

∅ D / number of teeth Z	21P 21 8440	21P 21 8442	21P 21 8444	Set of fastening screws
	Blade			
mm	HSS width a_p = 1.5 mm	HSS width a_p = 2.2 mm	HSS width a_p = 3.1 mm	
63/4	eShop	eShop	eShop	219985
80/5	eShop	eShop	eShop	219985
100/8	eShop	eShop	eShop	219985
125/10	eShop	eShop	eShop	219985
160/15	–	eShop	eShop	219985



21 8440_125/10

Garant Carbide inserts for side milling cutters No. 218408 – 218444 and parting-off blades No. 273560

Note: Standard application values for a_e max.

See page 861 for suitable parting-off tools

a_e / D	25 %	20 %	15 %	10 %
f_z factor	1.0	1.15	1.25	1.5

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
ALU	530	495	415															
ST900				230	190	170	135											
UNI				210	150	150	115							110	90		145	●
INOX														120	100			

Cutter insert, neutral



Type		ALU	ST900	INOX	UNI	
21B 21 8450	Insert **Width 1.5 mm**	eShop	eShop	–	eShop	10
21B 21 8460	Insert **Width 2.2 mm**	eShop	eShop	eShop	eShop	10
21B 21 8470	Insert **Width 3.1 mm**	eShop	eShop	eShop	eShop	10
Corner radius (21 8450) mm		0.15	0.15	–	0.15	
Corner radius (21 8460, 21 8470) mm		0.2				
Type		HU7810	HB7535	HB7635	HB7535	
f_z mm		0.13	0.1	0.07	–	
Tolerance a_p mm		0 / + 0.3				

Cutter insert, full radius

Note:
21 8482/8484 – Suitable for side/parting off milling cutters a_p = 3.1 mm.



Type		ALU	ST900	INOX	UNI	
21B 21 8478	Cutter insert **Full radius width 1.5 mm**	eShop	eShop	eShop	eShop	10
21B 21 8480	Cutter insert **Full radius width 2.2 mm**	eShop	eShop	eShop	eShop	10
21B 21 8482	Cutter insert **Full radius width 3 mm**	eShop	eShop	eShop	eShop	10
21B 21 8484	Cutter insert **Full radius width 4 mm**	eShop	eShop	eShop	eShop	10
Type		HU7810	HB7535	HB7635	HB7535	
f_z mm		0.13	0.1	0.7	–	
Tolerance a_p mm		0 / +0.3				

Garant Assembly key No. 27 9940 size 1–3

For side / parting off milling cutters.



27 9940_1–3

POWER CARD Garant

Garant

Side milling cutters for screw-on indexable inserts

Side milling cutters of robust special steel for reduced vibration.

Application: For milling grooves and slots. For flat or non-flat slot base.

Note: Side milling cutters available up to Ø D = 200 mm.



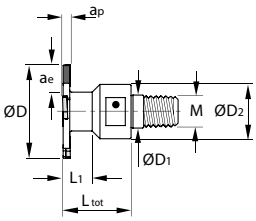
21 8542_63

Side milling cutter with thread

Note:

21 8544 – Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size IP15**.

21 8540/8542 – Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size IP9**.



Ø D	210 21 8540	210 21 8542	210 21 8544	Number of effective inserts Z_{eff}		Number of indexable inserts		$a_{e\,max}$	Ø D_1 h6	L_1	L_{tot}	Ø D_2	Mounting thread M
	Side milling cutter with thread			21 8540 21 8542	21 8544	21 8540 21 8542	21 8544						
mm	**Width a_p = 4 mm**	**Width a_p = 5 mm**	**Width a_p = 6 mm**					mm	mm	mm	mm	mm	
50	eShop	eShop	eShop	2	2	4	4	14	17	15	35	29	M16
63	eShop	eShop	eShop	4	3	8	6	14	17	–	35	29	M16
80	eShop	eShop	eShop	5	4	10	8	22.5	17	–	35	29	M16
ISO code indexable insert	SN..1102	SN..1103	SN..1203										
Set of insert screws	219948 (IP9; 2.0 Nm)	219949 (IP9; 2.0 Nm)	219950 (IP15; 2.2 Nm)										

Side milling cutter with collar

Attention:

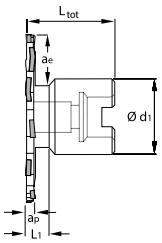
21 8568/8569 – **To obtain a flat slot base, please use neutral, left-hand and right-hand indexable inserts, where the neutral insert is mounted on the middle insert range.**

Note:

21 8560 – Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size IP9**.

21 8562 – Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size IP9**.

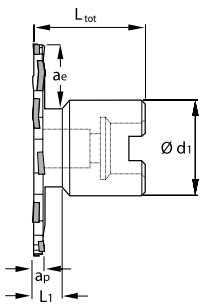
21 8564–8569 – Use GARANT torque screwdriver TQ No. **211750 size 2.2** with bit No. **674252 size IP15**.





21 8560

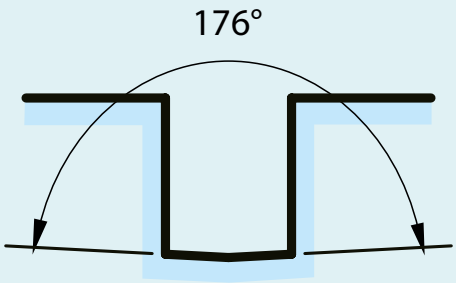
Ø D	210 21 8560	210 21 8562	210 21 8564	210 21 8565	Number of effective inserts Z_{eff}		Number of indexable inserts		$a_{e\,max}$	Ø d_1	L_1	L_{tot}	Mounting bore Ø
	Side milling cutter with collar				21 8560 21 8562	21 8564 21 8565	21 8560 21 8562	21 8564 21 8565					
mm	**Width a_p = 4 mm**	**Width a_p = 5 mm**	**Width a_p = 6 mm**	**Width a_p = 8 mm**					mm	mm	mm	mm	mm
50	eShop	eShop	eShop	eShop	2	2	4	4	8.5	32	15	50	16
63	eShop	eShop	eShop	eShop	4	3	8	6	10.5	40	15	50	22
80	eShop	eShop	eShop	eShop	5	4	10	8	20	40	15	50	22
100	eShop	eShop	eShop	eShop	6	5	12	10	24.2	48	–	50	27
125	eShop	eShop	eShop	eShop	6	6	12	12	23.7	70	–	50	40
125L	eShop	eShop	eShop	eShop	6	6	12	12	29.7	59	–	50	32
160	eShop	eShop	eShop	eShop	8	8	16	16	41.2	70	–	50	40
ISO code indexable insert	SN.. 1102	SN.. 1103	SN.. 1203	SN.. 12045									
Set of insert screws	219948 (IP9; 2.0 Nm)	219949 (IP9; 2.0 Nm)	219950 (IP15; 2.2 Nm)	219978 (IP15; 2.2 Nm)									



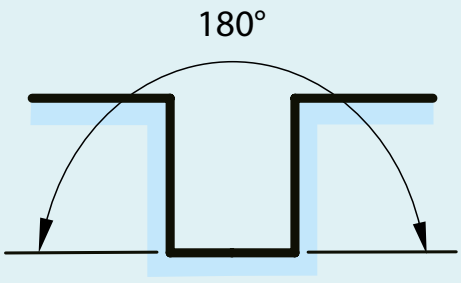


Ø D	210 21 8566	210 21 8567	210 21 8568	210 21 8569	Number of effective inserts Z_{eff}		Number of indexable inserts		$a_{e\,max}$	Ø d_1	L_1	L_{tot}	Mounting bore Ø
	Side milling cutter with collar				21 8566 21 8567	21 8568 21 8569	21 8566 21 8567	21 8568 21 8569					
mm	**Width a_p = 10 mm**	**Width a_p = 12 mm**	**Width a_p = 14 mm**	**Width a_p = 16 mm**					mm	mm	mm	mm	mm
50	eShop	eShop	–	–	2	–	4	–	8.5	32	15	50	16
63	eShop	eShop	–	–	3	–	6	–	10.5	40	15	50	22
80	eShop	eShop	eShop	eShop	4	2	8	6	20	40	15	50	22
100	eShop	eShop	–	–	5	–	10	–	24.2	48	–	50	27
125	eShop	eShop	eShop	eShop	6	4	12	12	23.7	70	–	50	40
125L	eShop	eShop	–	–	6	–	12	–	29.7	59	–	50	32
160	eShop	eShop	eShop	eShop	8	5	16	15	41.2	70	–	50	40
ISO code indexable insert	SN.. 1205	SN.. 1207	SN.. 1205	SN.. 1207									
Set of insert screws	219983 (IP15; 2.2 Nm)	219984 (IP15; 2.2 Nm)	219983 (IP15; 2.2 Nm)	219984 (IP15; 2.2 Nm)									

Garant Slot base



Non-flat slot base (176°).
Use of neutral indexable inserts.



Flat slot base (180°).
Use of left- and right-hand indexable inserts.

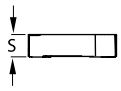
Garant Carbide indexable inserts for side milling cutters No. 218540 – 218569

Note: Standard application values for a_e max.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
ALU	800	650	500																●		○		
ST900				200	180	170													●		○		
ST1400						200	180	170											●		○		
INOX														120	100				●		○		
UNI					180	170	160							110	90			●	●		○		

Indexable inserts, neutral, for slot base 176° (not flat)





Type		ALU	ST900	ST1400	INOX	UNI		Insert thickness mm	for slot width a_p mm
21A 21 8571	SNHX 1102 **neutral**	eShop	eShop	eShop	eShop	eShop	10	2.3	4
21A 21 8581	SNHX 1103 **neutral**	eShop	eShop	eShop	eShop	eShop	10	2.7	5
21A 21 8591	SNHX 1203 **neutral**	eShop	eShop	eShop	eShop	eShop	10	3.2	6
21A 21 8601	SNHX 12045 **neutral**	eShop	eShop	eShop	eShop	eShop	10	4.5	8
21A 21 8611	SNHX 1205 **neutral**	eShop	eShop	eShop	eShop	eShop	10	5.4	10; 14
21A 21 8621	SNHX 1207 **neutral**	eShop	eShop	eShop	eShop	eShop	10	7	12; 16
Type		HU7710	HB7525	HB7525	HB7535	HB7525			
f_z	mm	0.1	0.08	0.13	0.13	–			
Chamfer width (21 8571, 21 8581)	mm	0.1	0.15	0.15	0.15	0.15			
Chamfer width (21 8591, 21 8601)	mm			0.25					
Chamfer width (21 8611)	mm	0.3	0.25	0.25	0.25	0.25			
Chamfer width (21 8621)	mm	0.45	0.25	0.25	0.25	0.25			

Indexable inserts, left and right, for slot base 180° (flat)

Note: To machine a flat slot base, left and right inserts must be mounted on the carrier.
The side facing away from the shank is equipped with left inserts.

Type		UNI		Insert thickness mm	for slot width a_p mm
21A 21 8573	SNHX 1102 **left-hand**	eShop	10	2.3	4
21A 21 8583	SNHX 1103 **left-hand**	eShop	10	2.7	5
21A 21 8593	SNHX 1203 **left-hand**	eShop	10	3.2	6
21A 21 8603	SNHX 12045 **left-hand**	eShop	10	4.5	8
21A 21 8613	SNHX 1205 **left-hand**	eShop	10	5.4	10; 14
21A 21 8623	SNHX 1207 **left-hand**	eShop	10	7	12; 16
Type		HB7835			
Chamfer width	mm	0.25			



21 8573

Type		UNI		Insert thickness mm	for slot width a_p mm
21A 21 8575	SNHX 1102 **right-hand**	eShop	10	2.3	4
21A 21 8585	SNHX 1103 **right-hand**	eShop	10	2.7	5
21A 21 8595	SNHX 1203 **right-hand**	eShop	10	3.2	6
21A 21 8605	SNHX 12045 **right-hand**	eShop	10	4.5	8
21A 21 8615	SNHX 1205 **right-hand**	eShop	10	5.4	10; 14
21A 21 8625	SNHX 1207 **right-hand**	eShop	10	7	12; 16
Type		HB7835			
Chamfer width	mm	0.25			



21 8575

Garant ISO carbide milling inserts / systems becoming obsolete

Milling inserts for indexable milling cutter No. 211870 - 211872

Type			ST1400	HART	UNI	
21A 21 1892	XDHW 060210	HB7720	eShop	–	–	10
21A 21 1894		HB7705	–	eShop	–	10
21A 21 1898		HB7535	–	–	eShop	10


21 1894

Type			ST1400	HART	UNI	
21A 21 1902	XDHW 10T310	HB7720	eShop	–	–	10
21A 21 1904		HB7705	–	eShop	–	10
21A 21 1908		HB7535	–	–	eShop	10


21 1908

Milling inserts for indexable milling cutter No. 213100


21 3450


21 3510


21 3520

Type			ST1400	INOX	UNI	
21A 21 3450	SPUN 120308 E	HU7730	eShop	–	–	10
21A 21 3510	SPUN 120308 S	HB7535	–	eShop	–	10
21A 21 3520	SPUN 120308 E	HB7720	–	–	eShop	10
21A 21 3530	SPKN 1203 EDER	HU7730	eShop	–	–	10
21A 21 3540	SPKN 1203 EDSR	HB7535	–	eShop	–	10
21A 21 3560	SPKN 1203 EDER	HB7720	–	–	eShop	10
21A 21 3600	SPLR 120308 S	HB7535	–	–	eShop	10

Milling inserts for indexable milling cutter No. 214800

Type			ALU	ST500	
21A 21 4940	MPHX 1104 PPFR	HU7710	eShop	–	10
21A 21 4960	MPHX 1104 PPER	HB7535	–	eShop	10


21 4940


21 4960

Milling inserts for indexable milling cutter No. 216000 - 6008

Type			ALU	ST1400	
21A 21 6012	ANGT 160605 PPFR	HU7710	eShop	–	10
21A 21 6015	ANGT 160605 PPTR	HB7830	–	eShop	10


21 6012


21 6015

Milling inserts for indexable milling cutter No. 216025 - 6032

Type			ALU	ST1400	
21A 21 6035	ANGT 100305 PDFR	HU7710	eShop	–	10
21A 21 6037	ANGT 100305 PDER	HB7830	–	eShop	10


21 6035


21 6037

Milling inserts for precision boring bar No. 217200

Type			UNI	
29W 21 7231	MPHX 060202 TN	HB7720	eShop	10


21 7231

Solid carbide | DIN 6527 | Type N | f9 | HPC

HAIMER MILL solid carbide milling cutter / HAIMER MILL solid carbide milling cutter SAFE-λOCK®

For **general-purpose use** in steel materials and high-alloy steels, especially stainless steel. With **cylindrical core** for optimised tool stiffness when milling slots. Reliable processes guaranteed when ramping and during circular interpolation milling thanks to **special end face geometry.**

22 0288/0290/0294 – With SAFE-LOCK pull-out protection to provide an additional form fit for the tool. In conjunction with SAFE-LOCK tool holders, it secures the tool to prevent it being pulled out.

Note: Tool holders with the SAFE-LOCK pull-out protection can be found under clamping technology.

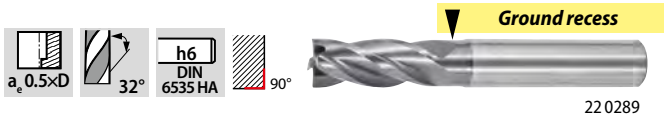
22 0286 – For **HB** use order **No. 220287**.
22 0289 – For **HB** use order **No. 220291**.
22 0292 – For **HB** use order **No. 220293**.



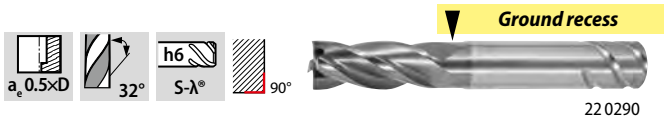
22 0286



22 0288



22 0289



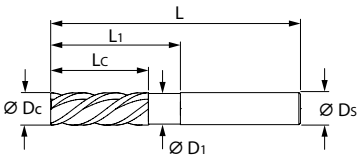
22 0290



22 0292



22 0294



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
22 0286–22 0294	480	480	350	275	255	210	190							95	75	35	155	●	●	●	●	●	●

Ø f9 D_c	26X 22 0286	26X 22 0288	26X 22 0289	26X 22 0290	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	HAIMER MILL end mill											
		SAFE-LOCK		SAFE-LOCK						22 0286 22 0288		
mm	AlTiN	AlTiN	AlTiN	AlTiN	mm	mm	mm	mm	mm	mm	mm	mm
2	–	–	–	–	7	9	1.9	58	6	0.04	0.011	0.013
3	–	–	–	–	8	10	2.9	58	6	0.06	0.017	0.02
4	–	–	–	–	11	15	3.8	58	6	0.08	0.022	0.026
5	–	–	–	–	13	18	4.8	58	6	0.1	0.028	0.033
6	–	–	–	–	13	20	5.7	58	6	0.12	0.033	0.039
8	–	–	–	–	19	26	7.6	64	8	0.16	0.044	0.052
10	–	–	–	–	22	30.5	9.5	73	10	0.2	0.055	0.065
12	–	–	–	–	26	36.5	11.4	84	12	0.24	0.066	0.078
16	–	–	–	–	32	42.5	15.2	93	16	0.32	0.088	0.104
20	–	–	–	–	38	52	19	105	20	0.4	0.11	0.13

Ø f9 D_c	26X 22 0292	26X 22 0294	L_c	L_1	Ø D_1	L	Ø D_s	Corner chamfer width at 45°	< 900 N f_z	< 900 N f_z
	HAIMER MILL end mill									
		SAFE-LOCK								
mm	AlTiN	AlTiN	mm	mm	mm	mm	mm	mm	mm	mm
6	–	–	18	24	5.7	62	6	0.12	0.033	0.039
8	–	–	24	32	7.6	70	8	0.16	0.044	0.052
10	–	–	30	40	9.5	82	10	0.2	0.055	0.065
12	–	–	36	48	11.4	95	12	0.24	0.066	0.078
16	–	–	48	64	15.2	115	16	0.32	0.088	0.104
20	–	–	60	80	19	133	20	0.4	0.11	0.13

Solid carbide | DIN 6527 | Type N | f9 | 4 | 32° | HPC

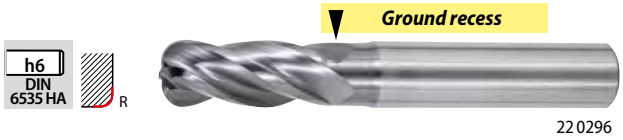
HAIMER MILL solid carbide torus cutter / HAIMER MILL solid carbide torus cutter SAFE-λOCK®

For **general-purpose use** in steel materials and high-alloy steels, especially stainless steel.
With **cylindrical core** for optimum tool stiffness when milling slots.
Reliable processes guaranteed when ramping and during circular interpolation milling thanks to **special end face geometry.**

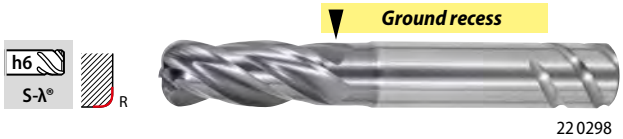
22 0298 – With SAFE-LOCK pull-out protection to provide an additional form fit for the tool. In conjunction with SAFE-LOCK tool holders, it secures the tool to prevent it being pulled out.

Note: Tool arbor with the SAFE-LOCK pull-out protection can be found under clamping technology.

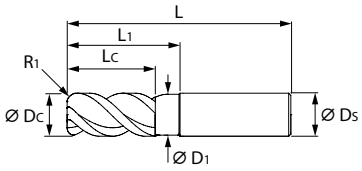
22 0296 – For **HB** use order **No. 220297**.



22 0296



22 0298



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	
22 0296/0298	480	480	375	275	255	210	190							95	75	35	155	●

Ø f9 D_c / R_1	26X 22 0296 HAIMER MILL solid carbide torus cutter AlTiN	26X 22 0298 HAIMER MILL solid carbide torus cutter SAFE-LOCK AlTiN	L_c	R_1	L_1	Ø D_1	L	Ø D_s	< 900 N f_z	< 900 N f_z
mm			mm	mm	mm	mm	mm	mm	mm	mm
4/0,4	–	–	11	0.4	15	3.8	58	6	0.022	0.026
4/0,5	–	–	11	0.5	15	3.8	58	6	0.022	0.026
5/0,5	–	–	13	0.5	18	4.8	58	6	0.028	0.033
5/1,0	–	–	13	1	18	4.8	58	6	0.028	0.033
6/0,5	–	–	13	0.5	20	5.7	58	6	0.033	0.039
6/1,0	–	–	13	1	20	5.7	58	6	0.033	0.039
6/1,5	–	–	13	1.5	20	5.7	58	6	0.033	0.039
8/0,5	–	–	19	0.5	26	7.6	64	8	0.044	0.052
8/1,0	–	–	19	1	26	7.6	64	8	0.044	0.052
8/1,5	–	–	19	1.5	26	7.6	64	8	0.044	0.052
8/2,0	–	–	19	2	26	7.6	64	8	0.044	0.052
10/0,5	–	–	22	0.5	30.5	9.5	73	10	0.055	0.065
10/1,0	–	–	22	1	30.5	9.5	73	10	0.055	0.065
10/1,5	–	–	22	1.5	30.5	9.5	73	10	0.055	0.065
10/2,0	–	–	22	2	30.5	9.5	73	10	0.055	0.065
12/0,5	–	–	26	0.5	36.5	11.4	84	12	0.066	0.078
12/1,0	–	–	26	1	36.5	11.4	84	12	0.066	0.078
12/1,5	–	–	26	1.5	36.5	11.4	84	12	0.066	0.078
12/2,0	–	–	26	2	36.5	11.4	84	12	0.066	0.078
12/3,0	–	–	26	3	36.5	11.4	84	12	0.066	0.078
12/4,0	–	–	26	4	36.5	11.4	84	12	0.066	0.078
16/0,5	–	–	32	0.5	42.5	15.2	93	16	0.088	0.104
16/1,0	–	–	32	1	42.5	15.2	93	16	0.088	0.104
16/2,0	–	–	32	2	42.5	15.2	93	16	0.088	0.104
16/3,0	–	–	32	3	42.5	15.2	93	16	0.088	0.104
16/4,0	–	–	32	4	42.5	15.2	93	16	0.088	0.104
20/1,0	–	–	38	1	52	19	105	20	0.11	0.13
20/2,0	–	–	38	2	52	19	105	20	0.11	0.13
20/3,0	–	–	38	3	52	19	105	20	0.11	0.13
20/4,0	–	–	38	4	52	19	105	20	0.11	0.13

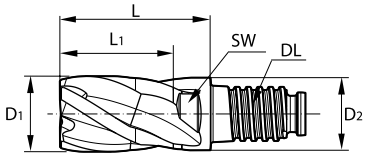
Solid carbide | Standard | Type W | 4 | ≠ | 37° | ≠ | a_e 0.5×D | f9 | HPC

DUO-λOCK® interchangeable head system – milling heads for aluminium machining

Note: DUO-LOCK HAIMER MILL PowerSeries:
First choice for applications with long overhangs and unstable clamping conditions.
For particularly smooth running on long overhangs it is preferable to use solid carbide extensions.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
22 0306/0307	240	240	120																●	●	●	●	

DUO-λOCK® HAIMER MILL Power Series solid carbide milling head, corner chamfer

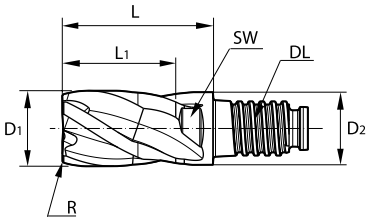




22 0306

∅ f9 D_1	26Y 22 0306 DUO-LOCK HAIMER MILL Power Series HPC	∅ D_2	L_1		DUO-LOCK interface	AF	recommended tightening torque	45°	Alu f_z
mm	uncoated	mm	mm	mm		mm	Nm	mm	mm
10	–	9.6	15	20	DL10	8	20	0.2	0.03
12	–	11.5	18	24	DL12	9.5	30	0.24	0.03
16	–	15.5	24	32	DL16	13	60	0.32	0.04
20	–	19.3	30	40	DL20	16	80	0.4	0.05

DUO-λOCK® HAIMER MILL Power Series solid carbide milling head, corner radius





22 0307

∅ f9 D_1/R	26Y 22 0307 DUO-LOCK HAIMER MILL Power Series HPC	∅ D_2	L_1		DUO-LOCK interface	AF	recommended tightening torque	R	Alu f_z
mm	uncoated	mm	mm	mm	mm	mm	Nm	mm	mm
10/1,0	–	9.6	15	20	DL10	8	20	1	0.03
10/1,5	–	9.6	15	20	DL10	8	20	1.5	0.03
10/2,0	–	9.6	15	20	DL10	8	20	2	0.03
12/1,0	–	11.5	18	24	DL12	9.5	30	1	0.03
12/1,5	–	11.5	18	24	DL12	9.5	30	1.5	0.03
12/2,0	–	11.5	18	24	DL12	9.5	30	2	0.03
12/3,0	–	11.5	18	24	DL12	9.5	30	3	0.03
12/4,0	–	11.5	18	24	DL12	9.5	30	4	0.03
16/1,0	–	15.5	24	32	DL16	13	60	1	0.04
16/2,0	–	15.5	24	32	DL16	13	60	2	0.04
16/3,0	–	15.5	24	32	DL16	13	60	3	0.04
16/4,0	–	15.5	24	32	DL16	13	60	4	0.04
20/1,0	–	19.3	30	40	DL20	16	80	1	0.05
20/2,0	–	19.3	30	40	DL20	16	80	2	0.05

Solid carbide | Standard | Type N

DUO-λOCK® interchangeable head system – milling heads for general-purpose machining

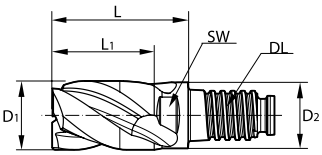
DUO-LOCK HAIMER MILL: Can be used as a universal tool. Unique end face geometry for ramping and circular interpolation milling. First choice for applications with short overhangs. **DUO-LOCK HAIMER MILL Power Series:** First choice for applications with long overhangs and unstable clamping conditions. For particularly smooth running on long overhangs it is preferable to use solid carbide extensions.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
22 0312–22 0317/ 0348	700	700	235	**220**	**180**	**160**	**120**							80	60	30	130	●	●	●	●	●	●
22 0320/0334	240	240	120	**200**	**170**	**110**	**90**							40	30	30	110	●	●	●	●	●	●
22 0322/0323	700	700	235	**280**	**220**	**200**	**160**							**120**	**90**	35	200	●	●	●	●	●	●
22 0326/0327	700	700	235	**220**	**180**	**160**	**120**							80		30	130	●	●	●	●	●	●
22 0353/0359	700	700	235	**220**	**160**	**160**	**120**							80	60	35	130	●	●	●	●	●	●

DUO-λOCK® HAIMER MILL solid carbide milling head, sharp-edged

f9 | 3 | ≠ | 36° | ≠ | | | a_e 0.5×D | HPC

Note:
22 0312 – Standard application values for slots milled from solid at a_{pmax} </= 0.5 × D.





22 0312



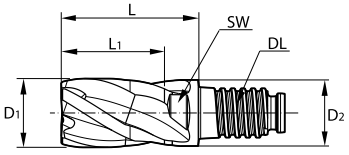
22 0314

Ø f9 D_1	22 0312	22 0314	Ø D_2	L_1		Overall length L		DUO-LOCK interface	AF	recommended tightening torque	< 900 N f_z	< 900 N f_z
	DUO-LOCK HAIMER MILL			22 0312	22 0314	22 0312	22 0314					
	HPC											
mm	AlTiN	AlTiN	mm	mm	mm	mm	mm		mm	Nm	mm	mm
2	–	–	9.6	–	3	–	20	DL10	8	20	0.018	0.036
3	–	–	9.6	–	4.5	–	20	DL10	8	20	0.018	0.036
4	–	–	9.6	–	6	–	20	DL10	8	20	0.018	0.036
5	–	–	9.6	–	7.5	–	20	DL10	8	20	0.018	0.036
6	–	–	9.6	–	9	–	20	DL10	8	20	0.018	0.036
8	–	–	9.6	–	12	–	20	DL10	8	20	0.024	0.048
10	–	–	9.6	7.5	15	12,5	20	DL10	8	20	0.03	0.06
12	–	–	11.5	9	18	15	24	DL12	9.5	30	0.03	0.065
16	–	–	15.5	12	24	20	32	DL16	13	60	0.04	0.08
20	–	–	19.3	15	30	25	40	DL20	16	80	0.05	0.09

DUO-λOCK® HAIMER MILL solid carbide milling head, corner chamfer

f9 | 4 | ≠ | 32° | ≠ | | | a_e 0.5×D | HPC

Note:
22 0316 – Standard application values for slots milled from solid at a_{pmax} </= 0.5 × D.





22 0316

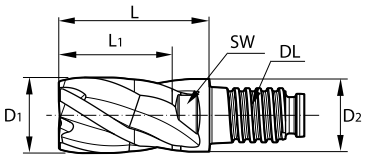


22 0317

Ø f9 D_1	22 0316	22 0317	Ø D_2	L_1		Overall length L		DUO-LOCK interface	AF	recommended tightening torque	45°	< 900 N f_z	< 900 N f_z
	DUO-LOCK HAIMER MILL			22 0316	22 0317	22 0316	22 0317						
	HPC												
mm	AlTiN	AlTiN	mm	mm	mm	mm	mm		mm	Nm	mm	mm	mm
2	–	–	9.6	–	3	–	20	DL10	8	20	0.04	0.018	0.036
3	–	–	9.6	–	4.5	–	20	DL10	8	20	0.06	0.018	0.036
4	–	–	9.6	–	6	–	20	DL10	8	20	0.08	0.018	0.036
5	–	–	9.6	–	7.5	–	20	DL10	8	20	0.1	0.018	0.036
6	–	–	9.6	–	9	–	20	DL10	8	20	0.12	0.018	0.036
8	–	–	9.6	–	12	–	20	DL10	8	20	0.16	0.024	0.048
10	–	–	9.6	7.5	15	12,5	20	DL10	8	20	0.2	0.03	0.06
12	–	–	11.5	9	18	15	24	DL12	9.5	30	0.24	0.03	0.065
16	–	–	15.5	12	24	20	32	DL16	13	60	0.32	0.04	0.08
20	–	–	19.3	15	30	25	40	DL20	16	80	0.4	0.05	0.09

DUO-λOCK® HAIMER MILL Power Series solid carbide milling head, corner chamfer

f9 | 4 | ≠ | 37° | ≠ | a_e 0.5×D | HPC





22 0320

Ø f9 D_1	26Y 22 0320	Ø D_2	L_1	Overall length L	DUO-LOCK interface	AF	recommended tightening torque	45°	< 900 N f_z
	DUO-LOCK HAIMER MILL Power Series HPC								
mm	AlTiN	mm	mm	mm		mm	Nm	mm	mm
10	–	9.6	15	20	DL10	8	20	0.2	0.015
12	–	11.5	18	24	DL12	9.5	30	0.24	0.015
16	–	15.5	24	32	DL16	13	60	0.32	0.03
20	–	19.3	30	40	DL20	16	80	0.4	0.03

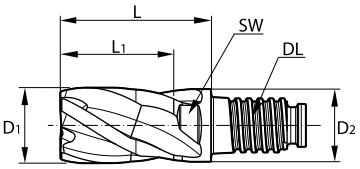
DUO-λOCK® HAIMER MILL solid carbide milling head, corner chamfer

f9 | ≠ | 35° | a_e 0.05×D | HPC

6 | 8 | 10



22 0322



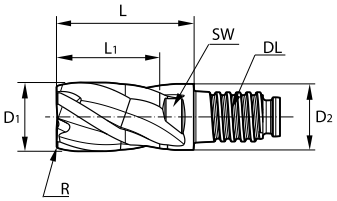


22 0323

Ø f9 D_1	26Y 22 0322	26Y 22 0323	Z	Ø D_2	L_1		Overall length L		DUO-LOCK interface	AF	recommended tightening torque	45°	< 900 N f_z
	DUO-LOCK HAIMER MILL HPC				22 0322	22 0323	22 0322	22 0323					
mm	AlTiN	AlTiN		mm	mm	mm	mm	mm		mm	Nm	mm	mm
10	–	–	6	9.6	7.5	15	12,5	20	DL10	8	20	0.2	0.06
12	–	–	6	11.5	9	18	15	24	DL12	9.5	30	0.24	0.065
16	–	–	8	15.5	12	24	20	32	DL16	13	60	0.32	0.08
20	–	–	10	19.3	15	30	25	40	DL20	16	80	0.4	0.09

DUO-λOCK® HAIMER MILL Power Series solid carbide milling head, corner radius

f9 | 4 | ≠ | 37° | ≠ | a_e 0.5×D | HPC





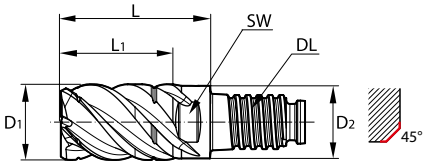
22 0334

Ø f9 D_1/R	26Y 22 0334	Ø D_2	L_1	Overall length L	DUO-LOCK interface	AF	recommended tightening torque	R	< 900 N f_z
	DUO-LOCK HAIMER MILL Power Series HPC								
mm	AlTiN	mm	mm	mm		mm	Nm	mm	mm
10/1,0	–	9.6	15	20	DL10	8	20	1	0.03
10/1,5	–	9.6	15	20	DL10	8	20	1.5	0.03
10/2,0	–	9.6	15	20	DL10	8	20	2	0.03
12/1,0	–	11.5	18	24	DL12	9.5	30	1	0.03
12/1,5	–	11.5	18	24	DL12	9.5	30	1.5	0.03
12/2,0	–	11.5	18	24	DL12	9.5	30	2	0.03
12/3,0	–	11.5	18	24	DL12	9.5	30	3	0.03
12/4,0	–	11.5	18	24	DL12	9.5	30	4	0.03
16/1,0	–	15.5	24	32	DL16	13	60	1	0.04
16/2,0	–	15.5	24	32	DL16	13	60	2	0.04
16/3,0	–	15.5	24	32	DL16	13	60	3	0.04
16/4,0	–	15.5	24	32	DL16	13	60	4	0.04
20/1,0	–	19.3	30	40	DL20	16	80	1	0.05
20/2,0	–	19.3	30	40	DL20	16	80	2	0.05

DUO-λOCK® HAIMER MILL Power Series solid carbide milling head, corner chamfer

h9 | 5 | 46° | ≠ | TPC $a_{e\,max}$ 0.05×D | TPC

Note: h_{max}: The values stated in the table are maximum values.
$ae_{max} = 0.05 \times D$ for TPC machining.





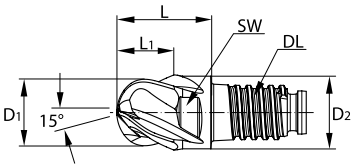
22 0326

22 0327

Ø h9 D_1	26Y 22 0326	26Y 22 0327	Ø D_2	L_1		Overall length L		DUO-LOCK interface	AF	recommended tightening torque	45°	TPC < 900 N h_{max}
	DUO-LOCK HAIMER MILL Power Series			22 0326	22 0327	22 0326	22 0327					
	TPC											
mm	AlTiN	AlTiN	mm	mm	mm	mm	mm		mm	Nm	mm	mm
10	–	–	9.6	15	–	20	–	DL10	8	20	0.3	0.026
12	–	–	11.5	18	–	24	–	DL12	9.5	30	0.3	0.028
16	–	–	15.5	24	48	32	56	DL16	13	60	0.5	0.035
20	–	–	19.3	30	60	40	70	DL20	16	80	0.6	0.039

DUO-λOCK® HAIMER MILL solid carbide milling head, full radius

f9 | 4 | 32° | ≠ | a_e 0.5×D | a_e 0.5×D | HPC



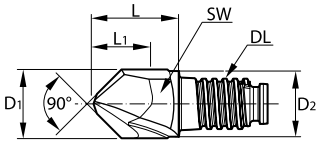


22 0348

Ø f9 D_1	26Y 22 0348	Ø D_2	L_1	Overall length L	DUO-LOCK interface	AF	recommended tightening torque	< 900 N f_z	< 900 N f_z
	DUO-LOCK HAIMER MILL								
	HPC								
mm	AlTiN	mm	mm	mm		mm	Nm	mm	mm
10	–	9.6	7.5	12.5	DL10	8	20	0.03	0.066
12	–	11.5	9	15	DL12	9.5	30	0.03	0.065
16	–	15.5	12	20	DL16	13	60	0.04	0.08
20	–	19.3	15	25	DL20	16	80	0.05	0.09

DUO-λOCK® HAIMER MILL solid carbide milling head, multi-functional

90° | 45° | f9 | 2 | 20° | a_e 0.5×D | HPC

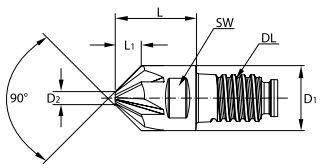



22 0353

Ø f9 D_1	26Y 22 0353	Ø D_2	L_1	Overall length L	DUO-LOCK interface	recommended tightening torque	AF	< 900 N f_z
	DUO-LOCK HAIMER MILL							
	90° HPC							
mm		mm	mm	mm		mm	Nm	mm
10	–	9.6	10	12.5	DL10	20	8	0.06
12	–	11.5	12	15	DL12	30	9.5	0.065
16	–	15.5	16	20	DL16	60	13	0.08
20	–	19.3	20	25	DL20	80	16	0.09

DUO-λOCK® HAIMER MILL solid carbide milling head, deburrer

90° | 45° | h6 | ≠ | HPC | 6 | 8




22 0359

Ø h6 D_1	26Y 22 0359	Ø D_2	L_1	Overall length L	DUO-LOCK interface	recommended tightening torque	AF	< 900 N f_z
	DUO-LOCK HAIMER MILL							
	90° HPC							
mm		mm	mm	mm		mm	Nm	mm
10	–	2	4	12.5	DL10	20	8	0.06
12	–	2.4	4.8	15	DL12	30	9,5	0.065
16	–	3.2	6.4	20	DL16	60	13	0.08
20	–	4	8	25	DL20	80	16	0.09

DUO-λOCK® interchangeable head system – arbors

DUO-λOCK® extension, cylindrical, steel

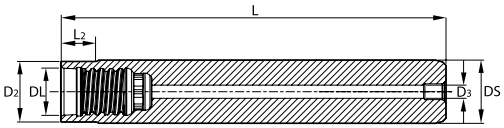
Coated for optimum shrinking in and out.



22 0370



22 0372





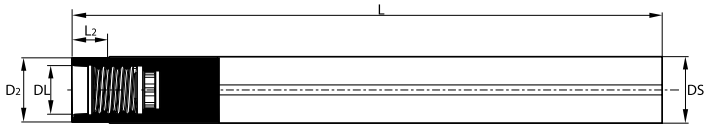
22 0374

DUO-LOCK interface	26Y 22 0370	26Y 22 0372	26Y 22 0374	∅ D_s	∅ D_2	L			L_2	Recommended torque
	DUO-LOCK extension, cylindrical, steel, short		DUO-LOCK extension, cylindrical, steel, long			22 0370	22 0372	22 0374		
	SAFE-LOCK	Plain shank	Plain shank	mm	mm	mm	mm	mm	mm	Nm
DL10	–	–	–	10	9.6	55	–	100	5	20
DL12	–	–	–	12	11.5	65	60	120	6	30
DL16	–	–	–	16	15.5	70	65	160	8	60
DL20	–	–	–	20	19.3	80	70	200	10	80

DUO-λOCK® extension, solid carbide

Technically optimised.

Note: Special dimensions available on request.





22 0377

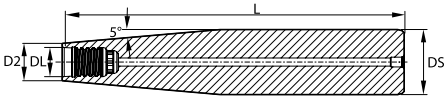
DUO-LOCK interface	10N 22 0377	∅ D_s	∅ D_2	L	L_2	Recommended torque
	DUO-LOCK extension, cylindrical, solid carbide					
	Plain shank	mm	mm	mm	mm	Nm
DL10	–	10	9.6	77.5	37.5	20
DL12	–	12	11.5	93	45	30
DL16	–	16	15.5	108	60	60
DL20	–	20	19.3	125	75	80

DUO-λOCK® extension, conical, steel

Coated for optimum shrinking in and out.



22 0376

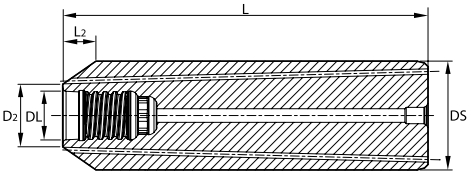




22 0378

DUO-LOCK interface / ∅ D_s	26Y 22 0376	26Y 22 0378	∅ D_s	∅ D_2	L		Recommended torque
	DUO-LOCK extension, conical, steel, short	DUO-LOCK extension, conical, steel, long			22 0376	22 0378	
	SAFE-LOCK	Plain shank	mm	mm	mm	mm	Nm
DL10/12	–	–	12	9.6	65	120	20
DL10/16	–	–	16	9.6	90	160	20
DL10/20	–	–	20	9.6	115	200	20
DL12/16	–	–	16	11.5	80	160	30
DL12/20	–	–	20	11.5	105	200	30
DL16/20	–	–	20	15.5	80	200	60
DL16/25	–	–	25	15.5	115	250	60
DL20/25	–	–	25	19.3	95	250	80

DUO-λOCK® extension, Heavy Duty with Cool Jet, steel





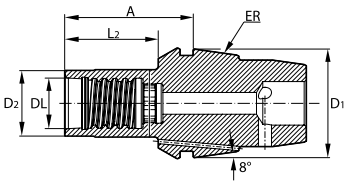
22 0380

DUO-LOCK interface	26Y 22 0380 DUO LOCK extension Heavy Duty with Cool Jet steel SAFE-LOCK	Ø D_3	Ø D_2	L	L_2	Recommended torque
		mm	mm	mm	mm	Nm
DL10	–	16	9.6	62.5	6	20
DL12	–	20	11.5	67	6	30
DL16	–	25	15.5	78	6	60
DL20	–	32	19.3	82	6	80

DUO-λOCK® ER collets

ISO 15488-A

Note: **HAIMER ER collets are incompatible with Centro P and HiRunER collet chucks.**





22 0386

DUO-LOCK interface	26Y 22 0386	26Y 22 0387	L_2		A		Ø D_2	Recommended torque
	DUO-LOCK ER collet		22 0386	22 0387	22 0386	22 0387		
	ER 16	ER 20	mm	mm	mm	mm	mm	Nm
DL10	–	–	5.3	5.48	12	13	9.6	20
DL12	–	–	–	6.48	–	14	11.5	30

DUO-LOCK interface	26Y 22 0388	26Y 22 0389	L_2		A		Ø D_2	Recommended torque
	DUO-LOCK ER collet		22 0388	22 0389	22 0388	22 0389		
	ER 25	ER 32	mm	mm	mm	mm	mm	Nm
DL10	–	–	5.5	5	13.5	14	9.6	20
DL12	–	–	6,5	6	14.5	15	11.5	30
DL16	–	–	5.5	8	13.5	17	15.5	60
DL20	–	–	–	10	–	19	19.3	80

22

DUO-λOCK® accessories

Note:
22 9932 – Plug-in shank 9×12 mm. Suitable torque wrench can be ordered under No. 657094 size 100.



22 9930

Width across flats AF	mm	8	9,5	13	16
26Y 22 9930 DUO-LOCK hand wrench		–	–	–	–
L	mm	196	199	217	236
DUO-LOCK interface		DL10	DL12	DL16	DL20



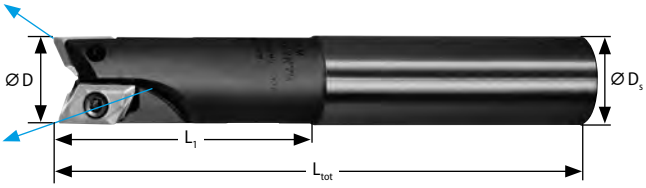
22 9932

Width across flats AF	mm	8	9,5	13	16
26Y 22 9932 DUO-LOCK plug-in adaptor for torque wrench		–	–	–	–
Recommended torque	Nm	20	30	60	80
DUO-LOCK interface		DL10	DL12	DL16	DL20
Pitch S	mm	16.6	16.9	16.8	17
Socket for plug-in head	mm	9×12			



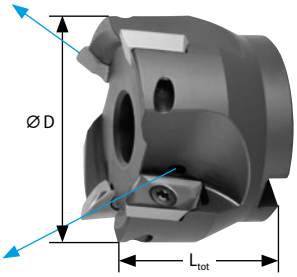
KENNAMETAL Shoulder mill 90° 5720VZ16 for indexable inserts ZDET 16M5

Milling body with plain shank, balanced to G = 6.3 at 30,000 rpm. Shell-type milling cutters and milling cutters with modular interfaces have to be balanced together with their holder before use in high-speed copy milling. The design allows all radii of indexable inserts up to r_e = 6.0 mm to be mounted without modification to the milling head and without length correction.



Ø D / number of teeth Z	28R	22 0800 Shoulder mill 90° 5720VZ16 Plain shank	maximum cutting depth a_p max	L_1	L_{tot}	Ø D_s h6	Insert screw
mm			mm	mm	mm	mm	
25/2		eShop	16	75	131	25	229900 (TP20; 6.0 Nm)
32/2		eShop	16	75	135	32	229900 (TP20; 6.0 Nm)
32/3		eShop	16	75	135	32	229900 (TP20; 6.0 Nm)

Ø D / number of teeth Z	28R	22 0803 Shoulder mill 90° 5720VZ16 with bore	maximum cutting depth a_p max	L_{tot}	Mounting bore Ø	Insert screw
mm			mm	mm	mm	
40/3		eShop	16	45	16	229900 (TP20; 6.0 Nm)
42/3		eShop	16	45	16	229900 (TP20; 6.0 Nm)
50/3		eShop	16	45	22	229900 (TP20; 6.0 Nm)
50/4		eShop	16	45	22	229900 (TP20; 6.0 Nm)
52/4		eShop	16	45	22	229900 (TP20; 6.0 Nm)
63/4		eShop	16	45	22	229900 (TP20; 6.0 Nm)
63/5		eShop	16	45	22	229900 (TP20; 6.0 Nm)
80/4		eShop	16	50	27	229900 (TP20; 6.0 Nm)
80/5		eShop	16	50	27	229900 (TP20; 6.0 Nm)



Ø D / number of teeth Z	28R	22 0806 Shoulder mill 90° 5720VZ16 with threaded shank	maximum cutting depth a_p max	L_{tot}	Mounting thread M	Insert screw
mm			mm	mm		
25/2		eShop	16	50	M12	229900 (TP20; 6.0 Nm)
32/2		eShop	16	50	M16	229900 (TP20; 6.0 Nm)
32/3		eShop	16	50	M16	229900 (TP20; 6.0 Nm)



KENNAMETAL Indexable inserts ZDET 16.. for shoulder mill No. 220800 – 220806

Recommendation: When exchanging the indexable inserts, please also replace the screws. Spare screws are supplied with the indexable inserts.

Note: f_z for a_e = 0.3×D.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	
22 0810–22 0832	1640	1370	1095															

Type			ALU	
28E 22 0810	ZDET 16M503 PDFR-721	GH1	eShop	1
28E 22 0812	ZDET 16M504 FR-721	GH1	eShop	1
28E 22 0814	ZDET 16M508 FR-721	GH1	eShop	1
28E 22 0816	ZDET 16M512 FR-721	GH1	eShop	1
28E 22 0818	ZDET 16M516 FR-721	GH1	eShop	1
28E 22 0820	ZDET 16M520 FR-721	GH1	eShop	1
28E 22 0822	ZDET 16M525 FR-721	GH1	eShop	1
28E 22 0824	ZDET 16M530 FR-721	GH1	eShop	1
28E 22 0826	ZDET 16M532 FR-721	GH1	eShop	1
28E 22 0828	ZDET 16M540 FR-721	GH1	eShop	1
28E 22 0830	ZDET 16M550 FR-721	GH1	eShop	1
28E 22 0832	ZDET 16M560 FR-721	GH1	eShop	1
f_z for roughing up to $a_{p\,max}$ 16 mm		mm	0.12 – 0.25	
f_z for pre-finishing a_p = 3 mm		mm	0.05 – 0.15	
f_z for finishing a_p = 1 mm		mm	0.02 – 0.1	

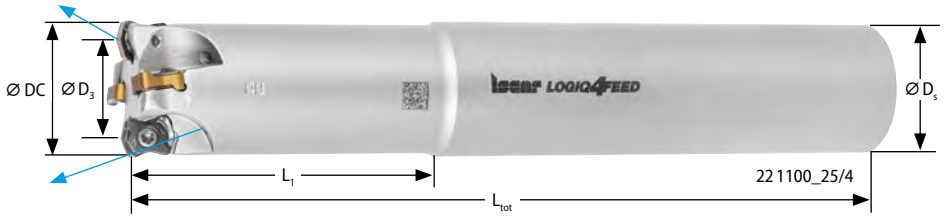


HPC

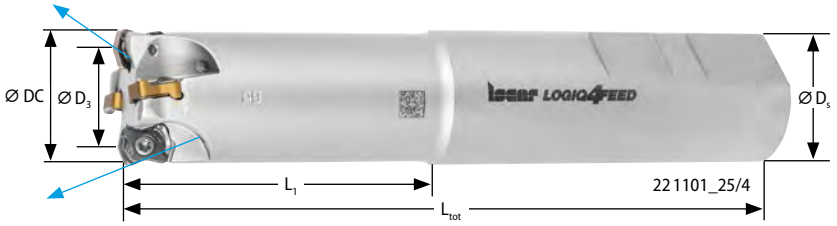
LOGIQ4FEED high feed rate milling cutter for inserts XNMU040310..

Innovative high feed milling system for efficient roughing – especially for machining deep cavities,
e.g. in tool and mould making, as well as in the aerospace industry.
The twisted shape indexable insert has an auxiliary cutting edge which guarantees a higher metal removal rate during oblique plunging.

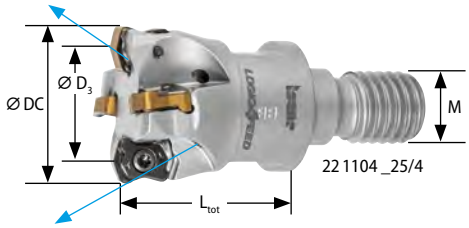
Spare part: Pack of insert screws No. **229695 2** (TX7; 0.9 Nm).



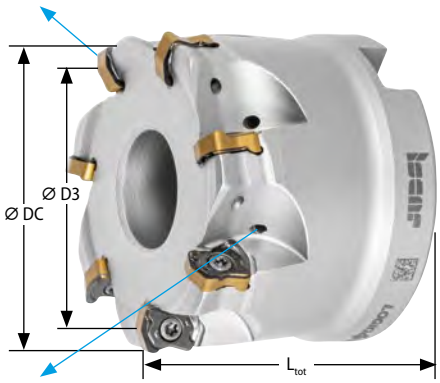
Ø D_c / number of effective cutting edges Z	19D 22 1100 LOGIQ4FEED high feed rate indexable milling cutter **Plain shank**	Ø D_3	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
		mm	mm	mm	mm	mm	mm	mm	degrees	mm
16/2	–	8.6	30	120	16	24.6	31	0.8	4.3	6.6
20/3	–	12.6	50	140	20	32.6	39	0.8	2.7	10.6
25/4	–	17.6	60	150	25	42.6	49	0.8	1.8	15.6
32/5	–	24.6	120	205	32	56.6	63	0.8	1.2	22.6



Ø D_c / number of effective cutting edges Z	19D 22 1101 LOGIQ4FEED high feed rate indexable milling cutter **Weldon shank**	Ø D_3	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
		mm	mm	mm	mm	mm	mm	mm	degrees	mm
16/2	–	8.6	50	110	20	24.6	31	0.8	4.3	6.6
20/3	–	12.6	60	120	20	32.6	39	0.8	2.7	10.6
25/4	–	17.6	80	140	25	42.6	49	0.8	1.8	15.6
32/5	–	24.6	80	150	32	56.6	63	0.8	1.2	22.6



Ø D_c / number of effective cutting edges Z	19D 22 1104 LOGIQ4FEED high feed rate indexable milling cutter **with threaded shank**	Ø D_3	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
		mm	mm		mm	mm	mm	degrees	mm
20/3	–	12.6	25	M10	32.6	39	0.8	2.7	10.6
25/4	–	17.6	30	M12	42.6	49	0.8	1.8	15.6
32/5	–	24.6	35	M16	56.6	63	0.8	1.2	22.6
35/5	–	27.6	35	M16	62.6	69	0.8	1.1	25.6
42/6	–	34.6	40	M16	76.6	83	0.8	0.8	32.6



22 1106_50/7

Ø D_c / number of cutting edges Z	19D 22 1106 LOGIQ4FEED high feed rate indexable milling cutter **with bore**	Ø D_3	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
		mm	mm	mm	mm	mm	mm	degrees	mm
32/5	–	24.6	40	16	56.6	63	0.8	1.2	22.6
40/6	–	32.6	40	16	72.6	79	0.8	0.9	30.6
42/6	–	34.6	40	16	76.6	83	0.8	0.8	32.6
50/7	–	42.6	40	22	92.6	99	0.8	0.7	40.6
52/7	–	44.6	40	22	96.6	103	0.8	0.7	42.6

LOGIQ4FEED milling inserts XNMU040310.. for high feed rate milling cutter

Double-sided indexable insert with 4 cutting edges. With auxiliary cutting edge.

Note: Standard application values for a_e = 0.6 to 1 × D / $a_{p\,max}$ = 0.8 mm.
The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	GG(G)					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	K					
22 1201														**110**	**90**	30	25		●				
22 1202														**130**	**100**	30	25		●				
22 1204																**30**			●				
22 1205/1207														100	80	**25**	**30**		●				
22 1208																		**200**	●				
22 1209/1210				**220**	**200**	**190**	180							**90**	**80**				●		○	●	
22 1211				200	180	170	**160**	**140**											●		○	●	
22 1213														**140**	**110**	30	30		●				
22 1214														140	120	**35**	**35**		○		●	●	


22 1211


22 1202


22 1204


22 1208

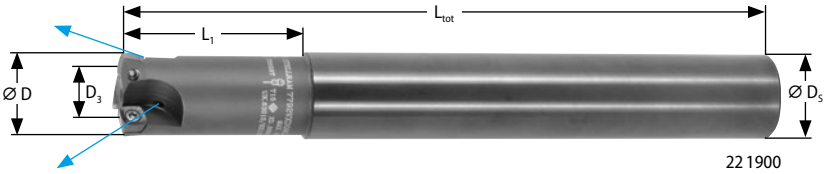

22 1209

Type			ST1400	INOX	S	GGG	UNI		$a_{p\,max}$ mm
19A 22 1211	XNMU 040310T	IC830	–	–	–	–	–	10	0.8
19A 22 1201	XNMU 040310HP	IC830	–	–	–	–	–	10	0.8
19A 22 1202		IC840	–	–	–	–	–	10	0.8
19A 22 1213	XNMU 040310RM-HP	IC808	–	–	–	–	–	10	0.8
19A 22 1204	XNMU 043010HP	IC716	–	–	–	–	–	10	0.8
19A 22 1205		IC882	–	–	–	–	–	10	0.8
19A 22 1214		IC5820	–	–	–	–	–	10	0.8
19A 22 1207	XNMU 040310RM-HP	IC882	–	–	–	–	–	10	0.8
19A 22 1208	XNMU 040310T	IC810	–	–	–	–	–	10	0.8
19A 22 1209		IC808	–	–	–	–	–	10	0.8
19A 22 1210	XNMU 040310RM-T	IC808	–	–	–	–	–	10	0.8
Programming radius at $a_{p\,max}$		mm			1.8				
f_z		mm	0.8	0.8	0.4	0.8	–		

HPC

KENNAMETAL High feed rate milling cutter 7792VX for extreme metal removal rates

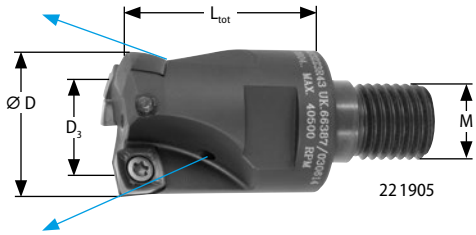
Description: The unique design of the indexable inserts together with their approach angle in the milling body greatly reduces the radial forces and diverts them into the axial direction. Particularly thick indexable inserts with 4 cutting edges for the heaviest duties and high cost-effectiveness. The tool has particular advantages for face milling and milling deep pockets. With its ground wiper chamfer it is equally well suited also to plunge milling and finish milling operations.



22 1900


22 1903

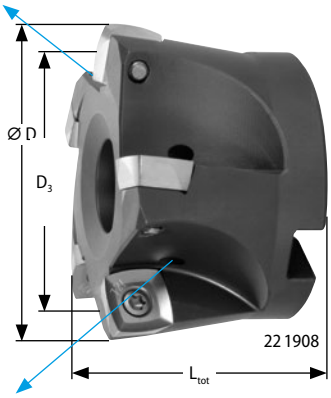
Ø D / number of teeth Z	28R 22 1900	28R 22 1903	Number of cutting edges Z	Ø D_3	maximum cutting depth $a_{p\,max}$	L_1		L_{tot}		Ø D_5 h6	Indexable insert size	Insert screw
	High feed rate milling cutter 7792VX					22 1900	22 1903	22 1900	22 1903			
mm	Plain shank	Weldon shank		mm	mm	mm	mm	mm	mm	mm		
16/2	eShop	–	2	5	0.9	25	–	188	–	16	06	229915 (T7; 0.8 Nm)
20/3	eShop	–	3	9	0.9	32	–	204	–	20	06	229915 (T7; 0.8 Nm)
25/2	eShop	eShop	2	10	1.5	50	40	200	96	25	09	229917 (T15; 2.1 Nm)
25/3	eShop	–	3	10	1.5	50	–	200	–	25	09	229917 (T15; 2.1 Nm)
25/4	eShop	–	4	14	0.9	40	–	210	–	25	06	229916 (T7; 0.8 Nm)
32/2	eShop	–	2	11	2.5	70	–	250	–	32	12	229908 (T15; 3.1 Nm)
32/3	eShop	eShop	3	17	1.5	70	40	250	100	32	09	229918 (T15; 2.1 Nm)
32/3L	eShop	–	3	11	2.5	70	–	250	–	32	12	229908 (T15; 3.1 Nm)
32/4	eShop	–	4	17	1.5	70	–	250	–	32	09	229918 (T15; 2.1 Nm)
32/5	eShop	–	5	21	0.9	40	–	250	–	32	06	229916 (T7; 0.8 Nm)
40/2	eShop	–	2	13	3.5	102	–	172	–	40	16	229920 (TP20; 7.6 Nm)



22 1905

Ø D / number of teeth Z	28R 22 1905	Number of cutting edges Z	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting thread M	Indexable insert size	Insert screw
	High feed rate milling cutter 7792VX with threaded shank							
mm			mm	mm	mm			
16/2	eShop	2	5	0.9	25	M8	06	229915 (T7; 0.8 Nm)
20/2	eShop	2	9	0.9	35	M10	06	229915 (T7; 0.8 Nm)
20/3	eShop	3	9	0.9	35	M10	06	229915 (T7; 0.8 Nm)
25/2	eShop	2	10	1.5	35	M12	09	229917 (T15; 2.1 Nm)
25/3	(eShop)	3	10	0.9	35	M12	06	229916 (T7; 0.8 Nm)
25/3L	eShop	3	10	1.5	35	M12	09	229917 (T15; 2.1 Nm)
25/4	eShop	4	14	0.9	35	M12	06	229916 (T7; 0.8 Nm)
32/2	eShop	2	11	2.5	43	M16	12	229908 (T15; 3.1 Nm)
32/3	eShop	3	17	1.5	43	M16	09	229918 (T15; 2.1 Nm)
32/3L	eShop	3	11	2.5	43	M16	12	229908 (T15; 3.1 Nm)
32/4	eShop	4	17	1.5	43	M16	09	229918 (T15; 2.1 Nm)
32/5	eShop	5	21	0.9	43	M16	06	229916 (T7; 0.8 Nm)
35/3	eShop	3	20	1.5	43	M16	09	229918 (T15; 2.1 Nm)
35/3L	eShop	3	14	2.5	43	M16	12	229908 (T15; 3.1 Nm)
35/4	eShop	4	20	1.5	43	M16	09	229918 (T15; 2.1 Nm)
35/6	eShop	6	24	0.9	43	M16	06	229916 (T7; 0.8 Nm)
42/4	eShop	4	21	2.5	43	M16	12	229908 (T15; 3.1 Nm)
42/5	eShop	5	27	1.5	43	M16	09	229918 (T15; 2.1 Nm)

∅ D / number of teeth Z	28R 22 1908 High feed rate milling cutter 7792VX with bore	∅ D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore ∅	Indexable insert size	Insert screw
mm		mm	mm	mm	mm		
40/3	eShop	25	1.5	32	16	09	229918 (T15; 2.1Nm)
40/4	eShop	25	1.5	32	16	09	229918 (T15; 2.1Nm)
40/4L	eShop	19	2.5	40	22	12	229919 (T15; 3.1 Nm)
40/5	(eShop)	25	1.5	32	16	09	229918 (T15; 2.1Nm)
42/4	eShop	21	1.5	32	16	09	229918 (T15; 2.1Nm)
42/5	eShop	27	1.5	32	16	09	229918 (T15; 2.1Nm)
50/4	eShop	29	2.5	40	22	12	229919 (T15; 3.1Nm)
50/5	eShop	35	1.5	40	22	09	229918 (T15; 2.1Nm)
50/6	eShop	35	1.5	40	22	09	229918 (T15; 2.1Nm)
50/6L	(eShop)	29	2.5	40	22	12	229919 (T15; 3.1 Nm)
52/3	eShop	31	2.5	40	22	12	229919 (T15; 3.1Nm)
52/4	eShop	31	2.5	40	22	12	229919 (T15; 3.1Nm)
52/5	eShop	31	2.5	40	22	12	229919 (T15; 3.1Nm)
63/4	eShop	42	2.5	40	22	12	229919 (T15; 3.1Nm)
63/5	eShop	42	2.5	40	22	12	229919 (T15; 3.1Nm)
63/5L	eShop	36	3.5	40	22	16	229920 (TP20; 7.6Nm)
63/7	eShop	42	2.5	40	22	12	229919 (T15; 3.1 Nm)
66/4	eShop	45	2.5	45	27	12	229919 (T15; 3.1Nm)
66/5	eShop	45	2.5	45	27	12	229919 (T15; 3.1Nm)
66/5L	(eShop)	51	1.5	50	27	09	229918 (T15; 2.1Nm)
80/5	eShop	59	2.5	50	27	12	229919 (T15; 3.1Nm)
80/6	(eShop)	53	3.5	50	27	16	229920 (TP20; 7.6Nm)
80/8	eShop	59	2.5	50	27	12	229919 (T15; 3.1Nm)
100/6	(eShop)	79	2.5	50	32	12	229919 (T15; 3.1Nm)
100/8	(eShop)	73	3.5	50	32	16	229920 (TP20; 7.6Nm)
100/9	(eShop)	79	2.5	50	32	12	229919 (T15; 3.1Nm)
125/8	(eShop)	104	2.5	63	40	12	229919 (T15; 3.1Nm)
125/10	(eShop)	98	3.5	63	40	16	229920 (TP20; 7.6Nm)
125/11	(eShop)	104	2.5	63	40	12	229919 (T15; 3.1Nm)
160/12	(eShop)	133	3.5	63	50	16	229920 (TP20; 7.6Nm)



KENNAMETAL Indexable inserts for high feed rate milling cutters No. 221900 – 221908

Particularly thick indexable inserts with ground wiper chamfer.

Note: Standard application values for $a_e = 0.3 \times D$.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
GH2		800	600																●	○		○	
KCMP30				340	260	210	180	155											○	○	●	●	
X500					230	180	140							200	170	60		●	●	○	●	●	
X400				260	240	200	150	110													●	●	
SP6519				280	250	185	150	130						210	160	50	220	●	○	○	●	●	

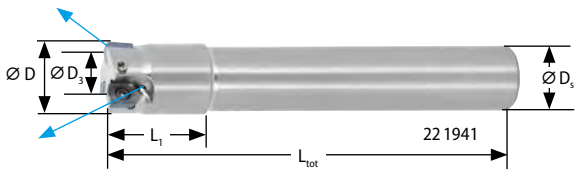


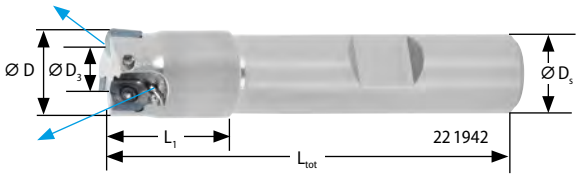
Indexable insert size			mm	06	09	12	16		f_z mm
28E 22 1920	X.LT...ER-D721	GH2		eShop	eShop	eShop	–	10	0.2 – 1.5
28F 22 1923	XDLW...SR-D	X500		–	eShop	eShop	–	10	0.3 – 2.5
28F 22 1925	X.LT..ER-D41	X400		eShop	eShop	eShop	eShop	10	0.2 – 1.8
NEW 28E 22 1921	X.LW...SR-D	KCMP30		–	eShop	–	–	10	0.2 – 3
NEW 28E 22 1922	X.LT...ER-D41	KCMP30		eShop	eShop	eShop	eShop	10	0.2 – 2.5
NEW 28E 22 1924	XDPT...ER-D41	KCMP30		–	eShop	eShop	–	10	0.2 – 2.5
28E 22 1928	X.LT...ER-D411	SP6519		eShop	eShop	eShop	–	10	0.2 – 2.5
28F 22 1930		X500		–	eShop	eShop	–	10	0.3 – 1.4
28E 22 1935	X.LT...ER-D41	SP6519		eShop	eShop	eShop	eShop	10	0.3 – 2.5
28E 22 1936	XDPT..ER-D41	SP6519		–	eShop	eShop	–	10	0.3 – 2.5
28F 22 1938	X.LT...ER-D41	X500		eShop	eShop	eShop	eShop	10	0.15 – 1
28F 22 1939	XDPT..ER-D41	X500		–	eShop	eShop	–	10	0.15 – 1
Type (22 1920)				ALU	ALU	ALU	–		
Type (22 1923)				–	ST900	ST900	–		
Type (22 1925, 22 1921, 22 1922, 22 1924)				ST1400					
Type (22 1928, 22 1930)				INOX; Ti	INOX; Ti	INOX; Ti	–		
Type (22 1935, 22 1936, 22 1938, 22 1939)				UNI					
Programming radius at $a_{p\,max}$ (22 1920, 22 1923, 22 1925, 22 1921, 22 1922, 22 1924, 22 1935, 22 1936, 22 1938, 22 1939)			mm	1.37	2.01	2.5	4.18		
Programming radius at $a_{p\,max}$ (22 1928, 22 1930)			mm	1.37	2.27	2.73	–		

HPC

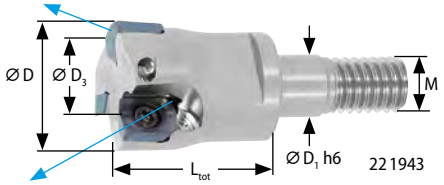
KYOCERA High feed rate indexable milling cutter MFH micro for indexable inserts LPGT 0102..

For extremely cost-effective machining due to high feed rates. Vibration is minimised by cutting force reduction.





Ø D / number of effective cutting edges Z	250 22 1941	250 22 1942	Number of cutting edges Z	Ø D_3	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}		Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Ramping angle α_{max}	Ramping length L for α_{max}	Insert screw
	High feed rate milling cutter MFH micro						22 1941	22 1942						
mm	Plain shank	Weldon shank		mm	mm	mm	mm	mm	mm	mm	mm	degrees	mm	
8/1	eShop	eShop	1	4	0.5	16	75	58	10	12	14	3.69	3.1	229722 (6IP; 0.6Nm)
10/2	eShop	eShop	2	6	0.5	20	80	60	10	16	18	2.25	5.1	229722 (6IP; 0.6Nm)
12/3	eShop	eShop	3	8	0.5	20	80	65	12	20	22	1.61	7.1	229722 (6IP; 0.6Nm)
14/3	eShop	eShop	3	10	0.5	20	80	65	12	24	26	1.26	9.1	229722 (6IP; 0.6Nm)
16/4	eShop	eShop	4	12	0.5	25	90	73	16	28	30	1.03	11.1	229722 (6IP; 0.6Nm)



Ø D / number of effective cutting edges Z	250 22 1943	Number of cutting edges Z	Ø D_1 h6	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Ramping angle α_{max}	Ramping length L for α_{max}	Insert screw
	High feed rate milling cutter MFH micro with threaded shank											
mm			mm	mm	mm	mm		mm	mm	degrees	mm	
8/1	eShop	1	6.5	4	0.5	17	M6	12	14	3.69	3.1	229722 (6IP; 0.6Nm)
10/2	eShop	2	6.5	6	0.5	17	M6	16	18	2.25	5.1	229722 (6IP; 0.6Nm)
12/3	eShop	3	6.5	8	0.5	17	M6	20	22	1.61	7.1	229722 (6IP; 0.6Nm)
14/3	eShop	3	6.5	10	0.5	17	M6	24	26	1.26	9.1	229722 (6IP; 0.6Nm)
16/4	eShop	4	8.5	12	0.5	22	M8	28	30	1.03	11.1	229722 (6IP; 0.6Nm)

KYOCERA Milling inserts LPGT0102.. for high feed rate indexable milling cutter MFH micro

2-edge indexable insert.

Note: Standard application values for $a_e = 0.3 \times D$ / $a_p = 0.3$ mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel*	GG(G)					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	K					
22 1945				200	180	160	140	100										180	○		●	●	
22 1948														160	120	60			○		●	●	
22 1949														240			30		●		○	○	

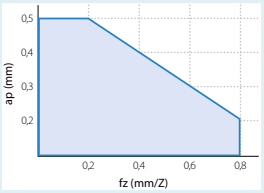
Type			ST1400	INOX	S		f_z mm
25A 22 1945	LPGT 010210 ER-GM	PR1825	eShop	–	–	1	0.4
25A 22 1948		PR1835	–	eShop	–	1	0.3
25A 22 1949		CA6535	–	–	eShop	1	0.25
Programming radius at $a_{p\,max}$		mm	1.2				


22 1945

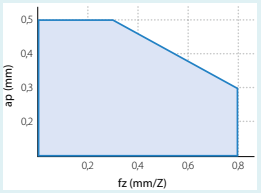

22 1948


22 1949

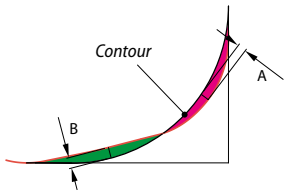
Application notes for the MFH micro



Ø 8 to 12 mm



Ø 14 to 16 mm

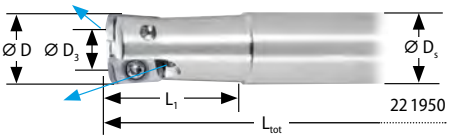


Programmed radius mm	Maximum machined contour mm (A)	Maximum unmachined contour mm (B)
1.0	0	0.21
1.2	0	0.17
1.5	0.08	0.1
2.0	0.28	0.01

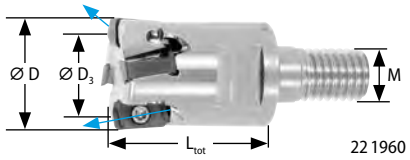
HPC

KYOCERA High feed rate indexable milling cutter MFH mini for inserts LOGU 0303..

Ø D / number of teeth Z	250 22 1950	250 22 1955	Ø D_3	maximum cutting depth a_p max	L_1	L_{tot}		Ø D_s h6	Insert screw
	High feed rate milling cutter MFH mini					22 1950	22 1955		
mm	Plain shank	Weldon shank	mm	mm	mm	mm	mm	mm	
16/2	eShop	eShop	9	1	30	100	79	16	229713 (8IP; 1.2 Nm)
16/2L	eShop	–	9	1	50	150	–	16	229713 (8IP; 1.2 Nm)
20/3	eShop	eShop	13	1	50	130	101	20	229713 (8IP; 1.2 Nm)
20/3L	eShop	–	13	1	80	160	–	20	229713 (8IP; 1.2 Nm)
20/4	eShop	eShop	13	1	50	130	101	20	229713 (8IP; 1.2 Nm)
25/4	eShop	eShop	18	1	60	140	117	25	229713 (8IP; 1.2 Nm)
25/4L	eShop	–	18	1	100	180	–	25	229713 (8IP; 1.2 Nm)
25/5	eShop	eShop	18	1	60	140	117	25	229713 (8IP; 1.2 Nm)
32/5	eShop	eShop	25	1	70	150	131	32	229713 (8IP; 1.2 Nm)
32/5L	eShop	–	25	1	120	200	–	32	229713 (8IP; 1.2 Nm)

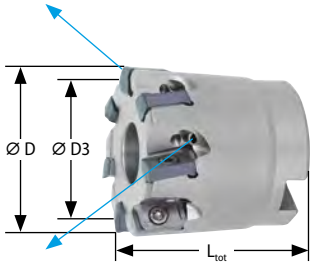


Ø D / number of teeth Z	250 22 1960	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting thread M	Insert screw
	High feed rate milling cutter MFH mini with threaded shank					
mm		mm	mm	mm		
16/2	eShop	9	1	25	M8	229713 (8IP; 1.2 Nm)
20/3	eShop	13	1	30	M10	229713 (8IP; 1.2 Nm)
20/4	eShop	13	1	30	M10	229713 (8IP; 1.2 Nm)
25/4	eShop	18	1	35	M12	229713 (8IP; 1.2 Nm)
25/5	eShop	18	1	35	M12	229713 (8IP; 1.2 Nm)
28/4	eShop	21	1	35	M12	229713 (8IP; 1.2 Nm)
32/5	eShop	25	1	40	M16	229713 (8IP; 1.2 Nm)
32/6	eShop	25	1	40	M16	229713 (8IP; 1.2 Nm)
35/6	eShop	28	1	40	M16	229713 (8IP; 1.2 Nm)
40/5	eShop	33	1	40	M16	229713 (8IP; 1.2 Nm)
42/7	eShop	35	1	40	M16	229713 (8IP; 1.2 Nm)



22 1960

Ø D / number of effective cutting edges Z	250 22 1965	Ø D_3	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Insert screw
	High feed rate milling cutter MFH mini with bore					
mm		mm	mm	mm	mm	
40/5	eShop	33	1	40	16	229713 (8IP; 1.2 Nm)
40/7	eShop	33	1	40	16	229713 (8IP; 1.2 Nm)
42/7	eShop	35	1	40	16	229713 (8IP; 1.2 Nm)
50/8	eShop	43	1	40	22	229713 (8IP; 1.2 Nm)
52/8	eShop	45	1	40	22	229713 (8IP; 1.2 Nm)
63/8	eShop	56	1	40	22	229713 (8IP; 1.2 Nm)



22 1965

22

KYOCERA Milling insert LOGU 0303.. for high feed rate indexable milling cutter MFH mini

Double-sided indexable insert with 4 cutting edges. The convex cutting edge version of the insert ensures gentle entry of the cutting edge into the material.

Note: Standard application values for $a_e = 0.3 \times D$ / $a_{p\,max} = 1$ mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	GG(G)					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	K					
22 1971				200	180	160	140	100											○		●	●	
22 1973														160	120	40			○		●	●	
22 1975																		180	○		●	●	
22 1976																	30		●		○	○	

Type			ST1400	INOX	GG	S		f_z mm
25A 22 1971	LOGU 030310 ER-GM	PR1825	eShop	–	–	–	1	0.2 – 1.5
25A 22 1973		PR1835	–	eShop	–	–	1	0.2 – 1.9
25A 22 1975		PR1810	–	–	eShop	–	1	0.2 – 1.5
25A 22 1976		CA6535	–	–	–	eShop	1	0.2 – 0.8
Programming radius at $a_{p\,max}$		mm	1.6					


22 1976

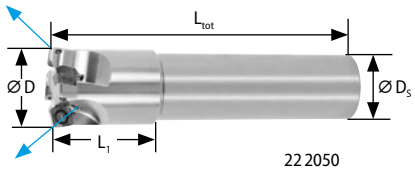
HPC

KYOCERA

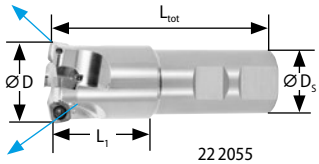
MFH Harrier high feed rate indexable milling cutter for SOMT.. indexable inserts

Description: MFH Harrier high feed rate indexable face mills enable short machining times thanks to high feed rates and high cutting depths. The approach angle in combination with the convex cutting edges reduces the cutting forces and minimises the tendency to vibrate.

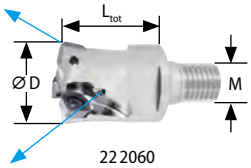
Application: For increased productivity in face milling, pocket milling and slot milling. Because the cutting forces are so low, large overhangs for plunge milling pose no problem.



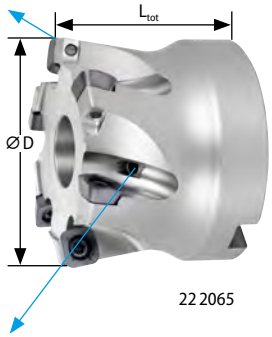
22 2050



22 2055



22 2060



22 2065

Ø D / number of teeth Z	250 22 2050	250 22 2055	Number of cutting edges Z	maximum cutting depth $a_{p\,max}$	$a_{p\,max}$ for LD geometry	L_1	L_{tot}		Ø D_s h6	Indexable insert size	Insert screw
	High feed rate milling cutter MFH Harrier						22 2050	22 2055			
mm	Plain shank	Weldon shank		mm	mm	mm	mm	mm	mm		
25/2	eShop	eShop	2	1.5	3.5	60	140	117	25	10	229717 (15IP; 3.5 Nm)
28/2	eShop	–	2	1.5	3.5	40	140	–	25	10	229717 (15IP; 3.5 Nm)
32/3	eShop	eShop	3	1.5	3.5	70	150	131	32	10	229717 (15IP; 3.5 Nm)
35/3	eShop	–	3	1.5	3.5	50	150	–	32	10	229717 (15IP; 3.5 Nm)
40/4	eShop	eShop	4	1.5	3.5	50	150	112	32	10	229717 (15IP; 3.5 Nm)
50/3	eShop	–	3	2	5	50	150	–	42	14	229719 (20 IP; 4.5 Nm)
63/4	eShop	–	4	2	5	50	150	–	42	14	229719 (20 IP; 4.5 Nm)
80/5	eShop	–	5	2	5	50	150	–	42	14	229719 (20 IP; 4.5 Nm)

Ø D / number of teeth Z	250 22 2060	Number of cutting edges Z	maximum cutting depth $a_{p\,max}$	$a_{p\,max}$ for LD geometry	L_{tot}	Mounting thread M	Indexable insert size	Insert screw
	High feed rate milling cutter MFH Harrier with threaded shank							
mm			mm	mm	mm			
25/2	eShop	2	1.5	3.5	35	M12	10	229717 (15IP; 3.5 Nm)
28/2	eShop	2	1.5	3.5	35	M12	10	229717 (15IP; 3.5 Nm)
32/3	eShop	3	1.5	3.5	40	M16	10	229717 (15IP; 3.5 Nm)
35/3	eShop	3	1.5	3.5	40	M16	10	229717 (15IP; 3.5 Nm)
40/4	eShop	4	1.5	3.5	40	M16	10	229717 (15IP; 3.5 Nm)

Ø D / number of teeth Z	250 22 2065	maximum cutting depth $a_{p\,max}$	$a_{p\,max}$ for LD geometry	L_{tot}	Mounting bore Ø	Indexable insert size	Insert screw
	High feed rate milling cutter MFH Harrier with bore						
mm		mm	mm	mm	mm		
50/4	eShop	1.5	3.5	50	22	10	229718 (15IP; 3.5 Nm)
50/5	eShop	1.5	3.5	50	22	10	229718 (15IP; 3.5 Nm)
52/4	eShop	1.5	3.5	50	22	10	229718 (15IP; 3.5 Nm)
52/5	eShop	1.5	3.5	50	22	10	229718 (15IP; 3.5 Nm)
63/5	eShop	1.5	3.5	50	22	10	229718 (15IP; 3.5 Nm)
63/6	eShop	1.5	3.5	50	22	10	229718 (15IP; 3.5 Nm)
63/5S	eShop	1.5	3.5	50	27	10	229718 (15IP; 3.5 Nm)
63/6S	eShop	1.5	3.5	50	27	10	229718 (15IP; 3.5 Nm)
80/7	eShop	1.5	3.5	63	27	10	229718 (15IP; 3.5 Nm)
63/5L	eShop	2	5	50	22	14	229719 (20 IP; 4.5 Nm)
63/5SL	eShop	2	5	50	27	14	229719 (20 IP; 4.5 Nm)
66/5L	eShop	2	5	50	22	14	229719 (20 IP; 4.5 Nm)
66/5SL	eShop	2	5	50	27	14	229719 (20 IP; 4.5 Nm)
80/6	eShop	2	5	63	27	14	229719 (20 IP; 4.5 Nm)
100/7	eShop	2	5	63	32	14	229719 (20 IP; 4.5 Nm)
125/7	eShop	2	5	63	40	14	229719 (20 IP; 4.5 Nm)

KYOCERA Milling inserts SOMT.. for MFH Harrier high feed rate indexable milling cutters

4-edge indexable inserts with convex cutting edges for low cutting forces.

Application:

22 2071–2076 – **FL geometry** is the first choice for general machining.

22 2079–2084 – **LD geometry** is also suitable for high cutting depths ($a_{p\,max}$ = 5 mm) at moderate feed rates. Do not use for helical, plunging or contour milling, or on steep walls.

22 2087–2092 – **FL geometry** (surface-oriented) is the first choice for roughing on lower-powered machines. Do not use for helical, plunging or contour milling, or on steep walls.

Note:	Standard application values for $a_e = 0.3 \times D$.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Inconel®	GG(G)					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	S	K					
PR1825				**200**	**180**	**160**	**140**	**100**												○		●	●
PR1835														**160**	**120**	**40**				○		●	●
PR1810																		**180**		○		●	●
CA6535																	**30**			○		●	●



22 2079_10



22 2076_14

Type			10	14	
25A **22 2071**	SOMT....20ER-GM	**PR1825**	eShop	eShop	1
25A **22 2073**		**PR1835**	eShop	eShop	1
25A **22 2075**		**PR1810**	eShop	eShop	1
25A **22 2076**		**CA6535**	eShop	eShop	1
25A **22 2079**	SOMT....20ER-LD	**PR1825**	eShop	eShop	1
25A **22 2081**		**PR1835**	eShop	eShop	1
25A **22 2083**		**PR1810**	eShop	eShop	1
25A **22 2084**		**CA6535**	eShop	eShop	1
25A **22 2087**	SOMT.....ER-FL	**PR1825**	eShop	eShop	1
25A **22 2089**		**PR1835**	eShop	eShop	1
25A **22 2091**		**PR1810**	eShop	eShop	1
25A **22 2092**		**CA6535**	eShop	eShop	1
Programming radius at $a_{p\,max}$ (22 2071, 22 2073, 22 2075, 22 2076)		mm	3	3.5	
Programming radius at $a_{p\,max}$ (22 2079, 22 2081, 22 2083, 22 2084)		mm	3.5	5	
Programming radius at $a_{p\,max}$ (22 2087, 22 2089, 22 2091, 22 2092)		mm	3		
f_z (22 2071)		mm	0.2 – 2		
f_z (22 2073, 22 2089)		mm	0.5 – 1.8		
f_z (22 2075, 22 2091)		mm	0.5 – 2		
f_z (22 2076)		mm	0.5 – 1.2		
f_z (22 2079)		mm	0.03 – 2		
f_z (22 2081)		mm	0.06 – 1.8		
f_z (22 2083)		mm	0.06 – 2		
f_z (22 2084)		mm	0.03 – 1.2		
f_z (22 2087, 22 2092)		mm	0.2 – 1.2		

KYOCERA MFAH – highly efficient milling cutters for finish machining of aluminium

Wide range with different types of cutting edge for **a wide variety of milling applications.**

Steel or hybrid body with through-coolant.

Low cutting forces minimise the formation of burrs and chip abrasion, and ensure **high-quality machining results.**

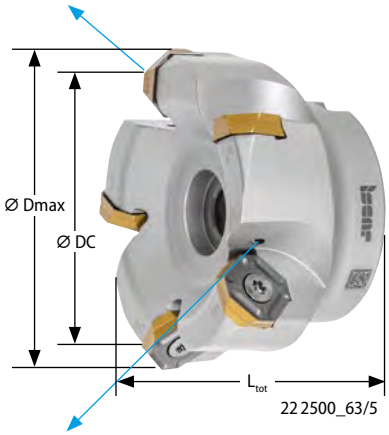




DOVEIQMILL face mill 50° for inserts SYHU0704..

Extremely stable face milling system. The indexable inserts are fixed by means of screw clamping and by additional fixing in a dovetail-like insert seating. The positive axial installation position of the plates results in a very soft cut and thus guarantees the best surface qualities. Maximum **cost-effectiveness** due to 8-cutter indexable inserts.

Spare part: Pack of insert screws No. **229695 4** (IP15; 4.8 Nm).



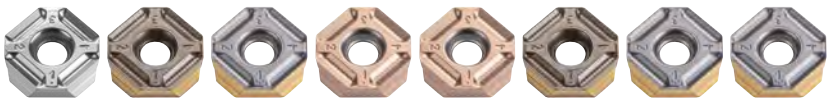
Ø D_c / number of effective cutting edges Z	19D 22 2500 DOVEIQMILL face mill with bore	maximum cutting depth $a_{p\,max}$	Ø D_{max}	L_{tot}	Mounting bore Ø
mm		mm	mm	mm	mm
50/4	–	4.6	59.4	40	22
50/5	–	4.6	59.4	40	22
63/5	–	4.6	72.4	40	22
63/7	–	4.6	72.4	40	22
80/6	–	4.6	89.4	50	27
80/8	–	4.6	89.4	50	27
100/7	–	4.6	109.4	50	32
100/10	–	4.6	109.4	50	32
125/9	–	4.6	134.4	63	40
125/12	–	4.6	134.4	63	40
160/11	–	4.6	169.4	63	40

DOVEIQMILL milling inserts SYHU0704.. for face mill 50°

Double-sided indexable insert with 8 cutting edges. Large flat chamfer for high surface qualities. Positive rake angle for optimum chip breaking.

Note: Standard application values for a_e = 0.6 to 1.0×D / $a_{p\,max}$ = 4.6 mm.
The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K						
22 2510	**500**	**480**	**400**																	●		●	
22 2511				**200**	**170**	**160**	140	130												●		●	
22 2512				**200**	**170**	**160**	140	130												○		●	●
22 2513				220	190	160	**140**	**130**												●		●	
22 2514				240	220	200	**180**	**160**												●		●	
22 2515													**120**	**110**						●		●	
22 2516													**140**	**140**						●		●	
22 2517													**140**	**130**						●		●	
22 2518															45					●		●	
22 2519																**300**	220			○		●	●
22 2520/2521																270	**220**			●		○	
22 2522				**190**	**170**	**150**	130						**90**	**80**				●		●		●	

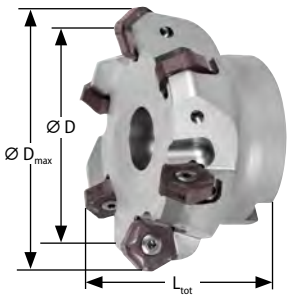


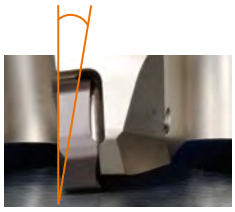
Type			ALU	ST900	ST1400	INOX	S	GG	GGG	UNI	
19A 22 2510	SYHU 0704ADN-P	IC28	–	–	–	–	–	–	–	–	10
19A 22 2511	SYHU 0704ADN	IC830	–	–	–	–	–	–	–	–	10
19A 22 2512	SYHU 0704ADN-MM	IC5400	–	–	–	–	–	–	–	–	10
19A 22 2513		IC830	–	–	–	–	–	–	–	–	10
19A 22 2514	SYHU 070400N-MM	IC830	–	–	–	–	–	–	–	–	10
19A 22 2515	SYHU 0704ADN	IC330	–	–	–	–	–	–	–	–	10
19A 22 2516		IC840	–	–	–	–	–	–	–	–	10
19A 22 2517	SYHU 070400ADN	IC830	–	–	–	–	–	–	–	–	10
19A 22 2518	SYHU 070400AD	IC882	–	–	–	–	–	–	–	–	10
19A 22 2519	SYHU 0704ADTN	IC5100	–	–	–	–	–	–	–	–	10
19A 22 2520		IC810	–	–	–	–	–	–	–	–	10
19A 22 2521	SYHU 070400ADTN	IC810	–	–	–	–	–	–	–	–	10
19A 22 2522	SYHU 0704DN-MM	IC808	–	–	–	–	–	–	–	–	10
f_z		mm	0.25	0.2	0.18	0.16	0.15	0.25	0.25	–	

47.5° HPC

KYOCERA Indexable face mill 47.5° MFPN45 for PN.U 1205 milling inserts

High performance face milling cutter with double-sided pentagonal indexable inserts. The combination of approach angle, chip chamber design as well as the geometries and cutting angles of the indexable inserts ensure outstanding metal removal rates, chip clearance, working life, and low cutting forces, and hence high cost-effectiveness.





Low cutting force due to high axial rake (maximum +10°).

Ø D / number of teeth Z	250 22 2800 Indexable face mill 47.5° MFPN45 with bore	maximum cutting depth $a_{p\,max}$	Ø D_{max}	L_{tot}	Mounting bore Ø	Insert screw	Shim	Clamp screw for shim
mm		mm	mm	mm	mm			
63/5	eShop	6	76	40	22	229700	–	–
63/6	eShop	6	76	40	22	229701	–	–
80/5	eShop	6	93	50	27	229700	229750	229702 (SW5; 6.0 Nm)
80/6	eShop	6	93	50	27	229700	–	–
100/8	eShop	6	113	50	32	229700	–	–
100/10	eShop	6	113	50	32	229701	–	–
125/10	eShop	6	138	63	40	229700	–	–
125/13	eShop	6	138	63	40	229701	–	–
160/8	eShop	6	173	63	40	229700	229750	229702 (SW5; 6.0 Nm)
160/12	eShop	6	173	63	40	229700	–	–
200/10	eShop	6	213	63	60	229700	229750	229702 (SW5; 6.0 Nm)
200/14	eShop	6	213	63	60	229700	–	–
250/12	eShop	6	263	63	60	229700	229750	229702 (SW5; 6.0 Nm)
250/16	eShop	6	263	63	60	229700	–	–

KYOCERA Indexable inserts PN... for indexable face mill No. 222800

22 2825/2826 – WIPER indexable inserts for the best surface quality. Only 1 wiper indexable insert per set.
Make sure it is fitted correctly!

Note: Standard application values for $a_e = 0.3 \times D$.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
PR1525 / PR1535				**200**	**180**	**180**	**140**	**140**						**150**	**140**			●	○	○	●	●
PR1510																	**180**		○	○	●	●
CA6535														**240**	**220**	**40**			○	○	●	●
TN100M				**200**	**180**	**180**	**140**	**140**						**150**	**140**		180		○	○	●	●







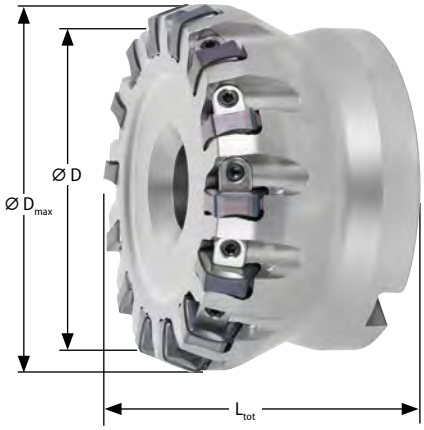
Type			ST1400	INOX	GG	S	UNI	
25A 22 2805	PNMU 1205 ANER-GM	PR1525	eShop	–	–	–	–	10
25A 22 2806	PNMU 1205 ANER-SM	PR1525	eShop	–	–	–	–	1
25A 22 2807	PNMU 1205 ANER-GH	PR1525	eShop	–	–	–	–	1
25A 22 2812	PNMU 1205 ANER-SM	PR1535	–	eShop	–	–	–	1
25A 22 2814	PNMU 1205 ANER-GM	PR1510	–	–	eShop	–	–	1
25A 22 2815	PNMU 1205 ANER-GH	PR1510	–	–	eShop	–	–	1
25A 22 2818	PNEU 1205 ANER-GL	PR1510	–	–	eShop	–	–	1
25A 22 2819	PNMU 1205 ANER-SM	CA6535	–	–	–	eShop	–	1
25A 22 2822	PNEU 1205 ANER-GL	PR1525	–	–	–	–	eShop	1
25A 22 2825	PNEU 1205 ANER-Wiper	TN100M	eShop	–	–	–	–	1
25A 22 2826		PR1525	eShop	–	–	–	–	1
f_z (22 2805, 22 2812, 22 2814, 22 2819)		mm	0.11 – 0.38	0.07 – 0.27	0.11 – 0.44	0.06 – 0.15	–	
f_z (22 2806, 22 2815, 22 2818)		mm	0.07 – 0.27	–	0.06 – 0.25	–	–	
f_z (22 2807)		mm	0.2 – 0.65	–	–	–	–	

70°

KYOCERA Indexable face mill MFK for machining cast iron, for inserts PN.. 1106

Face mills for high-performance machining of cast iron. Close and very close tooth spacing for maximum productivity when machining cast iron.

Advantage:
- Cost-effective and stable machining by use of 10-edge pentagonal inserts.
- Reduced cutting forces thanks to balanced tool design and high approach angle.



Ø D / number of teeth Z	250 22 3300 Indexable face mill 70° MFK	maximum cutting depth $a_{p\,max}$	Ø D_{max}	L_{tot}	Mounting bore Ø	Wedge	Wedge screw
mm	with bore	mm	mm	mm	mm		
80/8	eShop	6	89	63	27	229720	229721
80/10	eShop	6	89	63	27	229720	229721
100/10	eShop	6	109	63	32	229720	229721
100/14	eShop	6	109	63	32	229720	229721
125/12	eShop	6	134	63	40	229720	229721
125/18	eShop	6	134	63	40	229720	229721
160/16	eShop	6	169	63	40	229720	229721
160/22	eShop	6	169	63	40	229720	229721
200/20	eShop	6	209	63	60	229720	229721
200/28	eShop	6	209	63	60	229720	229721
250/24	(eShop)	6	259	63	60	229720	229721
250/36	(eShop)	6	259	63	60	229720	229721
315/28	(eShop)	6	324	63	60	229720	229721
315/44	(eShop)	6	324	63	60	229720	229721

KYOCERA Milling inserts PN.. 1106 for face mill MFK

10-edge pentagonal indexable inserts for stable and economical machining.

22 3306–3310 – GM - general application.
22 3312–3316 – GH - stable cutting edge.
22 3318–3322 – GL - surface-oriented geometry
22 3324–3328 – W - 2-edge wiper insert.

Note: Standard application values for ae = 0.3×D.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
CA420M																	**230**					●	●
PR1510 / PR1525																	**180**					●	●
CS7050																	**650**					●	●
KS6050																	**750**					●	●

Type			GG		Plane edge mm
25A 22 3306	PNMG 1106XNEN-GM	CA420M	eShop	1	2
25A 22 3308		PR1510	eShop	1	2
25A 22 3310		PR1525	eShop	1	2
25A 22 3312	PNMG 1106XNEN-GH	CA420M	eShop	1	2
25A 22 3314		PR1510	eShop	1	2
25A 22 3316		PR1525	eShop	1	2
25A 22 3318	PNEG 1106XNEN-GL	CA420M	eShop	1	2.6
25A 22 3320		PR1510	eShop	1	2.6
25A 22 3322		PR1525	eShop	1	2.6
25A 22 3324	PNEG 1106XNER-W **Wiper**	CA420M	eShop	1	10
25A 22 3326		PR1510	eShop	1	10
25A 22 3328		PR1525	eShop	1	10
25G 22 3330	PNEA 1106XN TN-T01020 **Ceramic**	CS7050	eShop	1	1.5
25G 22 3332		KS6050	eShop	10	1.5
f_z (22 3306, 22 3308, 22 3310)		mm	0.25		
f_z (22 3312, 22 3314, 22 3316)		mm	0.3		
f_z (22 3318, 22 3320, 22 3322)		mm	0.12		
f_z (22 3324, 22 3326, 22 3328)		mm	max. 0.2		
f_z (22 3330, 22 3332)		mm	0.1		


22 3308


22 3312


22 3318


22 3324

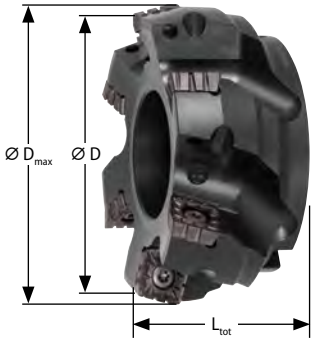

22 3332

75° HPC

KYOCERA Indexable face mill 75° MSRS (Monster Square) for milling inserts SPMT 1806

Cutter head with normal and close-pitch cutter spacing.

Application: Cutting depths up to 12 mm and high feed rates for highly efficient roughing. The innovative notched indexable inserts reduce the cutting pressure, which in turn significantly reduces the tendency to vibrate. This allows a larger cutting width and a significantly increased rate of metal removal.



Ø D / number of teeth Z	25P 22 4000 Indexable face mill 75° MSRS with bore	maximum cutting depth $a_{p\,max}$	Ø D_{max}	L_{tot}	Mounting bore Ø	suitable indexable insert	Insert screw	Case	Screw for cartridge
mm		mm	mm	mm	mm				
80/4	eShop	12	87	50	27	SP.. 1806	229703 (T25; 7.5 Nm)	229765	229704
80/6	eShop	12	87	50	27	SP.. 1806	229703 (T25; 7.5 Nm)	–	–
100/4	eShop	12	107	50	32	SP.. 1806	229703 (T25; 7.5 Nm)	229765	229704
100/6	eShop	12	107	50	32	SP.. 1806	229703 (T25; 7.5 Nm)	–	–
125/6	eShop	12	132	60	40	SP.. 1806	229703 (T25; 7.5 Nm)	229765	229704
125/8	eShop	12	132	60	40	SP.. 1806	229703 (T25; 7.5 Nm)	–	–
160/8	(eShop)	12	167	60	40	SP.. 1806	229703 (T25; 7.5 Nm)	229765	229704
160/10	eShop	12	167	60	40	SP.. 1806	229703 (T25; 7.5 Nm)	–	–
200/10	(eShop)	12	207	60	60	SP.. 1806	229703 (T25; 7.5 Nm)	229765	229704
200/12	(eShop)	12	207	60	60	SP.. 1806	229703 (T25; 7.5 Nm)	–	–
250/12	(eShop)	12	257	60	60	SP.. 1806	229703 (T25; 7.5 Nm)	229765	229704
250/14	(eShop)	12	257	60	60	SP.. 1806	229703 (T25; 7.5 Nm)	–	–
315/14	(eShop)	12	322	60	60	SP.. 1806	229703 (T25; 7.5 Nm)	229765	229704
315/16	(eShop)	12	322	60	60	SP.. 1806	229703 (T25; 7.5 Nm)	–	–

KYOCERA Indexable inserts for indexable face mill 75° MSRS (Monster Square)

Special indexable insert geometry ensures reduced cutting forces and improved chip breaking. All types with **wiper cutters** for high feed rates.

Application:

22 4012/4013 – **NB2 / NB3:** General application

22 4018/4019/4030/4031 – **NB2T / NB3T:** Ideal for **interrupted cutting**, high cutting speeds and high feed rates.

22 4024/4025 – **NB2P / NB3P:** For **reduced cutting forces.** Specially for large overhangs and thin workpieces.

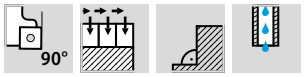
Note: **The milling cutters are alternately equipped with equal numbers of indexable inserts of forms NB2 and NB3.** Comply with the assignment instructions on the cutter.
Standard application values for $a_e = 1 \times D$.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
PR1835				**200**	**180**	**180**	**160**	**160**											○	○	●	●	
PR1810																	**180**		○	○	●	●	


22 4013


22 4030

Type			ST1400	GG		Application
25A 22 4012	SPMT 1806 EDER-NB2	PR1835	eShop	–	1	Standard
25A 22 4013	SPMT 1806 EDER-NB3	PR1835	eShop	–	1	Standard
25A 22 4018	SPMT 1806 EDSR-NB2T	PR1835	eShop	–	10	Roughing
25A 22 4019	SPMT 1806 EDSR-NB3T	PR1835	eShop	–	10	Roughing
25A 22 4024	SPMT 1806 EDER-NB2P	PR1835	eShop	–	1	soft-cutting
25A 22 4025	SPMT 1806 EDER-NB3P	PR1835	eShop	–	1	soft-cutting
25A 22 4030	SPMT 1806 EDSR-NB2T	PR1810	–	eShop	1	Roughing
25A 22 4031	SPMT 1806 EDSR-NB3T	PR1810	–	eShop	1	Roughing
f_z (22 4012, 22 4013, 22 4018, 22 4019, 22 4030)		mm	0.06 – 0.25	0.06 – 0.15		
f_z (22 4024, 22 4031)		mm	0.06 – 0.3	0.06 – 0.25		
f_z (22 4025)		mm	0.06 – 0.15	–		

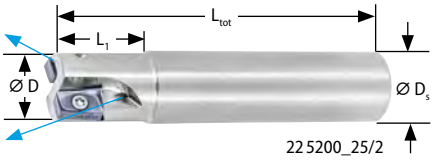


KYOCERA 90° indexable milling cutter MEW for milling inserts LOMU...

Cost-efficient due to 4 cutting edges.

22 5200 Size 16/2L – Without internal cooling.

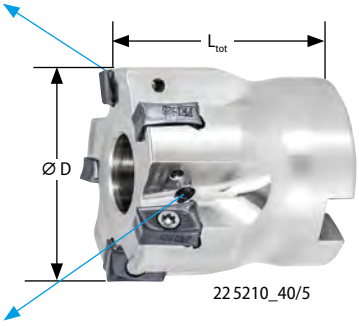
∅ D / number of teeth Z	250 22 5200 Indexable milling cutter 90° MEW	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	∅ D_s h6	Indexable insert size	Insert screw
mm	**Plain shank**	mm	mm	mm	mm		
16/2	eShop	10	26	100	16	10	229713 (8IP; 1.2 Nm)
16/2L	eShop	10	23	100	12	10	229713 (8IP; 1.2 Nm)
20/2L	eShop	10	40	150	20	10	229713 (8IP; 1.2 Nm)
20/3	eShop	10	30	110	20	10	229713 (8IP; 1.2 Nm)
25/3	eShop	10	32	120	25	10	229713 (8IP; 1.2 Nm)
25/3L	eShop	10	29	120	20	10	229713 (8IP; 1.2 Nm)
30/4L	eShop	10	32	130	25	10	229713 (8IP; 1.2 Nm)
32/4	eShop	10	40	130	32	10	229713 (8IP; 1.2 Nm)
32/4L	eShop	10	32	130	25	10	229713 (8IP; 1.2 Nm)
40/5L	(eShop)	10	50	150	32	10	229713 (8IP; 1.2 Nm)
50/5L	(eShop)	10	40	120	32	10	229713 (8IP; 1.2 Nm)
25/2	eShop	15	32	120	25	15	229714 (15IP; 3.5 Nm)
25/2L	eShop	15	29	120	20	15	229714 (15IP; 3.5 Nm)
32/2L	eShop	15	32	130	25	15	229714 (15IP; 3.5 Nm)
32/3	eShop	15	32	130	32	15	229714 (15IP; 3.5 Nm)
40/3L	(eShop)	15	50	150	32	15	229714 (15IP; 3.5 Nm)
40/4L	(eShop)	15	50	150	32	15	229714 (15IP; 3.5 Nm)
50/4L	(eShop)	15	40	120	32	15	229714 (15IP; 3.5 Nm)



22 5200_25/2


22 5200_16/2L

∅ D / number of teeth Z	250 22 5210 Indexable milling cutter 90° MEW	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore ∅	Indexable insert size	Insert screw
mm	**with bore**	mm	mm	mm		
32/4	eShop	10	35	16	10	229713 (8IP; 1.2 Nm)
40/5	eShop	10	40	16	10	229713 (8IP; 1.2 Nm)
50/5	eShop	10	40	22	10	229713 (8IP; 1.2 Nm)
63/6	eShop	10	40	22	10	229713 (8IP; 1.2 Nm)
40/4	eShop	15	40	16	15	229714 (15IP; 3.5 Nm)
50/4	eShop	15	40	22	15	229714 (15IP; 3.5 Nm)
63/5	eShop	15	40	22	15	229714 (15IP; 3.5 Nm)
80/6	eShop	15	50	27	15	229714 (15IP; 3.5 Nm)



22 5210_40/5

KYOCERA Indexable inserts LOMU.. for indexable milling cutter No. 225200 / 225210

MEGACOAT-coated indexable inserts with 4 edges – due to double-sided version. The high axial rake angle up to a maximum of 10° significantly reduces the cutting force.

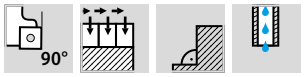
Note: Standard application values for a_e=0.3×D.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
PR1525				**200**	**180**	**160**	**140**	**140**						**160**	**150**				○	○	●	●	
PR1535														**170**	**160**	**50**			○	○	●	●	
PR1510																50	**180**		○	○	●	●	

Indexable insert size			10	15		f_z mm
25A 22 5220	LOMU...04ER-GM	PR1525	eShop	eShop	**10**	0.06 – 0.25
25A 22 5225	LOMU...08ER-GM	PR1525	eShop	eShop	**10**	0.06 – 0.25
25A 22 5226	LOMU...12ER-GM	PR1525	eShop	eShop	**1**	0.06 – 0.25
25A 22 5227	LOMU...08ER-GH	PR1525	eShop	eShop	**1**	0.06 – 0.3
25A 22 5235	LOMU...08ER-SM	PR1525	eShop	eShop	**1**	0.06 – 0.15
25A 22 5237		PR1535	eShop	eShop	**1**	0.06 – 0.15
25A 22 5240	LOMU...08ER-GM	PR1510	eShop	eShop	**1**	0.06 – 0.25
Type (22 5220, 22 5225, 22 5226, 22 5227)			ST1400			
Type (22 5235, 22 5237)			INOX			
Type (22 5240)			GG			

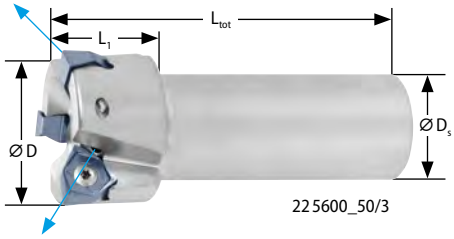

_10


_15

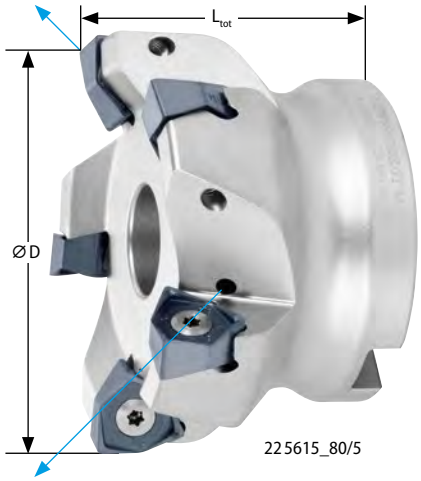


KYOCERA 90° indexable milling cutter MFWN for indexable inserts WNMU 0806..

Milling cutter with double-sided indexable inserts.
The combination of approach angle, chip chamber design as well as the geometries and cutting angles of the indexable inserts ensure outstanding metal removal rates, chip clearance, working life, and low cutting forces, and hence high cost-effectiveness.
Size 160/8–250/14 – Without internal cooling.



Ø D / number of teeth Z	250 22 5600 Indexable milling cutter 90° MFWN Plain shank	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}	Ø D_s h6	Insert screw
mm		mm	mm	mm	mm	
50/3	eShop	8	30	110	32	229700 (T15; 4.2 Nm)
63/4	eShop	8	30	110	32	229700 (T15; 4.2 Nm)
80/5	eShop	8	30	110	32	229700 (T15; 4.2 Nm)



Ø D / number of teeth Z	250 22 5615 Indexable milling cutter 90° MFWN with bore	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Insert screw	Shim
mm		mm	mm	mm		
50/4	eShop	8	40	22	229700 (T15; 4.2 Nm)	–
63/3	eShop	8	40	22	229700 (T15; 4.2 Nm)	229751
63/4	eShop	8	40	22	229700 (T15; 4.2 Nm)	–
63/5	eShop	8	40	22	229700 (T15; 4.2 Nm)	–
80/4	eShop	8	50	27	229700 (T15; 4.2 Nm)	229751
80/5	eShop	8	50	27	229700 (T15; 4.2 Nm)	–
80/7	eShop	8	50	27	229701 (T15; 3.5 Nm)	–
100/5	(eShop)	8	50	32	229700 (T15; 4.2 Nm)	229751
100/7	eShop	8	50	32	229700 (T15; 4.2 Nm)	–
100/9	(eShop)	8	50	32	229701 (T15; 3.5 Nm)	–
125/6	(eShop)	8	63	40	229700 (T15; 4.2 Nm)	229751
125/8	eShop	8	63	40	229700 (T15; 4.2 Nm)	–
125/12	(eShop)	8	63	40	229701 (T15; 3.5 Nm)	–
160/8	(eShop)	8	63	40	229700 (T15; 4.2 Nm)	229751
160/10	(eShop)	8	63	40	229700 (T15; 4.2 Nm)	–
160/14	eShop	8	63	40	229701 (T15; 3.5 Nm)	–
200/10	(eShop)	8	63	60	229700 (T15; 4.2 Nm)	229751
200/12	(eShop)	8	63	60	229700 (T15; 4.2 Nm)	–
250/12	(eShop)	8	63	60	229700 (T15; 4.2 Nm)	229751
250/14	(eShop)	8	63	60	229700 (T15; 4.2 Nm)	–

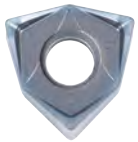
KYOCERA Indexable inserts WNMU.. for indexable milling cutter No. 225600 / 225615

MEGACOAT-coated indexable inserts with **6 edges** – due to double-sided version. The high axial rake angle up to a maximum of 13° significantly reduces the cutting force.
22 5627–5630 – Ground version for significantly better surface quality.

Application:

22 5621 – The **GH geometry** is the first choice for roughing applications.
22 5620/5626 – The **GM geometry** is the first choice for general machining.
22 5623/5625 – The **SM geometry** has a highly positive rake and cuts smoothly.
22 5627–5630 – The **GL geometry** is suitable for good surface finishes thanks to the ground version and flat cutting edge.

Note: Standard application values for $a_e = 0.3 \times D$.


22 5620_ST1400

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
PR1525				**200**	**180**	**160**	**140**	**140**						160	150			●		○	○	●	●
PR1535														**160**	**150**					○	○	●	●
PR1510																50	**180**			○	○	●	●
CA6535														240	200	**40**				○	○	●	●

Type			ST1400	INOX	GG	S	UNI	a_p	f_z mm
25A 22 5620	WNMU 080608 EN-GM	PR1525	eShop	–	–	–	–	10	0.1 – 0.3
25A 22 5621	WNMU 080608 EN-GH	PR1525	eShop	–	–	–	–	1	0.2 – 0.4
25A 22 5623	WNMU 080608 EN-SM	PR1525	–	eShop	–	–	–	1	0.06 – 0.2
25A 22 5625		PR1535	–	eShop	–	–	–	1	0.06 – 0.2
25A 22 5626	WNMU 080608 EN-GM	PR1510	–	–	eShop	–	–	1	0.1 – 0.3
25A 22 5627	WNEU 080608 EN-GL	PR1510	–	–	eShop	–	–	1	0.06 – 0.2
25A 22 5628		CA6535	–	–	–	eShop	–	1	0.06 – 0.1
25A 22 5630		PR1525	–	–	–	–	eShop	1	0.06 – 0.15



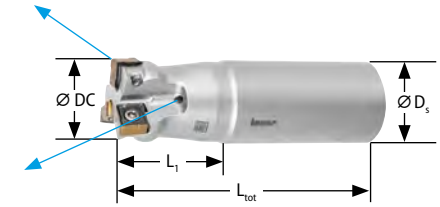
NEODO face / shoulder mill for inserts SZ.U0804..

Highly efficient milling system for facing and milling 90° shoulders. For roughing and pre-finishing especially of steel and cast iron materials. Cost-effective due to 8 cutting edges per indexable insert. Extremely stable embedding for the inserts in a dovetail-shaped insert seating.

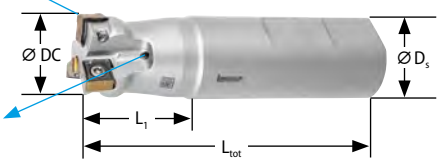
Spare part: Pack of insert screws No. **229696 3** (IP9; 2.0 Nm).

Ø D_c / number of effective cutting edges Z	19D 22 5750	19D 22 5751	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}		Ø D_s h6
	NEODO indexable face / shoulder mill				22 5750	22 5751	
mm	Plain shank	Weldon shank	mm	mm	mm	mm	mm
25/3	–	–	5	35	120	95	25
32/4	–	–	5	45	130	110	32

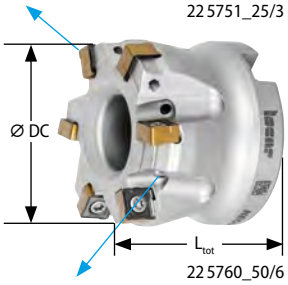
Ø D_c / number of effective cutting edges Z	19D 22 5760	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø
	NEODO indexable face / shoulder mill			
mm	with bore	mm	mm	mm
32/4	–	5	32	16
40/5	–	5	35	16
40/6	–	5	35	16
50/6	–	5	40	22
50/8	–	5	40	22
63/7	–	5	40	22
63/10	–	5	40	22
80/8	–	5	50	27
80/12	–	5	50	27
100/10	–	5	50	32
100/14	–	5	50	32
125/12	–	5	50	40
125/18	–	5	50	40



22 5750_25/3



22 5751_25/3



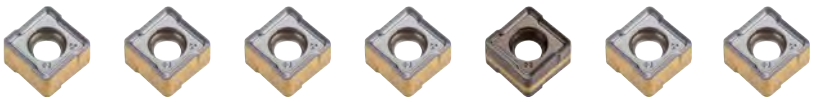
22 5760_50/6

NEODO milling inserts SZ.U for face / shoulder mill

Double-sided indexable insert with 8 helical cutting edges. Special cutting edge geometry for smooth cutting to reduce power consumption during machining.

Note: Standard application values for a_e = 0.3 to 1 × D / $a_{p\,max}$ = 5.0 mm.
The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	K					
22 5800/5804				**200**	**180**	**170**	150	140												○		●	●
22 5801				**180**	**170**	**150**	140	130												●		●	
22 5802				**160**	**150**	**140**	120	110												●		●	
22 5803				**190**	**180**	**170**	150	140												○		●	●
22 5805				200	190	180	**170**	**150**												●		●	
22 5806														**140**	**120**					●		●	
22 5807																**45**				●		●	
22 5808/5809																	**300**	240		○		●	●
22 5810/5811																	280	**260**		●		○	
22 5812				**180**	**170**	**150**	140							**90**	**80**					●		●	
22 5813				**170**	**160**	**140**	130							**90**	**80**					●		●	

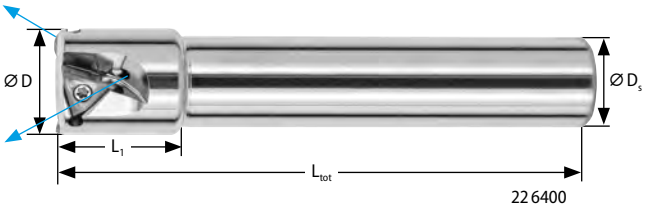

22 5800 22 5805 22 5806 22 5807 22 5808 22 5810 22 5812

Type			ST900	ST1400	INOX	S	GG	GGG	UNI	
19A 22 5800	SZMU 080408PNRMM	IC5600	–	–	–	–	–	–	–	10
19A 22 5801	SZMU 080412PNRMM	IC808	–	–	–	–	–	–	–	10
19A 22 5802		IC845	–	–	–	–	–	–	–	10
19A 22 5803		IC5400	–	–	–	–	–	–	–	10
19A 22 5804		IC5600	–	–	–	–	–	–	–	10
19A 22 5805	SZMU 080408PNRMM	IC830	–	–	–	–	–	–	–	10
19A 22 5806	SZMU 080408PNRHP	IC830	–	–	–	–	–	–	–	10
19A 22 5807	SZHU 080408PNR	IC882	–	–	–	–	–	–	–	10
19A 22 5808	SZMU 080408PNTR	IC5100	–	–	–	–	–	–	–	10
19A 22 5809	SZMU 080412PNTR	IC5100	–	–	–	–	–	–	–	10
19A 22 5810	SZMU 080408PNTR	IC810	–	–	–	–	–	–	–	10
19A 22 5811	SZMU 080412PNTR	IC810	–	–	–	–	–	–	–	10
19A 22 5812	SZMU 080408PNRMM	IC808	–	–	–	–	–	–	–	10
19A 22 5813	SZMU 080412PNRMM	IC830	–	–	–	–	–	–	–	10
f_z		mm	0.25	0.2	0.15	0.12	0.25	0.25	–	



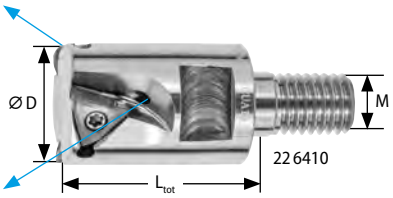
KYOCERA MEV 90° indexable milling cutter for indexable inserts TOMT060508

High-performance milling cutter with newly developed triangular indexable insert for corner and slot milling and ramping with lower cutting forces and increased stability.



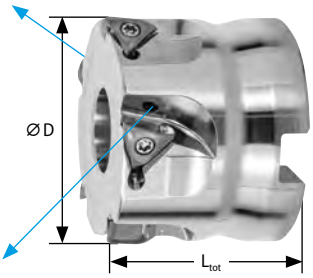
22 6400

Ø D / number of teeth Z	250 22 6400 Indexable milling cutter 90° MEV	maximum cutting depth $a_{p\,max}$	L$_1$	L$_{tot}$	Ø D$_s$ h6	Insert screw
mm	**Plain shank**	mm	mm	mm	mm	
20/2	eShop	6	26	110	16	229723 1 (10IP; 2.0 Nm)
20/2L	eShop	6	40	150	20	229723 1 (10IP; 2.0 Nm)
25/3	eShop	6	29	120	20	229723 1 (10IP; 2.0 Nm)
25/2L	eShop	6	50	170	25	229723 1 (10IP; 2.0 Nm)
32/4	eShop	6	32	130	25	229723 1 (10IP; 2.0 Nm)
32/2L	eShop	6	65	200	32	229723 1 (10IP; 2.0 Nm)
40/5	eShop	6	50	150	32	229723 1 (10IP; 2.0 Nm)
50/5	eShop	6	40	120	32	229723 1 (10IP; 2.0 Nm)



22 6410

Ø D / number of teeth Z	250 22 6410 Indexable milling cutter 90° MEV	maximum cutting depth $a_{p\,max}$	L$_{tot}$	Mounting thread M	Insert screw
mm	**with threaded shank**	mm	mm		
20/3	eShop	6	30	M10	229723 1 (10IP; 2.0 Nm)
25/3	eShop	6	35	M12	229723 1 (10IP; 2.0 Nm)
32/4	eShop	6	40	M16	229723 1 (10IP; 2.0 Nm)



22 6420

Ø D / number of teeth Z	250 22 6420 Indexable milling cutter 90° MEV	maximum cutting depth $a_{p\,max}$	L$_{tot}$	Mounting bore Ø	Insert screw
mm	**with bore**	mm	mm	mm	
32/4	eShop	6	35	16	229723 1 (10IP; 2.0 Nm)
40/5	eShop	6	40	16	229723 1 (10IP; 2.0 Nm)
50/5	eShop	6	40	22	229723 1 (10IP; 2.0 Nm)

KYOCERA Indexable inserts TOMT060508 for 90° indexable milling cutters MEV No. 226400 / 226410 / 226420

Improved chip evacuation with unique chip breaker design for the indexable inserts. The maximum axial rake angle of 17° ensures low cutting forces.

Application:

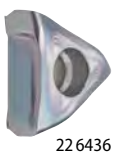
22 6430/6436/6442 –The GM geometry is the 1st choice for general machining.

22 6433/6439/6445 –The SM geometry is the 1st Choice for lower cutting forces.

Suitable for/ v$_c$ [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N						
PR1525				**200**	**180**	**160**	**140**	**140**											○	○	●	●	
PR1535														**200**	**160**				○	○	●	●	
CA6535																**40**			○	○	●	●	



22 6430



22 6436



22 6442

Type			ST1400	INOX	S	
25A 22 6430	TOMT 060508ER-GM	PR1525	eShop	–	–	1
25A 22 6433	TOMT 060508ER-SM	PR1525	eShop	–	–	1
25A 22 6436	TOMT 060508ER-GM	PR1535	–	eShop	–	1
25A 22 6439	TOMT 060508ER-SM	PR1535	–	eShop	–	1
25A 22 6442	TOMT 060508ER-GM	CA6535	–	–	eShop	1
25A 22 6445	TOMT 060508ER-SM	CA6535	–	–	eShop	1
f_z (22 6430, 22 6436, 22 6442)		mm	0.08 – 0.25	0.08 – 0.2	0.08 – 0.2	
f_z (22 6433, 22 6439, 22 6445)		mm	0.08 – 0.2	0.08 – 0.15	0.08 – 0.15	

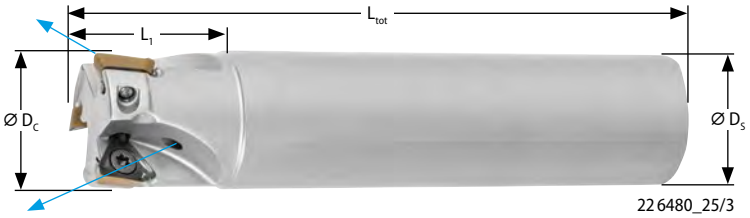
90° HPC

HELI3MILL shoulder mill 90° for inserts TP..1003.. and TD..1505..

Reliable shoulder milling system for a wide range of applications. Versions in two system sizes with cutting edge lengths in 10 and 15 mm.
Optimally supported Trigon indexable inserts in the seat ensure true 90° shoulders. Ideally suited for circular interpolation milling operations and ramping.

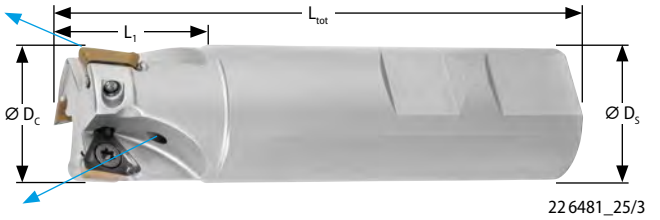
HELI3MILL shoulder mill 90° for TP..1003..

Spare part: Pack of indexable insert screws No. **229695 1** (TX10; 3.2 Nm).



22 6480_25/3

Ø D_c / number of effective cutting edges Z	19D	22 6480	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm		HELI3MILL shoulder mill **Plain shank**	mm	mm	mm	mm	mm	mm	degrees	mm
25/3		–	25	120	25	46.4	49	3.4	2.9	20
25/4		–	25	120	25	46.4	49	3.4	2.9	20
32/4L		–	40	200	32	60.4	63	3.3	2.1	27



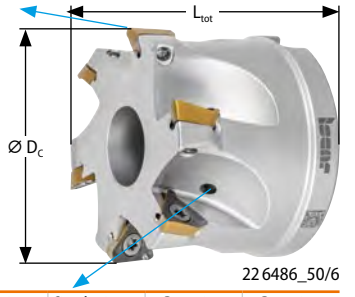
22 6481_25/3

Ø D_c / number of effective cutting edges Z	19D	22 6481	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm		HELI3MILL shoulder mill **Weldon shank**	mm	mm	mm	mm	mm	mm	degrees	mm
25/3		–	25	95	25	46.4	49	3.4	2.9	20
32/4		–	30	110	32	60.4	63	3.3	2.1	27



22 6484_25/3

Ø D_c / number of effective cutting edges Z	19D	22 6484	L_{tot}	Mounting thread M	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm		HELI3MILL shoulder mill **with threaded shank**	mm		mm	mm	mm	degrees	mm
25/3		–	35	M12	46.4	49	3.4	2.9	20
32/4		–	35	M16	60.4	63	3.3	2.1	27



22 6486_50/6

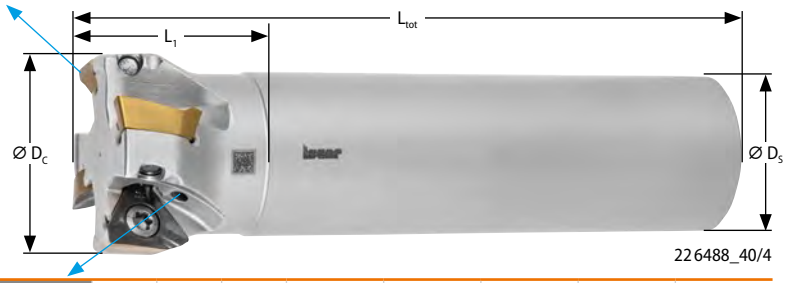
Ø D_c / number of effective cutting edges Z	19D	22 6486	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
mm		HELI3MILL shoulder mill **with bore**	mm	mm	mm	mm	mm	degrees	mm
40/5		–	40	16	76.4	79	3.2	1.6	35
50/4		–	40	22	96.4	99	3.1	1.2	45
50/6		–	40	22	96.4	99	3.1	1.2	45
63/6		–	45	22	122.4	125	2.9	0.9	58
63/6S		–	45	27	122.4	125	2.9	0.9	58
63/7		–	45	22	122.4	125	2.9	0.9	58
63/7S		–	45	27	122.4	125	2.9	0.9	58
80/11S		–	50	27	156.4	159	3.4	0.8	75

HELI3MILL shoulder mill 90° for TD..1505..

Spare part:

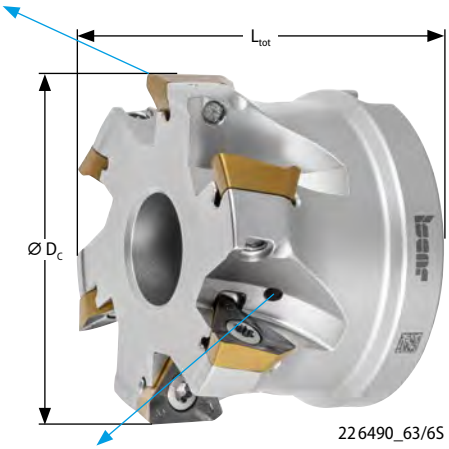
Size 40/4–50/5 – Pack of insert screws No. **229696 1** (IP20; 9.0 Nm).

Size 63/5–125/9 – Pack of insert screws No. **229696 2** (IP20; 9.0 Nm).



22 6488_40/4

Ø D_c / number of effective cutting edges Z	19D	22 6488	L_1	L_{tot}	Ø D_s h6	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
		HELI3MILL shoulder mill								
mm		**Plain shank**	mm	mm	mm	mm	mm	mm	degrees	mm
40/4		–	30	130	32	75	79	4	2.1	33
50/4		–	40	130	32	95	99	3.9	1.6	43



22 6490_63/6S

Ø D_c / number of effective cutting edges Z	19D	22 6490	L_{tot}	Mounting bore Ø	Circular interpolation milling Ø D_{min}	Circular interpolation milling Ø D_{max}	Circular interpolation milling a_p	Ramping angle α_{max}	Ramping length L for α_{max}
		HELI3MILL shoulder mill							
mm		**with bore**	mm	mm	mm	mm	mm	degrees	mm
40/4		–	40	16	75	79	4	2	33
50/4		–	40	22	95	99	3.9	1.6	43
50/5		–	40	22	95	99	3.9	1.6	43
63/5		–	45	22	121	125	3.8	1.2	56
63/5S		–	45	27	121	125	3.8	1.2	56
63/6		–	45	22	121	125	3.8	1.2	56
63/6S		–	45	27	121	125	3.8	1.2	56
80/5		–	50	27	155	159	3.7	0.9	73
80/6		–	50	27	155	159	3.7	0.9	73
80/7		–	50	27	155	159	3.7	0.9	73
100/6		–	50	32	195	199	3.6	0.7	93
100/8		–	50	32	195	199	3.6	0.7	93
125/7		–	63	40	245	249	3.3	0.5	118
125/9		–	63	40	245	249	3.3	0.5	118

Hoffmann Group **ToolScout**

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www.toolscout.com

HELI3MILL milling inserts TP..1003.. and TD..1505.. for 90° shoulder mill

Trigon indexable insert with 3 helical cutting edges. Axial and radial positive cutting edge design. For effective and precise machining of 90° shoulders.

Note: The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K						
22 6499	640	560	320																●		●		
22 6501/6502/6504 6518–22 6561/6571				300	280	260	240	220											●		●		
22 6503				320	280	260	240	220											○		●		●
22 6506/6574				200	180	160	160	150											●		●		
22 6507/6508														140	110				●		●		
22 6509/6563/6564																50			●		●		
22 6511–22 6517/ 6582–22 6589/6597				220	200	170	150							110	90			●	●		●		
22 6562/6576/6577														130	110				●		●		
22 6573				220	200	170	160	150											●		●		
22 6579/6596																	240		●		○		
22 6581				240	220	200	180							110	90			●	●		●		

HELI3MILL milling inserts TP..1003..

22 6514 – With knuckle form profile for roughing.

Note: Standard application values for a_e = 0.3 to 1 × D / a_p max = 8.0 mm.

Type			ALU	ST900	ST1400	INOX	S	GGG	UNI	
19A 22 6499	TPCR 1003PDFR-P	IC28	–	–	–	–	–	–	–	10
19A 22 6501	TPKT 100304PDR	IC808	–	–	–	–	–	–	–	10
19A 22 6502	TPKT 1003PDR	IC808	–	–	–	–	–	–	–	10
19A 22 6503		IC5400	–	–	–	–	–	–	–	10
19A 22 6504	TPCT 1003PDR	IC808	–	–	–	–	–	–	–	10
19A 22 6518	TPKT 100310PDR	IC808	–	–	–	–	–	–	–	10
19A 22 6506	TPKT 1003PDR	IC845	–	–	–	–	–	–	–	10
19A 22 6507	TPCT 1003PDR	IC830	–	–	–	–	–	–	–	10
19A 22 6508	TPKR 100304PDR-HM	IC830	–	–	–	–	–	–	–	10
19A 22 6509	TPKT 1003PDR	IC882	–	–	–	–	–	–	–	10
19A 22 6596		IC810	–	–	–	–	–	–	–	10
19A 22 6511	TPKT 100304PDR	IC830	–	–	–	–	–	–	–	10
19A 22 6512	TPKT 1003PDR-MP	IC830	–	–	–	–	–	–	–	10
19A 22 6513	TPKT 1003PDR	IC830	–	–	–	–	–	–	–	10
19A 22 6514	TPKT 1003PDR-FW	IC830	–	–	–	–	–	–	–	10
19A 22 6597	TPKT 100312PDR	IC830	–	–	–	–	–	–	–	10
19A 22 6516	TPKT 100316PDR	IC830	–	–	–	–	–	–	–	10
19A 22 6517	TPKT 100320PDR	IC830	–	–	–	–	–	–	–	10
f_z		mm	0.25	0.15	0.13	0.1	0.1	0.15	–	


22 6499


22 6506


22 6511

HELI3MILL milling inserts TD..1505..

22 6582 – With knuckle form profile for roughing.

Note: Standard application values for a_e = 0.3 to 1 × D / a_p max = 13.0 mm.
22 6579 – Standard application values for a_e = 0.3×D. Exactly 90° up to a_p = 10 mm.
22 6582 – When mounted, the tool diameter D_C increases by approx. 1 mm.

Type			ST900	ST1400	INOX	S	GGG	UNI	
19A 22 6560	TDKT 1505PDR	IC808	–	–	–	–	–	–	10
19A 22 6571	TDCT 1505PDR	IC808	–	–	–	–	–	–	10
19A 22 6561	TDKT 150512-PDR	IC808	–	–	–	–	–	–	10
19A 22 6573	TDKT 1505PDR	IC830	–	–	–	–	–	–	10
19A 22 6574		IC845	–	–	–	–	–	–	10
19A 22 6562	TDKT 150504PDR	IC830	–	–	–	–	–	–	10
19A 22 6576	TDCT 1505PDR	IC830	–	–	–	–	–	–	10
19A 22 6577	TDKR 150508PDRHM	IC830	–	–	–	–	–	–	10
19A 22 6563	TDKT 1505PDR	IC882	–	–	–	–	–	–	10
19A 22 6564	TDCT 1505PDR	IC882	–	–	–	–	–	–	10
19A 22 6579	TDKT 1505PDR	IC810	–	–	–	–	–	–	10
19A 22 6581	TDKT 1505PDR-MP	IC830	–	–	–	–	–	–	10
19A 22 6582	TDKT 1505PDR-FW	IC830	–	–	–	–	–	–	10
19A 22 6583	TDKT 150516-PDR	IC830	–	–	–	–	–	–	10
19A 22 6584	TDKT 150520-PDR	IC830	–	–	–	–	–	–	10
19A 22 6586	TDKT 150524-PDR	IC830	–	–	–	–	–	–	10
19A 22 6588	TDKT 150532-PDR	IC830	–	–	–	–	–	–	10
19A 22 6589	TDKT 150540-PDR	IC830	–	–	–	–	–	–	10
f_z		mm	0.25	0.21	0.2	0.15	0.21	–	


22 6560


22 6563



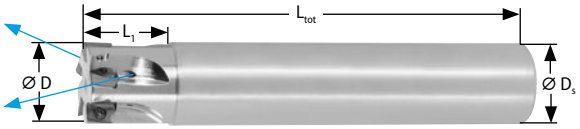
22 6579



KYOCERA 90° indexable milling cutter MECX for indexable inserts BDMT 0703..

Description:

22 7100/7105 – Very close spacing provides improved productivity even under more unstable machining conditions. Low cutting forces and high stability for low tendency to vibrate. Permits various milling tasks such as milling shoulders and ramps etc.



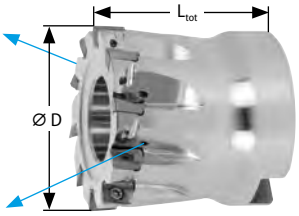
22 7100



22 7105

Ø D / number of teeth Z	250 22 7100	250 22 7105	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}		Ø D_s h6	Insert screw
	Indexable milling cutter 90° MECX				22 7100	22 7105		
mm	Plain shank	Weldon shank	mm	mm	mm	mm	mm	
8/1	eShop	–	6	16	80	–	10	229706 (T6; 0.45 Nm)
10/1	eShop	–	6	17	80	–	10	229706 (T6; 0.45 Nm)
12/2	eShop	–	6	18	80	–	12	229706 (T6; 0.45 Nm)
14/2L	eShop	–	6	18	80	–	12	229706 (T6; 0.45 Nm)
16/3	eShop	eShop	6	20	100	68	16	229707 (T6; 0.45 Nm)
16/4	eShop	eShop	6	20	100	68	16	229707 (T6; 0.45 Nm)
17/3L	eShop	–	6	20	100	–	16	229707 (T6; 0.45 Nm)
18/3L	eShop	–	6	20	100	–	16	229707 (T6; 0.45 Nm)
20/4L	eShop	–	6	20	110	–	16	229707 (T6; 0.45 Nm)
20/5	eShop	eShop	6	20	110	81	20	229707 (T6; 0.45 Nm)
25/5L	eShop	–	6	25	120	–	20	229707 (T6; 0.45 Nm)
25/7	eShop	eShop	6	25	120	88	25	229707 (T6; 0.45 Nm)
26/5L	eShop	–	6	25	120	–	25	229707 (T6; 0.45 Nm)
32/8	eShop	–	6	30	130	–	32	229707 (T6; 0.45 Nm)

Ø D / number of teeth Z	250 22 7115	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Insert screw
	Indexable milling cutter 90° MECX				
mm	with bore	mm	mm	mm	
32/8	eShop	6	40	16	229707 (T6; 0.45 Nm)
40/10	eShop	6	40	22	229707 (T6; 0.45 Nm)



22 7115

KYOCERA Indexable inserts BDMT 0703.. for indexable milling cutters No. 227100 – 227115

Note: Standard application values for a_e = 0.3×D. Exactly 90° up to a_p = 4 mm.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
PR1825				200	180	180	140	140						180	180					○	○	●	●
PR1835														160	160	50				○	○	●	●
PR1810																	180			○	○	●	●



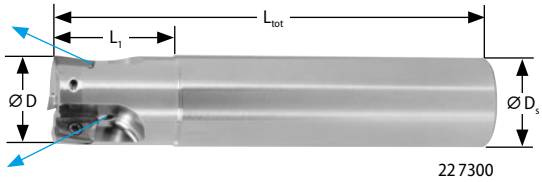


	Type			ST1400	INOX	GG	
NEW	25A 22 7138	BDMT 070302 ER-JT	PR1825	eShop	–	–	10
NEW	25A 22 7139	BDMT 070304 ER-JT	PR1825	eShop	–	–	10
NEW	25A 22 7140	BDMT 070308 ER-JT	PR1825	eShop	–	–	10
NEW	25A 22 7151	BDMT 070302 ER-JS	PR1835	–	eShop	–	10
NEW	25A 22 7152	BDMT 070304 ER-JS	PR1835	–	eShop	–	10
NEW	25A 22 7153	BDMT 070308 ER-JS	PR1835	–	eShop	–	10
	25A 22 7158	BDMT 070302 ER-JT	PR1810	–	–	eShop	1
	25A 22 7159	BDMT 070304 ER-JT	PR1810	–	–	eShop	1
	25A 22 7160	BDMT 070308 ER-JT	PR1810	–	–	eShop	1
f_z			mm	0.07 – 0.11	0.05 – 0.08	0.09 – 0.16	



KYOCERA 90° indexable milling cutter MEC11T for indexable inserts BD. T 11T3..

Description: MEC11T mill type with higher stability due to lower number of cutters than MECX. This enables higher feed rates per cutter.



22 7300



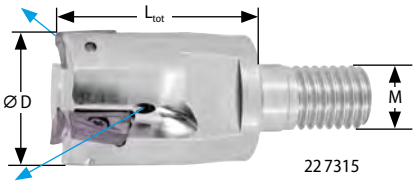
22 7305

Note:
22 7300 Size 16/2L – Without internal cooling.

Ø D / number of teeth Z	250 22 7300	250 22 7305	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}		Ø D_s h6	Insert screw
	Indexable milling cutter 90° MEC11T				22 7300	22 7305		
mm	**Plain shank**	**Weldon shank**	mm	mm	mm	mm	mm	
16/2	eShop	eShop	10	25	100	68	16	229708 (T8; 1.2 Nm)
16/2L	eShop	eShop	10	23	100	68	12	229708 (T8; 1.2 Nm)
18/2L	eShop	eShop	10	23	100	68	16	229708 (T8; 1.2 Nm)
20/2XL	eShop	–	10	30	170	–	18	229708 (T8; 1.2 Nm)
20/3	eShop	–	10	30	110	–	20	229708 (T8; 1.2 Nm)
20/3L	eShop	eShop	10	26	110	68	16	229708 (T8; 1.2 Nm)
22/2XL	eShop	–	10	30	170	–	20	229708 (T8; 1.2 Nm)
22/3L	eShop	–	10	26	110	–	20	229708 (T8; 1.2 Nm)
24/3L	eShop	–	10	29	120	–	20	229708 (T8; 1.2 Nm)
25/3	eShop	eShop	10	32	120	88	25	229708 (T8; 1.2 Nm)
25/3L	eShop	–	10	29	120	–	20	229708 (T8; 1.2 Nm)
30/4L	eShop	–	10	32	130	–	25	229708 (T8; 1.2 Nm)
32/4	eShop	–	10	40	130	–	32	229708 (T8; 1.2 Nm)
32/4L	eShop	–	10	32	130	–	25	229708 (T8; 1.2 Nm)
40/5L	eShop	–	10	50	150	–	32	229708 (T8; 1.2 Nm)
50/5L	eShop	–	10	50	150	–	32	229708 (T8; 1.2 Nm)

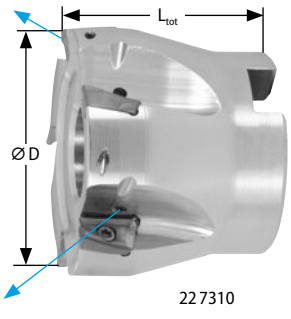
22

Ø D / number of teeth Z	250 22 7315	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting thread M	Insert screw
	Indexable milling cutter 90° MEC11T				
mm	**with threaded shank**	mm	mm		
16/2	eShop	10	25	M8	229708 (T8; 1.2 Nm)
20/2	eShop	10	30	M10	229708 (T8; 1.2 Nm)
20/3	eShop	10	30	M10	229708 (T8; 1.2 Nm)
25/3	eShop	10	35	M12	229708 (T8; 1.2 Nm)
32/4	eShop	10	40	M16	229708 (T8; 1.2 Nm)



22 7315

Ø D / number of teeth Z	250 22 7310	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Insert screw
	Indexable milling cutter 90° MEC11T				
mm	**with bore**	mm	mm	mm	
40/5	eShop	10	40	16	229708 (T8; 1.2 Nm)
50/5	eShop	10	40	22	229708 (T8; 1.2 Nm)
63/6	eShop	10	40	22	229708 (T8; 1.2 Nm)
80/7	eShop	10	50	27	229708 (T8; 1.2 Nm)
100/9	eShop	10	55	32	229708 (T8; 1.2 Nm)
125/11	eShop	10	63	40	229708 (T8; 1.2 Nm)

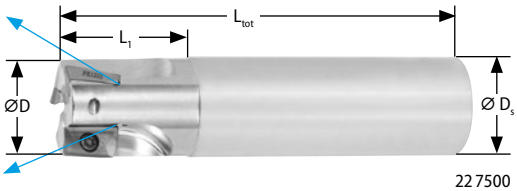


22 7310



KYOCERA 90° indexable milling cutter MEC17 for indexable inserts BD.T 1704..

Long cutting edges permit exceptionally large cutting depths.
Small number of cutting edges.



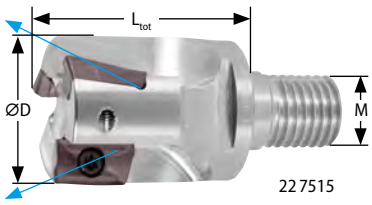
22 7500



22 7505

Ø D / number of teeth Z	250 22 7500	250 22 7505	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}		Ø D_s h6	Insert screw
	Indexable milling cutter 90° MEC17				22 7500	22 7505		
mm	**Plain shank**	**Weldon shank**	mm	mm	mm	mm	mm	
25/2	eShop	eShop	15.7	36	120	92	25	229709 (T15; 3.5 Nm)
25/2L	eShop	–	15.7	36	120	–	20	229709 (T15; 3.5 Nm)
32/3	eShop	eShop	15.7	40	130	100	32	229709 (T15; 3.5 Nm)
32/3L	eShop	–	15.7	40	130	–	25	229709 (T15; 3.5 Nm)
40/4L	eShop	–	15.7	50	150	–	32	229709 (T15; 3.5 Nm)
50/4L	eShop	–	15.7	50	150	–	32	229709 (T15; 3.5 Nm)

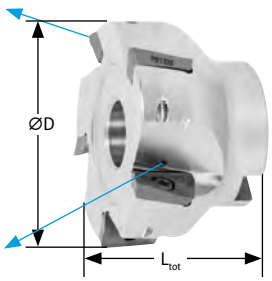
Ø D / number of teeth Z	250 22 7515	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting thread M	Insert screw
	Indexable milling cutter 90° MEC17				
mm	**with threaded shank**	mm	mm		
25/2	eShop	15.7	35	M12	229709 (T15; 3.5 Nm)
32/3	eShop	15.7	40	M16	229709 (T15; 3.5 Nm)



22 7515

Note:
Size 160/12 – Without internal cooling.

Ø D / number of teeth Z	250 22 7510	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Insert screw
	Indexable milling cutter 90° MEC17				
mm	**with bore**	mm	mm	mm	
40/4	eShop	15.7	40	16	229709 (T15; 3.5 Nm)
50/4	eShop	15.7	40	22	229709 (T15; 3.5 Nm)
63/5	eShop	15.7	40	22	229709 (T15; 3.5 Nm)
80/6	eShop	15.7	50	27	229709 (T15; 3.5 Nm)
100/7	(eShop)	15.7	55	32	229709 (T15; 3.5 Nm)
125/9	(eShop)	15.7	63	40	229709 (T15; 3.5 Nm)
160/12	(eShop)	15.7	63	40	229709 (T15; 3.5 Nm)



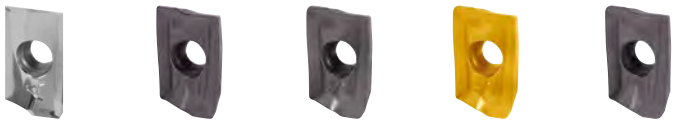
22 7510

KYOCERA Inserts BD.T 11T3.. for indexable milling cutters MEC11T No. 227300 – 227315 and inserts BD.T 1704..for indexable milling cutters No. 227500 – 227515

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
GW25	700	500	250																○	○	●	●	
PR1825				200	180	180	140	140						180	180				○	○	●	●	
PR1535														160	160	50			○	○	●	●	
CA6535														240	220	30			○	○	●	●	
PR1810																50	180		○	○	●	●	

Milling inserts BD.T 11T3..

Note: Standard application values for $a_e = 0.3 \times D$. Exactly 90° up to $a_p = 5.5$ mm.



Type			ALU	ST1400	INOX	S	GG	
25A 22 7325	BDGT 11T302 FR-JA	GW25	eShop	–	–	–	–	1
25A 22 7326	BDGT 11T304 FR-JA	GW25	eShop	–	–	–	–	1
25A 22 7327	BDGT 11T308 FR-JA	GW25	eShop	–	–	–	–	1
25A 22 7343	BDMT 11T302 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7344	BDMT 11T304 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7345	BDMT 11T308 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7346	BDMT 11T312 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7347	BDMT 11T316 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7348	BDMT 11T320 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7349	BDMT 11T324 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7351	BDMT 11T331 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7358	BDMT 11T302 ER-JS	PR1535	–	–	eShop	–	–	1
25A 22 7359	BDMT 11T304 ER-JS	PR1535	–	–	eShop	–	–	1
25A 22 7360	BDMT 11T308 ER-JS	PR1535	–	–	eShop	–	–	1
25A 22 7361	BDMT 11T302 ER-JS	CA6535	–	–	–	eShop	–	1
25A 22 7362	BDMT 11T304 ER-JS	CA6535	–	–	–	eShop	–	1
25A 22 7363	BDMT 11T308 ER-JS	CA6535	–	–	–	eShop	–	1
25A 22 7366	BDMT 11T308 ER-JT	PR1810	–	–	–	–	eShop	1
f_z		mm	0.05 – 0.33	0.07 – 0.11	0.07 – 0.11	0.06 – 0.1	0.09 – 0.16	

Milling inserts BD.T 1704..

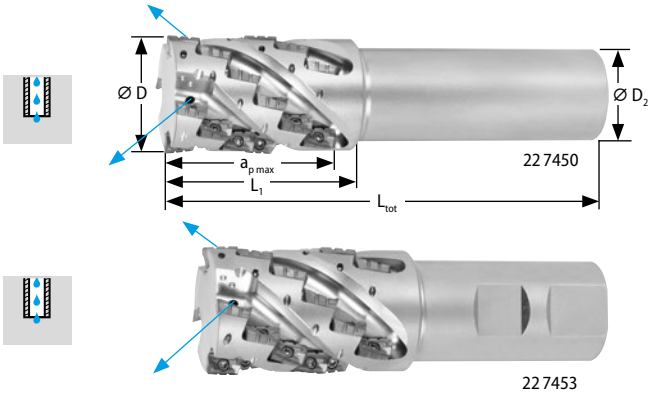
Note: Standard application values for $a_e = 0.3 \times D$. Exactly 90° up to $a_p = 9$ mm.



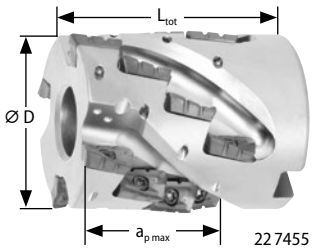
Type			ALU	ST1400	INOX	S	GG	
25A 22 7526	BDGT 170404 FR-JA	GW25	eShop	–	–	–	–	1
25A 22 7527	BDGT 170408 FR-JA	GW25	eShop	–	–	–	–	1
25A 22 7530	BDGT 170420 FR-JA	GW25	eShop	–	–	–	–	1
25A 22 7533	BDGT 170431 FR-JA	GW25	eShop	–	–	–	–	1
25A 22 7550	BDMT 170404 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7551	BDMT 170408 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7552	BDMT 170412 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7553	BDMT 170416 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7554	BDMT 170420 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7555	BDMT 170424 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7558	BDMT 170431 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7559	BDMT 170440 ER-JT	PR1825	–	eShop	–	–	–	1
25A 22 7560	BDMT 170404 ER-JS	PR1535	–	–	eShop	–	–	1
25A 22 7561	BDMT 170408 ER-JS	PR1535	–	–	eShop	–	–	1
25A 22 7564	BDMT 170404 ER-JS	CA6535	–	–	–	eShop	–	1
25A 22 7565	BDMT 170408 ER-JS	CA6535	–	–	–	eShop	–	1
25A 22 7568	BDMT 170408 ER-JT	PR1810	–	–	–	–	eShop	1
f_z		mm	0.05 – 0.33	0.09 – 0.22	0.09 – 0.13	0.07 – 0.13	0.09 – 0.27	

90°

KYOCERA 90° indexable milling cutter MECH11 for indexable inserts BDMT 11T308



Ø D / Z_{eff}	250 22 7450	250 22 7453	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}		Ø D_5 h6	Insert screw
	90° indexable milling cutter MECH11						22 7450	22 7453		
mm	Plain shank	Weldon shank			mm	mm	mm	mm	mm	
25/2	eShop	eShop	2	8	37	46	120	104	25	229708 (T8; 1.2 Nm)
32/2	eShop	eShop	2	10	46	55	140	117	32	229708 (T8; 1.2 Nm)
32/4	eShop	eShop	4	20	46	55	140	117	32	229708 (T8; 1.2 Nm)
40/4	eShop	eShop	4	24	55	64	150	126	32	229708 (T8; 1.2 Nm)
50/4	–	eShop	4	28	64	75	–	147	40	229708 (T8; 1.2 Nm)



Ø D/Z_{eff}	250 22 7455	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Insert screw
	90° indexable milling cutter MECH11						
mm	with bore			mm	mm	mm	
40/4	eShop	4	16	37	50	16	229708 (T8; 1.2 Nm)
50/6	eShop	6	30	46	63	22	229708 (T8; 1.2 Nm)

KYOCERA Indexable inserts BDMT 11T308 for indexable milling cutter No. 227450 – 227455

Note: The milling cutters are alternately equipped with equal numbers of indexable inserts shape N2 and N3.
Please fit the inserts as marked on the body.
Standard application values for a_e = 0.3×D.

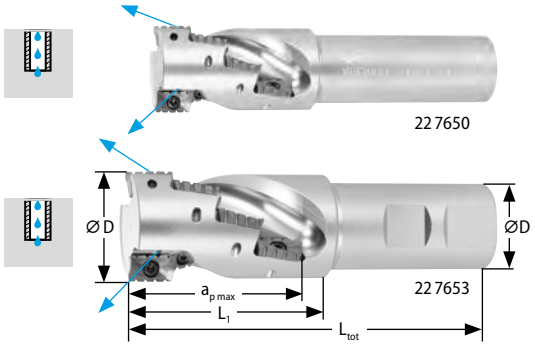
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
22 7472/7473				**180**	**180**	**180**	**140**	**140**												○	○	●	●
22 7482/7483																	**180**			○	○	●	●



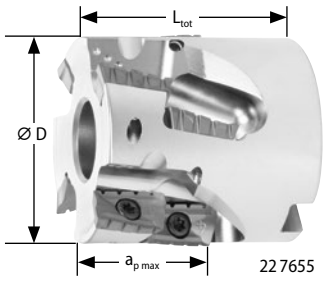

Type			ST1400	GG	
25A **22 7472**	BDMT 11T308 ER-N2	**PR1825**	eShop	–	1
25A **22 7473**	BDMT 11T308 ER-N3	**PR1825**	eShop	–	1
25A **22 7482**	BDMT 11T308 ER-N2	**PR1810**	–	eShop	1
25A **22 7483**	BDMT 11T308 ER-N3	**PR1810**	–	eShop	1
f_z		mm	0.09 – 0.16	0.09 – 0.2	

90°

KYOCERA 90° indexable milling cutter MECH17 for indexable inserts BDMT 170408



Ø D / Z_{eff}	250 22 7650	250 22 7653	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_1	L_{tot}		Ø D_s h6	Insert screw
	90° indexable milling cutter MECH17						22 7650	22 7653		
mm	Plain shank	Weldon shank			mm	mm	mm	mm	mm	
40/2	eShop	eShop	2	8	59	73	160	136	32	229709 (T15; 3.5 Nm)
50/4	–	eShop	4	20	74	88	–	161	40	229709 (T15; 3.5 Nm)



Ø D / Z_{eff}	250 22 7655	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø	Insert screw
	90° indexable milling cutter MECH17						
mm	with bore			mm	mm	mm	
50/4	eShop	4	8	30	52	22	229709 (T15; 3.5 Nm)
50/4L	eShop	4	16	59	78	22	229709 (T15; 3.5 Nm)
63/4	eShop	4	12	45	70	27	229709 (T15; 3.5 Nm)
80/6	eShop	6	24	59	85	32	229709 (T15; 3.5 Nm)
100/6	eShop	6	24	59	85	40	229709 (T15; 3.5 Nm)

22

KYOCERA Indexable inserts BDMT 170408 for indexable milling cutters No. 227650 – 227655

Note: The milling cutters are alternately equipped with equal numbers of indexable inserts shape N3 and N4.
Please fit the inserts as marked on the body.
Standard application values for $a_e = 0.3 \times D$.

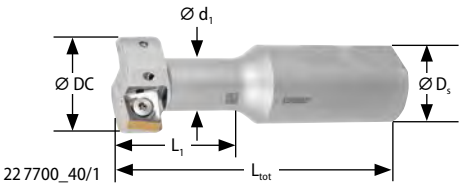
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	K	N					
22 7672/7673				180	180	180	140	140												○	○	●	●
22 7682/7683																	180			○	○	●	●




Type			ST1400	GG	
25A 22 7672	BDMT 170408 ER-N3	PR1825	eShop	–	1
25A 22 7673	BDMT 170408 ER-N4	PR1825	eShop	–	1
25A 22 7682	BDMT 170408 ER-N3	PR1810	–	eShop	1
25A 22 7683	BDMT 170408 ER-N4	PR1810	–	eShop	1
f_z		mm	0.09 – 0.16	0.09 – 0.2	

HELISLOT slot and side milling cutter for inserts XNMU130608 and XNMU090408

Economical machining of grooves and T-slots. Achieve different slot widths with only one insert size thanks to the insert seat concept with staggered teeth formation. Square inserts with positive rake angle for efficient and gentle machining. Very reliable process thanks to optimised insert support in the seat.

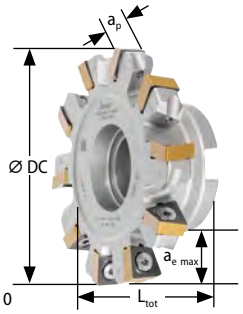


22 7700_40/1

HELISLOT full slot milling cutter for XNMU130608

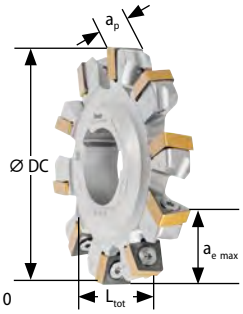
Spare part: Pack of insert screws No. **229697 1** (IP15; 4.8 Nm).

Ø D_c / Z_{eff}	19D **22 7700** HELISLOT T-slot milling cutter **Weldon shank**	Number of effective inserts Z_{eff}	Number of indexable inserts	Slot depth a_p	Ø d_1	L_1	L_{tot}	Ø D_s h6
mm				mm	mm	mm	mm	mm
40/1	–	1	2	18	21	47	120	32
48/2	–	2	4	22	27	58	130	32



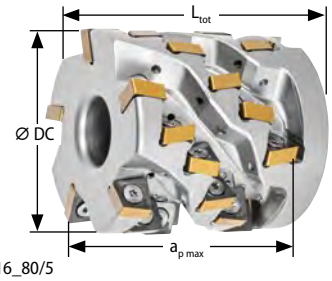
22 7712_100/10

Ø D_c / Z_{eff}	19D **22 7712** HELISLOT side millling cutter **with flange**	Number of effective inserts Z_{eff}	Number of indexable inserts	$a_{e\,max}$	L_1	L_{tot}	Mounting bore Ø	Slot width a_p
mm				mm	mm	mm	mm	mm
100/10	–	10	10	26	26.5	40	27	14
125/12	–	12	12	33	30.5	45	32	14
125/6	–	6	12	33	30.5	45	32	16
160/7	–	7	14	45	44	60	40	18
200/8	–	8	16	53	–	63	40	20



22 7714_100/10

Ø D_c / Z_{eff}	19D **22 7714** HELISLOT side milling cutter **without flange**	Number of effective inserts Z_{eff}	Number of indexable inserts	$a_{e\,max}$	L_{tot}	Mounting bore Ø	Slot width a_p
mm				mm	mm	mm	mm
100/10	–	10	10	23	18	32	14
125/12	–	12	12	33	18	40	14
125/6	–	6	12	33	20	40	16
160/7	–	7	14	50.5	20	40	16
200/8	–	8	16	59	26	50	20

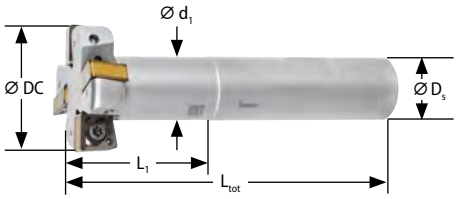


22 7716_80/5

Ø D_c / Z_{eff}	19D **22 7716** HELISLOT shoulder mill **with bore**	Number of effective inserts Z_{eff}	Number of indexable inserts	maximum cutting depth $a_{p\,max}$	L_{tot}	Mounting bore Ø
mm				mm	mm	mm
63/3	–	3	18	69	80	27
80/5	–	5	30	69	85	32

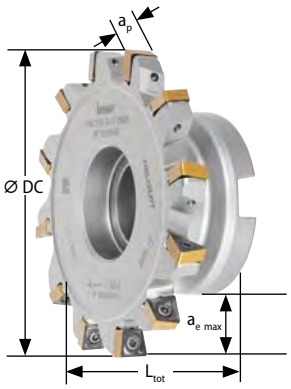
HELISLOT full slot milling cutter for XNMU090408

Spare part: Pack of insert screws No. **229695 3** (TX9; 2.0 Nm).



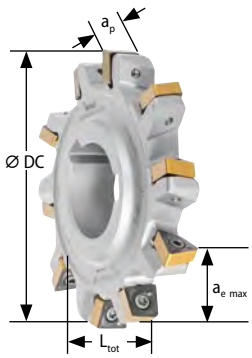
22 7718_31,7/16

Ø D_c / Ø $D_s h_6$	19D **22 7718** HELISLOT T-slot milling cutter **Weldon shank**	Number of effective inserts Z_{eff}	Number of indexable inserts	Slot depth a_p	Ø d_1	L_1	L_{tot}	Ø D_s h6
mm				mm	mm	mm	mm	mm
31,7/16	–	2	4	9.9	15.5	35	85	16
31,7/20	–	2	4	10.8	16	41	95	20
31,7/25	–	2	4	10.8	16	41	105	25
31,7/25S	–	2	4	13.8	16	41	105	25
31,7/32	–	2	4	13.8	16	45	110	32



22 7720_100/6

Ø D_c / Z_{eff}	19D **22 7720** HELISLOT side milling cutter **with flange**	Number of effective inserts Z_{eff}	Number of indexable inserts	$a_{e\,max}$	L_1	L_{tot}	Mounting bore Ø	Slot width a_p
mm				mm	mm	mm	mm	mm
80/10	–	10	10	22.5	27	40	22	10
80/5	–	5	10	22.5	27	40	22	12
100/12	–	12	12	26	25	40	27	10
100/6	–	6	12	26	25	40	27	12
125/14	–	14	14	33	31	45	32	10
125/7	–	7	14	33	31	45	32	12
160/18	–	18	18	45	35	50	40	10
160/9	–	9	18	45	35	50	40	12



22 7722_80/5

Ø D_c / Z_{eff}	19D **22 7722** HELISLOT side milling cutter **without flange**	Number of effective inserts Z_{eff}	Number of indexable inserts	$a_{e\,max}$	L_{tot}	Mounting bore Ø	Slot width a_p
mm				mm	mm	mm	mm
80/10	–	10	10	20	14	27	10
80/5	–	5	10	20	16	27	12
100/12	–	12	12	25	14	32	10
100/6	–	6	12	25	16	32	12
125/14	–	14	14	34	14	40	10
125/7	–	7	14	34	16	40	12
160/18	–	18	18	51	14	40	10
160/9	–	9	18	51	16	40	12

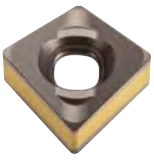
HELISLOT milling inserts XNMU130608 and XNMU090408 for slot and side milling cutters

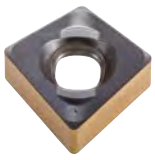
Double-sided indexable insert with 8 helical cutting edges. Very robust design, special insert thickness. Very reliable process due to positive installation position in the insert seat. Excellent chip control and evacuation.

Note: Standard application values for a_e max
The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.

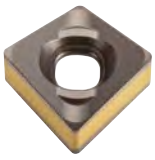
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 50 HRC	< 55 HRC	< 60 HRC	< 65 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG	GGG	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	K						
22 7739				**200**	**180**	**160**	150	140												●		●	
22 7741/7782				**300**	**260**	**220**	200	170												●		●	●
22 7742				220	200	170	**160**	**140**												●		●	
22 7743													**130**	**100**						●		●	
22 7744									50	50	45	45			**45**					●		●	
22 7745																**340**	260			○		●	●
22 7746																300	**240**			●		●	
22 7747				**240**	**210**	**190**	180						**90**	**80**				●		●		●	
22 7783													**130**	**100**	50					●			
22 7784				**240**	**210**	**190**	180						**90**	**80**				●		●			

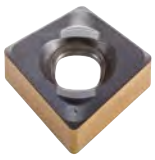
HELISLOT milling inserts XNMU130608

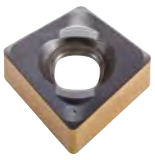

22 7739


22 7742


22 7744


22 7745


22 7746


22 7747

Type			ST900	ST1400	INOX	S	GG	GGG	UNI	
19A 22 7739	XNMU 130608PNN-PL	IC845	–	–	–	–	–	–	–	10
19A 22 7741	XNMU 130608PNN-MM	IC5400	–	–	–	–	–	–	–	10
19A 22 7742		IC830	–	–	–	–	–	–	–	10
19A 22 7743		IC330	–	–	–	–	–	–	–	10
19A 22 7744		IC380	–	–	–	–	–	–	–	10
19A 22 7745	XNMU 130608PNTN	IC5100	–	–	–	–	–	–	–	10
19A 22 7746		IC810	–	–	–	–	–	–	–	10
19A 22 7747	XNMU 130608PNN-MM	IC808	–	–	–	–	–	–	–	10
f_z		mm	0.15	0.1	0.1	0.15	0.15	0.15	–	

HELISLOT milling inserts XNMU090408


22 7782


22 7783


22 7784

Type			ST900	INOX	UNI	
19A 22 7782	XNMU 090408-PNTN	IC5400	–	–	–	10
19A 22 7783		IC830	–	–	–	10
19A 22 7784		IC808	–	–	–	10
f_z		mm	0.15	0.1	–	

New products –
Machining – turning

NEW

We use this symbol to tag new items in our range of catalogue products



Page **727 / 736 / 754**
HOLEX Pro lever lock toolholders, expansion of the range



Pages **730 – 806**
GARANT HB7010-2 / HB7020-2 / HB7035-2



Pages **731 – 757**
KYOCERA PR115S



Page **769**
HOLEX carbide boring bars set



Page **817**
GARANT MCD chipbreaker NU



Pages **808 – 809**
GARANT Master Mute mono boring bars



Page **810**
GARANT Master Mute
HSK-T / PSC shank mountings



Page **811**
GARANT Master Mute boring bar shanks



Pages **811 – 812**
GARANT Master Mute
exchangeable cutting heads for
negative indexable inserts



Pages **812 – 813**
GARANT Master Mute
exchangeable cutting heads for
positive indexable inserts



Page **814**
GARANT Master Mute
exchangeable cutting heads
for diamond burnishing



Page **844**
GARANT threading inserts type BF



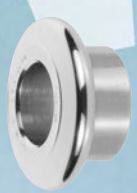
Page **855**
HOLEX threading inserts



Page **909**
ZEUS holder for burnishing roller



Page **903 / 906 / 907**
ZEUS knurl forming tools / cut knurling tools,
for sliding headstock lathes (Swiss type lathes)



Page **909**
ZEUS burnishing rollers

Machining – Turning

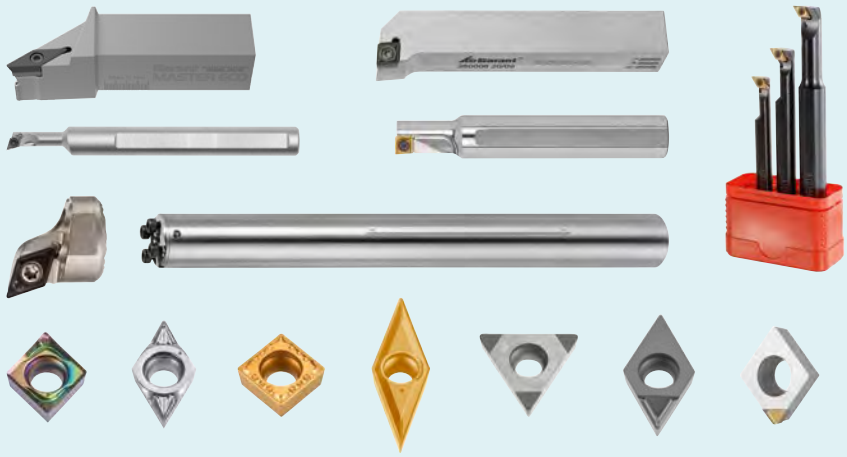
The whole catalogue range of these brands is available from the Hoffmann Group – just request it!



Garant · ISCAR · KYOCERA · HOLEX

Negative rake inserts (carbide, CBN, ceramic), toolholders, boring bars

25 712 – 763



Garant · ISCAR · KYOCERA · KENNAMETAL · SWISSTOOLS · HOLEX

Positive inserts (carbide, CBN, MCD, PCD), toolholders, boring bars, vibration-damping tools, interchangeable cutting heads, precision turning range, turning and drilling tools

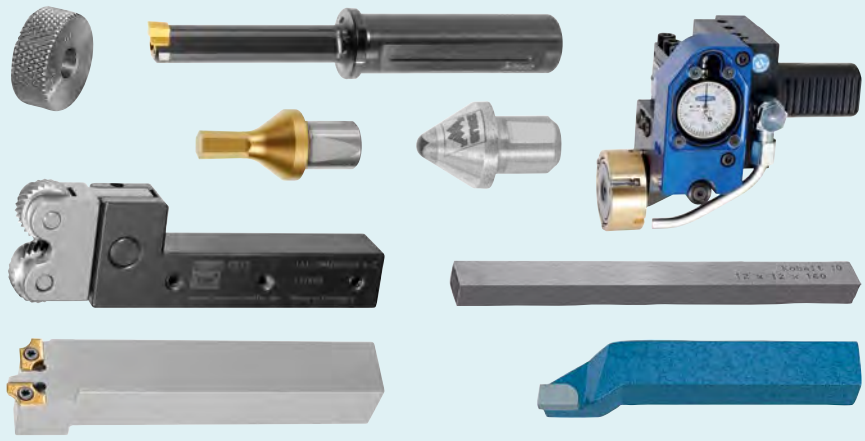
26 764 – 827



Garant · ISCAR · SIMTEK · HOLEX

Mini turning tools, micro turning tools, thread turning tools, groove turning tools for retaining rings, parting off and grooving tools, axial face grooving tools

27 828 – 902



Garant · ZEUS · ECOROLL · duMONT · HOLEX

Knurling tools, smooth rolling tools, labelling tools, keyway broaching tools and profile slotting tools, broaches, profile broaching tools, radial turning tools, turning tool blanks, turning tools

29 903 – 931

Garant HOLEX Turning type key

HB 7130-2

H	B	7	1	30	–	2
Technology	Coating	Classification	Application range of materials	Application conditions		Version

Technology		Coating		Classification		Application range of materials		Application conditions	Version
C	Cermet	B	Coated	7	GARANT	0	P	05	
H	Tungsten carbide	U	Uncoated	8	GARANT	1	M	10	
P	PCD			9	GARANT	2	O	15	
M	MCD			Z	GARANT	3	N	20	
B	CBN			G	HOLEX	4	S	25	
O	Ceramic			X	HOLEX	2	H	30	
				T	HOLEX	..	UNI	35	
								40	

Tool materials for turning

ISO turning

Garant	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Cermet																								
Cermet grade for precision finishing and finishing of steel, stainless steel and cast iron. Uncoated.		CU7010					CU7010				CU7010													
Cermet grade for general machining of steel, stainless steel and cast iron. TiAlN + TiN (coating).		CB7010					CB7010				CB7010													
Tungsten carbide																								
General-purpose tool material grade. Multi-layer TiAlN (PVD coating).			HB725-1				HB725-1				HB725-1				HB725-1				HB725-1					
General-purpose tool material grade. Low cobalt content. PVD coating.			HB730-1				HB730-1				HB730-1				HB730-1				HB730-1					
Grade for continuous cutting conditions in steel machining. Optimised heat and wear resistance. TiCN + Al_2O_3 (CVD coating).	HB7010-2																							
Grade for general machining of steel. Optimised edge toughness and wear resistance. TiCN + Al_2O_3 (CVD coating).		HB7020-2																						
Grade for interrupted cutting conditions in steel machining. Increased toughness for higher process reliability. TiCN + Al_2O_3 (CVD coating).			HB7035-2																					
Grade for continuous cutting conditions in stainless steel machining. Optimised heat and wear resistance. TiCN + Al_2O_3 (CVD coating).						HB7120-1																		
Grade for general machining of stainless steel. Optimised edge toughness and wear resistance. TiCN + Al_2O_3 (CVD coating).							HB7130-2																	
Grade for interrupted cutting conditions in stainless steel machining. Increased toughness for higher process reliability. AlTiSiN (PVD coating).								HB7140-2																
Grade for general machining of cast iron. TiCN + Al_2O_3 (CVD coating).										HB7210-1														
Grade for general machining of aluminium. Outstanding wear resistance and cutting edge stability. Uncoated.														HU7305-1										
Grade for general machining of aluminium. Outstanding wear resistance and cutting edge stability. Uncoated.															HU7310									
Grade for general machining of aluminium and copper. Uncoated.															HU7310-1									
Grade for general machining of aluminium. Outstanding wear resistance and cutting edge stability. TiAlN (PVD coating).															HB7310									
Grade for general machining of aluminium. Uncoated.															HU7315-1									
Grade for general machining of aluminium. Outstanding wear resistance and cutting edge stability. TiAlN (PVD coating).															HB7315-1									
Grade for continuous cutting conditions when machining heat-resistant alloys. AlTiSiN (PVD coating).							HB7415-1												HB7415-1					

Tool materials for turning

ISO turning

Garant

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
PCD																								
Polycrystalline diamond, fine grain. Very good cutter sharpness, wear resistance and toughness.														PCD					PCD					
MCD																								
Monocrystalline diamond. Extremely sharp cutting edges and extremely high contour accuracy. Low tendency to brittle fracture.														MCD					MCD					
CBN																								
General-purpose CBN grade for hardened materials. Excellent toughness properties.																							BU7220	
Ceramic																								
Aluminium oxide silicon carbide whisker ceramic. Grade for general machining of heat-resistant alloys. Uncoated.																				KU7415				
Coated aluminium oxide titanium carbide ceramic. Grade for general machining of hardened materials and grey cast iron. Coated.										KB7205													KB7205	

IBAR

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
General-purpose tool material grade. Particularly good for general machining of steel and stainless steel. Substrate with submicron grain size. PVD coating.		IC807					IC807					IC807								IC807			IC807	
Grade for continuous cutting conditions in steel machining. High speed machining. Hard substrate with a cobalt-enriched layer. CVD coating.		IC8150					IC8150				IC8150													
Grade for general machining of steel. Hard substrate with a cobalt-enriched layer. CVD coating.			IC8250				IC8250																	
Grade for continuous cutting conditions in stainless steel machining. Hard substrate with a cobalt-enriched layer. CVD coating.							IC6015												IC6015					
Grade for slightly interrupted cutting conditions in stainless steel machining. High flexibility. CVD coating.							IC6025													IC6025				

KYOCERA

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Cermet																								
Cermet grade for continuous cutting conditions in steel and cast iron machining. High speed machining. CVD coating.	CCX									CCX														
Cermet grade for general machining of steel and stainless steel. PVD coating.		PV720					PV720																	
Tungsten carbide																								
Grade for continuous cutting conditions in steel machining. Optimised heat and wear resistance. High speed machining. TiCN + Al_2O_3 + TiN (CVD coating).		CA510																						
Grade for continuous and slightly interrupted cutting conditions in steel machining. Optimised heat and wear resistance. TiCN + Al_2O_3 (CVD coating).			CA115P																					
Grade for continuous and strongly interrupted cutting conditions in steel machining. High flexibility. TiCN + Al_2O_3 (CVD coating).				CA125P																				
Grade for general machining of stainless steel. PVD coating.			PR1725				PR1725																	
Grade for general machining of stainless steel. TiCN + Al_2O_3 +TiN (CVD coating).							CA6525																	
Grade for general machining of stainless steel, heat-resistant alloys and titanium alloys. PVD coating.							PR1535												PR1535					
Grade for continuous and slightly interrupted cutting conditions in cast iron machining. TiCN + Al_2O_3 (CVD coating).											CA315													
Grade for continuous cutting conditions in aluminium and cast iron machining. Tough, fine-grain substrate. Uncoated.															KW10									
Grade for continuous cutting conditions in aluminium machining. Excellent surface quality due to reduced galling. DLC coating.															PDL010									
Grade for general machining of heat-resistant alloys. TiAlN + AlTiCrN (PVD coating).																			PR115S					
Grade for continuous cutting conditions when machining titanium alloys. Uncoated.																			SW05					

Tool materials for turning

ISO turning

KYOCERA

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
CBN																								
CBN grade for continuous cutting conditions in hardened materials. Optimised heat resistance. Megacoat coating.																					KBN05M			
CBN grade for general machining of hardened materials. Megacoat coating.																							KBN25M	
CBN grade for interrupted cutting conditions in hardened materials. Optimised edge toughness and wear resistance. Megacoat coating.																							KBN35M	
Ceramic																								
Aluminium oxide silicon carbide whisker ceramic. Grade for general machining of heat-resistant alloys. Uncoated.														PT600M							PT600M			

KENNAMETAL

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
General-purpose tool material grade for finishing. Also for interrupted cutting. TiAlN (PVD coating).	SP4019					SP4019				SP4019									SP4019					

HOLEX

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
Grade for general machining of steel. Also for interrupted cutting. TiCN + Al_2O_3 (CVD coating).		HBT020																						
Grade for general machining of stainless steel. Also for interrupted cutting. TiCN + Al_2O_3 + TiN (CVD coating).							HBT130																	
CBN																								
General-purpose CBN grade for hardened materials. Excellent toughness properties.																					BUX220			

Precision turning / small-parts machining

Garant

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
General-purpose tool material grade. First choice for low-alloy steel. PVD coating.			HB7020			HB7020					HB7020													
Grade for general machining of steel and medium cutting speeds.		HB7025-1																						
Grade for general machining of steel. TiN + Al_2O_3 + TiCN (coating).			HB7035																					
Grade for general machining of stainless steel at medium to high cutting speeds.							HB7125-1																	
Grade for general machining of aluminium. Outstanding wear resistance and cutting edge stability. Uncoated.														HU7310										
Grade for general machining of heat-resistant alloys. Micro-grain substrate with high toughness. TiN (PVD coating).																		HB7410						

Grooving and parting off

Garant	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Cermet																								
Cermet grade for general machining of steel. Good cutting edge stability. Uncoated.		CU7025																						
Tungsten carbide																								
General-purpose tool material grade for grooving and groove turning. PVD coating.		HB7010				HB7010				HB7010								HB7010						
General-purpose tool material grade. TiN + Al_2O_3 + TiCN (PVD coating).			HB7020			HB7020					HB7020									HB7020				
Grade for grooving and groove turning for steel and cast iron. TiN + Al_2O_3 + TiCN (CVD coating).		HB7035								HB7035														
Grade for grooving and groove turning for steel and cast iron. TiN + Al_2O_3 + TiCN (CVD coating).			HB7215								HB7215													
Grade for grooving and groove turning in steel. TiCN (PVD coating).				HB9035																				
Grade for groove turning and grooving in steel and stainless steel. High wear resistance and long working life.			HB9635																					
Grade for groove turning and grooving in stainless steel. Outstanding wear resistance. PVD coating.							HB9140																	
Grade for grooving and groove turning in cast materials. Outstanding cutting edge stability. Uncoated.											HU915													
Grade for grooving and groove turning for aluminium materials. Outstanding wear resistance and cutting edge stability. Uncoated.															HU7310									
Grade for grooving and groove turning for aluminium materials. Outstanding cutting edge stability. Uncoated.															HU9310									
Grade for grooving and groove turning for aluminium materials. Tough, fine-grain substrate. Uncoated.															HU9315			HU9315						

HOLEX	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
Grade for general machining of steel and stainless steel.		HBX25				HBX25																		
Grade for general machining of steel and stainless steel.		HBG25				HBG25																		

Groove turning

Garant	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Cermet																								
Cermet grade for general machining of steel. Good cutting edge stability. Uncoated.		CU7025																						
Tungsten carbide																								
Grade for general machining of steel. Extremely high wear resistance. PVD coating.			HB7010																					
General-purpose tool material grade. TiAlN (PVD coating).			HB7020																					
Grade for general machining of steel and cast iron. Al_2O_3 + TiCN + TiN (CVD coating).		HB7215																						
Grade for general machining of aluminium. Outstanding wear resistance and cutting edge stability. Uncoated.															HU7310									
Grade for general machining of aluminium, non-ferrous metals and cast aluminium. CVD-diamond coating.															HU7310									
PCD																								
Polycrystalline diamond, fine grain. Very good cutter sharpness, wear resistance and toughness.															PCD									
CBN																								
General-purpose CBN grade for hardened materials. Excellent toughness properties.																						CBN825		

Tool materials for turning

Groove machining

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
ISCAR	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
General-purpose tool material grade. Substrate with increased wear resistance. TiAlN + TiN (PVD coating).		IC1010				IC1010														IC1010			IC1010	
Grade for interrupted and unstable cutting conditions. Substrate with increased toughness. TiAlN + TiN (PVD coating).				IC1030			IC1030																	
Grade for stable and unstable cutting conditions. Substrate with increased toughness. CVD coating.		IC5400					IC5400					IC5400												
General-purpose tool material grade. Substrate with increased wear resistance. TiAlN + AlTiN + TiN (PVD coating).			IC808				IC808					IC808			IC808					IC808			IC808	
Grade for interrupted and unstable cutting conditions. Substrate with increased toughness. AlTiN + TiN (PVD coating).				IC830			IC830													IC830				
Grade for stable and unstable cutting conditions. Substrate with increased toughness. CVD coating.			IC8250				IC8250																	
General-purpose tool material grade. Substrate with increased toughness. TiAlN + TiN (PVD coating).			IC1008				IC1008					IC1008								IC1008			IC1008	
General-purpose tool material grade. Substrate with increased wear resistance. TiAlN (PVD coating).			IC908				IC908					IC908								IC908			IC908	

Thread machining

	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
Garant	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
Grade for continuous cutting conditions. TiAlN + Al_2O_3 + TiCN (coating).		HB7010				HB7010					HB7010													
Grade for continuous cutting conditions. Multi-purpose micro-grain substrate. AlTiN (PVD coating).			HB8015				HB8015																	
General-purpose tool material grade. Optimised edge toughness and wear resistance.			HB7020				HB7020					HB7020			HB7020				HB7020					
Grade for general machining of stainless steel. TiAlN (PVD coating).							HB7125																	
Grade for general machining of aluminium. Mirror finish polished for good chip evacuation and high-quality surfaces. Uncoated.															HU7315									

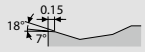
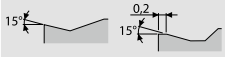
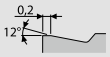
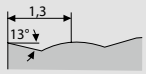
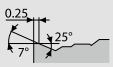
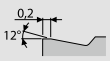
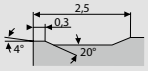
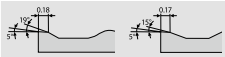
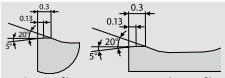
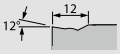
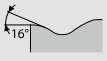
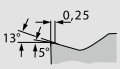
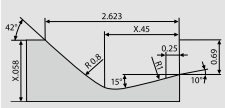
	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
HOLEX	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
Grade for general machining of steel and stainless steel.		HBF20				HBF20																		

"4-in-1" drilling and turning tool

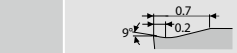
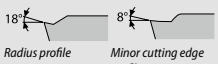
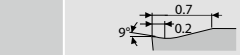
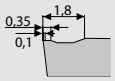
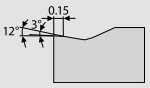
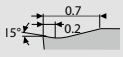
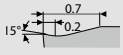
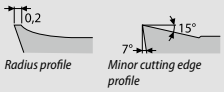
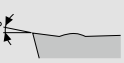
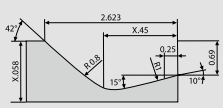
	P (Steel)					M (Inox)				K GG(G)				N (Alu)				S (Ti)				H (HRC)		
Garant	P01	P10	P20	P30	P40	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	N30	S01	S10	S20	S30	H10	H20	H30
Tungsten carbide																								
General-purpose tool material grade. First choice for low-alloyed steel. PVD coating.	HBZ025																							
General-purpose tool material grade. First choice for low-alloyed steel. PVD coating.			HBZ035																					
Grade for general machining of steel. Specially for external and internal machining. CVD coating.		HBZ030																						
Grade for general machining of stainless steel. Fine-grain substrate. PVD coating.						HBZ120																		
Grade for general machining of stainless steel. Tough medium-grain substrate. PVD coating.							HBZ140																	
Grade for general machining of aluminium. Outstanding wear resistance and cutting edge stability. Uncoated.														HUZ310										
Grade for general machining of aluminium. Outstanding wear resistance and cutting edge stability. PVD coating.														HBZ310										

Garant Chip breaker selection – ISO indexable turning inserts

Negative

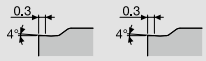
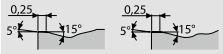
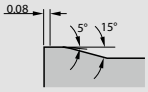
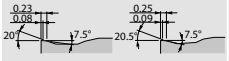
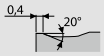
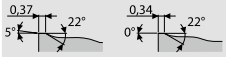
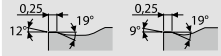
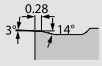
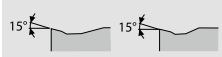
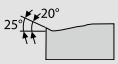
Application		Chip breaker	Geometry	Characteristics
P	Finishing	WSS		**Wiper** geometry for finishing of general and alloy steels. Higher feed rates with the same surface quality.
		SS		Specially for finishing of general and alloy steels. For high feed rates at low cutting depths.
	Medium	WSM	 Radius profile Minor cutting edge profile	**Wiper** geometry for medium machining of general and alloy steels. Higher feed rates with the same surface quality.
		SM	 Radius profile Minor cutting edge profile	Medium machining of general and alloy steel grades. Positive primary chamfer for smooth cutting.
		SM spec. KNUX		Machining of carbon steel and alloy steels.
	Roughing	SG	 Radius profile Minor cutting edge profile	Roughing operations on general and alloy steels. Large flute combined with a wide, flat primary chamfer for high feed rates.
	Coarse machining	SR	 Radius profile Minor cutting edge profile	Rough machining of low-tensile steels. The positive primary chamfer and curved cutting edge reduce the cutting resistance.
M	Finishing	VS		Light to medium machining of stainless steels. Also for difficult to machine materials. Sharp cutting edges for a soft cutting action.
	Medium	VM		Distinctive chip evacuation geometry coupled with slightly positive cutting angle give the best chip evacuation. Main application in stainless steels.
		VM spec. KNUX		Machining of stainless steels.
	Roughing	VG		For rough machining of stainless steels. Sturdy cutting edge version.
O	Medium	GM	 Radius profile Minor cutting edge profile	High cutting edge stability for a wide range of applications in cast materials.
	Roughing	Cast iron	 Radius profile Minor cutting edge profile	Stable cutting edge and wide protective chamfer for medium rough machining of castings.
N	Medium	AM1		For finishing to medium roughing of aluminium. Positive chip-breaker geometry.
S	Finishing	TIS		Finish machining of difficult-to-machine materials such as nickel-based alloys or titanium.
	Medium	TIM		Medium machining of heat-resistant alloys. Positive cutting angle and large flute permit targeted chip evacuation.
UNI	Medium	UM1		Chip breakers for medium machining. For general use over a wide range of materials.
		XUM		Open and positive chip breaker for soft cutting and optimum chip formation.

Positive

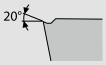
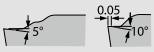
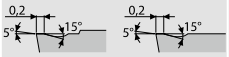
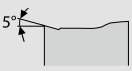
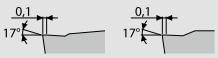
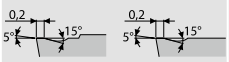
Application		Chip breaker	Geometry	Characteristics
P	Fine finishing	SF		For precision finishing in steels. Positive rake geometry for soft cutting.
	Finishing	WSS		**Wiper** geometry for finishing of steels and stainless steels. Higher feed rates with the same surface quality.
		SS	 Radius profile Minor cutting edge profile	Finishing operations on general, alloy and stainless steels. Smooth cut due to sharp cutting edge profile.
	Medium	WSM		**Wiper** geometry for medium machining of general and alloy steels. Higher feed rates with the same surface quality.
		SM	 Radius profile Minor cutting edge profile	First choice for medium machining of carbon steel, alloy and stainless steels. Combination of sharp cutting edges and stability.
M	Fine finishing	VF		For precision finishing in stainless steels. Positively designed geometry for soft cutting.
	Finishing	VS		For light and medium operations in stainless steels. Heavily profiled surface for unobstructed swarf evacuation. Sharp cutting edges.
	Medium	VM		For medium and pre-machining of stainless steels. Strong cutting edges and positive rake angle.
O	Medium	GM		High cutting edge stability for a wide range of applications in cast materials.
N	Fine finishing	AF		Positive rake geometry specially for non-ferrous metals and plastics.
	Finishing	AF		Positive rake geometry specially for non-ferrous metals and plastics.
	Medium	AM	 Radius profile Minor cutting edge profile	Aluminium machining. Large rake angle and special surface geometry permit excellent chip clearance and low cutting forces.
S	Finishing	TIS		Exceptionally well suited for use on high temperature materials.
UNI	Medium	UM1		Chip breakers for medium machining. Universally applicable in a wide range of materials.
		XUM		Open and positive chip breaker for soft cutting and optimum chip formation.

KYOCERA Chip breaker selection – ISO indexable turning inserts

Negative

	Application	Chip breaker	Geometry	Characteristics
P	Finishing	WP		Finishing with **wiper** geometry. For twice the feed rate without compromising the surface quality.
		WQ		**Wiper** geometry for finish machining with double the feed rate without affecting the surface quality.
		PP		Stable chip control in a wide feed range thanks to 3-stage point structure. Low cutting force.
	Finishing – Medium	PQ		For finishing up to light cuts. Good chip clearance.
		HQ		Wide chip clearance area due to 3D rake angle and double overhang geometry.
	Medium	PS		Extremely stable due to large contact area.
		PG		Chip breaker with stable edges for general machining.
		PMG		For medium machining (wide range of applications). The chip evacuation prevents crater wear and promotes a long tool life.
	Roughing	PH		For roughing steels. Suitable for heavily interrupted cutting and workpieces with casting skin.
	Coarse machining	PX		Roughing at high feed rates. The chip breaker requires only low cutting force.
M	Finishing	MQ		Large rake angle, round cutting edge design. Low cutting force and good chip clearance.
	Medium	MS		First-class sharp cutting edges due to positive rake geometry. Particularly stable cutting edge.
K	Medium	KG		Chip breaker with positive chisel edge for smooth to interrupted cutting.
N	Medium	AH		Polished chip breaker. Very good chip clearance and low tendency to edge build-up.
S	Finishing	MQ		Large rake angle, round cutting edge design. Low cutting force and good chip clearance.
	Medium	MU		Large rake angle reduces the cutting forces. Low burr formation due to reduced damage due to formation of notches.
	Coarse machining	SX		Highly efficient roughing thanks to unique cutting edge design. Shim insert necessary!

Positive

	Application	Chip breaker	Geometry	Characteristics
P	Fine finishing	MP-CF		Suitable for small cutting depths (0.02 mm – 0.2 mm).
	Finishing	WP		Finishing with **wiper** geometry. For good chip clearance at high feed rates. Reduces the surface wear rate.
		MFP-SKS		Stable chip clearance thanks to base and chip breaker surfaces. For finishing from 0.2 mm –1.5 mm.
		PP		Stable tool life due to special cutting edge design with improved strength.
	Finishing – Medium	HQ		Chip breaker for medium machining.
M	Fine finishing	MFP-PF		Sharp cutting edge version for finish machining of materials that are difficult to machine.
	Finishing	MFP-SKS		Stable chip clearance thanks to base and chip breaker surfaces. For finishing from 0.2 mm –1.5 mm.
		MQ		Good chip evacuation when used for internal turning. The swarf is small and tightly rolled so it does not lodge in the toolholder.
K	Finishing – Medium	GK		Good chip clearance due to chip breaker and chip diverter.
N	Finishing	AP		Good chip clearance. Sharp cutting edge for excellent surface quality. Chip breaker polished.
	Finishing – Medium	AH		Sharp cut and good chip clearance with low cutting force. Low tendency to edge build-up due to polished rake faces.
S	Finishing	MQ		Good chip evacuation when used for internal turning. The swarf is small and tightly rolled so it does not lodge in the toolholder.

Garant HOLEX Selection of chip breakers, ISO indexable turning inserts

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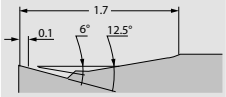
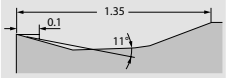
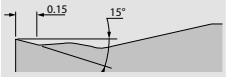
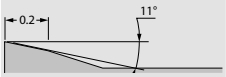
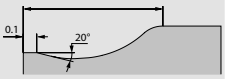
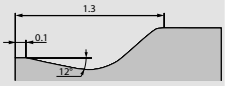
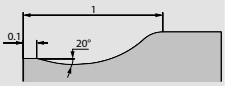
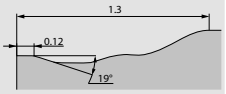
Negative

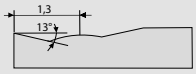
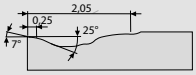
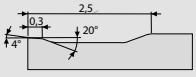
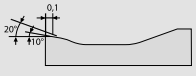
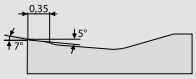
	Application	Chip breaker	Geometry	Characteristics
P	Finishing	F3P		Double-sided indexable insert with positive rake angle to reduce cutting forces when finishing steel.
P	Medium	M3P		Double-sided indexable insert for medium machining of steel with reinforced cutting edge to increase tool life.
M	Finishing	F3M		Double-sided indexable insert with positive rake angle for finishing stainless steel. The unique insert geometry with a wavy surface prevents chipping.
M	Medium	M3M		Double-sided indexable insert for medium machining of stainless steel with reinforced cutting edge to increase tool life.

Positive

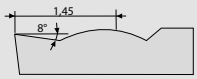
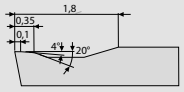
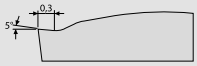
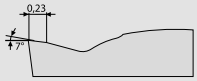
	Application	Chip breaker	Geometry	Characteristics
P	Finishing	F3P		Chip breaker with positive rake angle for fine and finish machining of steel.
P	Medium	M3P		Chip breaker with reinforced cutting edge and positive rake angle for medium machining of steel.
M	Finishing	F3M		Chip breaker with positive rake angle for finish machining stainless steels, also suitable for superalloys and exotic materials.
M	Medium	M3M		Chip breaker with reinforced cutting edge and positive rake angle for medium machining of stainless steel.

HOLEX

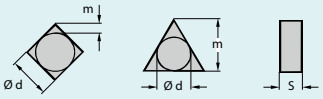
Negative

	Application	Chip breaker	Geometry	Characteristics
P	Finishing	PF		Soft-cutting geometry for finish machining of steels.
P	Medium	PM		Reliable chip clearance for medium machining of steels.
P	Roughing	PR		Stable cutting edge version for roughing machining of steels.
M	Finishing	MF		Soft-cutting geometry for finish machining of stainless steels.
M	Medium	MM		Reliable chip clearance for medium machining of stainless steels.
M	Roughing	MR		Stable cutting edge version for roughing machining of stainless steels.

Positive

	Application	Chip breaker	Geometry	Characteristics
P	Finishing	PF		Soft-cutting geometry for finish machining of steels.
P	Medium	PM		Reliable chip clearance for medium machining of steels.
M	Finishing	MF		Soft-cutting geometry for finish machining of stainless steels.
M	Medium	MM		Reliable chip clearance for medium machining of stainless steels.

ISO code / factory standard, indexable turning inserts



Form, indexable insert		
C	Rhombus 80°	80°
D	Rhombus 55°	55°
G	Rhombus 45°	45°
K	Rhomboid 55°	55°
R	Round	
S	Square 90°	
T	Triangle 60°	60°
V	Rhombus 35°	35°
W	Trigon 80°	80°
X/Z	Special shape	

Main clearance angle	
A	3°
B	5°
C	7°
D	15°
G	30°
N	0°
P	11°
O	further clearance angles

Tolerance* (factory standard)	Tolerance with radius m mm	Tolerance in circle Ø d mm	Thickness tolerance S mm
A	± 0.005	± 0.025	± 0.025
C	± 0.013	± 0.025	± 0.025
E	± 0.025	± 0.025	± 0.025
F	± 0.005	± 0.013	± 0.025
G	± 0.025	± 0.025	± 0.13
H	± 0.013	± 0.013	± 0.025
J	± 0.005	± 0.05 up to ± 0.15	± 0.025
K	± 0.013	± 0.05 up to ± 0.15	± 0.025
L	± 0.025	± 0.05 up to ± 0.15	± 0.025
M	± 0.08 up to ± 0.20	± 0.05 up to ± 0.15	± 0.13
N	± 0.08 up to ± 0.20	± 0.05 up to ± 0.15	± 0.025
P*	± 0.04	± 0.04	± 0.04
U	± 0.13 up to ± 0.38	± 0.08 up to ± 0.25	± 0.13

Fastening and chip breaker	Hole configuration	Chip breaker	Insert type
A	Cylindrical hole	none	
B	Cylindrical hole + Countersink (70 ≈ 90°)	none	
C			
F	-	double-sided	
G	Cylindrical hole	double-sided	
H	Cylindrical hole + Countersink (70 ≈ 90°)	single-sided	
J		double-sided	
M	Cylindrical hole	single-sided	
N	-	none	
Q	Cylindrical hole + Countersink (40 ≈ 60°)	none	
R	-	single-sided	
T	Cylindrical hole + Countersink (40 ≈ 60°)	single-sided	
U		double-sided	
W		none	
X	-	-	Special design

C N M G

12 04 08 P F N

Inner circle ∅ for insert size									
Inner circle (mm)	C	D	S	E	R	S	T	V	W
3.970	03					03	06		02
4.100	S4		S5						
4.920			06						
5.000					05				03
5.560	05						09		
6.000					06				
6.350	06	07				06	11	11	04
7.000					07				
7.940	08	09				07	13		05
8.000					08	08			
8.200							14		
9.525	09	11		16		09	16	16	06
10.000					10				
11.000						11			
12.000					12				07
12.700	12	15				12	22	22	08
14.290									09
15.875	16	19				15	27		10
16.000					16				
19.050	19	23				19	33		
20.000					20				
21.000									13
22.225	22	27				22	38		
25.000					25				
25.400	25	31				25	44		
26.194									17
31.750	32	38				31	55		
32.000					32				

Thickness	mm
S4	1.16
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35

Corner radius	mm
00	without
01	0.1
02	0.2
03	0.3
04	0.4
05	0.5
06	0.6
08	0.8
10	1.0
12	1.2
15	1.5
16	1.6
20	2.0
24	2.4

Adjustment angle	
	k_r
A	45°
D	60°
E	75°
F	85°
M O	Round
P	90°
Z	special

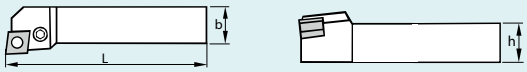
Cutting edge version	
F	sharp-edged
E	honed
T	chamfered
S	chamfered and honed

Direction of machining	
R	right-hand
L	left-hand
N	neutral

ISO code / factory standard toolholder

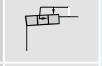
Toolholder for external turning

Standards: DIN ISO 5610 / *factory standard



P	C	L	N	R	25	25	M	16

Clamping system

C	
D	
M*	
P	
S	

Form, indexable insert

C	
D	
G*	
K*	
R	
S	
T	
V	
W	

Tool type

A	
B	
D	
E*	
F	
G	
H	
J	
K	
L	
M*	
N	
P*	
Q*	
R	
S	
T	
U*	
V	
X*	Special versions

Clearance angle, indexable insert

B	
C	
D*	
E*	
F*	
N	
P	

Direction of machining

R	
L	
N	

Shank

Height mm	Width mm
08	08
10	10
12	12
16	16
20	20
25	25
32	32
40	40
50	50

Tool length L

	mm
D	60
E	70
F	80
H	100
K	125
M	150
N*	160
P	170
R	200
S	250
T*	300
U*	350
X	Special length

Cutting length

	mm
C	
D	
G	
K	
R	
S	
T	
V	
W	

Toolholder for internal turning (boring bars)

Standards: DIN 8024 / DIN 8025-1 / ISO 5609-1 / *Manufacturer's standard

A	16	M	S	C	L	C	R	09

Shank type

A	Steel shank with through coolant supply
AH*	HSS shank with through coolant supply
C	Carbide shank
E	Carbide shank with through coolant supply
S	Steel shank

Ø d

	mm
04	4
05	5
06	6
08	8
10	10
12	12
16	16
20	20
25	25
32	32
40	40
50	50

Tool length L

	mm
F	80
G	90
H	100
J	110
K	125
L*	140
M	150
Q	180
R	200
S	250
T	300
U	350
X	Special length

Clamping system

D*	
M	
P	
S	

Form, indexable insert

C	
D	
G*	
K	
R	
S	
T	
V	
W	

Adjustment angle

F	
J*	
K	
L	
O*	
P	
Q	
S	
U	
V*	
X*	
Z*	
95*	

Clearance angle, indexable insert

B	
C	
D	
E	
F	
N	
P	

Direction of machining

R	
L	

Cutting length

	mm
C	
D	
G	
K	
R	
S	
T	
V	
W	

Garant HOLEX Overview – toolholder for external machining

Toolholder



Toolholder for external machining

ISO code toolholder		DCLNR/L	MCLNR/L	PCBNR/L	PCKNR/L	PCLNR/L	PCSNR/L	DDJNR/L
Article number		25 0002 – 25 0039	25 0006 – 25 0007	25 0020 – 25 0021	25 0022 – 25 0023	25 0000 – 25 0045	25 0024 – 25 0025	25 0608 – 25 0631
Shank size square	mm	20 – 32	20 – 32	16 – 32	16 – 32	16 – 32	16 – 32	20 – 32
Approach angle	Degrees	95	95	75	75	95	45	93
Variants with internal cooling		●	–	–	–	●	–	●
Toolholder page		726 – 727	727	728	728	726 – 728	729	735 – 736

suitable indexable insert

Indexable insert

Carbide / ceramic



ISO code		CNMA / CNMG / CNMM	CNMA / CNMG / CNMM	CNMA / CNMG / CNMM	CNMA / CNMG / CNMM	CNMA / CNMG / CNMM	CNMA / CNMG / CNMM	DNMG
Article number		25 0058 – 25 0498	25 0058 – 25 0498	25 0050 – 25 0498	25 0050 – 25 0498	25 0050 – 25 0504	25 0050 – 25 0498	25 0652 – 25 0787
Insert size		12 / 16	12 / 16	09 / 12 / 16	09 / 12 / 16	09 / 12 / 16 / 19	09 / 12 / 16	11 / 15
Indexable insert page		730 – 734	730 – 734	730 – 734	730 – 734	730 – 734	730 – 734	737 – 740

Toolholder



Toolholder for external machining

ISO code toolholder		PSSNR/L	MTJNR/L	MVJNR/L	MVPNR/L	MVVNN	DWLNR/L	MWLNR/L
Article number		25 1112 – 25 1117	25 1404 – 25 1407	25 1696 – 25 1707	25 1708 – 25 1709	25 1712	25 1914 – 25 1915	25 1912 – 25 1923
Shank size square	mm	16 – 32	20 – 32	20 – 32	20 – 32	20 – 32	20 – 25	20 – 32
Approach angle	Degrees	45	93	93	62.5	72.5	95	95
Version with internal cooling		●	●	●	–	–	●	●
Toolholder page		742 – 743	746	749	749	750	753	753 – 754

suitable indexable insert

Indexable insert

Tungsten carbide



ISO code		SNMG	TNMG	VNMG	VNMG	VNMG	WNGG / WNMA / WNMG	WNGG / WNMA / WNMG
Article number		25 1142 – 25 1390	25 1432 – 25 1565	25 1732 – 25 1829	25 1732 – 25 1829	25 1732 – 25 1829	25 1962 – 25 2226	25 1962 – 25 2226
Insert size		12 / 15	16 / 22	16	16	16	08	08
Indexable insert page		743 – 746	747 – 748	751 – 752	751 – 752	751 – 752	755 – 758	755 – 758

Toolholder



Toolholder for external machining

ISO code toolholder		SDNCN	SRDCN	SRGCR/L	SSDCN	SSSCR/L	STGCR/L	STJCR/L
Article number		26 0300 – 26 0301	26 0611	26 0606 – 26 0607	26 0711	26 0706 – 26 0707	26 0906 – 26 0907	26 0904 – 26 0905
Shank size square	mm	8 – 25	16 – 25	16 – 25	12 – 25	8 – 25	16 – 25	10 – 16
Approach angle	Degrees	62.5	45	90	45	45	90	93
Version with internal cooling		–	–	–	–	–	–	–
Toolholder page		775 – 776	786	786	787	787	789	789

suitable indexable insert

Indexable insert

Tungsten carbide



ISO code		DCGT / DCMT	RCGT / RCMT / RCGX / RCMX	RCGT / RCMT / RCGX / RCMX	SCGT / SCMT	SCGT / SCMT	TCGT / TCMT	TCGT / TCMT
Article number		26 0351 – 25 0508	26 0620 – 25 0650	26 0620 – 25 0640	26 0742 – 25 0795	26 0742 – 25 0795	26 0950 – 25 1019	26 0950 – 25 1012
Insert size		07 / 11	06 / 08 / 10 / 12	06 / 08 / 10	09 / 12	09 / 12	11 / 16	11
Indexable insert page		782 – 785	786	786	788	788	791	791



Toolholder for external machining

	PDJNR/L	PDNNR/L	CKJNR/L	CRDNN	CRSNR/L	PSBNR/L	PSDNN	PSKNR/L
	25 0610 – 25 0633	**25 0612 – 25 0613**	**25 1008 – 25 1009**	**25 5798**	**25 5795 – 25 5796**	**25 1106 – 25 1107**	**25 1114**	**25 1110 – 25 1111**
	16 – 32	16 – 32	20 – 32	25 – 32	25 – 32	20 – 32	16 – 25	20 – 32
	93	63	93	45	45	75	45	75
	●	–	–	–	–	–	–	–
	735 – 736	737	741	763	763	742	743	742

suitable indexable insert



	DNMG	DNMG	KNUX	RNGN	RNGN	SNMG	SNMG	SNMG
	25 0652 – 25 0787	**25 0652 – 25 0787**	**25 1030 – 25 1038**	**25 5770 – 25 5870**	**25 1030 – 25 1038**	**25 1142 – 25 1390**	**25 1142 – 25 1390**	**25 1142 – 25 1390**
	11 / 15	11 / 15	16	12	12	12 / 15	12 / 15	12 / 15
	737 – 740	737 – 740	741	763	763	743 – 745	743 – 745	743 – 745



Toolholder for external machining

	PWLNR/L	SCACR/L	SCLCR/L	SCRCR/L	SCSCR/L	SDACR/L	SDHCR/L	SDJCR/L
	25 1910 – 25 1925	**26 0014 – 26 0015**	**26 0006 – 26 0049**	**26 0004 – 26 0005**	**26 0000 – 26 0001**	**26 0298 – 26 0299**	**26 0306 – 26 0307**	**26 0290 – 26 0309**
	16 – 32	8 – 16	8 – 25	20 – 32	8 – 25	8 – 16	10 – 25	8 – 25
	95	90	95	93	45	90	107.5	93
	●	–	●	–	–	–	–	●
	753 – 754	765	764 – 765	765	766	776	775	774 – 775

suitable indexable insert



	WNGG / WNMA / WNMG	CCGT / CCMT	CCGT / CCMT	CCGT / CCMT	CCGT / CCMT	DCGT / DCMT	DCGT / DCMT	DCGT / DCMT
	25 1952 – 25 2226	**26 0050 – 25 0213**	**26 0050 – 25 0221**	**26 0050 – 25 0221**	**26 0050 – 25 0221**	**26 0351 – 25 0508**	**26 0351 – 25 0508**	**26 0351 – 25 0508**
	06 / 08	06 / 09	06 / 09 / 12	06 / 09 / 12	06 / 09 / 12	07 / 11	07 / 11	07 / 11
	755 – 758	770 – 773	770 – 773	770 – 773	770 – 773	782 – 785	782 – 785	782 – 785



Toolholder for external machining

	SVHBR/L	SVJBR/L	SVVBN	SVHCR/L	SVJCR/L	SVLCR/L	SVVCN
	26 1106 – 26 1107	**26 1108 – 26 1123**	**26 1111**	**26 1298 – 26 1309**	**26 1136 – 26 1313**	**26 1306 – 26 1307**	**26 1317**
	12 – 25	12 – 25	12 – 25	16 – 25	16 – 25	8 – 12	8 – 25
	107.5	93	72.5	107.5	93	95	72.5
	–	●	–	●	●	–	–
	792	792	793	796 – 797	796 – 798	797	

suitable indexable insert



	VBGT / VBMT	VBGT / VBMT	VBGT / VBMT	VCGT / VCMT	VCGT / VCMT	VCGT / VCMT	VCGT / VCMT
	26 1142 – 25 1259	**26 1142 – 25 1259**	**26 1142 – 25 1259**	**26 1364 – 25 1476**	**26 1364 – 25 1476**	**26 1360 – 25 1362**	**26 1360 – 25 1476**
	11 / 16	11 / 16	11 / 16	11 / 16	11 / 16	07	07 / 11 / 16
	795 – 796	795 – 796	795 – 796	805 – 806	805 – 806	804	804 – 806

Garant HOLEX Overview – boring bars for internal machining

Boring bar



Boring bars for internal machining

ISO code toolholder		DCLNR/L	PCKNR/L	PCLNR/L	PDUNR/L	CKUNR/L	PTFNR/L	MVPNR/L
Item number		25 0034 – 25 0035	25 0042 – 25 0043	25 0036 – 25 0037	25 0626 – 25 0627	25 1016 – 25 1017	25 1416 – 25 1417	25 1720 – 25 1721
Shank size ∅	mm	25 – 32	25 – 32	16 – 50	20 – 50	25 – 32	25 – 40	25 – 40
Setting angle	Degrees	95	75	95	93	93	90	117,5
Minimum pre-drill ∅ D_{min}	mm	29,5 – 38	32 – 40	20 – 63	25 – 63	36 – 40	32 – 50	32 – 50
Boring bar page		729	730	729	737	741	747	750

suitable indexable insert

Indexable insert
Tungsten carbide



ISO code	CNMA / CNMG / CNMM	CNMA / CNMG / CNMM	CNMA / CNMG / CNMM	DNMG	KNUX	TNMA / TNMG	VNMG
Item number	25 0058 – 25 0493	25 0058 – 25 0493	25 0050 – 25 0504	25 0652 – 25 0787	25 1030 – 25 1038	25 1432 – 25 1565	25 1732 – 25 1829
Indeable insert size	12	12	09 / 12 / 16	11 / 15	16	16 / 22	16
Indexable insert page	730 – 734	730 – 734	730 – 734	737 – 740	741	747 – 748	751 – 752

Boring bar



Boring bars for internal machining

ISO code toolholder		SDQCR/L	SDUCR/L	SDXCR/L	SGLCR/L	SGLPR/L	SGSPR/L	SSSCR/L
Item number		26 0320 – 26 0341	26 0318 – 26 0343	26 0344 – 26 0345	26 8732 – 26 8736	26 8722 – 26 8736	26 8802 – 26 8806	26 0722 – 26 0723
Shank size ∅	mm	4 – 40	4 – 40	8 – 25	10 – 12	6 – 12	12	16 – 25
Setting angle	Degrees	107.5	93	93	95	95	45	45
Minimum pre-drill ∅ D_{min}	mm	12 – 40	8 – 18	9.2 – 31.5	9.15 – 15.52	9.15 – 15.52	10.72	20 – 32
Boring bar page		776 / 778 / 780	777 – 779 / 781	781	823	823	823	787

suitable indexable insert

Indexable insert
Carbide



ISO code	DCGT / DCMT	DCGT / DCMT	DCGT / DCMT	GPCT	GPCT	GPCT	SCGT / SCMT
Item number	26 0350 – 26 0508	26 0350 – 26 0508	26 0350 – 26 0508	26 8590 – 26 8600	26 8560 – 26 8570	26 8560 – 26 8570	26 0742 – 26 0791
Indexable insert size	04 / 07 / 11	04 / 07 / 11	04 / 07 / 11	06	S5	S5	09
Indexable insert page	782 – 785	782 – 785	782 – 785	823	823	823	788

Boring bar

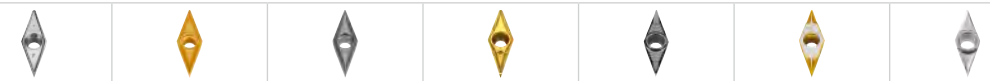


Boring bars for internal machining

ISO code toolholder		SVLCR/L	SVOCR/L	SVQCR/L	SVUCR/L	SVVCR/L	SVXCR/L	SV95CR/L
Item number		26 1332 – 26 1347	26 1376 – 26 1379	26 1344 – 26 1345	26 1318 – 26 1349	26 1336 – 26 1353	26 1356 – 26 1369	26 1342 – 26 1355
Shank size ∅	mm	8 – 16	8 – 20	16 – 40	16 – 40	8 – 25	8 – 16	8 – 16
Setting angle	Degrees	95	140	107.5	93	72.5	113	95
Minimum pre-drill-∅ D_{min}	mm	9.2 – 19.5	8 – 24	21 – 49	20 – 49	10.2 – 19.5	9.2 – 19.5	9.2 – 19.5
Boring bar page		799 / 803	799 / 802	802	800 – 801 / 803	800 / 804	799 / 802	800 / 804

suitable indexable insert

Indexable insert
Carbide



ISO code	VCGT / VCMT	VCGT / VCMT	VCGT / VCMT	VCGT / VCMT	VCGT / VCMT	VCGT / VCMT	VCGT / VCMT
Item number	26 1358 – 26 1362	26 1358 – 26 1472	26 1358 – 26 1476	26 1358 – 26 1476	26 1358 – 26 1476	26 1358 – 26 1362	26 1358 – 26 1362
Indexable insert size	05 / 07	05 / 07 / 11	11 / 16	11 / 16	05 / 07 / 11 / 16	05 / 07	05 / 07
Indexable insert page	804	804 – 806	805 – 806	805 – 806	804 – 806	804	804



Boring bars for internal machining

	MVUNR/L	MVZNR/L	MWLNR/L	PWLNR/L	SCLCR/L	SCLDR/L
	25 1724 – 25 1725	**25 1728 – 25 1729**	**25 1936 – 25 1937**	**25 1942 – 25 1943**	**26 0016 – 26 0033**	**26 8702 – 26 8718**
	25 – 40	32 – 40	25 – 40	16 – 32	4 – 40	4 – 8
	93	95	95	95	95	95 / 97
	32 – 50	48 – 57	32 – 50	21 – 40	5 – 8,9	4,57 – 9,05
	750	750	755	755	766 – 769	822
	suitable indexable insert					
						
	VNMG	VNMG	WNGG / WNMA / WNMG	WNGG / WNMA / WNMG	CCGT / CCMT	CDCT
	25 1732 – 25 1829	**25 1732 – 25 1829**	**25 1962 – 25 2224**	**25 1952 – 25 2226**	**26 0046 – 26 0221**	**26 8520 – 26 8540**
	16	16	08	06 / 08	03 / 06 / 09 / 12	S4
	751 – 752	751 – 752	755 – 758	755 – 758	769 – 773	822



Boring bars for internal machining

	STFCR/L	STLDR/L	SVJBR/L	SVQBR/L	SVUBR/L	SVJCR/L
	26 0918 – 26 0935	**26 8812 – 26 8826**	**26 1112 – 26 1125**	**26 1130 – 26 1131**	**26 1118 – 26 1133**	**26 1326 – 26 1339**
	10 – 40	6 – 8	16 – 5	16 – 25	16 – 40	8 – 25
	90	95	142	107.5	93	142
	12 – 49	7.06 – 9.14	22 – 28	21 – 32	21 – 49	8 – 28
	789 – 790	824	793	794	793 – 794	798 / 801
	suitable indexable inserts					
						
	TCGT / TCMT	TDAT	VBGT / VBMT	VBGT / VBMT	VBGT / VBMT	VCGT / VCMT
	26 0950 – 26 1019	**26 8620 – 26 8640**	**26 1358 – 26 1362**	**26 1358 – 26 1362**	**26 1358 – 26 1362**	**26 1358 – 26 1476**
	11 / 16	07	11 / 16	11 / 16	11 / 16	05 / 07 / 11 / 16
	789 – 790	824	795 – 796	795 – 796	795 – 796	804 – 806

OTHER HIGHLIGHTS

Garant MASTER

GARANT Master Mute – vibration-damping

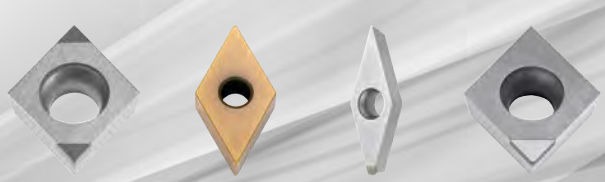
- Mono boring bars – page 808 – 809
- HSK-T / PSC boring bar shanks – page 810
- Standard boring bar shanks – page 811
- Exchangeable cutting heads – page 811 – 814
- Exchangeable cutting head for diamond burnishing – page 814



Garant

Indexable turning inserts CBN / ceramic / MCD / PCD

- **CBN** - page 760 (negative) and 815 (positive)
- **Ceramic** – page 762 / 763
- **MCD** – page 817
- **PCD** – page 818 / 819



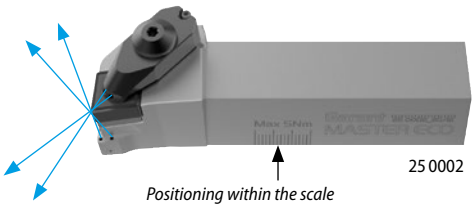
Standard

Garant GARANT Master Eco DCLN 95° clamp toolholder for indexable inserts CN..

Highly efficient cooling directly on the cutting edge and additional flank face cooling.

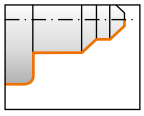
Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holder No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.

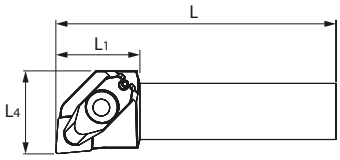
With flank face cooling



25 0002

Positioning within the scale ensures precise coolant transfer.





Shank / insert size	21U 25 0002	21U 25 0003	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp, screw, O-ring
	GARANT Master Eco clamp toolholder short									
mm	right-hand	left-hand			mm	mm	mm			
20/12	eShop	eShop	DCLNR/L 2020H12	CN.. 1204..	25	30	100	259031 49	259027 8	259036 22
25/12	eShop	eShop	DCLNR/L 2525H12	CN.. 1204..	32	30	100	259031 49	259027 8	259036 22

Shank / insert size	21U 25 0038	21U 25 0039	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp, screw, O-ring
	GARANT Master Eco clamp toolholder									
mm	right-hand	left-hand			mm	mm	mm			
20/12	eShop	eShop	DCLNR/L 2020K12	CN.. 1204..	29.5	30	125	259031 49	259027 8	259036 22
25/12	eShop	eShop	DCLNR/L 2525M12	CN.. 1204..	32	30	150	259031 49	259027 8	259036 22

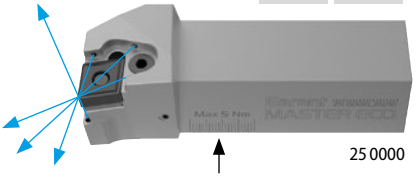
Garant GARANT Master Eco PCLN 95° lever lock toolholder for indexable inserts CN..

Highly efficient cooling directly on the cutter and additional flank face cooling.

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holder No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.

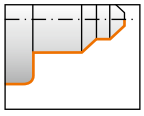
With flank face cooling

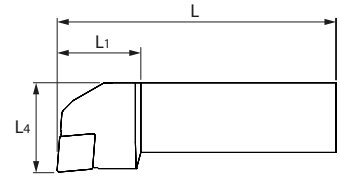
Standard DIN ISO 5610



25 0000

Positioning within the scale ensures precise coolant transfer.





Shank / insert size	21U 25 0000	21U 25 0001	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Spring
	GARANT Master Eco lever lock toolholder short										
mm	right-hand	left-hand			mm	mm	mm				
16/12	eShop	eShop	PCLNR/L 1620F12	CN.. 1204..	25	30	80	259031 5	259015 15	259018 14	259046 4
20/12	eShop	eShop	PCLNR/L 2020X12	CN.. 1204..	25	30	90	259031 5	259015 15	259018 15	259046 4
25/12	eShop	eShop	PCLNR/L 2525H12	CN.. 1204..	32	30	100	259031 5	259015 15	259018 15	259046 4

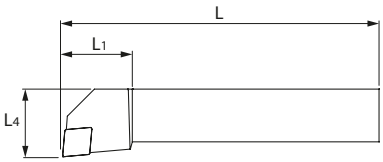
Standard

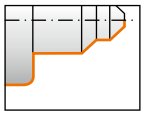
HOLEX Pro Eco PCLN 95° lever lock toolholder for indexable inserts CN..

Targeted cooling on the cutting edge.

Note: Coolant transfer under the head via hose connection (G1/8 inch – included in delivery).





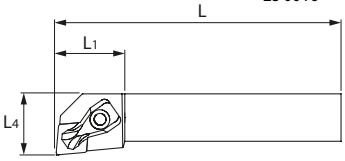


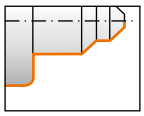
Shank / insert size	22E 25 0044	22E 25 0045	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Pin
	HOLEX Pro Eco lever lock toolholder										
mm	right-hand	left-hand			mm	mm	mm				
20/12	eShop	eShop	PCLNR/L 2020K12	CN.. 1204..	31	26	125	259034 1	259016 1	259019 1	259045 1
25/12	eShop	eShop	PCLNR/L 2525M12	CN.. 1204..	32	26	150	259034 1	259016 1	259019 1	259045 1

Standard

Garant DCLN 95° clamp toolholder for indexable inserts CN..





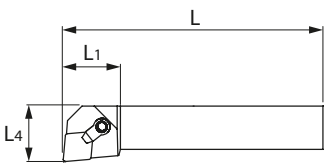


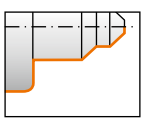
Shank / insert size	21T 25 0016	21T 25 0017	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp, screw, spring
	Clamp toolholder									
mm	right-hand	left-hand			mm	mm	mm			
20/12	eShop	eShop	DCLNR/L 2020K12	CN.. 1204..	25	30	125	259031 2	259025 10	259035 2
25/12	eShop	eShop	DCLNR/L 2525M12	CN.. 1204..	32	33	150	259031 2	259025 10	259035 2
32/12	eShop	eShop	DCLNR/L 3232P12	CN.. 1204..	40	34	170	259031 2	259025 10	259035 2
25/16	eShop	eShop	DCLNR/L 2525M16	CN.. 1606..	32	36	150	259031 35	259025 11	259035 6
32/16	eShop	eShop	DCLNR/L 3232P16	CN.. 1606..	40	40	170	259031 35	259025 11	259035 6

Standard

Garant MCLN 95° clamp toolholder for indexable inserts CN..

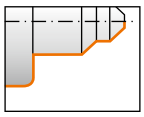


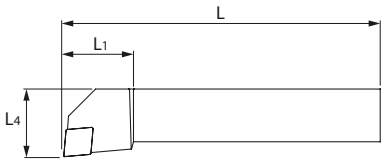




Shank / insert size	21T 25 0006	21T 25 0007	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp	Screw for clamping claw
	Clamp toolholder										
mm	right-hand	left-hand			mm	mm	mm				
20/12	eShop	eShop	MCLNR/L 2020K12	CN.. 1204..	25	28	125	259031 22	259025 6	259038 4	259021 1
25/12	eShop ■	eShop	MCLNR/L 2525M12	CN.. 1204..	32	33	150	259031 22	259025 6	259038 4	259021 1
32/12	eShop	eShop	MCLNR/L 3232P12	CN.. 1204..	40	34	170	259031 22	259025 6	259038 4	259021 1
25/16	eShop	eShop	MCLNR/L 2525M16	CN.. 1606..	32	33	150	259031 23	259025 7	259038 4	259021 1
32/16	eShop	eShop	MCLNR/L 3232P16	CN.. 1606..	40	34	170	259031 23	259025 7	259038 4	259021 1

Garant PCLN 95° lever lock toolholder for indexable inserts CN..





DIN ISO 5610 Standard

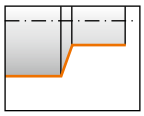


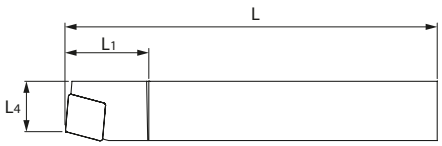
25 0018

Shank / insert size	21T 25 0018	21T 25 0019	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
16/09	eShop	eShop	PCLNR/L 1616H09	CN.. 09T3..	20	25	100	259031 27	259015 9	259018 6	259044 5	259047 3
20/09	eShop	eShop	PCLNR/L 2020K09	CN.. 09T3..	25	28	125	259031 27	259015 9	259018 6	259044 5	259047 3
25/09	eShop	eShop	PCLNR/L 2525M09	CN.. 09T3..	32	33	150	259031 27	259015 9	259018 6	259044 5	259047 3
16/12	eShop	eShop	PCLNR/L 1616H12	CN.. 1204..	20	25	100	259031 2	259015 2	259018 8	259044 2	259047 2
20/12	eShop	eShop	PCLNR/L 2020K12	CN.. 1204..	25	28	125	259031 2	259015 2	259018 2	259044 2	259047 2
25/12	eShop	eShop	PCLNR/L 2525M12	CN.. 1204..	32	33	150	259031 2	259015 2	259018 2	259044 2	259047 2
32/12	eShop	eShop	PCLNR/L 3232P12	CN.. 1204..	40	30	170	259031 2	259015 2	259018 2	259044 2	259047 2
25/16	eShop	eShop	PCLNR/L 2525M16	CN.. 1606..	32	33	150	259031 35	259015 12	259018 11	259044 6	259047 4
32/16	eShop	eShop	PCLNR/L 3232P16	CN.. 1606..	40	40	170	259031 35	259015 12	259018 11	259044 6	259047 4
32/19	eShop	eShop	PCLNR/L 3232P19	CN.. 1906..	40	40	170	259031 36	259015 13	259018 13	259044 7	259047 5

Standard

Garant PCBN 75° lever lock toolholder for indexable inserts CN..





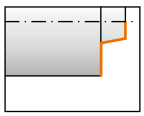


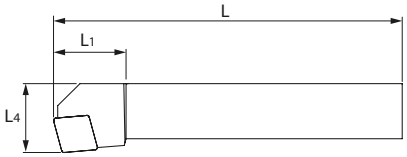
25 0020

Shank / insert size	21T 25 0020	21T 25 0021	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
16/09	eShop	eShop	PCBNR/L 1616H09	CN.. 09T3..	16	20	100	259031 27	259015 9	259018 6	259044 5	259047 3
20/09	eShop	eShop	PCBNR/L 2020K09	CN.. 09T3..	20	21	125	259031 27	259015 9	259018 6	259044 5	259047 3
25/09	eShop	eShop	PCBNR/L 2525M09	CN.. 09T3..	25	21	150	259031 27	259015 9	259018 6	259044 5	259047 3
20/12	eShop	eShop	PCBNR/L 2020K12	CN.. 1204..	25	28	125	259031 2	259015 2	259018 2	259044 2	259047 2
25/12	eShop	eShop	PCBNR/L 2525M12	CN.. 1204..	32	33	150	259031 2	259015 2	259018 2	259044 2	259047 2
25/16	eShop	eShop	PCBNR/L 2525M16	CN.. 1606..	22	29	150	259031 35	259015 12	259018 11	259044 6	259047 4
32/16	eShop	eShop	PCBNR/L 3232P16	CN.. 1606..	27	35	170	259031 35	259015 12	259018 11	259044 6	259047 4

Standard

Garant PCKN 75° lever lock toolholder for indexable inserts CN..





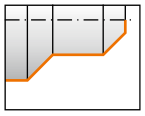


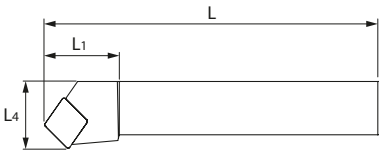
25 0022

Shank / insert size	21T 25 0022	21T 25 0023	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
16/09	eShop	eShop	PCKNR/L 1616H09	CN.. 09T3..	20	22	100	259031 27	259015 9	259018 6	259044 5	259047 3
20/09	eShop	eShop	PCKNR/L 2020K09	CN.. 09T3..	25	20	125	259031 27	259015 9	259018 6	259044 5	259047 3
25/09	eShop	eShop	PCKNR/L 2525M09	CN.. 09T3..	32	25	150	259031 27	259015 9	259018 6	259044 5	259047 3
20/12	eShop	eShop	PCKNR/L 2020K12	CN.. 1204..	25	28	125	259031 2	259015 2	259018 2	259044 2	259047 2
25/12	eShop	eShop	PCKNR/L 2525M12	CN.. 1204..	32	33	150	259031 2	259015 2	259018 2	259044 2	259047 2
25/16	eShop	eShop	PCKNR/L 2525M16	CN.. 1606..	32	30	150	259031 35	259015 12	259018 11	259044 6	259047 4
32/16	eShop	eShop	PCKNR/L 3232P16	CN.. 1606..	40	34	170	259031 35	259015 12	259018 11	259044 6	259047 4

Standard

Garant PCSN 45° lever lock toolholder for indexable inserts CN..





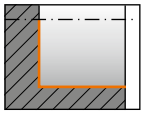


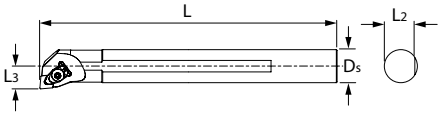
25 0024

Shank / insert size	21T 25 0024	21T 25 0025	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
16/09	eShop	eShop	PCSNR/L 1616H09	CN.. 09T3..	20	22	100	259031 27	259015 9	259018 6	259044 5	259047 3
20/09	eShop	eShop	PCSNR/L 2020K09	CN.. 09T3..	25	26	125	259031 27	259015 9	259018 6	259044 5	259047 3
25/09	eShop	eShop	PCSNR/L 2525M09	CN.. 09T3..	32	25	150	259031 27	259015 9	259018 6	259044 5	259047 3
20/12	eShop	eShop	PCSNR/L 2020K12	CN.. 1204..	25	28	125	259031 2	259015 2	259018 2	259044 2	259047 2
25/12	eShop	eShop	PCSNR/L 2525M12	CN.. 1204..	32	33	150	259031 2	259015 2	259018 2	259044 2	259047 2
25/16	eShop	eShop	PCSNR/L 2525M16	CN.. 1606..	32	33	150	259031 35	259015 12	259018 11	259044 6	259047 4
32/16	eShop	eShop	PCSNR/L 3232P16	CN.. 1606..	40	34	170	259031 35	259015 12	259018 11	259044 6	259047 4

3×D Standard

Garant A... DCLN 95° boring bars for indexable inserts CN..





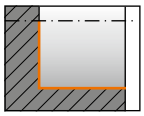


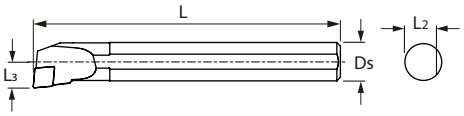
25 0034

Shank ∅ / insert size	21U 25 0034	21U 25 0035	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim	Shim screw	Clamp, screw, O-ring
	Boring bar, steel										
mm	right-hand	left-hand			mm	mm	mm	mm			
25/12	eShop	eShop	A25X DCLNR/L12	CN.. 1204..	29.5	17	24.3	225	259033 2	259027 2	259036 1
32/12	eShop	eShop	A32X DCLNR/L12	CN.. 1204..	38	22	31	288	259033 2	259027 2	259036 1

3×D DIN 8024

Garant A... PCLN 95° boring bars for indexable inserts CN..







25 0036

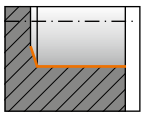
Shank ∅ / insert size	21T 25 0036	21T 25 0037	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Boring bar, steel												
mm	right-hand	left-hand			mm	mm	mm	mm					
16/09	eShop	eShop	A16M PCLNR/L09	CN.. 09T3..	20	11	15.25	150	–	259015 11	259018 9	–	–
20/09	eShop	eShop	A20Q PCLNR/L09	CN.. 09T3..	25	13	18	180	–	259015 11	259018 9	–	–
25/09	eShop	eShop	A25R PCLNR/L09	CN.. 09T3..	32	17	23	200	259031 27	259015 10	259018 12	259044 4	259047 2
25/12	eShop	eShop	A25R PCLNR/L12	CN.. 1204..	32	17	24	200	259031 2	259015 2	259018 8	259044 2	259047 2
32/12	eShop	eShop	A32S PCLNR/L12	CN.. 1204..	40	22	31	250	259031 2	259015 2	259018 2	259044 2	259047 2
40/12	eShop	eShop	A40T PCLNR/L12	CN.. 1204..	50	27	38.5	300	259031 2	259015 2	259018 2	259044 2	259047 2
50/12	eShop	eShop	A50U PCLNR/L12	CN.. 1204..	63	35	48	350	259031 2	259015 2	259018 2	259044 2	259047 2
40/16	eShop	eShop	A40T PCLNR/L16	CN.. 1606..	50	27	38.5	300	259031 35	259015 12	259018 11	259044 6	259047 4
50/16	eShop	eShop	A50U PCLNR/L16	CN.. 1606..	63	35	48	350	259031 35	259015 12	259018 11	259044 6	259047 4

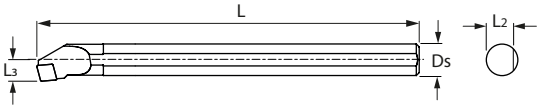
3×D Standard

Garant A... PCKN 75° boring bars for indexable inserts CN..



25 0042





Shank ∅ / insert size	21T 25 0042	21T 25 0043	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Boring bar, steel												
mm	right-hand	left-hand			mm	mm	mm	mm					
25/12	eShop	eShop	A25T PCKNR/L12	CN.. 1204..	32	17	23	300	259031 2	259015 2	259018 8	259044 2	259047 2
32/12	eShop	eShop	A32U PCKNR/L12	CN.. 1204..	40	22	31	350	259031 2	259015 2	259018 2	259044 2	259047 2

Indexable inserts CNM.

CNMG Finishing

Note:
25 0070/0071 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade		HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 25 0050 Garant	CNMG 09T304	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 25 0052 Garant	CNMG 09T308	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 25 0058 Garant	CNMG 120404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0060 Garant	CNMG 120408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●		P	P	P	M	M	M	S	
○		–	–	–	–	–	–	M	
⚙		●	●	●	●	●	●	●	
Chip breaker		SS	SS	SS	VS	VS	VS	TIS	
a_p	mm	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2.5	0.3 – 2.5	0.3 – 2.5	0.2 – 2	
f	mm/rev.	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.15 – 0.5	0.15 – 0.5	0.15 – 0.5	0.1 – 0.2	
v_c main application	m/min	170 – 500	160 – 400	150 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application (25 0058, 25 0060)	m/min	–	–	–	–	–	–	70 – 250	



Type		HB7020-2	
21G 25 0059 Garant	CNMG 120404 wiper	eShop	10
21G 25 0061 Garant	CNMG 120408 wiper	eShop	10
●		P	
⚙		●	
Chip breaker		WSS	
a_p	mm	0.3 – 2.5	
f	mm/rev.	0.1 – 0.5	
v_c main application	m/min	170 – 480	



Grade		IC8150	IC8250	IC6015	IC6025	
26B 25 0070 Iscar	CNMG 120404	–	–	–	–	10
26B 25 0071 Iscar	CNMG 120408	–	–	–	–	10
●		P	P	M	M	
⚙		●	●	●	●	
Chip breaker		F3P	F3P	F3M	F3M	
a_p	mm	0.4 – 3.5	0.4 – 3.5	0.1 – 1.5	0.1 – 1.5	
f	mm/rev.	0.05 – 0.25	0.05 – 0.25	0.1 – 0.3	0.1 – 0.3	
v_c main application	m/min	180 – 400	150 – 380	140 – 300	120 – 230	



Grade			CCX	PV720	CA510	CA115P	CA125P	CA6525	PR115S	SW05	
25E 25 0102	KYOCERA	CNMG 120404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 0104	KYOCERA	CNMG 120408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
●			P	P	P	P	P	M	S	Ti	
⚙			◉	◉	◉	◉	◪	◪	◪	◉	
Chip breaker			PP	PQ	PQ	PQ	PQ	MQ	MQ	MQ	
a_p		mm	0.2 – 1.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.3 – 2	0.2 – 1	0.2 – 1	
f		mm/rev.	0.05 – 0.35	0.05 – 0.3	0.13 – 0.4	0.13 – 0.4	0.13 – 0.4	0.05 – 0.25	0.04 – 0.2	0.05 – 0.3	
v_c main application		m/min	210 – 450	110 – 520	180 – 590	180 – 400	150 – 320	60 – 220	25 – 70	50 – 140	



Grade			CA510	CA115P	CA125P	
25E 25 0103	KYOCERA	CNMG 120404 wiper	eShop	eShop	eShop	1
25E 25 0105	KYOCERA	CNMG 120408 wiper	eShop	eShop	eShop	1
●			P	P	P	
⚙			◉	◉	◪	
Chip breaker				WP		
a_p		mm		0.3 – 1.2		
f		mm/rev.		0.06 – 0.42		
v_c main application		m/min	180 – 590	180 – 400	150 – 320	



Grade			HBT020	HBT130	
22D 25 0090		CNMG 09T304	eShop	eShop	–
22D 25 0092	HOLEX	CNMG 120404	eShop	eShop	–
22D 25 0093	HOLEX	CNMG 120408	eShop	eShop	–
●			P	M	
⚙			◪	◪	
Chip breaker			PF	MF	
a_p		mm	0.5 – 2	0.5 – 2.5	
f		mm/rev.	0.1 – 0.4	0.15 – 0.45	
v_c main application		m/min	120 – 330	60 – 220	

CNM. Medium machining

Note:

25 0270–0272 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	HU7305-1	HB7415-1	HB725-1	HB730-1	
21G 25 0152		CNMG 09T308	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	10
21G 25 0156		CNMG 120404	eShop	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0158		CNMG 120408	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	10
21G 25 0165		CNMA 120408	–	–	–	–	–	–	eShop	–	–	–	–	–
21G 25 0160	Garant	CNMG 120412	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–	10
21G 25 0161		CNMA 120412	–	–	–	–	–	–	eShop	–	–	–	–	–
21G 25 0162		CNMG 120416	eShop	eShop	eShop	eShop	eShop	eShop	eShop ■	–	–	–	–	10
21G 25 0168		CNMG 160608	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	10
21G 25 0170		CNMG 160612	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	10
●			P	P	P	M	M	M	K	N	S	UNI	UNI	
○			–	–	–	–	–	–	–	–	M	–	–	
⚙			◉	◪	◡	◉	◪	◡	◪	◪	◉	◪	◪	
Chip breaker (25 0152, 25 0156, 25 0158, 25 0160, 25 0162, 25 0168, 25 0170)			SM	SM	SM	VM	VM	VM	GM	AM1	TIM	UM1	XUM	
a_p		mm	0.3 – 4	0.3 – 4	0.3 – 4	0.5 – 4	0.5 – 4	0.5 – 4	0.4 – 6.5	0.2 – 5	0.5 – 4	0.2 – 6	0.5 – 6	
f		mm/rev.	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.3 – 0.7	0.05 – 0.6	0.1 – 0.3	0.05 – 0.6	0.2 – 0.6	
v_c main application		m/min	140 – 440	130 – 370	120 – 320	80 – 260	70 – 240	60 – 200	100 – 450	400 – 700	40 – 90	50 – 250	35 – 230	
v_c secondary application (25 0156, 25 0158, 25 0160)		m/min	–	–	–	–	–	–	–	–	60 – 220	–	–	



Type			HB7020-2	
21G 25 0157	Garant	CNMG 120408 wiper	eShop	10
21G 25 0159	Garant	CNMG 120412 wiper	eShop	10
●			P	
⚙				
Chip breaker			WSM	
a_p		mm	0.5 – 4	
f		mm/rev.	0.2 – 0.6	
v_c main application		m/min	140 – 420	



Grade			IC8150	IC8250	IC6015	IC6025	
26B 25 0270		CNMG 120404	–	–	–	–	10
26B 25 0271		CNMG 120408	–	–	–	–	10
26B 25 0272		CNMG 120412	–	–	–	–	10
●			P	P	M	M	
⚙							
Chip breaker			M3P	M3P	M3M	M3M	
a_p		mm	0.5 – 5				
f		mm/rev.	0.15 – 0.6	0.15 – 0.6	0.17 – 0.5	0.17 – 0.5	
v_c main application		m/min	180 – 400	150 – 380	140 – 300	120 – 230	



Grade			PV720	CA510	CA115P	CA125P	CA6525	CA315	KW10	PDL010	PR115S	SW05	
25E 25 0210	KYOCERA	CNMG 120404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 0212	KYOCERA	CNMG 120408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 0214	KYOCERA	CNMG 120412	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	1
25E 25 0216	KYOCERA	CNMG 120416	–	–	eShop	eShop	eShop	–	–	–	–	–	10
●			P	P	P	P	M	O	N	N	S	Ti	
⚙													
Chip breaker			PG	PS	PMG	PMG	MS (brass)	KG	AH	AH	MU	MU	
a_p		mm	1 – 3.5	1 – 3.5	0.5 – 5	0.5 – 5	0.7 – 4	0.5 – 4	1 – 4	1 – 3.5	0.5 – 2	0.5 – 2	
f		mm/rev.	0.15 – 0.35	0.15 – 0.35	0.15 – 0.5	0.15 – 0.5	0.1 – 0.35	0.15 – 0.5	0.1 – 0.35	0.1 – 0.4	0.09 – 0.3	0.1 – 0.35	
v_c main application		m/min	110 – 490	80 – 450	180 – 400	150 – 320	60 – 220	150 – 350	60 – 400	200 – 600	25 – 70	50 – 140	



Grade			CA510	CA115P	CA125P	
25E 25 0211	KYOCERA	CNMG 120404 wiper	eShop	eShop	eShop	1
25E 25 0213	KYOCERA	CNMG 120408 wiper	eShop	eShop	eShop	1
25E 25 0215	KYOCERA	CNMG 120412 wiper	–	eShop	eShop	1
●			P	P	P	
⚙						
Chip breaker			WQ			
a_p		mm	0.5 – 3			
f		mm/rev.	0.14 – 0.5			
v_c main application		m/min	80 – 450	180 – 400	150 – 320	




Grade			HBT020	HBT130	
22D 25 0188		CNMG 09T304	eShop	eShop	–
22D 25 0196		CNMG 120404	eShop	eShop	–
22D 25 0197	HOLEX	CNMG 120408	eShop	eShop	–
22D 25 0198		CNMG 120412	eShop	eShop	–
22D 25 0204		CNMG 160608	eShop	eShop	–
●			P	M	
⚙			◙	◙	
Chip breaker			PM	MM	
a_p		mm	0.8 – 5	0.5 – 5	
f		mm/rev.	0.1 – 0.45	0.12 – 0.45	
v_c main application		m/min	100 – 280	50 – 200	

CNMG Roughing









Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	
21G 25 0322		CNMG 120408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0324		CNMG 120412	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0328	Garant	CNMG 120416	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0334		CNMG 160608	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 25 0336		CNMG 160612	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0338		CNMG 160616	eShop	eShop	eShop	eShop	eShop	eShop	eShop ■	10
●			P	P	P	M	M	M	K	
⚙			◙	◙	◙	◙	◙	◙	◙	
Chip breaker			SG	SG	SG	VG	VG	VG	GG	
a_p		mm	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	0.4 – 6.5	
f		mm/rev.	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.32 – 0.8	
v_c main application		m/min	120 – 415	110 – 360	100 – 290	70 – 240	60 – 220	50 – 170	100 – 450	





Grade			CA510	CA115P	CA125P	
25E 25 0371		CNMG 120408	eShop	eShop	eShop	1
25E 25 0372		CNMG 120412	eShop	eShop	eShop	1
25E 25 0373		CNMG 120416	–	eShop	eShop	1
25E 25 0376		CNMG 160608	eShop	eShop	eShop	1
25E 25 0377	KYOCERA	CNMG 160612	eShop	eShop	eShop	1
25E 25 0378		CNMG 160616	eShop	eShop	eShop	1
25E 25 0382		CNMG 190608	eShop	eShop	eShop	1
25E 25 0383		CNMG 190612	eShop	eShop	eShop	1
25E 25 0384		CNMG 190616	–	eShop	eShop	10
●			P	P	P	
⚙			◙	◙	◙	
Chip breaker			PH			
a_p		mm	1 – 10			
f		mm/rev.	0.28 – 0.88			
v_c main application		m/min	80 – 450	170 – 380	140 – 300	




Grade			HBT020	HBT130	
22D 25 0218	HOLEX	CNMG 120408	eShop	eShop	–
22D 25 0219	HOLEX	CNMG 120412	eShop	eShop	–
22D 25 0220	HOLEX	CNMG 160608	eShop	eShop	–
22D 25 0221	HOLEX	CNMG 160612	eShop	eShop	–
●			P	M	
⚙			◙	◙	
Chip breaker			PR	MR	
a_p		mm	1.8 – 6	2 – 6	
f		mm/rev.	0.2 – 0.6	0.15 – 0.55	
v_c main application		m/min	80 – 260	40 – 180	

CNMM Rough machining





Grade			HB7020-2	HB7130-2	
21G 25 0452	Garant	CNMM 120408	eShop	eShop	10
21G 25 0453	Garant	CNMM 120412	eShop	eShop	10
21G 25 0455	Garant	CNMM 120416	eShop	eShop	10
21G 25 0458	Garant	CNMM 160612	eShop	eShop	10
21G 25 0460	Garant	CNMM 160616	eShop	eShop	10
21G 25 0462	Garant	CNMM 160624	eShop	eShop	10
●			P	M	
⚙			◙	◙	
Chip breaker			SR	VR	
a_p		mm	2 – 10		
f		mm/rev.	0.4 – 1.2	0.2 – 0.9	
v_c main application		m/min	140 – 300	50 – 200	





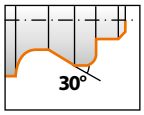
Grade			CA510	CA115P	CA125P	
25E 25 0491	KYOCERA	CNMM 120408	eShop	eShop	eShop	1
25E 25 0492	KYOCERA	CNMM 120412	eShop	eShop	eShop	1
25E 25 0493	KYOCERA	CNMM 120416	–	–	eShop	1
25E 25 0496	KYOCERA	CNMM 160608	–	–	eShop	1
25E 25 0497	KYOCERA	CNMM 160612	–	eShop	eShop	1
25E 25 0498	KYOCERA	CNMM 160616	–	eShop	eShop	1
25E 25 0502	KYOCERA	CNMM 190608	–	–	eShop	1
25E 25 0503	KYOCERA	CNMM 190612	–	eShop	eShop	1
25E 25 0504	KYOCERA	CNMM 190616	–	eShop	eShop	1
●			P	P	P	
⚙			◙	◙	◙	
Chip breaker				PX		
a_p		mm		1 – 11		
f		mm/rev.		0.25 – 0.9		
v_c main application		m/min	80 – 450	170 – 380	140 – 300	

Garant

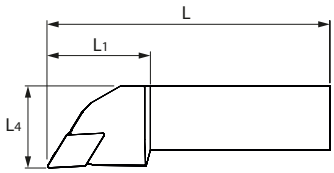
GARANT Master Eco .DJN 93° clamp / lever lock toolholder for indexable inserts DN..

Highly efficient cooling directly on the cutting edge and additional flank face cooling.

Note:	Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holders No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.

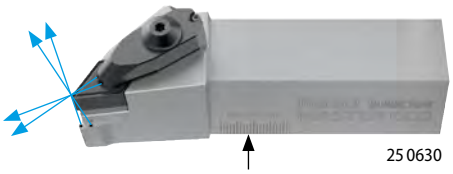


With flank face cooling



Clamping with clamp

Standard



25 0630

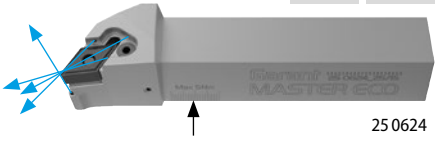
Positioning within the scale ensures precise coolant transfer.

Shank / insert size	21U 25 0630	21U 25 0631	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp, screw, spring
	GARANT Master Eco clamp toolholder short									
mm	right-hand	left-hand			mm	mm	mm			
20/11	eShop	eShop	DDJNR/L 2020X11	DN.. 1104..	25	35	95	269007 1	259027 3	259036 23
20/15	eShop	eShop	DDJNR/L 2020H15	DN.. 1506..	25	40	100	259031 50	259027 8	259036 24
25/15	eShop	eShop	DDJNR/L 2525X15	DN.. 1506..	32	40	110	259031 50	259027 8	259036 24

Shank / insert size	21U 25 0628	21U 25 0629	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp, screw, spring
	GARANT Master Eco clamp toolholder									
mm	right-hand	left-hand			mm	mm	mm			
20/11	eShop	eShop	DDJNR/L 2020K11	DN.. 1104..	25	35	125	269007 1	259027 3	259036 23
20/15	eShop	eShop	DDJNR/L 2020K15	DN.. 1506..	25	40	125	259031 50	259027 8	259036 24
25/15	eShop	eShop	DDJNR/L 2525M15	DN.. 1506..	32	40	150	259031 50	259027 8	259036 24

Clamping with toggle lever

Standard DIN ISO 5610



25 0624

Positioning within the scale ensures precise coolant transfer.

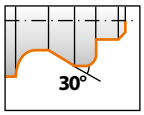
Shank / insert size	21U 25 0624	21U 25 0625	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Spring
	GARANT Master Eco lever lock toolholder short										
mm	right-hand	left-hand			mm	mm	mm				
16/11	eShop	eShop	PDJNR/L 1616X11	DN.. 1104..	20	35	85	259031 44	259015 16	259018 16	259046 5
20/11	eShop	eShop	PDJNR/L 2020X11	DN.. 1104..	25	35	95	259031 44	259015 16	259018 16	259046 5
20/15	eShop	eShop	PDJNR/L 2020H15	DN.. 1506..	25	40	100	259031 45	259015 17	259018 17	259046 4
25/15	eShop	eShop	PDJNR/L 2525X15	DN.. 1506..	32	40	110	259031 45	259015 17	259018 17	259046 4

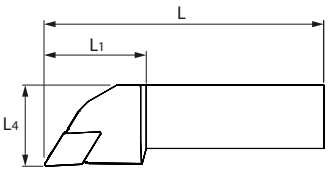
Standard

HOLEX Pro Eco PDJN 93° lever lock toolholder for indexable inserts DN..

Targeted cooling on the cutting edge.

Note: Coolant transfer under the head via hose connection (G1/8 inch – included in delivery).





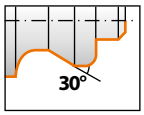


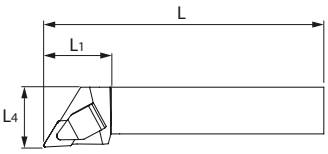
25 0632

Shank / insert size	22E 25 0632	22E 25 0633	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Pin
	HOLEX Pro Eco lever lock toolholder										
mm	right-hand	left-hand			mm	mm	mm				
20/15	eShop	eShop	PDJNR/L 2020K15	DN.. 1506..	32	36	125	259034 2	259016 1	259019 2	259045 1
25/15	eShop	eShop	PDJNR/L 2525M15	DN.. 1506..	32	36	150	259034 2	259016 1	259019 2	259045 1

Standard

Garant Garant DDJN 93° clamp toolholder for indexable inserts DN..



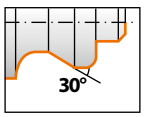


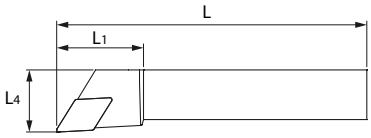


25 0608

Shank / insert size	21T 25 0608	21T 25 0609	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp, screw, spring
	Clamp toolholder									
mm	right-hand	left-hand			mm	mm	mm			
20/15	eShop	eShop	DDJNR/L 2020K15	DN.. 1506..	25	35	125	259031 28	259025 10	259035 2
25/15	eShop ■	eShop	DDJNR/L 2525M15	DN.. 1506..	32	36	150	259031 28	259025 10	259035 2
32/15	eShop	eShop	DDJNR/L 3232 P15	DN.. 1506..	40	40	170	259031 28	259025 10	259035 2

Garant PDJN 93° lever lock toolholder for indexable inserts DN..





DIN ISO 5610 Standard

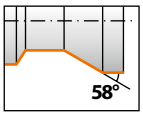


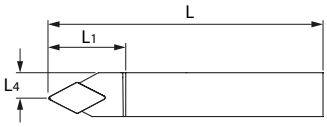
25 0610

Shank / insert size	21T 25 0610	21T 25 0611	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
16/11	eShop	eShop	PDJNR/L 1616H11	DN.. 1104..	20	25	100	259031 7	259015 7	259018 6	259044 4	259047 3
20/11	eShop	eShop	PDJNR/L 2020K11	DN.. 1104..	25	28	125	259031 7	259015 7	259018 6	259044 4	259047 3
25/11	eShop	eShop	PDJNR/L 2525M11	DN.. 1104..	32	33	150	259031 7	259015 7	259018 6	259044 4	259047 3
20/15	eShop	eShop	PDJNR/L 2020K15	DN.. 1506..	25	35	125	259031 28	259015 8	259018 7	259044 2	259047 2
25/15	eShop	eShop	PDJNR/L 2525M15	DN.. 1506..	32	35	150	259031 28	259015 8	259018 7	259044 2	259047 2
32/15	eShop	eShop	PDJNR/L 3232P15	DN.. 1506..	40	36	170	259031 28	259015 8	259018 7	259044 2	259047 2

Standard

Garant PDNN 63° lever lock toolholder for indexable inserts DN..





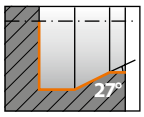


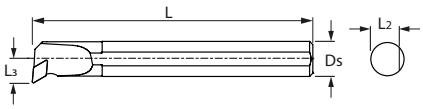
25 0612

Shank / insert size	21T 25 0612	21T 25 0613	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
16/11	eShop	eShop	PDNNR/L 1616H11	DN.. 1104..	8	25	100	2590317	2590157	2590186	2590444	2590473
20/11	eShop	eShop	PDNNR/L 2020K11	DN.. 1104..	10	25	125	2590317	2590157	2590186	2590444	2590473
25/11	eShop	eShop	PDNNR/L 2525M11	DN.. 1104..	12	29	150	2590317	2590157	2590186	2590444	2590473
20/15	eShop	eShop	PDNNR/L 2020K15	DN.. 1506..	12	35	125	25903128	2590158	2590187	2590442	2590472
25/15	eShop	eShop	PDNNR/L 2525M15	DN.. 1506..	12	37	150	25903128	2590158	2590187	2590442	2590472
32/15	eShop	eShop	PDNNR/L 3232P15	DN.. 1506..	16.8	37	170	25903128	2590158	2590187	2590442	2590472

3×D DIN 8024

Garant A... PDUN 93° boring bars for indexable inserts DN..







25 0626

Shank ∅ / insert size	21T 25 0626	21T 25 0627	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Boring bar, steel												
mm	right-hand	left-hand			mm	mm	mm	mm					
20/11	eShop	eShop	A20Q PDUNR/L11	DN.. 1104..	25	16	19	180	–	259015 10	259018 12	–	–
25/11	eShop	eShop	A25R PDUNR/L11	DN.. 1104..	32	18.5	24	200	2590317	2590157	2590186	2590444	2590472
32/15	eShop	eShop	A32S PDUNR/L15	DN.. 1506..	40	22	31	250	25903128	2590158	2590187	2590442	2590472
40/15	eShop	eShop	A40T PDUNR/L15	DN.. 1506..	50	27	38.5	300	25903128	2590158	2590187	2590442	2590472
50/15	eShop	eShop	A50U PDUNR/L15	DN.. 1506..	63	35	48	350	25903128	2590158	2590187	2590442	2590472

DNMG indexable inserts

DNMG Finishing

Note:
25 0730/0731 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 25 0652	Garant	DNMG 110404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0654	Garant	DNMG 110408	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 25 0658	Garant	DNMG 150604	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0660	Garant	DNMG 150608	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	M	M	M	S	
○			–	–	–	–	–	–	M	
⚙			●	●	●	●	●	●	●	
Chip breaker			SS	SS	SS	VS	VS	VS	TIS	
a_p		mm	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.2 – 2	
f		mm/rev.	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.2	
v_c main application		m/min	170 – 500	160 – 400	150 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application (25 0652, 25 0658, 25 0660)		m/min	–	–	–	–	–	–	70 – 250	



Type			HB7020-2	
21G 25 0653	Garant	DNMG 110404 wiper	eShop	10
21G 25 0655		DNMG 110408 wiper	eShop	10
21G 25 0659		DNMG 150604 wiper	eShop	10
21G 25 0661		DNMG 150608 wiper	eShop	10
●			P	
⚙			◪	
Chip breaker			WSS	
a_p		mm	0.3 – 2.5	
f		mm/rev.	0.1 – 0.5	
v_c main application		m/min	170 – 480	



Grade			IC8150	IC8250	IC6015	IC6025	
26B 25 0730	Member IMC Group	DNMG 150604	–	–	–	–	10
26B 25 0731		DNMG 150608	–	–	–	–	10
●			P	P	M	M	
⚙			◉	◪	◉	◪	
Chip breaker			F3P	F3P	F3M	F3M	
a_p		mm	0.4 – 3.5	0.4 – 3.5	0.1 – 1.5	0.1 – 1.5	
f		mm/rev.	0.08 – 0.25	0.08 – 0.25	0.1 – 0.4	0.1 – 0.4	
v_c main application		m/min	180 – 400	150 – 380	140 – 300	120 – 230	



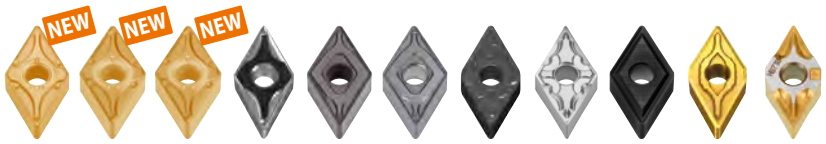
Grade			CCX	PV720	CA510	CA115P	CA125P	CA6525	PR115S	SW05	
25E 25 0696	KYOCERA	DNMG 150604	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 0697		DNMG 150608	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
●			P	P	P	P	P	M	S	Ti	
⚙			◉	◉	◉	◉	◪	◪	◪	◉	
Chip breaker			PP	PQ	PQ	PQ	PQ	MQ	MQ	MQ	
a_p		mm	0.2 – 1.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.3 – 2	0.2 – 1	0.2 – 1	
f		mm/rev.	0.05 – 0.35	0.05 – 0.3	0.13 – 0.4	0.13 – 0.4	0.13 – 0.4	0.05 – 0.25	0.04 – 0.2	0.05 – 0.3	
v_c main application		m/min	210 – 450	110 – 520	180 – 590	180 – 400	150 – 320	60 – 220	25 – 70	50 – 140	



Grade			HBT020	HBT130	
22D 25 0666	HOLEX	DNMG 110404	eShop	eShop	–
22D 25 0668		DNMG 150604	eShop	eShop	–
22D 25 0669		DNMG 150608	eShop	eShop	–
●			P	M	
⚙			◪	◪	
Chip breaker			PF	MF	
a_p		mm	0.5 – 2		
f		mm/rev.	0.1 – 0.4	0.15 – 0.45	
v_c main application		m/min	120 – 330	60 – 220	

DNMG Medium machining

Note:
25 0810/0811 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	HU7305-1	HB7415-1	HB725-1	HB730-1	
21G 25 0752	Garant	DNMG 110404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	10
21G 25 0754		DNMG 110408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	10
21G 25 0760		DNMG 150604	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	10
21G 25 0762		DNMG 150608	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0764		DNMG 150612	eShop	eShop	eShop	eShop	eShop	eShop	–	–	eShop	eShop	–	10
●			P	P	P	M	M	M	K	N	S	UNI	UNI	
○			–	–	–	–	–	–	–	–	M	–	–	
⚙														
Chip breaker			SM	SM	SM	VM	VM	VM	GM	AM1	TIM	UM1	XUM	
a_p		mm	0.3 – 4	0.3 – 4	0.3 – 4	0.5 – 5	0.5 – 5	0.5 – 5	0.4 – 6.5	0.2 – 5	0.5 – 4	0.2 – 6	0.5 – 6	
f		mm/rev.	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.3 – 0.7	0.05 – 0.6	0.1 – 0.3	0.05 – 0.6	0.2 – 0.6	
v_c main application		m/min	140 – 440	130 – 370	120 – 320	80 – 260	70 – 240	60 – 200	100 – 450	400 – 700	40 – 90	50 – 250	35 – 230	
v_c secondary application		m/min	–	–	–	–	–	–	–	–	60 – 220	–	–	



Type			HB7020-2	
21G 25 0763	Garant	DNMG 150608 wiper	eShop	10
21G 25 0765		DNMG 150612 wiper	eShop	10
●			P	
⚙				
Chip breaker			WSM	
a_p		mm	0.5 – 4	
f		mm/rev.	0.2 – 0.6	
v_c main application		m/min	140 – 420	



Grade			IC8150	IC8250	IC6015	IC6025	
26B 25 0810	Iscar	DNMG 150608	–	–	–	–	10
26B 25 0811		DNMG 150612	–	–	–	–	10
●			P	P	M	M	
⚙							
Chip breaker			M3P	M3P	M3M	M3M	
a_p		mm	0.5 – 5				
f		mm/rev.	0.15 – 0.6	0.15 – 0.6	0.17 – 0.5	0.17 – 0.5	
v_c main application		m/min	180 – 400	150 – 380	140 – 300	120 – 230	



Grade			PV720	CA510	CA115P	CA125P	CA6525	CA315	KW10	PR115S	SW05	
25E 25 0796	KYOCERA	DNMG 150604	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 0797		DNMG 150608	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 0798		DNMG 150612	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	1
●			P	P	P	P	M	O	N	S	Ti	
⚙												
Chip breaker			PG	PS	PMG	PMG	MS	KG	AH	MU	MU	
a_p		mm	1 – 4	1 – 4	0.5 – 5	0.5 – 5	0.7 – 4	0.5 – 3.6	0.8 – 3.5	0.5 – 2	0.5 – 2	
f		mm/rev.	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.1 – 0.35	0.17 – 0.5	0.1 – 0.35	0.09 – 0.3	0.1 – 0.35	
v_c main application		m/min	110 – 490	80 – 450	180 – 400	150 – 320	60 – 220	150 – 350	60 – 400	25 – 70	50 – 140	




Grade			HBT020	HBT130	
22D 25 0780	HOLEX	DNMG 110404	eShop	eShop	–
22D 25 0781	HOLEX	DNMG 110408	eShop	eShop	–
22D 25 0783	HOLEX	DNMG 150604	eShop	eShop	–
22D 25 0784	HOLEX	DNMG 150608	eShop	eShop	–
●			P	M	
⚙			▨	▨	
Chip breaker			PM	MM	
a_p		mm	0.8 – 5	0.5 – 5	
f		mm/rev.	0.1 – 0.45	0.12 – 0.45	
v_c main application		m/min	100 – 280	50 – 200	

DNMG Roughing









Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	
21G 25 0862	Garant	DNMG 150608	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 0864	Garant	DNMG 150612	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	M	M	M	K	
⚙			●	▨	◡	●	▨	◡	▨	
Chip breaker			SG	SG	SG	VG	VG	VG	GG	
a_p		mm	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	0.4 – 6.5	
f		mm/rev.	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.32 – 0.8	
v_c main application		m/min	120 – 415	110 – 360	100 – 290	70 – 240	60 – 220	50 – 170	100 – 450	




Grade			CA115P	CA125P	
25E 25 0892	KYOCERA	DNMG 150608	eShop	eShop	1
25E 25 0893	KYOCERA	DNMG 150612	eShop	eShop	1
25E 25 0894	KYOCERA	DNMG 150616	eShop	eShop	1
●			P	P	
⚙			●	▨	
Chip breaker			PH		
a_p		mm	1 – 5		
f		mm/rev.	0.25 – 0.6		
v_c main application		m/min	170 – 380	140 – 300	




Grade			HBT020	HBT130	
22D 25 0786	HOLEX	DNMG 150608	eShop	eShop	–
22D 25 0787	HOLEX	DNMG 150612	eShop	eShop	–
●			P	M	
⚙			▨	▨	
Chip breaker			PR	MR	
a_p		mm	1.8 – 6	2 – 6	
f		mm/rev.	0.2 – 0.6	0.15 – 0.55	
v_c main application		m/min	80 – 260	40 – 180	

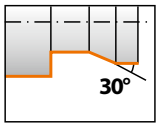
Standard

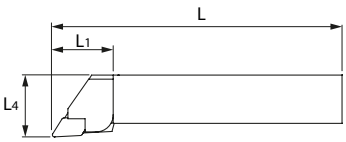
Garant

CKJN 93° clamping toolholders for indexable inserts KNUX



25 1008





Shank / insert size	21T 25 1008 / 21T 25 1009 Clamping toolholder		ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim		Clamp		Screw for clamp	Spring	Set of shim pins
								25 1008	25 1009	25 1008	25 1009			
mm	right-hand	left-hand			mm	mm	mm							
20/16	eShop	eShop	CKJNR/L 2020K16	KNUX 1604.. R/L	30	32	125	259031 4	259031 6	259038 16	259038 17	259021 3	259046 3	259044 3
25/16	eShop	eShop	CKJNR/L 2525M16	KNUX 1604.. R/L	32	32	150	259031 4	259031 6	259038 16	259038 17	259021 3	259046 3	259044 3
32/16	eShop	eShop	CKJNR/L 3232P16	KNUX 1604.. R/L	40	32	170	259031 4	259031 6	259038 16	259038 17	259021 3	259046 3	259044 3

3×D Standard

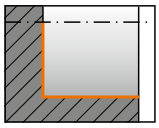
Garant

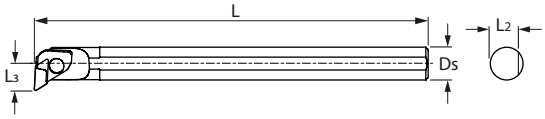
CKUN 93° boring bars for indexable inserts KNUX

Note:
25 1016 – With KNUX 1604.. Use L insert
25 1017 – With KNUX 1604.. Use R insert



25 1016





Shank ∅ / insert size	21T 25 1016 / 21T 25 1017 Boring bar, steel		ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim		Clamp		Screw for clamp	Spring	Set of shim pins	Pin
									25 1016	25 1017	25 1016	25 1017				
mm	right-hand	left-hand			mm	mm	mm	mm								
25/16	eShop	eShop	A25T CKUNR/L16	KNUX 1604.. R/L	36	20.5	23	300	–	–	259038 17	259038 16	259021 3	–	259044 3	259049 4
32/16	eShop	eShop	A32U CKUNR/L16	KNUX 1604.. R/L	40	22	31	350	259031 6	259031 4	259038 17	259038 16	259021 3	259046 3	259044 3	259049 4

Garant

Indexable inserts KNUX

KNUX Medium machining





Grade		HB7020-2	HB7130-2	
21G 25 1030	KNUX 160405R	eShop	eShop	10
21G 25 1032	KNUX 160405L	eShop	eShop	10
21G 25 1036	KNUX 160410R	eShop	eShop	10
21G 25 1038	KNUX 160410L	eShop	eShop	10
●		P	M	
⚙		⚙	⚙	
Chip breaker		SM	VM	
Chip diverter	mm	2.2		
a_p	mm	0.3 – 4	0.5 – 5	
f	mm/rev.	0.2 – 0.5		
v_c main application	m/min	130 – 370	70 – 240	

25

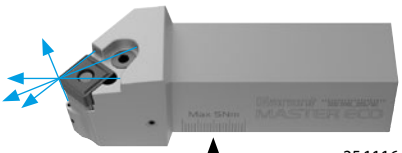
Garant GARANT Master Eco PSSN 45° lever lock toolholder for indexable inserts SN..

Highly efficient cooling directly on the cutter and additional flank face cooling.

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master eco toolholders No. 319006 – 311936 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.

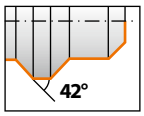
DIN ISO 5610 Standard

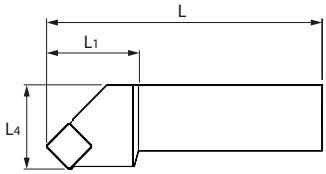
With flank face cooling



25 1116

Positioning within the scale ensures precise coolant transfer.

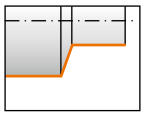


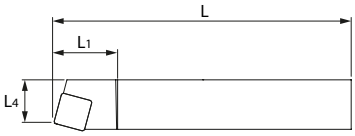


Shank / insert size	21U 25 1116	21U 25 1117	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Spring
	GARANT Master Eco lever lock toolholder short										
mm	right-hand	left-hand			mm	mm	mm				
16/12	eShop	eShop	PSSNR/L 1620X12	SN.. 1204..	25	35	85	259031 46	259015 15	259018 15	259046 4
20/12	eShop	eShop	PSSNR/L 2020X12	SN.. 1204..	25	35	95	259031 46	259015 15	259018 15	259046 4
25/12	eShop	eShop	PSSNR/L 2525X12	SN.. 1204..	32	35	105	259031 46	259015 15	259018 15	259046 4

Garant PSBN 75° lever lock toolholder for indexable inserts SN..

DIN ISO 5610 Standard





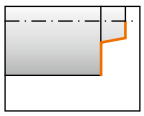


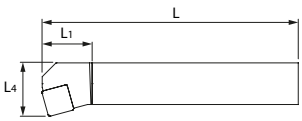
25 1106

Shank / insert size	21T 25 1106	21T 25 1107	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
20/12	eShop	eShop	PSBNR/L 2020K12	SN.. 1204..	17	28	125	259031 20	259015 2	259018 2	259044 2	259047 2
25/12	eShop	eShop	PSBNR/L 2525M12	SN.. 1204..	22	29	150	259031 20	259015 2	259018 2	259044 2	259047 2
25/15	eShop	eShop	PSBNR/L 2525M15	SN.. 1506..	22	32	150	259031 37	259015 12	259018 11	259044 6	259047 4
32/15	eShop	eShop	PSBNR/L 3232P15	SN.. 1506..	27	32	170	259031 37	259015 12	259018 11	259044 6	259047 4

Garant PSKN 75° lever lock toolholder for indexable inserts SN..

DIN ISO 5610 Standard







25 1110

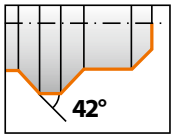
Shank / insert size	21T 25 1110	21T 25 1111	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
20/12	eShop	eShop	PSKNR/L 2020K12	SN.. 1204..	25	26	125	259031 20	259015 2	259018 2	259044 2	259047 2
25/12	eShop	eShop	PSKNR/L 2525M12	SN.. 1204..	32	26	150	259031 20	259015 2	259018 2	259044 2	259047 2
25/15	eShop	eShop	PSKNR/L 2525M15	SN.. 1506..	32	30	150	259031 37	259015 12	259018 11	259044 6	259047 4
32/15	eShop	eShop	PSKNR/L 3232P15	SN.. 1506..	40	30	170	259031 37	259015 12	259018 11	259044 6	259047 4

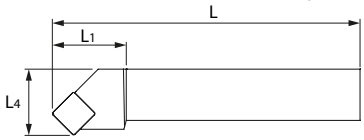
Garant PSSN 45° lever lock toolholder for indexable inserts SN..

DIN ISO 5610 | Standard



25 1112





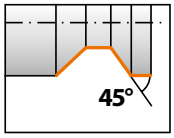
Shank / insert size	21T 25 1112	21T 25 1113	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
16/12	eShop	eShop	PSSNR/L 1616H12	SN.. 1204..	20	26	100	259031 20	259015 2	259018 2	259044 2	259047 2
20/12	eShop	eShop	PSSNR/L 2020K12	SN.. 1204..	25	29	125	259031 20	259015 2	259018 2	259044 2	259047 2
25/12	eShop	eShop	PSSNR/L 2525M12	SN.. 1204..	32	29	150	259031 20	259015 2	259018 2	259044 2	259047 2
25/15	eShop	eShop	PSSNR/L 2525M15	SN.. 1506..	32	35	150	259031 37	259015 12	259018 11	259044 6	259047 4
32/15	eShop	eShop	PSSNR/L 3232P15	SN.. 1506..	40	36	170	259031 37	259015 12	259018 11	259044 6	259047 4

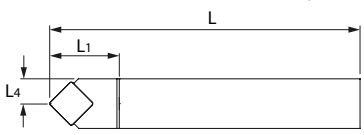
Standard

Garant PSDN 45° lever lock toolholder for indexable inserts SN..



25 1114





Shank / insert size	21T 25 1114	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder										
mm	neutral			mm	mm	mm					
16/12	eShop	PSDNN 1616H12	SN.. 1204..	8.3	31	100	259031 20	259015 2	259018 2	259044 2	259047 2
20/12	eShop	PSDNN 2020K12	SN.. 1204..	10.3	28	125	259031 20	259015 2	259018 2	259044 2	259047 2
25/12	eShop	PSDNN 2525M12	SN.. 1204..	12.8	29	150	259031 20	259015 2	259018 2	259044 2	259047 2

Indexable inserts SNMG

SNMG Finishing



Grade		HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 25 1142 Garant	SNMG 120404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 1144 Garant	SNMG 120408	eShop	eShop	eShop	eShop	eShop	eShop	–	10
●		P	P	P	M	M	M	S	
○		–	–	–	–	–	–	M	
⚙		●	●	●	●	●	●	●	
Chip breaker		SS	SS	SS	VS	VS	VS	TIS	
a_p	mm	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.2 – 2	
f	mm/rev.	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.2	
v_c main application	m/min	170 – 500	160 – 400	150 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application	m/min	–	–	–	–	–	–	70 – 250	

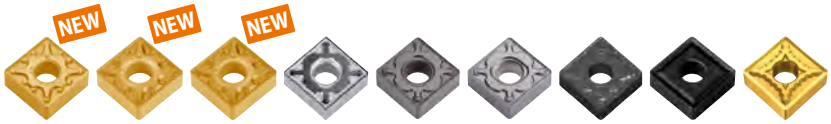


Grade			PV720	CA510	CA115P	CA125P	CA6525	PR115S	
25E 25 1162	KYOCERA	SNMG 120404	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 1164	KYOCERA	SNMG 120408	eShop	eShop	eShop	eShop	eShop	eShop	1
●			P	P	P	P	M	S	
⚙			◍	◍	◍	◪	◪	◪	
Chip breaker			PQ	PQ	PQ	PQ	MQ	MQ	
a_p		mm	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.5 – 2	0.2 – 1.5	
f		mm/rev.	0.05 – 0.3	0.13 – 0.4	0.13 – 0.4	0.13 – 0.4	0.05 – 0.25	0.04 – 0.2	
v_c main application		m/min	110 – 520	180 – 590	180 – 400	150 – 320	60 – 220	25 – 70	



Grade			HBT020	HBT130	
22D 25 1160	HOLEX	SNMG 120404	eShop	eShop	–
●			P	M	
⚙			◪	◪	
Chip breaker			PF	MF	
a_p		mm	0.5 – 2		
f		mm/rev.	0.1 – 0.4	0.15 – 0.45	
v_c main application		m/min	120 – 330	60 – 220	

SNM. Medium machining



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	HB7415-1	HB725-1	
21G 25 1222		SNMG 120404	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	10
21G 25 1224		SNMG 120408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 1225	Garant	SNMA 120408	–	–	–	–	–	–	eShop	–	–	–
21G 25 1226		SNMG 120412	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	10
21G 25 1228		SNMA 120412	–	–	–	–	–	–	eShop	–	–	–
●			P	P	P	M	M	M	K	S	UNI	
○			–	–	–	–	–	–	–	M	–	
⚙			◍	◪	◒	◍	◪	◒	◪	◍	◪	
Chip breaker (25 1222, 25 1224, 25 1226)			SM	SM	SM	VM	VM	VM	GM	TIM	UM1	
a_p		mm	0.3 – 4	0.3 – 4	0.3 – 4	0.5 – 4	0.5 – 4	0.5 – 4	0.4 – 6.5	0.5 – 4	0.2 – 6	
f		mm/rev.	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.3 – 0.7	0.1 – 0.3	0.05 – 0.6	
v_c main application		m/min	140 – 440	130 – 370	120 – 320	80 – 260	70 – 240	60 – 200	100 – 450	40 – 90	50 – 250	
v_c secondary application		m/min	–	–	–	–	–	–	–	60 – 220	–	



Grade			PV720	CA510	CA115P	CA125P	CA6525	CA315	
25E 25 1253	KYOCERA	SNMG 120404	–	–	–	–	eShop	–	1
25E 25 1254	KYOCERA	SNMG 120408	eShop	eShop	eShop	eShop	eShop	eShop	1
●			P	P	P	P	M	O	
⚙			◍	◍	◍	◪	◪	◪	
Chip breaker			PG	PS	PMG	PMG	MS (brass)	KG	
a_p		mm	1 – 4	1 – 4	0.5 – 5	0.5 – 5	0.8 – 4	0.5 – 4	
f		mm/rev.	0.15 – 0.6	0.15 – 0.6	0.15 – 0.5	0.15 – 0.5	0.1 – 0.35	0.15 – 0.5	
v_c main application		m/min	110 – 490	80 – 450	180 – 400	150 – 320	60 – 220	150 – 350	

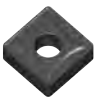



Grade			HBT020	HBT130	
22D 25 1266	HOLEX	SNMG 120404	eShop	eShop	–
22D 25 1267	HOLEX	SNMG 120408	eShop	eShop	–
●			P	M	
⚙			◪	◪	
Chip breaker			PM	MM	
a_p		mm	0.8 – 5	0.5 – 5	
f		mm/rev.	0.1 – 0.45	0.12 – 0.45	
v_c main application		m/min	100 – 280	50 – 200	

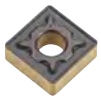
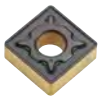
SNMG Roughing



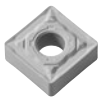




Grade			HB7020-2	HB7130-2	HB7210-1	
21G 25 1324	Garant	SNMG 120408	eShop	eShop	–	10
21G 25 1326	Garant	SNMG 120412	eShop	eShop	eShop	10
21G 25 1330	Garant	SNMG 150612	eShop	eShop	eShop	10
21G 25 1332	Garant	SNMG 150616	eShop	eShop	–	10
●			P	M	K	
⚙			◪	◪	◪	
Chip breaker			SG	VG	GG	
a_p		mm	1.5 – 6	1.5 – 7	0.4 – 6.5	
f		mm/rev.	0.25 – 0.6	0.2 – 0.55	0.32 – 0.8	
v_c main application		m/min	110 – 360	60 – 220	100 – 450	

Grade			CA115P	CA125P	
25E 25 1356	KYOCERA	SNMG 120408	eShop	eShop	1
25E 25 1363	KYOCERA	SNMG 150612	eShop	eShop	1
25E 25 1368	KYOCERA	SNMG 190612	–	eShop	1
●			P	P	
⚙			◪	◪	
Chip breaker			PH		
a_p		mm	1 – 11		
f		mm/rev.	0.3 – 1		
v_c main application		m/min	170 – 380	140 – 330	




Grade			HBT020	HBT130	
22D 25 1396	HOLEX	SNMG 120408	eShop	eShop	–
●			P	M	
⚙			◪	◪	
Chip breaker			PR	MR	
a_p		mm	1.8 – 6	2 – 6	
f		mm/rev.	0.2 – 0.6	0.15 – 0.55	
v_c main application		m/min	80 – 260	40 – 180	

SNMM Rough machining





Grade			HB7020-2	HB7130-2	
21G 25 1386	Garant	SNMM 120412	eShop	eShop	10
21G 25 1390	Garant	SNMM 150616	eShop	eShop	10
●			P	M	
⚙			◪	◪	
Chip breaker			SR	VR	
a_p		mm	2 – 10		
f		mm/rev.	0.4 – 1.2	0.3 – 0.9	
v_c main application		m/min	140 – 300	50 – 200	

HOLEX Radius turning inserts SNMX

Suitable for: eco lever lock toolholder PSSN. For example lever lock toolholders No. 251112 and 251113.

Note: The insert pocket must be modified when using indexable inserts with a radius ≥ 3 mm.



25 1398_1-4

Radius		mm	1	2	3	4	1-4
29W 25 1398	SNMX 120408	HUT25	eShop	eShop	eShop	eShop	eShop
●			P	P	P	P	P
○			M	M	M	M	M
⚙			◉	◉	◉	◉	◉
a_p		mm	1 – 4	2 – 4	3	4	1 – 4
f		mm/rev.	0.1 – 0.2				
v_c main application		m/min	50 – 120				
v_c secondary application		m/min	30 – 80				

Standard

Garant GARANT Master Eco MTJN 93° clamping toolholder for indexable inserts TN..

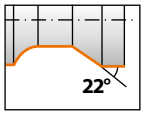
Highly efficient cooling directly on the cutter and additional flank face cooling.

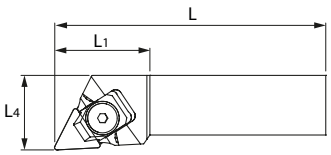
Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holders No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.



25 1404

Positioning within the scale ensures precise coolant transfer.

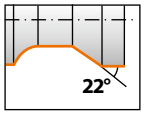


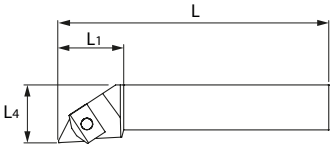


Shank / insert size	21U 25 1404	21U 25 1405	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Clamp	Screw for clamping claw	Stick
	GARANT Master Eco clamping toolholder short										
mm	right-hand	left-hand			mm	mm	mm				
20/16	eShop	eShop	MTJNR/L 2020X16	TN.. 1604..	25	35	95	259033 9	259038 20	259021 6	259049 8
25/16	eShop	eShop	MTJNR/L 2525X16	TN.. 1604..	32	35	105	259033 9	259038 20	259021 6	259049 8

Standard

Garant MTJN 93° clamping toolholder for indexable inserts TN..







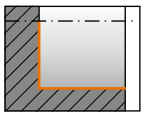
25 1406

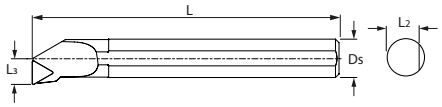
Shank / insert size	21T 25 1406	21T 25 1407	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of screws 10 pieces	Shim	Clamp	Stick
	Clamping toolholder										
mm	right-hand	left-hand			mm	mm	mm				
20/16	eShop	eShop	MTJNR/L 2020K16	TN.. 1604..	25	31	125	259023 2	259031 32	259038 14	259049 6
25/16	eShop	eShop	MTJNR/L 2525M16	TN.. 1604..	32	36	150	259023 2	259031 32	259038 14	259049 6
25/22	eShop	eShop	MTJNR/L 2525M22	TN.. 2204..	32	36	150	259023 2	259031 33	259038 13	259049 2
32/22	eShop	eShop	MTJNR/L 3232P22	TN.. 2204..	40	36	170	259023 2	259031 33	259038 13	259049 2

3×D | DIN 8024

Garant

A... PTFN 90° boring bars for indexable inserts TN..







25 1416

Shank ∅ / insert size	21T 25 1416	21T 25 1417	ISO code tool-holder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Boring bar, steel												
mm	right-hand	left-hand			mm	mm	mm	mm					
25/16	eShop	eShop	A25R PTFNR/L 16	TN.. 1604..	32	17	24	200	259031 34	259015 9	259018 6	259044 5	259047 3
32/16	eShop	eShop	A32S PTFNR/L 16	TN.. 1604..	40	22	31	250	259031 34	259015 9	259018 6	259044 5	259047 3
32/22	eShop	eShop	A32S PTFNR/L 22	TN.. 2204..	40	22	31	250	259031 10	259015 2	259018 2	259044 2	259047 2
40/22	eShop	eShop	A40T PTFNR/L 22	TN.. 2204..	50	27	38.5	300	259031 10	259015 2	259018 2	259044 2	259047 2

Indexable inserts TNM.

TNMG Finishing



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 25 1432	Garant	TNMG 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 1434	Garant	TNMG 160408	eShop	eShop	eShop	eShop	eShop	eShop	–	10
●			P	P	P	M	M	M	S	
○			–	–	–	–	–	–	M	
⚙			◉	◉	◉	◉	◉	◉	◉	
Chip breaker			SS	SS	SS	VS	VS	VS	TIS	
a_p		mm	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.2 – 2	
f		mm/rev.	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.2	
v_c main application		m/min	170 – 500	160 – 400	150 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application		m/min	–	–	–	–	–	–	70 – 250	



Type			HB7020-2	
21G 25 1433	Garant	TNMG 160404 wiper	eShop	10
21G 25 1435	Garant	TNMG 160408 wiper	eShop	10
●			P	
⚙			◉	
Chip breaker			WSS	
a_p		mm	0.3 – 2.5	
f		mm/rev.	0.1 – 0.5	
v_c main application		m/min	170 – 480	



Grade			CCX	PV720	CA510	CA115P	CA125P	CA6525	PR115S	
25E 25 1472	KYOCERA	TNMG 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 1474	KYOCERA	TNMG 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
●			P	P	P	P	P	M	S	
⚙			◉	◉	◉	◉	◉	◉	◉	
Chip breaker			PP	PQ	PQ	PQ	PQ	MQ	MQ	
a_p		mm	0.2 – 1.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.3 – 2	0.2 – 1	
f		mm/rev.	0.05 – 0.35	0.05 – 0.3	0.13 – 0.4	0.13 – 0.4	0.13 – 0.4	0.05 – 0.25	0.04 – 0.2	
v_c main application		m/min	210 – 450	110 – 520	180 – 590	180 – 400	150 – 320	60 – 220	25 – 70	




Grade			HBT020	HBT130	
22D 25 1414	HOLEX	TNMG 160404	eShop	eShop	–
●			P	M	
⚙			▣	▣	
Chip breaker			PF	MF	
a_p		mm	0.5 – 2		
f		mm/rev.	0.1 – 0.4	0.15 – 0.45	
v_c main application		m/min	120 – 330	60 – 220	

TNM. Medium machining



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	HU7305-1	HB7415-1	HB725-1	
21G 25 1542		TNMG 160404	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	eShop	10
21G 25 1544	Garant	TNMG 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 1546		TNMA 160408	–	–	–	–	–	–	eShop	–	–	–	–
●			P	P	P	M	M	M	K	N	S	UNI	
○			–	–	–	–	–	–	–	–	M	–	
⚙			◉	▣	◔	◉	▣	◔	▣	▣	◉	▣	
Chip breaker (25 1542, 25 1544)			SM	SM	SM	VM	VM	VM	GM	AM1	TIM	UM1	
a_p		mm	0.3 – 4	0.3 – 4	0.3 – 4	0.5 – 5	0.5 – 5	0.5 – 5	0.4 – 6.5	0.2 – 5	0.5 – 4	0.2 – 6	
f		mm/rev.	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.3 – 0.7	0.05 – 0.6	0.1 – 0.3	0.05 – 0.6	
v_c main application		m/min	140 – 440	130 – 370	130 – 320	80 – 260	70 – 240	60 – 200	100 – 450	400 – 700	40 – 90	50 – 250	
v_c secondary application		m/min	–	–	–	–	–	–	–	–	60 – 220	–	



Type			HB7020-2	
21G 25 1545	Garant	TNMG 160408 wiper	eShop	10
●			P	
⚙			▣	
Chip breaker			WSM	
a_p		mm	0.5 – 4	
f		mm/rev.	0.2 – 0.6	
v_c main application		m/min	140 – 420	



Grade			PV720	CA510	CA115P	CA125P	CA6525	CA315	KW10	PDL010	PR115S	SW05	
25E 25 1582	KYOCERA	TNMG 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 1583		TNMG 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 1586		TNMG 220404	–	eShop	eShop	eShop	–	–	–	–	–	–	1
25E 25 1587		TNMG 220408	–	eShop	eShop	eShop	–	–	–	–	–	–	1
●			P	P	P	P	M	O	N	N	S	Ti	
⚙			◉	◉	◉	▣	▣	▣	▣	▣	▣	◉	
Chip breaker			PG	PS	PMG	PMG	MS	KG	AH	AH	MU	MU	
a_p		mm	1 – 4.5	1 – 4.5	0.5 – 5	0.5 – 5	0.8 – 4	0.5 – 3.6	1 – 4	1 – 3.5	0.5 – 2	0.5 – 2	
f		mm/rev.	0.15 – 0.6	0.15 – 0.6	0.15 – 0.5	0.15 – 0.5	0.1 – 0.35	0.15 – 0.5	0.1 – 0.35	0.1 – 0.4	0.09 – 0.3	0.1 – 0.35	
v_c main application		m/min	110 – 490	80 – 450	180 – 400	150 – 320	60 – 220	150 – 350	60 – 400	200 – 600	25 – 70	50 – 140	



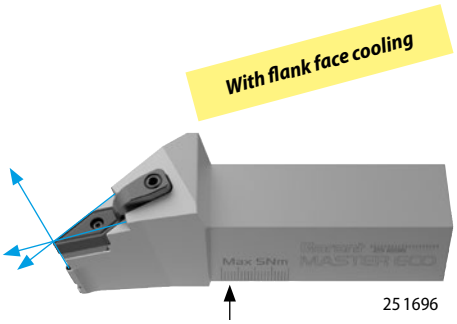

Grade			HBT020	HBT130	
22D 25 1564	HOLEX	TNMG 160404	eShop	eShop	–
22D 25 1565		TNMG 160408	eShop	eShop	–
●			P	M	
⚙			▣	▣	
Chip breaker			PM	MM	
a_p		mm	0.8 – 5	0.5 – 5	
f		mm/rev.	0.1 – 0.45	0.12 – 0.45	
v_c main application		m/min	100 – 280	50 – 200	

Standard

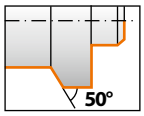
Garant GARANT Master Eco MVJN 93° clamping toolholder for indexable inserts VN..

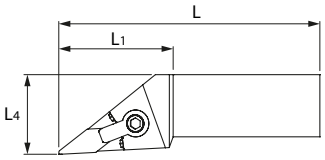
Highly efficient cooling directly on the cutter and additional flank face cooling.

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holders No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.



Positioning within the scale ensures precise coolant transfer.

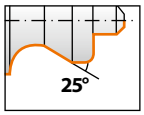


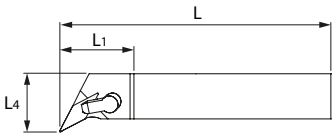


Shank / insert size	21U 25 1696	21U 25 1697	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp	Screw for clamping claw
	GARANT Master Eco clamping toolholder short										
mm	right-hand	left-hand			mm	mm	mm				
20/16	eShop	eShop	MVJNR/L 2020H16	VN.. 1604..	25	40	100	259033 10	259027 7	259038 19	259021 7
25/16	eShop	eShop	MVJNR/L 2525X16	VN.. 1604..	32	40	110	259033 10	259027 7	259038 19	259021 7

Standard

Garant MVPN 117.5° clamping toolholder for indexable inserts VN..



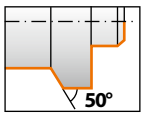


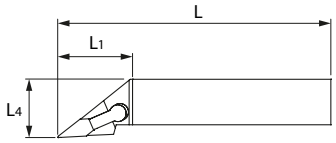


Shank / insert size	21T 25 1708	21T 25 1709	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp	Screw for clamping claw
	Clamping toolholder										
mm	right-hand	left-hand			mm	mm	mm				
20/16	eShop	eShop	MVPNR/L 2020K16	VN.. 1604..	25	41	125	259031 39	259025 3	259038 2	259021 1
25/16	eShop	eShop	MVPNR/L 2525M16	VN.. 1604..	32	41	150	259031 39	259025 3	259038 2	259021 1
32/16	eShop	eShop	MVPNR/L 3232P16	VN.. 1604..	40	40	170	259031 39	259025 3	259038 2	259021 1

Standard

Garant MVJN 93° clamping toolholder for indexable inserts VN..



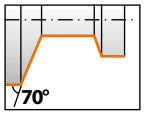


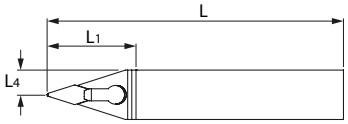


Shank / insert size	21T 25 1706	21T 25 1707	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp	Screw for clamping claw
	Clamping toolholder										
mm	right-hand	left-hand			mm	mm	mm				
20/16	eShop	eShop	MVJNR/L 2020K16	VN.. 1604..	25	32	125	259031 39	259025 3	259038 2	259021 1
25/16	eShop	eShop	MVJNR/L 2525M16	VN.. 1604..	32	32	150	259031 39	259025 3	259038 2	259021 1
32/16	eShop	eShop	MVJNR/L 3225P16	VN.. 1604..	32	32	170	259031 39	259025 3	259038 2	259021 1

Standard

Garant MVVN clamping toolholder for indexable inserts VN..





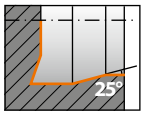


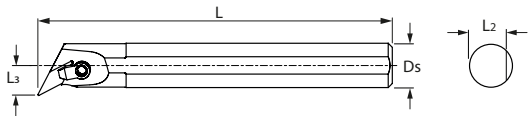
25 1712

Shank / insert size	21T 25 1712	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp	Screw for clamping claw
	Clamping toolholder									
mm	neutral			mm	mm	mm				
20/16	eShop	MVVNN 2020K16	VN.. 1604..	10	45	125	259031 39	259025 3	259038 2	259021 1
25/16	eShop	MVVNN 2525M16	VN.. 1604..	12.5	45	150	259031 39	259025 3	259038 2	259021 1
32/16	eShop	MVVNN 3225P16	VN.. 1604..	12.5	45	170	259031 39	259025 3	259038 2	259021 1

3×D DIN 8024

Garant A... MVPN 117.5° boring bars for indexable inserts VN..





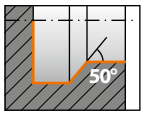


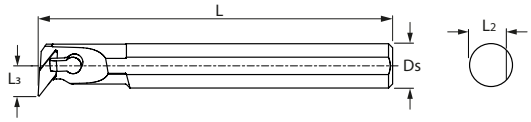
25 1720

Shank ∅ / insert size	21T 25 1720	21T 25 1721	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim	Shim screw	Clamp	Screw for clamp
	Boring bar, steel											
mm	right-hand	left-hand			mm	mm	mm	mm				
25/16	eShop	eShop	A25R MVPNR/L 16	VN.. 1604..	32	17	24	200	259031 39	259025 3	259038 4	259021 4
32/16	eShop	eShop	A32S MVPNR/L 16	VN.. 1604..	40	22	31	250	259031 39	259025 3	259038 2	259021 4
40/16	eShop	eShop	A40T MVPNR/L 16	VN.. 1604..	50	27	38.5	300	259031 39	259025 3	259038 2	259021 1

3×D DIN 8024

Garant A... MVUN 93° boring bars for indexable inserts VN..





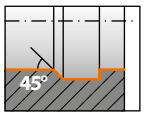


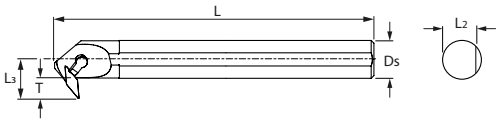
25 1724

Shank ∅ / insert size	21T 25 1724	21T 25 1725	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim	Shim screw	Clamp	Screw for clamp
	Boring bar, steel											
mm	right-hand	left-hand			mm	mm	mm	mm				
25/16	eShop	eShop	A25R MVUNR/L 16	VN.. 1604..	32	17	24	200	259031 39	259025 3	259038 4	259021 4
32/16	eShop	eShop	A32S MVUNR/L 16	VN.. 1604..	40	22	31	250	259031 39	259025 3	259038 4	259021 4
40/16	eShop	eShop	A40T MVUNR/L 16	VN.. 1604..	50	27	38.5	300	259031 39	259025 3	259038 4	259021 1

3×D Standard

Garant A... MVZN 95° boring bars for indexable inserts VN..







25 1728

Shank ∅ / insert size	21T 25 1728	21T 25 1729	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L	Shim	Shim screw	Clamp	Screw for clamp
	Boring bar, steel												
mm	right-hand	left-hand			mm	mm	mm	mm	mm				
32/16	eShop	eShop	A32S MVZNR/L 16	VN.. 1604..	48	30	31	14	250	259031 39	259025 3	259038 2	259021 4
40/16	eShop	eShop	A40T MVZNR/L 16	VN.. 1604..	57	35	38.5	15	300	259031 39	259025 3	259038 2	259021 4

VNMG indexable inserts

VNMG Finishing

Note:
25 1790/1791 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade		HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 25 1732	Garant VNMG 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 1734	Garant VNMG 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●		P	P	P	M	M	M	S	
○		–	–	–	–	–	–	M	
⚙		◉	◪	◒	◉	◪	◒	◉	
Chip breaker		SS	SS	SS	VS	VS	VS	TIS	
a_p	mm	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.2 – 2	
f	mm/rev.	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.05 – 0.4	0.05 – 0.4	0.05 – 0.4	0.05 – 0.2	
v_c main application	m/min	170 – 500	160 – 400	150 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application	m/min	–	–	–	–	–	–	70 – 250	



Grade		IC8150	IC8250	IC6015	IC6025	
26B 25 1790	Iscar VNMG 160404	–	–	–	–	10
26B 25 1791	Iscar VNMG 160408	–	–	–	–	10
●		P	P	M	M	
⚙		◉	◪	◉	◪	
Chip breaker		F3P	F3P	F3M	F3M	
a_p	mm	0.4 – 2.5	0.4 – 2.5	0.1 – 1.5	0.1 – 1.5	
f	mm/rev.	0.08 – 0.24	0.08 – 0.24	0.05 – 0.3	0.05 – 0.3	
v_c main application	m/min	180 – 400	150 – 380	140 – 300	120 – 230	



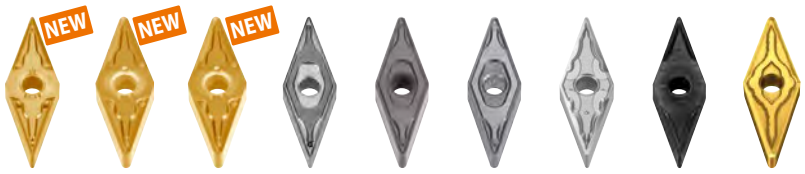
Grade		CCX	PV720	CA510	CA115P	CA125P	CA6525	PR115S	SW05	
25E 25 1752	Kyocera VNMG 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 1754	Kyocera VNMG 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
●		P	P	P	P	P	M	S	Ti	
⚙		◉	◉	◉	◉	◪	◪	◪	◉	
Chip breaker		PP	PQ	PQ	PQ	PQ	MQ	MQ	MQ	
a_p	mm	0.2 – 1.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.5 – 1.5	0.2 – 1	0.2 – 1	
f	mm/rev.	0.05 – 0.3	0.05 – 0.3	0.13 – 0.4	0.13 – 0.4	0.13 – 0.4	0.05 – 0.25	0.04 – 0.2	0.05 – 0.3	
v_c main application	m/min	210 – 450	110 – 520	180 – 590	180 – 400	150 – 320	60 – 220	25 – 70	50 – 140	



Grade		HBT020	HBT130	
22D 25 1772	Holex VNMG 160404	eShop	eShop	–
●		P	M	
⚙		◪	◪	
Chip breaker		PF	M	
a_p	mm	0.5 – 2		
f	mm/rev.	0.1 – 0.4	0.15 – 0.45	
v_c main application	m/min	120 – 330	60 – 220	

VNMG Medium machining

Note:
25 1850/1851 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HU7305-1	HB7415-1	HB725-1	
21G	25 1802	VNMG 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G	25 1804	VNMG 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	M	M	M	N	S	UNI	
○			–	–	–	–	–	–	–	M	–	
⚙			●	■	◕	●	■	◕	■	●	■	
Chip breaker			SM	SM	SM	VM	VM	VM	AM1	TIM	UM1	
a_p		mm	0.3 – 4	0.3 – 4	0.3 – 4	0.5 – 4	0.5 – 4	0.5 – 4	0.2 – 5	0.5 – 4	0.2 – 6	
f		mm/rev.	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.1 – 0.5	0.1 – 0.5	0.1 – 0.5	0.05 – 0.6	0.1 – 0.3	0.05 – 0.6	
v_c main application		m/min	140 – 440	130 – 370	120 – 320	80 – 260	70 – 240	60 – 200	400 – 700	40 – 90	50 – 250	
v_c secondary application		m/min	–	–	–	–	–	–	–	60 – 220	–	



Grade			IC6015	IC6025	
26B	25 1850	VNMG 160404	–	–	10
26B	25 1851	VNMG 160408	–	–	10
●			M	M	
⚙			●	■	
Chip breaker			M3M		
a_p		mm	0.4 – 2.5		
f		mm/rev.	0.07 – 0.3		
v_c main application		m/min	140 – 300	120 – 230	



Grade			CA6525	CA315	PR115S	SW05	
25E	25 1824	VNMG 160408	eShop	eShop	eShop	eShop	1
25E	25 1826	VNMG 160412	eShop	–	–	–	1
●			M	O	S	Ti	
⚙			■	■	■	●	
Chip breaker			MS (brass)	KG	MU	MU	
a_p		mm	0.75 – 2.5	0.5 – 3.6	0.5 – 2	0.5 – 2	
f		mm/rev.	0.1 – 0.35	0.15 – 0.45	0.1 – 0.3	0.1 – 0.35	
v_c main application		m/min	60 – 220	150 – 350	25 – 70	50 – 140	

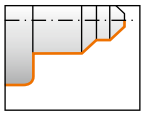


Grade			HBT020	HBT130	
22D	25 1828	VNMG 160404	eShop	eShop	–
22D	25 1829	VNMG 160408	eShop	eShop	–
●			P	M	
⚙			■	■	
Chip breaker			PM	MM	
a_p		mm	0.8 – 4	0.5 – 4	
f		mm/rev.	0.1 – 0.45	0.12 – 0.45	
v_c main application		m/min	100 – 280	50 – 200	

GARANT Master Eco .WLN 95° clamp toolholder for indexable inserts WN..

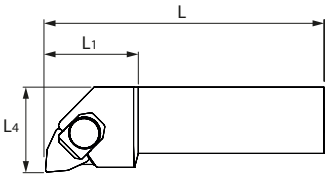
Highly efficient cooling directly on the cutter and additional flank face cooling.

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco toolholders No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.



Clamping with clamp

Standard



With flank face cooling



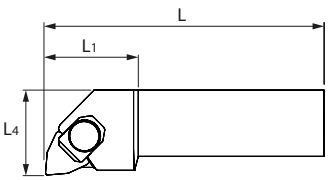
25 1914

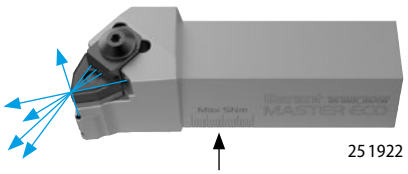
Positioning within the scale ensures precise coolant transfer.

Shank / insert size	21U 25 1914	21U 25 1915	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp, screw, spring	
	GARANT Master Eco clamp toolholder									25 1914	25 1915
mm	right-hand	left-hand			mm	mm	mm				
20/08	eShop	eShop	DWLNR/L 2020K08	WN.. 0804..	25	35	125	259033 6	259027 9	259036 25	259036 26
25/08	eShop	eShop	DWLNR/L 2525M08	WN.. 0804..	32	35	150	259033 6	259027 9	259036 25	259036 26

Clamping with pin and clamp

Standard





25 1922

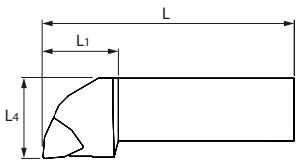
Positioning within the scale ensures precise coolant transfer.

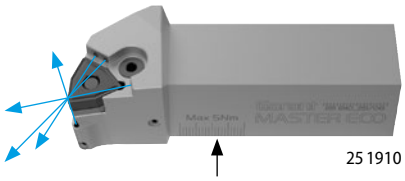
Shank / insert size	21U 25 1922	21U 25 1923	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Clamp	Screw for clamping claw	Stick
	GARANT Master Eco clamp toolholder short										
mm	right-hand	left-hand			mm	mm	mm				
20/08	eShop	eShop	MWLNR/L 2020X08	WN.. 0804..	25	35	95	259033 6	259038 18	259021 6	259049 7
25/08	eShop	eShop	MWLNR/L 2525X08	WN.. 0804..	32	35	105	259033 6	259038 18	259021 6	259049 7

Clamping with toggle lever

DIN ISO 5610

Standard





25 1910

Positioning within the scale ensures precise coolant transfer.

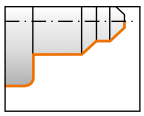
Shank / insert size	21U 25 1910	21U 25 1911	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Spring
	GARANT Master Eco lever lock toolholder short										
mm	right-hand	left-hand			mm	mm	mm				
16/06	eShop	eShop	PWLNR/L 1616F06	WN.. 0604..	20	30	80	259031 47	259015 16	259018 16	259046 5
20/06	eShop	eShop	PWLNR/L 2020X06	WN.. 0604..	25	30	90	259031 47	259015 16	259018 16	259046 5
25/06	eShop	eShop	PWLNR/L 2525H06	WN.. 0604..	32	30	100	259031 47	259015 16	259018 16	259046 5
16/08	eShop	eShop	PWLNR/L 1620F08	WN.. 0804..	25	30	80	259031 48	259015 15	259018 15	259046 4
20/08	eShop	eShop	PWLNR/L 2020X08	WN.. 0804..	25	30	90	259031 48	259015 15	259018 15	259046 4
25/08	eShop	eShop	PWLNR/L 2525H08	WN.. 0804..	32	30	100	259031 48	259015 15	259018 15	259046 4

Standard

HOLEX Pro Eco PWLN 95° lever lock toolholder for indexable inserts WN..

Targeted cooling on the cutting edge.

Note: Coolant transfer under the head via hose connection (G1/8 inch – included in delivery).







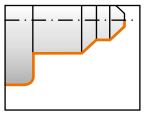
25 1924

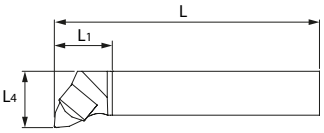
Shank / insert size	22E 25 1924	22E 25 1925	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Pin
	HOLEX Pro Eco lever lock toolholder										
mm	right-hand	left-hand			mm	mm	mm				
20/08	eShop	eShop	PWLNR/L 2020K08	WN.. 0804..	25	32	125	259034 3	259016 1	259019 1	259045 1
25/08	eShop	eShop	PWLNR/L 2525M08	WN.. 0804..	32	33	150	259034 3	259016 1	259019 1	259045 1

Standard

Garant

MWLN 95° clamp toolholder for indexable inserts WN..







25 1912

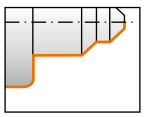
Shank / insert size	21T 25 1912	21T 25 1913	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of screws 10 pieces	Shim	Clamp	Stick
	Clamp toolholder										
mm	right-hand	left-hand			mm	mm	mm				
20/08	eShop	eShop	MWLNR/L 2020K08	WN.. 0804..	25	28	125	259023 2	259031 41	259038 12	259049 2
25/08	eShop	eShop	MWLNR/L 2525M08	WN.. 0804..	32	31	150	259023 2	259031 41	259038 12	259049 2
32/08	eShop	eShop	MWLNR/L 3232P08	WN.. 0804..	40	32	170	259023 2	259031 41	259038 12	259049 2

Garant

PWLN 95° lever lock toolholder for indexable inserts WN..

DIN ISO 5610

Standard







25 1916

Shank / insert size	21T 25 1916	21T 25 1917	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Lever lock toolholder											
mm	right-hand	left-hand			mm	mm	mm					
16/06	eShop	eShop	PWLNR/L 1616H06	WN.. 0604..	20	16	100	259031 25	259015 9	259018 6	259044 5	259047 3
20/06	eShop	eShop	PWLNR/L 2020K06	WN.. 0604..	25	16	125	259031 25	259015 9	259018 6	259044 5	259047 3
25/06	eShop	eShop	PWLNR/L 2525M06	WN.. 0604..	32	16	150	259031 25	259015 9	259018 6	259044 5	259047 3
16/08	eShop	eShop	PWLNR/L 1616H08	WN.. 0804..	25	20	100	259031 40	259015 2	259018 2	259044 2	259047 2
20/08	eShop	eShop	PWLNR/L 2020K08	WN.. 0804..	25	20	125	259031 40	259015 2	259018 2	259044 2	259047 2
25/08	eShop	eShop	PWLNR/L 2525M08	WN.. 0804..	32	21	150	259031 40	259015 2	259018 2	259044 2	259047 2
32/08	eShop	eShop	PWLNR/L 3232P08	WN.. 0804..	40	23	170	259031 40	259015 2	259018 2	259044 2	259047 2

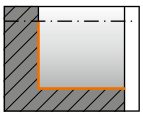
3×D | DIN 8024

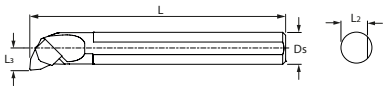
Garant

A... MWLN 95° boring bars for indexable inserts WN..



25 1936





Shank ∅ / insert size	21T 25 1936	21T 25 1937	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of screws 10 pieces	Shim	Clamp	Stick
	Boring bar, steel											
mm	right-hand	left-hand			mm	mm	mm	mm				
25/08	eShop	eShop	A25R MWLNR/L08	WN.. 0804..	32	17	24	200	259023 3	259031 41	259038 12	259049 3
32/08	eShop	eShop	A32S MWLNR/L08	WN.. 0804..	40	22	31	250	259023 3	259031 41	259038 12	259049 5
40/08	eShop	eShop	A40T MWLNR/L08	WN.. 0804..	50	27	38.5	300	259023 3	259031 41	259038 12	259049 5

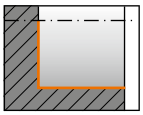
3×D | DIN 8024

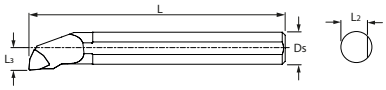
Garant

A... PWLN 95° boring bars for indexable inserts WN..



25 1942





Shank ∅ / insert size	21T 25 1942	21T 25 1943	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Shim	Lever	Lever screw	Set of shim pins	Shim punches pack
	Boring bar, steel												
mm	right-hand	left-hand			mm	mm	mm	mm					
16/06	eShop	eShop	A16M PWLNR/L06	WN.. 0604..	21	11	15.25	150	–	259015 14	259018 10	–	–
20/06	eShop	eShop	A20Q PWLNR/L06	WN.. 0604..	25	13	19	180	–	259015 14	259018 10	–	–
25/08	eShop	eShop	A25R PWLNR/L08	WN.. 0804..	32	17	24	200	259031 40	259015 2	259018 8	259044 2	259047 2
32/08	eShop	eShop	A32S PWLNR/L08	WN.. 0804..	40	22	31	250	259031 40	259015 2	259018 2	259044 2	259047 2

Indexable inserts WN.G

WNMG Finishing

Note:
25 1990/1991 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 25 1952	Garant	WNMG 060404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 1954	Garant	WNMG 060408	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 25 1962	Garant	WNMG 080404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 1964	Garant	WNMG 080408	eShop	eShop	eShop	eShop	eShop	eShop	–	10
●			P	P	P	M	M	M	S	
○			–	–	–	–	–	–	M	
⚙			●	●	●	●	●	●	●	
Chip breaker			SS	SS	SS	VS	VS	VS	TIS	
a_p		mm	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.2 – 2	
f		mm/rev.	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.2	
v_c main application		m/min	170 – 500	160 – 400	150 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application		m/min	–	–	–	–	–	–	70 – 250	



Type			HB7020-2	
21G 25 1953	Garant	WNMG 060404 wiper	eShop	10
21G 25 1955	Garant	WNMG 060408 wiper	eShop	10
21G 25 1963	Garant	WNMG 080404 wiper	eShop	10
21G 25 1965	Garant	WNMG 080408 wiper	eShop	10
●			P	
⚙			◪	
Chip breaker			WSS	
a_p		mm	0.3 – 2.5	
f		mm/rev.	0.1 – 0.5	
v_c main application		m/min	170 – 480	






Grade			IC8150	IC8250	IC6015	IC6025	
26B 25 1990	iscar	WNMG 080404	–	–	–	–	10
26B 25 1991	iscar	WNMG 080408	–	–	–	–	10
●			P	P	M	M	
⚙			◉	◪	◉	◪	
Chip breaker			F3P	F3P	F3M	F3M	
a_p		mm	0.4 – 2.5	0.4 – 2.5	0.1 – 1.5	0.1 – 1.5	
f		mm/rev.	0.08 – 0.25	0.08 – 0.25	0.1 – 0.4	0.1 – 0.4	
v_c main application		m/min	180 – 400	150 – 380	140 – 300	120 – 230	











Grade			CCX	PV720	CA510	CA115P	CA125P	CA6525	PR115S	SW05	
25E 25 2012	KYOCERA	WNMG 080404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 2014	KYOCERA	WNMG 080408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
●			P	P	P	P	P	M	S	Ti	
⚙			◉	◉	◉	◉	◪	◪	◪	◉	
Chip breaker			PP	HQ	HQ	HQ	HQ	MQ	MQ	MQ	
a_p		mm	0.2 – 1.5	0.5 – 2	0.5 – 2	0.5 – 2	0.5 – 2	0.3 – 2	0.2 – 1	0.2 – 1	
f		mm/rev.	0.05 – 0.35	0.07 – 0.3	0.07 – 0.3	0.07 – 0.3	0.07 – 0.3	0.05 – 0.25	0.04 – 0.2	0.05 – 0.3	
v_c main application		m/min	210 – 450	110 – 490	80 – 450	180 – 400	150 – 320	60 – 220	25 – 70	50 – 140	





Grade			CA510	CA115P	CA125P	
25E 25 2013	KYOCERA	WNMG 080404 wiper	eShop	eShop	eShop	1
25E 25 2015	KYOCERA	WNMG 080408 wiper	eShop	eShop	eShop	1
●			P	P	P	
⚙			◉	◉	◪	
Chip breaker			WP			
a_p		mm	0.3 – 1.2			
f		mm/rev.	0.06 – 0.42			
v_c main application		m/min	80 – 450	180 – 400	150 – 320	




Grade			HBT020	HBT130	
22D 25 1938	HOLEX	WNMG 060404	eShop	eShop	–
22D 25 1939	HOLEX	WNMG 080404	eShop	eShop	–
●			P	M	
⚙			◪	◪	
Chip breaker			PF	M	
a_p		mm	0.5 – 2		
f		mm/rev.	0.1 – 0.4	0.15 – 0.45	
v_c main application		m/min	120 – 330	60 – 220	

WN.. Medium machining

Note:
25 2120/2121 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	HU7305-1	HB7415-1	HB725-1	HB730-1	
21G 25 2062	Garant	WNMG 060404	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	10
21G 25 2064	Garant	WNMG 060408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 25 2068	Garant	WNMG 080404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	10
21G 25 2070	Garant	WNMG 080408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 25 2076	Garant	WNMA 080408	–	–	–	–	–	–	eShop	–	–	–	–	–
21G 25 2072	Garant	WNMG 080412	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–	10
21G 25 2074	Garant	WNMA 080412	–	–	–	–	–	–	eShop	–	–	–	–	–
●			P	P	P	M	M	M	K	N	S	UNI	UNI	
○			–	–	–	–	–	–	–	–	M	–	–	
⚙														
Chip breaker (25 2062, 25 2064, 25 2068, 25 2070, 25 2072)			SM	SM	SM	VM	VM	VM	GM	AM1	TIM	UN1	XUM	
a_p		mm	0.3 – 4	0.3 – 4	0.3 – 4	0.5 – 4	0.5 – 4	0.5 – 4	0.4 – 6.5	0.2 – 5	0.5 – 4	0.2 – 6	0.5 – 4.5	
f		mm/rev.	0.2 – 0.5	0.2 – 0.5	0.2 – 0.5	0.1 – 0.5	0.1 – 0.5	0.1 – 0.5	0.3 – 0.7	0.05 – 0.6	0.1 – 0.3	0.05 – 0.6	0.2 – 0.6	
v_c main application		m/min	140 – 440	130 – 370	120 – 320	80 – 260	70 – 240	60 – 200	100 – 450	400 – 700	40 – 90	50 – 250	35 – 230	
v_c secondary application		m/min	–	–	–	–	–	–	–	–	60 – 220	–	–	



Type			HB7020-2	
21G 25 2065	Garant	WNMG 060408 wiper	eShop	10
21G 25 2071	Garant	WNMG 080408 wiper	eShop	10
21G 25 2073	Garant	WNMG 080412 wiper	eShop	10
●			P	
⚙				
Chip breaker			WSM	
a_p		mm	0.5 – 4	
f		mm/rev.	0.2 – 0.6	
v_c main application		m/min	140 – 420	



Grade			IC8150	IC8250	IC6015	IC6025	
26B 25 2120	ISCAR	WNMG 080404	–	–	–	–	10
26B 25 2121	ISCAR	WNMG 080408	–	–	–	–	10
●			P	P	M	M	
⚙							
Chip breaker			M3P	M3P	M3M	M3M	
a_p		mm	0.5 – 4				
f		mm/rev.	0.15 – 0.6	0.15 – 0.6	0.17 – 0.5	0.17 – 0.5	
v_c main application		m/min	180 – 400	150 – 380	140 – 300	120 – 230	



Grade			PV720	CA510	CA115P	CA125P	CA6525	CA315	KW10	PDL010	PR115S	SW05	
25E 25 2112	KYOCERA	WN.G 080404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 2114	KYOCERA	WN.G 080408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 25 2116	KYOCERA	WNMG 080412	–	eShop	eShop	eShop	eShop	eShop	–	–	–	–	1
25E 25 2118	KYOCERA	WNMG 080416	–	eShop	eShop	eShop	–	–	–	–	–	–	1
●			P	P	P	P	M	O	N	N	S	Ti	
⚙													
Chip breaker			PG	PS	PMG	PMG	MS (brass)	KG	AH	AH	MU	MU	
Tolerance			M	M	M	M	M	M	M	G	M	M	
a_p		mm	1 – 3.8	1 – 3.8	0.5 – 5	0.5 – 5	0.8 – 4	0.5 – 4	1 – 4	1 – 3.5	0.5 – 2	0.5 – 2	
f		mm/rev.	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.15 – 0.6	0.1 – 0.35	0.15 – 0.5	0.1 – 0.35	0.1 – 0.4	0.09 – 0.3	0.1 – 0.35	
v_c main application		m/min	110 – 490	80 – 450	180 – 400	150 – 320	60 – 220	150 – 350	60 – 400	200 – 600	25 – 70	50 – 140	





Grade			CA510	CA115P	CA125P	
25E 25 2113	KYOCERA	WNMG 080404 wiper	–	eShop	eShop	1
25E 25 2115	KYOCERA	WNMG 080408 wiper	eShop	eShop	eShop	1
25E 25 2117	KYOCERA	WNMG 080412 wiper	eShop	eShop	eShop	1
●			P	P	P	
⚙			◉	◉	▨	
Chip breaker				WQ		
a_p		mm		0.5 – 3		
f		mm/rev.		0.14 – 0.55		
v_c main application		m/min	80 – 450	180 – 400	150 – 320	




Grade			HBT020	HBT130	
22D 25 2092	HOLEX	WNMG 060404	eShop	eShop	–
22D 25 2093	HOLEX	WNMG 060408	eShop	eShop	–
22D 25 2094	HOLEX	WNMG 080404	eShop	eShop	–
22D 25 2095	HOLEX	WNMG 080408	eShop	eShop	–
●			P	M	
⚙			▨	▨	
Chip breaker			PM	MM	
a_p		mm	0.8 – 5	0.5 – 5	
f		mm/rev.	0.1 – 0.45	0.12 – 0.45	
v_c main application		m/min	100 – 280	50 – 200	

WNMG Roughing







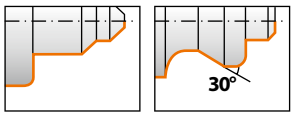


Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	
21G 25 2208	Garant	WNMG 080408	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	10
21G 25 2210	Garant	WNMG 080412	eShop	eShop	eShop	eShop	eShop	eShop	–	10
●			P	P	P	M	M	M	K	
⚙			◉	▨	◒	◉	▨	◒	▨	
Chip breaker			SG	SG	SG	VG	VG	VG	GG	
a_p		mm	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	1.5 – 6	0.4 – 6.5	
f		mm/rev.	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.25 – 0.6	0.3 – 0.8	
v_c main application		m/min	120 – 415	110 – 360	100 – 290	70 – 240	60 – 220	50 – 170	100 – 450	

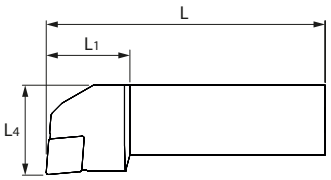



Grade			HBT020	HBT130	
22D 25 2224	HOLEX	WNMG 080408	eShop	eShop	–
22D 25 2226	HOLEX	WNMG 080412	eShop	eShop	–
●			P	M	
⚙			▨	▨	
Chip breaker			PR	MR	
a_p		mm	1.8 – 6	2 – 6	
f		mm/rev.	0.2 – 0.6	0.15 – 0.55	
v_c main application		m/min	80 – 260	40 – 180	

HOLEX Lever lock toolholder sets for indexable inserts CN../DN..



PCLNR/L PDJNR/L

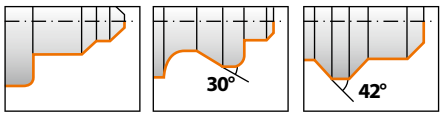


DIN ISO 5610 Standard

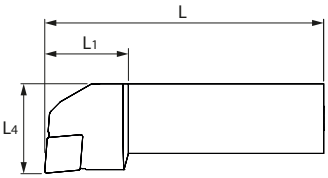

25 5120

Shank size mm	29W 25 5120 Lever lock toolholder set right-hand	29W 25 5121 Lever lock toolholder set left-hand	ISO code toolholder 25 5120	ISO code toolholder 25 5121	suitable indexable insert	L_4 mm	L_1 mm	L mm	Spare part
16	eShop	eShop	PCLNR 1616H09; PDJNR 1616H11;	PCLNL 1616H09; PDJNL 1616H11;	CN.. 09T3..; DN.. 1104..	20	22; 25	100	259981 7
20	eShop	eShop	PCLNR 2020K12; PDJNR 2020K11;	PCLNL 2020K12; PDJNL 2020K11;	CN.. 1204..; DN.. 1104..	25	28	125	259981 8
25	eShop	eShop	PCLNR 2525M16; PDJNR 2525M15;	PCLNL 2525M16; PDJNL 2525M15;	CN.. 1606..; DN.. 1506..	32	33	150	259981 9
32	eShop	eShop	PCLNR 3232P16; PDJNR 3232P15	PCLNL 3232P16; PDJNL 3232P15	CN.. 1606..; DN.. 1506..	40	40	170	259981 9

HOLEX Lever lock toolholder sets for indexable inserts CN../DN../SN..



PCLNR/L PDJNR/L PSSNR/L

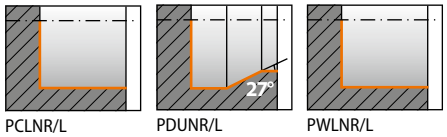


DIN ISO 5610 Standard

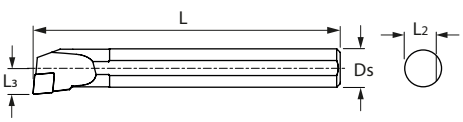

25 5130

Shank / insert size mm	29W 25 5130 Lever lock toolholder set right-hand	29W 25 5131 Lever lock toolholder set left-hand	ISO code toolholder 25 5130	ISO code toolholder 25 5131	suitable indexable insert	L_4 mm	L_1 mm	L mm	Spare part
16	eShop	eShop	PCLNR 1616H09; PDJNR 1616H11; PSSNR 1616H12	PCLNL 1616H09; PDJNL 16161H11; PSSNL 1616H12	CN.. 09T3..; DN.. 1104..; SN.. 1204..	20	22; 25; 25	100	259981 1
20	eShop	eShop	PCLNR 2020K12; PDJNR 2020K11; PSSNR 2020K12	PCLNL 2020K12; PDJNL 2020K11; PSSNL 2020K12	CN.. 1204..; DN.. 1104..; SN.. 1204..	25	25	125	259981 2
25	eShop	eShop	PCLNR 2525M16; PDJNR 2525M15; PSSNR 2525M12	PCLNL 2525M16; PDJNL 2525M15; PSSNL 2525M12	CN.. 1606..; DN.. 1506..; SN.. 1204..	32	25	150	259981 3
32	eShop	eShop	PCLNR 3232P16; PDJNR 3232P15; PSSNR 3232P12	PCLNL 3232P16; PDJNL 3232P15; PSSNL 3232P12	CN.. 1606..; DN.. 1506..; SN.. 1204..	40	40	170	259981 3

HOLEX Boring bar sets for indexable inserts CN../DN../WN..



PCLNR/L PDUNR/L PWLNR/L



3×D DIN 8024


25 5160

Type	29W 25 5160 Boring bar set, steel, without IC right-hand	29W 25 5161 Boring bar set, steel, without IC left-hand	ISO code toolholder 25 5160	ISO code toolholder 25 5161	suitable indexable insert	∅ D_{min} mm	L_3 mm	L_2 mm	L mm	Spare part
1	eShop	eShop	S16R PCLNR09; S20S PDUNR11; S16M PWLNR06	S16R PCLNL09; S20S PDUNL11; S16M PWLNL06	CN.. 09T3..; DN.. 1104..; WN.. 0604..	20; 25; 20	11; 13; 11	15.25; 19; 15.25	200; 250; 150	259981 10
2	eShop	eShop	S20S PCLNR09; S25S PDUNR11; S20Q PWLNR06	S20S PCLNL09; S25S PDUNL11; S20Q PWLNL06	CN.. 09T3..; DN.. 1104..; WN.. 0604..	25; 32; 25	13; 17; 13	19; 24; 19	250; 250; 180	259981 11
3	eShop	eShop	S25S PCLNR12; S32S PDUNR15; S25R PWLNR08	S25S PCLNL12; S32S PDUNL15; S25R PWLNL08	CN.. 1204..; DN..1506..; WN.. 0804..	32; 40; 32	17; 22; 17	24; 31; 24	250; 250; 200	259981 12

25

Garant CBN indexable inserts

Innovative **"all-in-one" concept** to reduce the amount of variation in your stock levels and to give you the flexibility you need in your production.
New type of CBN with a balanced combination of wear resistance and tensile strength for general-purpose use in hardened steels up to 67 HRC in combination with a special chamfered profile.
For use both in continuous cutting and also in slightly interrupted and heavily interrupted cutting.
SIMPLE. FAST. ALWAYS THE RIGHT CHOICE.



Garant Indexable inserts CBN (0°)

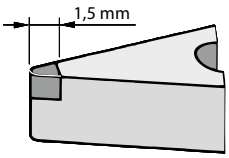
25 5403–5451/5463/5466 – Fitted with 2 cutters.
25 5454/5457/5469–5481 – Fitted with 3 cutters.

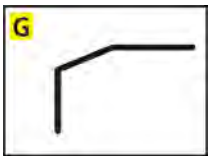
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
BU7220									●	●	●							

CNGA ..

Cutting edge version			G
21H 25 5403	CNGA 09T304	BU7220	eShop
21H 25 5406	CNGA 09T308	BU7220	eShop
21H 25 5409	CNGA 120404	BU7220	eShop
21H 25 5412	CNGA 120408	BU7220	eShop
21H 25 5418	CNGA 120412	BU7220	eShop
21H 25 5421	CNGA 120416	BU7220	eShop
a_p		mm	0.05 – 0.2
f		mm/rev.	0.05 – 0.15
v_c main application		m/min	90 – 140


25 5412





Cutting edge (chamfered) Chamfering generally applicable for steel up to 67 HRC. Also for heavily interrupted cutting.

DNGA ..

Cutting edge version			G
21H 25 5439	DNGA 110404	BU7220	eShop ■
21H 25 5442	DNGA 110408	BU7220	eShop
21H 25 5445	DNGA 150604	BU7220	eShop
21H 25 5448	DNGA 150608	BU7220	eShop
21H 25 5451	DNGA 150612	BU7220	eShop
a_p		mm	0.05 – 0.2
f		mm/rev.	0.05 – 0.15
v_c main application		m/min	90 – 140


25 5445

TNGA 1604..

Cutting edge version			G
21H 25 5454	TNGA 160404	BU7220	eShop
21H 25 5457	TNGA 160408	BU7220	eShop
a_p		mm	0.05 – 0.2
f		mm/rev.	0.05 – 0.15
v_c main application		m/min	90 – 140


25 5454

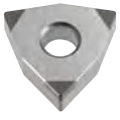
VNGA 1604..

Cutting edge version			G
21H 25 5463	VNGA 160404	BU7220	eShop
21H 25 5466	VNGA 160408	BU7220	eShop
a_p		mm	0.05 – 0.2
f		mm/rev.	0.05 – 0.15
v_c main application		m/min	90 – 140


25 5466

WNGA ..

Cutting edge version			G
21H 25 5469	WNGA 060404	BU7220	eShop
21H 25 5472	WNGA 060408	BU7220	eShop
21H 25 5475	WNGA 080404	BU7220	eShop
21H 25 5478	WNGA 080408	BU7220	eShop
21H 25 5481	WNGA 080412	BU7220	eShop
a_p		mm	0.05 – 0.2
f		mm/rev.	0.05 – 0.15
v_c main application		m/min	90 – 140


25 5475

KYOCERA Indexable inserts CBN (0°)

MEGACOAT coated CBN inserts.

Size ME – MultiEdge; 2 or 3 cutting edges per insert.
Size MET – MultiEdge Tough; 2 or 3 cutting edges per insert, with special honing for optimisation in interrupted cutting.
Size MEW – MultiEdge Wiper; 2 cutting edges per insert with wiper geometry.

Type			ME	MET	MEW
25H 25 5608	CNGA 120404	KBN05M	eShop	–	–
25H 25 5609		KBN25M	eShop	eShop	eShop
25H 25 5610		KBN35M	–	eShop	–
25H 25 5615	CNGA 120408	KBN05M	eShop	–	–
25H 25 5616		KBN25M	eShop	eShop	eShop
25H 25 5617		KBN35M	eShop	eShop	–
25H 25 5624	CNGA 120412	KBN35M	–	eShop	–
25H 25 5629	DNGA 150604	KBN05M	eShop	–	–
25H 25 5630		KBN25M	eShop	eShop	–
25H 25 5631		KBN35M	–	eShop	–
25H 25 5633	DNGA 150608	KBN05M	eShop	–	–
25H 25 5634		KBN25M	eShop	eShop	–
25H 25 5635		KBN35M	eShop	eShop	–
25H 25 5657	TNGA 160404	KBN05M	eShop	–	–
25H 25 5658		KBN25M	eShop	–	–
25H 25 5659		KBN35M	eShop	eShop	–
25H 25 5661	TNGA 160408	KBN05M	eShop	–	–
25H 25 5662		KBN25M	eShop	eShop	–
25H 25 5663		KBN35M	eShop	eShop	–
25H 25 5678	VNGA 160404	KBN25M	eShop	eShop	–
25H 25 5679		KBN35M	eShop	eShop	–
25H 25 5682	VNGA 160408	KBN25M	eShop	eShop	–
25H 25 5683		KBN35M	eShop	eShop	–
25H 25 5685	WNGA 080404	KBN05M	eShop	–	–
25H 25 5686		KBN25M	eShop	eShop	–
25H 25 5689	WNGA 080408	KBN05M	eShop	–	–
25H 25 5690		KBN25M	eShop	eShop	–
25H 25 5691		KBN35M	–	eShop	–
a_p		mm	0.05 – 0.2	0.1 – 0.3	0.05 – 0.2
f		mm/rev.	0.1 – 0.2	0.1 – 0.2	0.15 – 0.3
v_c main application		m/min	120 – 200	100 – 180	120 – 200


25 5609_ME


25 5630_ME


25 5658_ME

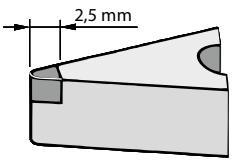

25 5678_ME

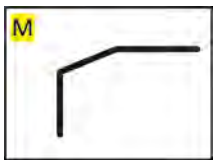

25 5686_ME

HOLEX Indexable inserts CBN (0°)

- Disposable insert.
- Single cutting edge.

Note: Further indexable insert shapes, sizes and corner radii available on request.





Cutting edge (chamfered). Chamfering even for slightly interrupted cutting.

Cutting edge version			M
22l 25 5578	CNMA 120404	BUX220	eShop
22l 25 5580	CNMA 120408	BUX220	eShop
22l 25 5582	CNMA 120412	BUX220	eShop
22l 25 5584	DNMA 150604	BUX220	eShop
22l 25 5586	DNMA 150608	BUX220	eShop
22l 25 5588	DNMA 150612	BUX220	eShop
22l 25 5590	TNMA 160404	BUX220	eShop
22l 25 5592	TNMA 160408	BUX220	eShop
22l 25 5594	TNMA 160412	BUX220	eShop
22l 25 5596	VNMA 160404	BUX220	eShop
22l 25 5598	VNMA 160408	BUX220	eShop
a_p (25 5578, 25 5580, 25 5582, 25 5584, 25 5586, 25 5588, 25 5590, 25 5592, 25 5594)		mm	0.1 – 0.5
a_p (25 5596, 25 5598)		mm	0.1 – 0.25
f		mm/rev.	0.1 – 0.2
v_c main application		m/min	80 – 200


25 5578


25 5584


25 5590


25 5596

Garant Indexable inserts ceramic (0°)

High quality, high-temperature ceramic tool material for reliable operation on materials that are hard and difficult to machine.
Coated aluminium oxide titanium carbide ceramic for machining hard materials up to 68 HRC.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
HART									250	210	180				250			

Application range			HART	
21H 25 5703	CNGA 120404	KB7205	eShop	10
21H 25 5707	CNGA 120408	KB7205	eShop	10
21H 25 5711	CNGA 120412	KB7205	eShop	10
21H 25 5716	DNGA 150604	KB7205	eShop	10
21H 25 5720	DNGA 150608	KB7205	eShop	10
21H 25 5724	DNGA 150612	KB7205	eShop	10
21H 25 5729	SNGA 120408	KB7205	eShop	10
21H 25 5746	TNGA 160408	KB7205	eShop	10
21H 25 5756	VNGA 160404	KB7205	eShop	10
21H 25 5761	VNGA 160408	KB7205	eShop	10
Cutting edge version			0.2 mm×25°	
a_p		mm	0.1 – 0.9	
f		mm/rev.	0.05 – 0.15	


25 5703


25 5746


25 5716


25 5756

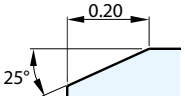

25 5729

KYOCERA Indexable inserts ceramic (0°)

MEGACOAT coated ceramic inserts.

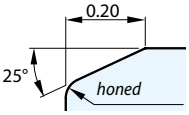
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
GG															550			
HART									200	160	140							

Chamfering T02025



- *0.20 mm×25°*
- *chamfered*

Chamfering S02025



- *0.20 mm×25°*
- *chamfered and honed*

Application range			GG	HART	
25F 25 5803	CNGA 120404	PT600M	eShop	eShop	1
25F 25 5806	CNGA 120408	PT600M	–	eShop	1
25F 25 5810	CNGA 120412	PT600M	eShop	eShop	1
25F 25 5815	DNGA 150604	PT600M	eShop	–	1
25F 25 5819	DNGA 150608	PT600M	eShop	–	1
25F 25 5823	DNGA 150612	PT600M	eShop	–	1
25F 25 5832	SNGA 120412	PT600M	–	eShop	1
25F 25 5842	TNGA 160404	PT600M	eShop	eShop	1
25F 25 5845	TNGA 160408	PT600M	–	eShop	1
25F 25 5850	TNGA 160412	PT600M	–	eShop	1
25F 25 5856	VNGA 160404	PT600M	eShop	eShop	1
25F 25 5857	VNGA 160408	PT600M	eShop	eShop	1
Chamfer			T02025	S02025	
a_p		mm	0.5 – 2.5	0.1 – 0.9	
f		mm/rev.	0.15 – 0.4	0.1 – 0.25	


25 5803_HART


25 5850_HART

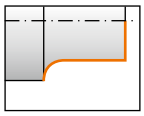

25 5819_GG

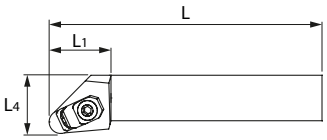

25 5832_HART


25 5857_HART

DIN ISO 5610

Garant CRSN 90° clamp toolholders for indexable inserts RN..





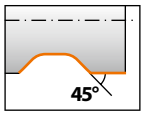


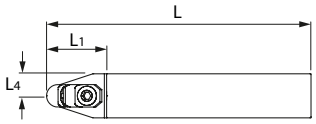
25 5795

Shank / insert size	21T 25 5795	21T 25 5796	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Shim	Shim screw	Clamp	Washer for clamp
	Clamp toolholder										
mm	right-hand	left-hand			mm	mm	mm				
25/12	eShop	eShop	CRSNR/L 2525M12	RN.. 1207..	32	34	150	259031 43	259025 2	259035 3	259041 1
32/12	eShop	eShop	CRSNR/L 3225P12	RN.. 1207..	32	34	170	259031 43	259025 2	259035 3	259041 1

DIN ISO 5610

Garant CRDN 45° clamp toolholders for indexable inserts RN..







25 5798

Shank / insert size	21T 25 5798	ISO code toolholder	suitable i ndexable insert	L_4	L_1	L	Shim	Shim screw	Clamp	Washer for clamp
	Clamp toolholder									
mm	neutral			mm	mm	mm				
25/12	eShop	CRDNN 2525M12	RN.. 1207..	12.5	34	150	259031 43	259025 2	259035 3	259041 1
32/12	eShop	CRDNN 3225P12	RN.. 1207..	12.5	34	170	259031 43	259025 2	259035 3	259041 1

Garant Indexable inserts ceramic (0°)

Application range			HART	S	
21H 25 5770	RNGN 120700	KB7205	eShop	–	10
21H 25 5774		KU7415	–	eShop	10
●			H	S	
○			K	–	
⚙			●	●	
Cutting edge version			0.1 mm×20°	0.05 mm×20°	
a_p		mm	0.1 – 0.8	0.1 – 1	
f		mm/rev.	0.05 – 0.15	0.3 – 0.5	
v_c main application		m/min	180 – 250	300	
v_c secondary application		m/min	250	–	



25 5770



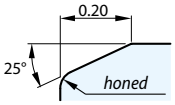
25 5774

KYOCERA Indexable inserts ceramic (0°)

MEGACOAT coated ceramic inserts.

Application range			HART	
25F 25 5870	RNGN 120700	PT600M	eShop	1
●			H	
⚙			●	
Chamfer			S02025	
Cutting edge version			0.2 mm×25°	
a_p		mm	0.2 – 0.7	
f		mm/rev.	0.05 – 0.15	
v_c main application		m/min	50 – 60	
v_c secondary application		m/min	30 – 40	

Chamfering S02025





25 5870

GARANT Master Eco SCLC 95° screw-on toolholder for indexable inserts CC..

Highly efficient cooling directly on the cutting edge and additional flank face cooling.

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco toolholders No. 319006 – 311936 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.

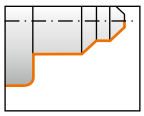
With flank face cooling.

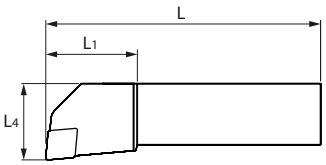
DIN ISO 5610 Standard



26 0026

Positioning within the scale ensures precise coolant transfer.





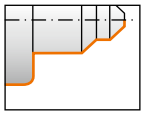
Shank / insert size	21U 26 0026	21U 26 0027	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	GARANT Master Eco screw-on toolholder short							
mm	right-hand	left-hand			mm	mm	mm	
16/09	eShop	eShop	SCLCR/L 1616F09	CC.. 09T3..	20	30	80	269028 28
20/09	eShop	eShop	SCLCR/L 2020X09	CC.. 09T3..	25	30	90	269028 28

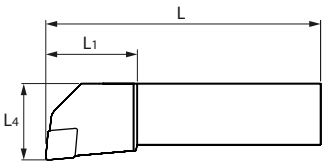
Standard

HOLEX Pro Eco SCLC 95° screw-on toolholder for indexable inserts CC..

Targeted cooling on the cutting edge.

Note: Coolant transfer under the head via hose connection (G1/8 inch – included in delivery).







26 0048

Shank / insert size	22E 26 0048	22E 26 0049	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	HOLEX Pro Eco screw-on toolholder							
mm	right-hand	left-hand			mm	mm	mm	
20/09	eShop	eShop	SCLCR/L 2020K09	CC.. 09T3..	25	17	125	269028 2
25/09	eShop	eShop	SCLCR/L 2525M09	CC.. 09T3..	32	19	150	269028 2

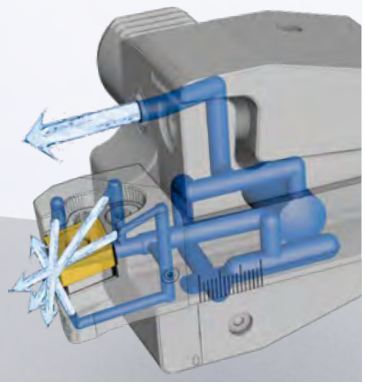
26

SCREW-ON TOOLHOLDER WITH THROUGH-COOLANT – DIFFERENTIATION

Garant Master

GARANT Master Eco – efficient, systematic cooling.

- Minimises heat-induced insert wear on both the rake face and the flank face.
- Variable arrangement of the VDI holder system with coolant transfer via slot at the bottom of the shank.
- Problem-solver, especially for materials with low thermal conductivity.



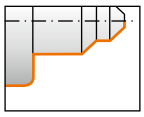
HOLEX Pro

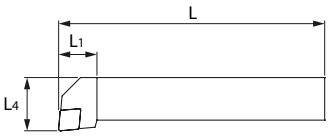
HOLEX Pro Eco – simple and clever.

- Minimises heat-induced insert wear on the rake face.
- Coolant transfer via tubing below the head without any other peripherals.
- The smart choice for standard applications.



Garant SCLC 95° screw-on toolholder for indexable inserts CC..





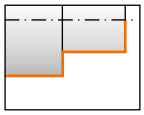
DIN ISO 5610 Standard

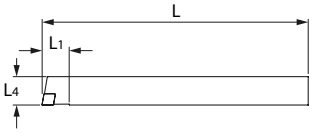


26 0006

Shank / insert size	21T 26 0006	21T 26 0007	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
8/06	eShop	eShop	SCLCR/L 0808D06	CC.. 0602..	10	9	60	269028 22	–	–
10/06	eShop	eShop	SCLCR/L 1010E06	CC.. 0602..	12	10	70	269028 22	–	–
12/09	eShop	eShop	SCLCR/L 1212F09	CC.. 09T3..	16	13	80	269028 2	–	–
16/09	eShop	eShop	SCLCR/L 1616H09	CC.. 09T3..	20	17	100	269028 2	269005 1	269013 2
20/09	eShop	eShop	SCLCR/L 2020K09	CC.. 09T3..	25	17	125	269028 2	269005 1	269013 2
25/09	eShop	eShop	SCLCR/L 2525M09	CC.. 09T3..	32	19	150	269028 2	269005 1	269013 2
16/12	eShop	eShop	SCLCR/L 1616H12	CC.. 1204..	20	20	100	269028 20	269005 6	269013 5
20/12	eShop	eShop	SCLCR/L 2020K12	CC.. 1204..	25	20	125	269028 20	269005 6	269013 5
25/12	eShop	eShop	SCLCR/L 2525M12	CC.. 1204..	32	20	150	269028 20	269005 6	269013 5

Garant SCAC 90° screw-on toolholder for indexable inserts CC..





DIN ISO 5610 Standard

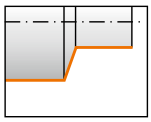


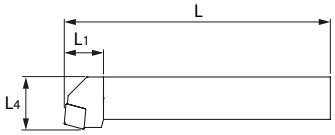
26 0014

Shank / insert size	21T 26 0014	21T 26 0015	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	Screw-on toolholder							
mm	right-hand	left-hand			mm	mm	mm	
8/06	eShop	eShop	SCACR/L 0808M06	CC.. 0602..	8	8	150	269021 1
10/06	eShop	eShop	SCACR/L 1010M06	CC.. 0602..	10	10	150	269021 1
12/06	eShop	eShop	SCACR/L 1212M06	CC.. 0602..	12	12	150	269021 1
16/06	eShop	eShop	SCACR/L 1616M06	CC.. 0602..	16	16	150	269021 1
12/09	eShop	eShop	SCACR/L 1212M09	CC.. 09T3..	12	12	150	269021 2
16/09	eShop	eShop	SCACR/L 1616M09	CC.. 09T3..	16	16	150	269021 2

Standard

Garant SCRC 75° screw-on toolholder for indexable inserts CC..





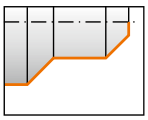


26 0004

Shank / insert size	21T 26 0004	21T 26 0005	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
8/06	eShop	eShop	SCRCR/L 0808D06	CC.. 0602..	9	10	60	269028 22	–	–
10/06	eShop	eShop	SCRCR/L 1010E06	CC.. 0602..	11	10	70	269028 22	–	–
12/09	eShop	eShop	SCRCR/L 1212F09	CC.. 09T3..	13	15	80	269028 8	–	–
16/09	eShop	eShop	SCRCR/L 1616H09	CC.. 09T3..	17	15	100	269028 2	269005 1	269013 2
20/09	eShop	eShop	SCRCR/L 2020K09	CC.. 09T3..	22	18	125	269028 2	269005 1	269013 2
16/12	eShop	eShop	SCRCR/L 1616H12	CC.. 1204..	17	20	100	269028 16	269005 6	269013 5
20/12	eShop	eShop	SCRCR/L 2020K12	CC.. 1204..	22	20	125	269028 16	269005 6	269013 5
25/12	eShop	eShop	SCRCR/L 2525M12	CC.. 1204..	27	20	150	269028 16	269005 6	269013 5

Garant SCSC 45° screw-on toolholder for indexable inserts CC..

DIN ISO 5610 Standard







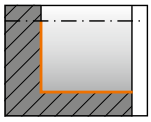
26 0000

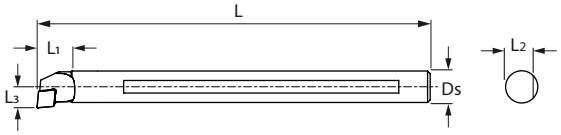
Shank / insert size	21T 26 0000	21T 26 0001	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
8/06	eShop	eShop	SCSCR/L 0808D06	CC.. 0602..	10	12	60	269028 22	–	–
10/06	eShop	eShop	SCSCR/L 1010E06	CC.. 0602..	12	12	70	269028 22	–	–
12/09	eShop	eShop	SCSCR/L 1212F09	CC.. 09T3..	16	19	80	269028 2	–	–
16/09	eShop	eShop	SCSCR/L 1616H09	CC.. 09T3..	20	20	101	269028 2	269005 1	269013 2
20/09	eShop	eShop	SCSCR/L 2020K09	CC.. 09T3..	25	22	126	269028 2	269005 1	269013 2
16/12	eShop	eShop	SCSCR/L 1616H12	CC.. 1204..	20	22	101	269028 20	269005 6	269013 5
20/12	eShop	eShop	SCSCR/L 2020K12	CC.. 1204..	25	24	126	269028 20	269005 6	269013 5
25/12	eShop	eShop	SCSCR/L 2525M12	CC.. 1204..	32	27	151	269028 20	269005 6	269013 5

8×D Carbide

Garant E... SCLC 95° boring bars for indexable inserts CC..

DIN ISO 5610 Standard





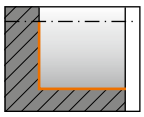


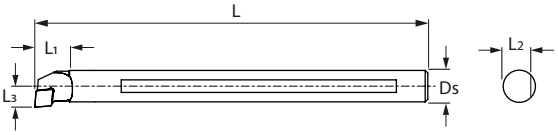
26 0016

Shank ∅ / insert size	21T 26 0016	21T 26 0017	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar carbide									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
4/03	eShop	eShop	E04G SCLCR/L03	CC.. 0301..	5	2.5	3.8	10	90	269028 13
5/03	eShop	eShop	E05H SCLCR/L03	CC.. 0301..	6	3	4.8	10	100	269028 19
6/03	eShop	eShop	E06J SCLCR/L03	CC.. 0301..	7	3.5	5.8	10	110	269028 19
8/06	eShop	eShop	E08K SCLCR/L06	CC.. 0602..	10	5	7.6	10	125	269028 7
10/06	eShop	eShop	E10K SCLCR/L06	CC.. 0602..	12	6	9.6	10	125	269028 7
12/06	eShop	eShop	E12M SCLCR/L06	CC.. 0602..	14	8	11.5	10	150	269028 7
16/09	eShop	eShop	E16R SCLCR/L09	CC.. 09T3..	18	10	15.5	16	200	269028 8
20/09	eShop	eShop	E20S SCLCR/L09	CC.. 09T3..	23	12	19	16	250	269028 8
25/12	eShop	eShop	E25S SCLCR/L12	CC.. 1204..	30	15	24	16	250	269028 8

8×D Carbide DIN 8024

Garant E... SCLC 95° boring bar sets for indexable inserts CC..







26 0018

29W 26 0018	29W 26 0019	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of insert screws
Boring bar set carbide								
right-hand	left-hand			mm	mm	mm	mm	
eShop	eShop	E08K SCLCR/L06; E10K SCLCR/L06; E12M SCLCR/L06	CC.. 0602..	10; 12; 14	5; 6; 8	7.6; 9.6; 11.5	125; 125; 150	269028 7

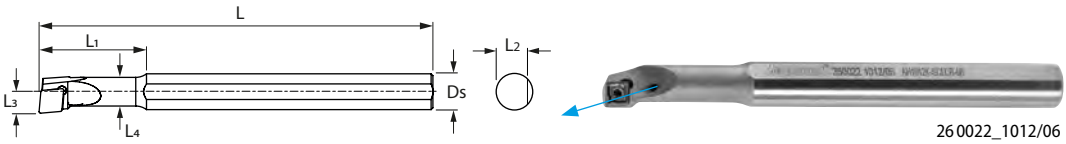
5×D HSS

Garant

AH... SCLC 95° boring bars for indexable inserts CC..

Boring bar stepped

Standard

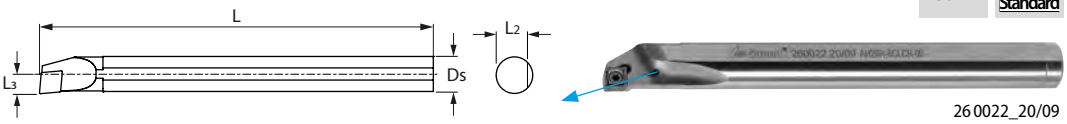


26 0022_1012/06

Shank ∅ / insert size	21T 26 0022	21T 26 0023	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
	Boring bar HSS											
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	
0410/03	eShop	eShop	10	AH0410H SCLCR/L03	CC.. 0301..	5	2.5	9	4	24	100	269028 13
0610/03	eShop	eShop	10	AH0610H SCLCR/L03	CC.. 0301..	7	2.5	9	6	24	100	269028 13
0608/06	eShop	eShop	8	AH0608H SCLCR/L06	CC.. 0602..	8	4	7	6	25	100	269028 7
0810/06	eShop	eShop	10	AH0810J SCLCR/L06	CC.. 0602..	12	6	9	8	32	110	269028 7
1012/06	eShop	eShop	12	AH1012K SCLCR/L06	CC.. 0602..	14	7	11	10	38	125	269028 7
1216/06	eShop	eShop	16	AH1216M SCLCR/L06	CC.. 0602..	18	9	15	12	50	150	269028 7

Boring bar cylindrical

DIN 8024 Standard



26 0022_20/09

Shank ∅ / insert size	21T 26 0022	21T 26 0023	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar HSS									
mm	right-hand	left-hand	mm			mm	mm	mm	mm	
8/06	eShop	eShop	8	AH08K SCLCR/L06	CC.. 0602..	10	5	7	125	269028 7
10/06	eShop	eShop	10	AH10K SCLCR/L06	CC.. 0602..	12	6	9	125	269028 7
12/06	eShop	eShop	12	AH12M SCLCR/L06	CC.. 0602..	14	7	11	150	269028 7
16/09	eShop	eShop	16	AH16Q SCLCR/L09	CC.. 09T3..	18	11	15	180	269028 8
20/09	eShop	eShop	20	AH20R SCLCR/L09	CC.. 09T3..	23	13	18	200	269028 8
25/12	eShop	eShop	25	AH25R SCLCR/L12	CC.. 1204..	28	15.5	23	200	269028 9

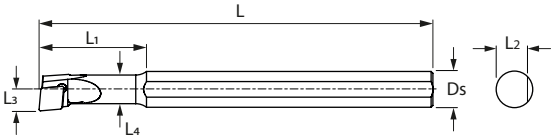
5×D HSS Standard

Garant

AH... SCLC 95° boring bar sets for indexable inserts CC..



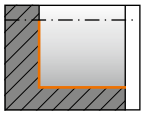
26 0024



29W 26 0024	29W 26 0025	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_4	L	L_1	Set of insert screws
Boring bar set HSS										
right-hand	left-hand			mm	mm	mm	mm	mm	mm	
eShop	eShop	AH0608H SCLCR/L06; AH0810J SCLCR/L06; AH1012K SCLCR/L06; AH1216M SCLCR/L06	CC.. 0602..	8; 12; 14; 18	4; 6; 7; 9	7; 9; 11; 15	6; 8; 10; 12	100; 110; 125; 150	25; 32; 38; 50	269028 7

3×D

GARANT Master Turn A... SCLC 95° boring bars for indexable inserts CC..





optimised chip evacuation

DIN 8024

Standard

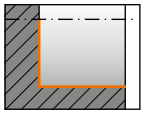


26 0030

Shank Ø / insert size	21T 26 0030	21T 26 0031	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L_1	L	Set of insert screws
	GARANT Master Turn boring bar, steel spiral flutes									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
8/06	eShop	eShop	A08H SCLCR/L06	CC.. 0602..	10	5	7	20	100	269028 7
10/06	eShop	eShop	A10K SCLCR/L06	CC.. 0602..	12	6	9	20	125	269028 7
12/06	eShop	eShop	A12L SCLCR/L06	CC.. 0602..	14	7	11	24.3	140	269028 7
16/09	eShop	eShop	A16Q SCLCR/L09	CC.. 09T3..	18	9	15	31	180	269028 8
20/09	eShop	eShop	A20R SCLCR/L09	CC.. 09T3..	22	11	18	36	200	269028 8
25/09	eShop	eShop	A25R SCLCR/L09	CC.. 09T3..	27	13.5	23	43	200	269028 8
25/12	eShop	eShop	A25R SCLCR/L12	CC.. 1204..	27	13.5	23	43	200	269028 9

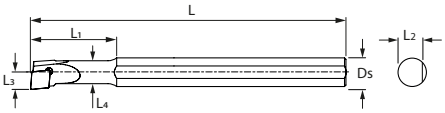
3×D

A... SCLC 95° boring bars for indexable inserts CC..



Boring bar stepped

Standard





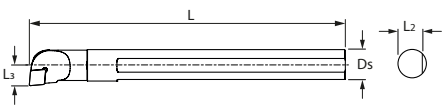
26 0032_1012/06

Shank Ø / insert size	21T 26 0032	21T 26 0033	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
	Boring bar steel											
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	
0608/06	eShop	eShop	8	A0608H SCLCR/L06	CC.. 0602..	8	4.2	7	6	21.5	100	269028 7
0810/06	eShop	eShop	10	A0810J SCLCR/L06	CC.. 0602..	11	6	9	8	27	110	269028 7
1012/06	eShop	eShop	12	A1012K SCLCR/L06	CC.. 0602..	13	6.9	11	10	32.5	125	269028 7
1216/06	eShop	eShop	16	A1216M SCLCR/L06	CC.. 0602..	16	8.9	15	12	42	150	269028 7

Boring bar cylindrical

DIN 8024

Standard





26 0032_25/12

Shank Ø / insert size	21T 26 0032	21T 26 0033	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L	Set of insert screws	Shim	Shim screw
	Boring bar steel											
mm	right-hand	left-hand	mm			mm	mm	mm	mm			
8/06	eShop	eShop	8	A08H SCLCR/L06	CC.. 0602..	10	6	7	100	269028 7	–	–
10/06	eShop	eShop	10	A10K SCLCR/L06	CC.. 0602..	12	7	9	125	269028 22	–	–
12/06	eShop	eShop	12	A12L SCLCR/L06	CC.. 0602..	16	9	11	140	269028 22	–	–
16/09	eShop	eShop	16	A16Q SCLCR/L09	CC.. 09T3..	20	11	14	180	269028 8	–	–
20/09	eShop	eShop	20	A20R SCLCR/L09	CC.. 09T3..	25	13	18	200	269028 8	–	–
25/12	eShop	eShop	25	A25R SCLCR/L12	CC.. 1204..	30	17	24	200	269028 9	–	–
32/12	eShop	eShop	32	A32S SCLCR/L12	CC.. 1204..	40	22	31	250	269028 20	269005 6	269013 5
40/12	eShop	eShop	40	A40T SCLCR/L12	CC.. 1204..	49	27	38.5	300	269028 20	269005 6	269013 5

HOLEX SCLC 95° boring bar sets for indexable inserts CC..

26 0389/0038 – Without through-coolant feed.

Supplied with:

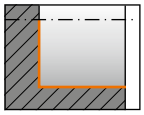
Size SET09 – Plastic case

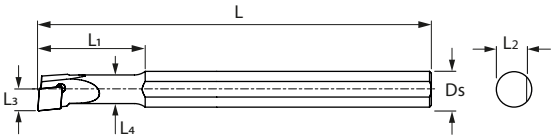
Size SET06 – Plastic case

8×D | 3×D | DIN 8024 | Standard



26 0036_SET06





NEW

Type	29W 26 0389 Boring bar set, carbide, without IC right-hand	ISO code toolholder	suitable indexable insert	∅ D_{min} mm	L_3 mm	L_2 mm	L_4 mm	L_1 mm	L mm	Set of insert screws
SET06	eShop	C08K SCLCR 06; C10K SCLCR 06; C12M SCLCR 06	CC.. 0602..	10; 12; 14	5; 6; 8	7.6; 9.6; 11.5	6; 8; 10	22; 27; 33	125; 125; 150	269028 7

Type	29W 26 0036 Boring bar set, steel, with IC right-hand	29W 26 0037 Boring bar set, steel, with IC left-hand	29W 26 0038 Boring bar set, steel, without IC right-hand	ISO code toolholder 26 0036 26 0037	ISO code toolholder 26 0038	suitable indexable insert	∅ D_{min} mm	L_3 mm	L_2 mm	L_4 mm	L_1 mm	L mm	Set of insert screws
SET06	eShop	eShop	eShop	A0608H SCLCR/L06; A0810J SCLCR/L06; A1012K SCLCR/L06; A1216M SCLCR/L06	S0608H SCLCR06; S0810J SCLCR06; S1012K SCLCR06; S1216M SCLCR06	CC.. 0602..	8; 11; 13; 17	4; 6; 7; 9	7; 9; 11; 15	6; 8; 10; 12	22; 27; 33; 42	100; 110; 125; 150	269028 7
SET09	eShop	eShop	eShop	A16Q SCLCR/L09; A20R SCLCR/L09; A25R SCLCR/L09	S16Q SCLCR09; S20R SCLCR09; S25R SCLCR09	CC.. 09T3..	20; 25; 28	10.7; 10.5; 14.5	15; 18; 23	–	–	180; 200; 200	269028 8

CC.T indexable inserts

CCGT Fine finishing





Grade		HB7025-1	HB7125-1	HU7315-1	
21I 26 0046	Garant CCGT 030101	eShop	eShop	eShop	–
21I 26 0047	Garant CCGT 030102	eShop	eShop	eShop	–
●		P	M	N	
⚙		◼	◼	◼	
Chip breaker		SF	VF	AF	
a_p	mm	0.05 – 0.2	0.05 – 0.2	0.05 – 0.5	
f	mm/rev.		0.03 – 0.1		
v_c main application	m/min	120 – 300	120 – 300	120 – 600	




Grade		PR1725	PR1535	
25E 26 0040	KYOCERA CCGT 030101	eShop	eShop	1
25E 26 0041	KYOCERA CCGT 030102	eShop	eShop	1
●		P	M	
○		M	S	
⚙		◼	◼	
Chip breaker		MP-CF	MFP-PF	
a_p	mm	0.03 – 0.2		
f	mm/rev.	0.02 – 0.1		
v_c main application	m/min	60 – 180	70 – 160	
v_c secondary application	m/min	100 – 150	40 – 60	

CC.T Finishing

Note:
26 0089–0103 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			CU7010	HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HU7315-1	HB7315-1	HB7415-1	
21G 26 0050	Garant	CC.T 060202	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0052	Garant	CC.T 060204	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0056	Garant	CC.T 09T302	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0058	Garant	CC.T 09T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0060	Garant	CCMT 09T308	–	eShop	eShop	eShop	eShop	eShop	eShop	–	–	eShop	10
21G 26 0062	Garant	CCGT 120402	–	–	–	–	–	–	–	eShop	eShop	–	–
21G 26 0064	Garant	CC.T 120404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0066	Garant	CCMT 120408	–	eShop	eShop	eShop	eShop	eShop	eShop	–	–	eShop	10
●			P	P	P	P	M	M	M	N	N	S	
○			M	–	–	–	–	–	–	–	–	M	
⚙			●	●	◪	◡	●	◪	◡	●	●	●	
Chip breaker			SS	SS	SS	SS	VS	VS	VS	AF	AF	TIS	
Tolerance			M	M	M	M	M	M	M	G	G	M	
a_p		mm	0.2 – 2.5	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.2 – 2.5	0.2 – 2.5	0.2 – 2.5	0.05 – 0.5	0.05 – 0.5	0.2 – 1.5	
f		mm/rev.	0.05 – 0.25	0.07 – 0.25	0.07 – 0.25	0.07 – 0.25	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.03 – 0.1	0.03 – 0.1	0.05 – 0.3	
v_c main application		m/min	90 – 210	150 – 500	140 – 400	120 – 350	90 – 290	80 – 270	70 – 230	120 – 600	120 – 600	50 – 110	
v_c secondary application		m/min	80 – 140	–	–	–	–	–	–	–	–	70 – 250	



Type			HB7020-2	
21G 26 0051	Garant	CCMT 060202 wiper	eShop	10
21G 26 0053	Garant	CCMT 060204 wiper	eShop	10
21G 26 0057	Garant	CCMT 09T302 wiper	eShop	10
21G 26 0059	Garant	CCMT 09T304 wiper	eShop	10
●			P	
⚙			◪	
Chip breaker			WSS	
a_p		mm	0.2 – 2.5	
f		mm/rev.	0.06 – 0.5	
v_c main application		m/min	150 – 460	



Grade			IC807	
26B 26 0089	ISCAR	CCMT 09T302	–	10
26B 26 0102	ISCAR	CCMT 09T304	–	10
●			P	
⚙			●	
Chip breaker			F3P	
a_p		mm	0.1 – 2	
f		mm/rev.	0.06 – 0.25	
v_c main application		m/min	50 – 245	



Grade			IC807	
26B 26 0101	ISCAR	CCMT 09T302	–	10
26B 26 0103	ISCAR	CCMT 09T304	–	10
●			M	
⚙			●	
Chip breaker			F3M	
a_p		mm	0.1 – 2	
f		mm/rev.	0.06 – 0.25	
v_c main application		m/min	30 – 80	



Grade			SP4019	
28D 26 0070		CCGT 060200	eShop	10
28D 26 0071		CCGT 060201	eShop	10
28D 26 0072		CCGT 060202	eShop	10
28D 26 0073		CCGT 060204	eShop	10
28D 26 0075	KENNAMETAL	CCGT 09T300	eShop	10
28D 26 0076		CCGT 09T301	eShop	10
28D 26 0077		CCGT 09T302	eShop	10
28D 26 0078		CCGT 09T304	eShop	10
28D 26 0079		CCGT 09T308	eShop	10
●			UNI	
⚙			●	
Chip breaker			62	
a_p		mm	0.15 – 3	
f		mm/rev.	0.05 – 0.3	
v_c main application		m/min	30 – 440	



Grade			CCX	PV720	CA510	CA115P	CA125P	PR1725	CA6525	PDL010	SW05	
25E 26 0090		CCGT 060201	–	–	–	–	–	eShop	–	–	–	1
25E 26 0091		CC.T 060202	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	1
25E 26 0092		CC.T 060204	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	1
25E 26 0095	KYOCERA	CCGT 09T301	–	–	–	–	–	eShop	–	–	–	1
25E 26 0096		CC.T 09T302	eShop	eShop	–	eShop	eShop	eShop	–	eShop	–	1
25E 26 0097		CC.T 09T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 26 0098		CCMT 09T308	eShop	eShop	eShop	eShop	eShop	–	eShop	–	eShop	1
●			P	P	P	P	P	M	M	N	Ti	
○			–	–	–	–	–	P	–	–	–	
⚙			●	●	●	●	◪	◪	◪	◪	●	
Chip breaker			PP	HQ	HQ	HQ	HQ	MFP-SKS	MQ	AP	MQ	
Tolerance			M	M	M	M	M	G	M	G	M	
a_p		mm	0.1 – 0.8	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5	0.2 – 1.5	0.5 – 2.5	0.1 – 1	0.1 – 1	
f		mm/rev.	0.05 – 0.3	0.05 – 0.25	0.05 – 0.25	0.05 – 0.25	0.05 – 0.25	0.03 – 0.2	0.05 – 0.2	0.05 – 0.25	0.05 – 0.2	
v_c main application		m/min	120 – 310	60 – 270	140 – 450	90 – 270	60 – 180	60 – 200	50 – 140	100 – 400	40 – 100	
v_c secondary application		m/min	–	–	–	–	–	50 – 150	–	–	–	



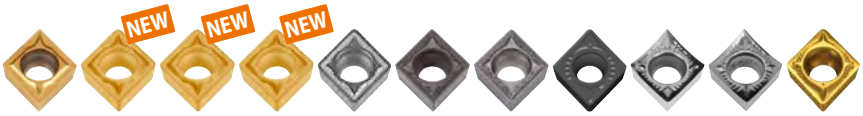
Grade			PV720	CA510	CA115P	CA125P	PR1725	
25E 26 0093		CCMT 060202 wiper	eShop	eShop	eShop	eShop	eShop	1
25E 26 0094	KYOCERA	CCMT 060204 wiper	eShop	eShop	eShop	eShop	eShop	1
25E 26 0099		CCMT 09T304 wiper	eShop	eShop	eShop	eShop	eShop	1
25E 26 0100		CCMT 09T308 wiper	eShop	eShop	eShop	eShop	eShop	1
●			P	P	P	P	M	
○			–	–	–	–	P	
⚙			●	●	●	◪	◪	
Chip breaker					WP			
a_p		mm	0.5 – 2.5	0.5 – 2.5	0.1 – 1.5	0.1 – 1.5	0.2 – 1.5	
f		mm/rev.	0.05 – 0.25	0.05 – 0.25	0.07 – 0.5	0.07 – 0.5	0.03 – 0.2	
v_c main application		m/min	60 – 270	140 – 450	120 – 270	90 – 180	60 – 200	
v_c secondary application		m/min	–	–	–	–	50 – 150	




Grade			HBT020	HBT130	
22D 26 0082	HOLEX	CCMT 060202	eShop	eShop	–
22D 26 0084	HOLEX	CCMT 060204	eShop	eShop	–
22D 26 0086	HOLEX	CCMT 09T304	eShop	eShop	–
22D 26 0088	HOLEX	CCMT 120404	eShop	eShop	–
●			P	M	
⚙			◙	◙	
Chip breaker			PF	M	
a_p		mm	0.4 – 2	0.1 – 1	
f		mm/rev.	0.1 – 0.3	0.05 – 0.2	
v_c main application		m/min	120 – 330	60 – 220	

CC.T Medium machining

Note:
26 0170–0173 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			CB7010	HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	HU7310	HB7310	HB725-1	
21G 26 0140	Garant	CC.T 060202	–	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–	10
21G 26 0142	Garant	CC.T 060204	–	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	10
21G 26 0148	Garant	CC.T 09T302	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–	–
21G 26 0150	Garant	CC.T 09T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0152	Garant	CC.T 09T308	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 0156	Garant	CCGT 120402	–	–	–	–	–	–	–	–	eShop	eShop	–	–
21G 26 0158	Garant	CC.T 120404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	–
21G 26 0160	Garant	CC.T 120408	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	10
●			P	P	P	P	M	M	M	K	N	N	UNI	
○			M	–	–	–	–	–	–	–	–	–	–	
⚙			◙	◙	◙	◙	◙	◙	◙	◙	◙	◙	◙	
Chip breaker			SM	SM	SM	SM	VM	VM	VM	GM	AM	AM	UM1	
Tolerance			M	M	M	M	M	M	M	M	G	G	M	
a_p		mm	0.2 – 4	0.3 – 2	0.3 – 2	0.3 – 2	0.2 – 4	0.2 – 4	0.2 – 4	0.2 – 2.5	0.1 – 4	0.1 – 4	0.2 – 4	
f		mm/rev.	0.1 – 0.3	0.08 – 0.3	0.08 – 0.3	0.08 – 0.3	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.25	0.05 – 0.5	0.05 – 0.5	0.05 – 0.5	
v_c main application		m/min	90 – 240	120 – 440	110 – 350	80 – 290	80 – 260	70 – 240	60 – 200	100 – 450	350 – 600	350 – 600	50 – 250	
v_c secondary application		m/min	70 – 180	–	–	–	–	–	–	–	–	–	–	



Type			HB7020-2	
21G 26 0143	Garant	CCMT 060204 wiper	eShop	10
21G 26 0151	Garant	CCMT 09T304 wiper	eShop	10
21G 26 0153	Garant	CCMT 09T308 wiper	eShop	10
21G 26 0159	Garant	CCMT 120404 wiper	eShop	10
21G 26 0161	Garant	CCMT 120408 wiper	eShop	10
●			P	
⚙			◙	
Chip breaker			WSM	
a_p		mm	0.4 – 2.5	
f		mm/rev.	0.1 – 0.35	
v_c main application		m/min	120 – 410	



Grade			IC807	
26B 26 0170	ISCAR	CCMT 09T304	–	10
26B 26 0172		CCMT 09T308	–	10
●			P	
⚙			◪	
Chip breaker			M3P	
a_p		mm	0.5 – 4	
f		mm/rev.	0.08 – 0.3	
v_c main application		m/min	50 – 245	



Grade			IC807	
26B 26 0171	ISCAR	CCMT 09T304	–	10
26B 26 0173		CCMT 09T308	–	10
●			M	
⚙			◪	
Chip breaker			M3M	
a_p		mm	0.5 – 4	
f		mm/rev.	0.08 – 0.3	
v_c main application		m/min	30 – 80	



Grade			SP4019	
28A 26 0180		CCMT 060202	eShop	10
28A 26 0181		CCMT 060204	eShop	10
28A 26 0182		CCMT 060208	eShop	10
28A 26 0184	KENNAMETAL	CCMT 09T304	eShop	10
28A 26 0185		CCMT 09T308	eShop	10
28A 26 0187		CCMT 120404	eShop	10
28A 26 0188		CCMT 120408	eShop	10
●			UNI	
⚙			◉	
Chip breaker			73	
a_p		mm	0.2 – 5	
f		mm/rev.	0.1 – 0.45	
v_c main application		m/min	30 – 440	



Grade			PV720	CA510	CA115P	CA125P	CA6525	CA315	KW10	
25E 26 0190		CCMT 060202	eShop	eShop	eShop	eShop	eShop	–	–	1
25E 26 0192		CCMT 060202	eShop	eShop	eShop	eShop	eShop	eShop	–	1
25E 26 0194		CCMT 09T302	eShop	–	eShop	eShop	eShop	–	–	1
25E 26 0196	KYOCERA	CC.T 09T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 26 0202		CCMT 120404	eShop	eShop	eShop	eShop	eShop	eShop	–	1
25E 26 0204		CCMT 120408	eShop	eShop	eShop	eShop	eShop	eShop	–	1
25E 26 0206		CCMT 120412	–	eShop	eShop	eShop	eShop	–	–	1
●			P	P	P	P	M	O	N	
⚙			◉	◉	◉	◪	◪	◪	◉	
Chip breaker			GK	GK	GK	GK	GK	GK	AH	
Tolerance			M	M	M	M	M	M	G	
a_p		mm				0.5 – 3				
f		mm/rev.	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.05 – 0.25	
v_c main application		m/min	60 – 270	140 – 450	90 – 340	60 – 260	50 – 140	60 – 230	30 – 300	





Grade			HBT020	HBT130	
22D 26 0210		CCMT 060204	eShop	eShop	–
22D 26 0211		CCMT 09T304	eShop	eShop	–
22D 26 0213	HOLEX	CCMT 09T308	eShop	eShop	–
22D 26 0219		CCMT 120404	eShop	eShop	–
22D 26 0221		CCMT 120408	eShop	eShop	–
●			P	M	
⚙			◪	◪	
Chip breaker			PM	MM	
a_p		mm	0.5 – 2.5	0.3 – 3	
f		mm/rev.	0.12 – 0.3	0.05 – 0.35	
v_c main application		m/min	100 – 280	50 – 200	

GARANT Master Eco SDJC 93° screw-on toolholder for indexable inserts DC..

Highly efficient cooling directly on the cutting edge and additional flank face cooling.

Note:	Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holder No. 319006 – 311936 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.

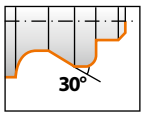
DIN ISO 5610 | Standard

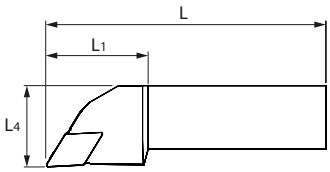


26 0292

Positioning within the scale ensures precise coolant transfer.

With flank face cooling





Shank / insert size	21U 26 0292	21U 26 0293	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	GARANT Master Eco screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
16/11	eShop	eShop	SDJCR/L 1616H11	DC.. 11T3..	20	30	100	269023 3	269007 1	269013 6
20/11	eShop	eShop	SDJCR/L 2020K11	DC.. 11T3..	25	30	125	269023 3	269007 1	269013 7
25/11	eShop	eShop	SDJCR/L 2525M11	DC.. 11T3..	32	30	150	269023 3	269007 1	269013 7

Shank / insert size	21U 26 0290	21U 26 0291	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	GARANT Master Eco screw-on toolholder short									
mm	right-hand	left-hand			mm	mm	mm			
16/11	eShop	eShop	SDJCR/L 1616F11	DC.. 11T3..	20	30	80	269023 3	269007 1	269013 6
20/11	eShop	eShop	SDJCR/L 2020X11	DC.. 11T3..	25	30	90	269023 3	269007 1	269013 7
25/11	eShop	eShop	SDJCR/L 2525H11	DC.. 11T3..	32	30	100	269023 3	269007 1	269013 7

Standard

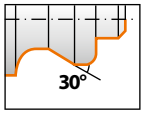
HOLEX Pro Eco SDJC 93° screw-on toolholder for indexable inserts DC..

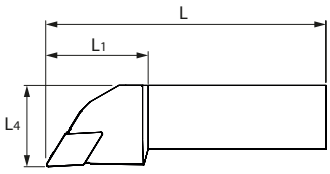
Targeted cooling on the cutting edge.

Note:	Coolant transfer under the head via hose connection (G1/8 inch – included in delivery).



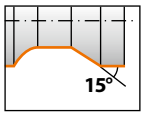
26 0304

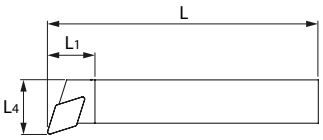




Shank / insert size	22E 26 0304	22E 26 0305	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	HOLEX Pro Eco screw-on toolholder							
mm	right-hand	left-hand			mm	mm	mm	
20/11	eShop	eShop	SDJCR/L 2020K11	DC.. 11T3..	25	20.5	125	269028 2
25/11	eShop	eShop	SDJCR/L 2525M11	DC.. 11T3..	32	21.5	150	269028 2

Garant SDHC 107.5° screw-on toolholder for indexable inserts DC..





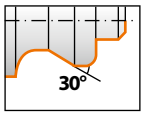
DIN ISO 5610 Standard

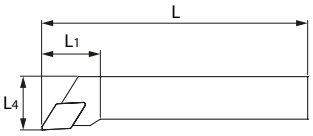


26 0306

Shank / insert size	2IT 26 0306	2IT 26 0307	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
10/07	eShop	eShop	SDHCR/L 1010E07	DC.. 0702..	12	7	70	269028 22	–	–
12/07	eShop	eShop	SDHCR/L 1212F07	DC.. 0702..	16	12	80	269028 22	–	–
16/11	eShop	eShop	SDHCR/L 1616H11	DC.. 11T3..	20	12	100	269028 2	269005 3	269013 2
20/11	eShop	eShop	SDHCR/L 2020K11	DC.. 11T3..	25	15	125	269028 2	269005 3	269013 2
25/11	eShop	eShop	SDHCR/L 2525M11	DC.. 11T3..	32	21	150	269028 2	269005 3	269013 2

Garant SDJC 93° screw-on toolholder for indexable inserts DC..





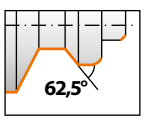
DIN ISO 5610 Standard



26 0308

Shank / insert size	2IT 26 0308	2IT 26 0309	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
8/07	eShop	eShop	SDJCR/L 0808D07	DC.. 0702..	10	13	60	269028 22	–	–
10/07	eShop	eShop	SDJCR/L 1010E07	DC.. 0702..	12	13	70	269028 22	–	–
12/07	eShop	eShop	SDJCR/L 1212F07	DC.. 0702..	16	17	80	269028 22	–	–
16/07	eShop	eShop	SDJCR/L 1616H07	DC.. 0702..	20	22	100	269028 22	–	–
20/07	eShop	eShop	SDJCR/L 2020K07	DC.. 0702..	24	24	125	269028 22	–	–
16/11	eShop	eShop	SDJCR/L 1616H11	DC.. 11T3..	20	20	100	269028 2	269005 3	269013 2
20/11	eShop	eShop	SDJCR/L 2020K11	DC.. 11T3..	25	20.5	125	269028 2	269005 3	269013 2
25/11	eShop	eShop	SDJCR/L 2525M11	DC.. 11T3..	32	21.5	150	269028 2	269005 3	269013 2

Garant SDNC 62.5° screw-on toolholder for indexable inserts DC..





DIN ISO 5610 Standard



26 0300

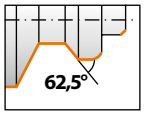
Shank / insert size	2IT 26 0300	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder								
mm	neutral			mm	mm	mm			
8/07	eShop	SDNCN 0808D07	DC.. 0702..	4	7.5	60	269028 22	–	–
10/07	eShop	SDNCN 1010E07	DC.. 0702..	5	9.5	70	269028 22	–	–
12/07	eShop	SDNCN 1212F07	DC.. 0702..	6	11	80	269028 22	–	–
16/11	eShop	SDNCN 1616H11	DC.. 11T3..	8	16	100	269028 2	269005 3	269013 2
20/11	eShop	SDNCN 2020K11	DC.. 11T3..	10	20	125	269028 2	269005 3	269013 2
25/11	eShop	SDNCN 2525M11	DC.. 11T3..	12.5	25	150	269028 2	269005 3	269013 2

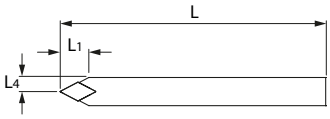
Garant SDNC 62.5° screw-on toolholder for indexable inserts DC..

DIN ISO 5610 | Standard



26 0301





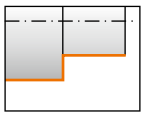
Shank / insert size	21T 26 0301	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	Screw-on toolholder						
mm	neutral			mm	mm	mm	
10/07	eShop	SDNCN 1010M07	DC.. 0702..	5.2	15	150	269021 1
12/11	eShop	SDNCN 1212M11	DC.. 11T3..	6.2	21	150	269021 2
16/11	eShop	SDNCN 1616M11	DC.. 11T3..	8.6	21	150	269021 2

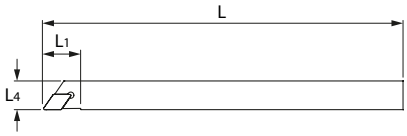
Standard

Garant SDAC 90° screw-on toolholder for indexable inserts DC..



26 0298

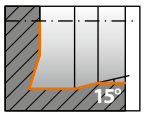




Shank / insert size	21T 26 0298	21T 26 0299	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	Screw-on toolholder							
mm	right-hand	left-hand			mm	mm	mm	
8/07	eShop	eShop	SDACR/L 0808M07	DC.. 0702..	8	12.7	150	269021 1
10/07	eShop	eShop	SDACR/L 1010M07	DC.. 0702..	10	15	150	269021 1
12/07	eShop	eShop	SDACR/L 1212M07	DC.. 0702..	12	15	150	269021 1
16/07	eShop	eShop	SDACR/L 1616M07	DC.. 0702..	16	16	150	269021 1
12/11	eShop	eShop	SDACR/L 1212M11	DC.. 11T3..	12	18	150	269021 2
16/11	eShop	eShop	SDACR/L 1616M11	DC.. 11T3..	16	20	150	269021 2

8×D | Carbide

Garant E... SDQC 107.5° boring bars for indexable inserts DC..

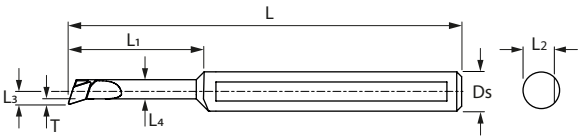


Boring bar stepped

Standard



26 0320_0408/04



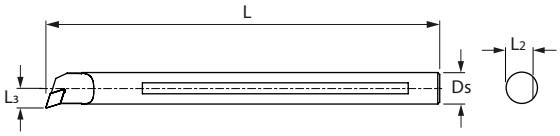
Shank Ø / insert size	21T 26 0320	21T 26 0321	$Ø D_s$	ISO code toolholder	suitable indexable insert	$Ø D_{min}$	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar carbide												
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	mm	
0408/04	eShop	eShop	8	E0408F SDQCR/L04	DC.. 04T0..	5.6	3	7.5	1.1	4	26	80	269028 26

Boring bar cylindrical

DIN 8024



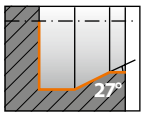
26 0320_20/11



Shank ∅ / insert size	21T 26 0320	21T 26 0321	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar carbide									
mm	right-hand	left-hand	mm			mm	mm	mm	mm	
8/07	eShop	eShop	8	E08K SDQCR/L07	DC.. 0702..	12	7	7.6	125	269028 7
10/07	eShop	eShop	10	E10K SDQCR/L07	DC.. 0702..	13	7	9.6	125	269028 7
12/07	eShop	eShop	12	E12M SDQCR/L07	DC.. 0702..	16	8.5	11.6	150	269028 7
16/07	eShop	eShop	16	E16R SDQCR/L07	DC.. 0702..	20	10	15.6	200	269028 7
20/11	eShop	eShop	20	E20S SDQCR/L11	DC.. 11T3..	25	12.5	18.9	250	269028 8
25/11	eShop	eShop	25	E25S SDQCR/L11	DC.. 11T3..	32	16	24	250	269028 8

8×D Carbide

Garant **E... SDUC 93° boring bars for indexable inserts DC..**

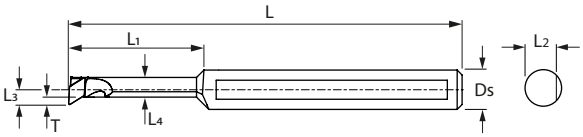


Boring bar stepped

Standard



26 0318_0408/04



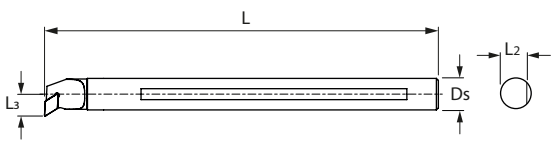
Shank ∅ / insert size	21T 26 0318	21T 26 0319	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar carbide												
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	mm	
0408/04	eShop	eShop	8	E0408F SDUCR/L04	DC.. 04T0..	5.6	3	7.5	1.5	4	26	80	269028 26

Boring bar cylindrical

DIN 8024 Standard



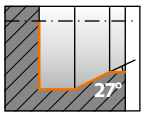
26 0318_12/07

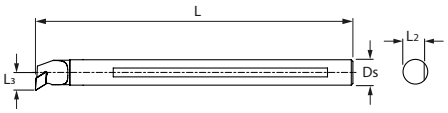


Shank ∅ / insert size	21T 26 0318	21T 26 0319	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar carbide									
mm	right-hand	left-hand	mm			mm	mm	mm	mm	
8/07	eShop	eShop	8	E08K SDUCR/L07	DC.. 0702..	12.5	7.5	7.6	125	269028 7
10/07	eShop	eShop	10	E10K SDUCR/L07	DC.. 0702..	12.5	7	9.6	125	269028 7
12/07	eShop	eShop	12	E12M SDUCR/L07	DC.. 0702..	15	9	11.6	150	269028 7
16/07	eShop	eShop	16	E16R SDUCR/L07	DC.. 0702..	19	11	15.6	200	269028 7
20/11	eShop	eShop	20	E20S SDUCR/L11	DC.. 11T3..	23.5	13.1	18.9	250	269028 8
25/11	eShop	eShop	25	E25S SDUCR/L11	DC.. 11T3..	32	16	24	250	269028 8

8×D | Carbide | DIN 8024 | Standard

Garant E... SDUC 93° boring bar sets for indexable inserts DC..





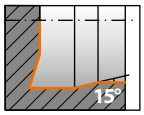


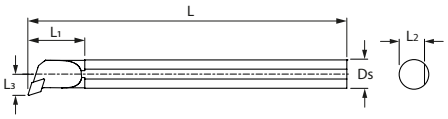
26 0324

29W 26 0324	29W 26 0325	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of insert screws
Boring bar set carbide								
right-hand	left-hand			mm	mm	mm	mm	
eShop	eShop	E10K SDUCR/L07; E12M SDUCR/L07	DC.. 0702..	12; 15	7; 9	9.6; 11.6	125; 150	269028 7

5×D | HSS | Standard

Garant AH... SDQC 107.5° boring bars for indexable inserts DC..





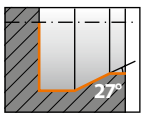


26 0328

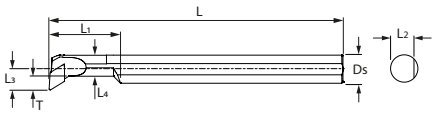
Shank ∅ / insert size	21T 26 0328	21T 26 0329	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar HSS									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
8/07	eShop	eShop	AH08K SDQCR/L07	DC.. 0702..	12	8	7	20	125	269028 7
10/07	eShop	eShop	AH10K SDQCR/L07	DC.. 0702..	13	8	9	20	125	269028 7
12/07	eShop	eShop	AH12M SDQCR/L07	DC.. 0702..	16	9.5	11	20	150	269028 7
16/07	eShop	eShop	AH16Q SDQCR/L07	DC.. 0702..	20	12	15	30	180	269028 7
20/11	eShop	eShop	AH20R SDQCR/L11	DC.. 11T3..	25	14.5	18	40	200	269028 8
25/11	eShop	eShop	AH25R SDQCR/L11	DC.. 11T3..	32	17	23	40	200	269028 8

5×D | HSS | Standard

Garant AH... SDUC 93° boring bars for indexable inserts DC..



Boring bar stepped

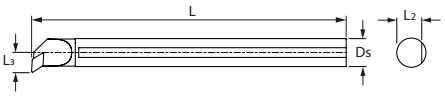




26 0332_0810/07

Shank ∅ / insert size	21T 26 0332	21T 26 0333	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar HSS												
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	mm	
0810/07	eShop	eShop	10	AH0810H SDUCR/L07	DC.. 0702..	12.5	7	9	5	8	22	100	269028 7
1012/07	eShop	eShop	12	AH1012K SDUCR/L07	DC.. 0702..	15.5	9	11	5	10	28	125	269028 7
1216/07	eShop	eShop	16	AH1216M SDUCR/L07	DC.. 0702..	19.5	11	15	5	12	36	150	269028 7

Boring bar cylindrical



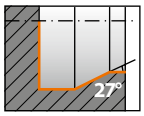


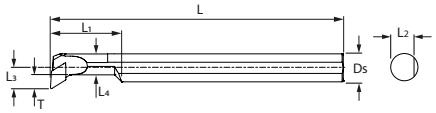
26 0332_20/11

Shank ∅ / insert size	21T 26 0332	21T 26 0333	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar HSS									
mm	right-hand	left-hand	mm			mm	mm	mm	mm	
8/07	eShop	eShop	8	AH08K SDUCR/L07	DC.. 0702..	13.5	7.5	7	125	269028 7
10/07	eShop	eShop	10	AH10K SDUCR/L07	DC.. 0702..	14	9	9	125	269028 7
12/07	eShop	eShop	12	AH12M SDUCR/L07	DC.. 0702..	16	8	11	150	269028 7
16/07	eShop	eShop	16	AH16Q SDUCR/L07	DC.. 0702..	20	10	15	180	269028 7
20/11	eShop	eShop	20	AH20R SDUCR/L11	DC.. 11T3..	26	16	18	200	269028 8
25/11	eShop	eShop	25	AH25R SDUCR/L11	DC.. 11T3..	32	16	23	200	269028 8

5×D | HSS | Standard

Garant AH... SDUC 93° boring bar sets for indexable inserts DC..





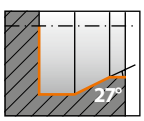


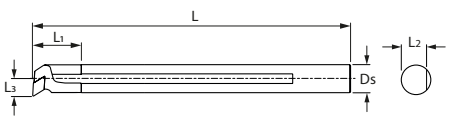
26 0334

29W 26 0334	29W 26 0335	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
Boring bar set HSS											
right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
eShop	eShop	AH0810H SDUCR/L07; AH1012K SDUCR/L07; AH1216M SDUCR/L07	DC.. 0702..	12.5; 15.5; 19.5	7; 9; 11	9; 11; 15	5; 5; 5	8; 10; 12	22; 28; 36	100; 125; 150	269028 7

3×D

Garant GARANT Master Turn A... SDUC 93° boring bars for indexable inserts DC..





optimised chip evacuation

DIN 8024 | Standard



26 0336

Shank ∅ / insert size	21T 26 0336	21T 26 0337	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	GARANT Master Turn boring bar, steel spiral flutes									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
10/07	eShop	eShop	A10K SDUCR/L07	DC.. 0702..	13	7	9	20	125	269028 7
12/07	eShop	eShop	A12L SDUCR/L07	DC.. 0702..	15	8	11	25	140	269028 7
16/07	eShop	eShop	A16Q SDUCR/L07	DC.. 0702..	19	10	15	28	180	269028 7
16/11	eShop	eShop	A16Q SDUCR/L11	DC.. 11T3..	23	14	15	28	180	269028 8
20/11	eShop	eShop	A20R SDUCR/L11	DC.. 11T3..	25	13	18	36	200	269028 8
25/11	eShop	eShop	A25R SDUCR/L11	DC.. 11T3..	31	16	23	40	200	269028 8

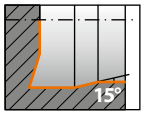
3×D

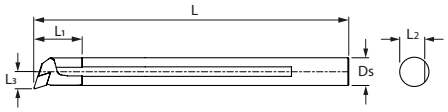
GARANT Master Turn A... SDQC 107.5° boring bars for indexable inserts DC..

Optimised chip evacuation

DIN 8024

Standard





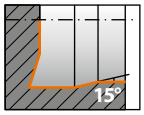


26 0330

Shank ∅ / insert size	21T 26 0330	21T 26 0331	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	GARANT Master Turn boring bar, steel spiral flutes									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
10/07	eShop	eShop	A10K SDQCR/L07	DC.. 0702..	13	7	9	20	125	269028 7
12/07	eShop	eShop	A12L SDQCR/L07	DC.. 0702..	15	8	11	25	140	269028 7
16/07	eShop	eShop	A16Q SDQCR/L07	DC.. 0702..	19	10	15	28	180	269028 7
16/11	eShop	eShop	A16Q SDQCR/L11	DC.. 11T3..	23	14	15	28	180	269028 8
20/11	eShop	eShop	A20R SDQCR/L11	DC.. 11T3..	25	13	18	36	200	269028 8
25/11	eShop	eShop	A25R SDQCR/L11	DC.. 11T3..	31	16	23	40	200	269028 8

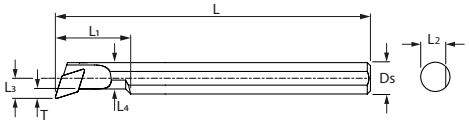
3×D

A... SDQC 107.5° boring bars for indexable inserts DC..



Boring bar stepped

Standard





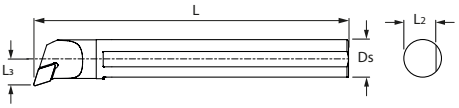
26 0340_0408/04

Shank ∅ / insert size	21T 26 0340	21T 26 0341	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar, steel												
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	mm	
0408/04	eShop	eShop	8	A0408F SDQCR/L04	DC.. 04T0..	5.2	2.6	7.5	1.1	4	15	80	269028 26
0810/07	eShop	eShop	10	A0810H SDQCR/L07	DC.. 0702..	12.5	6.4	9	3	8.4	22.4	100	269028 7
1012/07	eShop	eShop	12	A1012K SDQCR/L07	DC.. 0702..	15.5	9	11	4	10.7	27.5	125	269028 7
1216/07	eShop	eShop	16	A1216M SDQCR/L07	DC.. 0702..	19.5	11	15	5	12	39.5	150	269028 7

Boring bar cylindrical

DIN 8024

Standard





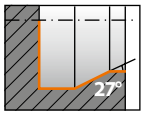
26 0340_25/11

Shank ∅ / insert size	21T 26 0340	21T 26 0341	∅ D_s	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of insert screws	Shim	Shim screw
	Boring bar, steel											
mm	right-hand	left-hand	mm			mm	mm	mm	mm			
10/07	eShop	eShop	10	A10K SDQCR/L07	DC.. 0702..	14	7	9	125	269028 7	–	–
12/07	eShop	eShop	12	A12L SDQCR/L07	DC.. 0702..	17	9	11	140	269028 7	–	–
16/07	eShop	eShop	16	A16Q SDQCR/L07	DC.. 0702..	22	11	14	180	269028 7	–	–
20/11	eShop	eShop	20	A20R SDQCR/L11	DC.. 11T3..	26	13	18	200	269028 8	–	–
25/11	eShop	eShop	25	A25R SDQCR/L11	DC.. 11T3..	32.5	17	24	200	269028 8	–	–
32/11	eShop	eShop	32	A32S SDQCR/L11	DC.. 11T3..	44	22	31	250	269028 2	269005 3	269013 2
40/11	eShop	eShop	40	A40T SDQCR/L11	DC.. 11T3..	49	27	39	300	269028 2	269005 3	269013 2

3×D

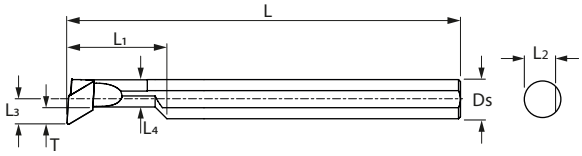
Garant

A... SDUC 93° boring bars for indexable inserts DC..



Boring bar stepped

Standard





26 0342_0810/07

Shank Ø / insert size	21T 26 0342	21T 26 0343	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar steel												
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	mm	
0408/04	eShop	eShop	8	A0408F SDUCR/L04	DC.. 04T0..	5.2	3	7.5	1.5	4	15	80	269028 26
0810/07	eShop	eShop	10	A0810H SDUCR/L07	DC.. 0702..	12.5	6.5	9	4.4	7	22.5	100	269028 7
1012/07	eShop	eShop	12	A1012K SDUCR/L07	DC.. 0702..	15.5	9	11	5.9	9	27.5	125	269028 7
1216/07	eShop	eShop	16	A1216M SDUCR/L07	DC.. 0702..	18	11	15	4.9	12	40.5	150	269028 7

Boring bar cylindrical

DIN 8024

Standard





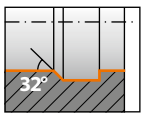
26 0342_25/11

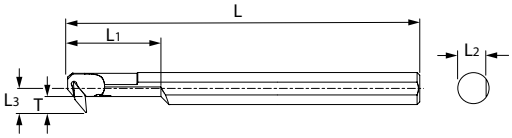
Shank Ø / insert size	21T 26 0342	21T 26 0343	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L	Set of insert screws	Shim	Shim screw
	Boring bar steel											
mm	right-hand	left-hand	mm			mm	mm	mm	mm			
10/07	eShop	eShop	10	A10K SDUCR/L07	DC.. 0702..	13.5	7	9	125	269028 7	–	–
12/07	eShop	eShop	12	A12L SDUCR/L07	DC.. 0702..	16	9	11	140	269028 7	–	–
16/07	eShop	eShop	16	A16Q SDUCR/L07	DC.. 0702..	20	11	14	180	269028 7	–	–
20/11	eShop	eShop	20	A20R SDUCR/L11	DC.. 11T3..	25	13	18	200	269028 8	–	–
25/11	eShop	eShop	25	A25R SDUCR/L11	DC.. 11T3..	32	17	24	200	269028 8	–	–
32/11	eShop	eShop	32	A32S SDUCR/L11	DC.. 11T3..	40	22	31	250	269028 2	269005 3	269013 2
40/11	eShop	eShop	40	A40T SDUCR/L11	DC.. 11T3..	49	27	39	300	269028 2	269005 3	269013 2

3×D

Garant

A... SDXC 93° boring bars for indexable inserts DC..





DIN 8024

Standard



26 0344

Shank Ø / insert size	21T 26 0344	21T 26 0345	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	T	L_1	L	Set of insert screws
	Boring bar, steel										
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	
8/04	eShop	eShop	A08F SDXCR/L04	DC.. 04T0..	9.2	5	7.5	3	15	80	269028 26
10/04	eShop	eShop	A10H SDXCR/L04	DC.. 04T0..	12.5	7	9	5	22	100	269028 26
12/07	eShop	eShop	A12L SDXCR/L07	DC.. 0702..	17	9	11	4.3	25	140	269028 7
16/07	eShop	eShop	A16Q SDXCR/L07	DC.. 0702..	21	11	15	4.3	33	180	269028 7
20/11	eShop	eShop	A20R SDXCR/L11	DC.. 11T3..	25	13	18	10	40	200	269028 8
25/11	eShop	eShop	A25R SDXCR/L11	DC.. 11T3..	31.5	17	23	10	50	200	269028 8

3×D

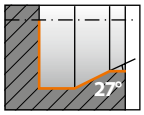
HOLEX

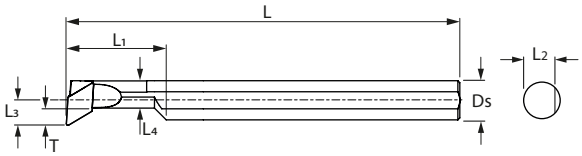
SDUC 93° boring bar sets for indexable inserts DC..

26 0348 – Without through–coolant feed.

DIN 8024 | Standard







26 0346

Type	29W 26 0346	29W 26 0347	29W 26 0348	ISO code toolholder		suitable indexable insert	Ø D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
	Boring bar set, steel, with IC		Boring bar set, steel, without IC	26 0346 26 0347	26 0348								
	right-hand	left-hand	right-hand				mm	mm	mm	mm	mm	mm	
SET07	eShop	eShop	eShop	A0810H SDUCR/L07; A1012K SDUCR/L07; A1216M SDUCR/L07	S0810H SDUCR07; S1012K SDUCR07; S1216M SDUCR07	DC..0702..	12; 15.5; 19	6.5; 9; 11	9; 11; 15	8; 10; 12	22.5; 27.5; 40.5	100; 125; 150	269028 7
SET11	eShop	eShop	–	A16Q SDUCR/L11; A20R SDUCR/L11; A25R SDUCR/L11	–	DC.. 11T3..	22; 27; 32	13.6; 16; 18.5	15; 18; 23	–	–	180; 200; 200	269028 8

DC.T indexable inserts

DCGT fine finishing



Grade			HB7025-1	HB7125-1	HU7315-1	
21G 26 0350	Garant	DCGT 04T002	eShop	eShop	eShop	–
●			P	M	N	
⚙			◪	◪	◍	
Chip breaker			SF	VF	AF	
a_p		mm	0.05 – 0.2	0.05 – 0.2	0.05 – 0.6	
f		mm/rev.		0.03 – 0.1		
v_c main application		m/min	120 – 300	120 – 300	120 – 600	

DC.. Finishing

Note:
26 0391–0395 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



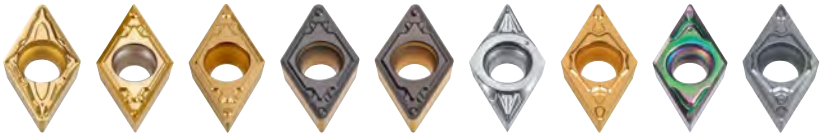
Grade			CU7010	HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HU7315-1	HB7315-1	HB7415-1	
21G 26 0351		DC.T 070202	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0353		DC.T 070204	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0356	Garant	DC.T 11T302	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0359		DC.T 11T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0361		DC.T 11T308	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	P	M	M	M	N	N	S	
○			M	–	–	–	–	–	–	–	–	M	
⚙			◍	◍	◪	◒	◍	◪	◒	◍	◍	◍	
Chip breaker			SS	SS	SS	SS	VS	VS	VS	AF	AF	TIS	
Tolerance			M	M	M	M	M	M	M	G	G	M	
a_p		mm	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.05 – 0.6	0.05 – 0.6	0.2 – 1.5	
f		mm/rev.	0.05 – 0.2	0.07 – 0.25	0.07 – 0.25	0.07 – 0.25	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.03 – 0.1	0.03 – 0.1	0.05 – 0.3	
v_c main application		m/min	90 – 210	150 – 500	140 – 400	120 – 350	90 – 290	80 – 270	70 – 230	120 – 600	120 – 600	50 – 110	
v_c secondary application		m/min	80 – 140	–	–	–	–	–	–	–	–	70 – 250	



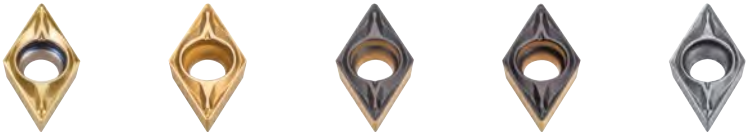
Grade		IC807	
26B 26 0391	DCMT 11T302	–	10
26B 26 0393	DCMT 11T304	–	10
26B 26 0395	DCMT 11T308	–	10
●		P	
⚙		◉	
Chip breaker		F3P	
a_p	mm	0.15 – 2	
f	mm/rev.	0.08 – 0.3	
v_c main application	m/min	50 – 245	



Grade		SP4019	
28D 26 0366	DCGX 0702005	eShop	10
28D 26 0367	DCGT 070201	eShop	10
28D 26 0368	DCGT 070202	eShop	10
28D 26 0369	DCGT 070204	eShop	10
28D 26 0372	DCGT 11T301	eShop	10
28D 26 0373	DCGT 11T302	eShop	10
28D 26 0374	DCGT 11T304	eShop	10
28D 26 0375	DCGT 11T308	eShop	10
●		UNI	
⚙		◉	
Chip breaker		62	
a_p	mm	0.15 – 3	
f	mm/rev.	0.05 – 0.3	
v_c main application	m/min	30 – 440	



Grade		CCX	PV720	CA510	CA115P	CA125P	PR1725	CA6525	PDL010	SW05	
25E 26 0380	DCGT 070201	–	–	–	–	–	eShop	–	–	–	1
25E 26 0381	DC.T 070202	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 26 0382	DC.T 070204	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	1
25E 26 0384	DCGT 11T301	–	–	–	–	–	eShop	–	–	–	1
25E 26 0385	DC.T 11T302	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	1
25E 26 0386	DC.T 11T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 26 0387	DCMT 11T308	eShop	eShop	eShop	eShop	eShop	–	–	–	eShop	1
●		P	P	P	P	P	M	M	N	Ti	
○		–	–	–	–	–	P	–	–	–	
⚙		◉	◉	◉	◉	◙	◙	◙	◙	◉	
Chip breaker		PP	HQ	HQ	HQ	HQ	MFP-SKS	MQ	AP	MQ	
Tolerance		M	M	M	M	M	G	M	G	M	
a_p	mm	0.1 – 1	0.5 – 1.5	0.5 – 1.5	0.5 – 1.5	0.5 – 1.5	0.2 – 1.5	0.5 – 1.5	0.1 – 1	0.1 – 1	
f	mm/rev.	0.05 – 0.3	0.05 – 0.25	0.05 – 0.25	0.05 – 0.25	0.05 – 0.25	0.03 – 0.2	0.05 – 0.25	0.05 – 0.25	0.05 – 0.2	
v_c main application	m/min	150 – 370	60 – 270	140 – 450	120 – 340	90 – 260	60 – 200	50 – 140	100 – 400	40 – 100	
v_c secondary application	m/min	–	–	–	–	–	50 – 150	–	–	–	



Grade			PV720	CA510	CA115P	CA125P	PR1725	
25E 26 0383	KYOCERA	DCMX 070204 Wiper	eShop	eShop	eShop	eShop	eShop	1
25E 26 0388	KYOCERA	DCMX 11T304 Wiper	eShop	eShop	eShop	eShop	eShop	1
●			P	P	P	P	M	
○			–	–	–	–	P	
⚙			◍	◍	◍	◪	◪	
Chip breaker					WP			
a_p		mm	0.5 – 1.5	0.5 – 1.5	0.15 – 1	0.15 – 1	0.2 – 1.5	
f		mm/rev.	0.05 – 0.25	0.05 – 0.25	0.1 – 0.45	0.1 – 0.45	0.03 – 0.2	
v_c main application		m/min	60 – 270	140 – 450	120 – 340	90 – 260	60 – 200	
v_c secondary application		m/min	–	–	–	–	50 – 150	



Grade			HBT020	HBT130	
22D 26 0363	HOLEX	DCMT 070202	eShop	eShop	–
22D 26 0376	HOLEX	DCMT 070204	eShop	eShop	–
22D 26 0377	HOLEX	DCMT 11T302	eShop	eShop	–
22D 26 0378	HOLEX	DCMT 11T304	eShop	eShop	–
●			P	M	
⚙			◪	◪	
Chip breaker			PF	M	
a_p		mm	0.4 – 1.5	0.1 – 1	
f		mm/rev.	0.1 – 0.3	0.05 – 0.2	
v_c main application		m/min	120 – 330	60 – 220	

DC.T Medium machining

Note:
26 0510–0513 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			CB7010	HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	HU7310	HB7310	HB725-1	
21G 26 0449	Garant	DC.T 070202	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 26 0452	Garant	DC.T 070204	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 0458	Garant	DC.T 11T302	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–	–
21G 26 0462	Garant	DC.T 11T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0464	Garant	DC.T 11T308	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
●			P	P	P	P	M	M	M	K	N	N	UNI	
○			M	–	–	–	–	–	–	–	–	–	–	
⚙			◍	◍	◪	◒	◍	◪	◒	◍	◍	◍	◪	
Chip breaker			SM	SM	SM	SM	VM	VM	VM	GM	AM	AM	UM1	
Tolerance			M	M	M	M	M	M	M	M	G	G	M	
a_p		mm	0.2 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5	0.2 – 2.5	0.1 – 4	0.1 – 4	0.2 – 4	
f		mm/rev.	0.1 – 0.3	0.08 – 0.3	0.08 – 0.3	0.08 – 0.3	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.25	0.05 – 0.5	0.05 – 0.5	0.05 – 0.5	
v_c main application		m/min	90 – 240	120 – 440	110 – 350	80 – 290	80 – 260	70 – 240	60 – 200	100 – 450	350 – 600	350 – 600	50 – 250	
v_c secondary application		m/min	70 – 180	–	–	–	–	–	–	–	–	–	–	



Grade		IC807	
26B 26 0510	DCMT 11T304	–	10
26B 26 0512	DCMT 11T308	–	10
●		P	
⚙		■	
Chip breaker		M3P	
a_p	mm	0.8 – 3	
f	mm/rev.	0.1 – 0.3	
v_c main application	m/min	50 – 245	



Grade		IC807	
26B 26 0511	DCMT 11T304	–	10
26B 26 0513	DCMT 11T308	–	10
●		M	
⚙		■	
Chip breaker		M3M	
a_p	mm	0.8 – 3	
f	mm/rev.	0.1 – 0.3	
v_c main application	m/min	30 – 80	



Grade		SP4019	
28D 26 0470	DCMT 070202	eShop	10
28D 26 0471	DCMT 070204	eShop	10
28D 26 0474	DCMT 11T304	eShop	10
28D 26 0475	DCMT 11T308	eShop	10
●		UNI	
⚙		●	
Chip breaker		73	
a_p	mm	0.2 – 4.5	
f	mm/rev.	0.1 – 0.45	
v_c main application	m/min	30 – 440	



Grade		PV720	CA510	CA115P	CA125P	CA6525	CA315	KW10	
25E 26 0481	DCMT 070202	eShop	–	eShop	eShop	eShop	–	–	10
25E 26 0483	DCMT 070204	eShop	–	eShop	eShop	eShop	eShop	–	10
25E 26 0486	DCMT 070208	eShop	–	eShop	eShop	eShop	eShop	–	10
25E 26 0488	DCMT 11T302	eShop	–	eShop	eShop	eShop	–	–	10
25E 26 0490	DC.T 11T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
25E 26 0492	DC.T 11T308	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●		P	P	P	P	M	O	N	
⚙		●	●	●	■	■	■	●	
Chip breaker		GK	GK	GK	GK	GK	GK	AH	
Tolerance		M	M	M	M	M	M	G	
a_p	mm				0.5 – 3				
f	mm/rev.	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.05 – 0.25	
v_c main application	m/min	60 – 270	140 – 450	120 – 340	90 – 260	50 – 140	60 – 230	30 – 300	

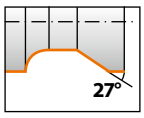


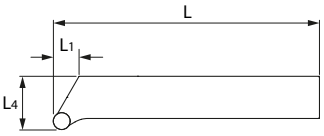
Grade		HBT020	HBT130	
22D 26 0500	DCMT 070204	eShop	eShop	10
22D 26 0503	DCMT 11T302	eShop	eShop	10
22D 26 0507	DCMT 11T304	eShop	eShop	–
22D 26 0508	DCMT 11T308	eShop	eShop	10
●		P	M	
⚙		■	■	
Chip breaker		PM	MM	
a_p	mm	0.5 – 2.5	0.3 – 2.5	
f	mm/rev.	0.12 – 0.3	0.05 – 0.35	
v_c main application	m/min	100 – 280	50 – 200	

Garant SRGC screw-on toolholder for indexable inserts RC..

Standard

Note:
Size 16/10–25/10 – When used with indexable insert No. 260640 HU7310-1, use insert screw set No. 269028 2.







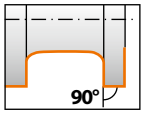
26 0606

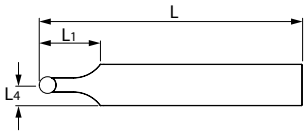
Shank / insert size	21T 26 0606	21T 26 0607	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
12/06	eShop	eShop	SRGCR/L 1212F06	RC.T 0602	16	13.6	80	269028 22	–	–
16/06	eShop	eShop	SRGCR/L 1616H06	RC.T 0602	20	13.6	100	269028 22	–	–
20/06	eShop	eShop	SRGCR/L 2020K06	RC.T 0602	25	15.3	125	269028 22	–	–
25/06	eShop	eShop	SRGCR/L 2525M06	RC.T 0602	32	15.3	150	269028 22	–	–
16/08	eShop	eShop	SRGCR/L 1616H08	RC.T 0803	20	18.8	100	269028 29	–	–
20/08	eShop	eShop	SRGCR/L 2020K08	RC.T 0803	25	14.7	125	269028 29	–	–
25/08	eShop	eShop	SRGCR/L 2525M08	RC.T 0803	32	19.8	150	269028 29	–	–
16/10	eShop	eShop	SRGCR/L 1616H10	RC.T 1003	20	15.5	100	269028 1	269005 11	269013 2
20/10	eShop	eShop	SRGCR/L 2020K10	RC.T 1003	25	17	125	269028 1	269005 11	269013 2
25/10	eShop	eShop	SRGCR/L 2525M10	RC.T 1003	32	21	150	269028 1	269005 11	269013 2

Garant SRDC screw-on toolholder for indexable inserts RC..

Standard

Note:
Size 16/10–25/10 – When used with indexable insert No. 260640 HU7310-1, use insert screw set No. 269028 2.







26 0611

Shank / insert size	21T 26 0611	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder								
mm	neutral			mm	mm	mm			
12/06	eShop	SRDCN 1212F06	RC.T 0602	9	12.4	80	269028 15	–	–
16/06	eShop	SRDCN 1616H06	RC.T 0602	11	12.4	100	269028 15	–	–
20/06	eShop	SRDCN 2020K06	RC.T 0602	13	12.4	125	269028 15	–	–
25/06	eShop	SRDCN 2525M06	RC.T 0602	15.5	12.4	150	269028 15	–	–
16/08	eShop	SRDCN 1616H08	RC.T 0803	12	16.4	100	269028 29	–	–
20/08	eShop	SRDCN 2020K08	RC.T 0803	14	16.4	125	269028 29	–	–
25/08	eShop	SRDCN 2525M08	RC.T 0803	16.5	16.4	150	269028 29	–	–
16/10	eShop	SRDCN 1616H10	RC.T 1003	13	20.3	100	269028 1	269005 11	269013 2
20/10	eShop	SRDCN 2020K10	RC.T 1003	15	20.3	125	269028 1	269005 11	269013 2
25/10	eShop	SRDCN 2525M10	RC.T 1003	17.5	20.3	150	269028 1	269005 11	269013 2
20/12	eShop	SRDCN 2020K12	RC.T 1204	16	20.3	125	269028 2	269005 10	269013 2
25/12	eShop	SRDCN 2525M12	RC.T 1204	18.5	20.3	150	269028 2	269005 10	269013 2

26

Garant Indexable inserts RC..

RC.. Medium machining





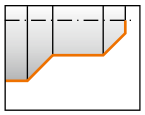


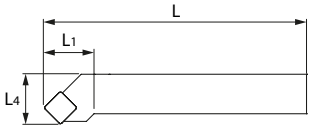


Grade		HB7020-2	HB7130-2	HU7310-1	HB725-1	
21G 26 0620	RC.T 0602	–	–	eShop	eShop	10
21G 26 0630	RC.T 0803	–	–	eShop	eShop	–
21G 26 0640	RC.X 1003	eShop	eShop	eShop	eShop	10
21G 26 0650	RC.X 1204	eShop	eShop	eShop	eShop	10
●		P	M	N	UNI	
⚙		◪	◪	◎	◪	
Chip breaker		SM	VM	AM	UM1	
Tolerance		M	M	G	M	
a_p	mm	0.3 – 2	0.5 – 2	0.5 – 2	0.5 – 2	
f	mm/rev.	0.08 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	
v_c main application	m/min	110 – 350	70 – 240	350 – 600	60 – 230	

Garant SSSC 45° screw-on toolholders for indexable inserts SC..

DIN ISO 5610 Standard





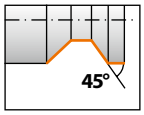


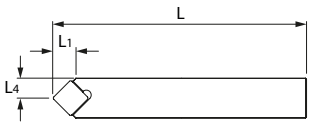
26 0706

Shank / insert size	21T 26 0706	21T 26 0707	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
8/09	eShop	eShop	SSSCR/L 0808D09	SC.. 09T3..	13.25	21	60	269028 23	–	–
10/09	eShop	eShop	SSSCR/L 1010E09	SC.. 09T3..	14.25	21	70	269028 23	–	–
12/09	eShop	eShop	SSSCR/L 1212F09	SC.. 09T3..	16	18	80	269028 2	–	–
16/09	eShop	eShop	SSSCR/L 1616H09	SC.. 09T3..	20	20	100	269028 2	269005 12	269013 2
20/09	eShop	eShop	SSSCR/L 2020K09	SC.. 09T3..	25	20	125	269028 2	269005 12	269013 2
16/12	eShop	eShop	SSSCR/L 1616H12	SC.. 1204..	20	18	100	269028 20	269005 9	269013 5
20/12	eShop	eShop	SSSCR/L 2020K12	SC.. 1204..	25	27	125	269028 20	269005 9	269013 5
25/12	eShop	eShop	SSSCR/L 2525M12	SC.. 1204..	32	25	150	269028 20	269005 9	269013 5

Garant SSDC 45° screw-on toolholders for indexable inserts SC..

DIN ISO 5610 Standard





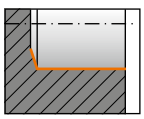


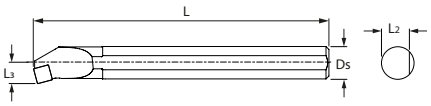
26 0711

Shank / insert size	21T 26 0711	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder								
mm	neutral			mm	mm	mm			
12/09	eShop	SSDCN 1212F09	SC.. 09T3..	6	6	80	269028 2	269005 12	269013 2
16/09	eShop	SSDCN 1616H09	SC.. 09T3..	8	9	100	269028 2	269005 12	269013 2
20/09	eShop	SSDCN 2020K09	SC.. 09T3..	10	11	125	269028 2	269005 12	269013 2
16/12	eShop	SSDCN 1616H12	SC.. 1204..	8	8.7	100	269028 20	269005 9	269013 5
20/12	eShop	SSDCN 2020K12	SC.. 1204..	10	11.2	125	269028 20	269005 9	269013 5
25/12	eShop	SSDCN 2525M12	SC.. 1204..	12.5	13.7	150	269028 20	269005 9	269013 5

3×D DIN 8024

Garant A... SSSC 45° boring bars for indexable inserts SC..







26 0722

Shank ∅ / insert size	21T 26 0722	21T 26 0723	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar, steel								
mm	right-hand	left-hand			mm	mm	mm	mm	
16/09	eShop	eShop	A16Q SSSCR/L09	SC.. 09T3..	20	11.5	14	180	269028 8
20/09	eShop	eShop	A20R SSSCR/L09	SC.. 09T3..	26	13.5	18	200	269028 8
25/09	eShop	eShop	A25R SSSCR/L09	SC.. 09T3..	32	17	24	200	269028 8

Indexable inserts SC.T

SCMT Finishing



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 26 0742	Garant	SCMT 09T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 0744	Garant	SCMT 09T308	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 26 0748	Garant	SCMT 120404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 0750	Garant	SCMT 120408	eShop	eShop	eShop	eShop	eShop	eShop	–	10
●			P	P	P	M	M	M	S	
○			–	–	–	–	–	–	M	
⚙										
Chip breaker			SS	SS	SS	VS	VS	VS	TIS	
a_p		mm				0.2 – 1.5				
f		mm/rev.	0.07 – 0.25	0.07 – 0.25	0.07 – 0.25	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.05 – 0.3	
v_c main application		m/min	150 – 500	140 – 400	120 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application		m/min	–	–	–	–	–	–	70 – 250	



Grade			HBT020	HBT130	
22D 26 0758	HOLEX	SCMT 09T304	eShop	eShop	–
●			P	M	
⚙					
Chip breaker			PF	M	
a_p		mm	0.4 – 1.5	0.1 – 1	
f		mm/rev.	0.1 – 0.3	0.05 – 0.2	
v_c main application		m/min	120 – 330	60 – 220	

SC.T Medium machining



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7210-1	HU7310	HB7310	HB725-1	
21G 26 0761		SCGT 09T302	–	–	–	–	–	–	–	eShop	eShop	–	–
21G 26 0762		SC.T 09T304	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	10
21G 26 0763	Garant	SCMT 09T308	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	eShop	10
21G 26 0765		SC.T 120404	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	10
21G 26 0766		SC.T 120408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	M	M	M	K	N	N	UNI	
⚙													
Chip breaker			SM	SM	SM	VM	VM	VM	GM	AM	AM	UM1	
Tolerance			M	M	M	M	M	M	M	G	G	M	
a_p		mm	0.3 – 2	0.3 – 2	0.3 – 2	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5	0.2 – 2.5	0.1 – 4	0.1 – 4	0.2 – 4	
f		mm/rev.	0.08 – 0.3	0.08 – 0.3	0.08 – 0.3	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.1 – 0.25	0.05 – 0.5	0.05 – 0.5	0.05 – 0.5	
v_c main application		m/min	120 – 440	110 – 350	80 – 290	80 – 260	70 – 240	60 – 200	100 – 450	350 – 600	350 – 600	50 – 250	



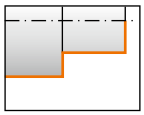
Grade			HBT020	HBT130	
22D 26 0791		SCMT 09T304	eShop	eShop	–
22D 26 0793	HOLEX	SCMT 120404	eShop	eShop	–
22D 26 0795		SCMT 120408	eShop	eShop	–
●			P	M	
⚙					
Chip breaker			PM	MM	
a_p		mm	0.5 – 2.5	0.3 – 2.5	
f		mm/rev.	0.12 – 0.3	0.05 – 0.35	
v_c main application		m/min	100 – 280	50 – 200	

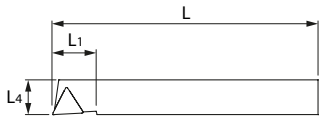
Standard

Garant STJC 93° screw-on toolholder for indexable inserts TC.



26 0904





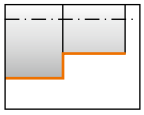
Shank / insert size	21T 26 0904	21T 26 0905	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	Screw-on toolholder							
mm	right-hand	left-hand			mm	mm	mm	
10/11	eShop	eShop	STJCR/L 1010M11	TC.. 1102..	10	16	150	269021 1
12/11	eShop	eShop	STJCR/L 1212M11	TC.. 1102..	12	16	150	269021 1
16/11	eShop	eShop	STJCR/L 1616M11	TC.. 1102..	16	16	150	269021 1

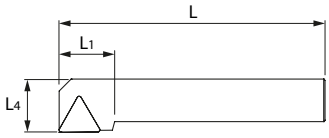
DIN ISO 5610

Garant STGC 90° screw-on toolholder for indexable inserts TC.



26 0906





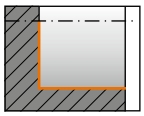
Shank / insert size	21T 26 0906	21T 26 0907	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
12/11	eShop	eShop	STGCR/L 1212F11	TC.. 1102..	16	19	80	269028 18	–	–
16/11	eShop	eShop	STGCR/L 1616H11	TC.. 1102..	20	19	100	269028 18	–	–
16/16	eShop	eShop	STGCR/L 1616H16	TC.. 16T3..	20	22	100	269028 2	269005 7	269013 2
20/16	eShop	eShop	STGCR/L 2020K16	TC.. 16T3..	25	22	125	269028 2	269005 7	269013 2
25/16	eShop	eShop	STGCR/L 2525M16	TC.. 16T3..	32	23	150	269028 2	269005 7	269013 2

8×D | Carbide | Standard

Garant E... STFC 90° boring bars for indexable inserts TC..



26 0918





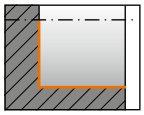
Shank ∅ / insert size	21T 26 0918	21T 26 0919	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar carbide									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
10/11	eShop	eShop	E10K STFCR/L11	TC.. 1102..	12	6	9.6	16	125	269028 7
12/11	eShop	eShop	E12M STFCR/L11	TC.. 1102..	15	8	11.5	20	150	269028 7
16/11	eShop	eShop	E16R STFCR/L11	TC.. 1102..	19	10	15.4	25	200	269028 7

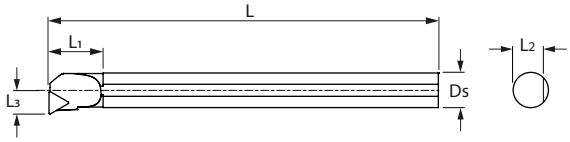
5×D | HSS | Standard

Garant AH... STFC 90° boring bars for indexable inserts TC..



26 0922





Shank ∅ / insert size	21T 26 0922	21T 26 0923	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar HSS									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
10/11	eShop	eShop	AH10K STFCR/L11	TC.. 1102..	12	7	9	16	125	269028 7
12/11	eShop	eShop	AH12M STFCR/L11	TC.. 1102..	14	9	11	20	150	269028 7
16/11	eShop	eShop	AH16Q STFCR/L11	TC.. 1102..	18	11	15	25	180	269028 7
20/11	eShop	eShop	AH20R STFCR/L11	TC.. 1102..	23	13	18	32	200	269028 7
25/16	eShop	eShop	AH25R STFCR/L16	TC.. 16T3..	28	17	23	40	200	269028 8

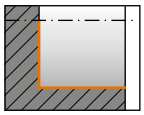
3×D

Garant GARANT Master Turn A... STFC 90° boring bars for indexable inserts TC..

DIN 8024 | Standard



26 0932



Optimised chip evacuation



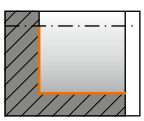
Shank ∅ / insert size	21T 26 0932	21T 26 0933	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	GARANT Master Turn boring bar, steel spiral flutes									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
10/11	eShop	eShop	A10K STFCR/L11	TC.. 1102..	12	6.2	9	22	125	269028 7
12/11	eShop	eShop	A12L STFCR/L11	TC.. 1102..	14	7.2	11	24.3	140	269028 7
16/11	eShop	eShop	A16Q STFCR/L11	TC.. 1102..	18	9.2	15	31	180	269028 7
20/11	eShop	eShop	A20R STFCR/L11	TC.. 1102..	22	11.1	18	36	200	269028 7

3×D | Standard

Garant A... STFC 90° boring bars for indexable inserts TC..



26 0934





Shank ∅ / insert size	21T 26 0934	21T 26 0935	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws	Shim	Shim screw
	Boring bar steel											
mm	right-hand	left-hand			mm	mm	mm	mm	mm			
10/11	eShop	eShop	A10K STFCR/L11	TC.. 1102..	13	7	9	22.8	125	269028 7	–	–
12/11	eShop	eShop	A12L STFCR/L11	TC.. 1102..	16	9	11	26.5	140	269028 7	–	–
16/11	eShop	eShop	A16Q STFCR/L11	TC.. 1102..	20	11	15	26.7	180	269028 7	–	–
20/16	eShop	eShop	A20R STFCR/L16	TC.. 16T3..	25	13	18	36.6	200	269028 8	–	–
25/16	eShop	eShop	A25R STFCR/L16	TC.. 16T3..	32	17	23	41	200	269028 8	–	–
32/16	eShop	eShop	A32S STFCR/L16	TC.. 16T3..	40	22	30	34.6	250	269028 2	269005 7	269013 2
40/16	eShop	eShop	A40T STFCR/L16	TC.. 16T3..	49	27	39	37.5	300	269028 2	269005 7	269013 2

Indexable inserts TC.T

TCMT Finishing



Grade			CU7010	HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 26 0950	Garant	TCMT 110202	–	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 26 0952	Garant	TCMT 110204	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 0954	Garant	TCMT 110208	–	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 26 0956	Garant	TCMT 16T304	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 0958	Garant	TCMT 16T308	–	eShop	eShop	eShop	eShop	eShop	eShop	–	10
●			P	P	P	P	M	M	M	S	
○			M	–	–	–	–	–	–	M	
⚙											
Chip breaker			SS	SS	SS	SS	VS	VS	VS	TIS	
a_p		mm	0.2 – 1.5								
f		mm/rev.	0.05 – 0.2	0.07 – 0.25	0.07 – 0.25	0.07 – 0.25	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.05 – 0.3	
v_c main application		m/min	90 – 210	150 – 500	140 – 400	120 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application		m/min	80 – 140	–	–	–	–	–	–	70 – 250	



Grade			HBT020	HBT130	
22D 26 0966	HOLEX	TCMT 110204	eShop	eShop	–
22D 26 0968	HOLEX	TCMT 16T304	eShop	eShop	–
●			P	M	
⚙					
Chip breaker			PF	M	
a_p		mm	0.4 – 1.5	0.1 – 1	
f		mm/rev.	0.1 – 0.3	0.05 – 0.2	
v_c main application		m/min	120 – 330	60 – 220	

TC.T Medium machining



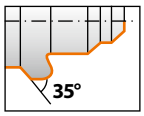
Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HU7310	HB725-1	
21G 26 0980	Garant	TC.T 110202	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
21G 26 0982	Garant	TC.T 110204	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 0986	Garant	TC.T 16T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 0988	Garant	TCMT 16T308	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	10
●			P	P	P	M	M	M	N	UNI	
⚙											
Chip breaker			SM	SM	SM	VM	VM	VM	AM	UM1	
Tolerance			M	M	M	M	M	M	G	M	
a_p		mm	0.3 – 2	0.3 – 2	0.3 – 2	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5	0.1 – 4	0.2 – 4	
f		mm/rev.	0.08 – 0.3	0.08 – 0.3	0.08 – 0.3	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.05 – 0.5	0.05 – 0.5	
v_c main application		m/min	120 – 440	110 – 350	80 – 290	80 – 260	70 – 240	60 – 200	350 – 600	50 – 250	

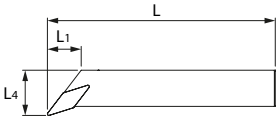


Grade			HBT020	HBT130	
22D 26 1012	HOLEX	TCMT 110204	eShop	eShop	–
22D 26 1018	HOLEX	TCMT 16T304	eShop	eShop	–
22D 26 1019	HOLEX	TCMT 16T308	eShop	eShop	–
●			P	M	
⚙					
Chip breaker			PM	MM	
a_p		mm	0.5 – 2.5	0.3 – 2.5	
f		mm/rev.	0.12 – 0.3	0.05 – 0.35	
v_c main application		m/min	100 – 280	50 – 200	

Garant SVHB 107.5° screw-on toolholder for indexable inserts VB..

DIN ISO 5610 Standard







26 1106

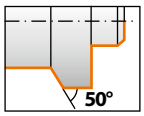
Shank / insert size	21T 26 1106	21T 26 1107	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
12/11	eShop	eShop	SVHBR/L 1212F11	VB.. 1103..	16	13	80	269028 22	–	–
16/11	eShop	eShop	SVHBR/L 1616H11	VB.. 1103..	20	13	100	269028 22	–	–
20/11	eShop	eShop	SVHBR/L 2020K11	VB.. 1103..	25	17	125	269028 22	–	–
20/16	eShop	eShop	SVHBR/L 2020K16	VB.. 1604..	25	16	125	269028 2	269005 8	269013 2
25/16	eShop	eShop	SVHBR/L 2525M16	VB.. 1604..	32	21	150	269028 2	269005 8	269013 2

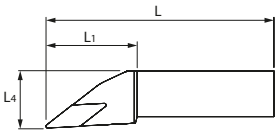
Garant GARANT Master Eco SVJB 93° screw-on toolholder for indexable inserts VB..

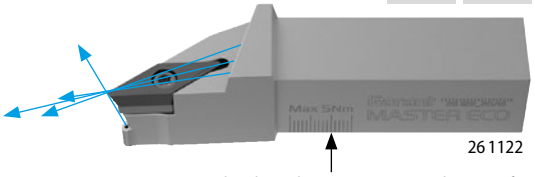
Highly efficient cooling directly on the cutting edge and additional flank face cooling.

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holders No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.

DIN ISO 5610 Standard







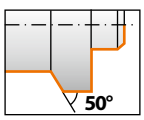
26 1122

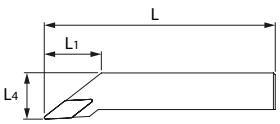
Positioning within the scale ensures precise coolant transfer.

Shank / insert size	21U 26 1122	21U 26 1123	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	GARANT Master Eco screw-on toolholder short									
mm	right-hand	left-hand			mm	mm	mm			
20/11	eShop	eShop	SVJBR/L 2020X11	VB.. 1103..	25	35	95	269023 1	–	–
20/16	eShop	eShop	SVJBR/L 2020H16	VB.. 1604..	25	40	100	269023 3	259033 5	269013 7
25/16	eShop	eShop	SVJBR/L 2525X16	VB.. 1604..	32	40	110	269023 3	259033 5	269013 7

Garant SVJB 93° screw-on toolholder for indexable inserts VB..

DIN ISO 5610 Standard





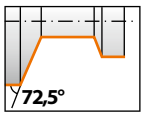


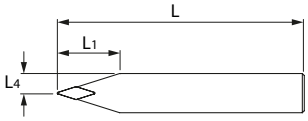
26 1108

Shank / insert size	21T 26 1108	21T 26 1109	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
12/11	eShop	eShop	SVJBR/L 1212F11	VB.. 1103..	16	21.5	80	269028 22	–	–
16/11	eShop	eShop	SVJBR/L 1616H11	VB.. 1103..	20	21.5	100	269028 22	–	–
20/11	eShop	eShop	SVJBR/L 2020K11	VB.. 1103..	25	23	125	269028 22	–	–
20/16	eShop	eShop	SVJBR/L 2020K16	VB.. 1604..	25	30	125	269028 2	269005 8	269013 2
25/16	eShop	eShop	SVJBR/L 2525M16	VB.. 1604..	32	33	150	269028 2	269005 8	269013 2

Garant SVVB 72.5° screw-on toolholders for indexable inserts VB..

DIN ISO 5610 Standard





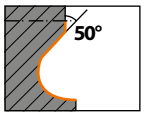


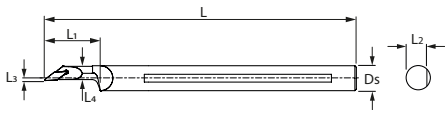
26 1111

Shank / insert size	21T 26 1111 Screw-on toolholder neutral	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
mm				mm	mm	mm			
12/11	eShop	SVVBN 1212F11	VB.. 1103..	6	18.5	80	269028 22	–	–
16/11	eShop	SVVBN 1616H11	VB.. 1103..	8	25	100	269028 22	–	–
20/11	eShop	SVVBN 2020K11	VB.. 1103..	10	32	125	269028 22	–	–
25/11	eShop	SVVBN 2525M11	VB.. 1103..	12.5	39	150	269028 22	–	–
20/16	eShop	SVVBN 2020K16	VB.. 1604..	10	31	125	269028 2	269005 8	269013 2
25/16	eShop	SVVBN 2525M16	VB.. 1604..	12.5	39	150	269028 2	269005 8	269013 2

8×D Carbide Standard

Garant E... SVJB 142° boring bars for indexable inserts VB..





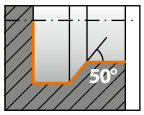


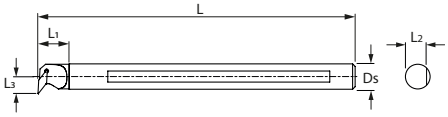
26 1112

Shank Ø / insert size	21T 26 1112 Boring bar carbide right-hand	21T 26 1113 left-hand	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
mm					mm	mm	mm	mm	mm	mm	
16/11	eShop	eShop	E16R SVJBR/L11	VB.. 1103..	22	2	15	9.5	31.4	200	269028 7
20/11	eShop	eShop	E20S SVJBR/L11	VB.. 1103..	24	2	19	11	38	250	269028 7
25/16	eShop	eShop	E25S SVJBR/L16	VB.. 1604..	28	4.6	24	16.5	44	250	269028 8

8×D Carbide DIN 8024

Garant E... SVUB 93° boring bars for indexable inserts VB..





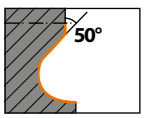


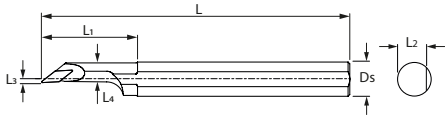
26 1118

Shank Ø / insert size	21T 26 1118 Boring bar carbide right-hand	21T 26 1119 left-hand	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L_1	L	Set of insert screws
mm					mm	mm	mm	mm	mm	
16/11	eShop	eShop	E16R SVUBR/L11	VB.. 1103..	21	11	15	16.5	200	269028 7
20/11	eShop	eShop	E20S SVUBR/L11	VB.. 1103..	25	13	18	20.5	250	269028 7
25/11	eShop	eShop	E25S SVUBR/L11	VB.. 1103..	31.5	17	23	23	250	269028 7

3×D Standard

Garant A... SVJB 142° boring bars for indexable inserts VB..







26 1124

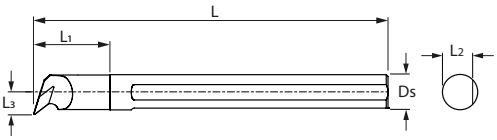
Shank Ø / insert size	21T 26 1124 Boring bar steel right-hand	21T 26 1125 left-hand	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
mm					mm	mm	mm	mm	mm	mm	
16/11	eShop	eShop	A16M SVJBR/L11	VB.. 1103..	22	2	15	9.5	31.4	150	269028 7
20/11	eShop	eShop	A20Q SVJBR/L11	VB.. 1103..	25	2	19	11	38	180	269028 7
25/16	eShop	eShop	A25R SVJBR/L16	VB.. 1604..	28	4.6	24	16.5	44	200	269028 8

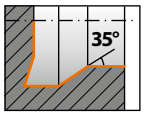
3×D DIN 8024

Garant A... SVQB 107.5° boring bars for indexable inserts VB..



26 1130





Shank ∅ / insert size	21T 26 1130	21T 26 1131	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar steel									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
16/11	eShop	eShop	A16Q SVQBR/L11	VB.. 1103..	21	11	15.5	16.5	180	269028 22
20/11	eShop	eShop	A20R SVQBR/L11	VB.. 1103..	25	13	19	20.5	200	269028 22
25/16	eShop	eShop	A25R SVQBR/L16	VB.. 1604..	32	17	23	40	200	269028 8

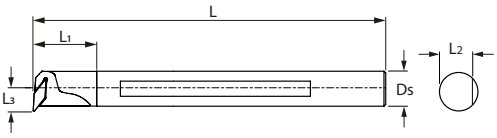
3×D DIN 8024

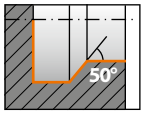
Garant GARANT Master Turn A... SVUB 93° boring bars for indexable inserts VB..

Optimised chip evacuation



26 1128





Shank ∅ / insert size	21T 26 1128	21T 26 1129	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	GARANT Master Turn boring bar, steel spiral flutes									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
16/11	eShop	eShop	A16Q SVUBR/L11	VB.. 1103..	20	11	15	31	180	269028 7
20/11	eShop	eShop	A20R SVUBR/L11	VB.. 1103..	24	13	18	36	200	269028 7
25/16	eShop	eShop	A25R SVUBR/L16	VB.. 1604..	31	17	23	40	200	269028 8

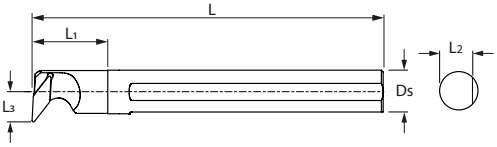
3×D

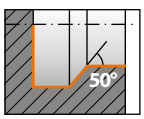
Garant A... SVUB 93° boring bars for indexable inserts VB..

DIN 8024 Standard



26 1132





Shank ∅ / insert size	21T 26 1132	21T 26 1133	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws	Shim	Shim screw
	Boring bar, steel											
mm	right-hand	left-hand			mm	mm	mm	mm	mm			
16/11	eShop	eShop	A16Q SVUBR/L11	VB.. 1103..	21	11	15.5	16.5	180	269028 7	–	–
20/11	eShop	eShop	A20R SVUBR/L11	VB.. 1103..	25	13	18	20.5	200	269028 7	–	–
25/16	eShop	eShop	A25R SVUBR/L16	VB.. 1604..	32	17	24	25.5	200	269028 8	–	–
32/16	eShop	eShop	A32S SVUBR/L16	VB.. 1604..	40	22	31	33.5	250	269028 2	269005 8	269013 2
40/16	eShop	eShop	A40T SVUBR/L16	VB.. 1604..	49	27	39	40	300	269028 2	269005 8	269013 2

Indexable inserts VB. T

VBMT Finishing



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HB7415-1	
21G 26 1142		VBMT 110302	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1144		VBMT 110304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1150	Garant	VBMT 160402	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1152		VBMT 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1154		VBMT 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	M	M	M	S	
○			–	–	–	–	–	–	M	
⚙										
Chip breaker			SS	SS	SS	VS	VS	VS	TIS	
a_p		mm	0.2 – 1.5							
f		mm/rev.	0.07 – 0.25	0.07 – 0.25	0.07 – 0.25	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.05 – 0.3	
v_c main application		m/min	150 – 500	140 – 400	120 – 350	90 – 290	80 – 270	70 – 230	50 – 110	
v_c secondary application		m/min	–	–	–	–	–	–	70 – 250	



Grade			CCX	PV720	CA510	CA115P	CA125P	CA6525	
25E 26 1174	KYOCERA	VBMT 110304	eShop	eShop	eShop	eShop	eShop	eShop	10
25E 26 1176		VBMT 110308	eShop	eShop	eShop	eShop	eShop	eShop	10
25E 26 1182		VBMT 160404	eShop	eShop	eShop	eShop	eShop	eShop	10
25E 26 1184		VBMT 160408	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	P	P	M	
⚙									
Chip breaker			PP	HQ	HQ	HQ	HQ	HQ	
a_p		mm	0.1 – 1	0.5 – 2	0.5 – 2	0.5 – 2	0.5 – 2	0.5 – 2	
f		mm/rev.	0.05 – 0.25						
v_c main application		m/min	140 – 300	60 – 270	140 – 450	140 – 340	110 – 260	50 – 140	



Grade			HBT020	HBT130	
22D 26 1186	HOLEX	VBMT 110304	eShop	eShop	10
22D 26 1188		VBMT 160404	eShop	eShop	10
●			P	M	
⚙					
Chip breaker			PF	M	
a_p		mm	0.4 – 1.5	0.1 – 1	
f		mm/rev.	0.1 – 0.3	0.05 – 0.2	
v_c main application		m/min	120 – 330	60 – 220	

VB.T Medium machining



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HU7310	HB7310	HB725-1	
21G 26 1220		VBGT 110301	–	–	–	–	–	–	eShop	–	–	10
21G 26 1222		VBGT 110302	–	–	–	–	–	–	eShop	eShop	–	10
21G 26 1224	Garant	VB.T 110304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1232		VB.T 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1234		VB.T 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	M	M	M	N	N	UNI	
⚙												
Chip breaker			SM	SM	SM	VM	VM	VM	AM	AM	UM1	
Tolerance			M	M	M	M	M	M	G	G	M	
a_p		mm	0.3 – 2	0.3 – 2	0.3 – 2	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5	0.1 – 4	0.1 – 4	0.2 – 4	
f		mm/rev.	0.08 – 0.3	0.08 – 0.3	0.08 – 0.3	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.05 – 0.5	0.05 – 0.5	0.05 – 0.5	
v_c main application		m/min	120 – 440	110 – 350	80 – 290	80 – 260	70 – 240	60 – 200	350 – 600	350 – 600	50 – 250	



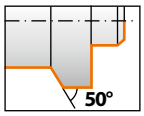

Grade		HBT020	HBT130	
22D 26 1252	VBMT 110304	eShop	eShop	10
22D 26 1257 HOLEX	VBMT 160404	eShop ■	eShop	10
22D 26 1259	VBMT 160408	eShop	eShop	10
●		P	M	
⚙		▨	▨	
Chip breaker		PM	MM	
a_p	mm	0.5 – 2.5	0.3 – 2.5	
f	mm/rev.	0.12 – 0.3	0.05 – 0.35	
v_c main application	m/min	100 – 280	50 – 200	

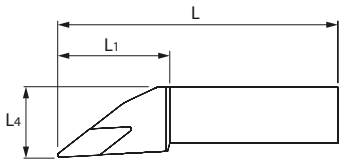
Standard

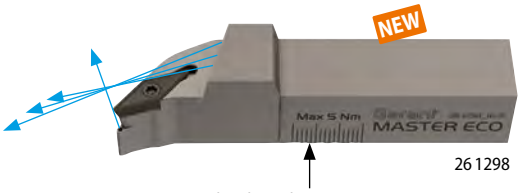
Garant GARANT Master Eco SVHC 107.5° screw-on toolholder for indexable inserts VC..

Highly efficient cooling directly on the cutting edge and additional flank face cooling.

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holders No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.







26 1298

Positioning within the scale ensures precise coolant transfer.

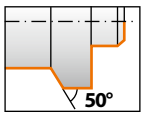
Shank / insert size	21U 26 1298	21U 26 1299	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	GARANT Master Eco screw-on toolholder short									
mm	right-hand	left-hand			mm	mm	mm			
16/11	eShop	eShop	SVJCR/L 1616X11	VC.. 1103..	20	35	85	269023 1	–	–
20/11	eShop	eShop	SVJCR/L 2020X11	VC.. 1103..	25	35	95	269023 1	–	–
20/16	eShop	eShop	SVJCR/L 2020H16	VC.. 1604..	25	40	100	269023 3	259033 5	269013 7
25/16	eShop	eShop	SVJCR/L 2525X16	VC.. 1604..	32	40	110	269023 3	259033 5	269013 7

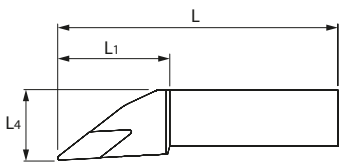
Standard

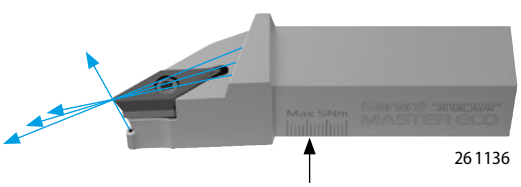
Garant GARANT Master Eco SVJC 93° screw-on toolholder for indexable inserts VC..

Highly efficient cooling directly on the cutting edge and additional flank face cooling.

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holders No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.







26 1136

Positioning within the scale ensures precise coolant transfer.

Shank / insert size	21U 26 1136	21U 26 1137	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	GARANT Master Eco screw-on toolholder short									
mm	right-hand	left-hand			mm	mm	mm			
16/11	eShop	eShop	SVJCR/L 1616X11	VC.. 1103..	20	35	85	269023 1	–	–
20/11	eShop	eShop	SVJCR/L 2020X11	VC.. 1103..	25	35	95	269023 1	–	–
20/16	eShop	eShop	SVJCR/L 2020H16	VC.. 1604..	25	40	100	269023 3	259033 5	269013 7
25/16	eShop	eShop	SVJCR/L 2525X16	VC.. 1604..	32	40	110	269023 3	259033 5	269013 7

Standard

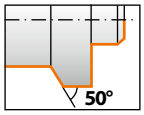
HOLEX Pro Eco SVJC 93° screw-on toolholder for indexable inserts VC..

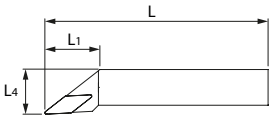
Targeted cooling on the cutting edge.

Note: Coolant transfer under the head via hose connection (G 1/8 inch – included in delivery).



26 1300





Shank / insert size	22E 26 1300	22E 26 1301	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	HOLEX Pro Eco screw-on toolholder							
mm	right-hand	left-hand			mm	mm	mm	
20/11	eShop	eShop	SVJCR/L 2020K11	VC.. 1103..	25	24	125	269028 22
25/11	eShop	eShop	SVJCR/L 2525M11	VC.. 1103..	32	26	150	269028 22

Garant

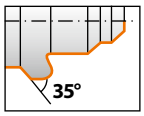
SVHC 107.5° screw-on toolholder for indexable inserts VC..

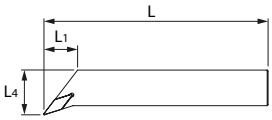
DIN ISO 5610

Standard



26 1308





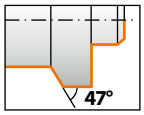
Shank / insert size	21T 26 1308	21T 26 1309	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
12/11	eShop	eShop	SVHCR/L 1212F11	VC.. 1103..	16	13	80	269028 22	–	–
16/11	eShop	eShop	SVHCR/L 1616H11	VC.. 1103..	20	13	100	269028 22	–	–
20/11	eShop	eShop	SVHCR/L 2020K11	VC.. 1103..	25	17	125	269028 22	–	–
25/11	eShop	eShop	SVHCR/L 2525M11	VC.. 1103..	32	22.9	150	269028 22	–	–
20/16	eShop	eShop	SVHCR/L 2020K16	VC.. 1604..	25	15	125	269028 2	269005 8	269013 2
25/16	eShop	eShop	SVHCR/L 2525M16	VC.. 1604..	32	23.5	150	269028 2	269005 8	269013 2

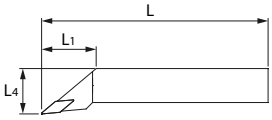
Standard

Garant

SVLC 95° screw-on toolholder for indexable inserts VC..


26 1306





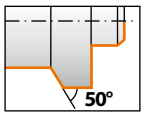
Shank size / insert size	21T 26 1306	21T 26 1307	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws
	Screw-on toolholder							
mm	right-hand	left-hand			mm	mm	mm	
8/07	eShop	eShop	SVLCR/L 0808D07	VC.. 0702..	10	15	60	269028 27
10/07	eShop	eShop	SVLCR/L 1010E07	VC.. 0702..	12	15	70	269028 27
12/07	eShop	eShop	SVLCR/L 1212F07	VC.. 0702..	16	18	80	269028 27

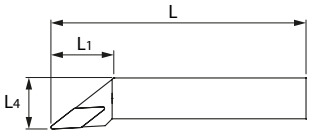
Garant SVJC 93° screw-on toolholder for indexable inserts VC..

DIN ISO 5610 | Standard



26 1312





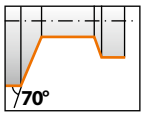
Shank / insert size	21T 26 1312	21T 26 1313	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder									
mm	right-hand	left-hand			mm	mm	mm			
12/11	eShop	eShop	SVJCR/L 1212F11	VC.. 1103..	16	21.5	80	269028 22	–	–
16/11	eShop	eShop	SVJCR/L 1616H11	VC.. 1103..	20	21.5	100	269028 22	–	–
20/11	eShop	eShop	SVJCR/L 2020K11	VC.. 1103..	25	24	125	269028 22	–	–
25/11	eShop	eShop	SVJCR/L 2525M11	VC.. 1103..	32	26	150	269028 22	–	–
20/16	eShop	eShop	SVJCR/L 2020K16	VC.. 1604..	25	29.5	125	269028 2	269005 8	269013 2
25/16	eShop	eShop	SVJCR/L 2525M16	VC.. 1604..	32	32.5	150	269028 2	269005 8	269013 2

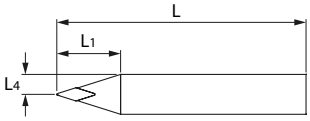
Standard

Garant SVVC 72.5° screw-on toolholders for indexable inserts VC..



26 1317





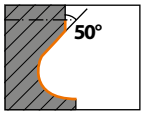
Shank / insert size	21T 26 1317	ISO code toolholder	suitable indexable insert	L_4	L_1	L	Set of insert screws	Shim	Shim screw
	Screw-on toolholder								
mm	neutral			mm	mm	mm			
8/07	eShop	SVVCN 0808K07	VC.. 0702..	4	15	125	269028 27	–	–
10/07	eShop	SVVCN 1010M07	VC.. 0702..	5	15	150	269028 27	–	–
12/07	eShop	SVVCN 1212M07	VC.. 0702..	6	18	150	269028 27	–	–
12/11	eShop	SVVCN 1212F11	VC.. 1103..	6	18	80	269028 22	–	–
16/11	eShop	SVVCN 1616H11	VC.. 1103..	8	25	100	269028 22	–	–
20/11	eShop	SVVCN 2020K11	VC.. 1103..	10	31	125	269028 22	–	–
25/11	eShop	SVVCN 2525M11	VC.. 1103..	12.5	39	150	269028 22	–	–
20/16	eShop	SVVCN 2020K16	VC.. 1604..	10	31	125	269028 2	269005 8	269013 2
25/16	eShop	SVVCN 2525M16	VC.. 1604..	12.5	38	150	269028 2	269005 8	269013 2

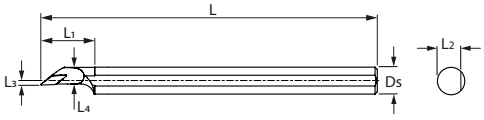
8×D | Carbide | Standard

Garant E... SVJC 142° boring bars for indexable inserts VC..



26 1326





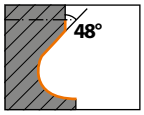
Shank ∅ / insert size	21T 26 1326	21T 26 1327	ISO code toolholder	suitable indexable insert	$\varnothing D_{min}$	L_3	L_2	L_4	L_1	L	Set of insert screws
	Boring bar carbide										
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08F SVJCR/L05	VC.. 0501..	8	3	7.5	6	26	80	269028 26
10/07	eShop	eShop	E10K SVJCR/L07	VC.. 0702..	13	1.5	9	6.3	18	125	269028 27
12/07	eShop	eShop	E12M SVJCR/L07	VC.. 0702..	13	2	11	7.8	18	150	269028 27
16/11	eShop	eShop	E16R SVJCR/L11	VC.. 1103..	22	2	15	9.5	31.4	200	269028 27

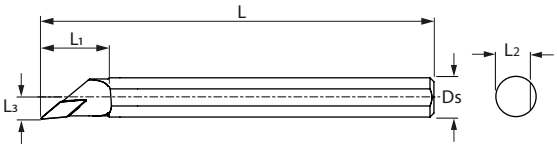
8×D | Carbide | Standard

Garant E... SVOC 140° boring bars for indexable inserts VC..



26 1376





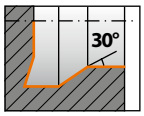
Shank ∅ / insert size	21T 26 1376	21T 26 1377	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar carbide									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08F SVOCR/L05	VC.. 0501..	8	3	7.5	26	80	269028 26
10/07	eShop	eShop	E10H SVOCR/L07	VC.. 0702..	11	5.5	9	–	100	269028 27

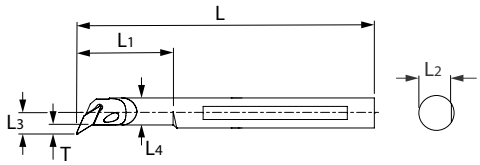
8×D | Carbide | Standard

Garant E... SVXC 113° boring bars for indexable inserts VC..



26 1368





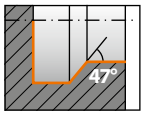
Shank ∅ / insert size	21T 26 1368	21T 26 1369	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar carbide											
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08F SVXCR/L05	VC.. 0501..	9.2	5	7.5	3	6	26	80	269028 27
10/07	eShop	eShop	E10H SVXCR/L07	VC.. 0702..	12.5	7	9	3	6.8	32	100	269028 26
12/07	eShop	eShop	E12K SVXCR/L07	VC.. 0702..	15.5	9	11	3	–	40	125	269028 26
16/07	eShop	eShop	E16M SVXCR/L07	VC.. 0702..	19.5	11	15	3	–	55	150	269028 26

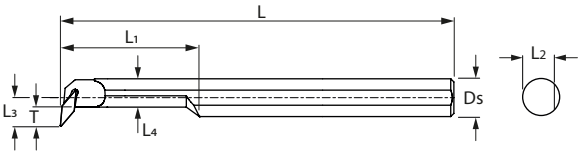
8×D | Carbide | Standard

Garant E... SVLC 95° boring bars for indexable inserts VC..



26 1332





Shank ∅ / insert size	21T 26 1332	21T 26 1333	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar carbide											
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08F SVLCR/L05	VC.. 0501..	9.2	5	7.5	3	6	26	80	269028 27
10/07	eShop	eShop	E10H SVLCR/L07	VC.. 0702..	12.5	7	9	5	7.5	32	100	269028 26
12/07	eShop	eShop	E12K SVLCR/L07	VC.. 0702..	15.5	9	11	6	9	40	125	269028 26
16/07	eShop	eShop	E16M SVLCR/L07	VC.. 0702..	19.5	11	15	5	14.5	55	150	269028 26

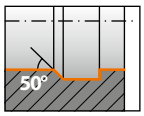
8×D | Carbide | Standard

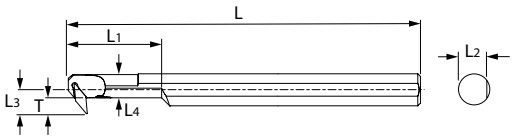
Garant

E... SV95C 95° boring bars for indexable inserts VC..



26 1342





Shank ∅ / insert size	21T 26 1342	21T 26 1343	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar carbide											
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08F SV95CR/L05	VC.. 0501..	9.2	5	7.5	3	6	26	80	269028 27
10/07	eShop	eShop	E10H SV95CR/L07	VC.. 0702..	12.5	7	9	5	6.8	32	100	269028 26
12/07	eShop	eShop	E12K SV95CR/L07	VC.. 0702..	15.5	9	11	6	9	40	125	269028 26
16/07	eShop	eShop	E16M SV95CR/L07	VC.. 0702..	19.5	11	15	8	12.9	55	150	269028 26

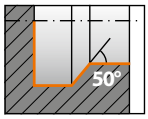
8×D | Carbide | DIN 8024

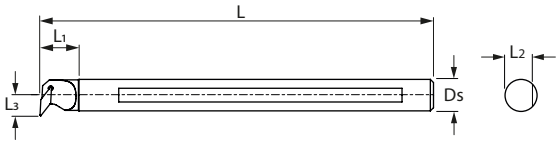
Garant

E... SVUC 93° boring bars for indexable inserts VC..



26 1328





Shank ∅ / insert size	21T 26 1328	21T 26 1329	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar carbide									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
16/11	eShop	eShop	E16R SVUCR/L11	VC.. 1103..	21	11	15	16.5	200	269028 7
20/11	eShop	eShop	E20S SVUCR/L11	VC.. 1103..	25	13	18	20.5	250	269028 7
25/11	eShop	eShop	E25S SVUCR/L11	VC.. 1103..	31.5	17	23	23	250	269028 7

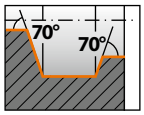
8×D | Carbide | Standard

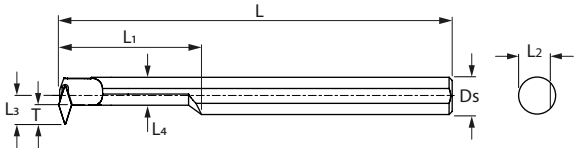
Garant

E... SVVC 72.5° boring bars for indexable inserts VC..



26 1336





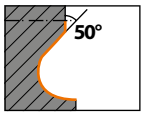
Shank ∅ / insert size	21T 26 1336	21T 26 1337	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar carbide											
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08F SVVCR/L05	VC.. 0501..	10.2	5.5	7.5	3,5	6	26	80	269028 27
10/07	eShop	eShop	E10H SVVCR/L07	VC.. 0702..	12.5	8	9	6	6.8	32	100	269028 26
12/07	eShop	eShop	E12K SVVCR/L07	VC.. 0702..	15.5	9	11	6	9	40	125	269028 26
16/07	eShop	eShop	E16M SVVCR/L07	VC.. 0702..	19.5	11	15	6	12.9	55	150	269028 26

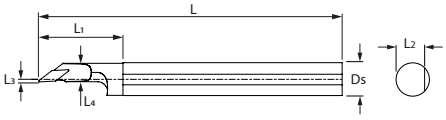
5×D | HSS | Standard

Garant AH... SVJC 142° boring bars for indexable inserts VC..



26 1330





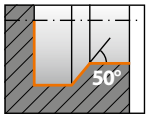
Shank ∅ / insert size	21T 26 1330	21T 26 1331	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
	Boring bar HSS										
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	
16/11	eShop	eShop	AH16M SVJCR/L11	VC.. 1103..	22	4.6	15	11.6	30	150	269028 7
20/11	eShop	eShop	AH20Q SVJCR/L11	VC.. 1103..	25	4.6	19	12	38	180	269028 7
25/16	eShop	eShop	AH25R SVJCR/L16	VC.. 1604..	28	3.5	24	14.5	44	200	269028 8

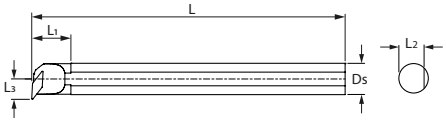
5×D | HSS | Standard

Garant AH... SVUC 93° boring bars for indexable inserts VC..



26 1334





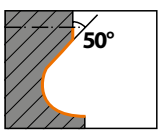
Shank ∅ / insert size	21T 26 1334	21T 26 1335	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar HSS									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
16/11	eShop	eShop	AH16Q SVUCR/L11	VC.. 1103..	21	11	15	20	180	269028 7
20/11	eShop	eShop	AH20R SVUCR/L11	VC.. 1103..	25	13	18	24	200	269028 7
25/16	eShop	eShop	AH25R SVUCR/L16	VC.. 1604..	31.5	17	23	25.5	200	269028 8

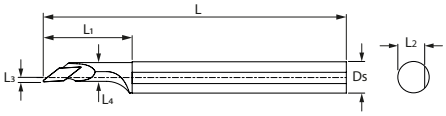
3×D | Standard

Garant A... SVJC 142° boring bars for indexable inserts VC..



26 1338





Shank ∅ / insert size	21T 26 1338	21T 26 1339	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
	Boring bar steel										
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	A08F SVJCR/L05	VC.. 0501..	8	3	7.5	6	15	80	269028 26
10/07	eShop	eShop	A10K SVJCR/L07	VC.. 0702..	13	1.5	9	6.3	18	125	269028 27
12/07	eShop	eShop	A12L SVJCR/L07	VC.. 0702..	13	2	11	7.8	18	140	269028 27
16/11	eShop	eShop	A16M SVJCR/L11	VC.. 1103..	22	2	15	9.5	30	150	269028 7
20/11	eShop	eShop	A20Q SVJCR/L11	VC.. 1103..	24	2	19	11	38	180	269028 7
25/16	eShop	eShop	A25R SVJCR/L16	VC.. 1604..	28	4.6	24	16.5	44	200	269028 8

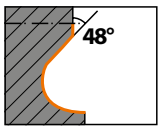
3×D Standard

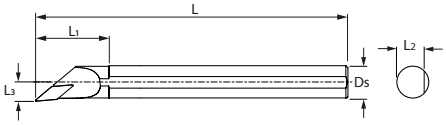
Garant

A... SVOC 140° boring bars for indexable inserts VC..



26 1378





Shank ∅ / insert size	21T 26 1378	21T 26 1379	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	Boring bar, steel									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
8/05	eShop	eShop	A08F SVOCR/L05	VC.. 0501..	8	3	7.5	15	80	269028 26
10/07	eShop	eShop	A10H SVOCR/L07	VC.. 0702..	11	5.5	9	22	100	269028 27
12/07	eShop	eShop	A12L SVOCR/L07	VC.. 0702..	13	6.5	11	24	140	269028 27
16/11	eShop	eShop	A16M SVOCR/L11	VC.. 1103..	22	9	15	35	150	269028 7
20/11	eShop	eShop	A20Q SVOCR/L11	VC.. 1103..	24	11	19	40	180	269028 7

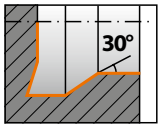
3×D Standard

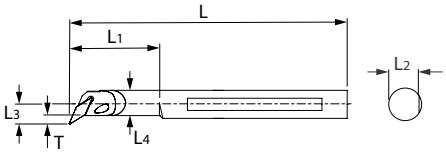
Garant

A... SVXC 113° boring bars for indexable inserts VC..



26 1356





Shank ∅ / insert size	21T 26 1356	21T 26 1357	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar steel											
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	A08F SVXCR/L05	VC.. 0501..	9.2	5	7.5	3	6	15	80	269028 27
10/07	eShop	eShop	A10H SVXCR/L07	VC.. 0702..	12.5	7	9	3	6.8	22	100	269028 26
12/07	eShop	eShop	A12K SVXCR/L07	VC.. 0702..	15.5	9	11	3	–	–	125	269028 26
16/07	eShop	eShop	A16M SVXCR/L07	VC.. 0702..	19.5	11	15	3	–	–	150	269028 26

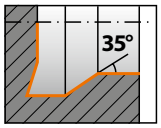
3×D DIN 8024

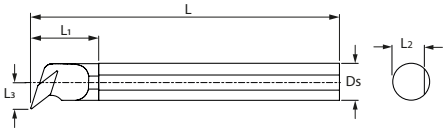
Garant

A... SVQC 107.5° boring bars for indexable inserts VC..



26 1344

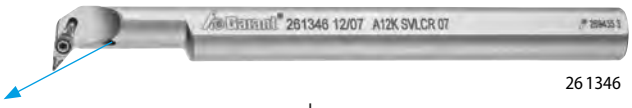




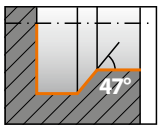
Shank ∅ / insert size	21T 26 1344	21T 26 1345	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws	Shim	Shim screw
	Boring bar steel											
mm	right-hand	left-hand			mm	mm	mm	mm	mm			
16/11	eShop	eShop	A16Q SVQCR/L11	VC.. 1103..	21	11	15.5	16.5	180	269028 7	–	–
20/11	eShop	eShop	A20R SVQCR/L11	VC.. 1103..	24	13	19	26.1	200	269028 7	–	–
25/16	eShop	eShop	A25R SVQCR/L16	VC.. 1604..	31.5	17	23	43	200	269028 8	–	–
32/16	eShop	eShop	A32S SVQCR/L16	VC.. 1604..	40	22	31	33.5	250	269028 2	269005 8	269013 2
40/16	eShop	eShop	A40T SVQCR/L16	VC.. 1604..	49	27	39	40	300	269028 2	269005 8	269013 2

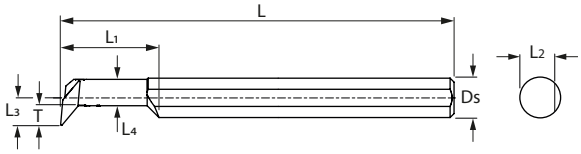
3×D | Standard

Garant A... SVLC 95° boring bars for indexable inserts VC..



26 1346





Shank ∅ / insert size	21T 26 1346	21T 26 1347	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar, steel											
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	A08F SVLCR/L05	VC.. 0501..	9.2	5	7.5	3	6	15	80	269028 26
10/07	eShop	eShop	A10H SVLCR/L07	VC.. 0702..	12.5	7	9	5	7.5	22	100	269028 27
12/07	eShop	eShop	A12K SVLCR/L07	VC.. 0702..	15.5	9	11	6	9	28	125	269028 27
16/07	eShop	eShop	A16M SVLCR/L07	VC.. 0702..	19.5	11	15	5	14.5	36	150	269028 27

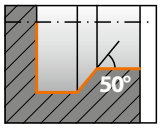
3×D | DIN 8024

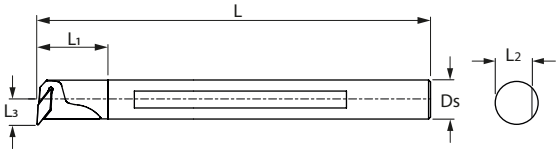
Garant GARANT Master Turn A... SVUC 93° boring bars for indexable inserts VC..

Optimised chip evacuation



26 1318





Shank ∅ / insert size	21T 26 1318	21T 26 1319	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws
	GARANT Master Turn boring bar, steel spiral flutes									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
16/11	eShop	eShop	A16Q SVUCR/L11	VC.. 1103..	20	11	15	31	180	269028 7
20/11	eShop	eShop	A20R SVUCR/L11	VC.. 1103..	24	13	18	36	200	269028 7
25/16	eShop	eShop	A25R SVUCR/L16	VC.. 1604..	31	17	23	40	200	269028 8

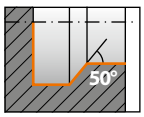
3×D

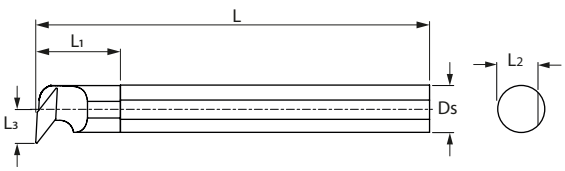
Garant A... SVUC 93° boring bars for indexable inserts VC..

DIN 8024 | Standard



26 1348



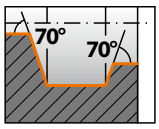


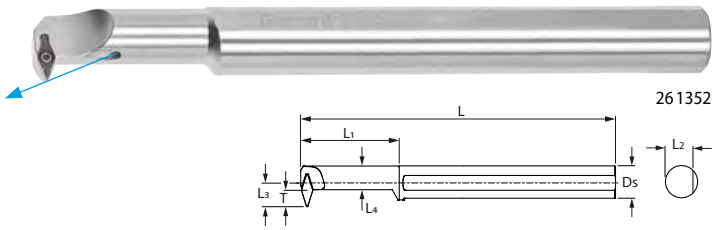
Shank ∅ / insert size	21T 26 1348	21T 26 1349	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	L_1	L	Set of insert screws	Shim	Shim screw
	Boring bar steel											
mm	right-hand	left-hand			mm	mm	mm	mm	mm			
16/11	eShop	eShop	A16Q SVUCR/L11	VC.. 1103..	21	11	15.5	16.5	180	269028 7	–	–
20/11	eShop	eShop	A20R SVUCR/L11	VC.. 1103..	25	13	18	20.5	200	269028 7	–	–
25/16	eShop	eShop	A25R SVUCR/L16	VC.. 1604..	32	17	24	25.5	200	269028 8	–	–
32/16	eShop	eShop	A32S SVUCR/L16	VC.. 1604..	40	22	31	33.5	250	269028 2	269005 8	269013 2
40/16	eShop	eShop	A40T SVUCR/L16	VC.. 1604..	49	27	39	40	300	269028 2	269005 8	269013 2

3×D Standard

Garant

A... SVVC 72.5° boring bars for indexable inserts VC..





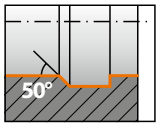
26 1352

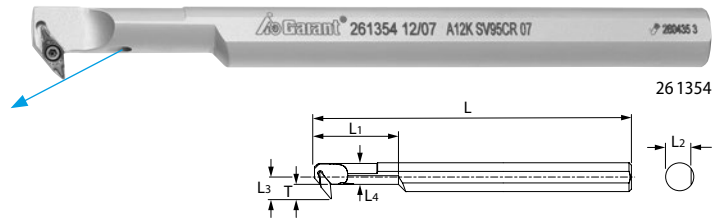
Shank ∅ / insert size	21T 26 1352	21T 26 1353	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar steel											
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	A08F SVVCR/L05	VC.. 0501..	10.2	5.5	7.5	3,5	6	15	80	269028 26
10/07	eShop	eShop	A10H SVVCR/L07	VC.. 0702..	13.5	8	9	6	6.8	22	100	269028 27
12/07	eShop	eShop	A12K SVVCR/L07	VC.. 0702..	15.5	9	11	6	9	28	125	269028 27
16/07	eShop	eShop	A16M SVVCR/L07	VC.. 0702..	19.5	11	15	6	12.9	36	150	269028 27
16/11	eShop	eShop	A16M SVVCR/L11	VC.. 1103..	23	14	15.5	9,5	11.9	40	150	269028 22
20/11	eShop	eShop	A20Q SVVCR/L11	VC.. 1103..	25	14	19	9,5	13.9	50	180	269028 22
25/16	eShop	eShop	A25R SVVCR/L16	VC.. 1604..	34	20	23	13	19.5	62.5	200	269028 8

3×D Standard

Garant

A... SV95C 95° boring bars for indexable inserts VC..





26 1354

Shank ∅ / insert size	21T 26 1354	21T 26 1355	ISO code toolholder	suitable indexable insert	∅ D_{min}	L_3	L_2	T	L_4	L_1	L	Set of insert screws
	Boring bar, steel											
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	A08F SV95CR/L05	VC.. 0501..	9.2	5	7.5	3	6	15	80	269028 26
10/07	eShop	eShop	A10H SV95CR/L07	VC.. 0702..	12.5	7	9	5	6.8	22	100	269028 27
12/07	eShop	eShop	A12K SV95CR/L07	VC.. 0702..	15.5	9	11	6	9	28	125	269028 27
16/07	eShop	eShop	A16M SV95CR/L07	VC.. 0702..	19.5	11	15	5	12.9	36	150	269028 27

Indexable inserts VC..

VC.T precision finishing







Type			HB7025-1	HB7125-1	HU7315-1	
21I 26 1358		VCGT 050102	eShop	eShop	eShop	10
21I 26 1360	Garant	VCMT 070202	eShop	eShop	–	10
21I 26 1362		VC.T 070204	eShop	eShop	eShop	10
●			P	M	N	
⚙			◼	◼	◼	
Chip breaker			SF	VF	AF	
Tolerance (26 1358)				G		
Tolerance (26 1360, 26 1362)			M	M	G	
a_p		mm	0.05 – 0.4	0.05 – 0.4	0.05 – 1.5	
f		mm/rev.	0.03 – 0.2	0.03 – 0.2	0.03 – 0.25	
v_c main application		m/min	80 – 190	70 – 180	50 – 600	

VC.T Finishing

Note:
26 1390–1393 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HU7315-1	HB7315-1	HB7415-1	
21G 26 1364		VC.T 110302	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1366		VC.T 110304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1370	Garant	VC.T 160402	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1372		VC.T 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
21G 26 1374		VC.T 160408	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●			P	P	P	M	M	M	N	N	S	
○			–	–	–	–	–	–	–	–	M	
⚙												
Chip breaker			SS	SS	SS	VS	VS	VS	AF	AF	TIS	
Tolerance			M	M	M	M	M	M	G	G	M	
a_p		mm	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.2 – 1.5	0.05 – 1.5	0.05 – 1.5	0.05 – 1.5	
f		mm/rev.	0.07 – 0.25	0.07 – 0.25	0.07 – 0.25	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.03 – 0.25	0.03 – 0.25	0.05 – 0.3	
v_c main application		m/min	150 – 500	140 – 400	120 – 350	90 – 290	80 – 270	70 – 230	50 – 600	50 – 600	50 – 110	
v_c secondary application		m/min	–	–	–	–	–	–	–	–	70 – 250	





Grade			IC807	
26B 26 1390		VCMT 160402	–	10
26B 26 1392		VCMT 160404	–	10
●			P	
⚙				
Chip breaker			F3P	
a_p		mm	0.1 – 1.8	
f		mm/rev.	0.05 – 0.2	
v_c main application		m/min	50 – 245	

Grade			IC807	
26B 26 1391		VCMT 160402	–	10
26B 26 1393		VCMT 160404	–	10
●			M	
⚙				
Chip breaker			F3M	
a_p		mm	0.1 – 1.8	
f		mm/rev.	0.05 – 0.2	
v_c main application		m/min	30 – 80	

Grade			SP4019	
28D 26 1382		VCGT 110301	eShop	10
28D 26 1383	KENNAMETAL	VCGT 110302	eShop	10
28D 26 1384		VCGT 110304	eShop	10
●			UNI	
⚙				
Chip breaker			62	
a_p		mm	0.15 – 3	
f		mm/rev.	0.05 – 0.3	
v_c main application		m/min	30 – 440	







Grade			HBT020	HBT130	
22D 26 1386	HOLEX	VCMT 110304	eShop	eShop	10
22D 26 1388		VCMT 160404	eShop	eShop	10
●			P	M	
⚙					
Chip breaker			PF	M	
a_p		mm	0.4 – 1.5	0.1 – 1	
f		mm/rev.	0.1 – 0.3	0.05 – 0.2	
v_c main application		m/min	120 – 330	60 – 220	

VC.T Medium machining

Note:

26 1481 – The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Grade			CB7010	HB7010-2	HB7020-2	HB7035-2	HB7120-1	HB7130-2	HB7140-2	HU7310	HB7310	HB725-1	HB730-1	
21G 26 1452	Garant	VCGT 110301	–	–	–	–	–	–	–	eShop	–	–	–	10
21G 26 1453	Garant	VCGT 110302	–	–	–	–	–	–	–	eShop	eShop	–	–	10
21G 26 1454	Garant	VC.T 110304	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	10
21G 26 1457	Garant	VCGT 160402	–	–	–	–	–	–	–	eShop	eShop	–	–	10
21G 26 1458	Garant	VC.T 160404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
21G 26 1459	Garant	VC.T 160408	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
●			P	P	P	P	M	M	M	N	N	UNI	UNI	
○			M	–	–	–	–	–	–	–	–	–	–	
⚙			●	●	■	◆	●	■	◆	●	●	■	■	
Chip breaker			SM	SM	SM	SM	VM	VM	VM	AM	AM	UM1	XUM	
Tolerance			M	M	M	M	M	M	M	G	G	M	M	
a_p		mm	0.2 – 2	0.3 – 2	0.3 – 2	0.3 – 2	0.5 – 2.5	0.5 – 2.5	0.5 – 2.5	0.1 – 4	0.1 – 4	0.2 – 4	0.4 – 4	
f		mm/rev.	0.1 – 0.3	0.08 – 0.3	0.08 – 0.3	0.08 – 0.3	0.1 – 0.4	0.1 – 0.4	0.1 – 0.4	0.05 – 0.5	0.05 – 0.5	0.05 – 0.5	0.15 – 0.25	
v_c main application		m/min	90 – 240	120 – 440	110 – 350	80 – 290	80 – 260	70 – 240	60 – 200	350 – 600	350 – 600	50 – 250	25 – 175	
v_c secondary application		m/min	70 – 180	–	–	–	–	–	–	–	–	–	–	



Grade			IC807	
26B 26 1481	Iscar	VCMT 160404	–	10
●			M	
⚙			■	
Chip breaker			M3M	
a_p		mm	1 – 2.5	
f		mm/rev.	0.07 – 0.25	
v_c main application		m/min	30 – 80	





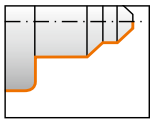
Grade			HBT020	HBT130	
22D 26 1472		VCMT 110304	eShop	eShop	10
22D 26 1474	HOLEX	VCMT 160404	eShop	eShop	10
22D 26 1476		VCMT 160408	eShop	eShop	10
●			P	M	
⚙			■	■	
Chip breaker			PM	MM	
a_p		mm	0.5 – 2.5	0.3 – 2.5	
f		mm/rev.	0.12 – 0.3	0.05 – 0.35	
v_c main application		m/min	100 – 280	50 – 200	

HOLEX Screw-on toolholder sets for indexable inserts CC..

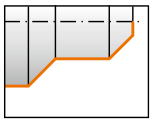
DIN ISO 5610 Standard



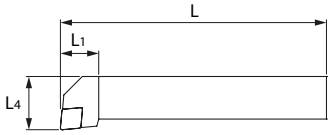
26 5110



SCLCR/L



SCSCR/L



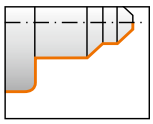
Shank / insert size	29W 26 5110	29W 26 5111	ISO code toolholder		suitable indexable insert	L_4	L_1	L	Spare part
	Screw-on toolholder set		26 5110	26 5111					
mm	right-hand	left-hand				mm	mm	mm	
16	eShop	eShop	SCLCR 1616H09; SCSCR 1616H09	SCLCL 1616H09; SCSCL 1616H09	CC.. 09T3..	20	17	100	269981 4
20	eShop	eShop	SCLCR 2020K09; SCSCR 2020K09	SCLCL 2020K09; SCSCL 2020K09	CC.. 09T3..	25	17	125	269981 4
25	eShop	eShop	SCLCR 2525M12; SCSCR 2525M12	SCLCL 2525M12; SCSCL 2525M12	CC.. 1204..	32	20	150	269981 5

HOLEX Screw-on toolholder sets for indexable inserts CC../DC../SC..

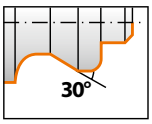
DIN ISO 5610 Standard



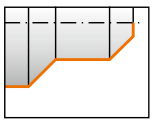
26 5130



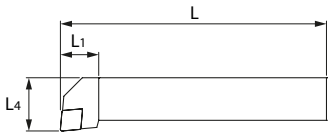
SCLCR/L



SDJCR/L



SSSCR/L



Shank / insert size	29W 26 5130	29W 26 5131	ISO code toolholder		suitable indexable insert	L_4	L_1	L	Spare part
	Screw-on toolholder set		26 5130	26 5131					
mm	right-hand	left-hand				mm	mm	mm	
10	eShop	eShop	SCLCR 1010E06; SDJCR 1010E07; SSSCR 1010E09	SCLCL 1010E06; SDJCL 1010E07; SSSCL1010E09	CC.. 0602..; DC.. 0702..; SC.. 09T3	12	10; 13; 21	70	269981 6
12	eShop	eShop	SCLCR 1212F09; SDJCR 1212F07; SSSCR 1212F09	SCLCL 1212F09; SDJCL 1212F07; SSSCL 1212F09	CC.. 09T3..; DC.. 0702..; SC.. 09T3	16	13; 17; 20	80	269981 1
16	eShop	eShop	SCLCR 1616H09; SDJCR 1616H11; SSSCR 1616H12	SCLCL 1616H09; SDJCL 1616H11; SSSCL 1616H12	CC.. 09T3..; DC.. 11T3..; SC.. 1204	20	17; 20; 27	100	269981 2
20	eShop	eShop	SCLCR 2020K09; SDJCR 2020K11; SSSCR 2020K12	SCLCL 2020K09; SDJCL 2020K11; SSSCL 2020K12	CC.. 09T3..; DC.. 11T3..; SC.. 1204	25	17; 20.5; 27	125	269981 2
25	eShop	eShop	SCLCR 2525M12; SDJCR 2525M11; SSSCR 2525M12	SCLCL 2525M12; SDJCL 2525M11; SSSCL 2525M12	CC.. 1204..; DC.. 11T3..; SC.. 1204	32	20; 21.5; 25	150	269981 3

Standard

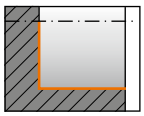
Garant GARANT Master Mute A... SCLC 95° vibration-damping boring bars for indexable inserts CC..

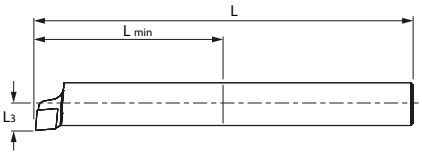
Round shank without clamping face.
Size 06/04–12/06 – Carbide-reinforced shank.

Note: Boring bar can be shortened as far as length L_{min}.
Use **only with internal cooling** (temperature resistance of up to max. 100°C).



26 5008





Shank Ø / insert size	29E 26 5008	29E 26 5009	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_{min}	L	Set of insert screws	Shim	Shim screw
	GARANT Master Mute boring bar vibration damping										
mm	right-hand	left-hand			mm	mm	mm	mm			
06/04	(eShop)	(eShop)	A06X SCLCR/L04	CC.. 0401..	8	3.5	–	96	269028 53	–	–
08/06	eShop	eShop	A08X SCLCR/L06	CC.. 0602..	10	5	–	128	269028 54	–	–
10/06	eShop	eShop	A10X SCLCR/L06	CC.. 0602..	12	6.1	–	161	269028 38	–	–
12/06	eShop	eShop	A12Q SCLCR/L06	CC.. 0602..	16	8.5	–	180	269028 38	–	–
16/06	eShop	eShop	A16X SCLCR/L06	CC.. 0602..	20	11	96	158	269028 38	–	–
20/09	eShop	eShop	A20X SCLCR/L09	CC.. 09T3..	25	13	120	189	269028 50	–	–
25/09	eShop	eShop	A25X SCLCR/L09	CC.. 09T3..	32	17	155	247	269028 50	–	–
32/09	eShop	eShop	A32X SCLCR/L09	CC.. 09T3..	40	22	192	288	269028 50	269005 17	269013 8
40/09	eShop	eShop	A40X SCLCR/L09	CC.. 09T3..	50	27	240	359	269028 50	269005 17	269013 8

Standard

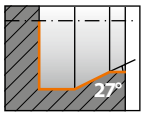
Garant GARANT Master Mute A... SDUC 93° vibration-damping boring bars for indexable inserts DC..

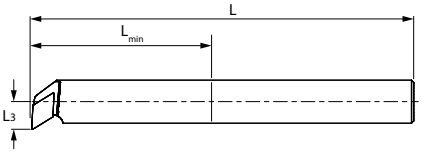
Round shank without clamping face.
Size 08/07–12/07 – Carbide-reinforced shank.

Note: Boring bar can be shortened as far as length L_{min}.
Use **only with internal cooling** (temperature resistance of up to max. 100°C).



26 5014





Shank Ø / insert size	29E 26 5014	29E 26 5015	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_{min}	L	Set of insert screws	Shim	Shim screw
	GARANT Master Mute boring bar vibration damping										
mm	right-hand	left-hand			mm	mm	mm	mm			
08/07	eShop	eShop	A08X SDUCR/L07	DC.. 0702..	13	8	–	128	269028 38	–	–
10/07	eShop	eShop	A10X SDUCR/L07	DC.. 0702..	15	9	–	161	269028 38	–	–
12/07	eShop	eShop	A12Q SDUCR/L07	DC.. 0702..	16	8.9	–	180	269028 38	–	–
16/07	eShop	eShop	A16X SDUCR/L07	DC.. 0702..	20	11	96	158	269028 38	–	–
20/11	eShop	eShop	A20X SDUCR/L11	DC.. 11T3..	25	13	120	189	269028 50	–	–
25/11	eShop	eShop	A25X SDUCR/L11	DC.. 11T3..	32	17	155	247	269028 50	–	–
32/11	eShop	eShop	A32X SDUCR/L11	DC.. 11T3..	40	22	192	288	269028 50	269005 18	269013 8
40/11	eShop	eShop	A40X SDUCR/L11	DC.. 11T3..	50	27	240	359	269028 50	269005 18	269013 8

Standard

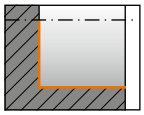
Garant GARANT Master Mute A... STFC 90° vibration-damping boring bars for indexable inserts TC..

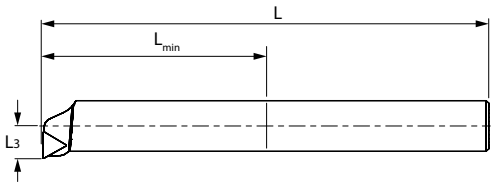
Round shank without clamping face.
Size 10/09; 12/09 – Carbide-reinforced shank.

Note:	Boring bar can be shortened as far as length L_{min}. Use **only with internal cooling** (temperature resistance of up to max. 100°C).



26 5024





Shank Ø / insert size	29E 26 5024	29E 26 5025	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_{min}	L	Set of insert screws	Shim	Shim screw
	GARANT Master Mute boring bar **vibration damping**										
mm	**right-hand**	**left-hand**			mm	mm	mm	mm			
10/09	(eShop)	(eShop)	A10X STFCR/L09	TC.. 0902..	13	6.8	–	161	269028 39	–	–
12/09	(eShop)	(eShop)	A12Q STFCR/L09	TC.. 0902..	16	9	–	180	269028 39	–	–
12/11	(eShop)	(eShop)	A12X STFCR/L11	TC.. 1102..	16	9	72	120	269028 38	–	–
16/11	(eShop)	(eShop)	A16X STFCR/L11	TC.. 1102..	20	11	96	158	269028 38	–	–
20/11	(eShop)	(eShop)	A20X STFCR/L11	TC.. 1102..	25	13	120	189	269028 47	–	–
25/11	(eShop)	(eShop)	A25X STFCR/L11	TC.. 1102..	32	17	155	247	269028 47	–	–
32/16	(eShop)	(eShop)	A32X STFCR/L16	TC.. 16T3..	40	22	192	288	269028 50	269005 19	269013 8
40/16	(eShop)	(eShop)	A40X STFCR/L16	TC.. 16T3..	50	27	240	359	269028 50	269005 19	269013 8

Standard

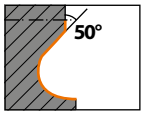
Garant GARANT Master Mute A... SVJC 142° vibration-damping boring bars for indexable inserts VC..

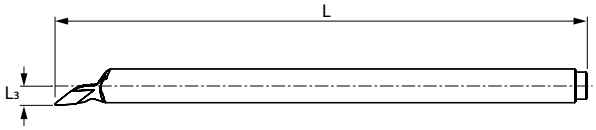
Carbide-reinforced round shank without clamping face.

Note:	Use **only with internal cooling** (temperature resistance of up to max. 100°C).



26 5038





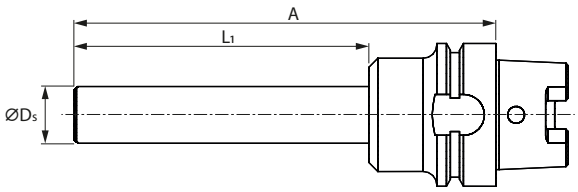
Shank Ø / insert size	29E 26 5038	29E 26 5039	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L	Set of insert screws
	GARANT Master Mute boring bar **vibration damping**							
mm	**right-hand**	**left-hand**			mm	mm	mm	
12/07	eShop	eShop	A12X SVJCR/L07	VC.. 0702..	14	7	189	269028 53

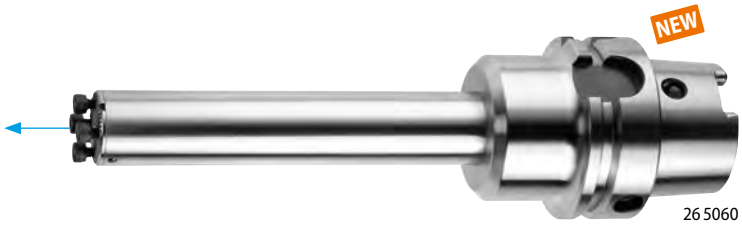
ISO 26623-1 | ISO 12164-3

GARANT Master Mute vibration-damping boring bar shanks HSK-T / PSC

Suitable for: GARANT Master Mute exchangeable cutting heads No. 265100 – 265377.

Note: The usable length is extended by the length L of the respective exchangeable cutting head. Use **only with internal cooling** (temperature resistance of up to max. 100°C).





26 5060

HSK-T 63 holder

HSK-T

Shank Ø / usable length L_1	29E 26 5060	Dimension A	Assembly bolt set
	GARANT Master Mute boring bar shank HSK-T vibration damping		
mm	HSK-T 63	mm	
16/64	(eShop)	120	269026 1
16/96	(eShop)	152	269026 1
20/90	(eShop)	146	269026 1
20/130	(eShop)	186	269026 1
25/130	eShop	186	269026 4
25/180	eShop	236	269026 4
25/230	eShop	286	269026 4
32/170	(eShop)	226	269026 5
32/230	(eShop)	286	269026 5
32/294	(eShop)	350	269026 5
40/210	eShop	266	269026 3
40/290	eShop	346	269026 3
40/370	(eShop)	426	269026 3

PSC holder

26 5063–5065 – Shank version Ø 50 mm and Ø 60 mm in right-hand version.
Left-hand version available on request.

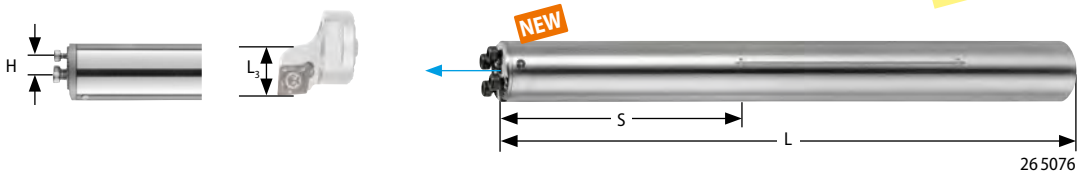
PSC

Shank Ø / usable length L_1	29E 26 5061	29E 26 5062	29E 26 5063	29E 26 5064	29E 26 5065	Dimension A					Assembly bolt set
	GARANT Master Mute boring bar shank PSC vibration damping										
mm	PSC 32	PSC 40	PSC 50	PSC 63	PSC 80	26 5061 mm	26 5062 mm	26 5063 mm	26 5064 mm	26 5065 mm	
16/64	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	99	100	99	102	94	269026 1
16/96	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	131	132	131	134	126	269026 1
20/90	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	125	126	131	128	120	269026 1
20/130	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	165	166	165	168	160	269026 1
25/130	(eShop)	(eShop)	(eShop)	eShop	(eShop)	165	167	165	168	160	269026 4
25/180	(eShop)	(eShop)	(eShop)	eShop	(eShop)	215	216	215	218	210	269026 4
25/230	(eShop)	(eShop)	(eShop)	eShop	(eShop)	265	266	265	268	260	269026 4
32/170	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	205	206	205	208	200	269026 5
32/230	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	265	266	265	268	260	269026 5
32/294	–	(eShop)	(eShop)	(eShop)	(eShop)	–	330	329	332	324	269026 5
40/210	–	(eShop)	(eShop)	eShop	(eShop)	–	246	245	248	240	269026 3
40/290	–	(eShop)	(eShop)	eShop	(eShop)	–	326	325	328	320	269026 3
40/370	–	–	(eShop)	(eShop)	(eShop)	–	–	405	408	400	269026 3
50/270	–	–	(eShop)	(eShop)	(eShop)	–	–	305	308	302	269026 3
50/370	–	–	(eShop)	(eShop)	(eShop)	–	–	405	408	402	269026 3
50/470	–	–	–	(eShop)	(eShop)	–	–	–	508	502	269026 3
60/330	–	–	–	(eShop)	(eShop)	–	–	–	368	362	269026 3
60/450	–	–	–	(eShop)	(eShop)	–	–	–	488	482	269026 3
60/570	–	–	–	–	(eShop)	–	–	–	–	602	269026 3
80/450	–	–	–	–	(eShop)	–	–	–	–	482	269026 3
80/610	–	–	–	–	(eShop)	–	–	–	–	642	269026 3
80/740	–	–	–	–	(eShop)	–	–	–	–	772	269026 3

GARANT Master Mute vibration-damping boring bar shanks

Supplied with: Reducing adaptor for coolant connection.

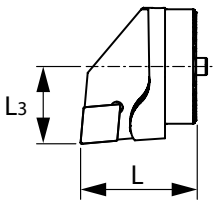
Note:
Do not clamp on the area marked S!
D_{min} = 1/2 shank ∅ + H + cutting head centre-line offset L_3.
Usable length = overall length L minus clamping length (recommended = 3×D).
Use **only with internal cooling** (temperature resistance of up to max. 100°C).



26 5076

Shank ∅ / overall length L	29E 26 5076 GARANT Master Mute boring bar shank **vibration damping**	L mm	Version	H mm	S mm	recommended clamping length mm	Assembly bolt set
16/170	eShop	170	Steel	–	74	48	269026 1
16/204	eShop	204	Carbide-reinforced	–	85	48	269026 1
16/268	(eShop)	268	Carbide-reinforced	–	102	48	269026 1
20/200	eShop	200	Steel	–	84	60	269026 1
20/260	eShop	260	Carbide-reinforced	–	119	60	269026 1
20/340	(eShop)	340	Carbide-reinforced	–	118	60	269026 1
25/255	eShop	255	Steel	–	107	75	269026 4
25/330	eShop	330	Steel	–	125	75	269026 4
25/430	(eShop)	430	Carbide-reinforced	–	145	75	269026 4
32/320	eShop	320	Steel	–	124	96	269026 5
32/416	eShop	416	Steel	–	151	96	269026 5
32/544	(eShop)	544	Carbide-reinforced	–	179	96	269026 5
40/408	eShop	408	Steel	–	144	120	269026 3
40/528	eShop	528	Steel	–	196	120	269026 3
40/668	(eShop)	668	Carbide-reinforced	–	224	120	269026 3
50/518	eShop	518	Steel	5	187	150	269026 3
50/660	eShop	660	Steel	5	269	150	269026 3
50/861	(eShop)	861	Carbide-reinforced	5	269	150	269026 3
60/628	eShop	628	Steel	10	230	180	269026 3
60/808	eShop	808	Steel	10	309	180	269026 3
60/1040	(eShop)	1040	Carbide-reinforced	10	333	180	269026 3

GARANT Master Mute exchangeable cutting heads



For negative indexable inserts

Suitable for: Vibration-damping boring bar shanks No. 265060 – 265076.

Shank ∅ / insert size	29E 26 5100 right-hand	29E 26 5101 left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Shim	Shim screw	Clamp	Screw for clamping claw
	GARANT Master Mute exchangeable cutting head DCLN									
40/12	(eShop)	(eShop)	CN.. 1204..	50	27	33	269005 22	269013 9	269038 21	259021 8



26 5100

Shank ∅ / insert size	29E 26 5102 right-hand	29E 26 5103 left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Shim	Lever	Lever screw
	GARANT Master Mute exchangeable cutting head PCLN								
32/12	eShop	(eShop)	CN.. 1204..	40	22	26	269005 13	259015 18	259018 19
40/12	eShop	(eShop)	CN.. 1204..	50	27	26	269005 13	259015 18	259018 18



26 5102

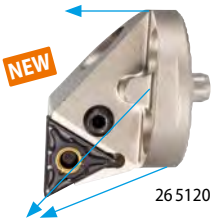
Shank ∅ / insert size	29E 26 5108 GARANT Master Mute exchangeable cutting head DDUN right-hand	29E 26 5109 GARANT Master Mute exchangeable cutting head DDUN left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Shim	Shim screw	Clamp	Screw for clamping claw
40/15	(eShop)	(eShop)	DN.. 1506..	50	27	33	269005 21	269013 9	259038 21	259021 8



Shank ∅ / insert size	29E 26 5114 GARANT Master Mute exchangeable cutting head PDUN right-hand	29E 26 5115 GARANT Master Mute exchangeable cutting head PDUN left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Shim	Lever	Lever screw
25/11	eShop	(eShop)	DN.. 1104..	34	19	23	–	259015 20	259018 20
32/11	eShop	(eShop)	DN.. 1104..	40	22	26	269005 20	259015 21	259018 19
40/15	eShop	(eShop)	DN.. 1506..	50	30	26	269005 14	259015 19	259018 18



Shank ∅ / insert size	29E 26 5120 GARANT Master Mute exchangeable cutting head PTFN right-hand	29E 26 5121 GARANT Master Mute exchangeable cutting head PTFN left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Shim	Lever	Lever screw
32/16	eShop	(eShop)	TN.. 1604..	40	22	27	269005 15	259015 20	259018 19
40/16	eShop	(eShop)	TN.. 1604..	50	27	26	269005 15	259015 20	259018 19



Shank ∅ / insert size	29E 26 5128 GARANT Master Mute exchangeable cutting head PWLN right-hand	29E 26 5129 GARANT Master Mute exchangeable cutting head PWLN left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Shim	Lever	Lever screw
40/08	eShop	(eShop)	WN.. 0804..	50	27	26	269005 16	259015 18	259018 18



For positive indexable inserts

Suitable for: Vibration-damping boring bar shanks No. 265060 – 265076.

Shank ∅ / insert size	29E 26 5202 GARANT Master Mute exchangeable cutting head SCLC right-hand	29E 26 5203 GARANT Master Mute exchangeable cutting head SCLC left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Insert screw
16/06	eShop	eShop	CC.. 0602..	20	11	16.5	269028 38
20/09	eShop	eShop	CC.. 09T3..	25	13	19.5	269028 50
25/09	eShop	eShop	CC.. 09T3..	32	17	22	269028 50
32/09	eShop	eShop	CC.. 09T3..	40	22	24	269028 50
40/12	eShop	eShop	CC.. 1204..	50	27	25	269028 49



Shank ∅ / insert size	29E 26 5206 GARANT Master Mute exchangeable cutting head SDQC right-hand	29E 26 5207 GARANT Master Mute exchangeable cutting head SDQC left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Insert screw
16/07	(eShop)	(eShop)	DC.. 0702..	20	11	18	269028 38
20/11	(eShop)	(eShop)	DC.. 11T3..	25	13	24	269028 50
25/11	(eShop)	(eShop)	DC.. 11T3..	32	17	24	269028 50
32/11	(eShop)	(eShop)	DC.. 11T3..	40	22	26	269028 50
40/11	(eShop)	(eShop)	DC.. 11T3..	50	27	26	269028 50



Shank ∅ / insert size	29E 26 5210 GARANT Master Mute exchangeable cutting head SDUC right-hand	29E 26 5211 GARANT Master Mute exchangeable cutting head SDUC left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Insert screw
16/07	eShop	eShop	DC.. 0702..	20	11	16	269028 38
20/11	eShop	eShop	DC.. 11T3..	25	13	20	269028 50
25/11	eShop	eShop	DC.. 11T3..	32	17	22	269028 50
32/11	eShop	eShop	DC.. 11T3..	40	22	27	269028 50
40/11	eShop	eShop	DC.. 11T3..	50	27	32	269028 50



Shank ∅ / insert size	29E 26 5214 right-hand	29E 26 5215 left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Insert screw
	GARANT Master Mute exchangeable cutting head SDXC						
16/07	(eShop)	(eShop)	DC.. 0702..	20	13	11	269028 38
20/07	(eShop)	(eShop)	DC.. 0702..	25	15	11	269028 38
25/07	(eShop)	(eShop)	DC.. 0702..	32	18	11	269028 47
32/11	(eShop)	(eShop)	DC.. 11T3..	40	22	13	269028 50
40/11	(eShop)	(eShop)	DC.. 11T3..	50	27	15	269028 50



Shank ∅ / insert size	29E 26 5218 right-hand	29E 26 5219 left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Insert screw
	GARANT Master Mute exchangeable cutting head SDNC						
16/07	(eShop)	(eShop)	DC.. 0702..	22	13	12.5	269028 38
20/07	(eShop)	(eShop)	DC.. 0702..	27	15	13	269028 47
25/07	(eShop)	(eShop)	DC.. 0702..	33	18	14	269028 47
32/11	(eShop)	(eShop)	DC.. 11T3..	40	22	17	269028 50
40/11	(eShop)	(eShop)	DC.. 11T3..	50	27	17	269028 50



Shank ∅ / insert size	29E 26 5222 right-hand	29E 26 5223 left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Insert screw
	GARANT Master Mute exchangeable cutting head STFC						
20/11	(eShop)	(eShop)	TC.. 1103..	25	13	20	269028 47
25/11	(eShop)	(eShop)	TC.. 1103..	32	17	22	269028 47
32/16	(eShop)	(eShop)	TC.. 16T3..	40	22	27	269028 50
40/16	(eShop)	(eShop)	TC.. 16T3..	50	27	32	269028 50



Shank ∅ / insert size	29E 26 5226 right-hand	29E 26 5227 left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Insert screw
	GARANT Master Mute exchangeable cutting head SVUC						
16/11	eShop	eShop	VC.. 1103..	25	16	17	269028 38
20/11	eShop	eShop	VC.. 1103..	27	15	20.5	269028 47
25/11	eShop	eShop	VC.. 1103..	33	18	20.5	269028 47
32/16	eShop	eShop	VC.. 1604..	40	22	25	269028 50
40/16	eShop	eShop	VC.. 1604..	50	27	28	269028 50



Shank ∅ / insert size	29E 26 5230 right-hand	29E 26 5231 left-hand	suitable indexable insert	∅ D_{min} mm	L_3 mm	L mm	Insert screw
	GARANT Master Mute exchangeable cutting head SVXC						
16/11	(eShop)	(eShop)	VC.. 1103..	25	16	8	269028 38



For thread turning inserts

Size 16/11–20/16 – With fixed 1.5° inclination angle.
Size 25/16–40/22 – With shim 1.5°.

Note: Matching thread turning inserts No. 270700 - 270984.

Shank ∅ / insert size	29E 26 5302 right-hand	29E 26 5303 left-hand	matching thread turning insert 26 5302	matching thread turning insert 26 5303	∅ D_{min} mm	L_3 mm	L mm	Insert screw
	GARANT Master Mute exchangeable cutting head for thread turning inserts							
16/11	(eShop)	(eShop)	11IR	11IL	20	10.4	20	269028 38
20/11	(eShop)	(eShop)	11IR	11IL	25	12.7	20	269028 38
16/16	(eShop)	(eShop)	16IR	16IL	20	10.4	20	269028 50
20/16	eShop	(eShop)	16IR	16IL	25	13.7	23	269028 52
25/16	eShop	(eShop)	16IR	16IL	30	16.3	24	269028 52
32/16	eShop	(eShop)	16IR	16IL	37	19.7	28	269028 50
40/16	eShop	(eShop)	16IR	16IL	45	23.7	28	269028 50
25/22	eShop	(eShop)	22IR	22IL	32	18.3	30	269028 51
32/22	eShop	(eShop)	22IR	22IL	39	21.7	32	269028 51
40/22	eShop	(eShop)	22IR	22IL	47	25.7	30	269028 51



For diamond burnishing

Diamond burnishing tool for material classes P, M, K, N and S.

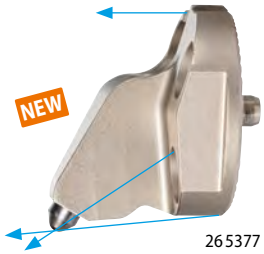
Cutting dataa: Cutting speed v_c = value of finish machining (start value).
Reduce the cutting speed step by step if vibrations occur.
Feed rate f = 70% of the value of the finish machining (start value).
Infeed a_p = 0.1 mm (start value) up to a maximum of 0.2 mm.

Function: The pressure of the diamond burnishing tip produces a material flow from the near-surface material layer.

Application: For surface machining up to R_a = 0.3 µm on materials up to 65 HRC.

Supplied with: Includes diamond burnishing tip and clamping screw.

Note: A surface quality of at least R_a = 1.6 µm is recommended by way of preparation.



26 5377

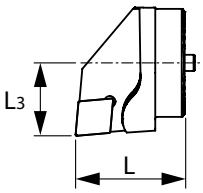
Shank ∅ / insert size	29E 26 5377 GARANT Master Mute exchangeable cutting head for diamond burnishing	∅ D_{min} mm	L_3 mm	L mm	Clamping screw	Diamond burnishing tip
20	(eShop)	24	12	21	269024 2	269016 1
25	(eShop)	30	16	25	269024 2	269016 1
32	(eShop)	38	20	33	269024 2	269016 1
40	(eShop)	46	24	34	269024 2	269016 1

SWISSTOOLS Exchangeable cutting heads

Suitable for: Boring bar shanks No. 265060 – 265065 and 265076 (GARANT).
Boring bar shanks No. 320102, 320104, 320407, 320409 and 320410 (SwissTools).

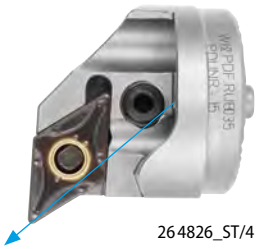
Spare part:
Size ST/10–ST/15 – Insert screw on request.

HP ready

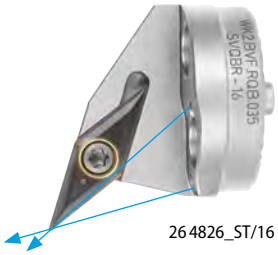




26 4826_ST/2



26 4826_ST/4



26 4826_ST/16

System / insert size			ST/1	ST/2	ST/3	ST/4	ST/5	ST/6	ST/7	ST/8	ST/9
29D 26 4826	Exchangeable cutting head	right-hand	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
29D 26 4827		left-hand	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Cutting point / joint		mm	25	32	40	32	40	25	32	40	25
ISO code cutting head (26 4826)			PCLNR	PCLNR	PCLNR	PDUNR	PDUNR	SCLCR	SCLCR	SCLCR	SDQCR
ISO code cutting head (26 4827)			PCLNL	PCLNL	PCLNL	PDUNL	PDUNL	SCLCL	SCLCL	SCLCL	SDQCL
suitable indexable insert			CN.. 1204..	CN.. 1204..	CN.. 1204..	DN.. 1506..	DN.. 1506..	CC.. 1204..	CC.. 1204..	CC.. 1204..	DC.. 11T3..
Approach angle		degrees	95	95	95	93	93	95	95	95	107.5
∅ D_{min}		mm	32	40	50	40	50	32	40	50	32
L_3		mm	17	22	27	22	27	17	22	27	17
L		mm	35	35	40	35	40	35	35	40	35
Lever			320612 P01	320612 P01	320612 P01	320612 P05	320612 P05	–	–	–	–
Lever screw			320611 P01	320611 P01	320611 P01	320611 P05	320611 P05	–	–	–	–
Pin			320618 P01	320618 P01	320618 P01	320618 P05	320618 P05	–	–	–	–
Shim			320610 P01	320610 P01	320610 P01	320610 P05	320610 P05	–	–	–	–
Insert screw			–	–	–	–	–	320620 S01	320620 S01	320620 S01	320626 S05/07

System / insert size			ST/10	ST/11	ST/12	ST/13	ST/14	ST/15	ST/16	ST/17
29D 26 4826	Exchangeable cutting head	right-hand	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
29D 26 4827		left-hand	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Cutting point / joint		mm	32	40	25	32	40	25	32	40
ISO code cutting head (26 4826)			SDQCR	SDQCR	SDUCR	SDUCR	SDUCR	SVQBR	SVQBR	SVQBR
ISO code cutting head (26 4827)			SDQCL	SDQCL	SDUCL	SDUCL	SDUCL	SVQBL	SVQBL	SVQBL
suitable indexable insert			DC.. 11T3..	DC.. 11T3..	DC.. 11T3..	DC.. 11T3..	DC.. 11T3..	VB.. 1103..	VB.. 1604..	VB.. 1604..
Approach angle		degrees	107.5	107.5	93	93	93	107.5	107.5	107.5
∅ D_{min}		mm	40	50	32	40	50	32	40	50
L_3		mm	22	27	17	22	27	17	22	27
L		mm	35	40	35	35	40	35	35	40
Insert screw			–	–	–	–	–	–	320626 S05/07	320626 S05/07

Garant Indexable inserts CBN (5° / 7°)

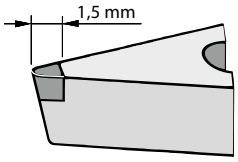
Innovative **„all-in-one“ concept,** to reduce the variety of items you hold in stock and give you the flexibility in production that you need.
New type of CBN with a balanced combination of wear-resistance and tensile strength for general-purpose use in hardened steel up to 67 HRC in combination with a special chamfered profile.
For use both in continuous cutting and also in slightly interrupted cutting and heavily interrupted cutting.
SIMPLE. FAST. ALWAYS THE RIGHT CHOICE.

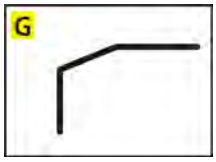


Garant Indexable inserts CBN (5° / 7°)

26 5403–5442/5457–5484 – Fitted with 2 cutters.
26 5445–5454 – Fitted with 3 cutters.

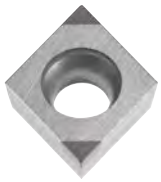
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
BU7220									●	●	●								●	●	●		●

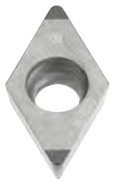




Cutting edge (chamfered). Chamfering generally applicable for steel up to 67 HRC. Also for heavily interrupted cutting.

Cutting edge version			G
21H 26 5403	CCGW 060202	BU7220	eShop
21H 26 5406	CCGW 060204	BU7220	eShop
21H 26 5409	CCGW 060208	BU7220	eShop
21H 26 5412	CCGW 09T302	BU7220	eShop
21H 26 5415	CCGW 09T304	BU7220	eShop
21H 26 5418	CCGW 09T308	BU7220	eShop
21H 26 5421	CCGW 120404	BU7220	eShop
21H 26 5424	CCGW 120408	BU7220	eShop
21H 26 5426	DCGW 04T001	BU7220	eShop
21H 26 5427	DCGW 070202	BU7220	eShop
21H 26 5430	DCGW 070204	BU7220	eShop
21H 26 5433	DCGW 070208	BU7220	eShop
21H 26 5436	DCGW 11T302	BU7220	eShop
21H 26 5439	DCGW 11T304	BU7220	eShop
21H 26 5442	DCGW 11T308	BU7220	eShop
21H 26 5445	TCGW 110202	BU7220	eShop
21H 26 5448	TCGW 110204	BU7220	eShop
21H 26 5451	TCGW 16T304	BU7220	eShop
21H 26 5454	TCGW 16T308	BU7220	eShop
21H 26 5457	VBGW 110302	BU7220	eShop
21H 26 5460	VBGW 110304	BU7220	eShop
21H 26 5463	VBGW 160402	BU7220	eShop
21H 26 5466	VBGW 160404	BU7220	eShop
21H 26 5469	VBGW 160408	BU7220	eShop
21H 26 5470	VCGW 050101	BU7220	eShop
21H 26 5472	VCGW 110302	BU7220	eShop
21H 26 5475	VCGW 110304	BU7220	eShop
21H 26 5478	VCGW 160402	BU7220	eShop
21H 26 5481	VCGW 160404	BU7220	eShop
21H 26 5484	VCGW 160408	BU7220	eShop
a_p		mm	0.03 – 0.12
f		mm/rev.	0.04 – 0.12
v_c main application		m/min	120 – 160


26 5412


26 5442


26 5454


26 5466


26 5475

KYOCERA Indexable inserts CBN (5° / 7°)

MEGACOAT coated CBN inserts.

Size ME – MultiEdge; 2 cutting edges per insert.

Size MET – MultiEdge Tough; 2 cutting edges per insert, with special honing for optimisation of interrupted cutting.



26 5634_ME



26 5664_ME



26 5688_ME



26 5738_ME

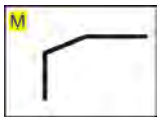
Type			ME	MET
25H 26 5606	CCMW 060202	KBN05M	eShop	–
25H 26 5608		KBN25M	eShop	–
25H 26 5610		KBN35M	eShop	–
25H 26 5612	CCMW 060204	KBN05M	eShop	–
25H 26 5614		KBN25M	eShop	–
25H 26 5616		KBN35M	eShop	–
25H 26 5620	CCMW 060208	KBN25M	eShop	–
25H 26 5626	CCMW 09T302	KBN05M	eShop	–
25H 26 5628		KBN25M	eShop	–
25H 26 5632	CCMW 09T304	KBN05M	eShop	–
25H 26 5634		KBN25M	eShop	eShop
25H 26 5636		KBN35M	eShop	eShop
25H 26 5638	CCMW 09T308	KBN05M	eShop	–
25H 26 5640		KBN25M	eShop	eShop
25H 26 5642		KBN35M	eShop	eShop
25H 26 5656	DCMW 070202	KBN05M	eShop	–
25H 26 5658		KBN25M	eShop	eShop
25H 26 5662	DCMW 070204	KBN05M	eShop	–
25H 26 5664		KBN25M	eShop	eShop
a_p		mm	0.05 – 0.5	
f		mm/rev.	0.08 – 0.15	0.1 – 0.2
v_c main application		m/min	120 – 200	100 – 180

Type			ME	MET
25H 26 5680	DCMW 11T302	KBN05M	eShop	–
25H 26 5682		KBN25M	eShop	eShop
25H 26 5684		KBN35M	eShop	–
25H 26 5686	DCMW 11T304	KBN05M	eShop	–
25H 26 5688		KBN25M	eShop	eShop
25H 26 5690		KBN35M	–	eShop
25H 26 5692	DCMW 11T308	KBN05M	eShop	–
25H 26 5694		KBN25M	eShop	eShop
25H 26 5696		KBN35M	eShop	eShop
25H 26 5730	VBGW 160402	KBN05M	eShop	–
25H 26 5732		KBN25M	eShop	eShop
25H 26 5734		KBN35M	eShop	–
25H 26 5736	VBGW 160404	KBN05M	eShop	–
25H 26 5738		KBN25M	eShop	eShop
25H 26 5740		KBN35M	eShop	eShop
25H 26 5742	VBGW 160408	KBN05M	eShop	–
25H 26 5744		KBN25M	eShop	eShop
25H 26 5746		KBN35M	–	eShop
a_p		mm	0.05 – 0.5	
f		mm/rev.	0.08 – 0.15	0.1 – 0.2
v_c main application		m/min	120 – 200	100 – 180

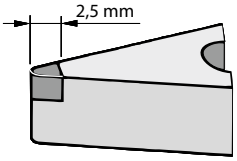
HOLEX Indexable inserts CBN (5° / 7°)

- Disposable insert.
- Single cutting edge.

Note: Further indexable insert shapes, sizes and corner radii available on request.



Cutting edge (chamfered). Chamfering even for slightly interrupted cutting.





26 5750



26 5760



26 5772



26 5788

Cutting edge version			M
22I 26 5750	CCMW 060202	BUX220	eShop
22I 26 5752	CCMW 060204	BUX220	eShop
22I 26 5754	CCMW 09T302	BUX220	eShop
22I 26 5756	CCMW 09T304	BUX220	eShop
22I 26 5758	CCMW 09T308	BUX220	eShop
22I 26 5760	DCMW 070202	BUX220	eShop
22I 26 5762	DCMW 070204	BUX220	eShop
22I 26 5764	DCMW 070208	BUX220	eShop
22I 26 5766	DCMW 11T302	BUX220	eShop
22I 26 5768	DCMW 11T304	BUX220	eShop
22I 26 5770	DCMW 11T308	BUX220	eShop
a_p		mm	0.1 – 0.5
f		mm/rev.	0.1 – 0.2
v_c main application		m/min	80 – 200

Cutting edge version			M
22I 26 5772	VBMW 110302	BUX220	eShop
22I 26 5774	VBMW 110304	BUX220	eShop
22I 26 5776	VBMW 160402	BUX220	eShop
22I 26 5778	VBMW 160404	BUX220	eShop
22I 26 5780	VBMW 160408	BUX220	eShop
22I 26 5782	VCMW 110302	BUX220	eShop
22I 26 5784	VCMW 110304	BUX220	eShop
22I 26 5786	VCMW 160402	BUX220	eShop
22I 26 5788	VCMW 160404	BUX220	eShop
22I 26 5790	VCMW 160408	BUX220	eShop
a_p (26 5772, 26 5774, 26 5776, 26 5778, 26 5780)		mm	0.1 – 0.5
a_p (26 5782, 26 5784, 26 5786, 26 5788, 26 5790)		mm	0.1 – 0.25
f		mm/rev.	0.1 – 0.2
v_c main application		m/min	80 – 200

Garant

Indexable inserts MCD

MCD - mono-crystalline diamond, laser-profiled cutting edges.
Universal chamfering (NU) for all non-ferrous metals and synthetic materials (PMMA, POM, acrylic etc.).
Application: For very fine machining for the best finishing surfaces.
Recommendation: For the best results, use the GARANT Master Eco system.
Alternatively all suitable ISO tool holders and boring bars can be used.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	PMMA acrylic	PE-HD	PA 66	PEEK	PF 31	AFRP aramid	PVDF GF20	POM GF25	PA 66 GF30	PEEK GF30	Ti > 850 N	Cu	CuZn	GRP CRP	Graphite					
ISO code	N	N	N	N	N	N	N	N	N	N	N	N	N	S	N	N	N	N					
26 5899 NU– 26 6016 NU	●	●	○	●	●	○	○		○	●	●			○	●	●	○	●	○	○	○	●	●

CCGW

Cutting edge version			NU
21L 26 5899	CCGW 060202 FN	MCD	eShop
21L 26 5900	CCGW 060204 FN	MCD	eShop
21L 26 5904	CCGW 060208 FN	MCD	eShop
21L 26 5905	CCGW 09T302 FN	MCD	eShop
21L 26 5916	CCGW 09T304 FN	MCD	eShop
21L 26 5920	CCGW 09T308 FN	MCD	eShop
a_p		mm	0.01 – 0.2
f		mm/rev.	0.005 – 0.2
v_c main application		m/min	100 – 1400



26 5900

DCGW

Cutting edge version			NU
21L 26 5921	DCGW 070202 FN	MCD	eShop
21L 26 5948	DCGW 070204 FN	MCD	eShop
21L 26 5964	DCGW 11T304 FN	MCD	eShop
a_p		mm	0.01 – 0.2
f		mm/rev.	0.005 – 0.2
v_c main application		m/min	100 – 1400



26 5948

VBGW

Cutting edge version			NU
21L 26 6001	VBGW 110302 FN	MCD	eShop
21L 26 6010	VBGW 110304 FN	MCD	eShop
21L 26 6016	VBGW 160404 FN	MCD	eShop
a_p		mm	0.01 – 0.2
f		mm/rev.	0.005 – 0.2
v_c main application		m/min	100 – 1400



26 6016

VCGW

Cutting edge version			NU
21L 26 5965	VCGW 110302 FN	MCD	eShop
21L 26 5980	VCGW 110304 FN	MCD	eShop
21L 26 5996	VCGW 160404 FN	MCD	eShop
a_p		mm	0.01 – 0.2
f		mm/rev.	0.005 – 0.2
v_c main application		m/min	100 – 1400

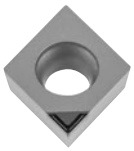


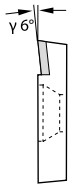
26 5980

Garant Indexable inserts PCD (7°)

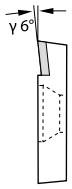
PCD – Polycrystalline diamond, fine grain.
Size N – Neutral, without chip breaker.
Size TWF – Finishing, sharp edges for low cutting pressure.
Size TWM – General machining, stable cutting edge for high metal removal rates.
Size TWN – Roughing, stable cutting edge for large cutting depths.
Application: For aluminium, aluminium alloys, non-ferrous metals, plastics, composite materials, titanium alloys, sintered metals.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	N					
N	○	●	●													●	●		●	●		●	●
TWF	●	●	●														●		●	●		●	●
TWM	●	●	●											○		●	●		●	●		●	●

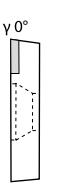





Cutting edge version			N	TWF	TWM	Rake degrees
21L 26 5802	CCGT 060202 FN	PCD	eShop	eShop	eShop	6
21L 26 5807	CCGT 060204 FN	PCD	eShop	eShop	eShop	6
21L 26 5812	CCGT 09T302 FN	PCD	eShop	eShop	eShop	6
21L 26 5817	CCGT 09T304 FN	PCD	eShop	eShop	eShop	6
21L 26 5827	CCGT 120404 FN	PCD	eShop	eShop	eShop	6
a_p (26 5802, 26 5812)		mm	0.1 – 2.5	0.1 – 1	0.2 – 2.5	
a_p (26 5807, 26 5817, 26 5827)		mm	0.1 – 2.5	0.3 – 1	0.2 – 2.5	
f		mm/rev.	0.03 – 0.4	0.03 – 0.2	0.05 – 0.3	
Alu < 10 % Si: v_c		m/min	300 – 2000	400 – 3500	400 – 3500	
NF metals: v_c		m/min	300 – 1500	–	300 – 2200	
G(C)FK: v_c		m/min	150 – 600	400 – 900	400 – 900	

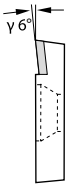



Cutting edge version			TWN	Rake degrees
21L 26 5823	CCGT 09T308 FR GS right-hand	PCD	eShop	6
21L 26 5824	CCGT 09T308 FL GS left-hand	PCD	eShop	6
a_p		mm	0.5 – 7.5	
f		mm/rev.	0.05 – 0.5	
Alu < 10 % Si: v_c		m/min	400 – 3500	
NF metals: v_c		m/min	300 – 2200	
G(C)FK: v_c		m/min	400 – 900	

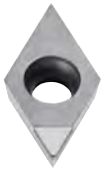
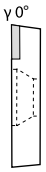



Cutting edge version			N	Rake degrees
21L 26 5800	CCGW 060202 FN	PCD	eShop	0
21L 26 5805	CCGW 060204 FN	PCD	eShop	0
21L 26 5810	CCGW 09T302 FN	PCD	eShop	0
21L 26 5815	CCGW 09T304 FN	PCD	eShop	0
21L 26 5826	CCGW 120404 FN	PCD	eShop	0
a_p		mm	0.1 – 2.5	
f		mm/rev.	0.03 – 0.4	
Alu < 10 % Si: v_c		m/min	300 – 2000	
NF metals: v_c		m/min	300 – 1500	
G(C)FK: v_c		m/min	150 – 600	



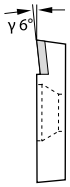



Cutting edge version			N	TWF	TWM	Rake degrees
21L 26 5832	DCGT 070202 FN	PCD	eShop	eShop	eShop	6
21L 26 5837	DCGT 070204 FN	PCD	eShop	eShop	eShop	6
21L 26 5847	DCGT 11T302 FN	PCD	eShop	eShop	eShop	6
21L 26 5852	DCGT 11T304 FN	PCD	eShop	eShop	eShop	6
a_p (26 5832, 26 5847)		mm	0.1 – 2.5	0.1 – 1	0.2 – 2.5	
a_p (26 5837, 26 5852)		mm	0.1 – 2.5	0.3 – 1	0.2 – 2.5	
f		mm/rev.	0.03 – 0.4	0.03 – 0.2	0.05 – 0.3	
Alu < 10 % Si: v_c		m/min	300 – 2000	400 – 3500	400 – 3500	
NF metals: v_c		m/min	300 – 1500	–	300 – 2200	
G(C)FK: v_c		m/min	150 – 600	400 – 900	400 – 900	

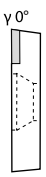



Cutting edge version			N	Rake degrees
21L 26 5829	DCGW 04T001 FN	PCD	eShop	0
21L 26 5830	DCGW 070202 FN	PCD	eShop	0
21L 26 5835	DCGW 070204 FN	PCD	eShop	0
21L 26 5845	DCGW 11T302 FN	PCD	eShop	0
21L 26 5850	DCGW 11T304 FN	PCD	eShop	0
a_p		mm	0.1 – 2.5	
f		mm/rev.	0.03 – 0.4	
Alu < 10 % Si: v_c		m/min	300 – 2000	
NF metals: v_c		m/min	300 – 1500	
G(C)FK: v_c		m/min	150 – 600	



Cutting edge version			N	TWF	TWM	Rake degrees
21L 26 5872	VCGT 110301 FN	PCD	eShop	eShop	–	6
21L 26 5877	VCGT 110302 FN	PCD	eShop	eShop	eShop	6
21L 26 5882	VCGT 110304 FN	PCD	eShop	eShop	eShop	6
21L 26 5892	VCGT 160402 FN	PCD	eShop	eShop	eShop	6
21L 26 5897	VCGT 160404 FN	PCD	eShop	eShop	eShop	6
a_p (26 5872)		mm	0.1 – 2.5	0.05 – 0.5	–	
a_p (26 5877, 26 5892)		mm	0.1 – 2.5	0.1 – 1	0.2 – 2.5	
a_p (26 5882, 26 5897)		mm	0.1 – 2.5	0.3 – 1	0.2 – 2.5	
f		mm/rev.	0.03 – 0.4	0.03 – 0.2	0.05 – 0.3	
Alu < 10 % Si: v_c		m/min	300 – 2000	400 – 3500	400 – 3500	
NF metals: v_c		m/min	300 – 1500	–	300 – 2200	
G(C)FK: v_c		m/min	150 – 600	400 – 900	400 – 900	

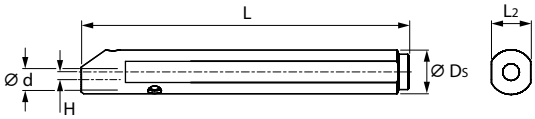
Cutting edge version			N	Rake degrees
21L 26 5870	VCGW 050101 FN	PCD	eShop	0
21L 26 5875	VCGW 110302 FN	PCD	eShop	0
21L 26 5880	VCGW 110304 FN	PCD	eShop	0
21L 26 5895	VCGW 160404 FN	PCD	eShop	0
a_p		mm	0.1 – 2.5	
f		mm/rev.	0.03 – 0.4	
Alu < 10 % Si: v_c		m/min	300 – 2000	
NF metals: v_c		m/min	300 – 1500	
G(C)FK: v_c		m/min	150 – 600	

Garant Holder for quick-change boring bars

With through-coolant and coolant transfer ring. Precise clamping system for quick, repeatable boring bar changes ensuring accurate positioning.



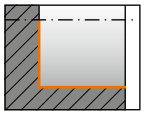
26 8102

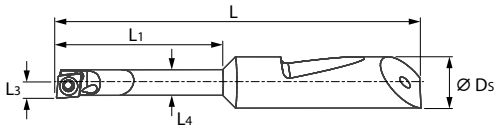


Shank dia. D_s	21P 26 8102	21P 26 8103	Ø D_s	L	Ø d	H	L_2	Clamping screw
	Holder for quick-change boring bars							
mm	right-hand	left-hand	mm	mm	mm	mm	mm	
16	eShop	eShop	16	120	8	2.8	14	269024 1

Carbide | DIN 8024

Garant E... SCLC 95° quick-change boring bars for indexable inserts CC..





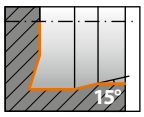


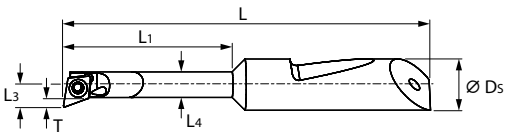
26 8110

Shank Ø D_s / insert size	21P 26 8110	21P 26 8111	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_4	L_1	L	Set of insert screws
	Quick-change boring bar carbide									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
8/03	eShop	eShop	E08X SCLCR/L03	CC.. 0301..	5	2.5	4	26	57	269028 13

Carbide | DIN 8024

Garant E... SDQC 107.5° quick-change boring bars for indexable inserts DC..





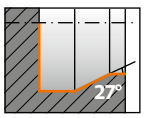


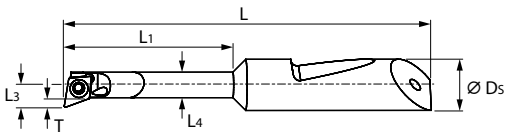
26 8112

Shank dia. D_s / insert size	21P 26 8112	21P 26 8113	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	T	L_4	L_1	L	Set of insert screws
	Quick-change boring bar carbide										
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	
8/04	eShop	eShop	E08X SDQCR/L04	DC.. 04T0..	5.2	2.6	1.1	4	26	57	269028 26

Carbide | Standard

Garant E... SDUC 93° quick-change boring bars for indexable inserts DC..





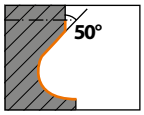


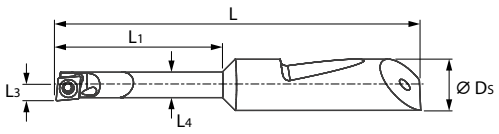
26 8114

Shank Ø D_s / insert size	21P 26 8114	21P 26 8115	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	T	L_4	L_1	L	Set of insert screws
	Quick-change boring bar carbide										
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	
8/04	eShop	eShop	E08X SDUCR/L04	DC.. 04T0..	5.6	3	1.5	4	26	57	269028 26

Carbide | Standard

Garant E... SVJC 142° quick-change boring bars for indexable inserts VC..





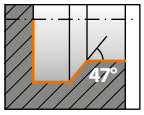


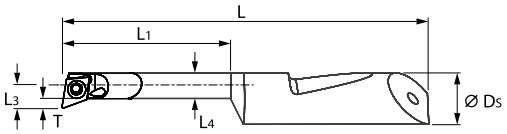
26 8116

Shank dia. D_s / insert size	21P 26 8116	21P 26 8117	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_4	L_1	L	Set of insert screws
	Quick-change boring bar carbide									
mm	right-hand	left-hand			mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08X SVJCR/L05	VC.. 0501..	5.5	2	4	26	57	269028 26

Carbide | Standard

Garant E... SVLC 95° quick-change boring bars for indexable inserts VC..





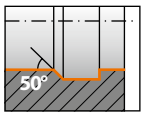


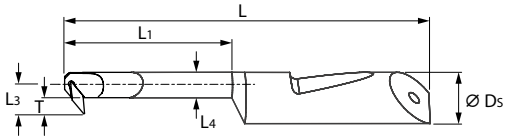
26 8120

Shank dia. D_s / insert size	21P 26 8120	21P 26 8121	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	T	L_4	L_1	L	Set of insert screws
	Quick-change boring bar carbide										
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08X SVLCR/L05	VC.. 0501..	9.2	5	3	6	26	57	269028 26

Carbide | Standard

Garant E... SV95C 95° quick-change boring bars for indexable inserts VC..





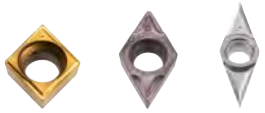


26 8122

Shank dia. D_s / insert size	21P 26 8122	21P 26 8123	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	T	L_4	L_1	L	Set of insert screws
	Quick-change boring bar carbide										
mm	right-hand	left-hand			mm	mm	mm	mm	mm	mm	
8/05	eShop	eShop	E08X SV95CR/L05	VC.. 0501..	9.2	5	3	6	26	57	269028 26

Garant Indexable inserts for quick-change boring bars

Size G – CBN version.
Size N – PCD version.



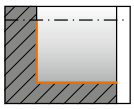
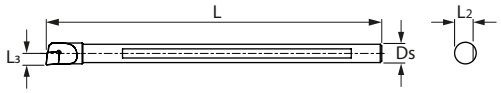


Grade		HB7025-1	HB7125-1	HU7315-1	
21I 26 8090	CCGT 030101	eShop	eShop	eShop	10
21I 26 8091	CCGT 030102	eShop	eShop	eShop	10
21G 26 8094	DCGT 04T002	eShop	eShop	eShop	10
21I 26 8095	VCGT 050102	eShop	eShop	eShop	10
●		P	M	N	
⚙					
Chip breaker		SF	VF	AF	
a_p	mm	0.05 – 0.4	0.05 – 0.4	0.05 – 1.5	
f	mm/rev.	0.03 – 0.3	0.03 – 0.2	0.03 – 0.25	
v_c main application	m/min	80 – 180	70 – 150	50 – 300	

Cutting edge version		G	N
21H 26 8096	DCGW 04T001	eShop	–
21H 26 8097	VCGW 050101	eShop	–
21L 26 8098	DCGW 04T001	–	eShop
21L 26 8099	VCGW 050101	–	eShop
●		H	N
⚙			
a_p	mm	0.03 – 0.08	0.05 – 1
f	mm/rev.	0.04 – 0.06	0.03 – 0.035
v_c main application	m/min	80 – 140	120 – 800

8×D | Carbide | Standard

Garant E... SCLD 95° / 97° boring bars for indexable inserts CDCT S4010.

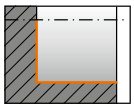
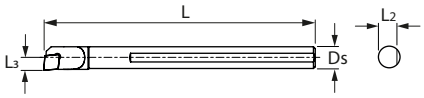




26 8712

Overhang / insert size	21V 26 8712	21V 26 8716	Ø D_s	ISO code toolholder	Setting angle κ	suitable indexable insert	Ø D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar carbide										
mm	right-hand	left-hand	mm		degrees		mm	mm	mm	mm	
60/S4	eShop	eShop	4	E04G SCLDR/LS4	97	CDCT S4010.	4.57	2.5	3.58	90	269028 10
65/S4	eShop	eShop	5	E05H SCLDR/LS4	95	CDCT S4010.	5.94	3	4.6	100	269028 10
75/S4	eShop	eShop	6	E06J SCLDR/LS4	95	CDCT S4010.	6.91	3.5	5.54	110	269028 10
85/S4	eShop	eShop	8	E08K SCLDR/LS4	95	CDCT S4010.	9.05	4.5	7.49	125	269028 10

5×D | HSS | Standard

Garant AH... SCLD 95° / 97° boring bars for indexable inserts CDCT S4010.

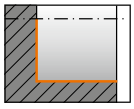
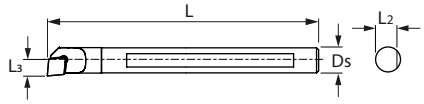




26 8702

Overhang / insert size	21V 26 8702	21V 26 8706	Ø D_s	ISO code toolholder	Setting angle κ	suitable indexable insert	Ø D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar HSS										
mm	right-hand	left-hand	mm		degrees		mm	mm	mm	mm	
45/S4	eShop	eShop	4	AH04X SCLDR/LS4	97	CDCT S4010.	4.57	2.5	3.58	65	269028 10
46/S4	eShop	eShop	5	AH05X SCLDR/LS4	95	CDCT S4010.	5.78	3	4.6	65	269028 10
50/S4	eShop	eShop	6	AH06X SCLDR/LS4	95	CDCT S4010.	6.92	3.5	5.54	75	269028 10
66/S4	eShop	eShop	8	AH08H SCLDR/LS4	95	CDCT S4010.	9.05	4.5	7.49	100	269028 10

3×D | Standard

Garant A... SCLD 95° / 97° boring bars for indexable inserts CDCT S4010.


26 8717

Shank Ø / insert size	21V 26 8717	21V 26 8718	Ø D_s	ISO code toolholder	Setting angle κ	suitable indexable insert	Ø D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar, steel										
mm	right-hand	left-hand	mm		degrees		mm	mm	mm	mm	
4/S4	eShop	eShop	4	A04X SCLDR/LS4	97	CDCT S4010.	4.57	2.41	3.58	65	269028 10
5/S4	eShop	eShop	5	A05X SCLDR/LS4	95	CDCT S4010.	5.78	2.95	4.6	65	269028 10
6/S4	eShop	eShop	6	A06X SCLDR/LS4	95	CDCT S4010.	6.92	3.73	5.54	65	269028 10
8/S4	eShop	eShop	8	A08X SCLDR/LS4	95	CDCT S4010.	9.05	4.7	7.49	76	269028 10

26

Garant Indexable inserts CDCT S4010.

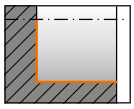


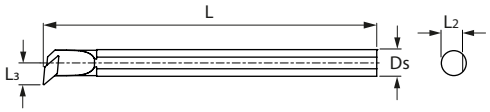



Grade		HB7035	HB7125-1	HU7310	HB7410	
21I 26 8520	CDCT S40101	eShop	eShop	eShop	eShop	10
21I 26 8530	CDCT S40102	eShop	eShop	eShop	eShop	10
21I 26 8540	CDCT S40104	eShop	eShop	–	eShop	10
●		P	M	N	Ti	
○		K	–	–	–	
⚙		⚙	⚙	⚙	⚙	
Chip breaker		SF	VS	AF	TIS	
a_p	mm	0.05 – 0.23	0.05 – 0.23	0.05 – 0.75	0.05 – 0.23	
f	mm/rev.	0.03 – 0.25	0.05 – 0.23	0.03 – 0.25	0.05 – 0.23	
v_c main application	m/min	60 – 150	60 – 140	50 – 300	40 – 90	
v_c secondary application	m/min	60 – 150	–	–	–	

8×D | Carbide | Standard

Garant E... SGL. 95° boring bars for indexable inserts GPCT S5010. / GCCT 06020.





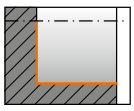


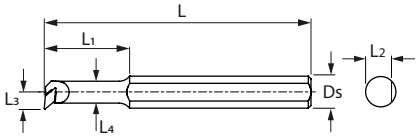
26 8732

Overhang / insert size	21V 26 8732	21V 26 8736	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar carbide									
mm	right-hand	left-hand	mm			mm	mm	mm	mm	
75/S5	eShop	eShop	6	E06J SGLPR/LS5	GPCT S5010.	9.15	5.6	5.54	110	269028 6
85/S5	eShop	eShop	8	E08K SGLPR/LS5	GPCT S5010.	10.72	6.4	7.49	125	269028 6
85/06	eShop	eShop	10	E10K SGLCR/L06	GCCT 06020.	13.54	8.15	9.5	125	269028 11
100/06	eShop	eShop	12	E12M SGLCR/L06	GCCT 06020.	15.52	9.15	11.33	150	269028 11

5×D | HSS | Standard

Garant AH... SGLP 95° boring bars for indexable inserts GPCT S5010.





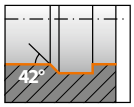


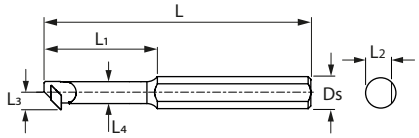
26 8722

Overhang / insert size	21V 26 8722	21V 26 8726	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
	Boring bar HSS											
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	
65/S5	eShop	eShop	12	AH0712H SGLPR/LS5	GPCT S5010.	9.15	5.6	11.15	7	25	100	269028 6
66/S5	eShop	eShop	12	AH0812H SGLPR/LS5	GPCT S5010.	10.72	6.4	11.15	8	32	100	269028 6

5×D | HSS | Standard

Garant AH... SGSP 45° boring bars for indexable inserts GPCT S5010.







26 8802

Overhang / insert size	21V 26 8802	21V 26 8806	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L_4	L_1	L	Set of insert screws
	Boring bar HSS											
mm	right-hand	left-hand	mm			mm	mm	mm	mm	mm	mm	
65/S5	eShop	eShop	12	AH0812H SGSPR/LS5	GPCT S5010.	10.72	6.4	11.15	8	32	100	269028 6

Garant Indexable inserts GPCT S5010. / GCCT 06020.





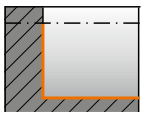

Grade		HB7035	HB7125-1	HU7310	HB7410	
21I 26 8560	GPCT S50102	eShop	eShop	eShop	eShop	10
21I 26 8570	GPCT S50104	eShop	eShop	–	eShop	10
21I 26 8590	GCCT 060202	eShop	eShop	eShop	eShop	10
21I 26 8600	GCCT 060204	eShop	eShop	–	eShop	10
●		P	M	N	Ti	
○		K	–	–	–	
⚙		◉	◉	◉	◉	
Chip breaker		SF	VS	AF	TIS	
a_p	mm	0.05 – 0.35	0.05 – 0.35	0.05 – 1.6	0.05 – 0.35	
f	mm/rev.	0.03 – 0.25	0.05 – 0.23	0.03 – 0.25	0.05 – 0.23	
v_c main application	m/min	60 – 150	60 – 140	50 – 300	40 – 90	
v_c secondary application	m/min	60 – 150	–	–	–	

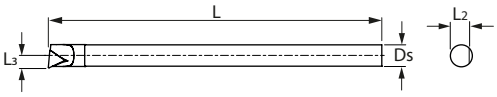
8×D | Carbide | Standard

Garant E... STLD 95° boring bars for indexable inserts TDAT 07010.



26 8822





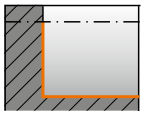
Overhang / insert size	21V 26 8822	21V 26 8826	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar carbide									
mm	right-hand	left-hand	mm			mm	mm	mm	mm	
75/07	eShop	eShop	6	E06J STLDR/L07	TDAT 07010.	7.06	3.71	5.54	110	269028 12
85/07	eShop	eShop	8	E08K STLDR/L07	TDAT 07010.	9.14	4.8	7.49	125	269028 12

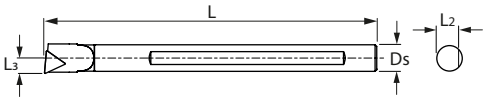
5×D | HSS | Standard

Garant AH... STLD 95° boring bars for indexable inserts TDAT 07010.



26 8812





Overhang / insert size	21V 26 8812	21V 26 8816	Ø D_s	ISO code toolholder	suitable indexable insert	Ø D_{min}	L_3	L_2	L	Set of insert screws
	Boring bar HSS									
mm	right-hand	left-hand	mm			mm	mm	mm	mm	
50/07	eShop	eShop	6	AH06X STLDR/L07	TDAT 07010.	7.06	3.71	5.54	75	269028 12
66/07	eShop	eShop	8	AH08H STLDR/L07	TDAT 07010.	9.14	4.8	7.49	100	269028 12

Garant Indexable inserts TDAT 07010.







Grade		HB7035	HB7125-1	HB7410	
21I 26 8620	TDAT 070101	eShop	eShop	eShop	10
21I 26 8630	TDAT 070102	eShop	eShop	eShop	10
21I 26 8640	TDAT 070104	eShop	eShop	eShop	10
●		P	M	Ti	
○		K	–	–	
⚙		●	●	●	
Chip breaker		SF	VS	TIS	
a_p	mm	0.05 – 0.23			
f	mm/rev.	0.03 – 0.25	0.05 – 0.23	0.05 – 0.23	
v_c main application	m/min	60 – 150	60 – 140	40 – 90	
v_c secondary application	m/min	60 – 150	–	–	

GARANT "5 in 1" drilling and turning tools

26 8463/8464 – Plain shank.
26 8467/8468 – Plain shank **with collar.**

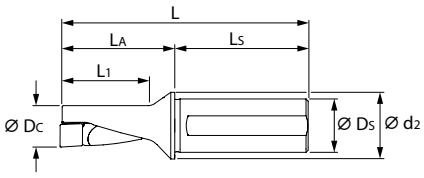
Application: Face turning, longitudinal turning, drilling, internal longitudinal turning, countersinking.

Note:
- Choose corner radii as large as possible.
- **Always use internal cooling for drilling (at least 5 bar).**

26 8467/8468 – Use the drilling and turning tool **in long chipping structural steels and long chipping stainless steels only up to 1.5×D.**

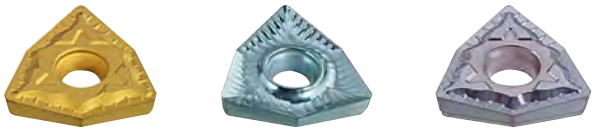

26 8463


26 8468



Ø D_C	21K 26 8463	21K 26 8464	21K 26 8467	21K 26 8468	Tolerance of bore Ø D	L_A	L_S	L_1		Ø D_S		Ø d_2	L	Indexable insert No. 268472 – 268496	Set of insert screws
	"5 in 1" drilling and turning tool														
	1.5×D	1.5×D	2.25×D	2.25×D		26 8467 26 8468	26 8467 26 8468	26 8463 26 8464	26 8467 26 8468	26 8463 26 8464	26 8467 26 8468	26 8467 26 8468	26 8463 26 8464		
mm	right-hand	left-hand	right-hand	left-hand	mm	mm	mm	mm	mm	mm	mm	mm	mm		
8	eShop	eShop	eShop	eShop	0/+0.22	22.5	38	12	18	12	10	12	80	WCHX 0401..	269028 30
10	eShop	eShop	eShop	eShop	0/+0.22	28	42	15	22.5	12	12	16	90	WCHX 05T1..	269028 31
11	eShop	eShop	eShop	eShop	0/+0.27	32	45	16.5	24.75	16	16	20	100	WCHX 0602..	269028 32
15	eShop	eShop	eShop	eShop	0/+0.27	43	50	22.5	33.75	20	20	25	125	WCHX 0703..	269028 33
18	eShop	eShop	eShop	eShop	0/+0.33	53	56	27	40.5	25	25	32	135	WCHX 0903..	269028 34
20	eShop	eShop	eShop	eShop	0/+0.33	56	56	30	45	25	25	32	150	WCHX 10T3..	269028 35
26	eShop	eShop	eShop	eShop	0/+0.33	73	60	39	58.5	32	32	40	180	WCHX 1305..	269028 36

GARANT indexable inserts WCHX.. for "5 in 1" drilling and turning tools

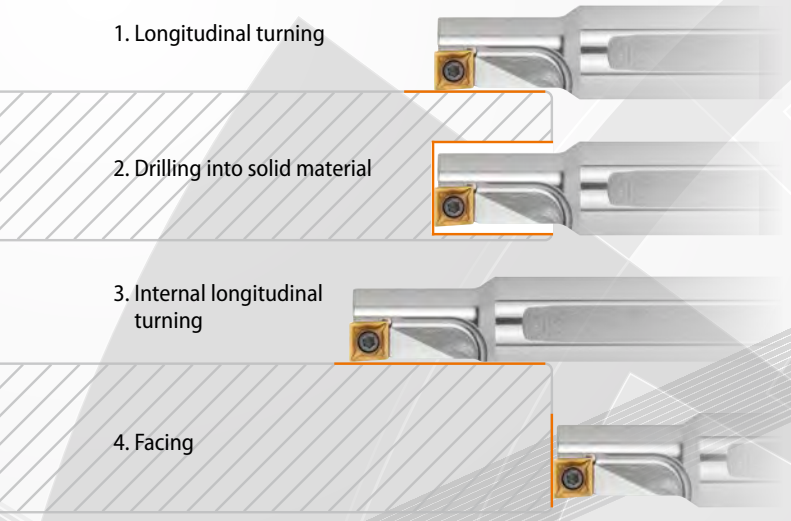


Type		SM	ALU	UNI		suitable for tool dia. D_c mm
21K 26 8472	WCHX 040102	eShop	eShop	eShop	1	8
21K 26 8474	WCHX 040104	eShop	eShop	eShop	1	8
21K 26 8476	WCHX 05T102	eShop	eShop	eShop	1	10
21K 26 8478	WCHX 05T104	eShop	eShop	eShop	1	10
21K 26 8480	WCHX 060202	eShop	eShop	eShop	1	11
21K 26 8482	WCHX 060204	eShop	eShop	eShop	1	11
21K 26 8484	WCHX 070304	eShop	eShop	eShop	1	15
21K 26 8486	WCHX 070308	eShop	eShop	eShop	1	15
21K 26 8488	WCHX 090304	eShop	eShop	eShop	1	18
21K 26 8490	WCHX 090308	eShop	eShop	eShop	1	18
21K 26 8492	WCHX 10T304	eShop	eShop	eShop	1	20
21K 26 8494	WCHX 10T308	eShop	eShop	eShop	1	20
21K 26 8496	WCHX 130508	eShop	eShop	eShop	1	26
●		P	N	UNI		
○		M	K	–		
Type		HB7120	HU70AL	HB7130		
v_c main application	m/min	110 – 220	300 – 600	65 – 200		
v_c secondary application	m/min	110 – 140	180	–		

Garant “4 IN 1” DRILLING AND TURNING TOOL

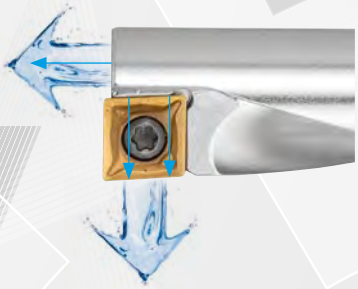
This multi-functional drilling and turning tool allows one-off and series components to be produced inexpensively and efficiently. Tool-changing and set-up times are minimised and the cost-benefit ratio is maximised.

1. Longitudinal turning
2. Drilling into solid material
3. Internal longitudinal turning
4. Facing



Ideal cooling.

Optimised cooling using three target-directed coolant channels. The positioning of these channels permits better chip evacuation from holes.



Optimum stability.

- Specially hardened shank for outstanding stability.
- Strength and dynamics are equally matched.
- Sturdy design of the carrier due to relatively small indexable insert.
- Improved resistance to the radial and axial forces that occur.

Reliable changing of the indexable insert.

The positive-locking design of the insert seat makes it impossible to incorrectly fit the indexable insert.



The GARANT “4 in 1” drilling and turning tool improves your machine efficiency by up to 30% by eliminating tool-changing time and machine idle time.

26

Variety of tool materials for optimum machining results.

Especially in sub-contract manufacturing, it is not unusual to experience a constant change of the material to be machined. The many demands on tool life, surface and tolerance can be satisfied by selecting the right tool material.



HBZ025 HBZ030 HBZ035 HBZ120 HBZ140 HUZ310 HBZ310

GARANT "4 in 1" drilling and turning tools

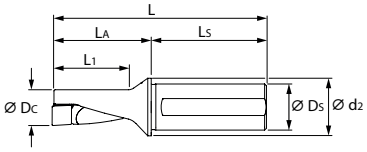
26 8404/8405 – Plain shank.
26 8408/8409 – Plain shank **with collar.**

Application:
1. Facing of end faces.
2. Drilling (drilling out and drilling from solid) – flat drilled hole end.
3. Internal longitudinal turning.
4. External longitudinal turning.

Note:
- Choose corner radii and toolholder size as large as possible.
- **Drilling tolerance + 0.15 mm** (for drilling processes with a driven tool).
- When drilling greater than nominal ∅, residual material will remain.
- **Always use internal cooling for drilling (at least 5 bar).**


26 8404


26 8408



∅ D_c	21K 26 8404	21K 26 8405	21K 26 8408	21K 26 8409	L_A	L_s	L_1		∅ D_s	∅ d_2	L	suitable indexable insert	Set of insert screws
	"4 in 1" drilling and turning tool												
	1.5×D	1.5×D	2.25×D	2.25×D	26 8408 26 8409	26 8408 26 8409	26 8404 26 8405	26 8408 26 8409		26 8408 26 8409	26 8404 26 8405		
mm	right-hand	left-hand	right-hand	left-hand	mm	mm	mm	mm	mm	mm	mm		
10	eShop	eShop	eShop	eShop	29	42	15	22.5	12	16	90	ZCMX 05..	269028 40 (IP6; 0.6 Nm)
12	eShop	eShop	eShop	eShop	35	45	18	27	16	20	100	ZCMX 06..	269028 41 (IP7; 0.9 Nm)
14	eShop	eShop	eShop	eShop	38.5	45	21	31.5	16	20	110	ZCMX 07..	269028 48 (IP7; 0.9 Nm)
16	eShop	eShop	eShop	eShop	43	50	24	36	20	25	125	ZCMX 08..	269028 42 (IP9; 1.4 Nm)
18	eShop	eShop	eShop	eShop	53	56	27	40.5	25	32	135	ZCMX 09..	269028 44 (IP10; 2 Nm)
20	eShop	eShop	eShop	eShop	57.5	56	30	46	25	32	150	ZCMX 10..	269028 43 (IP10; 2 Nm)
25	eShop	eShop	eShop	eShop	73	60	37.5	56	32	40	180	ZCMX 13..	269028 45 (IP20; 5 Nm)

GARANT inserts ZCMX.. for "4 in 1" drilling and turning tools

Size HBZ030 – Harder substrate for longer tool life with thinner CVD coating. Especially for facing and longitudinal turning applications.
Size HBZ025; HBZ035; HBZ140 – General-purpose medium grit substrate with PVD coating. First choice for turning and drilling applications.



Grade		HBZ025	HBZ030	HBZ035	HBZ120	HBZ140	HUZ310	HBZ310		suitable for tool dia. D_c mm
21K 26 8419	ZCMX 050202	–	–	–	–	–	eShop	eShop	10	10
21K 26 8420	ZCMX 050204	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	10
21K 26 8421	ZCMX 060202	–	–	–	–	–	eShop	eShop	10	12
21K 26 8423	ZCMX 060204	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	12
21K 26 8428	ZCMX 070302	–	–	–	–	–	eShop	eShop	10	14
21K 26 8439	ZCMX 070304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	14
21K 26 8424	ZCMX 080302	–	–	–	–	–	eShop	eShop	10	16
21K 26 8425	ZCMX 080304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	16
21K 26 8427	ZCMX 080308	eShop	eShop	eShop	eShop	eShop	–	–	10	16
21K 26 8437	ZCMX 09T302	–	–	–	–	–	eShop	eShop	10	18
21K 26 8438	ZCMX 09T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	18
21K 26 8429	ZCMX 10T302	–	–	–	–	–	eShop	eShop	10	20
21K 26 8433	ZCMX 10T304	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	20
21K 26 8434	ZCMX 10T308	eShop	eShop	eShop	eShop	eShop	–	–	10	20
21K 26 8442	ZCMX 130402	–	–	–	–	–	eShop	eShop	10	25
21K 26 8443	ZCMX 130404	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	25
21K 26 8444	ZCMX 130408	eShop	eShop	eShop	eShop	eShop	–	–	10	25
●		P	P	P	M	M	N	N		
⚙		●	●	◪	●	◪	●	●		
a_p	mm	0.4 – 2	0.4 – 2	0.4 – 2	0.4 – 2	0.4 – 2	0.2 – 4	0.2 – 4		
f when turning	mm	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.1 – 0.3	0.05 – 0.4	0.05 – 0.4		
f when drilling	mm	0.03 – 0.12	0.03 – 0.12	0.03 – 0.12	0.03 – 0.12	0.03 – 0.12	0.03 – 0.3	0.03 – 0.3		
v_c main application	m/min	90 – 210	70 – 200	50 – 190	90 – 200	50 – 190	200 – 600	200 – 600		

WE'RE BIG ON THE LITTLE THINGS TOO!

Our comprehensive range includes suitable turning solutions starting from a hole diameter of just 0.3 mm.



SIMTEK

With the simturn range, the Hoffmann Group offers a comprehensive turning range for micro-machining. On the following pages you will find a large selection ex stock from the Hoffmann Group.

All 16,000 standard tools under the Simtek brand can be ordered from the Hoffmann eShop.
Individual custom solutions are available on request.

simturn AX

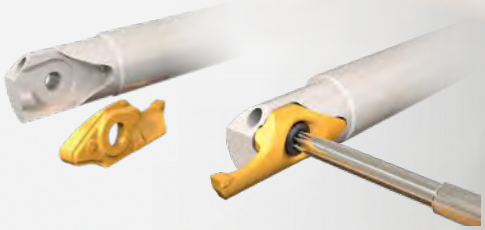
SIMTEK small part machining type AX

- From hole diameter 0.3 mm.
- CBN tools from a hole diameter of 1 mm.
- Overhang lengths up to 9×D.
- Standard range ex stock, Hoffman Group.
- Special solutions on request.

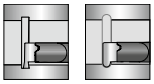
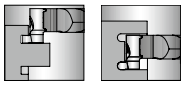
Member IMC Group IMC MIN CUT MINI FACE LINE

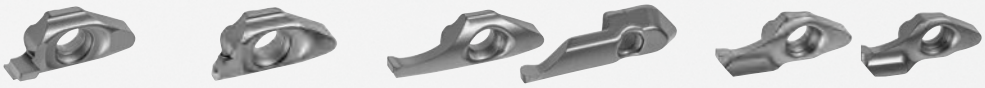
MINCUT – the flexible system for axial and internal machining of small and medium-sized components.

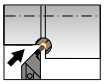
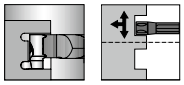
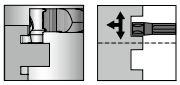
- Can be used from 8 mm bore diameter.
- Groove widths from 1.5 – 3.5 mm.
- Groove depths of up to 15 mm possible.
- Optimum chip evacuation thanks to soft-cutting geometry and targeted coolant supply into the cutting zone.
- Stable and accurately repeatable screw clamping thanks to defined contact surfaces between the tool and the cutter insert.





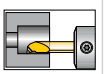
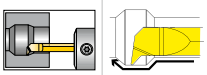
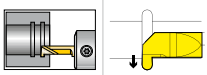
Designation		Micro-machining				
		Boring-out	Copying	Radial grooving	Axial grooving	Thread turning
Application						
Brand		Garant	Garant	Garant	Garant	Garant
Version / standards		without / with chip breaker		Groove / full radius / DIN 472	Groove / full radius external / internal	metric 60° internal right-hand full profile
∅ D_{min} / Pitch	mm	7.8 – 11	7.8 – 11	8 – 11	6 – 14	0.5 – 2
Tool material		HB720	HB720	HB720	HB720	HB720
Page(s)		830	830	831	890	831



Designation		Micro-machining			
		Radial grooving	Internal undercutting	Axial grooving and internal grooving	Axial grooving and external grooving on the pin
Application					
Brand		Gühring	Gühring	Gühring	Gühring
Version		neutral	Full radius	neutral / full radius	neutral / full radius
∅ D_{min}	mm	8.5 – 9.2	8 – 8.3	8 – 999	7 – 100
Tool material		IC908	IC908	IC908	IC908
Page(s)		839	840	840	840

CBN version ex-stock from the Hoffmann Group.



Designation		Micro-machining									
		Boring-out		Copying		Radial grooving		Axial grooving		Thread turning	
Application											
Brand		Garant	SIMTEK	Garant	SIMTEK	Garant	SIMTEK	Garant	SIMTEK	Garant	SIMTEK
Version / standards			Standard / Center Line			Groove / full radius		external / internal		metric 60° internal right-hand	
										Full profile	Partial profile Full profile
∅ D_{min} / Pitch	mm	1 – 6.2	1 – 6.2	4.2 – 6.2	2.7 – 8	4.2 – 6.2	2 – 7.2	6.2 – 14	6.2	0.5 – 1.5	0.5 – 1.75
Tool material / coating		Carbide TICN	Carbide; CBN / X800	Carbide / TICN	Carbide / X800	Carbide / TICN	Carbide / X800	Carbide / TICN	Carbide / X800	Carbide / TICN	Carbide / X800
Page(s)		832	834 – 838	832	836 / 838	833	836 – 837	833 / 889	837	833	837 / 838

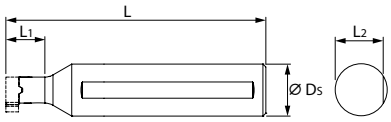
Garant Mini boring bar for indexable inserts

- Carbide insert screwed on to the end face, positive force transmission due to end face serrations.
- Insert change is very easy to perform.
  27 0006 – Low-vibration carbide shank with soldered steel head and hardened insert seat.

Note:
27 0006 Size 42/6; 50/6; 64/8 – **Only** for boring and chamfering!


27 0002


27 0006

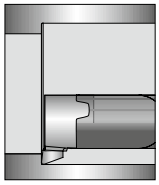


Overhang L_1 / insert size d	21V 27 0002 Mini boring bar, steel right-hand	21V 27 0006 Mini boring bar, carbide right-hand	Ø D_s	L_2	L	Insert screw
mm			mm	mm	mm	
12/6	eShop	–	16	15.6	80	279815 10
21/6	–	eShop	12	11.5	80.5	279815 10
30/6	–	eShop	12	11.5	90.5	279815 10
42/6	–	eShop	12	11.5	100.5	279815 10
50/6	–	eShop	12	11.5	115	279815 10
12/8	eShop	–	16	15.6	80	279815 11
29/8	–	eShop	12	11.5	95	279815 11
42/8	–	eShop	12	11.5	110	279815 11
56/8	–	eShop	12	11.5	120	279815 11
64/8	–	eShop	12	11.5	130	279815 11

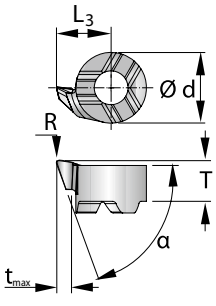
Garant Mini inserts

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
27 0020–27 0140	80	80	60	80	80	80	80	60				70	50	30	60	80		

For boring out

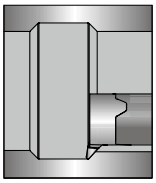



27 0020 27 0021

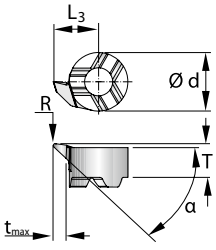


Ø D_{min}	21I 27 0020 Mini insert for internal boring out without chip breaker right-hand HB720	21I 27 0021 Mini insert for internal boring out, with chip breaker right-hand HB720		Ø d	T	L_3	t_{max}	R	α	f	maximum cutting depth $a_{p\,max}$
mm				mm	mm	mm	mm	mm	degrees	mm/rev.	mm
7,8	eShop	eShop	10	6	3.65	4.65	1.3	0.2	70	0.02 – 0.03	0.15 – 0.5
11	eShop	eShop	10	8	4	6.7	2.3	0.2	70	0.02 – 0.03	0.15 – 0.5

For copying

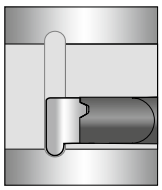



27 0040



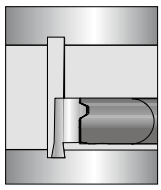
Ø D_{min}	21I 27 0040 Mini insert for internal copying right-hand HB720		Ø d	T	L_3	t_{max}	R	α	f	maximum cutting depth $a_{p\,max}$
mm			mm	mm	mm	mm	mm	degrees	mm/rev.	mm
7,8	eShop	10	6	3.65	4.65	1.2	0.2	43	0.02 – 0.03	0.15 – 0.5
11	eShop	10	8	4.1	6.7	2.3	0.2	43	0.02 – 0.03	0.15 – 0.5

For internal grooving





Ø D_{min} / w	211	27 0050		Ø d	w	T	L_3	R	t_{max}	f
		Mini insert for internal grooving, full radius **right-hand**								
mm		**HB720**		mm	mm	mm	mm	mm	mm	mm/rev.
8/0,8		eShop	**10**	6	0.8	3.6	4.8	0.4	1	0.02 – 0.03
8/1,2		eShop	**10**	6	1.2	3.6	4.8	0.6	1	0.02 – 0.03
8/2,0		eShop	**10**	6	2	3.6	4.8	1	1	0.02 – 0.03
11/0,8		eShop	**10**	8	0.8	4	6.7	0.4	2.3	0.02 – 0.03
11/1,2		eShop	**10**	8	1.2	4	6.7	0.6	2.3	0.02 – 0.03
11/2,0		eShop	**10**	8	2	4	6.7	1	2.3	0.02 – 0.03

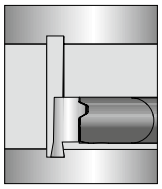




Ø D_{min} / w	211	27 0090		Ø d	T	L_3	t_{max}	f
		Mini insert for internal grooving **right-hand**						
mm		**HB720**		mm	mm	mm	mm	mm/rev.
8/1,0		eShop	**10**	6	3.6	4.8	1	0.02 – 0.03
8/1,5		eShop	**10**	6	3.6	4.8	1	0.02 – 0.03
8/2,0		eShop	**10**	6	3.6	4.8	1	0.02 – 0.03
11/1,0		eShop	**10**	8	4	6.7	2.3	0.02 – 0.03
11/1,5		eShop	**10**	8	4	6.7	2.3	0.02 – 0.03
11/2,0		eShop	**10**	8	4	6.7	2.3	0.02 – 0.03
11/2,5		eShop	**10**	8	4	6.7	2.3	0.02 – 0.03

For grooving to DIN 472

DIN 472

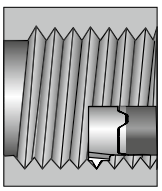




Ø D_{min} / slot width m (H13)	211	27 0110		Ø d	w	T	L_3	t_{max}	f
		Mini insert for internal grooving, DIN 472 **right-hand**							
mm		**HB720**		mm	mm	mm	mm	mm	mm/rev.
8/0,9		eShop	**10**	6	0.93	3.6	4.8	1	0.02 – 0.03
8/1,1		eShop	**10**	6	1.2	3.6	4.8	1	0.02 – 0.03
8/1,3		eShop	**10**	6	1.4	3.6	4.8	1	0.02 – 0.03
8/1,6		eShop	**10**	6	1.7	3.6	4.8	1	0.02 – 0.03
11/0,9		eShop	**10**	8	0.93	4	6.7	1.5	0.02 – 0.03
11/1,1		eShop	**10**	8	1.2	4	6.7	2.2	0.02 – 0.03
11/1,3		eShop	**10**	8	1.4	4	6.7	2.2	0.02 – 0.03
11/1,6		eShop	**10**	8	1.7	4	6.7	2.2	0.02 – 0.03

For threading

M/MF 60° DIN 13





Pitch	211	27 0140		Ø d	T	L_3	h_{min}	Y	Pitch angle	Number of passes
		Mini insert for internal threading **right-hand**								
mm		**HB720**		mm	mm	mm	mm	mm	degrees	
0,5		eShop	**10**	6	3.8	3.86	0.29	0.35	1	4 – 6
0,75		eShop	**10**	6	3.8	4.19	0.43	0.5	1.5	4 – 7
1		eShop	**10**	6	3.8	4.29	0.58	0.5	2	4 – 8
1,25		eShop	**10**	6	3.8	4.44	0.72	0.8	2.5	5 – 9
1,5		eShop	**10**	6	3.8	4.58	0.87	0.9	3	6 – 10
1,75		eShop	**10**	6	3.8	4.8	1.01	0.9	3	7 – 12
2		eShop	**10**	8	4.2	6.47	1.15	1.1	2.5	7 – 12

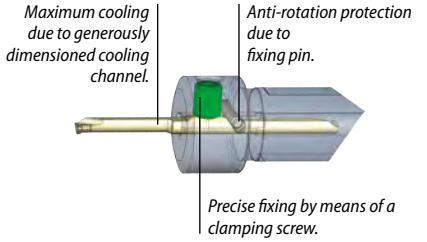
Garant Micro cutter holder

Spare part: Clamp screw No. 279815 3.





27 0200



Ø D_S	21V 27 0200	21V 27 0202	21V 27 0204	Ø D_1	L_2	L
	Micro cutter holder					
mm	Ø d = 4 mm	Ø d = 5 mm	Ø d = 6 mm	mm	mm	mm
10	eShop	eShop	–	14	8.8	65
12	eShop	eShop	eShop	16	10.8	70
16	eShop	eShop	eShop	18.6	14.8	75
20	eShop	eShop	eShop	22	18.8	84

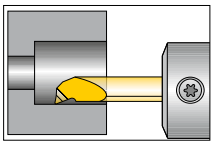
Garant Micro inserts for cutter holders No. 270200 – 270204

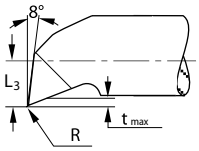
For the feed rates, see the eShop

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
27 0210–27 0365	250	200	200	160	150	150	80	60	30			90	60	30	90	150			●	○	○	●	
27 0400	200	200	150	160	150	150	80	60	30			90	60	30	90	150			●			●	



27 0210







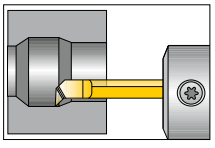
27 0220

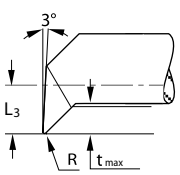


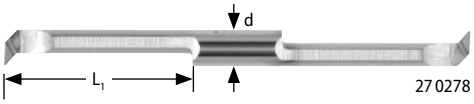
27 0250

Ø D_{min}	21I 27 0210	21I 27 0212	21I 27 0214	21I 27 0216	21I 27 0218	21I 27 0220	21I 27 0222	21I 27 0224	Ø d	L_3	t_{max}	R
	Micro boring-out insert, internal, right-hand											
mm	L_1 = 6 mm	L_1 = 10 mm	L_1 = 16 mm	L_1 = 21 mm	L_1 = 26 mm	L_1 = 30 mm	L_1 = 35 mm	L_1 = 40 mm	mm	mm	mm	mm
1	eShop	–	–	–	–	–	–	–	4	0.49	0.15	0.1
1,5	–	eShop	–	–	–	–	–	–	4	0.69	0.15	0.1
2,2	–	eShop	eShop	–	–	–	–	–	4	0.95	0.15	0.1
3,2	–	eShop	eShop	eShop	–	–	–	–	4	1.45	0.15	0.15
4,2	–	eShop	eShop	eShop	eShop	–	–	–	4	1.95	0.3	0.15
5,2	–	eShop	eShop	eShop	eShop	eShop	eShop	–	5	2.45	0.5	0.2
6,2	–	–	eShop	eShop	eShop	eShop	eShop	eShop	6	2.95	0.5	0.2

Ø D_{min}	21I 27 0240	21I 27 0242	21I 27 0244	21I 27 0246	21I 27 0248	21I 27 0250	21I 27 0252	21I 27 0254	Ø d	L_3	t_{max}	R
	Micro boring-out insert, internal, left-hand											
mm	L_1 = 6 mm	L_1 = 10 mm	L_1 = 16 mm	L_1 = 21 mm	L_1 = 26 mm	L_1 = 30 mm	L_1 = 35 mm	L_1 = 40 mm	mm	mm	mm	mm
1	eShop	–	–	–	–	–	–	–	4	0.49	0.15	0.1
1,5	–	eShop	–	–	–	–	–	–	4	0.69	0.15	0.1
2,2	–	eShop	eShop	–	–	–	–	–	4	0.95	0.15	0.1
3,2	–	eShop	eShop	eShop	–	–	–	–	4	1.45	0.15	0.15
4,2	–	eShop	eShop	eShop	eShop	–	–	–	4	1.95	0.3	0.15
5,2	–	eShop	eShop	eShop	eShop	eShop	eShop	–	5	2.45	0.5	0.2
6,2	–	–	eShop	eShop	eShop	eShop	eShop	eShop	6	2.95	0.5	0.2

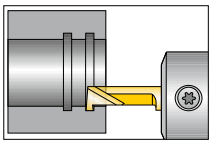


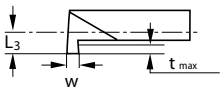




27 0278

Ø D_{min}	21I 27 0270	21I 27 0272	21I 27 0274	21I 27 0278	21I 27 0290	21I 27 0292	21I 27 0294	21I 27 0298	Ø d	L_3	t_{max}	R
	Micro copying insert, internal, right-hand				Micro copying insert, internal, left-hand							
mm	L_1 = 10 mm	L_1 = 16 mm	L_1 = 21mm	L_1 = 30 mm	L_1 = 10 mm	L_1 = 16 mm	L_1 = 21 mm	L_1 = 30 mm	mm	mm	mm	mm
4,2	eShop	eShop	eShop	–	eShop	eShop	eShop	–	4	1.95	0.75	0.15
5,2	–	eShop	eShop	–	–	eShop	eShop	–	5	2.45	0.95	0.2
6,2	–	eShop	eShop	eShop	–	eShop	eShop	eShop	6	2.95	1.75	0.2

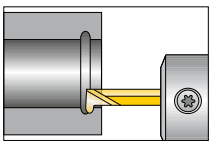


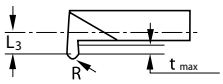




27 0324

∅ D_{min} / w	27 0310	27 0312	27 0314	27 0320	27 0322	27 0324	∅ d	L_3	t_{max}
	Micro grooving insert, internal, right-hand			Micro grooving insert, internal, left-hand					
mm	L_1 = 10 mm	L_1 = 15 mm	L_1 = 20 mm	L_1 = 10 mm	L_1 = 15 mm	L_1 = 20 mm	mm	mm	mm
4,2/1	eShop	eShop	eShop	eShop	eShop	eShop	4	2	0.8
5,2/1	eShop	eShop	eShop	eShop	eShop	eShop	5	2.5	1
5,2/1,5	eShop	eShop	eShop	eShop	eShop	eShop	5	2.5	1
5,2/2	eShop	eShop	eShop	eShop	eShop	eShop	5	2.5	1
6,2/1	eShop	eShop	eShop	eShop	eShop	eShop	6	3	1.8
6,2/1,5	eShop	eShop	eShop	eShop	eShop	eShop	6	3	1.8
6,2/2	eShop	eShop	eShop	eShop	eShop	eShop	6	3	1.8

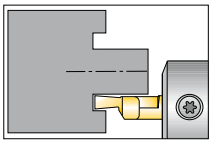


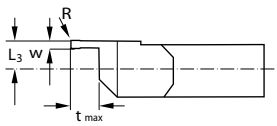


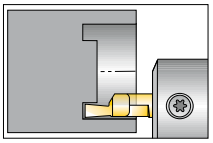


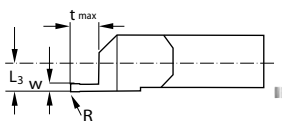
27 0334

∅ D_{min} / w	27 0330	27 0332	27 0334	27 0340	27 0342	27 0344	∅ d	L_3	t_{max}	R
	Micro grooving insert, full radius, internal, right-hand			Micro grooving insert, full radius, internal, left-hand						
mm	L_1 = 15 mm	L_1 = 20 mm	L_1 = 25 mm	L_1 = 15 mm	L_1 = 20 mm	L_1 = 25 mm	mm	mm	mm	mm
4,2/1	eShop	–	–	eShop	–	–	4	1.95	0.8	0.5
5,2/1	–	eShop	–	–	eShop	–	5	2.45	1	0.5
5,2/2	–	eShop	–	–	eShop	–	5	2.45	1	1
6,2/1	–	–	eShop	–	–	eShop	6	2.95	1.8	0.5
6,2/2	–	–	eShop	–	–	eShop	6	2.95	1.8	1











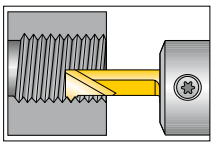
27 0350

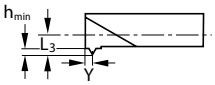


27 0360

∅ D_{min} / W	27 0350	27 0355	27 0360	27 0365	∅ d	L_3	t_{max}	R
	Micro axial grooving insert, external, right-hand	Micro axial grooving insert, external, left-hand	Micro axial grooving insert, internal, right-hand	Micro axial grooving insert, internal, left-hand				
mm	L_1 = 15 mm	L_1 = 15 mm	L_1 = 15 mm	L_1 = 15 mm	mm	mm	mm	mm
6,2/1	eShop	eShop	eShop	eShop	6	2.95	2	0.1
6,2/1,5	eShop	eShop	eShop	eShop	6	2.95	3	0.1
6,2/2	eShop	eShop	eShop	eShop	6	2.95	4	0.1
6,2/2,5	eShop	eShop	eShop	eShop	6	2.95	5	0.1
6,2/3	eShop	eShop	eShop	eShop	6	2.95	6	0.1

DIN 13 6H | 60° | M | MF







27 0400_3,4/0,5

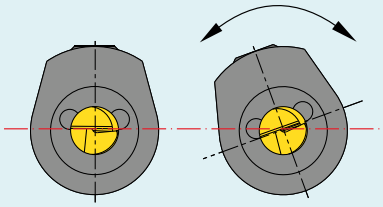


27 0400_5,8/1

∅ D_{min} / Pitch	27 0400	∅ d	L_3	Y	h_{min}
	Micro thread turning insert, internal, full profile 60°, right-hand				
mm	L_1 = 16 mm	mm	mm	mm	mm
3,4/0,5	eShop	4	0.9	0.4	0.29
4,4/0,5	eShop	4	1.9	0.4	0.29
4,9/0,5	eShop	5	1.7	0.4	0.29
5,4/0,5	eShop	6	1.9	0.4	0.29
3,2/0,7	eShop	4	0.9	0.5	0.41
4,6/0,75	eShop	5	1.7	0.6	0.43
5,6/0,75	eShop	6	1.9	0.6	0.43
4/0,8	eShop	4	0.9	0.6	0.46
4,8/1	eShop	4	1.9	0.7	0.58
5,8/1	eShop	5	2.4	0.7	0.58
6,3/1	eShop	6	2.9	0.7	0.58
6,5/1,25	eShop	6	2.9	0.9	0.72
8,3/1,5	eShop	6	2.9	1	0.87

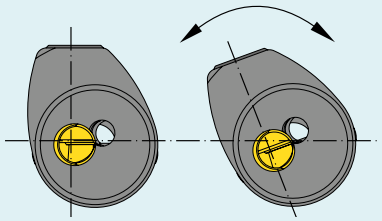
simturn AX Center Line

Standard version



Suitable for all cutter inserts.

Center Line version



For use only with optimised cutter inserts (for Ø range < 4.2 mm).

- The eccentric mounting of the Centre Line version ensures extremely precise cutting edge positioning, even in the event of slight variations in the tool mounting.
- The cutting results are significantly optimised, especially for very small diameters.
- Ideal coolant feed directly to the bore to be machined.

simturn AX Center Line toolholder

Eccentric mounting of cutter inserts.

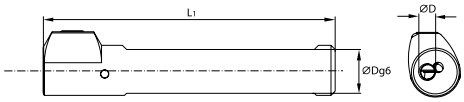
Advantage: Eccentric mounting ensures precise cutting edge positioning at all times.

Application: In particular for very small boring-out diameters.



27 0500

Ø Dg6	27 0500	27 0501	L_1	Clamping screw
	simturn AX Center Line toolholder, right-hand	simturn AX Center Line toolholder, left-hand		
mm	ØD = 4 mm		mm	
10	eShop	eShop	65	2797101
12	eShop	eShop	70	2797101
16	eShop	eShop	75	2797101
20	eShop	eShop	90	2797101

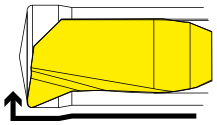


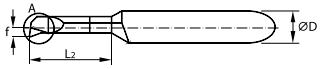
simturn AX Center Line cutter inserts

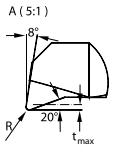
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
27 0503–27 0517		400	240	180		130						100	70	40	110	210		
27 0521–27 0527											90							

simturn AX Center Line cutter inserts for boring out

Coating: X800 (successor to coating GN39)







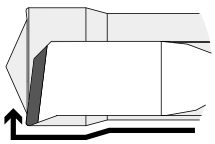


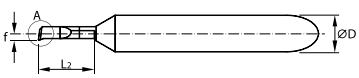
27 0509

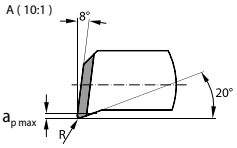
Ø D_{min}	27 0503	27 0505	27 0507	27 0509	27 0511	27 0513	27 0515	27 0517	Ø D	R	f	t_{max}
	simturn AX Center Line, boring-out insert, right-hand				simturn AX Center Line boring-out insert, left-hand							
mm	L_2 = 6.1 mm	L_2 = 10.2 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 6.1 mm	L_2 = 10.2 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	mm	mm	mm	mm
1	eShop	–	–	–	eShop	–	–	–	4	0.1	1.95	0.1
1,4	eShop	eShop	–	–	eShop	eShop	–	–	4	0.1	1.95	0.15
2,7	–	eShop	eShop	eShop	–	eShop	eShop	–	4	0.15	1.95	0.2
3,2	–	eShop	eShop	eShop	–	eShop	eShop	eShop	4	0.15	1.95	0.2
3,7	–	eShop	eShop	eShop	–	eShop	eShop	eShop	4	0.15	1.95	0.2

simturn AX Center Line cutter inserts for boring out – CBN

Tool material = CBN8









27 0527

Ø D_{min}	27 0521	27 0523	27 0525	27 0527	Ø D	R	f	$a_{p\,max}$
	simturn AX Center Line boring-out insert, right-hand CBN							
mm	L_2 = 6.1 mm	L_2 = 10.2 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	mm	mm	mm	mm
1	eShop	–	–	–	4	0.1	1.95	0.05
1,4	eShop	eShop	–	–	4	0.1	1.95	0.07
2,7	–	eShop	eShop	–	4	0.15	1.95	0.13
3,2	–	eShop	eShop	eShop	4	0.15	1.95	0.16
3,7	–	eShop	eShop	eShop	4	0.15	1.95	0.18

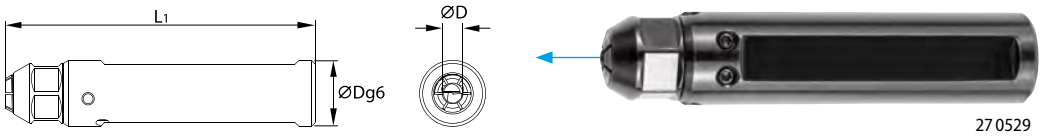
SIMTEK simturn AX toolholder

simturn AX toolholder with ME clamping system

Optionally select 4 different types of coolant feed. Easy to adjust using only two grub screws.

Advantage: The ME clamping system permits optimum precision and stability thanks to the all-round wrapping.

Application: Especially for long overhangs to reduce vibrations.

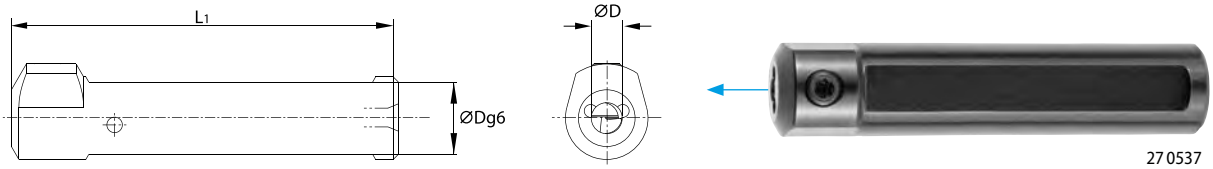


27 0529

Ø Dg6	24U 27 0529	24U 27 0531	24U 27 0533	24U 27 0535	24U 27 0536	L_1	Union nut		
	simturn AX toolholder ME clamping system						27 0529 27 0531	27 0533 27 0535	27 0536
mm	D = 4 mm	D = 5 mm	D = 6 mm	D = 7 mm	D = 8 mm	mm			
12	eShop	eShop	eShop	–	–	70	279715 1	279715 2	–
16	eShop	eShop	eShop	eShop	eShop	75	279715 1	279715 2	279715 3
20	eShop	eShop	eShop	eShop	eShop	90	279715 1	279715 2	279715 3
25	eShop	eShop	eShop	eShop	eShop	110	279715 1	279715 2	279715 3

simturn AX toolholder

Application: For all standard applications.



27 0537

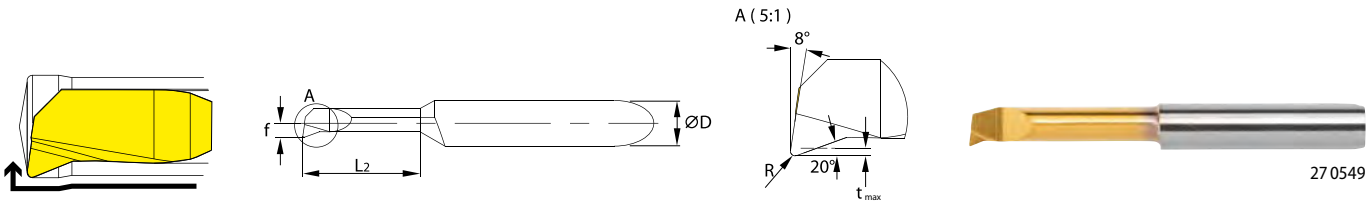
Ø Dg6	24U 27 0537	24U 27 0539	24U 27 0541	24U 27 0543	24U 27 0544	L_1	Clamping screw
	simturn AX toolholder						
mm	D = 4 mm	D = 5 mm	D = 6 mm	D = 7 mm	D = 8 mm	mm	
10	eShop	eShop	–	–	–	65	279710 1
12	eShop	eShop	eShop	–	–	70	279710 1
16	eShop	eShop	eShop	eShop	eShop	75	279710 1
20	eShop	eShop	eShop	eShop	eShop	90	279710 1
25	eShop	eShop	eShop	eShop	eShop	110	279710 1

SIMTEK simturn AX cutter inserts

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
27 0545–27 0575/ 0591–27 0649		400	240	180		130						100	70	40	110	210		
27 0577–27 0589											90							

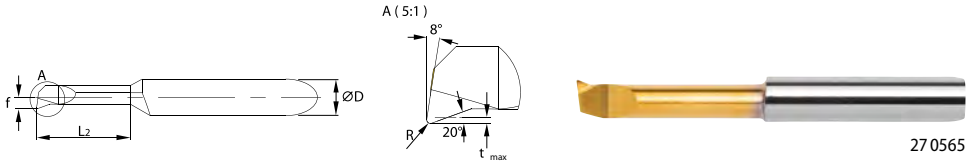
simturn AX cutter inserts for boring out

Coating: X800 (successor to coating GN39)



27 0549

Ø D_{min}	24U 27 0545	24U 27 0547	24U 27 0549	24U 27 0551	24U 27 0553	24U 27 0555	24U 27 0557	24U 27 0559	Ø D	R	f	t_{max}
	simturn AX boring-out insert, right-hand											
mm	L_2 = 6.1 mm	L_2 = 10.2 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 25.4 mm	L_2 = 30.5 mm	L_2 = 35.6 mm	L_2 = 40.6 mm	mm	mm	mm	mm
1	eShop	–	–	–	–	–	–	–	4	0.1	0.45	0.1
1,4	eShop	eShop	–	–	–	–	–	–	4	0.1	0.6	0.15
2,7	–	eShop	eShop	–	–	–	–	–	4	0.15	1.2	0.2
3,2	–	eShop	eShop	eShop	–	–	–	–	4	0.15	1.45	0.2
3,7	–	eShop	eShop	eShop	–	–	–	–	4	0.15	1.7	0.2
4,2	–	eShop	eShop	eShop	eShop	–	–	–	4	0.15	1.95	0.3
5,2	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	5	0.2	2.45	0.5
6,2	–	–	eShop	eShop	eShop	eShop	eShop	eShop	6	0.2	2.95	0.5

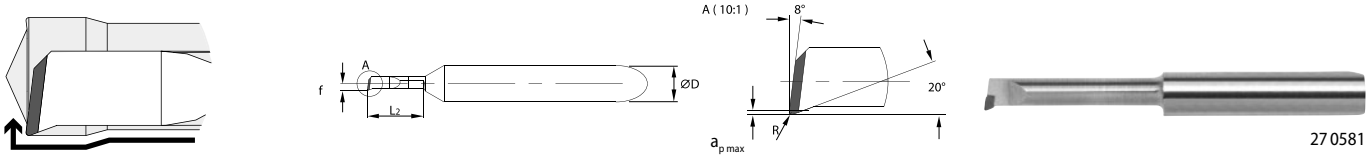


27 0565

Ø D_{min}	24U 27 0561	24U 27 0563	24U 27 0565	24U 27 0567	24U 27 0569	24U 27 0571	24U 27 0573	24U 27 0575	Ø D	R	f	t_{max}
	simturn AX boring-out insert, left-hand											
mm	L_2 = 6.1 mm	L_2 = 10.2 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 25.4 mm	L_2 = 30.5 mm	L_2 = 35.6 mm	L_2 = 40.6 mm	mm	mm	mm	mm
1	eShop	–	–	–	–	–	–	–	4	0.1	0.45	0.1
1,4	eShop	eShop	–	–	–	–	–	–	4	0.1	0.6	0.15
2,7	–	eShop	eShop	–	–	–	–	–	4	0.15	1.2	0.2
3,2	–	eShop	eShop	eShop	–	–	–	–	4	0.15	1.45	0.2
3,7	–	eShop	eShop	eShop	–	–	–	–	4	0.15	1.7	0.2
4,2	–	eShop	eShop	eShop	eShop	–	–	–	4	0.15	1.95	0.3
5,2	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	5	0.2	2.45	0.5
6,2	–	–	eShop	eShop	eShop	eShop	eShop	eShop	6	0.2	2.95	0.5

simturn AX cutter inserts for boring out – CBN

Tool material: CBN8

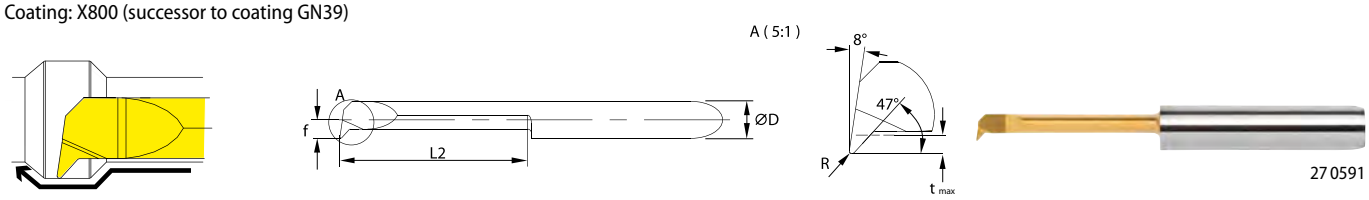


27 0581

Ø D_{min}	24V 27 0577	24V 27 0579	24V 27 0581	24V 27 0583	24V 27 0585	24V 27 0587	24V 27 0589	Ø D	R	f	$a_{p\,max}$
	simturn AX boring-out insert, right-hand CBN										
mm	L_2 = 6.1 mm	L_2 = 10.2 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 25.4 mm	L_2 = 30.5 mm	L_2 = 35.6 mm	mm	mm	mm	mm
1	eShop	–	–	–	–	–	–	4	0.1	0.45	0.05
1,4	eShop	eShop	–	–	–	–	–	4	0.1	0.6	0.07
2,7	–	eShop	eShop	–	–	–	–	4	0.15	1.2	0.13
3,2	–	eShop	eShop	eShop	–	–	–	4	0.15	1.45	0.16
4,2	–	eShop	eShop	eShop	eShop	–	–	4	0.15	1.95	0.21
5,2	–	eShop	eShop	eShop	eShop	eShop	–	5	0.2	2.45	0.26
6,2	–	–	eShop	eShop	eShop	eShop	eShop	6	0.2	2.95	0.31

simturn AX cutter inserts for copying/profile turning with 47°

Coating: X800 (successor to coating GN39)

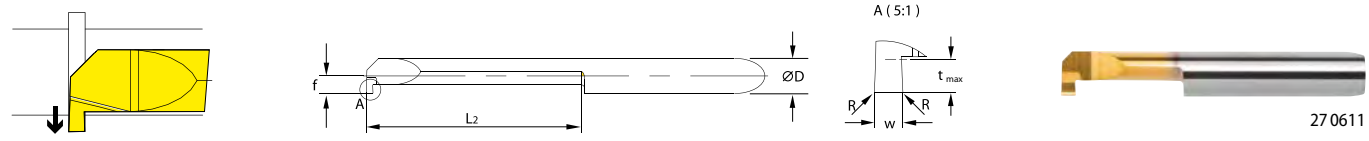


27 0591

Ø D_{min}	24U 27 0591	24U 27 0593	24U 27 0595	24U 27 0597	24U 27 0599	24U 27 0601	24U 27 0603	24U 27 0605	Ø D	R	f	t_{max}
	simturn AX copying insert, right-hand				simturn AX copying insert, left-hand							
mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 25.4 mm	L_2 = 30.5 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 25.4 mm	L_2 = 30.5 mm	mm	mm	mm	mm
2,7	eShop	–	–	–	eShop	–	–	–	4	0.1	1.2	0.5
3,2	eShop	–	–	–	eShop	–	–	–	4	0.1	1.45	0.6
4,2	–	eShop	–	–	–	eShop	–	–	4	0.15	1.95	0.8
5,2	eShop	–	eShop	–	eShop	–	eShop	–	5	0.15	2.45	1
6,2	–	eShop	–	eShop	–	eShop	–	eShop	6	0.15	2.95	1.8

simturn AX cutter inserts for grooving

Coating: X800 (successor to coating GN39) No corner radius (sharp-edged).

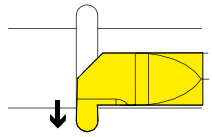


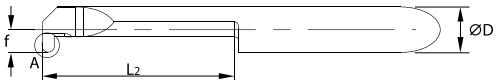
27 0611

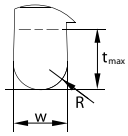
Ø D_{min} / w	24U 27 0607	24U 27 0609	24U 27 0611	24U 27 0613	24U 27 0615	24U 27 0617	24U 27 0619	24U 27 0621	Ø D	f	t_{max}
	simturn AX grooving insert, right-hand						simturn AX grooving insert, left-hand				
mm	L_2 = 10.2 mm	L_2 = 12.2 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 25.4 mm	L_2 = 30.5 mm	L_2 = 15.2 mm	L_2 = 25.4 mm	mm	mm	mm
2/0,5	–	eShop	–	–	–	–	–	–	4	0.85	0.4
3/0,7	–	eShop	–	–	–	–	–	–	4	1.35	0.6
4,2/1	eShop	–	eShop	eShop	–	–	eShop	–	4	1.95	0.8
5,2/1	eShop	–	eShop	eShop	eShop	–	eShop	eShop	5	2.45	1
5,2/1,5	eShop	–	eShop	eShop	eShop	–	eShop	eShop	5	2.45	1
5,2/2	eShop	–	eShop	eShop	eShop	–	eShop	eShop	5	2.45	1
6,2/1	eShop	–	eShop	eShop	eShop	–	eShop	eShop	6	2.95	1.8
6,2/1,5	eShop	–	eShop	eShop	eShop	–	eShop	eShop	6	2.95	1.8
6,2/2	eShop	–	eShop	eShop	eShop	–	eShop	eShop	6	2.95	1.8
7,2/1	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	7	3.45	2.5
7,2/1,5	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	7	3.45	2.5
7,2/2	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	7	3.45	2.5

simturn AX cutter inserts for grooving full radius grooves

Coating: X800 (successor to coating GN39)









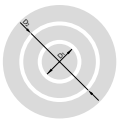
27 0625

Ø D_{min} / w	24U 27 0623	24U 27 0625	24U 27 0627	24U 27 0629	24U 27 0631	24U 27 0633	24U 27 0635	24U 27 0637	Ø D	R	f	t_{max}
	simturn AX grooving insert, full radius right-hand				simturn AX grooving insert, full radius left-hand							
mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 25.4 mm	L_2 = 30.5 mm	L_2 = 15.2 mm	L_2 = 20.3 mm	L_2 = 25.4 mm	L_2 = 30.5 mm	mm	mm	mm	mm
4,2/1	eShop	–	–	–	eShop	–	–	–	4	0.5	1.95	0.8
5,2/1	–	eShop	–	–	–	eShop	–	–	5	0.5	2.45	1
5,2/1,5	–	eShop	–	–	–	eShop	–	–	5	0.75	2.45	1
5,2/2	–	eShop	–	–	–	eShop	–	–	5	1	2.45	1
6,2/1	–	–	eShop	–	–	–	eShop	–	6	0.5	2.95	1.8
6,2/1,5	–	–	eShop	–	–	–	eShop	–	6	0.75	2.95	1.8
6,2/2	–	eShop	eShop	–	–	eShop	eShop	–	6	1	2.95	1.8
7,2/1	–	–	–	eShop	–	–	–	eShop	7	0.5	3.45	2.5
7,2/1,5	–	–	–	eShop	–	–	–	eShop	7	0.75	3.45	2.5
7,2/2	–	–	–	eShop	–	–	–	eShop	7	1	3.45	2.5

simturn AX cutter inserts for axial grooving

Coating: X800 (successor to coating GN39)

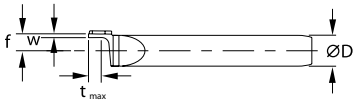
Attention: Larger groove diameters can be achieved without modifications.
$D_1 = D_{min}$ internal diameter.
$D_2 = D_{min}$ external diameter.

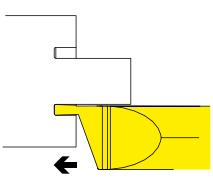


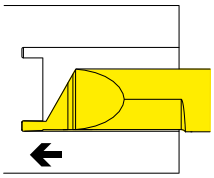


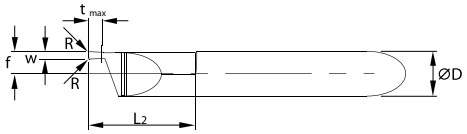
27 0639

Ø range Groove D_1 / D_2	24U 27 0639	Ø D	f	t_{max}	w
	simturn AX axial grooving insert, right-hand				
mm		mm	mm	mm	mm
3/4	eShop	4	2.2	1.6	0.5
4/5	eShop	4	2.2	1.6	0.5
4/6	eShop	4	2.2	3.3	1



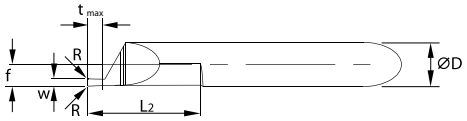








27 0641





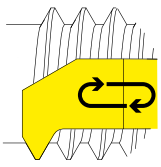
27 0645

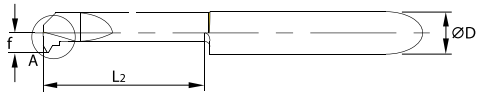
Ø D_{min} / w	24U 27 0641	24U 27 0643	24U 27 0645	24U 27 0647	Ø D	R	f	t_{max}
	simturn AX axial grooving insert at pin, right-hand	simturn AX axial grooving insert at pin, left-hand	simturn AX axial grooving insert at bore, right-hand	simturn AX axial grooving insert at bore, left-hand				
mm	L_2 = 15.2 mm	L_2 = 15.2 mm	L_2 = 15.2 mm	L_2 = 15.2 mm	mm	mm	mm	mm
6,2/1	eShop	eShop	eShop	eShop	6	0.15	2.95	2
6,2/1,5	eShop	eShop	eShop	eShop	6	0.15	2.95	3
6,2/2	eShop	eShop	eShop	eShop	6	0.15	2.95	4
6,2/2,5	eShop	eShop	eShop	eShop	6	0.15	2.95	5
6,2/3	eShop	eShop	eShop	eShop	6	0.15	2.95	6

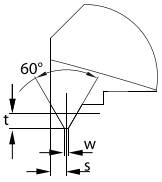
simturn AX cutter inserts for thread turning

Coating: X800 (successor to coating GN39)

Application: For producing metric ISO internal threads.









27 0649

Type	24U 27 0649	Ø D_{min}	Ø D	Pitch	f	t	w	S
	simturn AX thread turning insert, partial profile, 60°, internal, right-hand							
	L_2 = 15.2 mm	mm	mm	mm	mm	mm	mm	
1	eShop	3.24	4	0.7	–	0.38	0.09	0.32
2	eShop	3.9	4	0.8 – 1	1.95	0.46	0.1	0.45
3	eShop	4.2	4	0.5 – 0.7	1.95	0.4	0.06	0.35
4	eShop	4.8	5	1 – 1.25	2.25	0.7	0.12	0.55
5	eShop	5.1	5	0.75 – 1	2.4	0.57	0.09	0.45
6	eShop	5.2	5	0.5 – 0.75	2.45	0.43	0.06	0.35
7	eShop	6.2	6	1 – 1.25	2.95	0.7	0.12	0.55
8	eShop	6.2	6	1.25 – 1.5	2.95	0.84	0.16	0.75
9	eShop	6.2	6	1.5 – 1.75	2.95	0.98	0.18	0.8

SIMTEK simturn AX cutter inserts



SIMTEK simturn AX cutter inserts

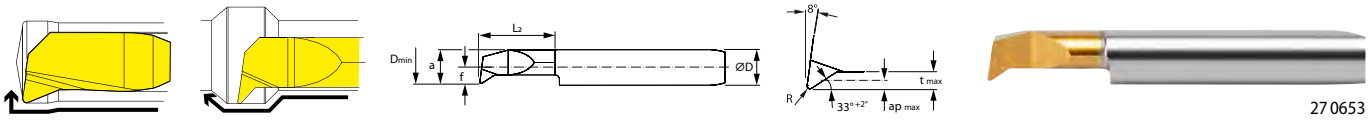
Coating: X800 (successor to coating GN39)

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
27 0651–27 0665		400	240	180		130						100	70	40	110	210		

simturn AX cutter inserts for boring out / copying

Version similar (new clamping) to former article numbers No. 240110 – 240135.

Suitable for: Toolholder No. 270531 – 270536 and 270539 – 270544.



27 0653

simturn AX copying insert, right-hand

∅ D_{min}	24U 27 0651	24U 27 0653	24U 27 0655	24U 27 0657	24U 27 0659	24U 27 0661	24U 27 0663	∅ D	R	f	a	$a_{p\,max}$	t_{max}
mm	L_2 = 10 mm	L_2 = 15 mm	L_2 = 20 mm	L_2 = 25 mm	L_2 = 30 mm	L_2 = 35 mm	L_2 = 40 mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	eShop	–	–	–	–	5	0.1	1.25	2.7	0.2	0.7
4	eShop	eShop	eShop	eShop	–	–	–	5	0.1	1.75	3.7	0.3	0.8
5	eShop	eShop	eShop	eShop	eShop	–	–	5	0.2	2.25	4.7	0.5	1
6	–	eShop	eShop	eShop	eShop	eShop	–	6	0.2	2.75	5.7	0.5	1.8
8	–	eShop	eShop	eShop	eShop	eShop	eShop	8	0.2	3.75	7.7	0.6	2.5

simturn AX copying insert, left-hand

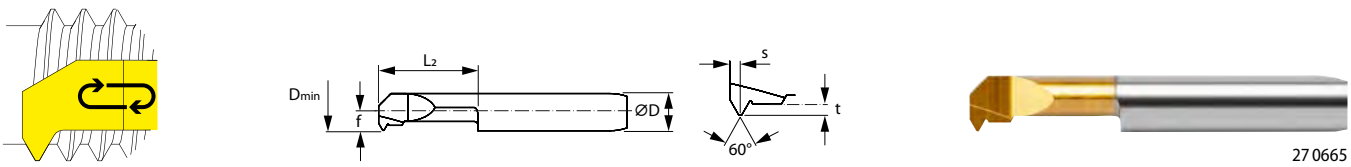
∅ D_{min}	24U 27 0652	24U 27 0654	24U 27 0656	24U 27 0658	24U 27 0660	24U 27 0662	24U 27 0664	∅ D	R	f	a	$a_{p\,max}$	t_{max}
mm	L_2 = 10 mm	L_2 = 15 mm	L_2 = 20 mm	L_2 = 25 mm	L_2 = 30 mm	L_2 = 35 mm	L_2 = 40 mm	mm	mm	mm	mm	mm	mm
3	eShop	eShop	eShop	–	–	–	–	5	0.1	1.25	2.7	0.2	0.7
4	eShop	eShop	eShop	eShop	–	–	–	5	0.1	1.75	3.7	0.3	0.8
5	eShop	eShop	eShop	eShop	eShop	–	–	5	0.2	2.75	4.7	0.5	1
6	–	eShop	eShop	eShop	eShop	eShop	–	6	0.2	2.75	5.7	0.5	1.8
8	–	eShop	eShop	eShop	eShop	eShop	eShop	8	0.2	3.75	7.7	0.6	2.5

simturn AX cutter inserts for thread turning

Version similar (new clamping) to former article numbers No. 240200.

Suitable for: Toolholder No. 270531 – 270533 and 270539 – 270541.

Application: For producing metric ISO internal threads.



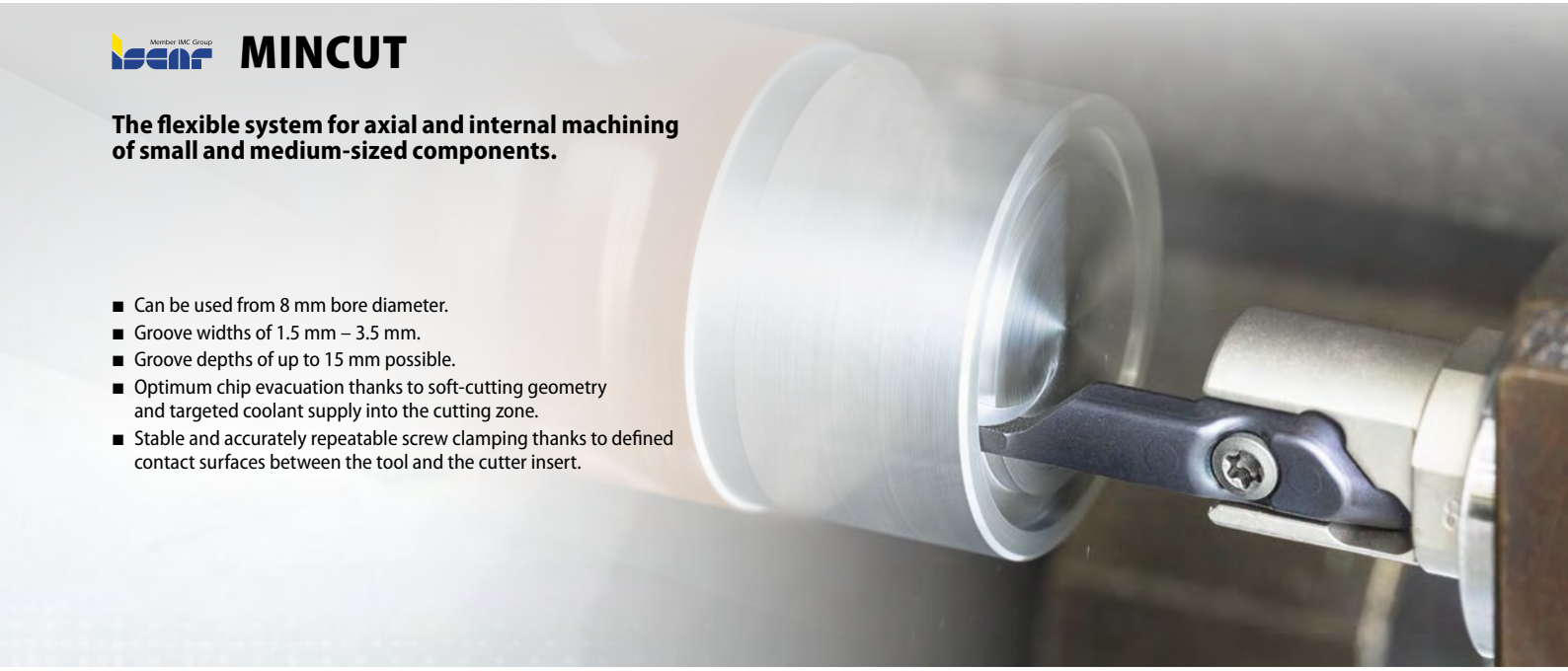
27 0665

simturn AX thread turning insert, full profile, 60°, internal, right-hand

Type	24U 27 0665	∅ D_{min}	∅ D	Pitch	f	t	S
	L_2 = 15.2 mm	mm	mm	mm	mm	mm	
5/M6	eShop	4.8	5	1	2.25	0.65	0.6
6/M8	eShop	6.2	6	1.25	2.95	0.812	0.7
8/M10	eShop	6.2	6	1.5	2.95	0.974	0.8
8/M12	eShop	6.2	6	1.75	2.95	1.137	0.9

MINCUT

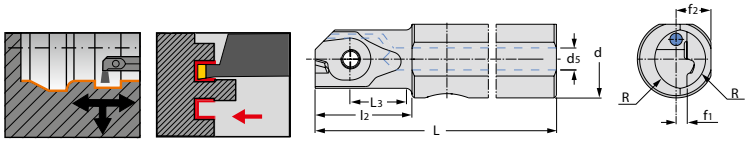
The flexible system for axial and internal machining of small and medium-sized components.



- Can be used from 8 mm bore diameter.
- Groove widths of 1.5 mm – 3.5 mm.
- Groove depths of up to 15 mm possible.
- Optimum chip evacuation thanks to soft-cutting geometry and targeted coolant supply into the cutting zone.
- Stable and accurately repeatable screw clamping thanks to defined contact surfaces between the tool and the cutter insert.

MINCUT boring bar

Suitable for: Inserts No. 270422 – 270429.
Application: For face grooving and groove turning in the diameter range 8 mm – 17 mm.





27 0420

Shank ∅ / insert size	261 27 0420 MINCUT boring bar right-hand	L_3	f_1	L	f_2	l_2	R
mm		mm	mm	mm	mm	mm	mm
10/8	–	7.4	1.4	102.5	4.5	12.5	3.8
12/8	–	7.4	1.4	102.5	5.5	12.5	3.8
12/10	–	11.2	2.4	90	5.5	17.2	4.6
16/10	–	11.2	2.4	90	7.5	17.2	4.6
16/15	–	12.5	2.7	100	7.5	19	10.3
20/15	–	12.5	4.7	100	9	19	11.3

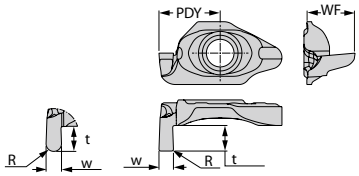
MINCUT inserts

Suitable for: Boring bar No. 270420.

MIGR inserts

For internal grooving at low cutting depth.


27 0422

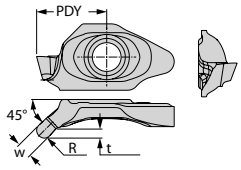


Groove width w / insert size	261 27 0422 MINCUT MIGR inserts neutral		∅ D_{min}	t_{max}	Corner radius R	WF	a_p	f when turning	f when parting off
mm	IC908		mm	mm	mm	mm	mm	mm/rev.	mm/rev.
1/8	–	10	8.5	1.4	0.05	4	0.05 – 0.5	0.03 – 0.1	0.01 – 0.03
1,5/8	–	10	9.2	2.1	0.05	4.7	0.05 – 0.5	0.03 – 0.1	0.01 – 0.03
2/8	–	10	8.9	1.8	0.1	4.4	0.05 – 0.5	0.03 – 0.1	0.01 – 0.03
●	UNI								
⚙	◉								
v_c main application mm/min	80 – 140								

MIUR inserts

With full radius for 45° internal undercutting.


27 0425



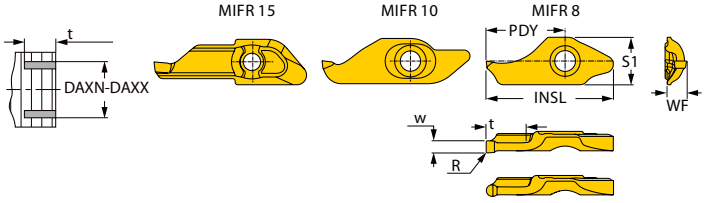
Groove width w / insert size	27 0425		∅ D_{min}	t_{max}	Corner radius R	WF	a_p	f when turning	f when parting off
	MINCUT MIUR inserts								
	Full radius								
mm	IC908		mm	mm	mm	mm	mm	mm/rev.	mm/rev.
1/8	–	10	8	1.1	0.5	3.6	0.03 – 0.5	0.03 – 0.1	0.01 – 0.03
1,5/8	–	10	8.1	1.2	0.75	3.6	0.03 – 0.5	0.03 – 0.1	0.01 – 0.03
2/8	–	10	8.3	1.36	1	3.6	0.03 – 0.5	0.03 – 0.1	0.01 – 0.03
●	UNI								
⚙	◍								
v_c main application mm/min	80 – 140								

MIFR inserts

For internal face grooving and turning.


27 0426


27 0427



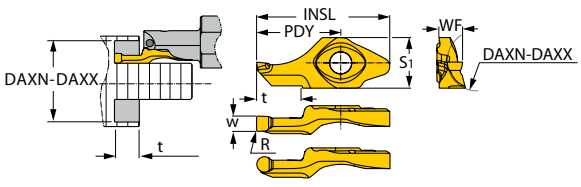
Groove width w / insert size	27 0426	27 0427		t_{max}	Corner radius R		WF		INSL	DAXN-DAXX		f when axial grooving	f when facing
	MINCUT MIFR inserts												
	neutral	Full radius			27 0426	27 0427	27 0426	27 0427		27 0426	27 0427		
mm	IC908	IC908		mm	mm	mm	mm	mm	mm	mm	mm	mm/rev.	mm/rev.
1,5/8	–	–	10	5.5	0.2	–	2.6	–	17.7	8 – 11.5	–	0.02 – 0.1	0.02 – 0.06
1,6/8	–	–	10	5.5	–	0.8	–	2.6	17.7	–	8 – 12.1	0.02 – 0.1	0.02 – 0.06
2/8	–	–	10	5.5	0.2	–	2.8	–	17.7	8 – 16	–	0.02 – 0.1	0.02 – 0.06
2,2/8	–	–	10	5.5	0.2	–	2.9	–	17.7	8 – 21	–	0.02 – 0.1	0.02 – 0.06
2/10	–	–	10	9	0.2	1	3	3	25.1	10 – 999	10 – 999	0.02 – 0.1	0.02 – 0.06
2,5/10	–	–	10	9	0.2	1.25	3.1	3.3	25.1	10 – 30	10 – 34	0.02 – 0.1	0.02 – 0.06
3/10	–	–	10	9	0.2	1.5	3.4	5.55	25.1	10 – 30	12 – 47	0.02 – 0.1	0.02 – 0.06
2,5/15	–	–	10	9	0.2	–	5.55	–	30	15 – 60	–	0.03 – 0.05	0.03 – 0.04
3/15	–	–	10	15	0.2	1.5	5.85	5.85	30	15 – 60	10 – 999	0.03 – 0.05	0.03 – 0.04
●	UNI	UNI											
⚙	◍	◍											
v_c main application mm/min	80 – 140	80 – 140											

MEFL inserts

For external face grooving and turning next to shafts.


27 0428


27 0429



Groove width w / insert size	27 0428	27 0429		t_{max}	Corner radius R		WF		INSL	DAXN-DAXX		f when parting off	f when axial grooving	f when facing
	MINCUT MEFL inserts													
	neutral	Full radius			27 0428	27 0429	27 0428	27 0429		27 0428	27 0429	27 0428		
mm	IC908	IC908		mm	mm	mm	mm	mm	mm	mm	mm	mm/rev.	mm/rev.	mm/rev.
1,5/8	–	–	10	5.5	0.2	–	2.6	–	17.4	8 – 15	–	2.6	0.02 – 0.1	0.02 – 0.06
1,6/8	–	–	10	5.5	–	0.8	–	2.7	17.4	–	7 – 12.1	–	0.02 – 0.1	0.02 – 0.06
2/8	–	–	10	5.5	0.2	1	3.1	2.9	17.4	7 – 20	7 – 14	3.1	0.02 – 0.1	0.02 – 0.06
2,2/8	–	–	10	5.5	0.2	–	3.1	–	17.4	7 – 20	–	3.1	0.02 – 0.1	0.02 – 0.06
2,5/10	–	–	10	9	0.2	1.25	3.15	3.15	24.5	10 – 45	10 – 45	3.15	0.02 – 0.06	0.02 – 0.05
3/10	–	–	10	9	0.2	1.5	–	–	24.5	10 – 100	–	3.6	0.02 – 0.06	0.02 – 0.05
●	UNI	UNI												
⚙	◍	◍												
v_c main application mm/min	60 – 180	60 – 180												

Hoffmann Group

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With our regrinding service, you save money and resources.

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It is already worth it from the first regrind.
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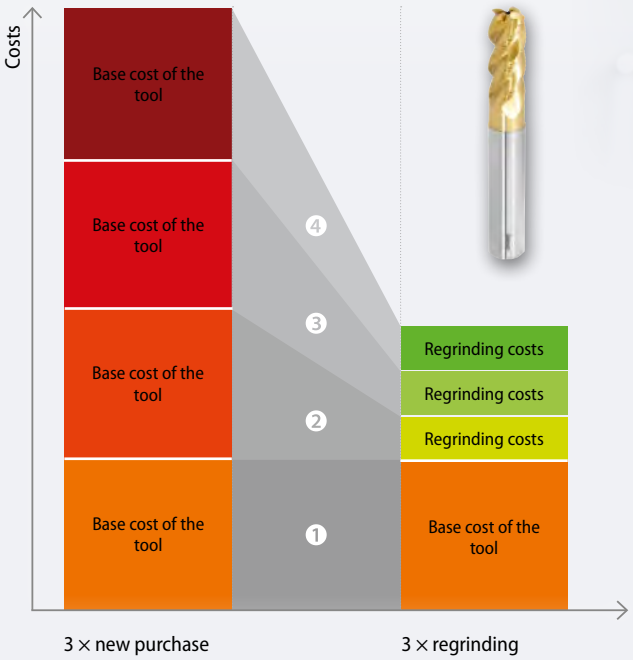
With our regrinding service, you save money and resources.



Good for you

It is already worth it from the first regrind.
All with the original regrind quality, to the original geometry and on the original production machines. There are no compromises here.

Up to **85 %** savings potential … … with **95 %** tool life … and **100 %** machining performance

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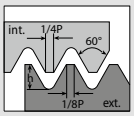
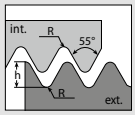
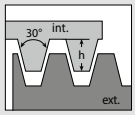
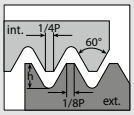
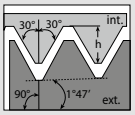
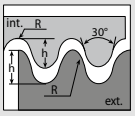
27

Garant **Thread turning – overview of the range**

Thread standards for our catalogue range.

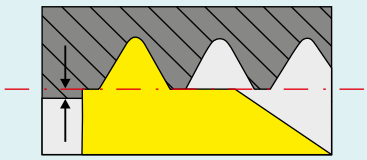
Special solutions and other thread standards can be provided upon request – simply contact us for more details!

Cutting sketch	Profile	Thread type		Pitch of full profile		Pitch of semi-profile	Pitch of partial profile		Insert size	Catalogue page
				mm	TPI	mm	mm	TPI		
	60°	Metric	external	0.5 – 6			0.5 – 5		11 – 22	844 – 845
			internal	0.5 – 6			0.5 – 5		6 – 22	844 / 846
	55°	Inch	external		28 – 11			48 – 5	11 – 16	844 / 847
			internal		28 – 11			48 – 8	6 – 16	847
	30°	Trapezoidal	external			2 – 6			16 – 22	848
			internal			2 – 6			16 – 22	848
	60°	UN	external		20 – 8				16	848
			internal		20 – 8				11 – 16	848
	60°	NPT	external		18 – 8				16	848
			internal		18 – 8				11 – 16	848
	30°	Round DIN 405	external		10 – 4				16 – 22	849
			internal		10 – 4				16 – 22	849

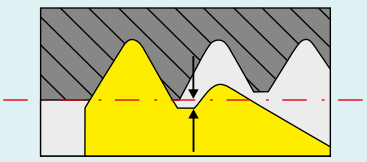
Carbide grades:

Grade designation	Application	Description
HB7010	P M O N	■ Multi-layer coating ■ Very good edge sharpness ■ Use for uninterrupted cutting ■ Universal use for steel up to < 55 HRC
HB8015	P M O N	■ AlTiN, PVD coating ■ Multi-purpose micro-grain grade ■ Extended contour grinding to reduce burrs
HB7020	P M O N	■ TiAlN coating ■ Fine-grain substrate ■ Optimised chip evacuation ■ Very high wear resistance ■ Good tensile strength ■ Universal use for steel up to < 55 HRC
HB7125	M S	■ AlTiN, multi-layer PVD coating ■ Specially adapted for stainless steels ■ Also suitable for Inconel when used with cutting oil
HU7315	N Ti	■ Uncoated ■ Especially for aluminium and titanium alloys

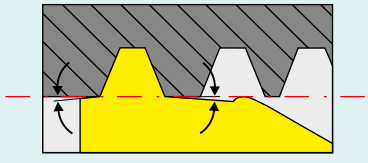
Differentiation between full, partial and semi-profile:



With **full profile** threading inserts the entire thread is cut in full with the outer or inner ∅ without any additional operations. The threads produced are burr-free and true to DIN/ISO gauge.

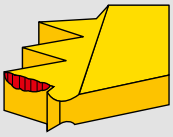
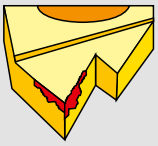
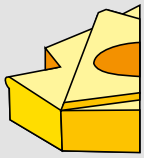
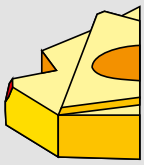
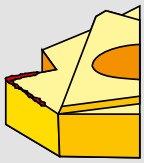
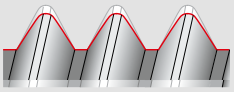
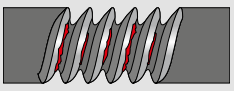


Partial profile threading inserts cover a wide range of different pitches. However, they do not produce true to gauge threads according to DIN/ISO, since the profile radius does not match the respective pitch.

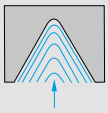
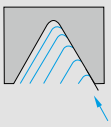
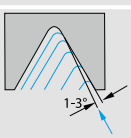
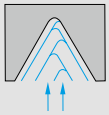


Semi-profile threading inserts cut the complete profile and deburr the tips of the thread flanks. The external or internal ∅ is not cut with the profile.

Garant Thread turning – error analysis and solutions

Problem		Possible cause		Solution
Increased wear on the flank faces		Excessively high cutting speed	▶	Lower cutting speed / use coated cutter insert
		Insufficient cutting depth / too many passes	▶	Increase the cutting depth per pass
		Unsuitable carbide grade	▶	Use a coated carbide grade
		Insufficient cooling	▶	Increase coolant flow
Uneven wear along the cutting edge		Incorrect pitch angle	▶	Use the correct shim
		Incorrect infeed method	▶	Use alternate infeeds
Extreme plastic deformation		Cutting depth too high	▶	Reduce the cutting depth / increase the number of passes
		Insufficient cooling	▶	Increase coolant flow
		Excessively high cutting speed	▶	Reduce cutting speed
		Unsuitable carbide grade	▶	Use a harder carbide substrate
		Corner radius too small	▶	Select a larger corner radius
Fracture of the cutting edge		Cutting depth too high	▶	Reduce the cutting depth / increase the number of passes
		Extreme plastic deformation	▶	Reduce cutting speed
		Insufficient cooling	▶	Increase the flow rate and adjust the flow direction
		Unsuitable carbide grade	▶	Use a tougher carbide substrate
		General instability	▶	Check/improve the system stability
Built-up edge		Cutting speed incorrect	▶	Adjust the cutting speed
		Unsuitable carbide grade	▶	Use a coated carbide grade
Thread profile too flat		Point height incorrect	▶	Correct the point height
		Cutter insert does not machine the threaded point	▶	Measure the workpiece ∅
		Cutter insert is worn	▶	Replace the cutter insert in good time
Poor surface quality		Excessively low cutting speed	▶	Increase cutting speed
		Shim incorrect	▶	Use the correct shim
		Unsuitable infeed method	▶	Use alternate or radial infeed

Infeed methods

Infeed method		Recommended for		Advantage
Radial infeed		■ Pitches up to 1 mm ■ Short-chipping material ■ Cold-formed or hard material	▶	■ Easy to use ■ Also on conventional machines
Flank infeed		■ Pitches > 1 mm (24 TPI) ■ Trapezoidal thread.	▶	■ Good chip clearance
Modified flank infeed		■ Pitches > 1 mm (24 TPI) ■ Trapezoidal thread	▶	■ Good chip clearance ■ Reduces forces on the flank side
Alternative flank infeed		■ Cutter inserts with small radii ■ E.g. for NPT thread	▶	■ Good chip clearance ■ Even load/wear on both flanks

Garant THREADING INSERTS TYPE BF AND CB

Type BF (Burr Free)
For higher thread quality requirements.



- Contour grinding deburrs the thread edge.
- Creates burr-free, ready-to-install components.
- Reduces vibration.
- Improves the edge quality.

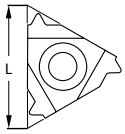
New grade HB8015 universally suitable for steel and stainless steel.

Type CB (Chip Breaker)
For higher process reliability.



- Sintered chip breaker.
- Ground profile.
- Particularly suitable for long-chipping materials.
- Reduces the incidence of edge build-up.

Garant Threading inserts with contour grinding / chip breaker



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
27 0703–27 0821		250	180	150	150	130	100	90	40			100	100	50	130	150			●			●	○

Full profile 60° external

DIN 13 6g | M | MF | 60°



Thread pitch mm	21J 27 0703 BF HB8015	21J 27 0706 CB HB7010	
	Full profile insert 60°, external, right-hand		
1	eShop	eShop	10
1,25	eShop	eShop	10
1,5	eShop	eShop	10
1,75	eShop	eShop	10
2	eShop	eShop	10
2,5	eShop	eShop	10
3	eShop	eShop	10
3,5	–	eShop	10
Thickness mm	3.6	3.6	
Insert size L mm	16	16	

Full profile 60° internal

DIN 13 6H | M | MF | 60°



Thread pitch mm	21J 27 0757 BF HB8015	21J 27 0761 CB HB7010	
	Full profile insert 60°, internal, right-hand		
1	eShop	eShop	10
1,25	eShop	eShop	10
1,5	eShop	eShop	10
1,75	eShop	eShop	10
2	eShop	eShop	10
2,5	eShop	eShop	10
3	eShop	eShop	10
3,5	–	eShop	10
Thickness mm	3.6	3.6	
Insert size L mm	16	16	

Partial profile 60° external

DIN 13 6g | M | MF | 60°



Pitch mm	21J 27 0741 CB HB7010	
	Partial profile insert 60°, external, right-hand	
0,5-1,5	eShop	10
1,75-3	eShop	10
Thickness mm	3.6	
Insert size L mm	16	

Full profile 55° external / internal

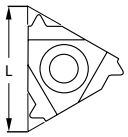
BSP | BSW | G | 55°



Thread pitch mm	21J 27 0801 BF HB8015	21J 27 0821 BF HB8015	
	Full profile insert 55°, external, right-hand	Full profile insert 55°, internal, right-hand	
19	eShop	eShop	10
14	eShop	eShop	10
11	eShop	eShop	10
Thickness mm	3.6	3.6	
Insert size L mm	16	16	

DIN 13 6g | M | M-LH | MF | MF-LH | 60°

Garant Threading inserts for metric external thread



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
HB7010		250	180	150	150	130	100	90	40			100	100	50	130	150			●			●	○
HB7020		200	180	160	160	120	90	70	30			90	90	50	120	120			○	●	●	●	○
HB7125												120	120	60					●	●	●	●	
HB7315	200	100	90											50		110			●	●	●	●	

Full profile

Full profile inserts 60° for external threads to DIN / ISO R 262 (DIN 13) tolerance class 6g.



Pitch	21J 27 0699	21J 27 0700	21J 27 0702	21J 27 0704	21J 27 0705	21J 27 0710	21J 27 0712	21J 27 0720	21J 27 0730	
	Full profile insert 60°, external, right-hand							Full profile insert 60°, external, left-hand		
mm	HB7010	HB7010	HB7020	HB7125	HU7315	HB7010	HB7020	HB7010	HB7010	
0,5	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	10
0,7	–	eShop	eShop	eShop	eShop	–	–	eShop	–	10
0,75	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	10
0,8	–	eShop	eShop	eShop	eShop	–	–	eShop	–	10
1	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	10
1,25	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	10
1,5	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	10
1,75	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	10
2	–	eShop	eShop	eShop	eShop	–	–	eShop	–	10
2,5	–	eShop	eShop	eShop	eShop	–	–	eShop	–	10
3	–	eShop	eShop	eShop	eShop	–	–	eShop	–	10
3,5	–	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	10
4	–	–	–	–	–	eShop	eShop	–	eShop	10
4,5	–	–	–	–	–	eShop	eShop	–	eShop	10
5	–	–	–	–	–	eShop	eShop	–	eShop	10
6	–	–	–	–	–	eShop	eShop	–	eShop	10
Thickness mm	3.17	3.6	3.6	3.6	3.6	4.76	4.76	3.6	4.76	
Insert size L mm	11	16	16	16	16	22	22	16	22	

Partial profile

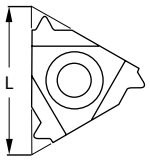
Partial profile insert 60° for external threads.



Pitch	21J 27 0738	21J 27 0740	21J 27 0744	21J 27 0745	21J 27 0747	
	Partial profile insert 60°, external, right-hand			Partial profile insert 60°, external, left-hand		
mm	HB7010	HB7010	HB7010	HB7010	HB7010	
0,5-1,5	eShop	eShop	–	eShop	–	10
0,5-3	–	eShop	–	–	–	10
1,75-3	–	eShop	–	eShop	–	10
3,5-5	–	–	eShop	–	eShop	10
Thickness mm	3.17	3.6	4.76	3.6	4.76	
Insert size L mm	11	16	22	16	22	

DIN 13 6H | M | M-LH | MF | MF-LH | 60°

Garant Threading inserts for metric internal thread



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
HB7010		250	180	150	150	130	100	90	40			100	100	50	130	150			●			●	○
HB7020		200	180	160	160	120	90	70	30			90	90	50	120	120			○	●	●	●	○
HB7125												120	120	60					●	●	●	●	
HU7315	200	100	90											50		110			●	●	●	●	

Full profile, internal

Full profile insert 60° for internal threads to DIN / ISO R 262 (DIN 13) tolerance class 6H.



Pitch mm	27 0749	27 0750	27 0752	27 0754	27 0756	27 0758	27 0759	27 0763	27 0762	
	Full profile insert 60°, internal, right-hand									
	HB7020	HB7010	HB7010	HB7020	HB7010	HB7020	HB7125	HU7315	HB7010	
0,5	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
0,7	–	–	–	–	eShop	–	–	–	–	10
0,75	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
0,8	–	–	–	–	eShop	–	–	–	–	10
1	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
1,25	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	–	10
1,5	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
1,75	–	eShop	eShop	–	eShop	eShop	eShop	eShop	–	10
2	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	10
2,5	–	–	eShop	eShop	eShop	eShop	eShop	eShop	–	10
3	–	–	–	–	eShop	eShop	eShop	eShop	–	10
3,5	–	–	–	–	eShop	eShop	eShop	eShop	eShop	10
4	–	–	–	–	–	–	–	–	eShop	10
4,5	–	–	–	–	–	–	–	–	eShop	10
5	–	–	–	–	–	–	–	–	eShop	10
6	–	–	–	–	–	–	–	–	eShop	10
Thickness mm	1.85	2.42	3.17	3.17	3.6	3.6	3.6	3.6	4.76	
Insert size L mm	6	9.3	11	11	16	16	16	16	22	



Pitch		mm	0,5	0,7	0,75	0,8	1	1,25	1,5	1,75	2	2,5	3		Thickness mm	Insert size L mm
27 0772	Full profile insert 60°, internal, left-hand	HB7010	eShop	–	eShop	–	eShop	–	eShop	–	eShop	eShop	–	10	3.17	11
27 0776		HB7010	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	3.6	16

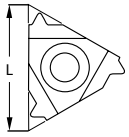
Partial profile, internal

Partial profile insert 60° for internal threads.



Pitch mm	27 0789	27 0790	27 0791	27 0792	27 0794	27 0796	27 0797	
	Partial profile insert 60°, internal, right-hand					Partial profile insert 60°, internal, left-hand		
	HB7020	HB7010	HB7010	HB7010	HB7010	HB7010	HB7010	
0,5-1,25	eShop	–	–	–	–	–	–	10
0,5-3	–	–	–	eShop	–	–	eShop	10
0,5-1,5	–	eShop	eShop	eShop	–	eShop	eShop	10
1,75-3	–	–	–	eShop	–	–	eShop	10
3,5-5	–	–	–	–	eShop	–	–	10
Thickness mm	1.85	2.42	3.17	3.6	4.76	3.17	3.6	
Insert size L mm	6	9.3	11	16	22	11	16	

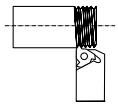
BSP | BSP-LH | BSW | BSW-LH | G | G-LH | 55°



Garant Threading inserts for imperial thread

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni	○	○	○	○	○
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
HB7010		250	180	150	150	130	100	90	40			100	100	50	130	150			●			●	○
HB7020		200	180	160	160	120	90	70	30			90	90	50	120	120			○	●	●	●	○
HB7125												120	120	60					●	●	●	●	
HU7315	200	100	90											50		110			●	●	●	●	

Full profile, external



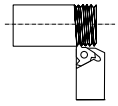







TPI	27 0799	27 0800	27 0802	27 0803	27 0804	27 0805	
	Full profile insert 55°, external, right-hand					Full profile insert 55°, external, left-hand	
	HB7010	HB7010	HB7020	HB7125	HU7315	HB7010	
28	eShop	eShop	eShop	eShop	eShop	eShop	10
19	eShop	eShop	eShop	eShop	eShop	eShop	10
14	eShop	eShop	eShop	eShop	eShop	eShop	10
11	–	eShop	eShop	eShop	eShop	eShop	10
Thickness mm	3.17	3.6	3.6	3.6	3.6	3.6	
Insert size L mm	11	16	16	16	16	16	

Partial profile, external

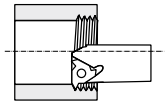







TPI	27 0808	27 0810	27 0812	27 0815	
	Partial profile insert 55°, external, right-hand			Partial profile insert 55°, external, left-hand	
	HB7010	HB7010	HB7010	HB7010	
48-16	eShop	eShop	–	eShop	10
48-8	–	eShop	–	eShop	10
14-8	–	eShop	–	eShop	10
7-5	–	–	eShop	–	10
Thickness mm	3.17	3.6	4.76	3.6	
Insert size L mm	11	16	22	16	

Full profile, internal





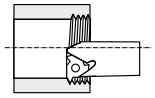







TPI	27 0819	27 0820	27 0822	27 0824	27 0826	27 0827	27 0828	27 0834	
	Full profile insert 55°, internal, right-hand							Full profile insert 55°, internal, left-hand	
	HB7020	HB7010	HB7010	HB7010	HB7020	HB7125	HU7315	HB7010	
28	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
19	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
14	–	–	eShop	eShop	eShop	eShop	eShop	eShop	10
11	–	–	–	eShop	eShop	eShop	eShop	eShop	10
Thickness mm	1.85	2.42	3.17	3.6	3.6	3.6	3.6	3.6	
Insert size L mm	6	9.3	11	16	16	16	16	16	

Partial profile, internal



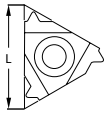






TPI	27 0839	27 0840	27 0841	27 0842	27 0847	
	Partial profile insert 55°, internal, right-hand				Partial profile insert 55°, internal, left-hand	
	HB7020	HB7010	HB7010	HB7010	HB7010	
48-20	eShop	–	–	–	–	10
48-16	–	eShop	eShop	eShop	eShop	10
48-8	–	–	–	eShop	–	10
14-8	–	–	–	eShop	eShop	10
Thickness mm	1.85	2.42	3.17	3.6	3.6	
Insert size L mm	6	9.3	11	16	16	

Garant Threading inserts for trapezoidal threads / UN threads / NPT threads



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N	
27 0850–27 0940		250	180	150	150	130	100	90	40			100	100	50	130	150		

Trapezoidal thread semi-profile

DIN 103 7e | DIN 103 7H | TR | TR-LH

30°



Pitch mm	27 0850	27 0853	27 0855	27 0858	27 0870	27 0873	27 0884	
	Semi-profile insert 30°, external, right-hand		Semi-profile insert 30°, external, left-hand		Semi-profile insert 30°, internal, right-hand		Semi-profile insert 30°, internal, left-hand	
	HB7010	HB7010	HB7010	HB7010	HB7010	HB7010	HB7010	
2	eShop	–	eShop	–	eShop	–	eShop	10
3	eShop	–	eShop	–	eShop	–	eShop	10
4	–	eShop	–	eShop	–	eShop	–	10
5	–	eShop	–	eShop	–	eShop	–	10
6	–	eShop	–	eShop	–	eShop	–	10
Thickness mm	3.6	4.76	3.6	4.76	3.6	4.76	3.6	
Insert size L mm	16	22	16	22	16	22	16	

UN threads full profile

UN | UNC | UNF | UNEF | UNS | UN-LH | UNC-LH | UNF-LH | UNEF-LH | UNS-LH

60°



TPI	27 0900	27 0905	27 0910	27 0913	27 0915	
	Full profile insert 60°, external, right-hand	Full profile insert 60°, external, left-hand	Full profile insert 60°, internal, right-hand		Full profile insert 60°, internal, left-hand	
	HB7010	HB7010	HB7010	HB7010	HB7010	
20	eShop	eShop	eShop	eShop	eShop	10
18	eShop	eShop	eShop	eShop	eShop	10
16	eShop	eShop	eShop	eShop	eShop	10
14	eShop	eShop	eShop	eShop	eShop	10
12	eShop	eShop	–	eShop	eShop	10
8	eShop	eShop	–	eShop	eShop	10
Thickness mm	3.6	3.6	3.17	3.6	3.6	
Insert size L mm	16	16	11	16	16	

NPT threads

NPT | 60°



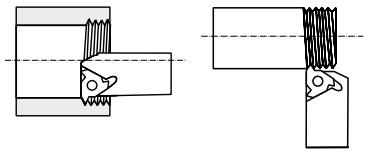
TPI	27 0930	27 0935	27 0940	
	Full profile insert 60°, external, right-hand	Full profile insert 60°, internal, right-hand		
	HB7010	HB7010	HB7010	
18	eShop	eShop	–	10
14	eShop	eShop	eShop	10
11,5	eShop	–	eShop	10
8	eShop	–	eShop	10
Thickness mm	3.6	3.17	3.6	
Insert size L mm	16	11	16	

RD | DIN 405 | 30°

Garant Threading inserts for round threads

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
27 0960–27 0984												120	120	60					●	●	●	●	

DIN 405 round thread





TPI	27 0960	27 0964	27 0980	27 0984	
	Full profile insert 30°, external, right-hand		Full profile insert 30°, internal, right-hand		
	HB7125	HB7125	HB7125	HB7125	
10	eShop	–	eShop	–	10
8	eShop	–	eShop	–	10
6	eShop	eShop	eShop	eShop	10
4	–	eShop	–	eShop	10
Thickness mm	3.6	4.76	3.6	4.76	
Insert size L mm	16	22	16	22	

M | M-LH | MF | G | BSW | MF-LH | G-LH | BSW-LH

Garant Threading insert sets, external / internal

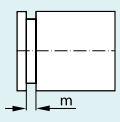


27 1900

Type			ER	IR	EL	IL
27 1900	Threading insert set size 16	HB7010	eShop	eShop	eShop	eShop
Machining direction			right-hand	right-hand	left-hand	left-hand
Content: Full profile, metric 60°			No. 270700 size 1; 1.25; 1.5; 2; 2.5; 3	No. 270756 size 1; 1.5; 1.75; 2; 2.5; 3	No. 270720 size 1; 1.25; 1.5; 2; 2.5; 3	No. 270776 size 1; 1.5; 1.75; 2; 2.5; 3
Partial profile, metric 60°			No. 270740 size 0.5-1.5; 1.75-3	No. 270792 size 0.5-1.5; 1.75-3	No. 270745 size 0.5-1.5; 1.75-3	No. 270797 size 0.5-1.5; 1.75-3
Full profile, BSW 55°			No. 270800 size 14; 11	No. 270824 size 14; 11	No. 270805 size 14; 11	No. 270834 size 14; 11

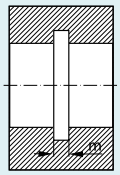
Garant Profile turning inserts for threading tool holder – see page 883

DIN 471



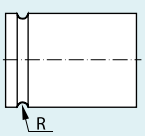


DIN 472

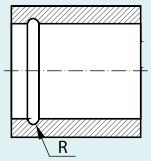




DIN 7993



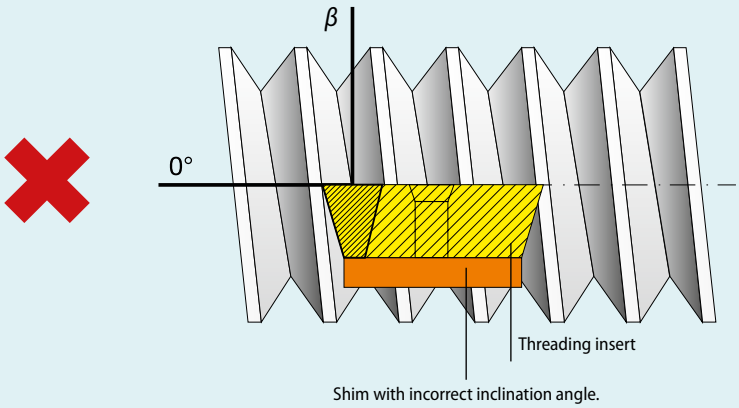


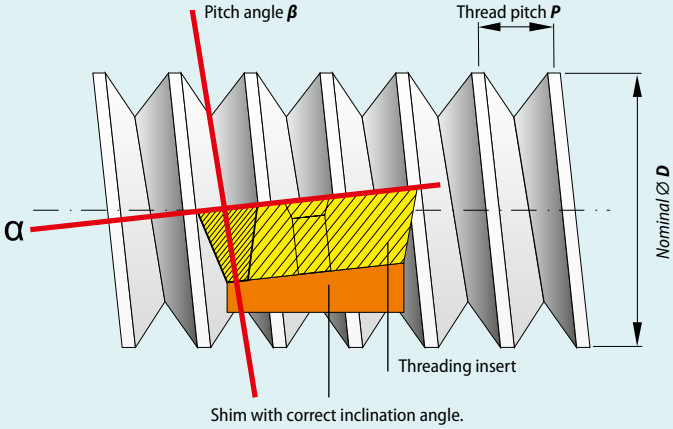




Garant Determination of the necessary inclination angle

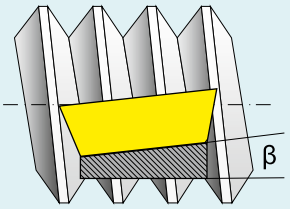
The insert inclination angle α must correspond with the thread pitch angle β as exactly as possible.
Only by this means can maximum profile accuracy and best surface quality be achieved.
At the same time the evenness of the wear increases the working life of the insert.





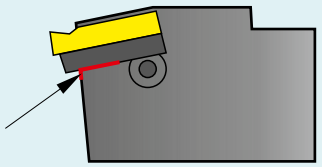
Three important factors for the shim:

❶



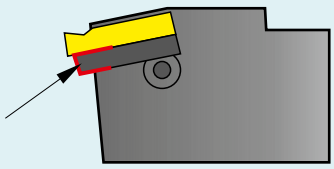
Setting the correct inclination angle.

❷



Protection for the insert seat.

❸



Support for the cutting edge.

Determination of the necessary inclination angle using the formula

Metric: $\alpha \approx \frac{20 \times P}{D}$

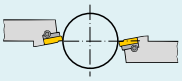
Inch: $\alpha \approx \frac{508}{D \times \text{threads per inch}}$

Example:
Thread pitch **P = 2**
Nominal Ø **D = 30 mm**

$\alpha \approx \frac{20 \times 2}{30} = 1.33°$

Result:
The suitable shim has a 1.5° inclination.
Machining can be performed using the standard shim.

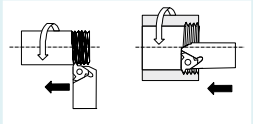
Determination of the necessary inclination angle using the diagram



also applies when overhead toolholders are used

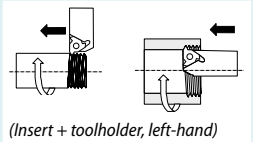
Feed towards chuck

Right-hand thread



(Insert + toolholder, right-hand)

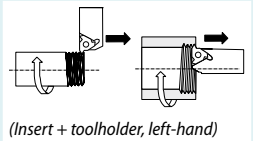
Left-hand thread



(Insert + toolholder, left-hand)

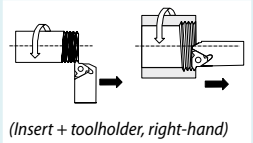
Feed towards tailstock

Right-hand thread

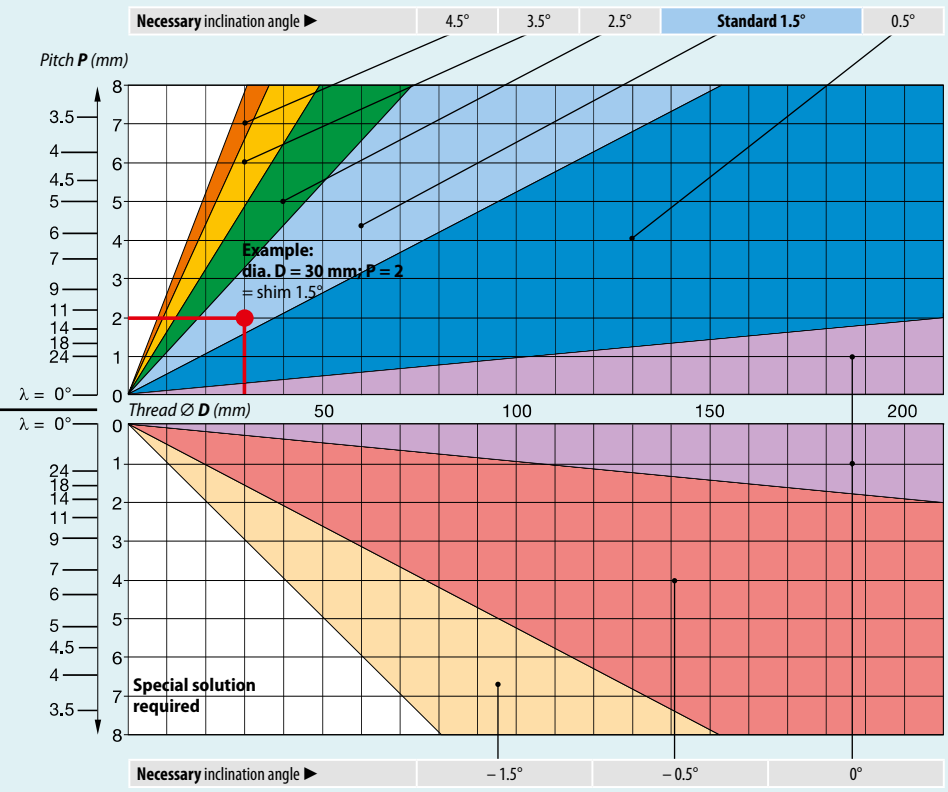


(Insert + toolholder, left-hand)

Left-hand thread

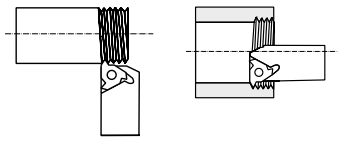


(Insert + toolholder, right-hand)



Garant Shims with correction angle

Note: Toolholders that have no fixed angle of inclination are supplied as standard with a 1.5° shim.



For external (ER/EL) and internal (IR/IL) threads

27 2600 – For right-hand external thread (ER) and left-hand internal thread (IL).
27 2606 – For right-hand external thread (EL).
27 2610/2616 – For left-hand external thread (EL) and right-hand internal thread (IR).

Application: **For the production of standard-compliant threads.** Use in conjunction with threading inserts No. 270700 – 271900 and 271970 – 271980.



Inclination angle	27 2600	27 2610	27 2606	27 2616	Angle as in graph
	Shim for screw-on toolholders and boring bars				
degrees	ER/IL	EL/IR	ER	EL/IR	
-1,5	eShop	eShop	eShop	eShop	
-0,5	eShop	eShop	eShop	eShop	
0	eShop	eShop	eShop	eShop	
0,5	eShop	eShop	eShop	eShop	
1,5	eShop	eShop	eShop	eShop	
2,5	eShop	eShop	eShop	eShop	
3,5	eShop	eShop	eShop	eShop	
4,5	eShop	eShop	eShop	eShop	
for insert size L mm	16	16	22	22	

For profile turning inserts

27 2604 – Use only in conjunction with profile inserts No. 271005 and 271025.
27 2624 – Use only in conjunction with profile inserts No. 271015 and 271035.



Inclination angle	27 2604	27 2624
	Shim for screw-on toolholder **Profile turning external right-hand**	Shim for boring bars **Profile turning internal right-hand**
degrees		
S	eShop	eShop
for insert size L mm	16	16

Shim sets

Type		ER	IR	EL	IL	for insert size L mm
27 2650	Shim set	eShop	eShop	eShop	eShop	16
27 2660	Shim set	eShop	–	eShop	–	22
Machining direction		right-hand	right-hand	left-hand	left-hand	
Content: 10 pieces (27 2650)		No. 272600 size -1.5; -0.5; 0; 0.5; 2×1.5; 2.5; 3.5; 4.5 No. 272604 size S	No. 272610 Size -1.5; -0.5; 0; 0.5; 2×1.5; 2.5; 3.5; 4.5 No. 272624 size S	No. 272610 size -1.5; -0.5; 0; 0.5; 3×1.5; 2.5; 3.5; 4.5	No. 272600 Size -1.5; -0.5; 0; 0.5; 3×1.5; 2.5; 3.5; 4.5	
10 pieces (27 2660)		No. 272606 size -1.5; -0.5; 0; 0.5; 3×1.5; 2.5; 3.5; 4.5	—	No. 272616 size -1.5; -0.5; 0; 0.5; 3×1.5; 2.5; 3.5; 4.5	—	



right-hand



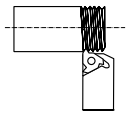
left-hand

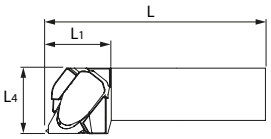
GARANT Master Eco clamping toolholder for thread turning inserts

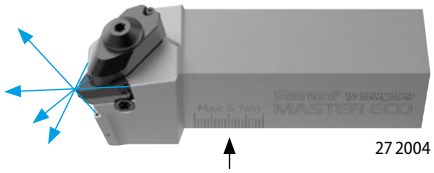
Highly efficient cooling directly on the cutter and additional flank face cooling.

Supplied with: **With shim 1.5°.**

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holder No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.







Positioning within the scale ensures precise coolant transfer.

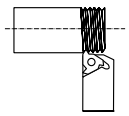
Shank size / insert size L	21U 27 2004	21U 27 2005	L_4	L_1	L	Shim 1.5°		Shim screw	Clamp, screw, 0-ring	
	GARANT Master Eco clamping toolholder clamp					27 2004	27 2005		27 2004	27 2005
mm	right-hand	left-hand	mm	mm	mm					
20/16	eShop	eShop	25	30	90	272600 1.5	272610 1.5	279824 1	279835 3	279835 4
25/16	eShop	eShop	32	30	100	272600 1.5	272610 1.5	279824 1	279835 3	279835 4

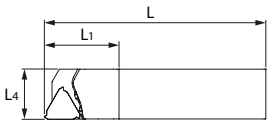
GARANT Master Eco screw-on toolholder for thread turning inserts

Highly efficient cooling directly on the cutting edge and additional flank face cooling.

Supplied with: **With shim 1.5°.**

Note: Coolant transfer via slot on the underside of the shank in conjunction with GARANT Master Eco holder No. 319006 – 319136 or No. 317900 for shank length < 125 mm. Optional connection possibility via hose connection (G 1/8 inch) No. 269207 and 269208.





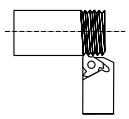


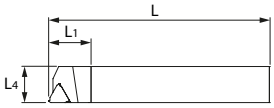
Positioning within the scale ensures precise coolant transfer.

Shank size / insert size L	21U 27 1997	21U 27 1998	L_4	L_1	L	Clamping screw	Shim 1.5°		Clamping screw for shim
	GARANT Master Eco screw-on toolholder screw clamping						27 1997	27 1998	
mm	right-hand	left-hand	mm	mm	mm				
16/16	eShop	eShop	20	30	80	269023 3	272600 1.5	272610 1.5	279824 1
20/16	eShop	eShop	25	30	90	269023 3	272600 1.5	272610 1.5	279824 1
25/16	eShop	eShop	32	30	100	269023 3	272600 1.5	272610 1.5	279824 1
25/22	eShop	eShop	32	30	100	269023 4	272606 1.5	272616 1.5	279824 2

Screw-on toolholders for threading inserts

Supplied with: **With shim 1.5°.**

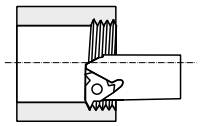






Shank size / insert size L	21W 27 2001	21W 27 2002	L_4	L_1	L	Clamping screw	Shim 1.5°		Clamping screw for shim
	Screw-on toolholder						27 2001	27 2002	
mm	right-hand	left-hand	mm	mm	mm				
12/16	eShop	eShop	16	22	83	279810 2	272600 1.5	272610 1.5	279824 1
16/16	eShop	eShop	16	20	97	279810 2	272600 1.5	272610 1.5	279824 1
20/16	eShop	eShop	20	30	128	279810 2	272600 1.5	272610 1.5	279824 1
25/16	eShop	eShop	25	30	153	279810 2	272600 1.5	272610 1.5	279824 1
32/16	eShop	eShop	32	30	173	279810 2	272600 1.5	272610 1.5	279824 1
25/22	eShop	eShop	25	36	155	279810 3	272606 1.5	272616 1.5	279824 2
32/22	eShop	eShop	32	36	175	279810 3	272606 1.5	272616 1.5	279824 2

Garant Boring bars for threading inserts





With fixed 0.5° inclination angle



27 2091_25/11

Overhang / insert size L	21W 27 2091	21W 27 2132	∅ D_s	∅ D_{min}	L_3	L	Insert screw
	Boring bar with fixed 0.5° inclination angle						
mm	right-hand	left-hand	mm	mm	mm	mm	
25/11	eShop	eShop	12	13	7.3	100	279810 4
32/11	eShop	eShop	16	16	8.9	100	279810 4

With fixed 1.5° inclination angle



Application:

Size 32/16 – For coarse threads M20×2.5; M22×2.5 and M24×3.



27 2111_32/16

Overhang / insert size L	21W 27 2111	21W 27 2142	∅ D_s	∅ D_{min}	L_3	L	Insert screw
	Boring bar with fixed 1.5° inclination angle						
mm	right-hand	left-hand	mm	mm	mm	mm	
25/11	eShop	eShop	20	13	7.3	180	279810 4
60/11	eShop	–	10	13	7.3	100	279810 4
32/16	eShop	eShop	20	17	10.3	180	279810 5
40/16	eShop	eShop	20	20	11.5	180	279810 5
100/16	eShop	–	16	20	11.3	150	279810 5

With fixed 2.5° inclination angle

Size 26/6 – **Solid carbide** shank.

Size 26/6; 32/16 – **With internal cooling.**

Application:

Size 32/16 – For coarse threads M20×2.5; M22×2.5 and M24×3.

Note:

Size 44/9,3 – Overhang adjustable from 8 mm – 44 mm.



27 2101_22/9.3



Adjustable from 8 – 40 mm.

27 2101_44/9.3





27 2101_32/16

Overhang / insert size L	21W 27 2101	∅ D_s	∅ D_{min}	L_3	L	Insert screw
	Boring bar with fixed 2.5° inclination angle					
mm	right-hand	mm	mm	mm	mm	
12/6	eShop	12	6.35	–	100	279810 6
26/6	eShop	6	6.35	–	100	279810 6
22/9,3	eShop	10	8	–	87	279810 7
31/9,3	eShop	10	8	–	97	279810 7
43/9,3	eShop	10	8	–	109	279810 7
44/9,3	eShop	16	8	–	100	279810 7
32/16	eShop	20	17	10.3	180	279810 5

With fixed 3° inclination angle



Application: For coarse threads M16×2 and M18×2.5.

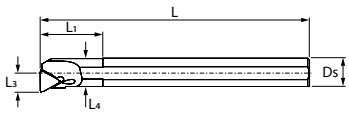


27 2121_25/11

Overhang / insert size L	21W 27 2121	∅ D_s	∅ D_{min}	L_3	L	Insert screw
	Boring bar with fixed 3° inclination angle					
mm	right-hand	mm	mm	mm	mm	
25/11	eShop	20	13	7.3	180	279810 4

Variable inclination angle with shim

Supplied with: **With shim 1.5°.**





27 2171_120/16

Overhang / insert size L	21W 27 2171	21W 27 2172	$\varnothing D_s$	$\varnothing D_{min}$	L_3	L	L_4	L_1	Insert screw	Shim 1.5°		Shim screw
	Boring Bar									27 2171	27 2172	
mm	right-hand	left-hand	mm	mm	mm	mm	mm	mm				
45/16	eShop	eShop	25	29	16.1	200	24.6	100	279810 2	272610 1.5	272600 1.5	279824 1
60/16	eShop	eShop	32	29	16.3	250	25	60	279810 2	272610 1.5	272600 1.5	279824 1
120/16	eShop	eShop	20	24	13.4	180	20	80	279810 2	272610 1.5	272600 1.5	279824 1
135/22	eShop	–	25	32	17.2	200	24.6	100	279810 3	272616 1.5	–	279824 2
170/22	eShop	–	32	39	21.5	250	32	128	279810 3	272616 1.5	–	279824 2

Hoffmann Group

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An all-round worry-free package has never been so easy – and with maximum cost transparency.
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27

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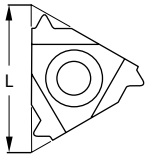
HOLEX Threading inserts

Fully sintered.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
27 1970–27 1980		220	150	120	120	120	85	75	35			60	60	40	110	130			●			●	○

Metric thread



Thread pitch		mm	1	1,5	2	2,5	3		Thickness mm	Insert size L mm
22B 27 1970	Full profile insert 60°, external, right-hand	HBF20	eShop	eShop	eShop	eShop	eShop	10	3.68	16
22B 27 1972	Full profile insert 60°, internal, right-hand	HBF20	eShop	eShop	eShop	eShop	eShop	10	3.68	16



27 1970

Thread pitch		mm	0,5-3	1-3		Thickness mm	Insert size L mm
22B 27 1974	Partial profile insert 60°, external, right-hand	HBF20	eShop	–	10	3.68	16
22B 27 1976	Partial profile insert 60°, internal, right-hand	HBF20	–	eShop	10	3.68	16



27 1974

Imperial thread



TPI			14	11		Thickness mm	Insert size L mm
22B 27 1978	Full profile insert 55°, external, right-hand	HBF20	eShop	eShop	10	3.68	16
22B 27 1980	Full profile insert 55°, internal, right-hand	HBF20	eShop	eShop	10	3.68	16



27 1978

HOLEX Screw-on toolholders for threading inserts

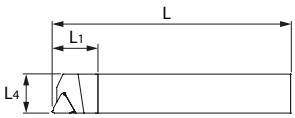
External machining

Supplied with: With shim 1.5°.



27 2015

Shank / insert size mm	22B 27 2015 Screw-on toolholder right-hand	L_4 mm	L_1 mm	L mm	Spare parts set
16/16	eShop	16	22	125	279981 1
20/16	eShop	20	22	125	279981 1
25/16	eShop	25	27	150	279981 1



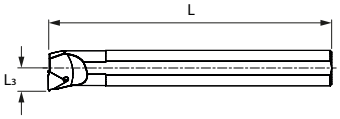
Internal machining

With fixed 1.5° inclination angle.



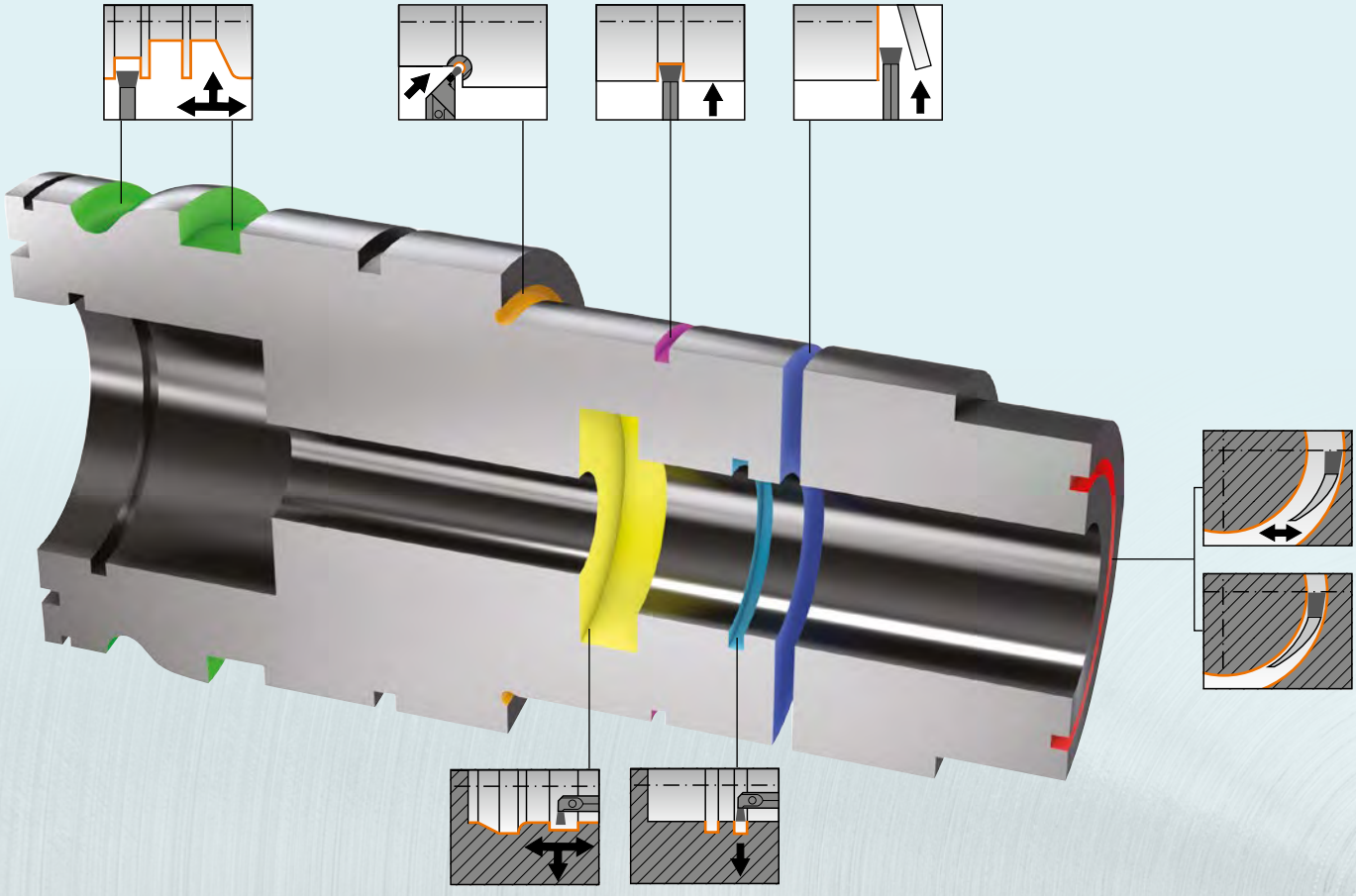
27 2185

Shank ∅ / insert size mm	22B 27 2185 Boring bar right-hand	∅ D_{min} mm	L_3 mm	L mm	Spare parts set
16/16	eShop	20	10.25	150	279981 2
20/16	eShop	25	13.3	180	279981 2
25/16	eShop	30	16.3	200	279981 2



Tool selection in a very short time.

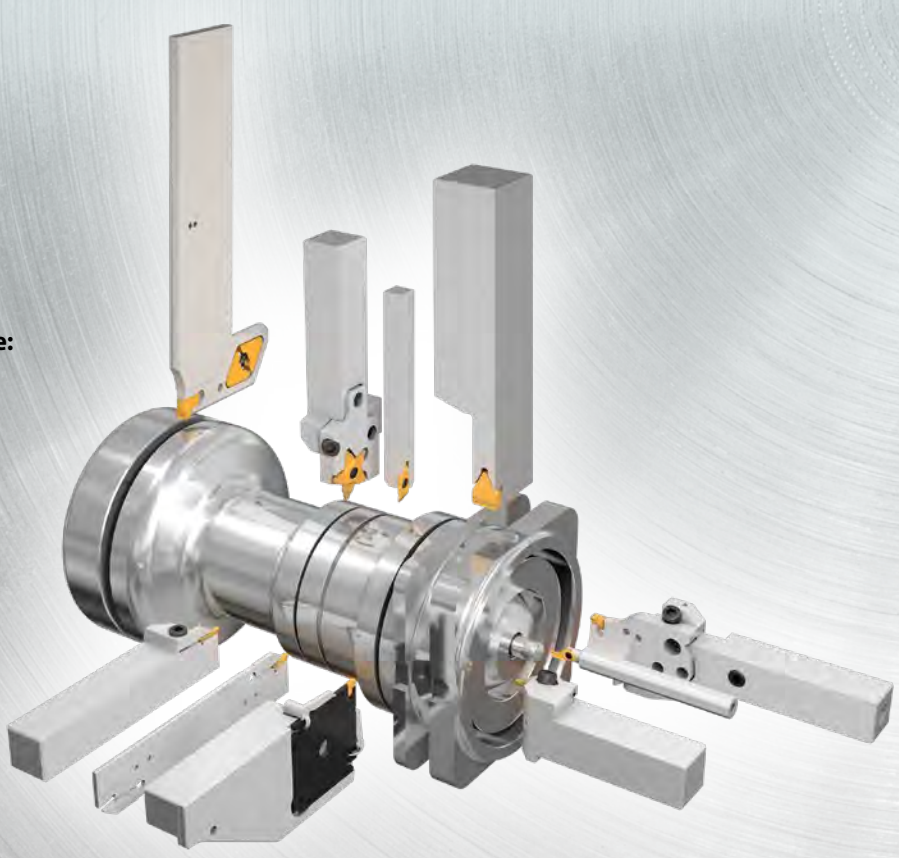
Discover the wide range of application options of GARANT and HOLEX grooving tools at a glance.



ISCAR Member IMC Group

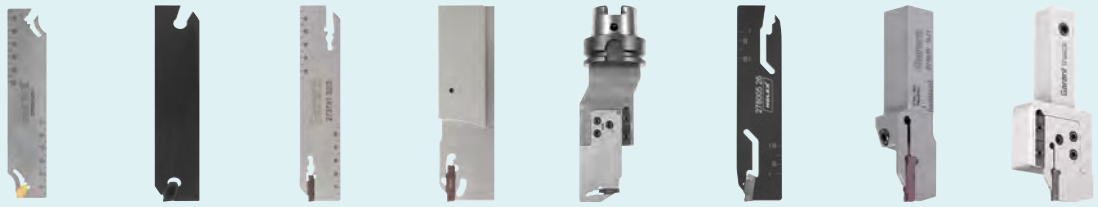
Complete ISCAR range for grooving.

The Hoffmann Group eShop contains the complete ISCAR range.



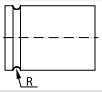
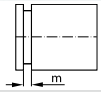
The following system tools are available directly from the Hoffmann Group warehouse:

ISCAR system	Catalogue page
JETCROWN	862
TANGFGRIP	862 – 863
LOGIQFGRIP	863
TANGGRIP TNG	864
DOVEIQGRIP	865
HELIGRIP	878 – 879
PENTACUT	886 – 887
PENTAIQGRIP	888
FLASHPENTA	888
MINCUT	839 – 840
TANGGRIP TNF	901



Application	Parting off						Grooving	
Colour code	external						external	
								
Brand	Garant	HOLEX	Garant	Garant	Garant	HOLEX	Garant	Garant
Version	Steel HSS heavy duty	Steel	Steel	Steel, reinforced	Vario plus Y grooving	Steel	Grooving toolholder mono	Vario plus modular
Suitable insert								
Number of cutting edges / insert	1	1	2	2	2	2	2	2
eco-variant	●		●	●	●		●	●
Groove depth t_{max} mm	500	50	55	45	45	32.5	37.5	28
Page(s)	860	866	867 / 869	868	893	880	870 – 873	891 – 892



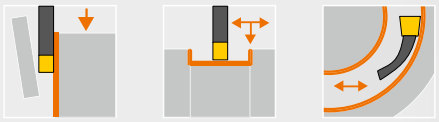
Application	Grooving				Plunging		
Colour code	external		internal		external	external	
							
Brand	Garant	HOLEX	Garant	HOLEX	Garant	Garant	Garant
Version	Modular blade carrier	Grooving toolholder mono	Boring bar	Boring bar	Groove / full radius	Threading toolholder, profile turning	Grooving toolholder, triangular inserts
Suitable insert							
Number of cutting edges / insert	1	2	1 / 2	2	2	3	3
eco-variant			●			●	
Groove depth t_{max} mm	120	21	5 / 13	5	–	2	2.5
Page(s)	898	880 – 881	899 / 874	881	873	852	884



Application	Plunging		Axial grooving	Face grooving			
Colour code	inner						
							
Brand	Garant	Garant	Garant	Garant	Garant	HOLEX	HOLEX
Version	Internal threading bar profile turning	Boring bar triangular inserts	Carbide grooving	Medium / Heavy Duty / Heavy Duty plus	Vario plus	Steel	Steel cranked
Suitable insert							
Number of cutting edges / insert	3	3	1	1	2	2	2
eco-variant	●		●		●		
Groove depth t_{max} mm	2	2.5	43	120	28	14	14
Page(s)	853 – 854	884	889	894 – 897	891 – 892	881	882

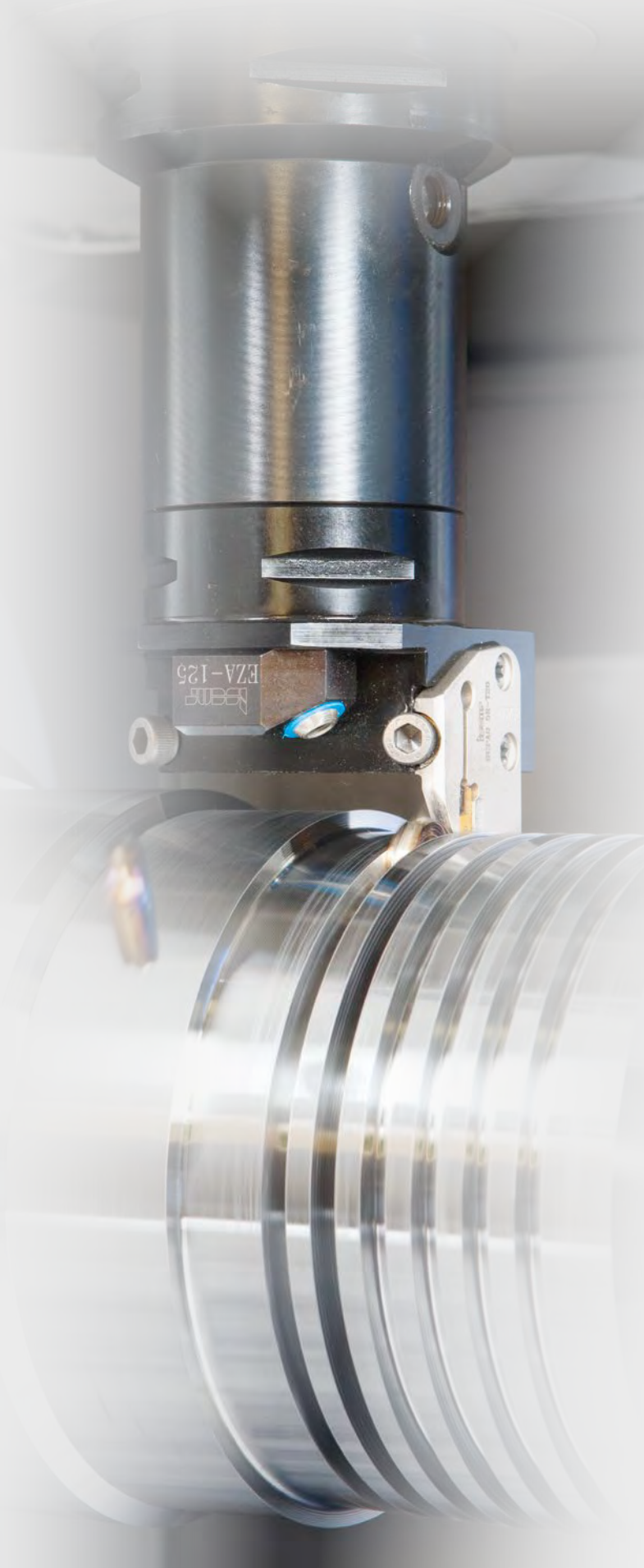
Cutting media types and cutter geometries.

ISCAR offers many options suitable for all materials and machining scenarios.



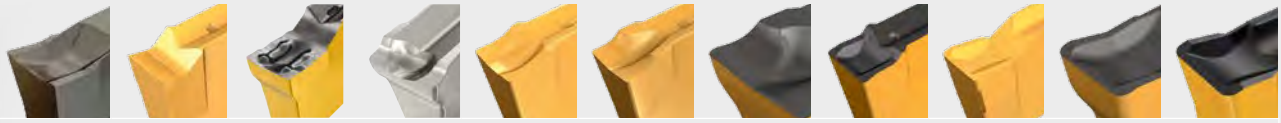
P (Steel)	Hard	Hard	Hard
	IC30N	IC20N	IC808*
	IC807	IC807	IC8250
	IC808	IC808*	IC830
	IC1010*	IC8250	
	IC5400	IC830	
	IC830		
	IC1030		
	Tough	Tough	Tough
M (Stainless steel)	Hard	Hard	Hard
	IC807	IC807	IC806
	IC808	IC808*	IC808*
	IC1010	IC8250	IC8250
	IC5400*	IC830	IC830
	IC830	IC528	
	IC1030		
	Tough	Tough	Tough
O (Cast iron)	Hard	Hard	Hard
	IC20	IC428	IC428
	IC807	IC418	IC5010*
	IC808	IC5010*	IC808
	IC5400*	IC807	
		IC808	
	Tough	Tough	Tough
N (Non-ferrous materials)	Hard	Hard	Hard
	IC807	ID5	IC20*
	IC20*	IC07	IC808
	IC808	IC20*	
	IC1010		
	Tough	Tough	Tough
S (High-alloy materials)	Hard	Hard	Hard
	IC807	IC804	IC806*
	IC808*	IC806*	IC808
	IC1010	IC807	
		IC808	
	Tough	Tough	Tough

* 1st choice



Overview of cutting media and chip formers

Overview of chip formers for parting off



	A	P	Z	UA/UT	LF	J	JT	MF	C	CB	HF
P		✓	✓	✓	✓	✓	✓	1. choice	✓	✓	✓
M		✓	✓	✓	1. choice	✓	✓	✓			
O									1. choice	✓	✓
N	1. choice	✓	✓		✓	✓					
S		✓	✓		✓	1. choice	✓				

Feed rate low — Feed rate high
Continuous cutting — Interrupted cutting

Overview of chip formers for grooving and groove turning radial



	PA	G	IY	P	HG-Y	ZC	N	T	A
P		✓	✓	✓	✓	✓	✓	1. choice	
M		✓	✓	✓	✓	1. choice	✓	✓	
O				✓					1. choice
N	1. choice					✓			
S			✓	✓	✓	✓			

Feed rate low — Feed rate high
Continuous cutting — Interrupted cutting

Overview of chip formers for grooving and groove turning axial



	TNF-P	TNF-M	TNF-GN	GRIP-A	GRIP-Y	GRIP-T	HFPL/R
P	1. choice	✓	✓		✓	✓	✓
M	✓	1. choice	✓		✓	✓	✓
O					✓	✓	1. choice
N			✓	1. choice	✓	✓	✓
S	✓	✓	✓		1. choice	✓	✓

Feed rate low — Feed rate high
Continuous cutting — Interrupted cutting

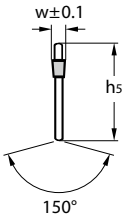


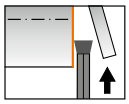
Garant Eco parting-off tools for single-sided GARANT parting-off inserts

With Eco cooling directly on the cutting edge and additional flank face cooling.
27 3564 – With coolant transfer for toolholders from other manufacturers (e.g. EWS).

Suitable for:
Size 19/2,2; 19/3,1 – Toolholder No. 274093 or 319132 – 319133 (VDI toolholder).
Size 26/2,2–32/5,1 – Toolholder No. 273893; 273894; 274095; 274097 or No. 319132 – 319133 (VDI toolholder).

Application: For deep grooves and parting off large diameters.
Spare part: Blanking screw No. 279828 size 2.
Sealing disc No. 279830 size 1.
Attention: Please order the assembly key No. 279940 separately.





Blade height h_5 / groove width w	21U 27 3562	21U 27 3564	for maximum workpiece ∅	L	Groove width w
	Eco parting-off tool				
mm			mm	mm	mm
19/2,2	eShop	eShop	40	86	2.2
19/3,1	eShop	eShop	45	86	3.1
26/2,2	eShop	eShop	50	110	2.2
26/3,1	eShop	eShop	75	110	3.1
26/4,1	eShop	eShop	80	110	4.1
32/2,2	eShop	eShop	60	150	2.2
32/3,1	eShop	eShop	100	150	3.1
32/4,1	eShop	eShop	110	150	4.1
32/5,1	eShop	eShop	120	150	5.1



27 3562



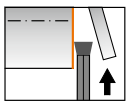
27 3564

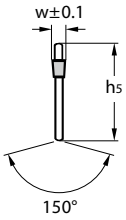


Garant Parting-off tools for single-sided GARANT parting-off inserts

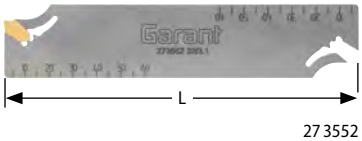
27 3558 – From blade height 100 mm with four insert seats.

Suitable for: Toolholder No. 273984 – 274000 or No. 319132; 319133 (VDI toolholder).
Attention: Please order the assembly key No. 279940 separately.



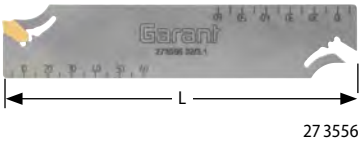


Blade height h_5 / groove width w	21W 27 3552	21U 27 3556	21U 27 3558	for maximum workpiece ∅	L	Groove width w
	Parting-off tool					
mm	Steel	HSS	Heavy Duty	mm	mm	mm
19/1,5	eShop	eShop	–	32	86	1.5
19/2,2	eShop	eShop	–	40	86	2.2
19/3,1	eShop	eShop	–	45	86	3.1
26/2,2	eShop	eShop	–	50	110	2.2
26/3,1	eShop	eShop	–	75	110	3.1
26/4,1	eShop	eShop	–	80	110	4.1
26/5,1	eShop	–	–	100	110	5.1
32/2,2	eShop	eShop	–	60	150	2.2
32/3,1	eShop	eShop	–	100	150	3.1
32/4,1	eShop	eShop	–	110	150	4.1
32/5,1	eShop	eShop	–	120	150	5.1
45/3,1	–	–	eShop	150	225	3.1
45/4,1	–	–	eShop	160	225	4.1
45/5,1	–	–	eShop	170	225	5.1
45/6,0	–	–	eShop	180	225	6
60/3,1	–	–	eShop	180	230	3.1
60/4,1	–	–	eShop	190	230	4.1
60/5,1	–	–	eShop	200	230	5.1
60/6,0	–	–	eShop	210	230	6
60/8,0	–	–	eShop	220	230	8
100/5,1	–	–	eShop	300	500	5.1
100/6,0	–	–	eShop	400	500	6
100/8,0	–	–	eShop	500	500	8
100/8,0L	–	–	eShop	1000	760	8

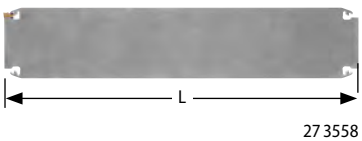


27 3552

HSS



27 3556



27 3558

Garant Assembly key for grooving tools

Suitable for: GARANT grooving tools with self-locking.

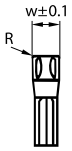
Type		1-3
29Y 27 9940	Assembly key	eShop
for groove width w	mm	1.5 – 8



27 9940_1-3

Garant Parting-off inserts for parting-off tools no. 273552 – 273558 and 273562 – 273564

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
HB9035				**200**	**180**	**160**	**140**	**110**							80				●	●	●	●	
HB9140				120	110	100	90	70				**120**	**80**						●	○		●	
HU9215				110	100	80	70								**100**				●	○		●	
HU9310	**380**	**360**	**280**																●	○		●	
HU7310	**300**	**300**	**230**																●	○		●	○



Neutral



27 3500

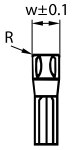


27 3505

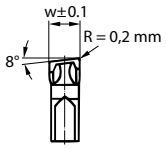


27 3296

Groove width w			mm	1,5	2	3	4	5	6	8		
2U **27 3500**	Parting-off insert **neutral**	**HB9035**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	**10**	P
2U **27 3505**		**HB9140**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	**10**	M
2H **27 3296**		**HU9215**		–	–	–	–	–	eShop	eShop	**10**	K
Corner radius			mm	0.15	0.25	0.25	0.25	0.25	0.3	0.8		
Feed f in steel < 900 N/mm²			mm/rev.	0.04	0.08	0.1	0.12	0.15	0.17	0.19		



Neutral



Right-hand



27 3310

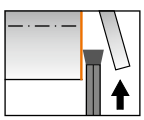
Groove width w			mm	1,5	2,2	3,1	6	8		
2U **27 3298**	Parting-off insert **neutral**	**HU9310**		eShop	–	–	eShop	eShop	**10**	N
2U **27 3310**		**HU7310**		–	eShop	eShop	–	–	**10**	N
2U **27 3180**	Parting-off insert **right-hand**	**HU7310**		–	eShop	eShop	–	–	**10**	N
Corner radius			mm	0.15	0.2	0.2	0.3	0.8		
f			mm/rev.	0.04	0.07	0.1	0.17	0.19		

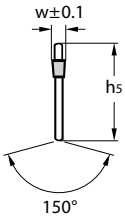
HSS

Garant Parting-off tool for parting-off inserts No. 218460 – 218470

Suitable for: Toolholder No. 273984 – 273994 or No. 319132; 319133 (VDI toolholder).
Attention: Please order the assembly key No. 279940 separately.

For carbide inserts see page 668







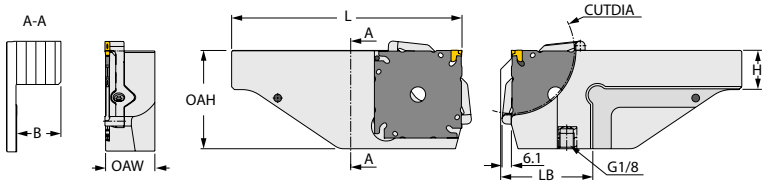
Blade height h_5 / groove width w			mm	19/2,2	19/3,1	26/2,2	26/3,1	32/2,2	32/3,1
21U **27 3560**	HSS parting-off tool	**neutral**		eShop	eShop	eShop	eShop	eShop	eShop
for maximum workpiece ∅			mm	40	40	50	75	50	100
L			mm	86	86	110	110	150	150
t_{max}			mm	21	21	25	37.5	25	50

JETCROWN tool blocks

JETCROWN tool block

Application: For parting off and grooving with targeted cooling via JETCROWN quick-clamping crown.

Note: Can only be used in conjunction with suitable JETCROWN quick-clamping crown No. 279950. Coolant transfer to the tool block is only possible via the G 1/8 inch hose coupling.





Shank size		mm	20	25
26D 27 3606	JETCROWN tool block	right-hand	–	–
26D 27 3607		left-hand	–	–
26D 27 3608		right-hand	–	–
26D 27 3609		left-hand	–	–
CUTDIA (27 3606, 27 3607)		mm	65	
CUTDIA (27 3608, 27 3609)		mm	82	
OAH (27 3606, 27 3607)		mm	55	
OAH (27 3608, 27 3609)		mm	64	
LB (27 3606, 27 3607)		mm	42	
LB (27 3608, 27 3609)		mm	53	

JETCROWN quick-clamping crown

Suitable for:

Size 65-2; 65-3 – JETCROWN tool blocks No. 273606 and 273607.

Size 82-3; 82-4 – JETCROWN tool blocks No. 273608 and 273609.

Application: For holding TANGFGRIP adapter No. 273612 – 273613 (order a separate crown for each insert width.)

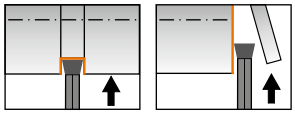


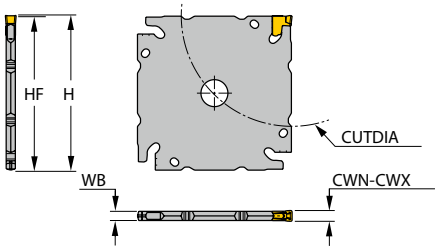
CUTDIA groove width mm	26D 27 9950 JETCROWN quick-clamping crown
65-2	–
65-3	–
82-3	–
82-4	–

TANGFGRIP adapter

Suitable for: JETCROWN quick-clamping crown No. 279950.

Attention: Please order the assembly key No. 279955 separately.







27 3612

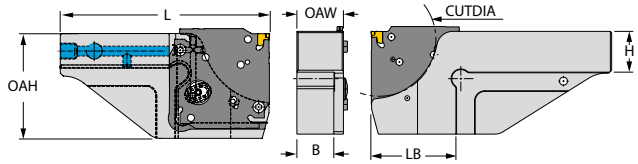
Groove width w		mm	2	3,05	4	Suitable for:
26D 27 3612	TANGFGRIP adapter	neutral	–	–	–	JET-CROWN
26D 27 3613		neutral	–	–	–	JET-CROWN
CUTDIA (27 3612)		mm	65	65	–	
CUTDIA (27 3613)		mm	–	82	82	

LOGIQFGRIP tool blocks

Suitable for: TANGFGRIP adapter No. 273610, 273611 and 273614.
Application: For parting off and grooving.

Note: Coolant transfer to tool block via G 1/8 inch hose coupling or directly via suitable ISCAR toolholders.

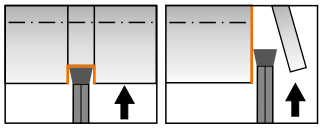


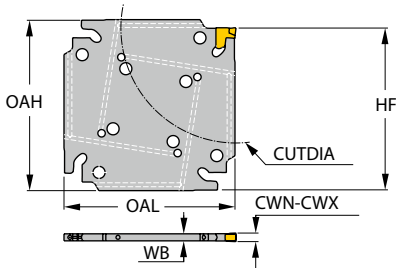


Shank size			mm	16	20	25
26D 27 3600	LOGIQFGRIP tool block	right-hand		–	–	–
26D 27 3601		left-hand		–	–	–
26D 27 3602		right-hand		–	–	–
26D 27 3603		left-hand		–	–	–
26D 27 3604		right-hand		–	–	–
26D 27 3605		left-hand		–	–	–
CUTDIA (27 3600, 27 3601)			mm		42	
CUTDIA (27 3602, 27 3603)			mm	–	52	52
CUTDIA (27 3604, 27 3605)			mm	–	–	120
OAH (27 3600, 27 3601)			mm		40	
OAH (27 3602, 27 3603)			mm	–	50	50
OAH (27 3604, 27 3605)			mm	–	–	95
LB (27 3600, 27 3601)			mm		35	
LB (27 3602, 27 3603)			mm	–	42	40
LB (27 3604, 27 3605)			mm	–	–	73

TANGFGRIP adapter

27 3610 – Without through-coolant feed.
Suitable for: Tool blocks No. 273600 – 273605.
Attention: Please order the assembly key No. 279955 separately.







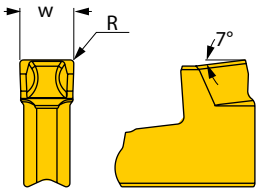
27 3614_3,05

Groove width w			mm	2	3,05	4	Suitable for:
26D 27 3610	TANGFGRIP adapter	neutral		–	–	–	LOGIPFGRIP
26D 27 3611		neutral		–	–	–	LOGIPFGRIP
26D 27 3614		neutral		–	–	–	LOGIPFGRIP
CUTDIA (27 3610)			mm	42	42	–	
CUTDIA (27 3611)			mm		52		
CUTDIA (27 3614)			mm	–	120	120	

TANGGRIP inserts for parting off and grooving

Suitable for: Adapter No. 273610 – 273614.
Application: For parting off and grooving.

Note: The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Chip breaker C

Chip breakers with a pronounced protective chamfer. First choice for ISO-P.
Medium to high feed rates.



Groove width w / corner radius R	26A 27 3626	26A 27 3628	26A 27 3630		Tolerance groove width w	f
	TANGGRIP TAG N-C inserts					
mm	IC1010	IC1030	IC5400		mm	mm/rev.
2/0,2	–	–	–	10	0.04	0.1 – 0.16
3,05/0,2	–	–	–	10	0.04	0.1 – 0.25
4/0,24	–	–	–	10	0.04	0.1 – 0.3
●	P	P	P			
⚙	◍	◍	◍			
Chip breaker	C	C	C			
v_c main application m/min	60 – 180	60 – 180	60 – 180			

Chip breaker MF

Chip breaker with protective chamfer. Universal for ISO-P and ISO-M.
For medium feed rates.



Groove width w / corner radius R	26A 27 3632	26A 27 3634	26A 27 3636		Tolerance groove width w	f
	TANGGRIP TAG N-MF inserts					
mm	IC1010	IC1030	IC5400		mm	mm/rev.
2/0,2	–	–	–	10	0.05	0.04 – 0.12
3,05/0,2	–	–	–	10	0.05	0.06 – 0.18
4/0,25	–	–	–	10	0.05	0.07 – 0.22
●	P	P	P			
○	M	M	M			
⚙	◍	◍	◍			
Chip breaker	MF	MF	MF			
v_c main application m/min	60 – 180	60 – 180	60 – 180			

Chip breaker LF

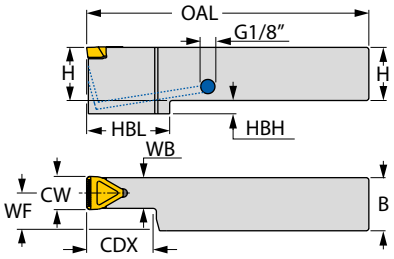
Positive chip breaker. Soft-cutting.
Low feed rates.



Groove width w / corner radius R	26A 27 3638	26A 27 3640	26A 27 3642		Tolerance groove width w	f
	TANGGRIP TAG N-LF inserts					
mm	IC1010	IC1030	IC5400		mm	mm/rev.
2/0,2	–	–	–	10	0.04	0.03 – 0.08
3,05/0,2	–	–	–	10	0.04	0.04 – 0.1
●	P	P	P			
○	M	M	M			
⚙	◍	◍	◍			
Chip breaker	LF	LF	LF			
v_c main application m/min	60 – 180	60 – 180	60 – 180			

DOVEIQGRIP toolholder

For external groove machining.



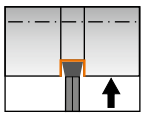


27 4140_25

Shank size / groove width w	26D 27 4140	26D 27 4141	HBH	HBL	CDX	WF	OAL	WB
	DOVEIQGRIP THD toolholder							
mm	right-hand	left-hand	mm	mm	mm	mm	mm	mm
25/10	–	–	8	30	20	20.4	170	9.2
25/12	–	–	8	30	20	19.5	170	11
25/14	–	–	8	30	20	18.5	170	13
32/16	–	–	8	48	40	24.6	170	14.8
40/16	–	–	–	–	50	32.6	180	14.8

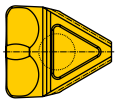
DOVEIQGRIP inserts

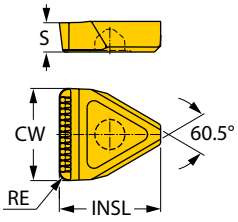
Y chip breaker for general groove machining. Positive chip former. Soft cut.
Application: For external grooving for high metal removal rates.







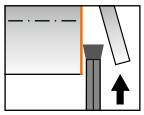


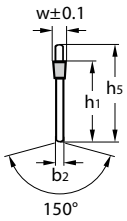


Groove width w	26H 27 4148	26H 27 4149		Corner radius R	CWTOL	fg	RETOL	INSL
	DOVEIQGRIP TIGER-IQ inserts							
mm	IC808	IC830		mm	mm	mm/rev.	mm	mm
10	–	–	10	0.8	0.08	0.2 – 0.35	0.05	13.3
12	–	–	10	1.2	0.08	0.2 – 0.4	0.05	14
14	–	–	10	1.5	0.08	0.22 – 0.45	0.05	161
16	–	–	10	1.5	0.08	0.22 – 0.5	0.05	20
●	UNI	UNI						
⚙	◉	◉						
Chip breaker	ZC	ZC						
v_c main application m/min	80 – 180	80 – 180						

HOLEX Parting-off tools for parting-off inserts No. 273010

Suitable for: Toolholder No. 273896 – 273898 or No. 319132; 319133 (VDI toolholder).
Application: Only in conjunction with parting-off inserts No. 273010.
Supplied with: Including key for changing inserts.







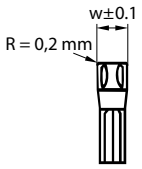
27 3000

Blade height h_5 / groove width w	mm	19/2,2	19/3,1	26/2,2	26/3,1	32/2,2	32/3,1
22B 27 3000 Steel parting-off tool	neutral	eShop	eShop	eShop	eShop	eShop	eShop
for maximum workpiece ∅	mm	40	40	75	75	100	100
Width b_2	mm	1.6	2.4	1.6	2.4	1.6	2.4
Height h_1	mm	15.5	15.4	21.2	21.1	24.8	24.7
L	mm	86	86	110	110	150	150

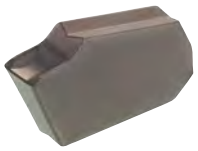
HOLEX Parting-off inserts for parting-off tools No. 273000

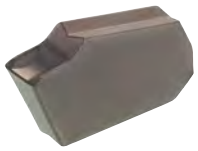
Application: Only in conjunction with parting-off tool No. 273000.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
27 3010				120	100	90	80					80	60		80				●				●



Neutral

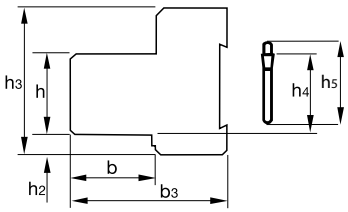


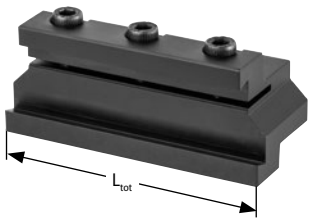


Groove width w	mm	2,2	3,1	
22D 27 3010 Parting-off insert neutral	HBX25	eShop	eShop	10
Feed f in steel < 900 N/mm²	mm/rev.	0.07	0.1	

HOLEX Toolholders for parting-off tools No. 273000

Application: In conjunction with parting-off tool No. 273000. Can also be used for many standard parting-off tools from other manufacturers.





27 3896

Shank height h	mm	16	20	25	For blade height h_5 mm	Clamping screw
22B 27 3896 Toolholder for parting-off tools		eShop	–	–	19	279816 8
22B 27 3897 Toolholder for parting-off tools		–	eShop	eShop	26	279816 8
22B 27 3898 Toolholder for parting-off tools		–	eShop	eShop	32	279816 8
h_4	mm	16	20	25		
h_2 (27 3896, 27 3897)	mm	4	8	8		
h_2 (27 3898)	mm	–	13	8		
h_3 (27 3896, 27 3897)	mm	32	38	43		
h_3 (27 3898)	mm	–	48	48		
b	mm		20			
b_3	mm		36			
L_{tot} (27 3896, 27 3897)	mm	80	90	100		
L_{tot} (27 3898)	mm	–	100	100		



Garant Parting-off tool for parting-off inserts No. 273656 – 273749

Suitable for: Toolholder No. 273984 – 273994 or 319132 – 319133 (VDI toolholder).
Application: In conjunction with parting-off inserts No. 273656 – 273749.
Attention: Please order the assembly key No. 279940 separately.

Note: From 19.5 mm groove depth (up to groove width 3 mm) and from 24.5 mm groove depth (from groove width 4 mm) the second cutter comes into contact with the workpiece. This can lead to scoring. If necessary, use single-ended grooving inserts No. 273656 – 273670.



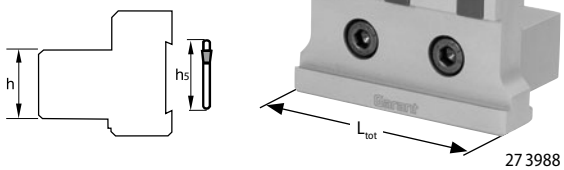
27 3781

Blade height h_5 / groove width w			mm	19/1,5	19/2	19/3	26/2	26/3	32/2	32/3	32/4	32/5	32/6
21W 27 3781	Parting-off tool	**neutral**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
for maximum workpiece ∅			mm	40	40	40	60	85	60	110	110	110	110
L			mm	96	96	96	120	120	150	150	150	150	150

Garant Toolholder for parting-off tools, with removable shank

27 3986/3990 – Long version for high stability.
Application: Allows grooving tools of different makes to be used.
Can be used even on toolholders with concealed clamping elements.

Additional dimensional data can be found in our eShop at https://www.hoffmann-group.com



27 3988

Shank height h		mm	12	16	20	25	For blade height h_5 mm	Clamp	Clamping screw
21W 27 3984	Parting-off toolholder with removable shank		eShop	eShop	–	–	19	279840 2	279815 14
21W 27 3986			–	–	eShop	eShop	26	279840 2	279815 14
21W 27 3988			–	–	eShop	eShop	26	279840 2	279815 14
21W 27 3990			–	–	eShop	eShop	32	279840 2	279815 14
21W 27 3992			–	–	eShop	eShop	32	279840 2	279815 14
L_{tot} (27 3984, 27 3986, 27 3990)		mm	61	61	110	110			
L_{tot} (27 3988, 27 3992)		mm	–	–	90	90			

Garant Assembly key for fitting inserts

It is simple to change the inserts – precisely and in seconds.
With just a single turn of the GARANT assembly key, you can position the insert exactly where you want it.
Many potential applications for GARANT grooving tools.

One key – one system!

- GARANT parting-off blade.
- GARANT tool holder for radial grooving.
- GARANT tool holder for face grooving.
- GARANT boring bar for grooving (No. 27 4170 – 27 4171).

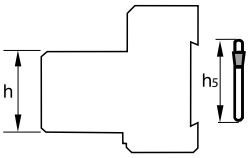


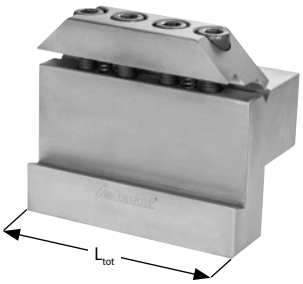


Garant Toolholder with removable clamping strip

Higher clamping forces dues to larger clamping screws in the clamping strip.

Application: Allows grooving tools of different makes to be used.
Can be used even on toolholders with concealed clamping elements.





Shank height h		mm	10	12	16	20	25	32	40	50	For blade height h_5 mm	Clamping strip	Clamping screw
21U 27 3991	Toolholder with removable clamping strip		eShop	eShop	eShop	–	–	–	–	–	19	279928 4	279815 22
21U 27 3993			–	–	eShop	eShop	eShop	–	–	–	26	279928 1	279815 17
21U 27 3994			–	–	–	eShop	eShop	eShop	–	–	32	279928 2	279815 17
21U 27 3996			–	–	–	eShop	eShop	eShop	eShop	–	45	279928 3	279815 18
21U 27 3998			–	–	–	–	eShop	eShop	eShop	eShop	60	279928 3	279815 18
21U 27 4000			–	–	–	–	–	–	eShop	eShop	100	279928 3	279815 18
L_{tot} (27 3991, 27 3994, 27 4000)		mm	76	76	76	100	100	100	250	250			
L_{tot} (27 3993)		mm	–	–	87	87	87	–	–	–			
L_{tot} (27 3996, 27 3998)		mm	–	–	–	120	120	120	120	120			

Garant Eco grooving tools, strengthened

With Eco cooling directly on the cutting edge and additional flank face cooling.
27 3854/3855 – With coolant transfer for toolholders from other manufacturers.

Suitable for:
27 3864 – Toolholder No. 273893; 273894; 274095; 274097 or VDI toolholder 319133.
27 3865 – Toolholder No. 273893; 273894; 274095; 274097 or VDI toolholder 319132.
27 3864 Size 26/3; 26/3L – 319140 – 319141 size RR or LR.
27 3865 Size 26/3; 26/3L – 319140 – 319141 size RL or LL.

Attention: Please order the assembly key No. 279920 separately.

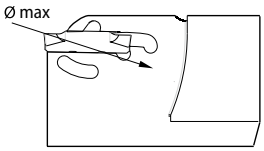
Note: Due to its design, it is not compatible with EWS toolholders No. 319148 and 319149.



27 3864_26/3



27 3864_26/3



Blade height h_5 / groove width w			mm	26/3	26/3L	32/3	32/3L
21W 27 3864	Eco grooving tool **strengthened**	**right-hand**		eShop	eShop	eShop	eShop
21W 27 3865		**left-hand**		eShop	eShop	eShop	eShop
21W 27 3854		**right-hand**		eShop	eShop	eShop	eShop
21W 27 3855		**left-hand**		eShop	eShop	eShop	eShop
for maximum workpiece Ø			mm	65	90	65	90
Height h_1			mm	21.4	21.4	25	25
L (27 3864, 27 3865)			mm	97	109.5	109.5	122
L (27 3854, 27 3855)			mm	83.5	96	87.5	100

Garant Assembly key

Suitable for: Grooving tools No. 273854 – 273866.
Application: For assembling or disassembling the grooving inserts.



27 9920

29Y 27 9920	Assembly key	eShop

Garant Eco grooving tools

With Eco cooling directly on the cutting edge and additional flank face cooling.
27 3856 – With coolant transfer for toolholders from other manufacturers (e.g. EWS).

Suitable for:
Size 26/2–32/6 – Toolholder No. 273893; 273894; 274095; 274097 or VDI toolholder No. 319132 – 319133.
Size 19/2; 19/3 – Toolholder No. 274093 or VDI toolholder No. 319132 – 319133.

Application: For deep grooves and parting off large diameters.

Spare part: Blanking screw No. 279828 1.

Attention: Please order the assembly key No. 279920 separately.

Note: From 19.5 mm groove depth (up to groove width 3 mm) and from 24.5 mm groove depth (from groove width 4 mm) the second cutter comes into contact with the workpiece. This can lead to scoring. If necessary, use single-ended grooving inserts No. 273656 – 273670.
Size 19/2; 19/3 – Set consisting of 2 blades each with its own seating.



27 3866

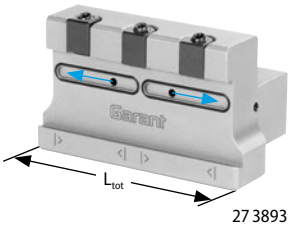

27 3856


27 3866_19/2 – 19/3

Blade height h_5 / groove width w			mm	19/2	19/3	26/2	26/3	32/2	32/3	32/4	32/5	32/6
21W 27 3866	Eco grooving tool	neutral		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
21W 27 3856	Eco grooving tool	neutral		–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
for maximum workpiece ∅			mm	40	40	60	85	60	110	110	110	110
Height h_1			mm	15.7	15.7	21.4	21.4	25	25	25	25	25
L			mm	96	96	120	120	150	150	150	150	150

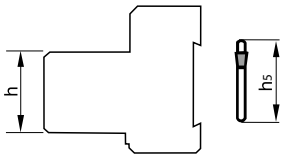
Garant Eco toolholder for Eco grooving tool and Eco grooving tool strengthened

Note: Coolant transfer only possible in conjunction with GARANT Master Eco toolholders No. 319006 – 319136.



27 3893

Shank height h		mm	20	25	For blade height h_5 mm	Clamp	Clamping screw
21W 27 3893	Eco toolholder		eShop	eShop	26	279840 2	279815 14
21W 27 3894	Eco toolholder		eShop	eShop	32	279840 2	279815 14
L_{tot}		mm	78	90			



Garant Eco toolholder with removable clamping strip

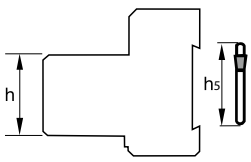
Application: For use of GARANT Eco grooving tools.
Can be used even on toolholders with concealed clamping elements.

Spare part:
27 4093 – Grub screw No. 279832 1.
27 4095/4097 – Grub screw No. 279832 2.

Note: Coolant transfer only possible in conjunction with GARANT Master Eco holder No. 319006 – 319136. Optional connection possibility via hose connection with connection set No. 279833 1.



27 4093



Shank height h		mm	10	12	16	20	25	32	For blade height h_5 mm	Clamping strip	Clamping screw
21W 27 4093	Eco toolholder with removable clamping strip		eShop	eShop	eShop	–	–	–	19	279928 4	279815 23
21W 27 4095	Eco toolholder with removable clamping strip		–	–	eShop	eShop	eShop	–	26	279928 5	279815 22
21W 27 4097	Eco toolholder with removable clamping strip		–	–	–	eShop	eShop	eShop	32	279928 6	279815 22
L_{tot} (27 4093, 27 4097)		mm	70	70	70	94	94	94			
L_{tot} (27 4095)		mm	–	–	82	82	82	–			

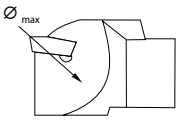
Garant Grooving toolholder with t_{max} ≤ 12.5×groove width w

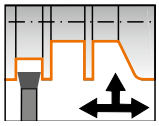
Made of high-tensile tool steel (> 1300 N/mm²). In conjunction with the convex insert clamping, the system achieves very high resistance to axial and radial cutting forces and thereby significantly increases the surface quality and productivity.

Note:	Maximum Ø = limited workpiece Ø due to the tool type. From 19.5 mm groove depth (up to groove width 3 mm) and from 24.5 mm groove depth (from groove width 4 mm) the second cutter comes into contact with the workpiece. This can lead to scoring. If necessary, use single-cutter grooving inserts No. 273656 – 273670.

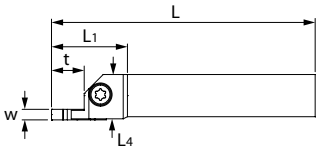


Optimum washing of the cutting edge with coolant.





Up to groove depth 37.5 mm = 12.5 × w



Eco grooving toolholder with groove depth t_{max} ≤ 12.5×groove width w

Size 16/3 – 8×w
Size 20/3; 25/3 – 10×w
Size 20/3L; 25/3L – 12.5×w **(groove depth up to 37.5 mm)**

Note:	Coolant transfer only possible in conjunction with GARANT Master Eco toolholders No. 319006 – 319136.



27 3835

Positioning within the scale ensures precise coolant transfer.

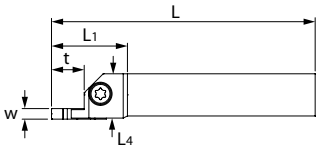
Shank width / groove width w	21W 27 3835	21W 27 3836	maximum Ø	t_{max}	L_4	L_1	L	Screw
	Eco grooving toolholder							
mm	right-hand	left-hand	mm	mm	mm	mm	mm	
16/3	eShop	eShop	50	25	16	43	90	279815 5 (TX25; 6 Nm)
20/3	eShop	eShop	60	30	21.5	49	108	279815 6 (TX25; 6 Nm)
20/3L	eShop	eShop	75	37.5	21.5	54	113	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	60	30	26.5	49	121	279815 6 (TX25; 6 Nm)
25/3L	eShop	eShop	75	37.5	26.5	54	125.5	279815 6 (TX25; 6 Nm)

Grooving toolholder with groove depth t_{max} ≤ 12.5×groove width w

Size 12/3 – 6.5×w
Size 16/4 – 7.5×w
Size 16/3; 20/4; 25/4 – 8×w
Size 20/3; 25/3 – 10×w
Size 20/3L; 25/3L – 12.5×w **(groove depth up to 37.5 mm)**



27 3760



Shank width / groove width w	21W 27 3760	21W 27 3761	maximum Ø	t_{max}	L_4	L_1	L	Screw
	Grooving toolholder							
mm	right-hand	left-hand	mm	mm	mm	mm	mm	
12/3	eShop	eShop	40	20	12	35	150	279815 4 (TX15; 3.5 Nm)
16/3	eShop	eShop	50	25	16	41	150	279815 5 (TX25; 6 Nm)
20/3	eShop	eShop	60	30	21.5	46	150	279815 6 (TX25; 6 Nm)
20/3L	eShop	eShop	75	37.5	21.5	54	150	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	60	30	26.5	46	150	279815 6 (TX25; 6 Nm)
25/3L	eShop	eShop	75	37.5	26.5	54	150	279815 6 (TX25; 6 Nm)
16/4	eShop	eShop	60	30	16	48	150	279815 5 (TX25; 6 Nm)
20/4	eShop	eShop	65	32.5	21.5	51	150	279815 6 (TX25; 6 Nm)
25/4	eShop	eShop	65	32.5	26.5	51	150	279815 6 (TX25; 6 Nm)

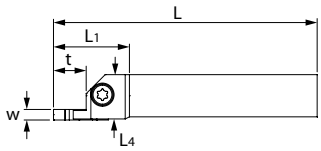
Garant Grooving toolholder with t_{max} = 7×groove width w

Made of high-tensile tool steel (> 1300 N/mm²). In conjunction with the convex insert clamping, the system achieves very high resistance to axial and radial cutting forces and thereby significantly increases the surface quality and productivity.

Note: From 19.5 mm groove depth (up to groove width 3 mm) and from 24.5 mm groove depth (from groove width 4 mm) the second cutter comes into contact with the workpiece. This can lead to scoring. If necessary, use single-ended grooving inserts No. 273656 – 273670.

Eco grooving toolholder with groove depth t_{max} = 7×groove width w

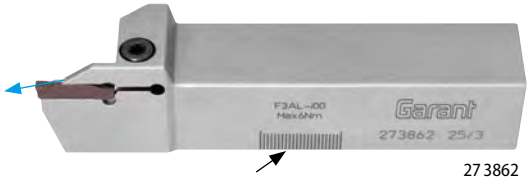
Note: Coolant transfer only possible in conjunction with GARANT Master Eco toolholders No. 319006 – 319136.





Additional overhang:
Shank 16 mm = + 14 mm
Shank 20 mm = + 17 mm
Shank 25 mm = + 22 mm

long shank type



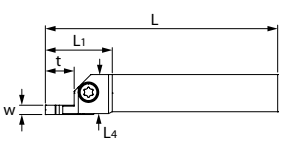
27 3862

Positioning within the scale ensures precise coolant transfer.

Shank width / groove width w	21W 27 3862	21W 27 3863	t_{max}	L_4	L_1	L	Screw
	Eco grooving toolholder, with long shank						
mm	right-hand	left-hand	mm	mm	mm	mm	
16/3	eShop	eShop	21	16	37	97.5	279815 5 (TX25; 6 Nm)
20/3	eShop	eShop	21	21.5	36.5	112	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	21	26.5	36.5	130	279815 6 (TX25; 6 Nm)

Shank width / groove width w	21W 27 3860	21W 27 3861	t_{max}	L_4	L_1	L	Screw
	Eco grooving toolholder						
mm	right-hand	left-hand	mm	mm	mm	mm	
16/2	eShop	eShop	14	16	31.5	78.5	279815 5 (TX25; 6 Nm)
20/2	eShop	eShop	14	21.5	33.5	92.5	279815 6 (TX25; 6 Nm)
25/2	eShop	eShop	14	26.5	33.5	105	279815 6 (TX25; 6 Nm)
16/3	eShop	eShop	21	16	37	84	279815 5 (TX25; 6 Nm)
20/3	eShop	eShop	21	21.5	36.5	95.5	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	21	26.5	36.5	108	279815 6 (TX25; 6 Nm)
16/4	eShop	eShop	28	16	45.5	92.5	279815 5 (TX25; 6 Nm)
20/4	eShop	eShop	28	21.5	48	107	279815 7 (TX30; 8 Nm)
25/4	eShop	eShop	28	26.5	48	119.5	279815 7 (TX30; 8 Nm)

Grooving toolholder with groove depth t_{max} = 7×groove width w





27 3757

Shank width / groove width w	21W 27 3757	21W 27 3758	t_{max}	L_4	L_1	L	Screw
	Grooving toolholder						
mm	right-hand	left-hand	mm	mm	mm	mm	
12/1,5	eShop	eShop	10.5	12	28.5	150	279815 4 (TX15; 3.5 Nm)
16/1,5	eShop	eShop	10.5	16	30	100	279815 4 (TX15; 3.5 Nm)
20/1,5	eShop	eShop	10.5	21.5	30	125	279815 6 (TX25; 6 Nm)
25/1,5	eShop	eShop	10.5	26.5	29	150	279815 6 (TX25; 6 Nm)
12/2	eShop	eShop	14	12	31.5	150	279815 4 (TX15; 3.5 Nm)
16/2	eShop	eShop	14	16	31.5	100	279815 5 (TX25; 6 Nm)
20/2	eShop	eShop	14	21.5	33.5	125	279815 6 (TX25; 6 Nm)
25/2	eShop	eShop	14	26.5	33.5	150	279815 6 (TX25; 6 Nm)
16/3	eShop	eShop	21	16	37	100	279815 5 (TX25; 6 Nm)
20/3	eShop	eShop	21	21.5	36.5	125	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	21	26.5	36.5	150	279815 6 (TX25; 6 Nm)
32/3	eShop	eShop	21	26.5	36.5	170	279815 6 (TX25; 6 Nm)
20/4	eShop	eShop	28	21.5	48	125	279815 7 (TX30; 8 Nm)
25/4	eShop	eShop	28	26.5	48	150	279815 7 (TX30; 8 Nm)
32/4	eShop	eShop	28	26.5	48	170	279815 7 (TX30; 8 Nm)

Garant Grooving toolholder with t_{max} = 5×groove width w

Made of high-tensile tool steel (> 1300 N/mm²). In conjunction with the convex insert clamping, the system achieves very high resistance to axial and radial cutting forces and thereby significantly increases the surface quality and productivity.

Note: From groove width 6 mm at t_{max} (5×groove width), the second cutter comes into contact with the workpiece. This can lead to scoring. Reliably free of scoring up to t = 24.5 mm.

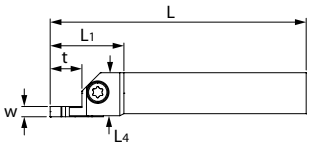


27 3830

Positioning within the scale ensures precise coolant transfer.

Eco grooving toolholder with groove depth t_{max} = 5×groove width w

Note: Coolant transfer only possible in conjunction with GARANT Master Eco toolholders No. 319006 – 319136.

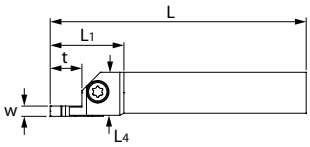


Shank width / groove width w	21W 27 3830	21W 27 3831	t_{max}	L_4	L_1	L	Screw
	Eco grooving toolholder						
mm	right-hand	left-hand	mm	mm	mm	mm	
16/2	eShop	eShop	10	16	30.5	77.5	279815 5 (TX25; 6 Nm)
20/2	eShop	eShop	10	21.5	33.5	92.5	279815 6 (TX25; 6 Nm)
25/2	eShop	eShop	10	26.5	33.5	105	279815 6 (TX25; 6 Nm)
16/3	eShop	eShop	15	16	31.5	78.5	279815 5 (TX25; 6 Nm)
20/3	eShop	eShop	15	21.5	34.5	93.5	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	15	26.5	34.5	106	279815 6 (TX25; 6 Nm)
16/4	eShop	eShop	20	16	37.5	84.5	279815 5 (TX25; 6 Nm)
20/4	eShop	eShop	20	21.5	40.5	99.5	279815 7 (TX30; 8 Nm)
25/4	eShop	eShop	20	26.5	40.5	112	279815 7 (TX30; 8 Nm)
20/5	eShop	eShop	25	21.5	40.5	102.5	279815 7 (TX30; 8 Nm)
25/5	eShop	eShop	25	26.5	40.5	115	279815 7 (TX30; 8 Nm)
20/6	eShop	eShop	30	21.5	40.5	109.5	279815 7 (TX30; 8 Nm)
25/6	eShop	eShop	30	26.5	40.5	122	279815 7 (TX30; 8 Nm)

Grooving toolholder with groove depth t_{max} = 5×groove width w



27 3755



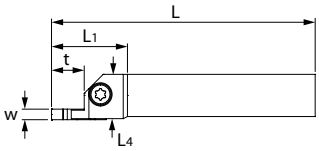
Shank width / groove width w	21W 27 3755	21W 27 3756	t_{max}	L_4	L_1	L	Screw
	Grooving toolholder						
mm	right-hand	left-hand	mm	mm	mm	mm	
8/1,5	eShop	eShop	7.5	8	20.5	125	279815 12 (TX15; 3.5 Nm)
10/1,5	eShop	eShop	7.5	10	20.5	120	279815 4 (TX15; 3.5 Nm)
12/1,5	eShop	eShop	7.5	12	26	150	279815 4 (TX15; 3.5 Nm)
16/1,5	eShop	eShop	7.5	16	29	100	279815 4 (TX15; 3.5 Nm)
20/1,5	eShop	eShop	7.5	21.5	29.5	125	279815 6 (TX25; 6 Nm)
25/1,5	eShop	eShop	7.5	26.5	29	150	279815 6 (TX25; 6 Nm)
10/2	eShop	eShop	10	10	26	120	279815 4 (TX15; 3.5 Nm)
12/2	eShop	eShop	10	12	30	150	279815 4 (TX15; 3.5 Nm)
16/2	eShop	eShop	10	16	30	100	279815 5 (TX25; 6 Nm)
20/2	eShop	eShop	10	21.5	33	125	279815 6 (TX25; 6 Nm)
25/2	eShop	eShop	10	26.5	33	150	279815 6 (TX25; 6 Nm)
12/2,5	eShop	eShop	12.5	12	31	150	279815 4 (TX15; 3.5 Nm)
16/2,5	eShop	eShop	12.5	16	31	100	279815 5 (TX25; 6 Nm)
20/2,5	eShop	eShop	12.5	21.5	33	125	279815 6 (TX25; 6 Nm)
25/2,5	eShop	eShop	12.5	26.5	33	150	279815 6 (TX25; 6 Nm)
12/3	eShop	eShop	15	12	30	150	279815 4 (TX15; 3.5 Nm)
16/3	eShop	eShop	15	16	31	100	279815 5 (TX25; 6 Nm)
20/3	eShop	eShop	15	21.5	34	125	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	15	26.5	34	150	279815 6 (TX25; 6 Nm)
32/3	eShop	eShop	15	26.5	34	170	279815 6 (TX25; 6 Nm)
16/4	eShop	eShop	20	16	37	100	279815 5 (TX25; 6 Nm)
20/4	eShop	eShop	20	21.5	40	125	279815 7 (TX30; 8 Nm)
25/4	eShop	eShop	20	26.5	40	150	279815 7 (TX30; 8 Nm)
32/4	eShop	eShop	20	26.5	40	170	279815 7 (TX30; 8 Nm)
20/5	eShop	eShop	25	21.5	43	125	279815 7 (TX30; 8 Nm)
25/5	eShop	eShop	25	26.5	43	150	279815 7 (TX30; 8 Nm)
32/5	eShop	eShop	25	26.5	43	170	279815 7 (TX30; 8 Nm)
20/6	eShop	eShop	30	21.5	49	125	279815 7 (TX30; 8 Nm)
25/6	eShop	eShop	30	26.5	50	150	279815 7 (TX30; 8 Nm)
32/6	eShop	eShop	30	26.5	50	170	279815 7 (TX30; 8 Nm)

Garant Grooving toolholder with t_{max} = 3×groove width w

Made of high-tensile tool steel (> 1300 N/mm²). In conjunction with the convex insert clamping, the system achieves very high resistance to axial and radial cutting forces and thereby significantly increases the surface quality and productivity.



27 3750

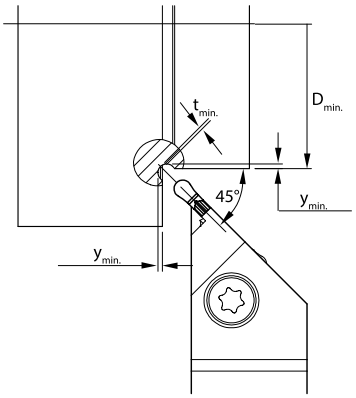


Shank / groove width w	21W 27 3750	21W 27 3751	t_{max}	L_4	L_1	L	Screw
	Grooving toolholder						
mm	right-hand	left-hand	mm	mm	mm	mm	
8/1,5	eShop	eShop	4.5	8	20.5	125	279815 12 (TX15; 3.5 Nm)
10/1,5	eShop	eShop	4.5	10	20.5	120	279815 4 (TX15; 3.5 Nm)
12/1,5	eShop	eShop	4.5	12	26	150	279815 4 (TX15; 3.5 Nm)
16/1,5	eShop	eShop	4.5	16	26	100	279815 4 (TX15; 3.5 Nm)
20/1,5	eShop	eShop	4.5	21.5	29	125	279815 6 (TX25; 6 Nm)
25/1,5	eShop	eShop	4.5	26.5	29	150	279815 6 (TX25; 6 Nm)
10/2	eShop	eShop	6	10	26	120	279815 4 (TX15; 3.5 Nm)
12/2	eShop	eShop	6	12	30	150	279815 4 (TX15; 3.5 Nm)
16/2	eShop	eShop	6	16	30	100	279815 5 (TX25; 6 Nm)
20/2	eShop	eShop	6	21.5	33	125	279815 6 (TX25; 6 Nm)
25/2	eShop	eShop	6	26.5	33	150	279815 6 (TX25; 6 Nm)
12/3	eShop	eShop	9	12	30	150	279815 4 (TX15; 3.5 Nm)
16/3	eShop	eShop	9	16	30	100	279815 5 (TX25; 6 Nm)
20/3	eShop	eShop	9	21.5	33	125	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	9	26.5	33	150	279815 6 (TX25; 6 Nm)
32/3	eShop	eShop	9	26.5	33	170	279815 6 (TX25; 6 Nm)
12/4	eShop	eShop	12	12	35	150	279815 4 (TX15; 3.5 Nm)
16/4	eShop	eShop	12	16	35	100	279815 5 (TX25; 6 Nm)
20/4	eShop	eShop	12	21.5	37	125	279815 7 (TX30; 8 Nm)
25/4	eShop	eShop	12	26.5	37	150	279815 7 (TX30; 8 Nm)
32/4	eShop	eShop	12	26.5	37	170	279815 7 (TX30; 8 Nm)
20/5	eShop	eShop	15	21.5	38	125	279815 7 (TX30; 8 Nm)
25/5	eShop	eShop	15	26.5	38	150	279815 7 (TX30; 8 Nm)
32/5	eShop	eShop	15	26.5	38	170	279815 7 (TX30; 8 Nm)
20/6	eShop	eShop	18	21.5	40	125	279815 7 (TX30; 8 Nm)
25/6	eShop	eShop	18	26.5	39	150	279815 7 (TX30; 8 Nm)
32/6	eShop	eShop	18	26.5	39	170	279815 7 (TX30; 8 Nm)

Garant Grooving toolholder 45°

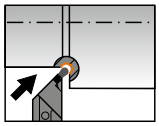
Application: For free turning operations directly up to a shoulder, to create free undercuts for threading and grinding work.

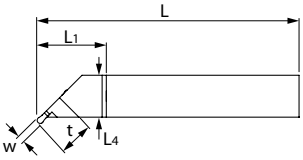
Note:
- **ØD$_{min}$ = 30 mm** (at w = 3).
- **ØD$_{min}$ = 35 mm** (at w = 2).
- Use only with a full radius groove turning insert No. 273735 – 273739.
- No standardised undercut according to DIN 509.





27 3762





Shank / groove width w	21W 27 3762	21W 27 3763	t_{min}	y_{min}	L_4	L_1	L	Screw
	Grooving toolholder 45°							
	right-hand	left-hand	mm	mm	mm	mm	mm	
20/2	eShop	eShop	0.5	0.35	23	33	125	279815 6 (TX25; 6 Nm)
25/2	eShop	eShop	0.5	0.35	28	33	150	279815 6 (TX25; 6 Nm)
20/3	eShop	eShop	0.7	0.5	23	33	125	279815 6 (TX25; 6 Nm)
25/3	eShop	eShop	0.7	0.5	28	33	150	279815 6 (TX25; 6 Nm)

Garant Boring bar for grooving

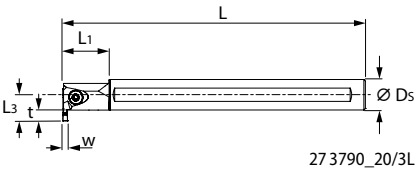
Note:
Size 20/3L – Insertion Ø D_{min} = 25 mm up to a length of 30.5 mm.
Insertion Ø D_{min} = 27.5 mm on the entire length.



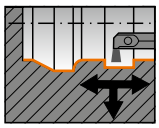
27 3790



27 3790



27 3790_20/3L



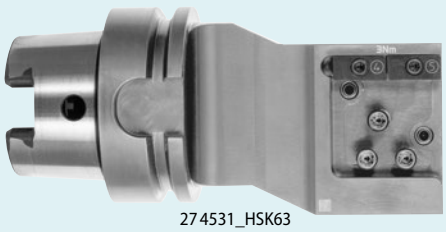
Shank Ø D_s / groove width w	27 3790	27 3791	t_{max} internal machining	Ø D_{min}	L_3	L_1	L	Screw
	Boring bar for grooving							
mm	right-hand	left-hand	mm	mm	mm	mm	mm	
12/1,5	eShop	eShop	4.5	16	9.5	30	140	279815 12 (TX15; 3.5 Nm)
16/1,5	eShop	eShop	4.5	16	7.5	30	180	279815 12 (TX15; 3.5 Nm)
16/1,5X	eShop	eShop	6	19	10.5	30	180	279815 12 (TX15; 3.5 Nm)
20/1,5	eShop	eShop	6	25	14.5	30	180	279815 8 (TX20; 4.5 Nm)
16/2	eShop	eShop	6	23	14.5	30	180	279815 9 (TX25; 4.5 Nm)
20/2	eShop	eShop	6	25	14.5	30	200	279815 8 (TX20; 4.5 Nm)
25/2	eShop	eShop	6	32	19	40	250	279815 8 (TX20; 4.5 Nm)
32/2	eShop	eShop	10	39	22	50	300	279815 8 (TX20; 4.5 Nm)
40/2	eShop	eShop	11.5	49	27	60	350	279815 8 (TX20; 4.5 Nm)
20/2,5	eShop	eShop	6	25	14.5	30	200	279815 8 (TX20; 4.5 Nm)
25/2,5	eShop	eShop	6	32	19	40	250	279815 8 (TX20; 4.5 Nm)
16/3	eShop	eShop	6	23	14.5	30	180	279815 9 (TX25; 4.5 Nm)
20/3	eShop	eShop	6	25	14.5	30	200	279815 8 (TX20; 4.5 Nm)
20/3L	eShop	eShop	6	27.5	17	–	200	279815 8 (TX20; 4.5 Nm)
25/3	eShop	eShop	6	32	19	40	250	279815 8 (TX20; 4.5 Nm)
32/3	eShop	eShop	9.5	40	22	50	300	279815 8 (TX20; 4.5 Nm)
40/3	eShop	eShop	11.5	49	27	60	350	279815 8 (TX20; 4.5 Nm)
25/4	eShop	eShop	9.5	32	19	40	250	279815 8 (TX20; 4.5 Nm)
32/4	eShop	eShop	11.5	40	22	50	300	279815 8 (TX20; 4.5 Nm)
40/4	eShop	eShop	13	49	27	60	350	279815 8 (TX20; 4.5 Nm)
25/5	eShop	eShop	9.5	32	19	40	250	279815 8 (TX20; 4.5 Nm)
32/5	eShop	eShop	11.5	40	22	50	300	279815 8 (TX20; 4.5 Nm)
40/5	eShop	eShop	13	49	27	60	350	279815 8 (TX20; 4.5 Nm)
25/6	eShop	eShop	9.5	32	19	40	250	279815 8 (TX20; 4.5 Nm)
32/6	eShop	eShop	11.5	40	22	50	300	279815 8 (TX20; 4.5 Nm)
40/6	eShop	eShop	13	49	27	60	350	279815 8 (TX20; 4.5 Nm)

Garant GARANT Vario plus

Innovative grooving system – variable, diverse and precise – always the ideal solution!
Find the comprehensive catalogue range on pages 891 – 893.



27 4500_25


27 4531_HSK63


27 4510_4

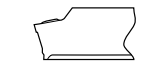

27 4516_67/100

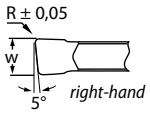

27 4541_3

Garant Parting-off and grooving inserts

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni	○	◔	↻	💧	✕
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
HB7310 / HU7310				220	180	170	140	120				140	130	60	200	250		●	●			●	○
CBN825	350	350	280											50					●	○		●	
PKD				230	190	180	150	130				150	140	70	200	250		●	●			●	○
HB7010				210	170	140													●				●
HB7020				300	250	210									280				●			●	○
CU7025									100	100	100								●	○			●
HB7215	650	650	650													550	400		●			●	●

Single-ended parting-off / grooving inserts







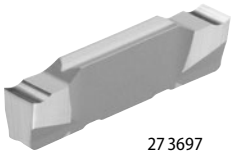
27 3668

Groove width w		mm	2	3	4		●	○	Corner radius R mm
2U 27 3656	Parting-off insert **right-hand 5°**	HB7020	eShop	–	–	10	P	M	0.2
2U 27 3657	Parting-off insert **left-hand 5°**	HB7020	eShop	–	–	10	P	M	0.2
2U 27 3658	Parting-off insert **right-hand 5°**	HB7020	–	eShop	–	10	P	M	0.3
2U 27 3659	Parting-off insert **left-hand 5°**	HB7020	–	eShop	–	10	P	M	0.3
2U 27 3668	Parting-off / grooving insert	HB7020	eShop	–	–	10	P	M	0.2
2L 27 3664		HU7310	eShop	eShop	eShop	10	N	Ti	0.2
2U 27 3670		HB7020	–	eShop	eShop	10	P	M	0.3
Tolerance groove width w		mm	±0.03	±0.03	±0.04				
f		mm/rev.	0.05 – 0.15	0.07 – 0.2	0.08 – 0.26				

Double-ended parting-off / grooving inserts



27 3690



27 3697



27 3704

Groove width w		mm	1,5	2	2,5	3	4	5	6		●	○	Corner radius R mm
2L 27 3678	Parting-off insert **right-hand 10°**	HU7310	–	eShop	eShop	eShop	eShop	–	–	10	N	Ti	0.05
2L 27 3680	Parting-off insert **left-hand 10°**	HU7310	–	eShop	eShop	eShop	eShop	–	–	10	N	Ti	0.05
2U 27 3682	Parting-off insert **right-hand 5°**	HB7020	–	eShop	–	–	–	–	–	10	P	M	0.2
2U 27 3686	Parting-off insert **left-hand 5°**	HB7020	–	eShop	–	–	–	–	–	10	P	M	0.2
2U 27 3690	Parting-off insert **right-hand 5°**	HB7020	–	–	–	eShop	eShop	–	–	10	P	M	0.3
2U 27 3694	Parting-off insert **left-hand 5°**	HB7020	–	–	–	eShop	eShop	–	–	10	P	M	0.3
2U 27 3699	Parting-off / grooving insert	HB7010	eShop	eShop	eShop	–	–	–	–	10	P	K	0.2
2U 27 3700		HB7020	eShop	eShop	eShop	–	–	–	–	10	P	M	0.2
2U 27 3702		HB7215	–	eShop	eShop	–	–	–	–	10	K	P	0.2
2L 27 3709		HU7310	–	eShop	–	eShop	–	–	–	10	N	Ti	0.05
2L 27 3697		HU7310	–	eShop	–	eShop	eShop	eShop	eShop	10	N	Ti	0.2
2U 27 3707		HB7010	–	–	–	eShop	eShop	–	–	10	P	K	0.3
2U 27 3704		HB7020	–	–	–	eShop	eShop	–	–	10	P	M	0.3
2U 27 3706		HB7215	–	–	–	eShop	eShop	–	–	10	K	P	0.3
2U 27 3708		HB7020	–	–	–	–	–	eShop	eShop	10	P	M	0.4
Tolerance groove width w		mm	±0.03	±0.03	±0.03	±0.03	±0.04	±0.04	±0.04				
f		mm/rev.	0.03 – 0.12	0.05 – 0.15	0.06 – 0.17	0.07 – 0.2	0.08 – 0.26	0.08 – 0.28	0.09 – 0.34				

Chip breaker for small diameters and reduction in cutting forces.

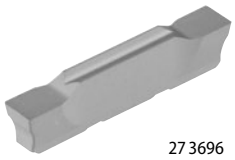


27 3701

Groove width w		mm	1,5	2	2,5	3	4	5	6		●	○	Corner radius R mm
27 3672	Parting-off / grooving insert	CU7025	eShop	–	–	–	–	–	–	10	P	–	0.1
27 3674		HB7010	eShop	–	–	–	–	–	–	10	P	K	0.1
27 3676		HB7020	eShop	–	–	–	–	–	–	10	P	M	0.1
27 3698		CU7025	eShop	eShop	eShop	eShop	eShop	–	–	10	P	–	0.2
27 3701		HB7020	–	eShop	–	eShop	–	–	–	10	P	M	0.2
27 3703		CU7025	–	–	–	–	–	eShop	eShop	10	P	–	0.3
Tolerance groove width w		mm	±0.03	±0.03	±0.03	±0.03	±0.04	±0.04	±0.04				
f		mm/rev.	0.03 – 0.12	0.05 – 0.15	0.06 – 0.17	0.07 – 0.2	0.08 – 0.26	0.08 – 0.28	0.09 – 0.34				

Double-sided grooving insert – blanks

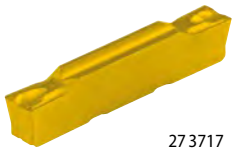
Application: For grinding specific profiles.



27 3696

Groove width w		mm	2,2	2,7	3,4	4,2	5,2	6,55		●	○
27 3696	Grooving insert **Blank**	HU7310	eShop	eShop	eShop	eShop	eShop	eShop	10	N	Ti

Double-ended grooving inserts finishing



27 3717

Groove width w		mm	2	3	4	5	6		●	○	Corner radius R mm
27 3718	Grooving insert **Finishing**	HB7010	eShop	eShop	eShop	–	–	10	P	K	0.2
27 3715		HB7020	eShop	eShop	eShop	–	–	10	P	M	0.2
27 3717		HB7215	eShop	eShop	eShop	–	–	10	K	P	0.2
27 3716		HB7310	eShop	eShop	eShop	–	–	10	N	Ti	0.2
27 3722		CU7025	eShop	–	–	–	–	10	P	–	0.2
27 3720		CU7025	–	eShop	eShop	eShop	eShop	10	P	–	0.4
27 3723		HB7010	–	eShop	eShop	–	–	10	P	K	0.4
27 3719		HB7020	–	eShop	eShop	eShop	eShop	10	P	M	0.4
27 3721		HB7215	–	eShop	eShop	–	–	10	K	P	0.4
Tolerance groove width w		mm	±0.03	±0.03	±0.04	±0.04	±0.04				
a_p		mm	0.2 – 1.1	0.4 – 1.5	0.5 – 2	0.7 – 2.6	0.9 – 3				
f		mm/rev.	0.04 – 0.14	0.05 – 0.2	0.06 – 0.22	0.07 – 0.25	0.08 – 0.3				

Double-ended grooving insert medium machining



27 3729

Groove width w		mm	2	2,5	3	4	5	6		●	○	Corner radius R mm
27 3728	Grooving insert **medium machining**	HB7010	eShop	–	eShop	–	–	–	10	P	K	0.2
27 3725		HB7020	eShop	eShop	eShop	–	–	–	10	P	M	0.2
27 3727		HB7215	eShop	eShop	eShop	–	–	–	10	K	P	0.2
27 3732		CU7025	eShop	–	–	–	–	–	10	P	–	0.2
27 3730		CU7025	–	–	eShop	eShop	eShop	eShop	10	P	–	0.4
27 3733		HB7010	–	–	eShop	eShop	–	–	10	P	K	0.4
27 3729		HB7020	–	–	eShop	eShop	eShop	eShop	10	P	M	0.4
27 3731		HB7215	–	–	eShop	eShop	–	–	10	K	P	0.4
27 3734		HB7020	–	–	eShop	eShop	eShop	eShop	10	P	M	0.8
Tolerance groove width w		mm	±0.03	±0.03	±0.03	±0.04	±0.04	±0.04				
a_p		mm	0.2 – 1.1	0.5 – 1.2	0.8 – 1.7	0.9 – 2.2	1 – 2.7	1.2 – 3.3				
f		mm/rev.	0.05 – 0.15	0.08 – 0.2	0.1 – 0.23	0.1 – 0.26	0.12 – 0.3	0.13 – 0.33				

Double-ended grooving inserts full radius



27 3736

Groove width w		mm	2	2,5	3	4	5	6		●	○
2IJ 27 3736	Grooving insert **Full radius**	CU7025	–	–	eShop	eShop	eShop	eShop	10	P	–
2IJ 27 3738		HB7010	eShop	–	eShop	eShop	–	–	10	P	K
2IJ 27 3735		HB7020	eShop	eShop	eShop	eShop	eShop	eShop	10	P	M
2IJ 27 3737		HB7215	eShop	eShop	eShop	eShop	–	–	10	K	P
2IL 27 3739		HB7310	eShop	–	eShop	eShop	–	–	10	N	Ti
Tolerance groove width w		mm	±0.03	±0.03	±0.03	±0.04	±0.04	±0.04			
a_p		mm	0.1 – 0.6	0.2 – 0.7	0.5 – 1.2	0.6 – 1.6	0.7 – 2	0.8 – 2.3			
f		mm/rev.	0.06 – 0.14	0.08 – 0.16	0.1 – 0.18	0.1 – 0.22	0.12 – 0.26	0.12 – 0.3			

Single-ended grooving inserts CBN / PCD

27 3743/3749 – **With laser-profiled chipbreaker** for optimum chip formation.



27 3740



27 3743



27 3746



27 3749

Groove width w		mm	2	3	4	5	6	●	Corner radius R mm
2IH 27 3740	Grooving insert **straight cutting edge**	CBN825	eShop	eShop	eShop	eShop	–	H	0.2
2IL 27 3743		PCD	eShop	eShop	eShop	eShop	eShop	N	0.2
2IH 27 3746	Grooving insert **Full radius**	CBN825	eShop	eShop	eShop	eShop	eShop	H	–
2IL 27 3749		PCD	eShop	eShop	eShop	eShop	eShop	N	–
Tolerance groove width w		mm	±0.03						

Double-ended grooving inserts for grooves < 3 mm

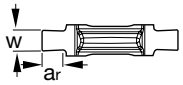
DIN 471 | DIN 472

Application: With grooving toolholder for insert width 3 mm.

Note: The tool holders must be suitably reworked to suit the groove width.



27 3665



Groove width w		mm	0,5	0,7	0,8	0,9	1,15	1,35	1,65	1,90	2,15	2,65		●	○
2IL 27 3665	Grooving insert	HB7010	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10	P	K
a_r		mm	1.3	1.3	1.3	1.3	1.4	1.6	1.9	2.15	2.4	2.9			
for retaining ring to DIN471/472		mm	0.4	0.6	0.7	0.8	1	1.2	1.5	1.75	2	2.5			

Double-ended grooving inserts for grooves < 3 mm set



27 3667

Type			0,9-2,65	●	○
2IL 27 3667	Set of grooving inserts	HB7010	eShop	P	K
Content: 2× each No. 273665			Size 0.9; 1.15; 1.35;		
1× each No. 273665			Size 1.65; 1.90; 2.15; 2.65		

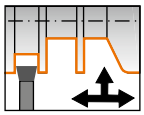
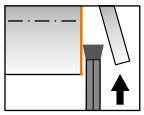
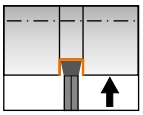
HELIGRIP toolholder

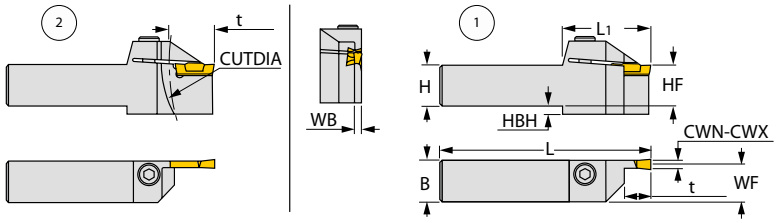
27 3766/3767 Size 16/3; 16/4 – Straight design (Figure 1).
Size 20/3; 25/3; 20/4; 25/4; 20/5; 25/5; 25/6 – Version with radius (figure 2).

Suitable for: Inserts No. 273403 – 273413.
Application: For groove turning, grooving and parting off.



27 3766_25/3



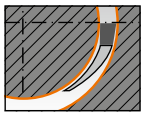
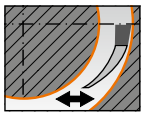
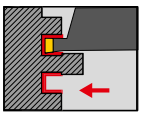
Shank size / groove width w	26D 27 3766	26D 27 3767	t_{max}	L_1	L	CWX	CUTDIA	WF	WB
	HELIGRIP HELI toolholder								
mm	right-hand	left-hand	mm	mm	mm	mm	mm	mm	mm
16/3	–	–	12	30	135	3.18		14.8	2.4
20/3	–	–	–	29	140	3.18	40	18.8	2.4
25/3	–	–	–	36.4	140	3.18	40	23.8	2.4
16/4	–	–	12	29	135	4.76		14.4	3.2
20/4	–	–	–	42	140	4.76	50	18.4	3.2
25/4	–	–	–	42	140	4.76	50	23.4	3.2
20/5	–	–	–	42	140	5	50	17.9	4.2
25/5	–	–	–	42	140	5	50	22.9	4.2
25/6	–	–	–	51.4	140	6.35	60	22.4	5.2

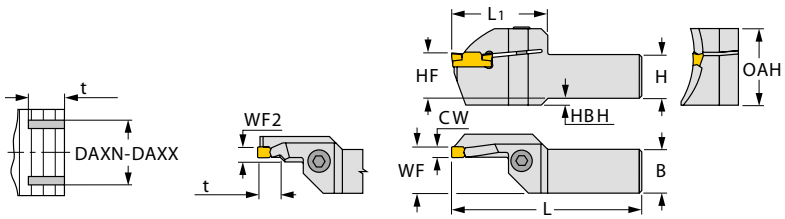
HELIGRIP compact toolholder

Suitable for: Inserts No. 273403 – 273413.
Application: For face grooving and facing.



27 3768_100-140



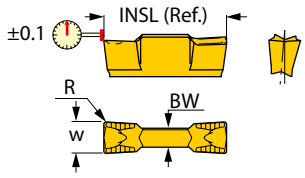
Ø range / cut DAXN-DAXX	26D 27 3768	Groove width w	t_{max}	L_1	B	L	HBH	OAH	WF	H
	HELIGRIP HFHR compact toolholder									
	reinforced right-hand									
mm		mm	mm	mm	mm	mm	mm	mm	mm	mm
40-48	–	4	25	44	20	140	–	31	20.6	20
100-140	–	4	25	44	25	150	–	37	25.74	25
140-240	–	4	25	44	25	150	–	37	25.6	25
35-40	–	5	20	39	20	140	–	31	21	20
130-180	–	5	32	51	25	150	–	37	26	25
180-800	–	5	32	51	25	150	–	37	26	25
100-180	–	6	32	51	25	150	–	37	26.4	25
180-400	–	6	32	51	25	150	3	40	26.4	25
400-3000	–	6	32	51	25	150	3	40	26.4	25

HELIGRIP inserts

Suitable for: Blade carrier No. 273766 – 273768.

Application: For axial and radial grooving, parting off and internal machining.
(HELIGRIP inserts for axial grooving application only compatible with HFHR holder).

Note: The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Chip breaker Y

Positive chip breaker. Soft cut. Reduced cutting forces.



Groove width w / corner radius R	26C 27 3403	26C 27 3405	26C 27 3407		Tolerance groove width w	INSL	a_p	f when turning	f when parting off	f when axial grooving	f when facing
	HELIGRIP inserts										
mm	IC8250	IC830	IC808		mm	mm	mm	mm/rev.	mm/rev.	mm/rev.	mm/rev.
3/0,2	–	–	–	10	0.05	15.8	0.25 – 1.8	0.14 – 0.18	0.07 – 0.11	0.08 – 0.2	0.1 – 0.2
3/0,3	–	–	–	10	0.05	15.8	0.4 – 1.8	0.15 – 0.19	0.07 – 0.11	0.08 – 0.2	0.1 – 0.2
4/0,2	–	–	–	10	0.05	19	0.5 – 1.9	0.16 – 0.21	0.09 – 0.14	0.1 – 0.24	0.15 – 0.3
4/0,4	–	–	–	10	0.05	19	0.25 – 2.4	0.18 – 0.24	0.09 – 0.15	0.1 – 0.24	0.15 – 0.3
5/0,5	–	–	–	10	0.05	19	0.6 – 3	0.2 – 0.3	0.11 – 0.2	0.12 – 0.24	0.15 – 0.35
5/0,8	–	–	–	10	0.05	19	1 – 3	0.23 – 0.35	0.11 – 0.21	0.12 – 0.24	0.15 – 0.35
6/0,5	–	–	–	10	0.05	19	0.6 – 3	0.22 – 0.36	0.13 – 0.23	0.12 – 0.28	0.15 – 0.4
6/0,8	–	–	–	10	0.05	19	1 – 3.6	0.24 – 0.42	0.13 – 0.25	0.12 – 0.28	0.15 – 0.4
●	P	UNI	UNI								
○	M	–	–								
⚙											
Chip breaker	ZC	ZC	ZC								
v_c main application m/min	45 – 260	50 – 140	30 – 200								

Chip breaker T

Optimised chip forming and chip control.



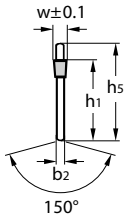
Groove width w / corner radius R	26C 27 3409	26C 27 3411	26C 27 3413		Tolerance groove width w	INSL	a_p	f when turning	f when parting off
	HELIGRIP inserts								
mm	IC8250	IC830	IC808		mm	mm	mm	mm/rev.	mm/rev.
3/0,3	–	–	–	10	0.05	15.8	0.4 – 1.8	0.14 – 0.18	0.07 – 0.11
4/0,4	–	–	–	10	0.05	19	0.5 – 2.4	0.18 – 0.24	0.09 – 0.15
5/0,8	–	–	–	10	0.05	19	1 – 3	0.23 – 0.35	0.11 – 0.21
6/0,8	–	–	–	10	0.05	19	1 – 3.6	0.24 – 0.42	0.13 – 0.25
●	P	UNI	UNI						
○	M	–	–						
⚙									
Chip breaker	T	T	T						
v_c main application m/min	45 – 260	50 – 140	80 – 180						

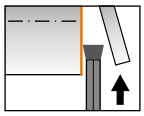
Parting off tools for parting-off inserts No. 278029 - 278036

All sizes with just one insert seat for two groove widths (3 mm and 4 mm). For grooving inserts No. 278029 – 278036.

Attention: Parting-off insert can be clamped only in combination with base holders No. 278008 and 278009. The parting-off insert is easily replaced only by releasing the front screw on the clamping strip of the base holder.

Note: From 14 mm groove depth onwards the second cutter comes into contact with the workpiece. This can lead to scoring.





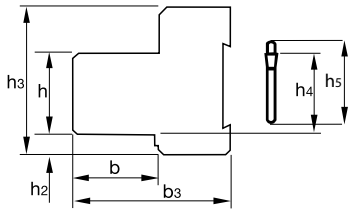


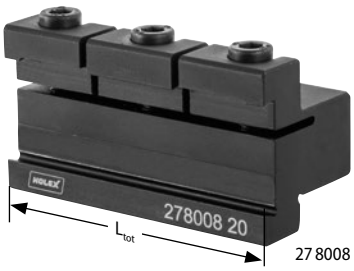
27 8005

Blade height h_5		mm	26	32
22B **27 8005**	Parting-off tool	**neutral**	eShop	eShop
for maximum workpiece ∅		mm	60	65
Width b_2		mm	2.6	
Height h_1		mm	21.4	25
L		mm	110	150

Toolholders for parting-off tools No. 278005

The slotted clamping strip allows the parting-off insert to be clamped in combination with grooving tool No. 278005. Can also be used for many standard grooving tools from other manufacturers (with other insert clamping).



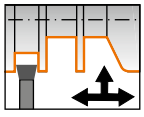


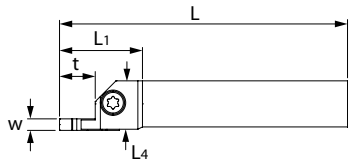
27 8008

Shank height h		mm	16	20	25	For blade height h_5 mm	Clamping screw
22B **27 8008**	Toolholder for parting-off tools		eShop	eShop	–	26	279816 1
22B **27 8009**			–	–	eShop	32	279816 2
h_4		mm	16	20	25		
h_2		mm	12	8	8		
h_3		mm	39	39	48		
b		mm	16	20	20		
b_3		mm	29	33	36		
L_{tot}		mm	78	78	98		

Grooving toolholder with groove depth $t_{max} \leq 21$ mm

All sizes with just one insert seat for two groove widths (3 mm and 4 mm). For grooving inserts No. 278029 – 278036.



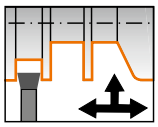


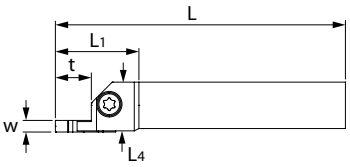

27 8015

Shank size	22B **27 8015**	22B **27 8016**	Groove width w	t_{max}	L_4	L_1	L	Screw
	Grooving toolholder							
mm	**right-hand**	**left-hand**	mm	mm	mm	mm	mm	
16	eShop	eShop	3; 4	21	16	39	109	279816 3 (SW5; 5 Nm)
20	eShop	eShop	3; 4	21	20	39	129	279816 4 (SW5; 5 Nm)
25	eShop	eShop	3; 4	21	25	39	129	279816 4 (SW5; 5 Nm)

HOLEX Grooving toolholder with groove depth $t_{max} \leq 12$ mm

All sizes with just one insert seat for two groove widths (3 mm and 4 mm). For grooving inserts No. 278029 – 278036.





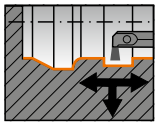


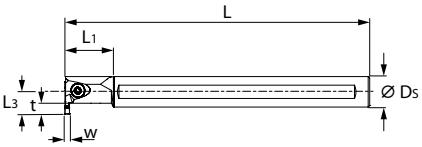
27 8017

Shank size	22B 27 8017	22B 27 8018	Groove width w	t_{max}	L_4	L_1	L	Screw
	Grooving toolholder							
mm	right-hand	left-hand	mm	mm	mm	mm	mm	
16	eShop	eShop	3; 4	12	16	30	100	279816 3 (SW5; 5 Nm)
20	eShop	eShop	3; 4	12	20	30	120	279816 4 (SW5; 5 Nm)
25	eShop	eShop	3; 4	12	25	30	120	279816 4 (SW5; 5 Nm)

HOLEX Boring bar for grooving

All sizes with just one insert seat for two groove widths (3 mm and 4 mm). For grooving inserts No. 278029 – 278036.







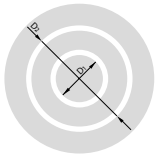
27 8023

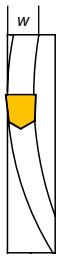
Shank Ø D_S	22B 27 8023	22B 27 8024	Groove width w	t_{max} internal machining	Ø D_{min}	L_3	L_1	L	Screw
	Boring bar for grooving								
mm	right-hand	left-hand	mm	mm	mm	mm	mm	mm	
20	eShop	eShop	3; 4	5	16.5	8	30	200	279816 5 (TX20; 5 Nm)
25	eShop	eShop	3; 4	5	25	12	50	200	279816 6 (SW5; 5 Nm)
32	eShop	eShop	3; 4	5	30	14.5	60	250	279816 7 (SW5; 5 Nm)

HOLEX Mono grooving toolholder for face grooving

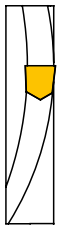
All sizes with just one insert seat for two groove widths (3 mm and 4 mm).
For grooving inserts No. 278029 – 278036.

Note: D_1 = minimum Ø for the first groove / D_2 = maximum Ø for the first cut.
D_2 = 999 in the size designation corresponds to theoretically infinite.





right-hand



left-hand



27 8043



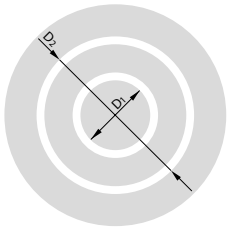
27 8044

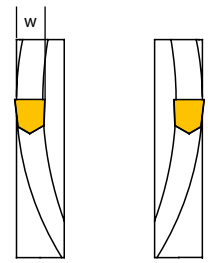
Ø range Groove D_1 / D_2	22B 27 8041	22B 27 8042	22B 27 8043	22B 27 8044	22B 27 8045	22B 27 8046	t_{max}	Shank width b		
	Mono grooving toolholder for face grooving							27 8041 27 8042	27 8043 27 8044	27 8045 27 8046
mm	right-hand	left-hand	right-hand	left-hand	right-hand	left-hand	mm	mm	mm	mm
35/50	eShop	eShop	eShop	eShop	eShop	eShop	14	16×16	20×20	25×25
50/75	eShop	eShop	eShop	eShop	eShop	eShop	14	16×16	20×20	25×25
65/100	eShop	eShop	eShop	eShop	eShop	eShop	14	16×16	20×20	25×25
90/130	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
110/170	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
160/250	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
240/350	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
340/999	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
Groove width w mm	3; 4	3; 4	3; 4	3; 4	3; 4	3; 4				

HOLEX Mono grooving toolholder cranked for face grooving

All sizes with just one insert seat for two groove widths (3 mm and 4 mm).
For grooving inserts No. 278029 – 278036.

Note: D_1 = minimum Ø for the first groove / D_2 = maximum Ø for the first cut.
D_2 = 999 in the size designation corresponds to theoretically infinite.





right-hand *left-hand*



27 8055



27 8056

Ø range Groove D_1 / D_2	22B 27 8051	22B 27 8052	22B 27 8053	22B 27 8054	22B 27 8055	22B 27 8056	t_{max}	Shank width b		
	Mono grooving toolholder, cranked for face grooving							27 8051 27 8052	27 8053 27 8054	27 8055 27 8056
mm	right-hand	left-hand	right-hand	left-hand	right-hand	left-hand	mm	mm	mm	mm
35/50	eShop	eShop	eShop	eShop	eShop	eShop	14	16×16	20×20	25×25
50/75	eShop	eShop	eShop	eShop	eShop	eShop	14	16×16	20×20	25×25
65/100	eShop	eShop	eShop	eShop	eShop	eShop	14	16×16	20×20	25×25
90/130	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
110/170	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
160/250	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
240/350	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
340/999	–	–	eShop	eShop	eShop	eShop	14	–	20×20	25×25
Groove width w mm	3; 4	3; 4	3; 4	3; 4	3; 4	3; 4				

HOLEX Parting-off / grooving inserts

Suitable for: Holders No. 278005 and 278015 – 278056.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
HBG25				150	130	120	100					100	80		140			●	●	○		●	



27 8029



27 8036

			Groove width w	mm	3	4		●	○
22D 27 8029	Parting-off / grooving insert **neutral**	HBG25			eShop	eShop	10	P	M
22D 27 8036	Parting-off / grooving insert **Full radius**	HBG25			eShop	eShop	10	P	M
Corner radius (27 8029)				mm	0.3				
Tolerance groove width w				mm	±0.04				
f				mm/rev.	0.07 – 0.2	0.1 – 0.26			

27

There's more in it for you!

The entire tooling catalogues for the following brands are available from the Hoffmann Group – just ask for them!



Garant Profile turning inserts external/internal

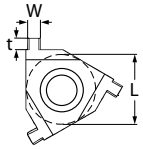
Suitable for: GARANT toolholders (external/internal) No. 271997 – 272172, for threading insert size 16 or 9.3 respectively.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni	○	◔	↻	●	○
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
27 1005–27 1940		250	180	150	150	130	100	90	40			100	100	50	130	150			●			●	○

Profile turning inserts for DIN 471/472

DIN 471 DIN 472

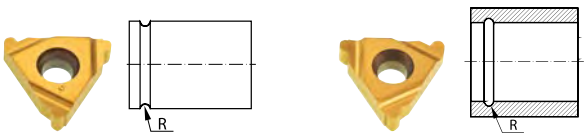


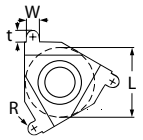


Width groove m (H13)	21J 27 1005	21J 27 1010	21J 27 1015		w	t_{max}		for circlips to DIN 471 / 472 ring thickness
	Partial profile insert for DIN 471, external, right-hand	Partial profile insert for DIN 472 internal, right-hand				27 1005 27 1015	27 1010	
mm	HB7010	HB7010	HB7010		mm	mm	mm	mm
0,5	eShop	eShop	–	10	0.59	1.3	0.7	0.4
0,7	eShop	eShop	–	10	0.79	1.3	0.7	0.6
0,8	eShop	eShop	–	10	0.89	1.3	0.7	0.7
0,9	eShop	eShop	eShop	10	0.99	1.3	0.7	0.8
1,1	eShop	eShop	eShop	10	1.19	1.3	1	1
1,3	eShop	eShop	eShop	10	1.39	1.5	1.5	1.2
1,6	eShop	–	eShop	10	1.69	1.8	–	1.5
1,85	eShop	–	eShop	10	1.94	2	–	1.75
2,15	eShop	–	eShop	10	2.24	2	–	2
2,65	eShop	–	eShop	10	2.74	2	–	2.5
Thickness mm	3.6	2.42	3.6					
Insert size L mm	16	9.3	16					
Shim	No. 272604 size S	–	No. 272624 size S					

Profile turning inserts for DIN 7993

DIN 7993





Groove R	21J 27 1025	21J 27 1035		w	t_{max}
	Partial profile insert for DIN 7993, external, right-hand	Partial profile insert for DIN 7993 internal, right-hand			
mm	HB7010	HB7010		mm	mm
0,4	eShop	–	10	0.8	0.6
0,6	eShop	eShop	10	1.2	0.8
0,9	eShop	–	10	1.8	1.1
1	eShop	eShop	10	2	1.2
Thickness mm	3.6	3.6			
Insert size L mm	16	16			
Shim	No. 272604 size S	No. 272624 size S			

Profile turning insert sets

DIN 471 DIN 472

Type			ER/IR
21J 27 1920	Partial profile insert set size 16 for circlips, right-hand	HB7010	eShop
Machining direction			right-hand
Content: Partial profile, DIN 471 and DIN 472			No. 271005 and 271015 size 1.1; 1.3; 1.6; 1.85
Shim			No. 272604 and 272624 size S



Type			ER/IR
21J 27 1940	Partial profile insert set size 16 for round section snap rings, right-hand	HB7010	eShop
Machining direction			right-hand
Content: Partial profile, DIN 7993			No. 271025 size 0.4; 0.6; 0.9; 1 No. 271035 size 0.6; 0.9; 1
Shim			No. 272604 and 272624 size S



DIN 7993

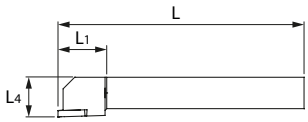
Garant Grooving toolholder for triangular grooving inserts

Grooving toolholder 0° for external radial grooving

Note: For **right-hand toolholders** use **right-hand inserts,** for **left-hand toolholders** use **left-hand inserts.**



27 3910



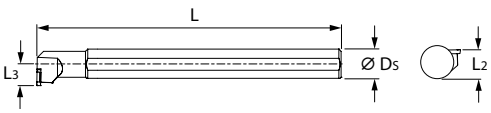
Shank size	21W 27 3910	21W 27 3911	L_4	L_1	L	Insert screw
	Grooving toolholder					
mm	right-hand	left-hand	mm	mm	mm	
12	eShop	eShop	16.2	21.4	100	279815 13
16	eShop	eShop	20.2	21.4	125	279815 13
20	eShop	eShop	25.2	21.4	125	279815 13
25	eShop	eShop	30.2	21.4	150	279815 13

Grooving toolholder for internal radial grooving

Note: For **right-hand toolholders** use **left-hand inserts,** for **left-hand toolholders** use **right-hand inserts.**



27 3914

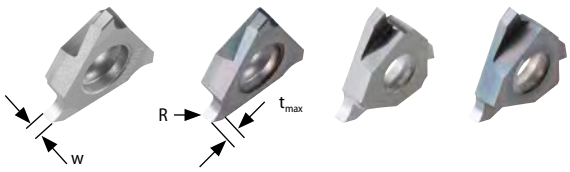


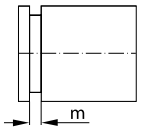
Shank Ø D_s	21W 27 3914	21W 27 3915	Ø D_{min}	L_3	L_2	L	Insert screw
	Boring bar						
mm	right-hand	left-hand	mm	mm	mm	mm	
25	eShop	eShop	30.5	17.5	11.5	250	279815 13
32	eShop	eShop	40	23	15	250	279815 13

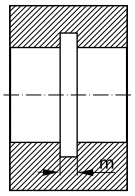
DIN 471 DIN 472

Garant Triangular grooving inserts

Grooving inserts for retaining ring profile grooves, external and internal







Slot width m (H13)	21J 27 3900	21J 27 3902	21J 27 3906	21J 27 3908		w	t_{max}	Corner radius R	for circlips to DIN 471 / 472 ring thickness
	Grooving insert								
mm	right-hand HU9315	right-hand HB9635	left-hand HU9315	left-hand HB9635		mm	mm	mm	mm
0,5	eShop	eShop	eShop	eShop	10	0.525	1.2	0.05	0.4
0,7	eShop	eShop	eShop	eShop	10	0.75	1.2	0.05	0.6
0,8	eShop	eShop	eShop	eShop	10	0.85	1.2	0.05	0.7
0,9	eShop	eShop	eShop	eShop	10	0.95	2	0.05	0.8
1,0	eShop	eShop	eShop	eShop	10	1	2	0.05	–
1,1	eShop	eShop	eShop	eShop	10	1.1	2	0.05	1
1,3	eShop	eShop	eShop	eShop	10	1.3	2	0.2	1.2
1,5	eShop	eShop	eShop	eShop	10	1.5	2.5	0.2	–
1,6	eShop	eShop	eShop	eShop	10	1.6	2.5	0.2	1.5
1,85	eShop	eShop	eShop	eShop	10	1.85	2.5	0.2	1.75
2,0	eShop	eShop	eShop	eShop	10	2	2.5	0.2	–
2,15	eShop	eShop	eShop	eShop	10	2.15	2.5	0.2	2
2,5	eShop	eShop	eShop	eShop	10	2.5	2.5	0.2	–
2,65	eShop	eShop	eShop	eShop	10	2.65	2.5	0.2	2.5
3,0	eShop	eShop	eShop	eShop	10	3	2.5	0.2	–
●	N	P	N	P					
○	–	M	–	M					
⚙	◉	◉	◉	◉					
v_c main application mm/min	70 – 280	110 – 170	70 – 280	110 – 170					
v_c secondary application mm/min	–	90 – 140	–	90 – 140					

PENTA GROOVING SYSTEMS FOR A WIDE RANGE OF APPLICATIONS.

5 cutting edges on one insert.
Best ratio of price per cutting edge.

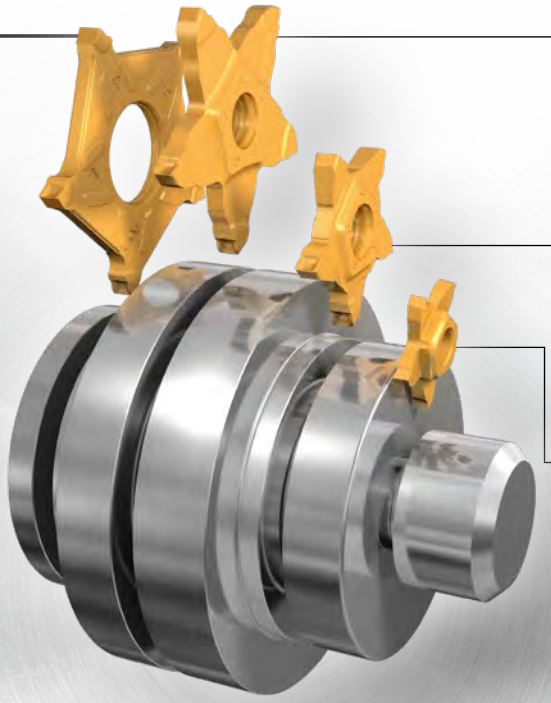
FLASHPENTA
ECO PARTING AND GROOVING LINE

PENTACUT
PARTING & GROOVING LINE

FLASHPENTA

- For all machine types.
- Groove width: 2– 3 mm.
- Groove depth: ≤ 20 mm (in 3 graduations).





PENTACUT 34

- For universal lathes and multi-spindle machines.
- Groove width: 1.5– 4.0 mm.
- Groove depth: ≤ 10 mm.

PENTACUT 24

- For universal lathes and multi-spindle machines.
- Groove width: 0.5– 5.0 mm.
- Groove depth: ≤ 6.5 mm.

PENTACUT 17

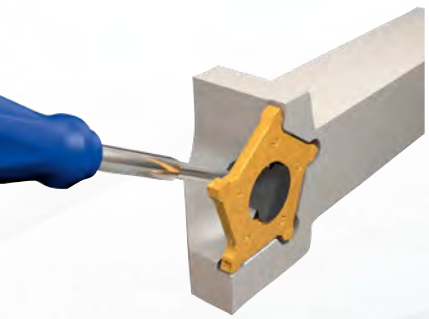
- For sliding headstock lathes and multi-spindle machines.
- Groove width: 0.25– 3.18 mm.
- Groove depth: ≤ 4 mm.

FLASHPENTA.
The highly economical system.

- Excellent flatness and surface quality when parting off.
- Inserts can be mounted on both right and left holders.
- Universal tool material grade IC908 for a wide range of applications.
- Dovetail clamping of the inserts in the holder for maximum stability and easy handling.

PENTACUT.
The highly variable system.

- A wide range of geometries is available (e.g. thread turning and grooving of retaining ring grooves).
- A wide range of tool materials is available.
- A wide range of chip breakers ensures effective chip clearance, even in demanding materials.
- Stable and precise tangential clamping of the inserts in the holder.
- Clamping or loosening possible on both sides of the holder.









PENTACUT PENTA 17 toolholder

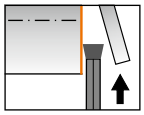
Suitable for: Inserts No. 273956 – 273959.

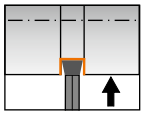
Application: For flush work on workpiece shoulders for groove widths of 0.25 mm – 3.18 mm.

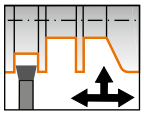
Note: For right-hand toolholders use right-hand inserts, for left-hand toolholders use left-hand inserts.

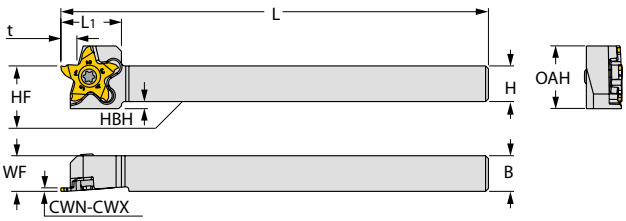


27 3950









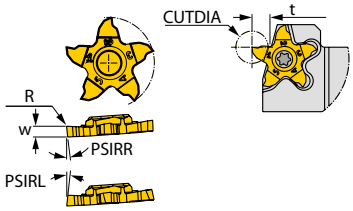
Shank size / insert size	26D 27 3950	26D 27 3951	t_{max}	L_1	L	HBH	OAH
	PENTACUT PCH-17 toolholder						
mm	right-hand	left-hand	mm	mm	mm	mm	mm
10/17	–	–	4	17	120	2	15.6
12/17	–	–	4	17	120	–	17.6
16/17	–	–	4	17	120	–	21.6
20/17	–	–	4	17	120	–	25.6
25/17	–	–	4	17	120	–	30.6

PENTACUT PENTA 17 inserts

Suitable for: Toolholder No. 273950 – 273951.

Application: Universal system for machining small components. For parting off, grooving, threading and reverse turning.

Note: The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.



Chip breaker P

Application: For parting off and grooving. Positive chip breaker. Soft-cutting.



27 3956



27 3957

Groove width w / insert size	26K 27 3956	26K 27 3957		Corner radius R	CUTDIA	t_{max}	f
	PENTACUT 17 N-P inserts						
	right-hand	left-hand					
mm	IC1008	IC1008		mm	mm	mm	mm/rev.
0,25/17	–	–	5	–	1.2	0.6	0.02 – 0.03
0,5/17	–	–	5	–	4	2	0.02 – 0.04
0,8/17	–	–	5	–	5	2.5	0.02 – 0.04
1/17	–	–	5	0.1	6	3	0.02 – 0.05
1,2/17	–	–	5	0.1	6	3	0.02 – 0.05
1,5/17	–	–	5	0.1	8	4	0.02 – 0.07
2/17	–	–	5	0.1	8	4	0.02 – 0.08
●	UNI	UNI					
⚙	◉	◉					
Chip breaker	P	P					
v_c main application m/min	60 – 180	60 – 180					

Chip breaker NP

Application: For grooving and groove turning. Soft-cutting.



27 3958

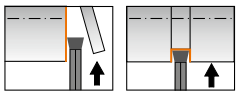


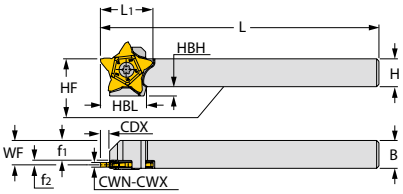
27 3959

Groove width w / insert size	26K 27 3958	26K 27 3959		Corner radius R	CUTDIA	t_{max}	a_p	f when grooving	f when parting off
	PENTACUT 17 N-NP inserts								
	right-hand	left-hand							
mm	IC1008	IC1008		mm	mm	mm	mm	mm/rev.	mm/rev.
2/17	–	–	5	0.8	32	4	0.1 – 2.5	0.05 – 0.15	0.05 – 0.09
3/17	–	–	5	0.8	32	4	0.1 – 3.1	0.05 – 0.19	0.05 – 0.11
●	UNI	UNI							
⚙	◉	◉							
Chip breaker	NP	NP							
v_c main application m/min	50 – 150	50 – 150							

PENTACUT PENTA 24-34 toolholder

Suitable for: Inserts No. 273937 – 273939.







27 3924

Shank size / insert size	26D 27 3924	26D 27 3925	t_{max}	L_1	L	HBH
	PENTACUT PCH 24-34 toolholder					
mm	right-hand	left-hand	mm	mm	mm	mm
12/24	–	–	6.5	19.5	120	4
16/24	–	–	6.5	19.5	120	–
20/24	–	–	6.5	19.5	120	–
25/24	–	–	6.5	19.5	135	–
16/34	–	–	10	31	120	9
20/34	–	–	10	31	120	6
25/34	–	–	10	31	135	–

PENTACUT PENTA 24-34 inserts

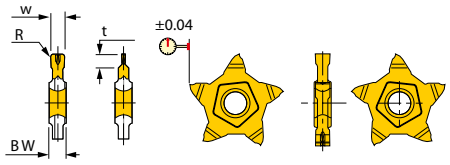
Suitable for: Toolholder No. 273924 – 273925.

Application: First choice for precision grooving. Parting off is possible. Also suitable for interrupted cutting.

Note: The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.

Chip breaker J

Positive chip former. Soft-cutting. Low to medium feed rates.



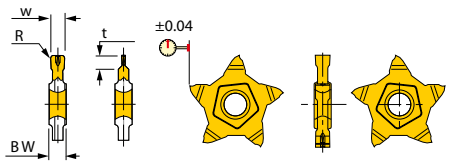


27 3937

Groove width w / insert size	26K 27 3937		Corner radius R	Tolerance groove width w	BW	t_{max}	Tolerance corner radius R	f
	PENTACUT 24N-J/34N-J inserts							
mm	IC908		mm	mm	mm	mm	mm	mm/rev.
1,5/24	–	5	0.1	0.02	4	5	0.02	0.03 – 0.1
2/24	–	5	0.2	0.02	4	6	0.03	0.04 – 0.12
3/24	–	5	0.2	0.02	4	6.5	0.03	0.04 – 0.16
4/24	–	5	0.4	0.02	–	6.25	0.03	0.04 – 0.18
1,5/34	–	5	0.2	0.02	–	8.5	0.02	0.04 – 0.12
2/34	–	4	0.15	0.02	–	8.5	0.02	0.03 – 0.1
3/34	–	4	0.2	0.02	–	10	0.02	0.04 – 0.16
●	UNI							
⚙	◉							
Chip breaker	J							
v_c main application m/min	60 – 180							

Chip breaker C

Chip breakers with a pronounced protective chamfer. Medium to high feed rates.



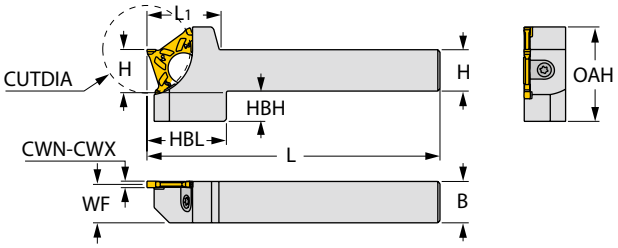


27 3939

Groove width w / insert size	26K 27 3939		Corner radius R	Tolerance groove width w	t_{max}	Tolerance corner radius R	f
	PENTACUT 24N-C/34N-C inserts						
mm	IC908		mm	mm	mm	mm	mm/rev.
1,5/24	–	5	0.1	0.02	5	0.05	0.05 – 0.11
2/24	–	5	0.2	0.02	6	0.05	0.05 – 0.16
3/24	–	5	0.2	0.02	6.2	0.05	0.1 – 0.2
1,5/34	–	4	0.15	0.02	8	0.03	0.03 – 0.07
2/34	–	4	0.2	0.02	8	0.03	0.04 – 0.14
3/34	–	4	0.2	0.02	10	0.03	0.06 – 0.22
4/34	–	4	0.3	0.02	10	0.03	0.06 – 0.3
●	UNI						
⚙	◉						
Chip breaker	C						
v_c main application m/min	60 – 180						

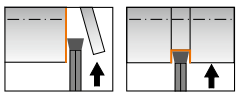
PENTAIQGRIP toolholder

Suitable for: Inserts No. 273580 – 273581.
Application: First choice for parting off up to diameter 40 mm. Grooving is possible.





27 3576



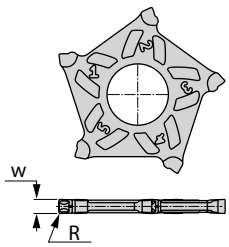
Shank size / insert size	26D 27 3576	26D 27 3577	L_1	L	HBH	HBL	WF	H
	PENTAIQGRIP PCH-IQ toolholder							
mm	right-hand	left-hand	mm	mm	mm	mm	mm	mm
12/22	–	–	26.9	100	8	25.7	11.4	25.5
16/22	–	–	26.9	120	4	23.2	15.4	25.5
12/32	–	–	28.4	100	14	29.5	11.5	33.6
16/32	–	–	28.4	120	10	29.5	15.5	33.6
20/32	–	–	28.4	120	6	29.5	19.5	33.6
20/40	–	–	33.3	135	13	35.6	18.7	43.5
25/40	–	–	33.3	135	8	33.6	23.7	43.5

FLASHPENTA inserts

27 3580 – For parting off and grooving soft components. Minimises burr formation. Positive chip breaker. Soft-cutting. Low to medium feed rates.
27 3581 – For parting off rods and hard materials, and for difficult applications. Chip breakers with a pronounced protective chamfer. Medium to high feed rates.

Suitable for: Toolholder No. 273576 – 273577.
Attention: The maximum groove depth t_{max} applies only up to workpiece Ø 40 mm. From workpiece Ø > 40 mm, the maximum groove depth is reduced.

Note: The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.




27 3580

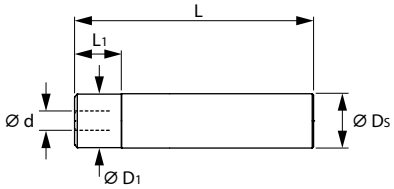

27 3581

Groove width w / insert size	26K 27 3580	26K 27 3581		Corner radius R	Tolerance groove width w	t_{max}	Tolerance corner radius R	f
	FLASHPENTA PMN D-J/D-C inserts							
mm	IC908	IC908		mm	mm	mm	mm	mm/rev.
2/22	–	–	2	0.2	0.03	11	0.03	0.04 – 0.12
2/32	–	–	2	0.2	0.03	16	0.03	0.04 – 0.14
3/40	–	–	2	0.2	0.03	20	0.03	0.06 – 0.22
●	UNI	UNI						
⚙	◉	◉						
Chip breaker	J	C						
v_c main application m/min	60 – 180	60 – 180						

Garant Holder for carbide inserts (axial grooving)



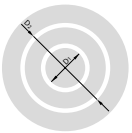
With through-coolant and adjustment screw for positioning the tools.
Suitable for: Cutter inserts No. 274061 and 274063.



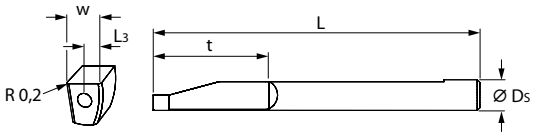
Ø D_s	21U 27 4100	21U 27 4102	L	L_1	Ø D_1	Clamping screw	Adjustment screw
	Holder for carbide inserts						
mm	**Ø d = 6 mm**	**Ø d = 8 mm**	mm	mm	mm		
16	eShop	eShop	88	19	20	279815 15	279815 16
20	eShop	eShop	88	19	20	279815 15	279815 16

Garant Carbide inserts for axial grooving

With through-coolant and additional flank face cooling.
Suitable for: Toolholder No. 274100 – 274102.
Attention: Order size = minimum groove Ø.
Larger groove diameters can be achieved without modification.
$D_1 = D_{min}$ internal diameter.
$D_2 = D_{min}$ external diameter.
L version with greater grooving depth $t_{max.}$




27 4061



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
27 4061/4063	50	90	70	55	55	50	40	35				45	45	25	55	50			●			●	

Ø D_{min} groove D_1/D_2	21L 27 4061	21L 27 4063	Ø D_s	w	L_3	L	t_{max}	f
	Carbide inserts for axial grooving							
mm	**right-hand**	**left-hand**	mm	mm	mm	mm	mm	mm
8/12	eShop	eShop	6	2	1.7	64	15	0.01 – 0.03
8/12L	eShop	eShop	6	2	1.7	64	22	0.01 – 0.03
7/12	eShop	eShop	6	2.5	2.2	64	22	0.01 – 0.03
14/20	eShop	eShop	8	3	2.5	64	27	0.01 – 0.03
14/20L	eShop	eShop	8	3	1.6	80	43	0.01 – 0.03
12/20	eShop	eShop	8	4	1.6	80	43	0.01 – 0.03

Garant Boring bars for axial grooving

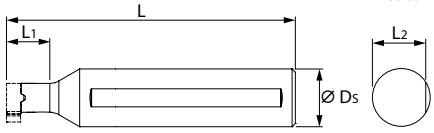
- Carbide insert screwed on to the end face, positive force transmission due to end face serrations.
- Insert change is very easy to handle.

27 3969 – Elliptical profile for very high flexional resistance.
27 3966/3969 – Low-vibration carbide shank with soldered steel head and hardened insert seat.


27 3963


27 3966

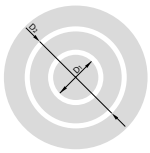

27 3969



Shank Ø D_s / overhang L_1	21U 27 3963	21U 27 3966	21U 27 3969	L_2	L	Insert screw
	Boring bar steel	Boring bar carbide				
mm		**round**	**elliptical**	mm	mm	
12/12	eShop	–	–	11	70	279810 1
12/20	eShop	–	–	11	78	279810 1
12/34	–	eShop	eShop	11	100	279810 1
12/45	–	eShop	eShop	11	110	279810 1
12/64	–	–	eShop	11	130	279810 1
16/12	eShop	–	–	15	92	279810 1
16/20	eShop	–	–	15	100	279810 1
16/34	–	eShop	eShop	15	100	279810 1
16/45	–	eShop	eShop	15	110	279810 1
16/64	–	–	eShop	15	130	279810 1
16/75	–	–	eShop	15	145	279810 1

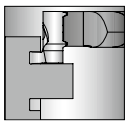
Garant Cutter inserts for axial grooving

Attention: Ordering size = minimum groove ∅.
Capable of cutting larger groove ∅ without modification.
$D_1 = D_{min}$ internal ∅.
$D_2 = D_{min}$ external ∅.
L type with larger groove depth t_{max}.



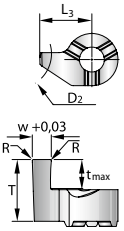
Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
27 3973–27 3979	200	120	120	110	110	90	90	90				80	60	25	60	100			●	○	○	●	

For external axial grooving

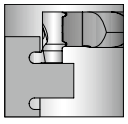




27 3973

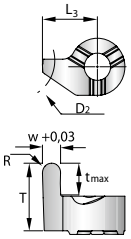


∅ D_{min} groove D_1/D_2	21H	27 3973	T	L_3	t_{max}	R	w	f
		Neutral cutter insert						
mm		HB720	mm	mm	mm	mm	mm	mm/rev.
10/12		eShop	7.3	9	1.5	0.2	1	0.01 – 0.02
9/12		eShop	8.3	9	2.5	0.2	1.5	0.01 – 0.02
8/12		eShop	8.8	9	3	0.2	2	0.01 – 0.02
8/12L		eShop	10.7	9	5	0.2	2	0.01 – 0.02
7/12		eShop	8.8	9	3	0.2	2.5	0.01 – 0.02
7/12L		eShop	10.7	9	5	0.2	2.5	0.01 – 0.02
6/12		eShop	8.8	9	3	0.2	3	0.01 – 0.02
6/12L		eShop	10.7	9	5	0.2	3	0.01 – 0.02



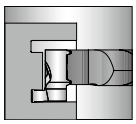


27 3975



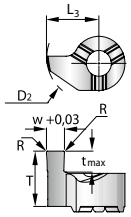
∅ D_{min} groove D_1/D_2	21H	27 3975	T	L_3	t_{max}	R	w	f
		Full-radius cutter insert						
mm		HB720	mm	mm	mm	mm	mm	mm/rev.
8/12L		eShop	10.7	9	5	1	2	0.01 – 0.02
7/12L		eShop	10.7	9	5	1.25	2.5	0.01 – 0.02
6/12L		eShop	10.7	9	5	1.5	3	0.01 – 0.02

For internal axial grooving

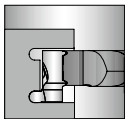




27 3977

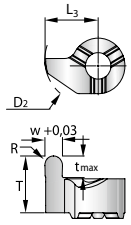


∅ D_{min} groove D_1/D_2	21H	27 3977	∅ D_{min}	T	L_3	t_{max}	R	w	f
		Neutral cutter insert							
mm		HB720	mm	mm	mm	mm	mm	mm	mm/rev.
12/14		eShop	14	7.7	9	1.5	0.2	1	0.01 – 0.02
11/14		eShop	14	8.7	9	2.5	0.2	1.5	0.01 – 0.02
10/14		eShop	14	9.2	9	3	0.2	2	0.01 – 0.02
10/14L		eShop	14	10.7	9	5	0.2	2	0.01 – 0.02
9/14		eShop	14	9.2	9	3	0.2	2.5	0.01 – 0.02
9/14L		eShop	14	10.7	9	5	0.2	2.5	0.01 – 0.02
8/14		eShop	14	9.2	9	3	0.2	3	0.01 – 0.02
8/14L		eShop	14	10.7	9	5	0.2	3	0.01 – 0.02





27 3979



∅ D_{min} groove D_1/D_2	21H	27 3979	∅ D_{min}	T	L_3	t_{max}	R	w	f
		Full-radius cutter insert							
mm		HB720	mm	mm	mm	mm	mm	mm	mm/rev.
12/14		eShop	14	7.7	9	1.5	0.5	1	0.01 – 0.02
10/14		eShop	14	9.2	9	3	1	2	0.01 – 0.02
8/14		eShop	14	9.2	9	3	1.5	3	0.01 – 0.02

Garant

Vario Plus Eco grooving toolholder

Optimised system stability thanks to multiple screw clamping and form fit.

Supplied with: Including assembly screws.

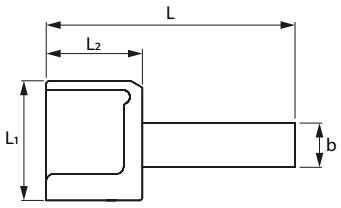
Note: Coolant transfer only possible in conjunction with GARANT Master eco toolholders No. 317906 – 319136. Optional connection possibility via hose connection (G1/8 inch) No. 269207 and 269208.

Straight 0°

Suitable for:

27 4500 – Vario plus eco blade carriers No. 274510; 274512; 274514; 274516; 274518; 274520; 274522; 274540.

27 4501 – Vario plus Eco blade carriers No. 274511; 274513; 274515; 274517; 274519; 274521; 274523; 274541.





27 4500

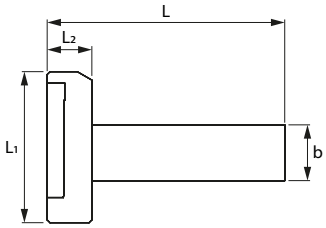
Shank width b	21U 27 4500	21U 27 4501	L	L_1	L_2	Assembly bolt	Clamping screw	Clamping strip
	Vario plus Eco toolholder straight 0°							
mm	right-hand	left-hand	mm	mm	mm			
20	eShop	eShop	112.5	54	43.5	279815 9	279815 24	279928 7
25	eShop	eShop	127.5	54	43.5	279815 9	279815 24	279928 7

Cranked 90°

Suitable for:

27 4502 – Vario plus Eco blade carriers No. 274511; 274513; 274515; 274517; 274519; 274521; 274523; 274541.

27 4503 – Vario plus eco blade carriers No. 274510; 274512; 274514; 274516; 274518; 274520; 274522; 274540.





27 4502

Shank width b	21U 27 4502	21U 27 4503	L	L_1	L_2	Assembly bolt	Clamping screw	Clamping strip
	Vario plus Eco toolholder cranked 90°							
mm	right-hand	left-hand	mm	mm	mm			
20	eShop	eShop	85	54	16	279815 9	279815 24	279928 7
25	eShop	eShop	100	54	16	279815 9	279815 24	279928 7

Garant

Vario Plus Eco blade carrier, straight

Suitable for:

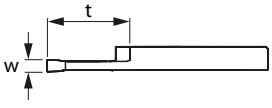
27 4510 – Vario plus Eco toolholder No. 274500; 274503; 274530.

27 4511 – Vario plus Eco toolholder No. 274501; 274502; 274531.

Attention: Without clamping screws (these are supplied with the toolholders).

Note: With a groove width of 2 mm and 3 mm, the groove depth t_{max} = 21 mm is limited to workpiece Ø up to 150 mm. With a workpiece Ø > 150 mm, t_{max} = 17 mm applies.
With a groove width of 4 mm, the groove depth t_{max} = 28 mm is limited to workpiece Ø up to 150 mm. With a workpiece Ø > 150 mm, t_{max} = 24 mm applies.


27 4510



Groove width w	21U 27 4510	21U 27 4511	t_{max}	suitable indexable insert	Clamping screw
	Vario plus Eco blade carrier straight				
mm	right-hand	left-hand	mm		
2	eShop	eShop	21	No. 273656 – 273749	279815 9
3	eShop	eShop	21	No. 273656 – 273749	279815 9
4	eShop	eShop	28	No. 273656 – 273749	279815 9

Garant

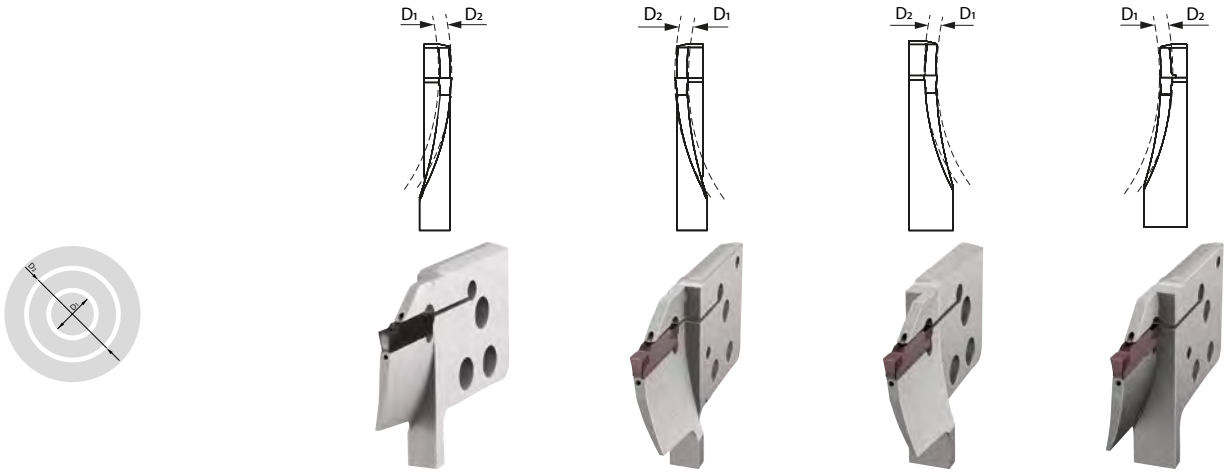
Vario Plus Eco blade carrier for face grooving

Optimised system stability thanks to multiple screw clamping and form fit.

Suitable for: Toolholder No. 274500 – 274503, 274530, 274531.

Attention: Without clamping screws (these are supplied with the toolholders).

Note: D_1 = minimum ∅ for the first first groove / D_2 = minimum ∅ for the second groove.



Groove width w = 2 mm

∅ range for groove D_1 / D_2	21U 27 4512	21U 27 4513	21U 27 4514	21U 27 4515	t_{max}	suitable indexable insert
	Vario plus Eco blade carrier, convex		Vario plus Eco blade carrier, concave			
	for face grooving					
mm	right-hand	left-hand	right-hand	left-hand	mm	
26/34	eShop	eShop	eShop	eShop	16	No. 273656 – 273749
33/43	eShop	eShop	eShop	eShop	16	No. 273656 – 273749
41/53	eShop	eShop	eShop	eShop	16	No. 273656 – 273749
51/67	eShop	eShop	eShop	eShop	16	No. 273656 – 273749
65/85	eShop	eShop	eShop	eShop	16	No. 273656 – 273749
82/110	eShop	eShop	eShop	eShop	16	No. 273656 – 273749
105/143	eShop	eShop	eShop	eShop	18	No. 273656 – 273749
138/190	eShop	eShop	eShop	eShop	18	No. 273656 – 273749
Groove width w mm	2	2	2	2		

Groove width w = 3 mm

∅ range for groove D_1 / D_2	21U 27 4516	21U 27 4517	21U 27 4518	21U 27 4519	t_{max}	suitable indexable insert
	Vario plus Eco blade carrier, convex		Vario plus Eco blade carrier, concave			
	for face grooving					
mm	right-hand	left-hand	right-hand	left-hand	mm	
26/39	eShop	eShop	eShop	eShop	18	No. 273656 – 273749
33/50	eShop	eShop	eShop	eShop	18	No. 273656 – 273749
43/60	eShop	eShop	eShop	eShop	18	No. 273656 – 273749
53/76	eShop	eShop	eShop	eShop	18	No. 273656 – 273749
67/100	eShop	eShop	eShop	eShop	18	No. 273656 – 273749
90/130	eShop	eShop	eShop	eShop	21	No. 273656 – 273749
110/170	eShop	eShop	eShop	eShop	21	No. 273656 – 273749
140/230	eShop	eShop	eShop	eShop	21	No. 273656 – 273749
Groove width w mm	3	3	3	3		

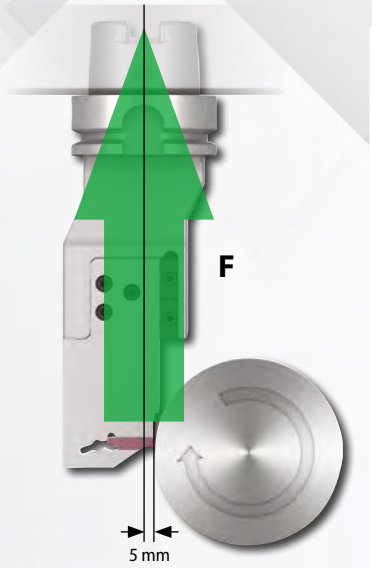
Groove width w = 4 mm

∅ range for groove D_1 / D_2	21U 27 4520	21U 27 4521	21U 27 4522	21U 27 4523	t_{max}	suitable indexable insert
	Vario plus Eco blade carrier, convex		Vario plus Eco blade carrier, concave			
	for face grooving					
mm	right-hand	left-hand	right-hand	left-hand	mm	
26/41	eShop	eShop	eShop	eShop	22	No. 273656 – 273749
38/55	eShop	eShop	eShop	eShop	22	No. 273656 – 273749
52/72	eShop	eShop	eShop	eShop	25	No. 273656 – 273749
67/100	eShop	eShop	eShop	eShop	25	No. 273656 – 273749
90/130	eShop	eShop	eShop	eShop	28	No. 273656 – 273749
110/170	eShop	eShop	eShop	eShop	28	No. 273656 – 273749
150/250	eShop	eShop	eShop	eShop	28	No. 273656 – 273749
Groove width w mm	4	4	4	4		

Garant VARIO PLUS ECO Y GROOVING – ADVANTAGES

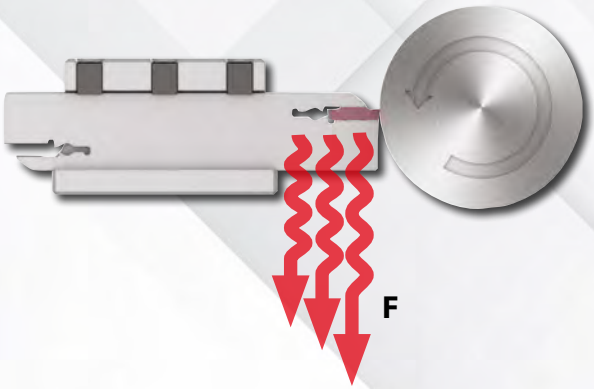
Parting off with Y-axis

- Favourable application of force directly into the spindle.
- Vibrations are significantly reduced – better surface quality.
- High feed rates are possible.
- Prerequisite: Y-axis on the machine.
- Ideal for multi-task machines.
- Peak height offset in y = -5 mm.



Standard parting-off method

- Can be used for all machines.
- Attractively priced.
- Unfavourable application of force at larger groove depths.
- Susceptible to vibrations.

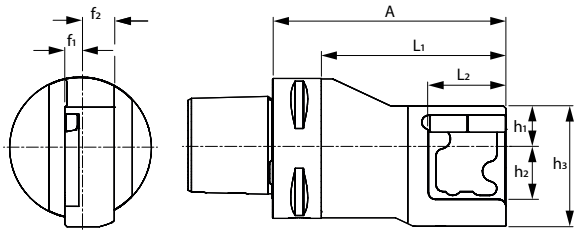


Garant Vario Plus Eco toolholder HSK-T / PSC

Optimised system stability thanks to multiple screw clamping and form fit.

Suitable for: Vario plus Eco blade carrier.

Supplied with: Including assembly screws.





27 4531

Shank mounting type	21U 27 4530	21U 27 4531	Dimension A	L_1	L_2	f_1	f_2	h_1	h_2	h_3	Assembly bolt	Clamping screw	Clamping strip
	Vario plus Eco toolholder												
	right-hand	left-hand	mm	mm	mm	mm	mm	mm	mm	mm			
HSK63	eShop	eShop	105	79	35	7	15	19	23	54	279815 9	279815 24	279928 7
PSC63	eShop	eShop	105	83	35	7	15	19	23	54	279815 9	279815 24	279928 7

Garant Vario Plus Eco Y blade carrier, straight

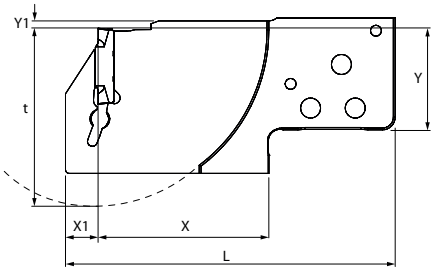
For parting off shafts with a maximum diameter of 90 mm.

Suitable for:

27 4540 – Vario plus Eco toolholder No. 274530; 274500; 274503.

27 4541 – Vario plus Eco toolholder No. 274531; 274501; 274502.

Attention: Without clamping screws (these are supplied with the toolholders).





27 4541

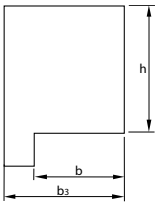
Groove width w	21U 27 4540	21U 27 4541	t_{max}	L	X	X1	Y1	Y	suitable indexable insert	Clamping screw
	Vario Plus Eco Y blade carrier									
mm	right-hand	left-hand	mm	mm	mm	mm	mm	mm		
3	eShop	eShop	45	90.8	47	9	2	28	273656 – 273749	279815 9

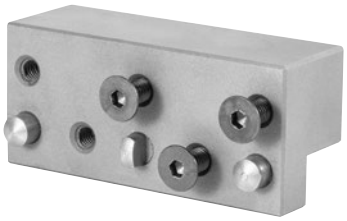
L R

Garant

Holder for Medium / Medium-Plus blade carrier

Application: For blade carriers No. 274010 – 274052; 274104 – 274110; 274136 – 274137.





Shank height h	mm	20	25	32	40	Assembly bolt	Dowel pins with plane surfaces	Dowel pin
21U 27 4002	Medium / Medium-Plus toolholder	eShop	eShop	eShop	eShop	279815 19	279934 1	279936 1
b	mm	18	18	28	–			
b_3	mm	30	30	40	40			
L_{tot}	mm	85						

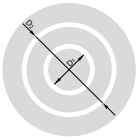
Garant

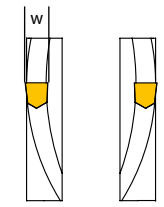
Blade carrier for face grooving

Application: In conjunction with toolholder No. 274002 or alternatively with adapter No. 274001 and suitable toolholder for parting-off tools.

Attention: Without clamping screws (these are supplied with the toolholders). The assembly key No. 279940 1-3 must be ordered separately.

Note: D_1 = minimum ∅ for the first first groove / D_2 = minimum ∅ for the second groove.

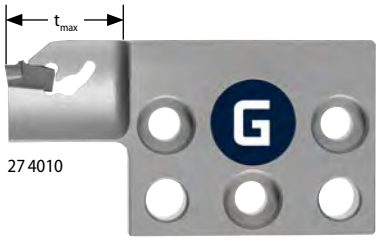




right-hand *left-hand*

Medium blade carrier

For inserts No. 275000 – 275015.



27 4010



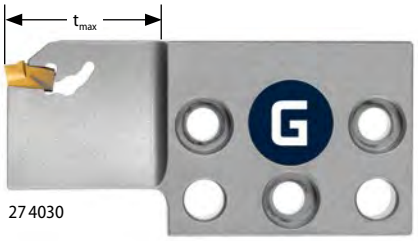
27 4012

∅ range Groove D_1 / D_2	21U 27 4010	21U 27 4012	21U 27 4014	21U 27 4016	t_{max}	
	Medium blade carrier for face grooving				27 4010 27 4012	27 4014 27 4016
mm	right-hand	left-hand	right-hand	left-hand	mm	mm
19/30	eShop	eShop	eShop	eShop	16	12
24/35	eShop	eShop	eShop	eShop	16	12
29/40	eShop	eShop	eShop	eShop	22	14
34/50	eShop	eShop	eShop	eShop	22	14
44/60	eShop	eShop	eShop	eShop	26	16
Groove width w mm	3	3	3	3		

∅ range Groove D_1 / D_2	21U 27 4020	21U 27 4022	21U 27 4024	21U 27 4026	t_{max}	
	Medium blade carrier for face grooving				27 4020 27 4022	27 4024 27 4026
mm	right-hand	left-hand	right-hand	left-hand	mm	mm
17/30	eShop	eShop	eShop	eShop	18	14
22/35	eShop	eShop	eShop	eShop	18	14
27/40	eShop	eShop	eShop	eShop	24	16
32/50	eShop	eShop	eShop	eShop	24	16
42/60	eShop	eShop	eShop	eShop	28	18
Groove width w mm	4	4	4	4		

Medium-Plus blade carrier

For grooving inserts No. 275021 – 275048. D_2 = 999 in the size designation corresponds to theoretically infinite.



27 4030



27 4032

∅ range Groove D_1 / D_2	21U	27 4030	21U	27 4032	21U	27 4034	21U	27 4036	t_{max}	
		Medium-Plus blade carrier for face grooving							27 4030 27 4032	27 4034 27 4036
mm		right-hand		left-hand		right-hand		left-hand	mm	mm
54/75		eShop		eShop		eShop		eShop	26	16
69/100		eShop		eShop		eShop		eShop	28	18
94/130		eShop		eShop		eShop		eShop	28	18
124/180		eShop		eShop		eShop		eShop	28	18
174/250		eShop		eShop		eShop		eShop	30	20
244/350		eShop		eShop		eShop		eShop	30	20
344/999		eShop		eShop		eShop		eShop	30	20
Groove width w mm		3		3		3		3		

∅ range Groove D_1 / D_2	21U	27 4040	21U	27 4042	21U	27 4044	21U	27 4046	t_{max}	
		Medium-Plus blade carrier for face grooving							27 4040 27 4042	27 4044 27 4046
mm		right-hand		left-hand		right-hand		left-hand	mm	mm
52/75		eShop		eShop		eShop		eShop	28	18
67/100		eShop		eShop		eShop		eShop	30	20
92/130		eShop		eShop		eShop		eShop	30	20
122/180		eShop		eShop		eShop		eShop	30	20
172/250		eShop		eShop		eShop		eShop	32	22
242/350		eShop		eShop		eShop		eShop	32	22
342/999		eShop		eShop		eShop		eShop	32	22
Groove width w mm		4		4		4		4		

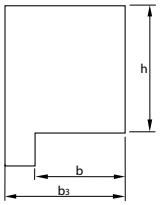
∅ range Groove D_1 / D_2	21U	27 4050	21U	27 4052	t_{max}
		Medium-Plus blade carrier for face grooving			
mm		right-hand		left-hand	mm
35/60		eShop		eShop	25
50/75		eShop		eShop	25
65/100		eShop		eShop	25
90/130		eShop		eShop	25
120/180		eShop		eShop	25
170/250		eShop		eShop	25
240/350		eShop		eShop	25
340/999		eShop		eShop	25
Groove width w mm		5; 6		5; 6	

L R

Garant

Holder for Heavy-Duty blade carrier

Application: For blade carriers No. 274060 – 274076; 274118 – 274120; 274138 – 274139.





27 4004

Shank height h	mm	25	32	40	50	Assembly bolt	Dowel pins with plane surfaces	Dowel pin
21U **27 4004**	Heavy-Duty toolholder	eShop	eShop	eShop	eShop	279815 20	279934 2	279936 2
b	mm	18	28	–	–			
b_3	mm	30	40	40	50			
L_{tot}	mm	140						

Garant

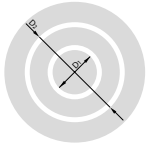
Heavy-Duty blade carrier for face grooving

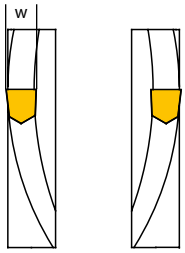
For grooving inserts No. 275021 – 275048.

Application: In conjunction with toolholder No. 274004 or alternatively with adapter No. 274003 and suitable toolholder for parting-off tools.

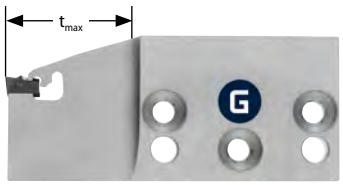
Attention: Without clamping screws (these are supplied with the toolholders). The assembly key No. 279940 1-3 must be ordered separately.

Note: D_1 = minimum Ø for the first groove / D_2 = maximum Ø for the first cut.
D_2 = 999 in the size designation corresponds to theoretically infinite.





right-hand *left-hand*



27 4060



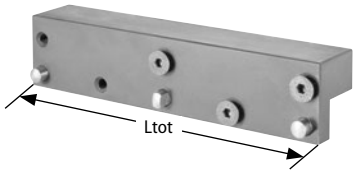
27 4064

Ø range Groove D_1 / D_2	21U **27 4060**	21U **27 4064**	t_{max}
	Heavy-Duty blade carrier **for face grooving**		
mm	**right-hand**	**left-hand**	mm
35/60	eShop	eShop	30
50/75	eShop	eShop	30
65/100	eShop	eShop	35
90/130	eShop	eShop	40
120/180	eShop	eShop	40
170/250	eShop	eShop	40
240/350	eShop	eShop	40
340/999	eShop	eShop	40
Groove width w mm	5; 6	5; 6	

Ø range Groove D_1 / D_2	21U **27 4070**	21U **27 4072**	21U **27 4074**	21U **27 4076**	t_{max}	
	Heavy-Duty blade carrier **for face grooving**				27 4070 27 4072	27 4074 27 4076
mm	**right-hand**	**left-hand**	**right-hand**	**left-hand**	mm	mm
44/80	–	–	eShop	eShop	–	50
64/100	–	–	eShop	eShop	–	50
84/130	eShop	eShop	eShop	eShop	70	50
114/160	eShop	eShop	eShop	eShop	70	50
144/200	eShop	eShop	eShop	eShop	70	50
184/250	eShop	eShop	eShop	eShop	70	50
234/350	eShop	eShop	eShop	eShop	70	50
334/999	eShop	eShop	eShop	eShop	70	50
Groove width w mm	8	8	8	8		

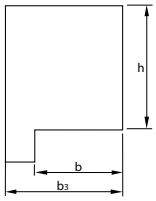
L R

Garant Holder for Heavy-Duty-Plus blade carrier



Application: For blade carriers No. 274079 – 274090; 274124 – 274134.

Shank height h	mm	25	32	40	50	Assembly bolt	Dowel pins with plane surfaces	Dowel pin
21U 27 4006	Heavy-Duty-Plus toolholder	eShop	eShop	eShop	eShop	279815 20	279934 2	279936 2
b	mm	25	32	38	–			
b_3	mm	37	44	50	50			
L_{tot}	mm	220						



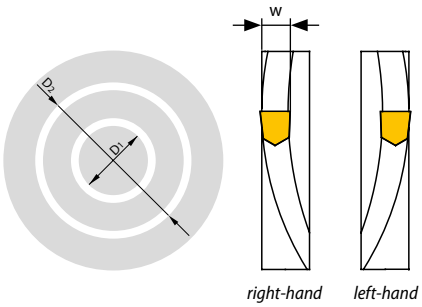
Garant Heavy-Duty-Plus blade carrier for face grooving

For grooving inserts No. 275021 – 275048.

Application: In conjunction with toolholder No. 274006.

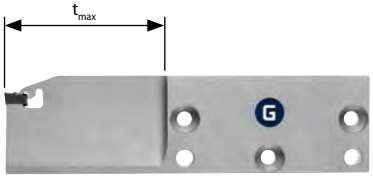
Attention: Without clamping screws (these are supplied with the toolholders). The assembly key No. 279940 1-3 must be ordered separately.

Note: D_1 = minimum ∅ for the first groove / D_2 = maximum ∅ for the first cut. D_2 = 999 in the size designation corresponds to theoretically infinite.



Blade carrier with cutting depth t_{max} ≤ 120 mm

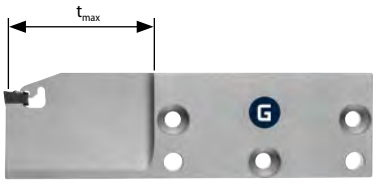
∅ range Groove D_1 / D_2	21U 27 4079	21U 27 4082	t_{max}
	Heavy-Duty-Plus blade carrier for face grooving		
mm	right-hand	left-hand	mm
144/200	eShop	eShop	120
184/250	eShop	eShop	120
234/350	eShop	eShop	120
334/999	eShop	eShop	120
Groove width w mm	8	8	



27 4079

Blade carrier with cutting depth t_{max} ≤ 100 mm

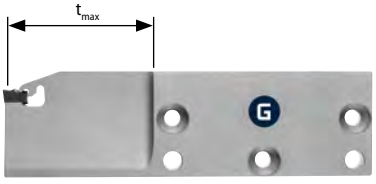
∅ range Groove D_1 / D_2	21U 27 4084	21U 27 4086	t_{max}
	Heavy-Duty-Plus blade carrier for face grooving		
mm	right-hand	left-hand	mm
114/160	eShop	eShop	100
144/200	eShop	eShop	100
184/250	eShop	eShop	100
234/350	eShop	eShop	100
334/999	eShop	eShop	100
Groove width w mm	8	8	



27 4084

Blade carrier with cutting depth t_{max} ≤ 80 mm

∅ range Groove D_1 / D_2	21U 27 4088	21U 27 4090	t_{max}
	Heavy-Duty-Plus blade carrier for face grooving		
mm	right-hand	left-hand	mm
84/130	eShop	eShop	80
114/160	eShop	eShop	80
144/200	eShop	eShop	80
184/250	eShop	eShop	80
234/350	eShop	eShop	80
334/999	eShop	eShop	80
Groove width w mm	8	8	



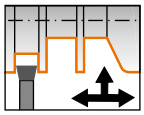
27 4088



Garant Blade carrier for radial grooving

Toolholders No. 273893 – 273894; 319133 20/50.

Attention: Without clamping screws (these are supplied with the toolholders).
The assembly key No. 279940 1-3 must be ordered separately.





27 4118

Medium-Plus blade carrier

Application: In conjunction with toolholder No. 274002 or alternatively with adapter No. 274001 and suitable toolholder for parting-off tools.

Groove width w	21U 27 4104	21U 27 4106	21U 27 4108	21U 27 4110	t_{max}	
	Medium-Plus blade carrier for radial grooving				27 4104 27 4106	27 4108 27 4110
mm	right-hand	left-hand	right-hand	left-hand	mm	mm
3	eShop	eShop	eShop	eShop	30	20
4	eShop	eShop	eShop	eShop	32	22
5/6	–	–	eShop	eShop	–	25

Heavy-Duty blade carrier

Application: In conjunction with toolholder No. 274004 or alternatively with adapter No. 274003 and suitable toolholder for parting-off tools.

Groove width w	21U 27 4118	21U 27 4120	t_{max}
	Heavy-Duty blade carrier for radial grooving		
mm	right-hand	left-hand	mm
5/6	eShop	eShop	40
8	eShop	eShop	50

Heavy-Duty-Plus blade carrier

Application: In conjunction with toolholder No. 274006.

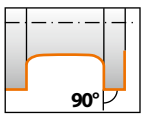
Groove width w	21U 27 4124	21U 27 4126	21U 27 4128	21U 27 4130	21U 27 4132	21U 27 4134	t_{max}		
	Heavy-Duty-Plus blade carrier for radial grooving						27 4124 27 4126	27 4128 27 4130	27 4132 27 4134
mm	right-hand	left-hand	right-hand	left-hand	right-hand	left-hand	mm	mm	mm
8	eShop	eShop	eShop	eShop	eShop	eShop	120	100	80

Garant Copy turning tool, modular

Modular copy turning tool for cutting depths up to 70 mm.

Attention: Without clamping screws (these are supplied with the toolholders).

Up to cutting depth $T_{max} = 70$ mm







27 4136

Radial Medium / Medium-Plus blade carrier

Application: In conjunction with toolholder No. 274002 or alternatively with adapter No. 274001 and suitable toolholder for parting-off tools.

Insert size	21U 27 4136	21U 27 4137	t_{max}	suitable indexable insert	Set of insert screws
	Radial Medium / Medium-Plus blade carrier				
mm	right-hand	left-hand	mm		
06	eShop	eShop	30	RC.T 0602	269028 22
08	eShop	eShop	40	RC.T 0803	269028 29

Radial Heavy-Duty blade carrier

Application: In conjunction with toolholder No. 274004 or alternatively with adapter No. 274003 and suitable toolholder for parting-off tools.



27 4138

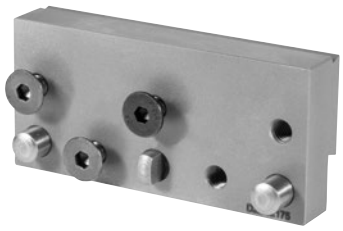
Insert size	21U 27 4138	21U 27 4139	t_{max}	suitable indexable insert	Set of insert screws	Shim	Shim screw
	Radial Heavy-Duty blade carrier						
mm	right-hand	left-hand	mm				
10	eShop	eShop	60	RC.X 1003	269028 1	269005 11	269013 2
12	eShop	eShop	70	RC.X 1204	269028 2	269005 10	269013 2

Garant Adapter for blade carrier / parting-off tool toolholder

Suitable for: Parting-off tool toolholder.
Application:

27 4001 – For directly adapting all Medium/Medium-Plus blade carriers No. 274010 – 274137 with toolholder No. 273893; 273986; 273988; 273993; 274045; 278008 or toolholders from many other manufacturers.

27 4003 – For direct adaptation of all Heavy-Duty blade carriers No. 274060 – 274139 with toolholder No. 273894; 273990; 273692; 273994; 274097; 278009 or toolholders from many other manufacturers.



27 4001

For blade height h_5	mm	26	32	Assembly bolt	Dowel pins with plane surfaces	Dowel pin
21U 27 4001	Adapter for blade carrier/toolholder	eShop	–	279815 19	279934 1	279936 1
21U 27 4003		–	eShop	279815 20	279934 2	279936 2
L_{tot}	mm	85	80			
Suitable for: Blade carrier		No. 274010 – 274052; 274104 – 274110; 274136 – 274137 (Medium/Medium Plus)	No. 274060 – 274076; 274118 – 274120; 274138 – 274139 (Heavy-Duty)			

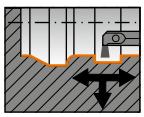


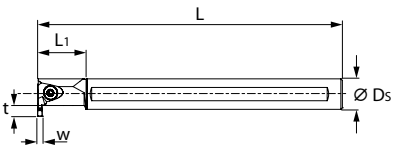
Garant Boring bar for grooving

For cutter inserts No. 275000 – 275015.
Application: For grooving from diameter D_{min} = 14 mm.
Attention: The assembly key No. 279940 1-3 must be ordered separately.



27 4170





Type	21U 27 4170	21U 27 4171	Ø D_s	Groove width w	t_{max} internal machining	Ø D_{min}	L_1	L
	Boring bar for grooving							
	right-hand	left-hand	mm	mm	mm	mm	mm	mm
16/2	eShop	eShop	16	1.5	3	14	25	78
20/2	eShop	eShop	20	1.5	3	16	30	88
20/2L	eShop	eShop	20	1.5	3	18	35	93
25/2	eShop	eShop	25	1.5	5	20	40	103
16/3	eShop	eShop	16	2,2; 3	3	14	25	78
20/3	eShop	eShop	20	2,2; 3	3	16	30	88
20/3L	eShop	eShop	20	2,2; 3	3	18	35	93
25/3	eShop	eShop	25	2,2; 3	5	20	40	103

Garant Inserts for facing/radial grooving and groove turning

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP	Uni					
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K	N	N						
HB9035				**140**	**120**	**100**	**80**	**50**							80				●	●	●	●	
HB9140				130	110	90	70	40				**100**	**80**						●	○		●	
HB9310	**380**	**360**	**280**																●	○		●	

Medium grooving inserts

27 5000–5006 – With ground flanks.
Suitable for: Blade carrier No. 274010 – 274026.
Size 1,5–3 – Boring bars No. 274170 – 274171.


27 5000


27 5003


27 5006

Groove width w		mm	1,5	2,2	3	4	
21H **27 5000**	Grooving insert **neutral**	HB9035	eShop	eShop	eShop	eShop	10
21H **27 5003**		HB9140	eShop	eShop	eShop	eShop	10
21H **27 5006**		HU9310	eShop	eShop	eShop	eShop	10
Corner radius		mm	0.15	0.2	0.2	0.2	
Feed f in steel < 900 N/mm²		mm/rev.	0.03	0.05	0.08	0.09	


27 5009


27 5012

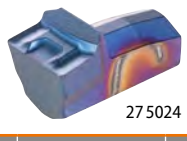

27 5015

Groove width w		mm	3	4	
21H **27 5009**	Grooving insert **Full radius**	HB9035	eShop	eShop	10
21H **27 5012**		HB9140	eShop	eShop	10
21H **27 5015**		HU9310	eShop	eShop	10
Feed f in steel < 900 N/mm²		mm/rev.	0.1	0.12	

Medium-Plus / Heavy-Duty / Heavy-Duty-Plus grooving inserts

Suitable for: Blade carrier No. 274030 – 274134.


27 5021


27 5024


27 5027

Groove width w		mm	3	4	5	6	8	
21H **27 5021**	Grooving insert **neutral**	HB9035	eShop	eShop	eShop	eShop	eShop	10
21H **27 5024**		HB9140	eShop	eShop	eShop	eShop	eShop	10
21H **27 5027**		HU9310	eShop	eShop	eShop	eShop	eShop	10
Corner radius		mm	0.2	0.2	0.2	0.4	0.8	
Feed f in steel < 900 N/mm²		mm/rev.	0.1	0.12	0.15	0.17	0.19	


27 5042

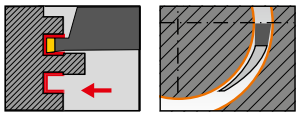

27 5045


27 5048

Groove width w		mm	3	4	5	6	8	
21H **27 5042**	Grooving insert **Full radius**	HB9035	eShop	eShop	eShop	eShop	eShop	10
21H **27 5045**		HB9140	eShop	eShop	eShop	eShop	eShop	10
21H **27 5048**		HU9310	eShop	eShop	eShop	eShop	eShop	10
Feed f in steel < 900 N/mm²		mm/rev.	0.1	0.12	0.15	0.17	0.19	

TANGGRIP axial grooving toolholder

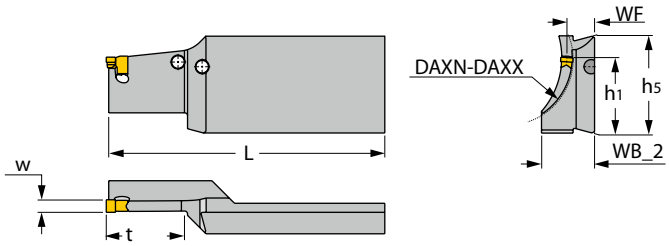
Suitable for: Inserts No. 274422 – 274226.
Application: For face grooving.
Attention: Please order the assembly key No. 279952 separately.



TNFFA-IQ axial grooving toolholder reinforced



27 4202



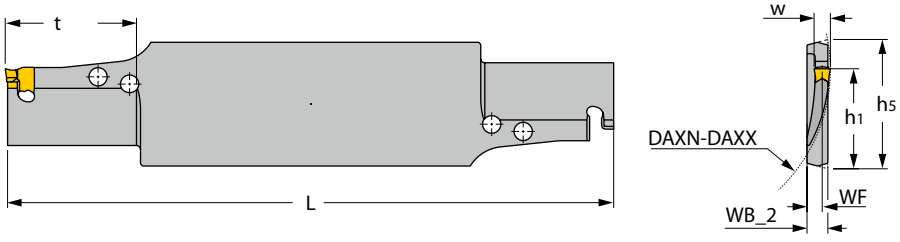
Ø range / cut DAXN-DAXX	26D 27 4202	26D 27 4203	Groove width w	t_{max}	L	WB_2	WF	h_1	h_5
	TANGGRIP TNFFA-IQ axial grooving toolholder reinforced								
mm	right-hand	left-hand	mm	mm	mm	mm	mm	mm	mm
54-65	–	–	3	26	90	18.5	9.5	24.8	32
65-80	–	–	3	27	90	18.5	9.5	24.8	32
80-100	–	–	3	27	90	16.7	9.5	24.8	32
60-80	–	–	4	27	90	18	9	24.8	32
80-130	–	–	4	27	90	14.8	9	24.8	32
70-100	–	–	5	30	90	18	9.7	24.8	32
100-180	–	–	5	35	90	18	9.7	24.8	32
80-110	–	–	6	30	90	18	10.2	24.8	32
110-300	–	–	6	35	90	14.8	10.2	24.8	32

TNFFH-IQ axial grooving toolholder standard

With two insert pockets.



27 4204



Ø range / cut DAXN-DAXX	26D 27 4204	26D 27 4205	Groove width w	t_{max}	L	WB_2	WF	h_1	h_5
	TANGGRIP TNFFH-IQ axial grooving toolholder								
mm	right-hand	left-hand	mm	mm	mm	mm	mm	mm	mm
90-120	–	–	3	18	150	5.2	4.1	24.8	32
150-500	–	–	4	32	150	5.2	3.8	24.8	32
150,1-500	–	–	5	35	150	5.2	3.5	24.8	32
150-700	–	–	6	35	150	5.2	3.3	24.8	32

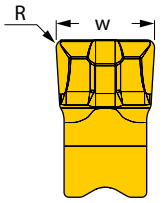
TANGGRIP inserts for axial grooving

Positive chip breaker. Soft-cutting. Optimal chip control and chip evacuation.
Low to medium feed rates.

Suitable for: Blade No. 274202 – 274205.

Application: For face grooving.

Note: The minimum order quantity corresponds to one pack unit quantity (VPE) or a multiple thereof.





27 4222



27 4224



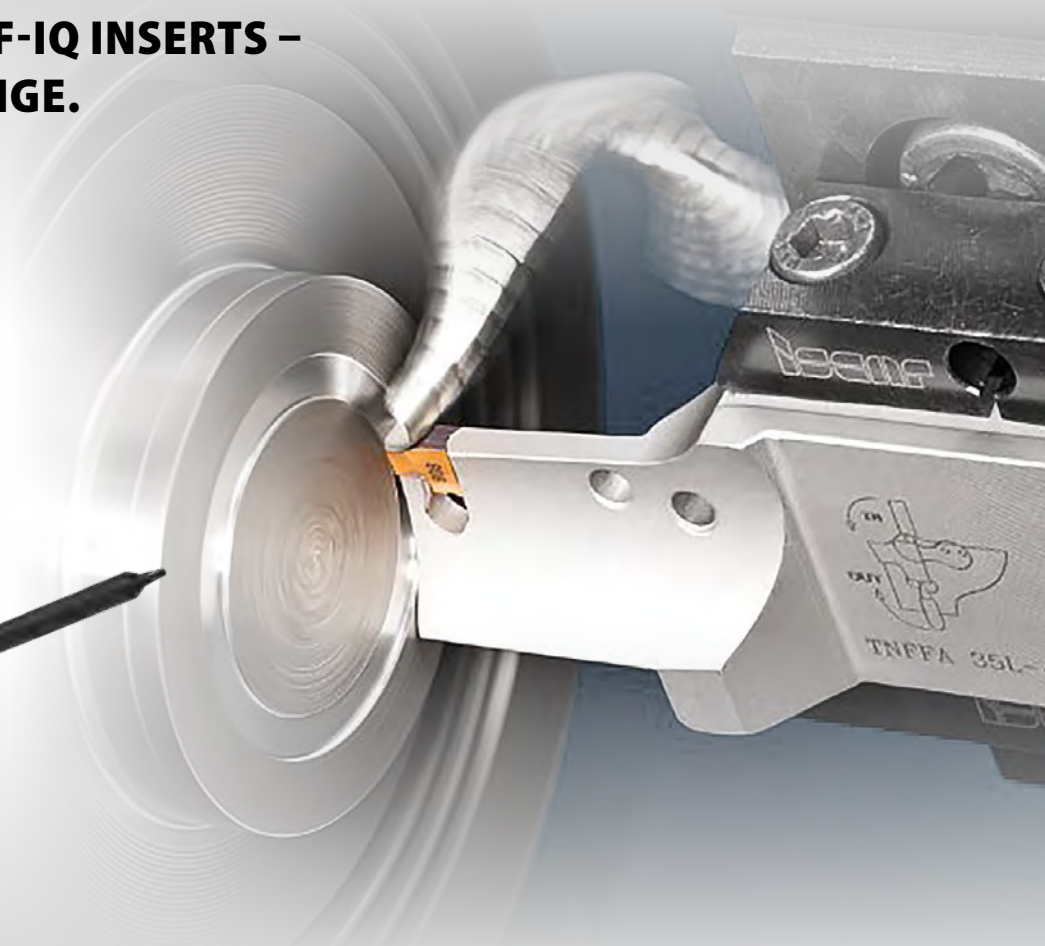
27 4226

Groove width w / corner radius R	26A 27 4222	26A 27 4224	26A 27 4226		Tolerance groove width w	f		
	TANGGRIP TNF-IQ inserts							
mm	IC808	IC808	IC808		mm	27 4222 mm/rev.	27 4224 mm/rev.	27 4226 mm/rev.
3/0,3	–	–	–	10	0.05	0.1 – 0.15	0.08 – 0.1	0.06 – 0.1
4/0,25	–	–	–	10	0.05	0.1 – 0.15	0.08 – 0.12	–
4/0,4	–	–	–	10	0.05	–	–	0.06 – 0.12
5/0,35	–	–	–	10	0.05	0.12 – 0.2	0.12 – 0.2	–
5/0,4	–	–	–	10	0.05	–	–	0.08 – 0.16
6/0,35	–	–	–	10	0.05	0.12 – 0.2	0.12 – 0.2	–
6/0,4	–	–	–	10	0.05	–	–	0.08 – 0.16
●	P	M	UNI					
⚙	◆	◆	◆					
Chip breaker	P	M	GN					
v_c main application m/min	80 – 150	80 – 150	80 – 150					

TANGGRIP TNF-IQ INSERTS – EASY TO CHANGE.

The same cutter insert can be used on both left-hand and right-hand tools.





27

Knurl forming tool

Grub screw in the shank for clearance angle correction.
Carbide roller pin for increased wear resistance.

Knurl forming tool for 1 knurl

RAA 1×AA | RBL 1×BR | RBR 1×BL | RGV30° 1×GE30° | RGE30° 1×GV30°

Top face of the shank = tip height
Click-Pin: For quick and easy changing of the knurl.
29 0004 – **Modular design: Can be used as a right-hand or left-hand version.**


29 0000_12



29 0004_20

Shank size	29H 29 0000	29H 29 0001	29H 29 0004	for knurl Ø d_1	for knurl width w	for knurl bore Ø d_2	Working range	Roller pin
	Knurl forming tool							
mm	right-hand	left-hand	universal	mm	mm	mm	mm	
10	eShop	eShop	–	10; 15	4	4	3 – 50	299910 1
12	eShop	eShop	–	10; 15	4	4	3 – 50	299910 1
16	eShop	eShop	–	10; 15	4	4	3 – 50	299910 2
20	–	–	eShop	20; 25	8	6	8 – 200	299910 4
25	–	–	eShop	20; 25	8	6	8 – 200	299910 4

Knurl forming tool for 2 knurls

L R | RAA 2×AA | RBL 2×BR | RBR 2×BL | RGE30° BL/R30° | RGE45° BL/R45°

Modular design: Can be used universally as right-hand or left-hand version.
Size 20; 25 – **Click-Pin:** For quick and easy changing of the knurl.


29 0010_12


29 0010_20

NEW

Shank size	29H 29 0009	29H 29 0010	for knurl Ø d_1	for knurl width w		for knurl bore Ø d_2	Working range		Roller pin
	Knurl forming tool			29 0009	29 0010		29 0009	29 0010	
mm	Sliding headstock lathe universal	universal	mm	mm	mm	mm	mm	mm	
10	(eShop)	eShop	10	4	4	4	3 – 25	3 – 25	299910 5
12	eShop	eShop	10	4	4	4	3 – 25	3 – 25	299910 5
16	(eShop)	eShop	15	4	6	4	3 – 50	6 – 60	299910 6
20	–	eShop	20	–	8	6	–	10 – 110	299910 4
25	–	eShop	25	–	8	6	–	15 – 220	299910 4

RAA 2×AA | RBL 2×BR | RBR 2×BL | RGE30° BL/R30° | RGE45° BL/R45°

- **Minimal pressure** reduces stress on the workpiece and machine.
- **Synchronising spindle** for easy adjustment of knurl carriers and centre heights.

29 0020 –
- Working area can be extended by rotating the knurl carrier.
- Exchangeable jaws (jaw set on request) for knurling up to the shoulder.

29 0015/0020 – **Modular design: Can be used as a right-hand or left-hand version.**

Note:
29 0020 – Use of knurl Ø 25 mm extends the working range to 0 mm – 65 mm.


29 0018_12



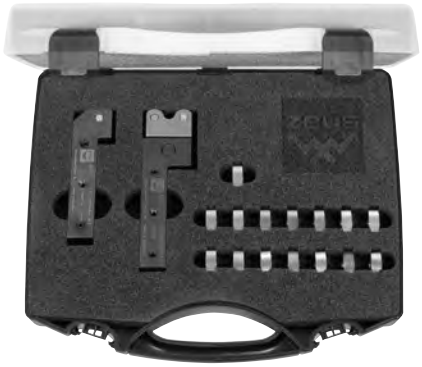
29 0020_20

NEW

Shank size	29H 29 0018	29H 29 0019	29H 29 0015	29H 29 0020	for knurl Ø d_1		for knurl width w	for knurl bore Ø d_2	Working range		Roller pin
	Knurl forming tool				29 0018 29 0019	29 0015 29 0020			29 0018 29 0019	29 0015 29 0020	
mm	right-hand	left-hand	Sliding head-stock lathe universal	universal	mm	mm	mm	mm	mm	mm	
10	eShop	eShop	(eShop)	–	15	10	4	4	0 – 15	0 – 12.5	299910 6
12	eShop	eShop	eShop	–	15	10	4	4	0 – 15	0 – 12.5	299910 6
16	eShop	eShop	(eShop)	–	15	10	4	4	0 – 15	0 – 12.5	299910 6
20	–	–	–	eShop	–	20; 25	8	6	–	3.5 – 65	299910 8
25	–	–	–	eShop	–	20; 25	8	6	–	3.5 – 65	299910 8

Knurl forming tool set

L R | RAA 1×AA | RBL 1×BR | RBR 1×BL | RGV30° 1×GE30° | RGE30° 1×GV30° | RAA 2×AA | RBL 2×BR | RBR 2×BL | RGE30° BL/R30° | RGE45° BL/R45°



29 0025_20

Shank / insert size mm	12	16	20	25
29H **29 0025** Knurl forming tool set	eShop	eShop	eShop	eShop
Content: 1 pc. each knurl forming tool No. 290000 and No. 290010	Size 12	Size 16	Size 20	Size 25
3 pc. each knurl No. 290161	–	Size 15×4/0.6; 15×4/0.8; 15×4/1.0	Size 20×8/0.8; 20×8/1.0; 20×8/1.5	Size 25×8/0.8; 25×8/1.0; 25×8/1.5
2 pcs. each knurl No. 290161	Size 10×4/0.5; 10×4/0.6; 10×4/0.8	–	–	–
1 pc. each knurl No. 290176 and No. 290181	Size 10×4/0.5; 10×4/0.6; 10×4/0.8	Size 15×4/0.6; 15×4/0.8; 15×4/1.0	Size 20×8/0.8; 20×8/1.0; 20×8/1.5	Size 25×8/0.8; 25×8/1.0; 25×8/1.5
1 pc. each knurl No. 290161	Size 15×4/0.5; 15×4/0.6; 15×4/0.8	–	–	–

ECO knurl forming tools

ECO knurl forming tool for 1 knurl

L R | RAA 1×AA | RBL 1×BR | RBR 1×BL | RGV30° 1×GE30° | RGE30° 1×GV30°

Used conventionally.

Note: Tip height must be adjusted.



29 0036

Shank size mm	29H **29 0036** ECO knurl forming tool **universal**	for knurl ∅ d_1 mm	for knurl width w mm	for knurl bore ∅ d_2 mm	Working range mm	Roller pin
12	eShop	10; 15	4	4	3 – 50	299911 2
20	eShop	20; 25	8	6	8 – 200	299911 7

ECO knurl forming tool for 2 knurls

RAA 2×AA | RBL 2×BR | RBR 2×BL | RGE30° BL/R30° | RGE45° BL/R45°

29 0041 – **Can be used universally as right-hand or left-hand version.**

L R



29 0041

Shank size mm	29H **29 0039** ECO knurl forming tool **right-hand**	29H **29 0041** **universal**	for knurl ∅ d_1 mm	for knurl width w mm	for knurl bore ∅ d_2 mm	Working range mm	Roller pin
12	eShop	–	15	4	4	6 – 60	299911 4
20	–	eShop	20	8	6	10 – 110	299911 3

ECO knurl forming tool set

L R	RAA 1×AA	RBL 1×BR	RBR 1×BL	RGV30° 1×GE30°	RGE30° 1×GV30°	RAA 2×AA	RBL 2×BR	RBR 2×BL	RGE30° BL/R30°	RGE45° BL/R45°



29 0050

NEW

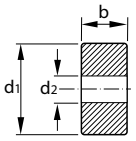
Shank size	mm	12	20
29H **29 0050**	ECO knurl forming tool set	eShop	eShop
Content:			
1 pc. each eco knurl forming tool No. 290036 and No. 290039		Size 12	–
1 pc. each eco knurl forming tool No. 290036 and No. 290041		–	Size 20
3 pc. knurl No. 290161		Size 15×4/0.6	Size 20×8/0.8
2 pc. knurl No. 290161		Size 15×4/0.8	Size 20×8/1.0
1 pc. each knurl No. 290176 and No. 290181		Size 15×4/0.6; 15×4/0.8; 15×4/1.0	Size 20×8/0.8; 20×8/1.0; 20×8/1.2
2 pcs. roller pin No. 299911		Size 4	Size 3
1 pc. roller pin No. 299911		Size 2	Size 7

Knurls with chamfer for knurl forming

Wear-resistant powder metal (PM).

Note: **Further sizes and profiles available on request.**

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
29 0161–29 0199	70	35		60	45	30								50	25		65		●	○	○		





Knurl Ø d_1 × knurl width b / pitch	29I 29 0161	29I 29 0176	29I 29 0181	29I 29 0186	29I 29 0191	29I 29 0196	29I 29 0199	Knurl bore Ø d_2
	Knurl PM							
mm	AA	BL 30°	BR 30°	BL 45°	BR 45°	GE 30°	GV 30°	mm
10×4/0,5	eShop	eShop	eShop	eShop	eShop	–	–	4
10×4/0,6	eShop	eShop	eShop	eShop	eShop	–	–	4
10×4/0,8	eShop	eShop	eShop	eShop	eShop	–	–	4
10×4/1,0	eShop	eShop	eShop	eShop	eShop	–	–	4
15×4/0,5	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4
15×4/0,6	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4
15×4/0,8	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4
15×4/1,0	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4
15×6/1,0	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4
20×8/0,5	eShop	eShop	eShop	eShop	eShop	eShop	eShop	6
20×8/0,6	eShop	eShop	eShop	eShop	eShop	eShop	eShop	6
20×8/0,8	eShop	eShop	eShop	eShop	eShop	eShop	eShop	6
20×8/1,0	eShop	eShop	eShop	eShop	eShop	eShop	eShop	6
20×8/1,2	eShop	eShop	eShop	eShop	eShop	eShop	eShop	6
20×8/1,5	eShop	eShop	eShop	eShop	eShop	eShop	eShop	6
20×8/1,6	eShop	eShop	eShop	–	–	–	–	6
25×8/1,0	eShop	eShop	eShop	eShop	eShop	–	eShop	6

Knurl forming tools for applications up to the collar

Grub screws in the shank for clearance angle correction.
Carbide roller pin for increased wear resistance.

Knurl forming tool for 1 knurl

RAA
1×AA

Top face of the shank = tip height

29 0084 – **Modular design: Can be used universally as right-hand or left-hand version.**



29 0084

Shank size	29H 29 0080	29H 29 0084	for knurl ∅ d_1	for knurl width w	for knurl bore ∅ d_2	for knurled countersunk ∅ d_3	Working range	Closure stud	Disc
	Knurl forming tool								
mm	right-hand	universal	mm	mm	mm	mm	mm		
10	eShop	–	15	6	6	11	3 – 50	299925 1	299927 1
12	eShop	–	15	6	6	11	3 – 50	299925 1	299927 1
16	eShop	–	15	6	6	11	3 – 50	299925 1	299927 1
20	–	eShop	20	8	6	13	8 – 200	299925 2	299927 2
25	–	eShop	20	8	6	13	8 – 200	299925 2	299927 2

Knurl forming tool for 2 knurls

RAA
2×AA

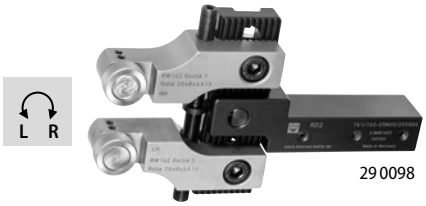
29 0098 – Working area can be extended by rotating the knurl carrier.

29 0089/0090/0098 – **Modular design: Can be used universally as right-hand or left-hand version.**

29 0094/0098 – ■ **Minimal pressure** reduces stress on the workpiece and machine.
■ **Synchronising spindle** for easy adjustment of knurl carriers and centre heights.



29 0090



29 0098

NEW

Shank size	29H 29 0089	29H 29 0090	for knurl ∅ d_1	for knurl width w	for knurl bore ∅ d_2	for knurled countersunk ∅ d_3	Working range	Closure stud	Disc
	Knurl forming tool								
mm	Sliding headstock lathe universal	universal	mm	mm	mm	mm	mm		
10	(eShop)	eShop	15	6	6	11	3 – 40	299925 1	299927 1
12	(eShop)	eShop	15	6	6	11	3 – 40	299925 1	299927 1
16	(eShop)	eShop	15	6	6	11	3 – 40	299925 1	299927 1
20	–	eShop	20	8	6	13	10 – 110	299925 2	299927 2
25	–	eShop	20	8	6	13	10 – 110	299925 2	299927 2

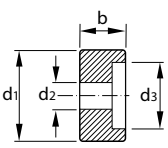
Shank size	29H 29 0094	29H 29 0098	for knurl ∅ d_1	for knurl width w	for knurl bore ∅ d_2	for knurled countersunk ∅ d_3	Working range	Closure stud	Disc
	Knurl forming tool								
mm	right-hand	universal	mm	mm	mm	mm	mm		
10	eShop	–	15	6	6	11	0 – 15	299925 1	299927 1
12	eShop	–	15	6	6	11	0 – 15	299925 1	299927 1
16	eShop	–	15	6	6	11	0 – 15	299925 1	299927 1
20	–	eShop	20	8	6	13	3.5 – 65	299925 2	299927 2
25	–	eShop	20	8	6	13	3.5 – 65	299925 2	299927 2

29

Knurls for knurl forming up to the collar

With 45° chamfer.
Wear-resistant powder metal (PM).

Note: **Further sizes and profiles available on request.**





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
29 0150	70	35		60	45	30								50	25		65		●	○	○		

Knurl ∅ d_1 × knurl width w / pitch		mm	15×6/0,6	15×6/0,8	15×6/1,0	15×6/1,2	15×6/1,5	20×8/0,6	20×8/0,8	20×8/1,0	20×8/1,2	20×8/1,5
29I 29 0150	Knurl PM	AA	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Knurl bore ∅ d_2		mm	6									
Knurled countersunk ∅ d_3		mm	11	11	11	11	11	13	13	13	13	13

L R

Cut knurling tools

Modular design: Can be used universally as right-hand or left-hand version.
Carbide running sleeve for increased wear resistance.
Quick tool adjustment by using the adjustment spindle.


29 0200_12


29 0200_20

Cut knurling tool for 1 knurl

RAA 1×BR30° | RAA 1×BL30° | RBR30° 1×AA | RBL30° 1×AA | RBR45° 1×BL15° | RBL45° 1×BR15°

Grub screw in the shank for clearance angle correction.
29 0200 Size 20; 25 – 3-point contact for exact axial positioning.
Radial and axial rotational registration for optimum tool guidance.

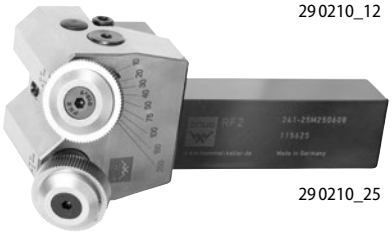
Shank size	29H 29 0197 NEW	29H 29 0198 NEW	29H 29 0200	for knurl Ø d_1		for knurl width w		for knurl bore Ø d_2		Working range		Carbide sleeve, cover disc, screw		
	Cut knurling tool			29 0197	29 0198 29 0200	29 0197	29 0198 29 0200	29 0197	29 0198 29 0200	29 0197	29 0198 29 0200	29 0197	29 0198	29 0200
	sliding headstock lathe													
mm	universal	universal	universal	mm	mm	mm	mm	mm	mm	mm	mm			
10	(eShop)	(eShop)	eShop	10	15	3	4	6	8	0 – 15	3 – 50	299920 10	299920 11	299920 5
12	(eShop)	eShop	eShop	10	15	3	4	6	8	0 – 15	3 – 50	299920 10	299920 11	299920 5
16	(eShop)	eShop	eShop	10	15	3	4	6	8	0 – 15	3 – 50	299920 10	299920 11	299920 5
20	–	–	eShop	–	25	–	6	–	8	–	10 – 300	–	–	299920 1
25	–	–	eShop	–	25	–	6	–	8	–	10 – 300	–	–	299920 1

Cut knurling tool for 2 knurls

RGE30° 2×AA | RGE45° BL/R15°

Advantage:
- Low vibration.
- Adjustment scale and synchronous adjustment spindle for adjusting the workpiece Ø.
- Reduced set-up times leading to reduced unit costs.
- Clearance angle correction of the knurls.
- Increased wear resistance due to specially hardened surface.
- For higher feed rates and cutting speeds.


29 0210_12


29 0210_25

Shank size	29H 29 0210	for knurl Ø d_1	for knurl width w	for knurl bore Ø d_2	Working range	Carbide sleeve, cover disc, screw
	Cut knurling tool					
mm	universal	mm	mm	mm	mm	
10	eShop	15	4	8	3 – 50	299920 5
12	eShop	15	4	8	3 – 50	299920 5
16	eShop	15	4	8	3 – 50	299920 5
16X	eShop	25	6	8	10 – 250	299920 1
20	eShop	25	6	8	10 – 250	299920 1
25	eShop	25	6	8	10 – 250	299920 1

Cut knurling tool set

RAA 1×BR30° | RAA 1×BL30° | RBR30° 1×AA | RBL30° 1×AA | RBR45° 1×BL15° | RBL45° 1×BR15° | RGE30° 2×AA | RGE45° BL/R45°


29 0219_12


29 0219_20

Shank size mm	12	16	20	25
29H 29 0219 Cut knurling tool set	eShop	eShop	eShop	eShop
Content: 1 pc. each knurling tool No. 290200 and No. 290210	Size 12	Size 16	Size 20	Size 25
2 pc. each knurl No. 290261	Size 15×4/0.5; 15×4/0.6; 15×4/0.8	Size 15×4/0.6; 15×4/0.8; 15×4/1.0	Size 25×6/0.8; 25×6/1.0; 25×6/1.5	Size 25×6/0.8; 25×6/1.0; 25×6/1.5
1 pc. each knurl No. 290276 and No. 290281	Size 15×4/0.5; 15×4/0.6; 15×4/0.8	Size 15×4/0.6; 15×4/0.8; 15×4/1.0	Size 25×6/0.8; 25×6/1.0; 25×6/1.5	Size 25×6/0.8; 25×6/1.0; 25×6/1.5

ECO cut knurling tools

Grub screws in the shank for clearance angle correction.



29 0231_12



29 0231_20

ECO cut knurling tools for 1 knurl



Shank size	29H 29 0231	for knurl Ø d_1	for knurl width w	for knurl bore Ø d_2	Working range	Carbide sleeve, cover disc, screw
	ECO cut knurling tool					
mm	right-hand	mm	mm	mm	mm	
12	eShop	15	4	8	3 – 50	299920 6
20	eShop	25	6	8	10 – 300	299920 7

ECO cut knurling tools for 2 knurls





29 0239_12

29 0242 – **Modular design: Can be used universally as right-hand or left-hand version.**
Adjustment of the production Ø using a scale.



29 0242_20

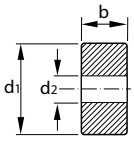
Shank size	29H 29 0239	29H 29 0242	for knurl Ø d_1	for knurl width w	for knurl bore Ø d_2	Working range	Carbide sleeve, cover disc, screw
	ECO cut knurling tool						
mm	right-hand	universal	mm	mm	mm	mm	
12	eShop	–	15	4	8	3 – 50	299920 8
20	–	eShop	25	6	8	10 – 250	299920 9

Knurls without chamfer for cut knurling

Wear-resistant powder metal (PM).

Note:
- Size 21.5×5×8 suitable for Quick tools.
- **Further sizes available on request.**

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	S	N	N					
29 0261–29 0281	160	110		110	85	65								60	35		120		●	○	○		









Knurl Ø d_1 × knurl width w / pitch	29I 29 0261	29I 29 0266	29I 29 0271	29I 29 0276	29I 29 0281	Knurl bore Ø d_2
	Knurl PM					
mm	AA	BL 15°	BR 15°	BL 30°	BR 30°	mm
10×3/0,5	(eShop)	(eShop)	(eShop)	(eShop)	eShop	6
10×3/0,6	(eShop)	(eShop)	(eShop)	(eShop)	eShop	6
10×3/0,8	(eShop)	(eShop)	(eShop)	(eShop)	eShop	6
10×3/1,0	(eShop)	(eShop)	(eShop)	(eShop)	eShop	6
15×4/0,5	eShop	eShop	eShop	eShop	eShop	8
15×4/0,6	eShop	eShop	eShop	eShop	eShop	8
15×4/0,8	eShop	eShop	eShop	eShop	eShop	8
15×4/1,0	eShop	eShop	eShop	eShop	eShop	8
25×6/0,5	eShop	eShop	eShop	eShop	eShop	8
25×6/0,6	eShop	eShop	eShop	eShop	eShop	8
25×6/0,8	eShop	eShop	eShop	eShop	eShop	8
25×6/1,0	eShop	eShop	eShop	eShop	eShop	8
25×6/1,2	eShop	eShop	eShop	eShop	eShop	8
25×6/1,5	eShop	eShop	eShop	eShop	eShop	8
21,5×5/1,0	eShop	eShop	eShop	eShop	eShop	8

Roller burnishing tools

Advantage: Surface quality of up to Rz 2 µm possible.
Application: For machining materials up to 45 HRC. Ideal for machining the surfaces of complex, continuous contours.

Note: For detailed application recommendations please see the instruction handbook supplied.

Holder for burnishing roller

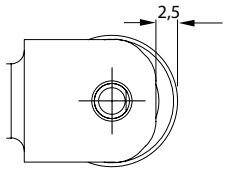
29 1412 – Fixed tool head (grub screw in the shank for clearance angle correction).
29 1415–1417 – Swivelling tool head (adjustment range ± 90°).

Application:
29 1412 – For roller-burnishing of **uninterrupted contours** (convex, concave, cylindrical and conical).
29 1415–1417 – For roller-burnishing of **uninterrupted contours** (convex, concave, cylindrical and conical) and flat faces. Suitable even for applications up to the collar.

Supplied with:
Size 10-16 – Shank size 10 including shank adaptor 12 mm × 12 mm and 16 mm × 16 mm.
Size 16-25 – Shank size 16 including shank adaptor 20 mm × 20 mm and 25 mm × 25 mm.

Attention: Burnishing rollers must be ordered separately!

Note: Check potential interference contours (x dimension of the roller = 2.5 mm).





29 1417

Shank size	29M 29 1412	29M 29 1415	29M 29 1416	29M 29 1417
	Holder for burnishing roller			
	Fixed head universal	Swivelling head universal	Swivelling head right-hand	Swivelling head left-hand
10-16	eShop	–	eShop	(eShop)
16-25	(eShop)	eShop	–	–

Burnishing rollers

Advantage: Inexpensive alternative to diamond burnishing up to a surface quality of Rz< 2 µm.

Note: Use the largest possible radius.



29 1419

Tip radius	mm	0,4	0,6	1
29M 29 1419	Burnishing roller	eShop	eShop	eShop

Smoothing tool with diamond smoothing tips

Technology

The pressure of the burnishing roller produces a material flow from the near-surface material layer which was produced using machining. The roughness peaks are levelled and the roughness reduced. This creates a smooth and resistant surface.

Impressive advantages

- Complete machining in a single clamping
- Cost-effective (compared to diamond burnishing)
- Surface quality of up to Rz 2 µm possible.
- Adjustable (head or clearance angle), which enables different contact points between burnishing roller and workpiece.

Impressive advantages

- Suitable for materials up to a tensile strength of 1500 N/mm2 (approx. 45 HRC).
- Suitable only under restricted conditions (not recommended) for hardened and high-strength materials.
- The recommended maximum workpiece diameter is approx. 4 × Ø of roller = 60 mm.
- Pre-turning surface of at least Rz = 10 µm (Ra = 1).
- Workpiece radial run-out < 0.03 mm.
- Infeed always in the workpiece.
- The selected curvature of the roller should be greater than the radius of the pre-turning plate.

	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	○	💧
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K			
a_p mm	0.005 – 0.02			0.006 – 0.04			0.01 – 0.08					0.01 – 0.1		0.01 – 0.1	0.05 – 0.2	0.005 – 0.02	●	●
f mm/rev	0.03 – 0.1			0.02 – 0.06			0.02 – 0.1					0.02 – 0.06		0.02 – 0.06	0.05 – 0.1	0.02 – 0.06	●	●
V_c m/min	120 – 140			110 – 140			100 – 130					100 – 130		100 – 130	80 – 120	100 – 130	●	●

Diamond burnishing tools

Advantage: Surface quality R_z < 1 µm possible.
Application: For machining materials up to 65 HRC.
Ideal for machining the surfaces of complex, continuous contours.

Note: For detailed application recommendations please see the instruction handbook supplied.

Holder for diamond burnishing tips

29 1401 – Fixed tool head (grub screw in the shank for clearance angle correction).
29 1405–1407 – Swivelling tool head (adjustment range ± 90°).

Application:
29 1401 – For burnishing of **uninterrupted contours** (convex, concave, cylindrical, conical).
29 1405–1407 – For burnishing of **uninterrupted contours** (convex, concave, cylindrical, conical) and flat faces. Suitable even for applications up to the collar.

Supplied with:
Size 10-16 – Shank size 10 including shank adaptor 12 mm × 12 mm and 16 mm × 16 mm.
Size 16-25 – Shank size 16 including shank adaptor 20 mm × 20 mm and 25 mm × 25 mm.

Attention: Diamond burnishing tips must be ordered separately!


29 1405

Shank size	29M 29 1401	29M 29 1405	NEW 29M 29 1406	NEW 29M 29 1407
	Holder for diamond burnishing tips			
	Universal fixed head	Universal swivelling head	Swivelling head right	Swivelling head left
10-16	(eShop)	–	eShop	(eShop)
16-25	–	(eShop)	–	–

Diamond burnishing tips

Advantage: Thanks to indexing there are 8 possibilities for using the diamond burnishing tips.

Note: Use the largest possible radius.


29 1410

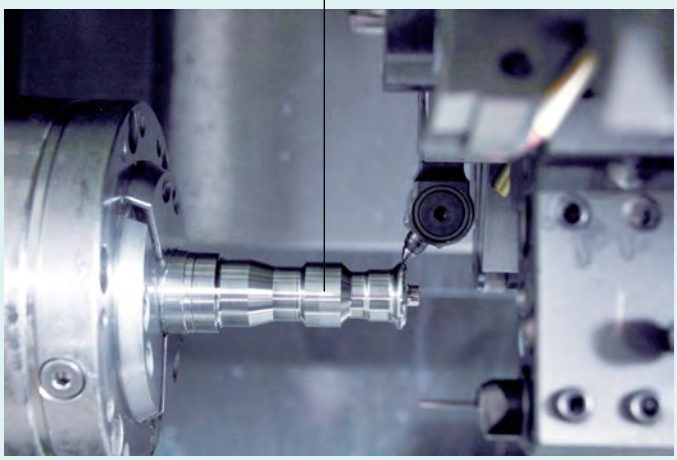
Tip radius	mm	NEW 0,2	0,4	0,6	0,8	1	2
29M 29 1410	Diamond burnishing tips	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)

Burnishing tool with diamond burnishing tips

Technology

The pressure of the diamond burnishing tip produces a material flow from the near-surface material layer which was produced using machining. The roughness peaks are levelled and the roughness reduced. This creates a smooth and resistant surface.

Burnished with diamond
R_z = 0.4 µm



Impressive advantages

- Smoothing of extremely hard materials up to 65 HRC with surface quality Rz < 1 µm possible.
- Simple and flexible application. Different shank sizes using adapters.
- 8 possibilities for using diamond tip. Easy change of position by means of indexing.

Standard application values

The technology values for the burnishing process are based on the finishing process, which was used to pre-machine the workpiece.

	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	○	💧
ISO code	N	N	N	P	P	P	P	P	H	H	H	M	M	S	K			
a_p mm	0.005 – 0.02			0.006 – 0.04			0.01 – 0.08					0.01 – 0.1		0.01 – 0.1	0.05 – 0.2	0.005 – 0.02	●	●
f mm/rev	0.03 – 0.1			0.02 – 0.06			0.02 – 0.1					0.02 – 0.06		0.02 – 0.06	0.05 – 0.1	0.02 – 0.06	●	●
V_c m/min	120 – 140			110 – 140			100 – 130					100 – 130		100 – 130	80 – 120	100 – 130	●	●

L R

ECOROLL

Smooth rolling tool, single roller

For use on CNC and conventional lathes.
With symmetrical structure – can be used universally as right-hand or left-hand version.

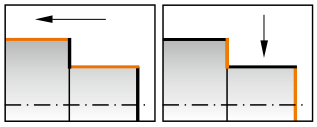
Advantage: Surface quality R_z < 1 µm possible.
Feed rates up to 1 mm/rev possible (external machining).

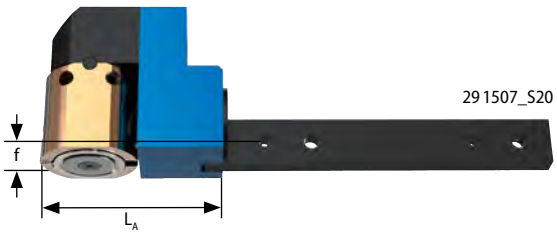
Application: For mechanical surface finishing.
For machining all metallic materials up to a tensile strength of 1400 N/mm² and a hardness of up to 45 HRC.

Note:
- Other shank connections on request.
- Detailed technology recommendations can be found in the instruction manual.

For cylindrical external or flat faces (recommended ∅ range 5 mm – 50 mm)

Application: For use on sliding headstock lathes.





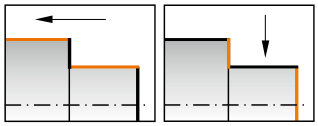
Shank mounting type		S10	S12	S16	S20
29F **29 1507**	Smooth rolling tool EG3T-3 **universal**	(eShop)	(eShop)	(eShop)	(eShop)
L_A	mm	110			
f	mm	5	6	8	10
maximum rolling force	kN	0.6			
Roll ∅	mm	3			
Shank square	mm	10×10	12×12	16×16	20×20
Suitable for: ∅ range (recommended)		5 mm – 50 mm			

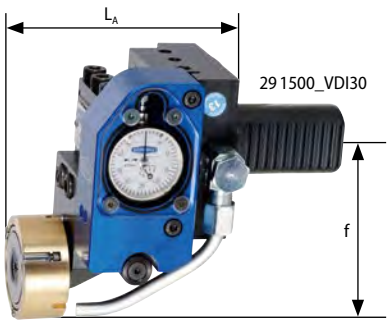
For cylindrical external or flat faces (recommended ∅ range 10 mm – 100 mm)

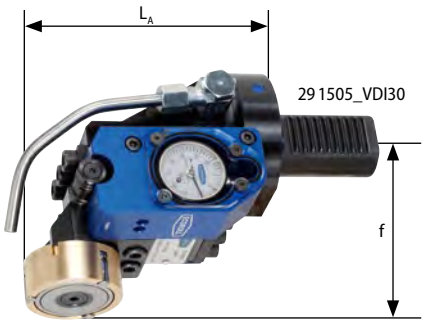
Advantage: Consistent results due to continuous measurement of the rolling force.

Supplied with: Two spare rolls built in the cage.

Note: Tool tray for the respective machining surface depends on the type of turret (star/disc).





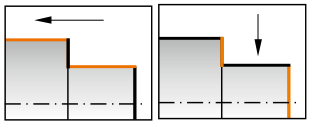


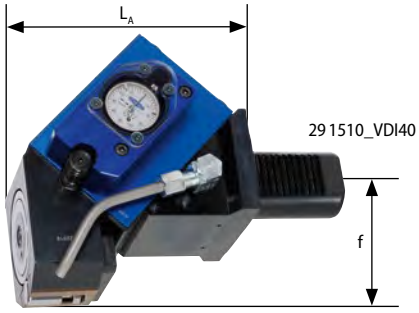
Shank mounting type		S20	S25	VDI20	VDI25	VDI30	VDI40
29F **29 1500**	Smooth rolling tool EG5 **universal**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
29F **29 1505**		–	–	(eShop)	(eShop)	(eShop)	(eShop)
L_A (29 1500)	mm	69	69	83	83	83	83
L_A (29 1505)	mm	–	–	121	121	121	121
f (29 1500)	mm	93.1	102.1	78	78	78	78
f (29 1505)	mm	–	–	80	80	80	80
maximum rolling force	kN	3					
Roll ∅	mm	5					
Shank square	mm	20×20	25×25	–	–	–	–
Suitable for: ∅ range (recommended)		10 mm – 100 mm					

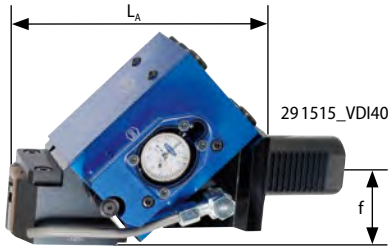
For cylindrical external or flat faces (recommended from Ø 50 mm)

Advantage: Consistent results due to continuous measurement of the rolling force.

Note: Tool tray for the respective machining surface depends on the type of turret (star/disc).







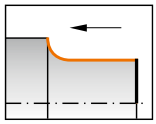
Shank mounting type		S25	S32	VDI40	VDI50	PSC63	PSC80
29F **29 1510**	Smooth rolling tool EG14 **universal**	(eShop)	(eShop)	(eShop)	(eShop)	–	–
29F **29 1515**		–	–	(eShop)	(eShop)	(eShop)	(eShop)
L_A (29 1510)	mm	132	132	131	131	–	–
L_A (29 1515)	mm	–	–	158.1	158.1	196	196
f (29 1510)	mm	103.6	103.6	71.3	71.3	–	–
f (29 1515)	mm	–	–	44	44	44	44
maximum rolling force	kN	8					
Roll Ø	mm	14					
Shank square	mm	25×25	32×32	–	–	–	–
Suitable for: Ø range (recommended)		from 50 mm					

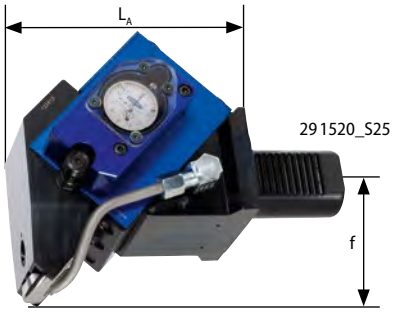
For external surfaces with transition radii

Advantage: Consistent results due to continuous measurement of the rolling force.

Recommendation: For external surfaces with subsequent radius up to plane surface.

Note: Roller radius = 2.5 mm. Machinable workpiece radii from 4 mm to 12 mm.





Shank mounting type		S25	S32	VDI40	VDI50	PSC63	PSC80
29F **29 1520**	Smooth rolling tool EG45-40M **universal**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
L_A	mm	130	130	129	129	151	166.3
f	mm	101.1	101.1	69	69	69	69
maximum rolling force	kN	4					
Roll Ø	mm	40					
Shank square	mm	25×25	32×32	–	–	–	–
Suitable for: Ø range (recommended)		from 35 mm					

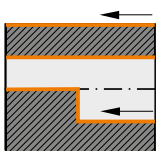
For external surfaces and holes

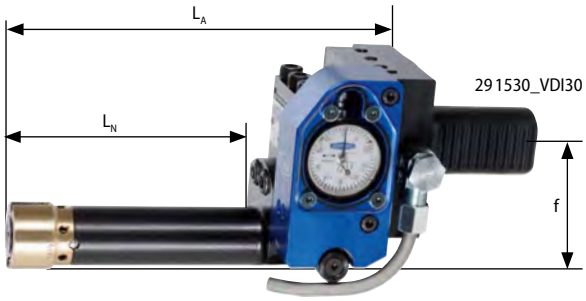
High flexibility due to external and internal use.
Independent of diameter (within the recommended range) for internal machining.

Advantage: Consistent results due to continuous measurement of the rolling force.

Application: For external Ø from 10 mm and internal Ø from 32 mm.

Supplied with: Two spare rolls built in the cage.





Shank mounting type		S20	S25	VDI20	VDI25	VDI30	VDI40
29F **29 1530**	Smooth rolling tool EGI5-32AI **universal**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
L_A	mm	154	154	168	168	168	168
f	mm	73.2	82.2	58	58	58	58
L_N	mm	100					
maximum rolling force	kN	3					
Roll Ø	mm	5					
Shank square	mm	20×20	25×25	–	–	–	–
Suitable for: Ø range outside (recommended)		10 mm – 100 mm					
Ø range inside (recommended)		32 mm – 150 mm					

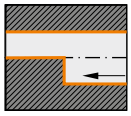
ECOROLL Smooth rolling tool, multi-roller

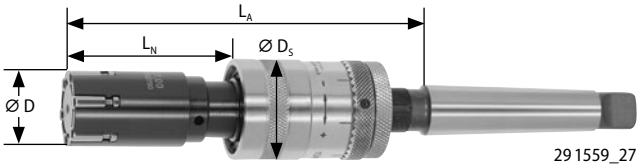
For use on CNC and conventional lathes, milling and drilling machines.
Stepless adjustment in µm (adjustment range from -0.05 mm to +0.1 mm).

Advantage: **Specially for production use.** Maximum productivity due to **feed rates** from 0.05 mm – 0.3 mm **per roll**.
Surface quality R_z < 1 µm possible.
Automatic release during tool withdrawal avoids damage to smooth rolled surface.

Application:
- For mechanical surface finishing.
- For machining all metallic materials up to a tensile strength of 1400 N/mm² and a hardness of up to 45 HRC.
- Clockwise machining.
- Up to tolerance class IT8.
- For holes up to Ø 49 mm.

Note: From Ø 10 mm optionally with internal cooling.





29 1559_27

Ø D	29F 29 1550	29F 29 1553	29F 29 1556	29F 29 1559	29F 29 1562	L_A	L_N	Adjustment range	Ø D_s	Number of rolls
	Smooth rolling tool G									
mm	Parallel shank Ø 16 mm	Parallel shank Ø 20 mm	Parallel shank Ø 25 mm	MT2	MT3	mm	mm	mm	mm	
6	(eShop)	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	3
7	(eShop)	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	3
8	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	4
9	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	4
10	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	4
11	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
12	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
13	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
14	–	eShop	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
15	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
16	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
17	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
18	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
19	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
20	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
21	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
22	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
23	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
24	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	5
25	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	6
26	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	6
27	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	6
28	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	6
29	–	(eShop)	–	(eShop)	–	128	50	-0.05 / +0.1	35	6
30	–	–	(eShop)	(eShop)	–	128	50	-0.05 / +0.1	35	6
31	–	–	(eShop)	(eShop)	–	128	50	-0.05 / +0.1	35	6
32	–	–	(eShop)	(eShop)	–	128	50	-0.05 / +0.1	35	6
33	–	–	(eShop)	–	(eShop)	153	75	-0.05 / +0.1	35	6
34	–	–	(eShop)	–	(eShop)	153	75	-0.05 / +0.1	35	6
35	–	–	(eShop)	–	(eShop)	153	75	-0.05 / +0.1	35	6
36	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	6
37	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	6
38	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
39	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
40	–	–	eShop	–	(eShop)	163	162	-0.05 / +0.1	35	8
41	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
42	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
43	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
44	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
45	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
46	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
47	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
48	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8
49	–	–	(eShop)	–	(eShop)	163	162	-0.05 / +0.1	35	8

Marking tool for marking roller No. 43

Return spring system with replaceable segments. Flexible and with adaptable shank.

Advantage: Marking up to the collar is possible.

Recommendation: Optionally, item No. 291990 Box can be ordered for the secure storage of interchangeable segments/character sets.

Note: The maximum number depends on the respective character width.
Marking roller with Ø 30mm: Fitting at least 17 segments possible.
Marking roller with Ø 50mm: Fitting at least 29 segments possible.

Marking tool set

Suitable for:

29 1920/1925 – Interchangeable segments No. 291950 – 291952 and character sets No. 291940 – 291942.
29 1930/1935 – Interchangeable segments No. 291954 – 291956 and character sets No. 291945 – 291947.

Supplied with:

29 1920/1925 – Marking tool with shank size 8, shank adapter for shank sizes 10, 12 and 16, start segment and end segment.
29 1930/1935 – Marking tool with shank size 16, shank adapter for shank sizes 20 and 25, start segment and end segment.

Attention: Check that the combination of tools and segments in correct.

Note: Range stock parts and for further versions available on request.

Shank size	29H 29 1920	29H 29 1925	29H 29 1930	29H 29 1935	Screw
	Marking tool set				
mm	right-hand	left-hand	right-hand	left-hand	
8-16	(eShop)	(eShop)	–	–	299923 3
16-25	–	–	(eShop)	(eShop)	299923 2
Labelling rollers Ø mm	30	30	50	50	



29 1930

Interchangeable segments

Suitable for:

29 1950/1952 – Marking tool No. 291920 and 291925.
29 1954/1956 – Marking tool No. 291930 and 291935.

Attention: Observe assignment between tools and segments.



29 1952_G



29 1956_1

Symbol	29H 29 1950	29H 29 1952	29H 29 1954	29H 29 1956
	Character segment			
	Character height 2 mm	Character height 3 mm	Character height 2 mm	Character height 3 mm
A	(eShop)	(eShop)	(eShop)	(eShop)
B	(eShop)	(eShop)	(eShop)	(eShop)
C	(eShop)	(eShop)	(eShop)	(eShop)
D	(eShop)	(eShop)	(eShop)	(eShop)
E	(eShop)	(eShop)	(eShop)	(eShop)
F	(eShop)	(eShop)	(eShop)	(eShop)
G	(eShop)	(eShop)	(eShop)	(eShop)
H	(eShop)	(eShop)	(eShop)	(eShop)
I	(eShop)	(eShop)	(eShop)	(eShop)
J	(eShop)	(eShop)	(eShop)	(eShop)
K	(eShop)	(eShop)	(eShop)	(eShop)
L	(eShop)	(eShop)	(eShop)	(eShop)
M	(eShop)	(eShop)	(eShop)	(eShop)
N	(eShop)	(eShop)	(eShop)	(eShop)
O	(eShop)	(eShop)	(eShop)	(eShop)
P	(eShop)	(eShop)	(eShop)	(eShop)
Q	(eShop)	(eShop)	(eShop)	(eShop)
R	(eShop)	(eShop)	(eShop)	(eShop)
S	(eShop)	(eShop)	(eShop)	(eShop)
T	(eShop)	(eShop)	(eShop)	(eShop)
Labelling rollers Ø mm	30	30	50	50

Symbol	29H 29 1950	29H 29 1952	29H 29 1954	29H 29 1956
	Character segment			
	Character height 2 mm	Character height 3 mm	Character height 2 mm	Character height 3 mm
U	(eShop)	(eShop)	(eShop)	(eShop)
V	(eShop)	(eShop)	(eShop)	(eShop)
W	(eShop)	(eShop)	(eShop)	(eShop)
X	(eShop)	(eShop)	(eShop)	(eShop)
Y	(eShop)	(eShop)	(eShop)	(eShop)
Z	(eShop)	(eShop)	(eShop)	(eShop)
0	(eShop)	(eShop)	(eShop)	(eShop)
1	(eShop)	(eShop)	(eShop)	(eShop)
2	(eShop)	(eShop)	(eShop)	(eShop)
3	(eShop)	(eShop)	(eShop)	(eShop)
4	(eShop)	(eShop)	(eShop)	(eShop)
5	(eShop)	(eShop)	(eShop)	(eShop)
6	(eShop)	(eShop)	(eShop)	(eShop)
7	(eShop)	(eShop)	(eShop)	(eShop)
8	(eShop)	(eShop)	(eShop)	(eShop)
9	(eShop)	(eShop)	(eShop)	(eShop)
.	(eShop)	(eShop)	(eShop)	(eShop)
-	(eShop)	(eShop)	(eShop)	(eShop)
/	(eShop)	(eShop)	(eShop)	(eShop)
Labelling rollers Ø mm	30	30	50	50

Character sets

Suitable for:

29 1940/1942 – Marking tool No. 291920 and 291925.
29 1945/1947 – Marking tool No. 291930 and 291935.

Attention: Observe assignment between tools and segments.

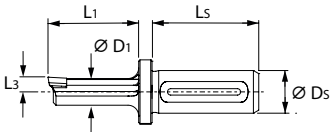
Character height	29H 29 1940	29H 29 1942	29H 29 1945	29H 29 1947	**Content:** Character segments	**Content:** Character segments
	Set of letters	Set of numbers	Set of letters	Set of numbers	291940	291945
mm	A – Z	0 – 9	A – Z	0 – 9	291942	291947
2	(eShop)	(eShop)	(eShop)	(eShop)	291950	291954
3	(eShop)	(eShop)	(eShop)	(eShop)	291952	291956
Labelling rollers Ø mm	30	30	50	50		

Garant Keyway broaching toolholder

Attention: Always use the minimum pre-drill ∅ to match the slot width (e.g. for slot width 14 mm, minimum pre-drill ∅ = 38.22 mm).

Note:
- Individual holder sizes are for different slot widths. In such cases, where possible, always use the optimum combination of holder and cutting insert (identical size) for maximum stability.
- For lathes without Y-axis, please use eccentric bush No. 290391– 290393 for exact setting of the Y-coordinate.
- For machining centres, use the alignment aid No. 290397 and a dial indicator to check the spindle orientation.

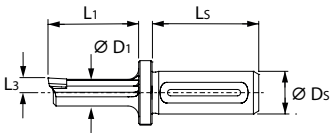
Toolholder, long




290350

from slot width m	29K 29 0350	29K 29 0353	suitable for slot width m	L_1	∅ D_1	L_3	Min. pre-drilling -∅ D_{min}	Screw
	Keyway broaching toolholder, long							
mm	∅ D_s 25 mm	∅ D_s 32 mm	mm	mm	mm	mm	mm	
2	eShop	eShop	2	34.5	6.5	3.65	7.03	290399 1
3	eShop	eShop	3	40	7.8	4.2	8.36	290399 1
4	eShop	eShop	4; 5	56	10	5.35	10.71; 10.91	290399 1
5	eShop	eShop	5	66	12	6.35	12.82	290399 1
6	eShop	eShop	6; 8	81	16	9	17.49; 17.85	290399 2
8	eShop	eShop	8	100	20	11	21.7	290399 2
10	eShop	eShop	10; 12	126	25	14	27.37; 27.73	290399 3
12	eShop	eShop	12	161	30	16.5	32.56	290399 3
14	eShop	eShop	14; 16	180	35	19.5	38.22; 38.58	290399 3
18	–	eShop	18; 20; 22; 25	200	40	23	44.7; 45.08; 45.5; 46.18	290399 4
L_s mm	90	100						

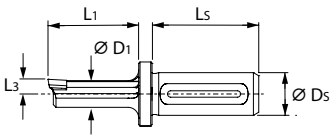
Toolholder, standard




290355

from slot width m	29K 29 0356	29K 29 0354	29K 29 0355	29K 29 0358	suitable for slot width m	L_1	∅ D_1	L_3	Min. pre-drilling -∅ D_{min}	Screw
	Standard keyway broaching toolholder									
mm	∅ D_s 16 mm	∅ D_s 20 mm	∅ D_s 25 mm	∅ D_s 32 mm	mm	mm	mm	mm	mm	
2	eShop	eShop	eShop	eShop	2	25	6.5	3.65	7.03	290399 1
3	eShop	eShop	eShop	eShop	3	30	7.8	4.2	8.36	290399 1
4	eShop	eShop	eShop	eShop	4; 5	40	10	5.35	10.71; 10.91	290399 1
5	eShop	eShop	eShop	eShop	5	46	12	6.35	12.82	290399 1
6	eShop	eShop	eShop	eShop	6; 8	56	16	9	17.49; 17.85	290399 2
8	–	eShop	eShop	eShop	8	68	20	11	21.7	290399 2
10	–	–	eShop	eShop	10; 12	86	25	14	27.37; 27.73	290399 3
12	–	–	eShop	eShop	12	104	30	16.5	32.56	290399 3
14	–	–	eShop	eShop	14; 16	126	35	19.5	38.22; 38.58	290399 3
18	–	–	–	eShop	18; 20; 22; 25	140	40	23	44.7; 45.08; 45.5; 46.18	290399 4
L_s mm	40	50	90	100						

Toolholder, short




290359

from slot width m	29K 29 0357	29K 29 0359	suitable for slot width m	L_1	∅ D_1	L_3	Min. pre-drilling -∅ D_{min}	Screw
	Short keyway broaching toolholder							
mm	∅ D_s 16 mm	∅ D_s 20 mm	mm	mm	mm	mm	mm	
2	eShop	eShop	2	17.5	6.5	3.65	7.03	290399 1
3	eShop	eShop	3	21	7.8	4.2	8.36	290399 1
4	eShop	eShop	4; 5	28	10	5.35	10.71; 10.91	290399 1
5	eShop	eShop	5	33	12	6.35	12.82	290399 1
6	eShop	eShop	6; 8	39	16	9	17.49; 17.85	290399 2
8	–	eShop	8	48	20	11	21.7	290399 2
L_s mm	40	50						

Garant Cutting inserts for keyway broaching toolholder

With TiN coating.
Suitable for regrinding.

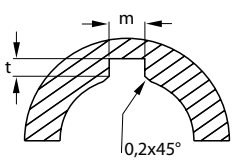
Application: For producing slots according to DIN 6885, DIN 138 and factory standards.
For slot widths with tolerance JS9, use cutter inserts with tolerance H7.

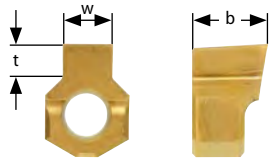
Note:
- Special sizes (slot widths) available on request.
- Detailed application values can be found in our application ToolScout.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	N					
29 0360–29 0379	●	●	●	●	●	●	●	○					●	○	○	●	●	○	●	●			

Cutting insert with chamfer

Note: From slot width 16 mm it is essential to perform two passes. The first pass must be performed for approx. half the slot width (e.g. 10 mm for a desired slot width of 18 mm). For the first pass it is recommended that a cutter insert without chamfer (290370 – 290379) is used, as this means greater slot depths are possible.

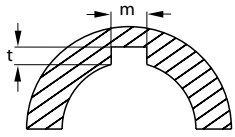


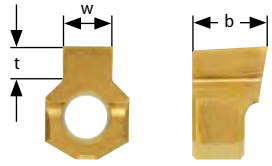


for slot width m	29L 29 0360	29L 29 0363	Blade width w		Groove depth t	Tip thickness b
	Slot cutting insert with chamfer					
	P9	H7	29 0360	29 0363		
mm	TiN	TiN	mm	mm	mm	mm
2	eShop	eShop	1.994	2.01	1.09	6.5
3	eShop	eShop	2.994	3.01	1.42	6.5
4	eShop	eShop	3.988	4.012	2.07	7
5	eShop	eShop	4.988	5.012	2.74	7
6	eShop	eShop	5.988	6.012	3	9
8	eShop	eShop	7.985	8.015	3.78	9
10	eShop	eShop	9.985	10.015	3.88	14
12	eShop	eShop	11.982	12.018	3.89	14
14	eShop	eShop	13.982	14.018	4.71	14
16	eShop	eShop	15.982	16.018	5.53	14
18	eShop	eShop	17.982	18.018	5.67	18
20	eShop	eShop	19.978	20.021	6.29	18
22	eShop	eShop	21.978	22.021	6.79	18
25	eShop	eShop	24.978	25.021	7.02	18
Chamfer	0.2 mm×45°	0.2 mm×45°				

Cutting insert without chamfer

Note: From slot width 16 mm it is essential to perform two passes. The first pass must be performed for approx. half the slot width (e.g. 10 mm for a desired slot width of 18 mm).





for slot width m	29L 29 0370	29L 29 0373	29L 29 0376	29L 29 0379	Blade width w				Groove depth t	Tip thickness b
	Slot cutting insert without chamfer									
	P9	H7	D10	C11	29 0370	29 0373	29 0376	29 0379		
mm	TiN	TiN	TiN	TiN	mm	mm	mm	mm	mm	mm
2	eShop	eShop	eShop	eShop	1.994	2.01	2.06	2.12	1.3	6.5
3	eShop	eShop	eShop	eShop	2.994	3.01	3.06	3.12	2	6.5
4	eShop	eShop	eShop	eShop	3.988	4.012	4.078	4.145	2.6	7
5	eShop	eShop	eShop	eShop	4.988	5.012	5.078	5.145	3	7
6	eShop	eShop	eShop	eShop	5.988	6.012	6.078	6.145	4	9
8	eShop	eShop	eShop	eShop	7.985	8.015	8.098	8.17	4.5	9
10	eShop	eShop	eShop	eShop	9.985	10.015	10.098	10.17	6	14
12	eShop	eShop	eShop	eShop	11.982	12.018	12.12	12.205	6.5	14
14	eShop	eShop	eShop	eShop	13.982	14.018	14.12	14.205	7	14
16	eShop	eShop	eShop	eShop	15.982	16.018	16.12	16.205	8	14
18	eShop	eShop	eShop	eShop	17.982	18.018	18.12	18.205	9	18
20	eShop	eShop	eShop	eShop	19.978	20.021	20.149	20.24	10	18
22	eShop	eShop	eShop	eShop	21.978	22.021	22.149	22.24	11	18
25	eShop	eShop	eShop	eShop	24.978	25.021	25.149	25.24	12	18

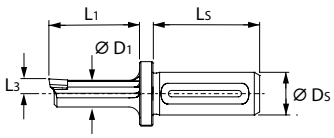
Garant

Profile slotting toolholders

Note:
- For lathes without Y-axis, please use eccentric bush No. 290391 – 290393 for exact setting of the Y-coordinate.
- For machining centres, use the pull-up aid No. 290397 and a dial indicator to check the spindle orientation.



29 0334



from square	29K 29 0330	29K 29 0332	29K 29 0334	suitable for square drive	L_1	Ø D_1	L_3	Min. pre-drilling -Ø D_{min}	Screw
	Profile slotting toolholder for square cutting inserts								
mm	Ø D_s 20 mm	Ø D_s 25 mm	Ø D_s 32 mm	mm	mm	mm	mm	mm	
8	eShop	eShop	eShop	8 – 10	30	8	4	8	290399 1
10	eShop	eShop	eShop	10 – 13	40	10	4.8	9.1	290399 1
14	eShop	eShop	eShop	14 – 16	50	13	7	13	290399 1
17	eShop	eShop	eShop	17 – 19	52	16	8.5	16	290399 3
19	–	eShop	eShop	19 – 27	89	18	10.25	18.975	290399 3
27	–	eShop	eShop	27 – 37	100	25	14.5	27	290399 3
38	–	–	eShop	38 – 50	140	35	20.5	38	290399 3
L_s mm	50	90	100						

from hexagon	29K 29 0340	29K 29 0342	29K 29 0344	suitable for hexagon drive	L_1	Ø D_1	L_3	Min. pre-drilling -Ø D_{min}	Screw
	Profile slotting toolholder for hexagon cutting inserts								
mm	Ø D_s 20 mm	Ø D_s 25 mm	Ø D_s 32 mm	mm	mm	mm	mm	mm	
9	eShop	eShop	eShop	9 – 11	30	8	4.5	8.5	290399 1
11	eShop	eShop	eShop	11 – 17	40	10	5.5	10.5	290399 1
17	eShop	eShop	eShop	17 – 28	56	15	8.5	16	290399 2
28	–	eShop	eShop	28 – 37	89	25	14	26.5	290399 3
37	–	eShop	eShop	37 – 45	126	35	19.5	37	290399 3
45	–	–	eShop	45 – 70	140	40	23	43	290399 4
L_s mm	50	90	100						

Garant

Cutting inserts for profile slotting toolholders

With TiN coating.
Suitable for regrinding.

Suitable for:

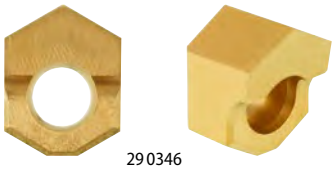
29 0336 – Profile slotting toolholders No. 290330 – 290334.
29 0346 – Profile slotting toolholders No. 290340 – 290344.

Note:
- Profile cutting inserts can be used for a square or hexagonal range (see product table).
- Detailed application values can be found in our application ToolScout.

	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	INOX < 900 N	INOX > 900 N	Ti > 850 N	GG(G)	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	M	M	S	K	N	N					
29 0336/0346	●	●	●	●	●	●	●	○					●	○	○	●	●	○	●	●			



29 0336



29 0346

from square	29L 29 0336	suitable for square drive
	Profile cutting insert Square	
mm	TiN	mm
8	eShop	8 – 10
10	eShop	10 – 13
14	eShop	14 – 16
17	eShop	17 – 19
19	eShop	19 – 27
27	eShop	27 – 37
38	eShop	38 – 50

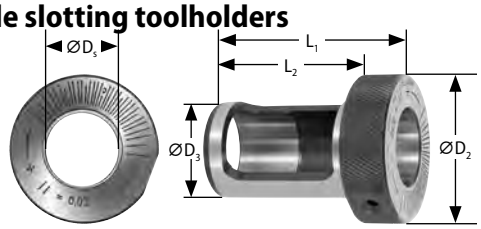
from hexagon	29L 29 0346	suitable for hexagon drive
	Profile cutting insert Hexagon	
mm	TiN	mm
9	eShop	9 – 11
11	eShop	11 – 17
17	eShop	17 – 28
28	eShop	28 – 37
37	eShop	37 – 45
45	eShop	45 – 70

Garant Eccentric bush for keyway broaching toolholders and profile slotting toolholders

With adjustment range from a maximum of ± 0.5 mm.
A graduation on the scale corresponds to 0.03 mm.

Suitable for: Keyway broaching and profile slotting toolholders No. 290330 – 290359.

Application: For fine adjustment of groove slotting toolholders and profile slotting toolholders on lathes without a Y axis.



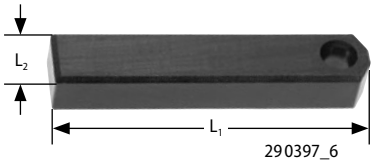
ØD3 H7	mm	25	32	32L	40	40L	50	50L	60	60L	for Ø Ds mm
29K 29 0391	Eccentric bush	eShop	eShop	eShop	–	–	–	–	–	–	20
29K 29 0392		–	eShop	eShop	eShop	–	–	–	–	–	25
29K 29 0393		–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	32
Ø D2	mm	40	48	48	55	55	65	65	80	80	
L1 (29 0391, 29 0393)	mm	50	50	70	80	95	95	115	105	115	
L1 (29 0392)	mm	–	65	85	80	–	–	–	–	–	
L2 (29 0391, 29 0393)	mm	40	40	60	65	80	80	100	80	100	
L2 (29 0392)	mm	–	50	70	65	–	–	–	–	–	

Garant Alignment aid for machining centres

Suitable for: Keyway broaching and profile slotting toolholders No. 290330 – 290359.

Application: For checking the spindle orientation using a dial indicator.





Type		2	3	6	10	14	18
29K 29 0397	Alignment aid for machining centres	eShop	eShop	eShop	eShop	eShop	eShop
L1	mm	50	50	50	60	70	70
L2	mm	5	6.08	10.08	13.1	18	26
Suitable for: Profile slotting toolholders No. 290330 – 290334		–	Size 8; 10	Size 14; 17	Size 19	Size 27	Size 38
Profile slotting toolholders No. 290340 – 290344		–	Size 9; 11	Size 17	Size 28	Size 37	Size 45
Groove slotting toolholders No. 290350 – 290359		Size 2	Size 3; 4; 5	Size 6; 8	Size 10; 12	Size 14	Size 18

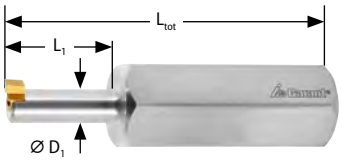
Garant Regrinding toolholder for cutting inserts

Made of aluminium with handy hexagon shank for easy use.

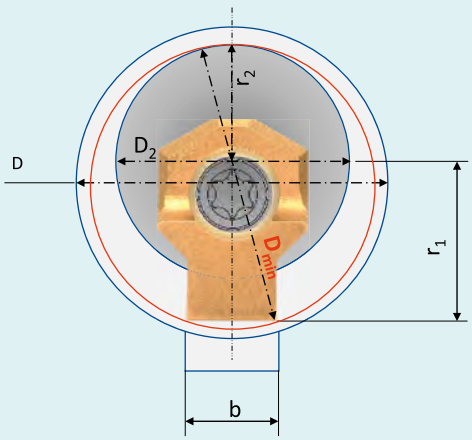
Suitable for: Cutting inserts No. 290336 – 290379.

Application: For safe and easy regrinding of the cutting inserts with an oilstone.

Type	29K 29 0398 Regrinding toolholder	Ltot mm	L1 mm	Ø D1 mm	Suitable for: Cutting insert No. 290360 – 290379	Cutting insert No. 290336	Cutting insert No. 290346
2	eShop	150	50	10	Size 2	–	–
3-5	eShop	150	50	12	Size 3 - 5	Size 8; 10	Size 9; 11
6-8	eShop	150	50	15	Size 6 - 8	Size 14; 17	Size 17
10-12	eShop	150	50	20	Size 10 - 12	Size 19	Size 28
14-16	eShop	150	50	25	Size 14 - 16	Size 27	Size 37
18-25	eShop	150	50	32	Size 18 - 25	Size 38	Size 45



Garant Keyway broaching and profile slotting – technical instructions



Standard application values:

	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	INOX < 900 N	INOX > 900 N	GG(G)	CuZn
	N	N	N	P	P	P	P	P	M	M	K	N
v_f mm/min	8000	8000	8000	10000	8000	6000	6000	6000	5000	5000	5000	7000
a_p mm	0.20	0.20	0.20	0.20	0.11	0.08	0.08	0.08	0.06	0.05	0.13	0.10

Formula for calculating D_{min}

$$D_{min} = \sqrt{r_1{}^2 + \left(\frac{b}{2}\right)^2} + r_2$$

HSS

duMONT Push broach sets



Set of push broaches **HSS** No. 290405 including the necessary shims No. 290410 and guide bushes No. 290415. Supplied in a high-quality sturdy wooden case for secure and clear storage.

Note:
- Fits P9 and H9 available ex stock at a 15 % additional charge.
- Sets of push broaches for single pass use on request.

Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	N					
29 0400	○	●	○	●	●	○								○		●	●	○	●				

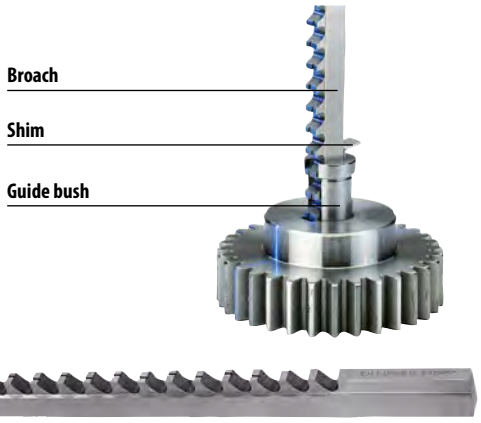
Type		2-3	4-8	10-14	16-18	20-25
29J 29 0400	Push broach set HSS, complete in a wooden case **Fit JS9**	eShop	eShop	eShop	(eShop)	(eShop)
Content: 1× each broach 290405		2A; 3A	4B1; 5B1; 6C1; 8C1	10D1; 12D1; 14D1	16E1; 18E1	20F1; 22F1; 25F1
1× each guide bush No. 290415		Type A: 6; 8; 10	Type B1: 12; 14; 15; 16; Type C1: 18; 19; 20; 22; 24; 25; 26; 28; 30	Type D1: 32; 34; 35; 36; 38; 40; 42; 44; 45; 46; 48; 50	Type E1: 52; 54; 55; 56; 58; 60; 62; 65	Type F1: 70; 75; 80; 85; 90; 95

duMONT Keyway broaches (push broaches) for one-off and series production

HSS

Application: **For production of keyways to DIN 6885.**
Supplied with: Broaches including the necessary shims.

Note:
- Broaches for high tensile materials, increased number of passes or special applications available (on request).
- After first and second of three passes, back the broach off slightly – the broach will then align itself.
- Coated broaches and **inch size** broaches available on request.
- Size 28, 32 and 36 available on request, on short lead times.



Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	N					
29 0405 – 0407	○	●	○	●	●	○								○		●	●	○	●				

Type	29J 29 0405	29J 29 0406	29J 29 0407	Broach length	Keyway width	Keyway depth	for bore ∅ to DIN 6885	Broaching length in steel	necessary broaching force for St50 and max. broaching length	Back width	Number of passes
	Keyway broach HSS										
	Fit JS9	Fit P9	Fit H9	mm	mm	mm	mm	mm	kg	mm	
2A	eShop	(eShop)	(eShop)	127	2	1	6 – 8	6 – 30	350	3.25	1
3A	eShop	(eShop)	(eShop)	127	3	1.4	8 – 10	6 – 30	300	3.25	2
4B1	eShop	(eShop)	(eShop)	172	4	1.8	11 – 12	8 – 42	550	6.46	2
5B1	eShop	(eShop)	(eShop)	172	5	2.3	12 – 17	8 – 42	850	6.46	2
6C1	eShop	(eShop)	(eShop)	299	6	2.8	18 – 22	10 – 64	1000	9.63	2
8C1	eShop	(eShop)	(eShop)	299	8	3.3	22 – 30	10 – 64	1700	9.63	3
10D1	eShop	(eShop)	(eShop)	353	10	3.3	30 – 38	25 – 150	2950	14.39	3
12D1	eShop	(eShop)	(eShop)	353	12	3.3	38 – 44	25 – 150	3800	14.39	3
14D1	eShop	(eShop)	(eShop)	353	14	3.8	44 – 50	25 – 150	5050	14.39	3
16E1	eShop	(eShop)	(eShop)	394	16	4.3	50 – 58	25 – 150	4300	19.34	4
18E1	eShop	(eShop)	(eShop)	394	18	4.4	58 – 65	25 – 150	4800	19.34	4
20F1	eShop	(eShop)	(eShop)	505	20	4.9	65 – 75	25 – 150	4000	25.72	4
22F1	eShop	(eShop)	(eShop)	505	22	5.4	75 – 85	25 – 150	4300	25.72	5
25F1	eShop	(eShop)	(eShop)	505	25	5.4	85 – 95	25 – 150	8300	25.72	5

Shims for broaches



Type		3A	4B1	5B1	6C1	8C1	10-12D1	14D1	16-18E1	20F1	22-25F1
29J 29 0410	Shim for keyway broach No. 290405 – 407	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

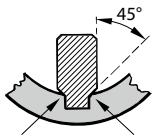
HSS

duMONT Keyway broaches for a single pass

Sizes 4B1 to 8C1 additionally with 45° edge breaker.
This deburrs the sharp edges of the groove.

Application: For efficient cutting of splines to DIN 6885 in a single pass.

Note:
- **For size 2A please use part No. 290405 2A.**
- Fits P9 and H9 available on request.
- After 1/3 and 2/3 of the pass, back the broach off slightly – the broach will then align itself.





Suitable for/ v_c [m/min]	Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	< 1100 N	< 1400 N	< 55 HRC	< 60 HRC	< 65 HRC	< 67 HRC	< 70 HRC	INOX < 900 N	INOX > 900 N	GG(G)	CuZn	Graphite GRP CRP					
ISO code	N	N	N	P	P	P	P	P	H	H	H	H	H	M	M	K	N	N					
29 0420	○	●	○	●	●	○								○		●	●	○	●				

Type	29J 29 0420 Keyway broach HSS Fit JS9	Broach length	Keyway width	Keyway depth	for bore ∅ to DIN 6885	Broaching length in steel	necessary broaching force for St50 and max. broaching length	Back width
		mm	mm	mm	mm	mm	kg	mm
3A	eShop	197	3	1.4	8 – 10	6 – 25	400	3.25
4B1	(eShop)	273	4	1.8	11 – 12	8 – 40	450	6.46
5B1	eShop	273	5	2.3	12 – 17	8 – 40	600	6.46
6C1	eShop	432	6	2.8	17 – 22	8 – 50	700	9.63
8C1	eShop	470	8	3.3	22 – 30	8 – 50	1100	9.63

Guide bushes for keyway broaches

Size 6A–22C1 – With collar.
Size 24C1–90F1 – Without collar.

Application: **Push broaches with identification mark A and guide bushes with identification mark A can be used together.**
The same applies to the other markings. So that the broach can run through to its full height and can drop back again freely, the guide bush must be inserted into the press bedplate at the same time as the workpiece is threaded through.

Note: Further sizes available on request.

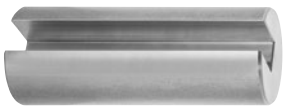
Bush ∅	29J 29 0415 Guide bush for bore H7	Slot width	Length
mm		mm	mm
6A	eShop	3.25	32
8A	eShop	3.25	32
9A	eShop	3.25	32
10A	eShop	3.25	32
11B1	eShop	6.46	43
12B1	eShop	6.46	43
13B1	eShop	6.46	43
14B1	eShop	6.46	43
15B1	eShop	6.46	43
16B1	eShop	6.46	43
17B1	eShop	6.46	43
18C1	eShop	9.63	64
19C1	eShop	9.63	64
20C1	eShop	9.63	64
22C1	eShop	9.63	64
24C1	eShop	9.63	64
25C1	eShop	9.63	64

Bush ∅	29J 29 0415 Guide bush for bore H7	Slot width	Length
mm		mm	mm
28C1	eShop	9.63	64
30C1	eShop	9.63	64
32D1	eShop	14.39	100
35D1	eShop	14.39	100
36D1	eShop	14.39	100
38D1	eShop	14.39	100
40D1	eShop	14.39	100
45D1	eShop	14.39	125
50D1	eShop	14.39	125
55E1	eShop	19.34	150
60E1	eShop	19.34	150
65E1	eShop	19.34	150
70F1	eShop	25.72	150
75F1	eShop	25.72	150
80F1	eShop	25.72	150
90F1	eShop	25.72	150



29 0415

Guide bushes with collar from 6 – 22 mm ∅.

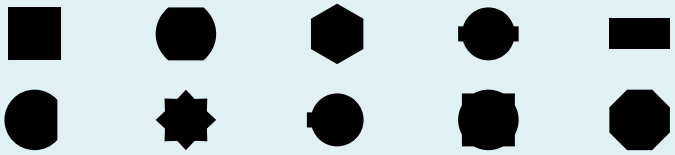


29 0415

Guide bushes from 24 – 90 mm ∅.

Special broaches – ask for our questionnaire!

Examples of profiles for special push broaches:



Square (No. 29 0426) and hexagon (No. 29 0431) push broaches are available from supplier's stock.
Further sizes are available at short notice from manufacturer's stock.

We will be happy to prepare a quotation for you.

Garant Profile broaching (tumbling)

Hexagon, square, Torx® and Torx Plus® profiles – created in seconds:

Internal profile

Preparation (bore)
To protect the cutting edge and reduce the machining time, pre-drill the workpiece with the largest possible bore diameter.

Guide values bore Ø d (AF plus oversize):

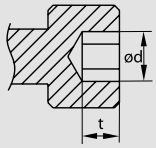
Width across flats AF	Positive oversize	
mm	Hexagon %	Square %
2 to 25	+ 0 to + 2	+5

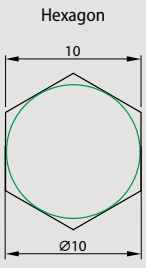
Guide values for bore Ø d (Torx® / Torx Plus®):

Torx®	Hole Ø	Bore oversize 0.00 –	Torx®	Hole Ø	Bore oversize 0.00 –
mm	mm	mm	mm	mm	mm
TX5	1	+0.05	TX27	3.75	+0.1
TX6	1.4	+0.05	TX30	4.2	+0.1
TX7	1.55	+0.07	TX40	5	+0.15
TX8	1.9	+0.1	TX45	5.8	+0.2
TX10	2.2	+0.1	TX50	6.7	+0.2
TX15	2.6	+0.1	TX55	8.2	+0.2
TX20	3	+0.1	TX60	9.9	+0.2
TX25	4	+0.1			

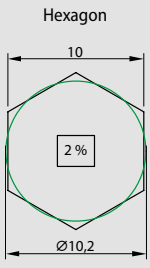
Torx Plus®	Hole Ø	Bore oversize 0.00 –	Torx Plus®	Hole Ø	Bore oversize 0.00 –
mm	mm	mm	mm	mm	mm
IP6	1.5	+0.1	IP20	3.2	+0.1
IP8	2	+0.1	IP25	3.6	+0.1
IP10	2.3	+0.1	IP30	4.5	+0.1
IP15	2.7	+0.1	IP40	5.4	+0.15

The guide value of the hole depth t for a blind hole is:
t = desired profile depth × factor 1.5.
A counterbore of the bore facilitates centring of the broach (countersink Ø ≙ the minimum external Ø of the profile).
At larger bore diameters the bore contour remains slightly visible on the faces. This does not cause any technical or qualitative restriction on the functionality of the profile.





Bore Ø min.



Bore Ø max.

External profiles

Preparation (workpiece)
To protect the cutting edge and reduce the machining time, pre-turn the workpiece to the smallest possible diameter.
It is essential that the workpiece diameter is less than the radius diameter of the hexagonal profile.

Guide values for workpiece Ø D (circle Ø less oversize):

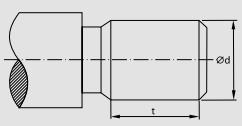
Width across flats AF	Material	Negative oversize Hexagon
mm	N	%
3 to 14	< 750	– 1 to – 7
3 to 14	< 900	- 3 to - 10

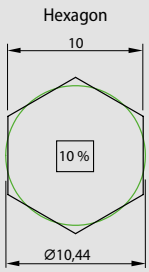
For hexagonal profiles a guide value for the diameter of the circumscribed circle is:
Ø D = Width across flats × factor 1.16.

Example calculation of radius diameter calculation (see diagram below):
Pre-turning Ø D_{min} = 10 mm × 1.16 – 10 % = 10.44 mm
Pre-turning Ø D_{max} = 10 mm × 1.16 – 1 % = 11.484 mm

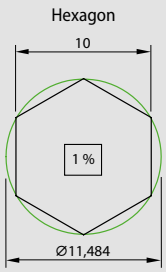
The guide value for the pre-turning length t is:
t = desired profile length × factor 1.2 to 1.4.

A rear chamfer or an undercut promotes chip breaking.
A chamfer on the workpiece facilitates centring of the cutter insert.





Pre-turning Ø min.



Pre-turning Ø max.

Profile broaching process (tumbling)
Concentric movement (tumbling) of the cutting edge quickly generates the desired profile in a single pass, with good process reliability.
When machining on a CNC lathe, start at a low speed (n ≈ 100 rpm – 200 rpm) and high feed rate (f ≈ 0.1 mm/rev – 0.3 mm//rev).
After a machining depth of approx. 0.5 mm, increase the feed rate and speed as shown in the table on page 922.
Retract at a higher feed rate.

Notes
For maximum stability, always select the largest possible toolholder.
Cooling lubrication is necessary – because of the small depth of the profile, external cooling is sufficient.

Garant Profile broaching (tumbling) – application guide values

			Alu plastics	Alu	Alu cast > 10 % Si	< 500 N	< 750 N	< 900 N	INOX < 900 N	GG(G)	CuZn
			N	N	N	P	P	P	M	K	N
Profile	Size		●	●	○	●	●	●	○	○	●
		V_c m/min	60	50	40	40	30	25	25	30	40
Hexagon	2 mm – 13 mm	f mm/rev	0.14	0.1	0.1	0.1	0.1	0.08	0.08	0.11	0.12
	14 mm – 25 mm		0.1	0.08	0.08	0.08	0.08	0.06	–	0.08	0.09
Square	2 mm – 11 mm		0.1	0.08	0.08	0.06	0.06	0.05	0.04	0.07	0.1
	12 mm – 20 mm		0.08	0.06	0.06	0.04	0.04	0.03	–	–	0.08
Torx® / Torx Plus®	TX5 – TX20 IP6 – IP20		0.14	0.1	0.1	0.1	0.1	0.08	0.08	0.11	0.12
	TX25 – TX60 IP25 – IP40		0.1	0.08	0.08	0.08	0.08	0.06	–	0.08	0.1

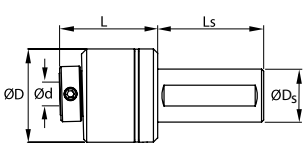
Garant Profile broaching holder for internal profiles

Optional extras: Positioning aid (No. 293000) and pin wrench (No. 293006).

Note:
- Caution: Always use appropriate slotting tool Ø.
- Other shank connections on request.

Holder with plain and Morse taper shank

29 3029/3079 – Suitable for automatic lathes.
Suitable for: CNC and conventional machines.
Optional extras: Drive-out tang for MT shanks can be ordered under No. 293008 in the sizes MT2, MT3 and MT4.



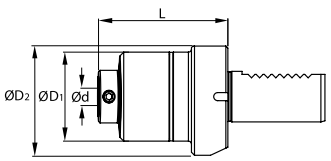

29 3023

Shank Ø D_s	29K 29 3029	29K 29 3020	29K 29 3023	29K 29 3026	L				L_s			Ø D			
	Toolholder for metric profile broaching tools				29 3029	29 3020	29 3023	29 3026	29 3029	29 3020	29 3023 29 3026	29 3029	29 3020	29 3023	29 3026
mm	Ø d = 5 mm	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
8	eShop	–	–	–	34	–	–	–	35	–	–	22	–	–	–
12	eShop	eShop	–	–	34	38	–	–	35	35	–	22	33	–	–
16	eShop	eShop	eShop	–	34	38	46	–	35	35	35	22	33	44	–
20	eShop	eShop	eShop	eShop	34	38	46	76	46	50	50	22	33	44	58
22	eShop	eShop	eShop	eShop	34	38	46	76	46	50	50	22	33	44	58
25	–	eShop	eShop	eShop	–	38	46	76	–	50	50	–	33	44	58
32	–	–	eShop	eShop	–	–	46	76	–	–	50	–	–	44	58
40	–	–	–	eShop	–	–	–	76	–	–	50	–	–	–	58
MK2	–	eShop	eShop	–	–	38	46	–	–	69	69	–	33	44	–
MK3	–	–	–	eShop	–	–	–	76	–	–	86	–	–	–	58
MK4	–	–	–	eShop	–	–	–	76	–	–	109	–	–	–	58

Shank Ø D_s	29K 29 3079	29K 29 3070	29K 29 3073	29K 29 3076	L				L_s		Ø D			
	Toolholder for imperial profile broaching tools				29 3079	29 3070	29 3073	29 3076	29 3079	29 3070 29 3073 29 3076	29 3079	29 3070	29 3073	29 3076
in	Ø d = 5 mm	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
5/8	eShop	eShop	–	–	34	38	–	–	35	35	22	33	–	–
3/4	eShop	eShop	eShop	eShop	34	38	46	76	46	50	22	33	44	58
1	–	eShop	eShop	eShop	–	38	46	76	–	50	–	33	44	58
1.1/4	–	–	eShop	eShop	–	–	46	76	–	50	–	–	44	58

Toolholder with VDI arbor

Suitable for: CNC machines.




29 3030

Shank mounting type	29K 29 3030	29K 29 3033	L	Ø D_1	Ø D_2
	Toolholder for VDI profile broaching tools				
	Ø d = 12 mm	Ø d = 16 mm	mm	mm	mm
VDI20	eShop	–	57	44	50
VDI25	eShop	–	64	44	58
VDI30	eShop	eShop	83	58	68
VDI40	eShop	eShop	83	58	83

Garant Cutter inserts for profile broaching holder

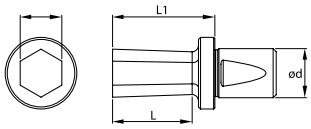
Application: For generation of profiles **in a single pass.**

Note:
- Special sizes and special profiles available on request.
- Detailed application values can be found in our application ToolScout.

Hex socket metric (stainless steels)

With high-performance coating (tungsten carbide/carbon). Optimised geometry of the cutting edge (hollows) for profile broaching in stainless steels.

Suitable for: Toolholder for profile broaching tools No. 293020 – 293026; 293070 – 293076; 293030; 293033.





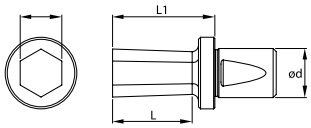
29 3044

Hexagon	29L 29 3041	29L 29 3044	29L 29 3047	L		Tolerance
	Profile broaching insert, hex socket metric					
	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm	29 3041	29 3044 29 3047	
mm	WC/C	WC/C	WC/C	mm	mm	mm
3	eShop	eShop	–	7	7	+0.06 to +0.08
4	eShop	eShop	eShop	9	9	+0.07 to +0.09
5	eShop	eShop	eShop	11	11	+0.08 to +0.1
6	eShop	eShop	eShop	13	13	+0.08 to +0.1
8	eShop	eShop	eShop	13	17	+0.08 to +0.1
10	–	eShop	eShop	–	21	+0.1 to +0.12
12	–	–	eShop	–	21	+0.11 to +0.13
14	–	–	eShop	–	21	+0.12 to +0.14
L_1 mm	18	25	40			

Hex socket metric

With TiN coating.

Suitable for: Profile broaching holder No. 293020 – 293079.





29 3040

Hexagon	29L 29 3049	29L 29 3040	29L 29 3043	29L 29 3046	L				Tolerance
	Profile broaching insert, hex socket metric								
	Ø d = 5 mm	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm	29 3049	29 3040	29 3043	29 3046	
mm	TiN	TiN	TiN	TiN	mm	mm	mm	mm	mm
1,5	eShop	eShop	eShop	–	3	3	3	–	+ 0.04 to + 0.06
2	eShop	eShop	eShop	–	3.5	3.5	3.5	–	+ 0.05 to + 0.07
2,5	eShop	eShop	eShop	–	4	4	4	–	+ 0.06 to + 0.09
3	eShop	eShop	eShop	eShop	5	5	5	5	+ 0.07 to + 0.1
3,5	eShop	eShop	eShop	eShop	6	6	6	6	+ 0.08 to + 0.11
4	eShop	eShop	eShop	eShop	6	6.5	6.5	6.5	+ 0.09 to + 0.12
4,5	eShop	eShop	eShop	eShop	7	7.5	7.5	7.5	+ 0.09 to + 0.12
5	eShop	eShop	eShop	eShop	7	8.5	8.5	8.5	+ 0.12 to + 0.15
6	eShop	eShop	eShop	eShop	7	10.5	10.5	10.5	+ 0.13 to + 0.16
7	–	eShop	eShop	eShop	–	12	13	13	+ 0.13 to + 0.16
8	–	eShop	eShop	eShop	–	12.5	15.5	15.5	+ 0.14 to + 0.17
9	–	eShop	eShop	eShop	–	12.5	20	20	+ 0.14 to + 0.17
10	–	eShop	eShop	eShop	–	12.5	20	20	+ 0.15 to + 0.18
11	–	–	eShop	eShop	–	–	20	20	+ 0.15 to + 0.18
12	–	–	eShop	eShop	–	–	20	20	+ 0.16 to + 0.19
13	–	–	eShop	eShop	–	–	20	28	+ 0.16 to + 0.19
14	–	–	eShop	eShop	–	–	20	32	+ 0.16 to + 0.19
15	–	–	–	eShop	–	–	–	32	+ 0.17 to + 0.2
16	–	–	–	eShop	–	–	–	32	+ 0.17 to + 0.2
17	–	–	–	eShop	–	–	–	32	+ 0.17 to + 0.2
18	–	–	–	eShop	–	–	–	32	+ 0.18 to + 0.21
19	–	–	–	eShop	–	–	–	32	+ 0.18 to + 0.21
20	–	–	–	eShop	–	–	–	32	+ 0.18 to + 0.21
21	–	–	–	eShop	–	–	–	32	+ 0.22 to + 0.26
22	–	–	–	eShop	–	–	–	32	+ 0.22 to + 0.26
23	–	–	–	eShop	–	–	–	32	+ 0.22 to + 0.26
24	–	–	–	eShop	–	–	–	32	+ 0.24 to + 0.28
25	–	–	–	eShop	–	–	–	32	+ 0.24 to + 0.28
L_1 mm	10	18	25	40					

Hex socket imperial

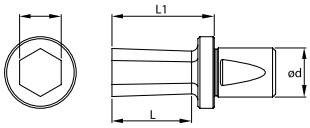
With TiN coating.

Suitable for: Profile broaching holder No. 293020 – 293079.

Hexagon	29L 29 3089	29L 29 3080	29L 29 3083	29L 29 3086	L				Tolerance
	Profile broaching insert, hex socket imperial								
	Ø d = 5 mm	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm	29 3089	29 3080	29 3083	29 3086	
in	TiN	TiN	TiN	TiN	mm	mm	mm	mm	mm
7/64	eShop	eShop	eShop	eShop	4	4	4	4	+ 0.06 to + 0.09
1/8	eShop	eShop	eShop	eShop	5	5	5	5	+ 0.07 to + 0.1
3/16	eShop	eShop	eShop	eShop	7	8	8	8	+ 0.1 to + 0.13
7/32	eShop	eShop	eShop	eShop	7	9.5	9.5	9.5	+ 0.13 to + 0.16
1/4	–	eShop	eShop	eShop	–	11	11	11	+ 0.13 to + 0.16
5/16	–	eShop	eShop	eShop	–	12.5	15.5	15.5	+ 0.13 to + 0.16
3/8	–	eShop	eShop	eShop	–	18	21	20	+ 0.14 to + 0.17
1/2	–	–	eShop	eShop	–	–	21	27	+ 0.16 to + 0.19
L_1 mm	10	18	25	40					



29 3089

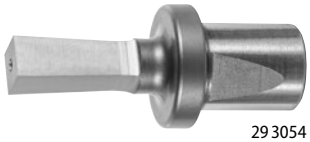


Square socket metric (stainless steels)

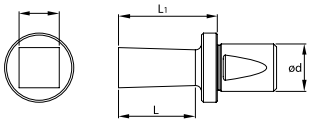
With high-performance coating (tungsten carbide/carbon). Optimised geometry of the cutting edge (hollows) for profile broaching in stainless steels.

Suitable for: Toolholder for profile broaching tools No. 293020 – 293026; 293070 – 293076; 293030; 293033.

Square	29L 29 3051	29L 29 3054	29L 29 3057	L	Tolerance
	Profile broaching insert, square socket metric				
	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm		
mm	WC/C	WC/C	WC/C	mm	mm
4	eShop	eShop	–	9	+ 0.07 to + 0.09
5	eShop	eShop	–	11	+ 0.08 to + 0.1
6	–	eShop	eShop	13	+ 0.08 to + 0.1
7	–	eShop	eShop	15	+ 0.08 to + 0.1
8	–	eShop	eShop	17	+ 0.08 to + 0.1
10	–	eShop	eShop	21	+ 0.1 to + 0.12
L_1 mm	18	25	40		



29 3054



Square socket metric

With TiN coating.

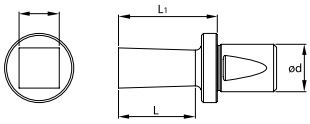
Suitable for: Profile broaching holder No. 293020 – 293079.

Note: The manufacture of square profiles > 9 mm is recommended only in easily machined materials (higher rate of material removal).

Square	29L 29 3059	29L 29 3050	29L 29 3053	29L 29 3056	L			Tolerance
	Profile broaching insert, square socket metric							
	Ø d = 5 mm	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm	29 3059	29 3050	29 3053 29 3056	
mm	TiN	TiN	TiN	TiN	mm	mm	mm	mm
1,5	eShop	eShop	eShop	–	3	3	3	+ 0.04 to + 0.06
2	eShop	eShop	eShop	–	3.5	3.5	3.5	+ 0.05 to + 0.07
2,5	eShop	eShop	eShop	–	4	4	4	+ 0.06 to + 0.09
3	eShop	eShop	eShop	eShop	5	5	5	+ 0.07 to + 0.1
3,5	eShop	eShop	eShop	eShop	6	6	6	+ 0.08 to + 0.11
4	eShop	eShop	eShop	eShop	6.5	6.5	6.5	+ 0.09 to + 0.12
4,5	eShop	eShop	eShop	eShop	7.5	7.5	7.5	+ 0.09 to + 0.12
5	eShop	eShop	eShop	eShop	6	8.5	8.5	+ 0.12 to + 0.15
6	eShop	eShop	eShop	eShop	6	10.5	10.5	+ 0.13 to + 0.16
7	–	eShop	eShop	eShop	–	12	13	+ 0.13 to + 0.16
8	–	–	eShop	eShop	–	–	15.5	+ 0.14 to + 0.17
9	–	–	eShop	eShop	–	–	20	+ 0.14 to + 0.17
10	–	–	eShop	eShop	–	–	20	+ 0.15 to + 0.18
11	–	–	–	eShop	–	–	20	+ 0.15 to + 0.18
12	–	–	–	eShop	–	–	20	+ 0.16 to + 0.19
13	–	–	–	eShop	–	–	28	+ 0.16 to + 0.19
14	–	–	–	eShop	–	–	32	+ 0.16 to + 0.19
15	–	–	–	eShop	–	–	32	+ 0.17 to + 0.2
16	–	–	–	eShop	–	–	32	+ 0.17 to + 0.2
17	–	–	–	eShop	–	–	32	+ 0.17 to + 0.2
18	–	–	–	eShop	–	–	32	+ 0.18 to + 0.21
19	–	–	–	eShop	–	–	32	+ 0.18 to + 0.21
20	–	–	–	eShop	–	–	32	+ 0.18 to + 0.21
L_1 mm	10	18	25	40				



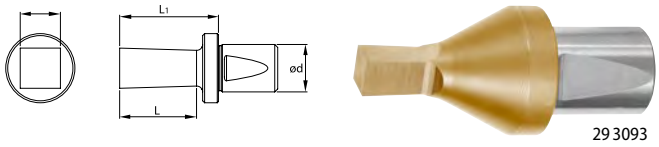
29 3053



Square socket imperial

With TiN coating.

Suitable for: Profile broaching holder No. 293020 – 293079.



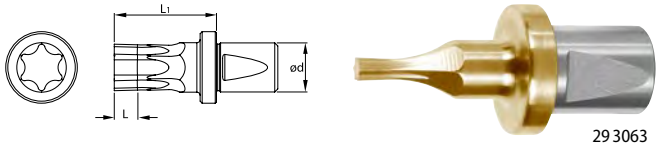
29 3093

Square	29L 29 3099	29L 29 3090	29L 29 3093	29L 29 3096	L			Tolerance
	Profile broaching insert, square socket imperial							
	Ø d = 5 mm	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm	29 3099	29 3090 29 3093	29 3096	
in	TiN	TiN	TiN	TiN	mm	mm	mm	mm
3/16	eShop	–	–	–	7	–	–	+ 0.1 to + 0.13
7/32	eShop	eShop	eShop	eShop	7	10.5	10.5	+ 0.13 to + 0.16
1/4	–	eShop	eShop	eShop	–	12	12	+ 0.13 to + 0.16
3/8	–	–	eShop	eShop	–	21	20	+ 0.14 to + 0.17
1/2	–	–	eShop	eShop	–	21	27	+ 0.16 to + 0.19
L_1 mm	10	18	25	40				

Torx® internal profile

With TiN coating.

Suitable for: Profile broaching holder No. 293020 – 293079.



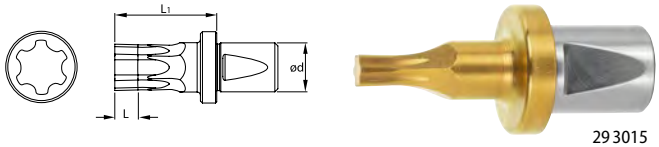
29 3063

Torx® profile	29L 29 3069	29L 29 3060	29L 29 3063	29L 29 3066	L	Tolerance
	Profile broaching insert internal Torx®					
	Ø d = 5 mm	Ø d = 8 mm	Ø d = 12 mm	Ø d = 16 mm		
mm	TiN	TiN	TiN	TiN	mm	mm
TX5	eShop	eShop	eShop	–	1.5	0.0 to +0.01
TX6	eShop	eShop	eShop	–	1.7	0.0 to +0.01
TX7	eShop	eShop	eShop	–	1.7	0.0 to +0.01
TX8	eShop	eShop	eShop	–	2	- 0.005 to + 0.01
TX10	eShop	eShop	eShop	eShop	2	- 0.005 to + 0.01
TX15	eShop	eShop	eShop	eShop	3	- 0.005 to + 0.01
TX20	eShop	eShop	eShop	eShop	3.5	- 0.005 to + 0.01
TX25	–	eShop	eShop	eShop	4	- 0.005 to + 0.01
TX27	–	eShop	eShop	eShop	4	- 0.005 to + 0.01
TX30	–	eShop	eShop	eShop	4.5	- 0.005 to + 0.01
TX40	–	–	eShop	eShop	5	- 0.01 to + 0.01
TX45	–	–	eShop	eShop	5.5	- 0.01 to + 0.01
TX50	–	–	eShop	eShop	6	- 0.01 to + 0.01
TX55	–	–	eShop	eShop	7	- 0.015 to + 0.015
TX60	–	–	–	eShop	7.5	- 0.015 to + 0.015
L_1 mm	10	18	25	40		

Torx Plus® internal profile

With TiN coating.

Suitable for: Profile broaching holder No. 293020 – 293079.



29 3015

Torx Plus® profile	29L 29 3015	29L 29 3017	L	Tolerance
	Profile broaching insert, internal Torx Plus®			
	Ø d = 8 mm	Ø d = 12 mm		
mm	TiN	TiN	mm	mm
IP6	eShop	eShop	1.7	0.01 to +0.02
IP8	eShop	eShop	2	+0.005 to +0.02
IP10	eShop	eShop	2	+0.005 to +0.02
IP15	eShop	eShop	3	+0.005 to +0.02
IP20	eShop	eShop	3.5	+0.005 to +0.02
IP25	eShop	eShop	4	+0.005 to +0.02
IP30	eShop	eShop	4.5	+0.005 to +0.02
IP40	–	eShop	5	0.0 to +0.02
L_1 mm	18	25		

Garant Profile broaching holder for external profiles

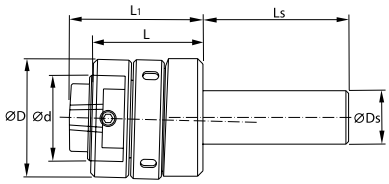
Holder

Suitable for: CNC and conventional machines.



29 3102

Shank ∅ D_s		mm	16	20	25	32
29K 29 3102	Profile broaching holder ∅ d = 32 mm		eShop	eShop	eShop	eShop
L		mm	41.5			
L_1		mm	50			
L_s		mm	50			
∅ D		mm	44			



Adapter

Suitable for:

Size 16 – Profile broaching holderfor internal profiles No. 293026, 293033, 293076.

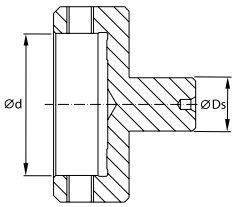
Size 12 – Profile broaching holderfor internal profiles No. 293023, 293030, 293073.

Application: With this adapter, cutter inserts for outer profiles can also be used in conjunction with a profile broaching holder for inner profiles.

Note: For reasons of stability, use the profile broaching holder No. 293102 on higher batch sizes or materials that are difficult to machine.



29 3105



Shank ∅ D_s		mm	12	16
29K 29 3105	Adapter ∅ d = 32 mm		eShop	eShop
Profile length t_{max}		mm	20	31 (up to 8 AF); 20 (from 10 AF)
L		mm	17	32
L_1		mm	25.5	40.5
L_s		mm	15	19

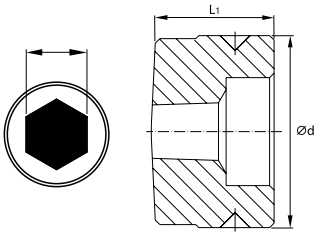
Garant Cutter inserts for profile broaching holder

With TiN coating.

Note: Special geometries on request.
Detailed application values can be found in our application ToolScout.



29 3110



External hexagon

Hexagon			mm	3	4	5	6	8	10	12	14
29L 29 3110	Profile broaching insert for external hexagon ∅ d = 32 mm	TiN		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L_1			mm	20.5							
Profile length t_{max}			mm	40	40	40	40	30	30	30	30
Tolerance			mm	- 0.05 to - 0.09	- 0.06 to - 0.1	- 0.07 to - 0.11	- 0.08 to - 0.12	- 0.09 to - 0.14	- 0.09 to - 0.14	- 0.1 to - 0.15	- 0.11 to - 0.16

r

Garant

Radius turning tool

Application: For turning convex radii on external or internal diameters.

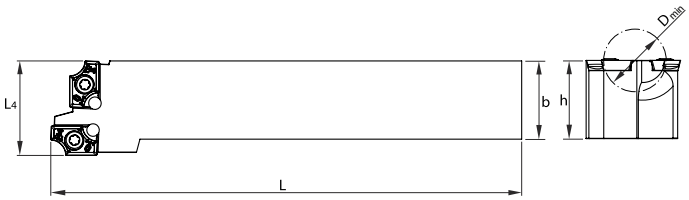


294500

Holder

Suitable for: Radius indexable inserts No. 294510 and 216841.

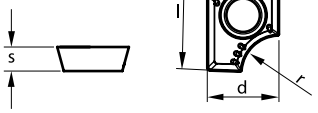
Note: D_{min} corresponds to the smallest possible internal diameter of the component to avoid collisions.



Shank height h	mm	16	20	25
21T 29 4500	Toolholder for radius indexable inserts	eShop	eShop	eShop
suitable indexable insert		294510		
b	mm	16	20	25
D_{min}	mm	20		
L_4	mm	30		
L	mm	100	125	150
Insert screw		269021 2 (TX15; 3 Nm)		

Radius indexable inserts

Suitable for: Toolholder No. 294500 and radius cutter No. 216825.





294510_5

Radius r	mm	1	1,5	2	2,5	3	3,5	4	4,5	5	
21A 29 4510	Radius indexable insert HB7525	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
●		UNI	UNI	UNI	UNI	UNI	UNI	UNI	UNI	UNI	
⚙		■	■	■	■	■	■	■	■	■	
s	mm	3.18									
l	mm	15									
d	mm	9.52									
f	mm/rev.	0.1 – 0.4									
v_c main application	m/min	110 – 390									

Radius turning tool

Application: For turning convex radii on external or internal diameters.

Holder

With ground contact face and location pins for mounting radius indexable inserts.



240026

Shank height h	mm	10	12	16	20	25
29W 24 0026	Toolholder for radius indexable inserts	eShop	eShop	eShop	eShop	eShop
for radius indexable inserts		R1 – R6	R1 – R6	R1 – R6	R1 – R6	R 8 – 12
Shank width	mm	10	12	16	20	25
L	mm	103	103	103	117	125

Radius indexable inserts

HSS Co5

Ground all round and each with four radii of the same size. The cutting edges are relief ground and have chip breakers for best cutting conditions over the entire radius sector.
The **rake angle** of **12°** is suitable for general purpose use.



240030_R5

Radius	mm	R1	R1,5	R2	R2,5	R3	R4	R5	R6	R8	R10	R12
29W 24 0030	Radius indexable insert 12° HSS-Co5, H7	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

HOLEX Tool bits

Tool bits with straight-cut square ends.

29 5000 – **Square tool bits to DIN 4964 form B. Width:** Tolerance **h12.** Ends chamfered.
29 5020 – **Tool bits to DIN 4964 form A.** Precision ground within tolerance **h14.**
29 5030 – **Solid carbide**. Precision round tool bits. Ground within tolerance **h6.**
29 5060 – **Rectangular tool bits to DIN 4964 form D.**
29 5080 – **Trapezoidal tool bits to DIN 4964 form E.**
29 5000/5020 – **HSS Co 10** (10 % cobalt, 67 HRC).
29 5060/5080 – Height and width: Tolerance **h14. HSS Co 10** (10 % cobalt).

Application: For turning, boring out, grooving etc.; particularly for production of blanks for profile cutters.



HSS Co 10 29 5000



HSS Co 10 29 5020



Solid carbide 29 5030



HSS-Co 10 29 5060



HSS-Co 10 29 5080

D×Length	22E 29 5000	22E 29 5020	22E 29 5030
	Square tool bit	Round tool bit	
mm	HSS Co 10	HSS Co 10	Solid carbide
2×40	–	eShop	–
3×63	–	eShop	–
3×100	–	–	eShop
4×63	–	eShop	–
4×80	eShop	eShop	–
4×100	–	–	eShop
5×63	–	eShop	–
5×80	eShop	eShop	–
5×100	–	–	eShop
6×63	–	eShop	–
6×80	eShop	eShop	–
6×100	eShop	eShop	eShop
8×63	eShop	eShop	–
8×80	–	eShop	–
8×100	eShop	eShop	eShop
8×125	eShop	eShop	–
8×160	eShop	–	–
10×63	eShop	eShop	–
10×80	eShop	eShop	–
10×100	eShop	eShop	eShop
10×125	eShop	–	–
10×160	eShop	eShop	–
10×200	eShop	–	–
12×63	eShop	–	–
12×80	eShop	eShop	–
12×100	eShop	eShop	eShop
12×125	eShop	eShop	–
12×160	eShop	eShop	–
12×200	eShop	–	–
14×100	eShop	–	eShop
14×125	eShop	–	–
14×160	eShop	eShop	–
14×200	eShop	–	–
16×100	eShop	–	eShop
16×125	eShop	eShop	–
16×160	eShop	eShop	–
16×200	eShop	–	–
20×100	–	–	eShop
20×160	eShop	eShop	–
20×200	eShop	eShop	–
25×160	eShop	–	–
25×200	eShop	–	–

Height× width	22E 29 5060	22E 29 5080	Length	
	Square tool bit	Trapezoidal tool bit		
mm	HSS Co 10	HSS Co 10	29 5060 mm	29 5080 mm
8×4	eShop	–	100	–
10×2,5	–	eShop	–	80
10×2,5L	–	eShop	–	125
10×5	eShop	–	160	–
10×6	eShop	–	160	–
12×3	–	eShop	–	160
12×6	eShop	–	160	–
12×8	eShop	–	160	–
16×4	eShop	eShop	80	100
16×4L	eShop	eShop	100	160
16×4XL	eShop	–	160	–
16×10	eShop	–	100	–
16×10L	eShop	–	160	–
16×10XL	eShop	–	200	–
20×5	–	eShop	–	160
20×5L	–	eShop	–	200
20×12	eShop	–	160	–
25×6	eShop	eShop	200	160
25×12	eShop	–	200	–

HOLEX D-bit

29 5040 – **HSS Co 10** (10 % cobalt). **D-bits with straight cutting edge,** precision ground within tolerance **h8.** Half section pre-ground, 0.2 mm grinding allowance.

29 5050 – **Solid carbide. D-bits with straight cutting edge.** Precision ground with maximum run-out error 0.005 mm. Half section pre-ground. **Shank tolerance up to diameter 8 mm = h7.**

Application: For engraving and copying in tool, mould, and die making.

D×Length	22E 29 5040	22E 29 5050	Cutter length	
	D-bits		29 5040	29 5050
mm	HSS Co 10	Solid carbide	mm	mm
2×40	eShop	eShop	3.5	3
2,5×40	–	eShop	–	3
3×50	–	eShop	–	3
3×63	eShop	–	4.5	–
4×63	eShop	eShop	6	4
4×80	eShop	–	6	–
5×63	–	eShop	–	5
5×80	eShop	–	7.5	–
6×80	eShop	eShop	9	6
6×100	eShop	–	9	–
8×90	eShop	eShop	12	8
10×125	eShop	–	15	–
12×140	eShop	–	18	–

HSS Co10



HSS Co 10 29 5040

Solid carbide



Solid carbide 29 5050

HOLEX HSS/E turning tool

All dimensions **welded.**

Application: Universally applicable, medium cutting speeds.

Shank square	mm	12	16	20
22E 29 6100 Turning tool **right-hand similar to DIN 4952** HSS E		eShop	eShop	eShop
Overall length	mm	110	140	160



29 6100

Shank ∅	mm	8	10	12	16
22E 29 6300 Internal turning tool **right-hand similar to DIN 4953** HSS E		eShop	eShop	eShop	eShop
Overall length	mm	140	160	180	220
for bores from ∅	mm	18	20	22	30



29 6300

Shank ∅	mm	6	8	10	12	16
22E 29 6400 Internal corner turning tool **right-hand similar to DIN 4954** HSS E		eShop	eShop	eShop	eShop	eShop
Overall length	mm	125	140	160	180	220
for bores from ∅	mm	16	18	20	22	30



29 6400

Shank square	mm	12	16	20
22E 29 6500 Pointed turning tool, straight **neutral similar to DIN 4955** HSS E		eShop	eShop	eShop
22E 29 6750 Corner turning tool cranked **right-hand similar to DIN 4965** HSS E		eShop	eShop	eShop
Overall length	mm	110	140	160



29 6500



29 6750

Shank square	mm	12	16	20
22E 29 6800 Side turning tool **right-hand similar to DIN 4960** HSS E		eShop	eShop	eShop
Overall length	mm	110	140	160



29 6800

Shank height	mm	12	16	20
22E 29 7000 Parting off tool **right-hand similar to DIN 4961** HSS E		eShop	eShop	eShop
Overall length	mm	110	125	140
Shank width b	mm	8	10	12
Blade width	mm	3	3	4

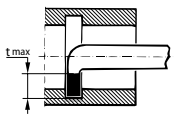


29 7000

Shank ∅	mm	6	8	10	12	16	20
22E 29 7120 Hook turning tool **right-hand similar to DIN 4963** HSS E		eShop	eShop	eShop	eShop	eShop	eShop
Overall length	mm	125	140	160	180	210	250
Blade width	mm	2	2	3	3	4	5
for bores from ∅	mm	13	16	20	25	32	40
maximum grooving depth t_{max}	mm	3	4	6	8	10	14



29 7120



HOLEX Carbide turning tool

Turning tool

Fitted with diamond ground carbide inserts.

Application: P20/K25 for machining steel and cast iron.
M20 for machining stainless steels.

Attention: For rough and interrupted machining the cutting edges should be sharpened with a boron carbide hand lapper (No. 558812).

Shank square		mm	10	12	16	20	25
22E 29 6025	Turning tool **right-hand, similar to DIN 4971 (ISO 1)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 6030		M20	eShop	eShop	eShop	eShop	eShop
Overall length		mm	90	100	110	125	140


29 6025


29 6030

Shank square		mm	10	12	16	20	25
22E 29 6125	Turning tool **right-hand, similar to DIN 4972 (ISO 2)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 6130		M20	eShop	eShop	eShop	eShop	eShop
22E 29 6225	Turning tool **left-hand, similar to DIN 4972 (ISO 2)**	P20/K25	eShop	eShop	eShop	eShop	eShop
Overall length		mm	100	100	110	125	140


29 6125


29 6130

Shank square		mm	10	12	16	20	25
22E 29 6325	Internal turning tool **right-hand, similar to DIN 4973 (ISO 8)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 6330		M20	eShop	eShop	eShop	eShop	eShop
Overall length		mm	150	180	210	250	300
for bores from ∅		mm	18	21	27	34	43


29 6325


29 6330

Shank square		mm	10	12	16	20	25
22E 29 6425	Internal corner turning tool **right-hand, similar to DIN 4974 (ISO 9)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 6430		M20	eShop	eShop	eShop	eShop	eShop
22E 29 6455	Internal corner turning tool **left-hand, similar to DIN 4974 (ISO 9)**	P20/K25	eShop	eShop	eShop	eShop	eShop
Overall length		mm	150	180	210	250	300
for bores from ∅		mm	18	21	27	34	43


29 6425


29 6430

Shank height		mm	16	20	25
22E 29 6525	Turning tool **neutral, similar to DIN 4975 (ISO 10)**	P20/K25	eShop	eShop	eShop
Overall length		mm	110	125	140
Shank width b		mm	10	12	16


29 6525

Shank height		mm	10	12	16	20	25
22E 29 6605	Turning tool, wide **neutral, similar to DIN 4976 (ISO 4)**	P20/K25	eShop	eShop	eShop	eShop	eShop
Overall length		mm	90	100	110	125	140
Shank width b		mm	10	12	16	12	16
Blade width		mm	10	12	16	12	16


29 6605

Shank square		mm	10	12	16	20	25
22E 29 6705	Face turning tool **right-hand, similar to DIN 4977 (ISO 5)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 6715		M20	eShop	eShop	eShop	eShop	eShop
Overall length		mm	90	100	110	125	140


29 6705


29 6715

Shank square		mm	10	12	16	20	25
22E 29 6745	Corner turning tool **right-hand, similar to DIN 4978 (ISO 3)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 6755		M20	eShop	eShop	eShop	eShop	eShop
Overall length		mm	90	100	110	125	150


29 6745


29 6755

Shank square		mm	10	12	16	20	25
22E 29 6825	Turning tool **right-hand, similar to DIN 4980 (ISO 6)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 6830		M20	eShop	eShop	eShop	eShop	eShop
22E 29 6925	Turning tool **left-hand, similar to DIN 4980 (ISO 6)**	P20/K25	eShop	eShop	eShop	eShop	eShop
Overall length		mm	90	100	110	125	140


29 6825


29 6830

Shank height		mm	12	16	20	25
22E 29 7025	Grooving tool **right-hand, similar to DIN 4981 (ISO 7)**	P20/K25	eShop	eShop	eShop	eShop
22E 29 7030		M20	eShop	eShop	eShop	eShop
22E 29 7105	Grooving tool **left-hand, similar to DIN 4981 (ISO 7)**	P20/K25	eShop	eShop	eShop	eShop
Overall length		mm	100	110	125	140
Shank width b		mm	8	10	12	16
Blade width		mm	3	4	5	6


29 7025


29 7030

Shank square		mm	10	12	16	20	25
22E 29 7135	Hook turning tool **right-hand, similar to DIN 263 (ISO 11)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 7145		M20	eShop	eShop	eShop	eShop	eShop
Overall length		mm	150	160	180	210	250
Blade width		mm	3	4	5	6	8
for bores from ∅		mm	25	30	40	50	60
maximum grooving depth t_{max}		mm	6	10	12	16	20


29 7135


29 7145

Shank square		mm	10	12	16	20	25
22E 29 7155	Thread turning tool **right-hand, similar to DIN 282 (ISO 12)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 7165		M20	eShop	eShop	eShop	eShop	eShop
Overall length		mm	90	110	125	140	140


29 7155


29 7165

Shank square		mm	10	12	16	20	25
22E 29 7175	Internal thread turning tool **right-hand, similar to DIN 283 (ISO 13)**	P20/K25	eShop	eShop	eShop	eShop	eShop
22E 29 7185		M20	eShop	eShop	eShop	eShop	eShop
Overall length		mm	150	160	180	210	250
for bores from ∅		mm	20	30	36	45	55

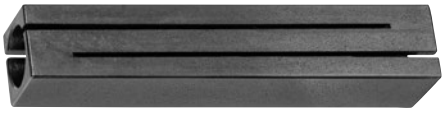

29 7175


29 7185

Turning toolholder with bore

Slotted in opposite direction; the round boring bar shank is clamped firmly and securely with only little pressure. All external surfaces are machined square.

Application: For holding turning tools with a round shank No. 296300, 296400, 297120 and for round tool bits No. 295020.


29 7200

Bore ∅		mm	6	8	10	12	16	20
22E 29 7200	Turning toolholder with bore		eShop	eShop	eShop	eShop	eShop	eShop
Height		mm	10	12	14	16	20	25
Overall length		mm	70	80	85	90	100	110

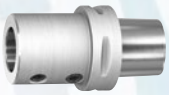
Innovations – Clamping technology

NEW

We use this symbol to tag new items in our range of catalogue products



From page **961**
GARANT Master Chuck
SK40 with A-dimension 160



From page **1006**
GARANT PSC arbor
for indexable drill



From page **1013**
Fahrion precision ER
collets, metallic sealed



Page **1025**
GARANT
HSK coolant tube with filter



Page **1030**
HOLEX
soft scroll jaws



Page **1070**
EWS Varia VXT holders
& inserts



Page **1074**
GARANT driven tools
for BMT turrets



From page **1075**
GARANT & HOLEX
BMT toolholders



From page **1077**
GARANT eco
toolholder slim



Page **1089**
GARANT lightweight revolving
lathe centre



Page **1098**
GARANT revolving
lathe centre with pressure
indicator



Page **1113**
Fahrion CENTRO P SYNCHRO
tapping chuck



From page **1113**
Llambrich keyless
drill chuck made of stainless steel



Page **1124**
Bilz
shrink-fit unit



Page **1134**
INSIGHT
Clear View Disk



Page **1135**
GARANT
length setting gauge



Page **1139**
GARANT
digital 3D edge finder



Page **1157**
GARANT
adapter plate



Page **1164**
GARANT Xtric
automation centring vice



Page **1182**
Allmatic
TeleCentric



Page **1185**
HOLEX
workpiece backstop



Page **1187**
GARANT HiPo Clamp
NC high-pressure vice



Page **1189**
HOLEX
NC high-pressure vice



Page **1198**
GARANT
modular NC high-pressure vice



Page **1205**
GARANT high-pressure
machine vice



Page **1220, 1223**
Kipp clamping cams, centring
clamps & wedge clamps



From page **1227**
HOLEX
clamping elements



Page **1253**
GARANT
lifting magnet

Clamping technology

You can obtain the whole catalogue range of these brands from the Hoffmann Group – just ask us for it!



Chucks, arbors, accessories

30 939 – 1026



Lathe chucks, quick-change toolholders, VDI toolholders, driven tools

31 1027 – 1080



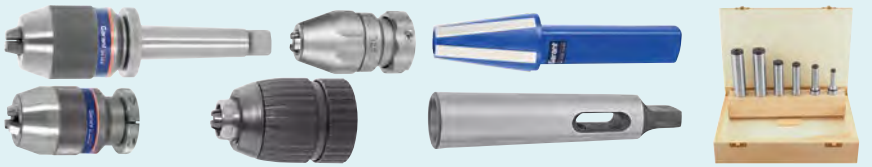
Lathe centres, face drivers, collets, clamping heads, toolholders for indexable inserts

32 1081 – 1104



Tapping chucks, quick-change chucks, tap extensions

33 1105 – 1113



Drill chucks, arbors, taper sleeves, taper cleaners, slitting saw arbors

34 1113 – 1121



Edge finder, 3D edge finder, shrink-fit unit, pre-setting device, data clip, tool fitting aid, cleaning aids

35 1122 – 1143



Zero-point clamping system, NC vices, centring vices, clamping rails, 5-axis vices, sets of parallels

36 1144 – 1216



Machine clamps, toggle clamps

37 1217 – 1252



Load lifting magnets, permanent magnet tables, electro-permanent magnets, demagnetisers, vacuum clamping technology

38 1253 – 1261



Manuals, coolant, cleaning tools, magnetic grippers and bar holders

Machining accessories 1262 – 1283

Pictograms

Standard

DIN 69871 | ISO 7388-1 | DIN 2080 | JIS B6339 | ISO 7388-2 | DIN 69893 | ISO 12164-1 | DIN 6359

DIN 6358 | DIN 69882-2 | ISO 26623-1 | ISO 26622-1 | ISO 12164-3

Tool arbors
Shank type,
Gripper groove, and interface correspond to this DIN.

DIN 69872 | ISO 7388 | MAS 403 | ISO 7388-3

Pull studs correspond to this DIN.

ISO 10897 | ISO 15488-A | ISO 15488-B | DIN 2084

ER / OZ collets / clamping nuts and accessories correspond to this DIN.

Standard

Manufacturer's standard

Coolant feed

Note: **CS** = **C**oolant **s**upply / **ICS** = **I**nternal **c**oolant **s**upply / **CCB** = **C**ooling **chan**nel **b**ores.

Form A | Form E | Form F

For ISO tapers: no central coolant supply available (the arbor is **not** bored through).
For hollow shank taper: central axial coolant supply available via a coolant pipe.
Form F: no central coolant supply available, only through bored.

Form AD

Conforms to standard JIS B 6339-2: Form JD -> Central coolant feed through the tightening bolt. A pull stud with through-hole is required for this purpose.
DIN ISO 7388-1 (formerly DIN 69871): Form AD -> Central coolant feed through the tightening bolt. A pull stud with through-hole is required for this purpose.

Form ADB

Conforms to the new standard DIN ISO 7388-1 (former DIN 69871): form ADF -> inner coolant feed optionally through the centre (form AD) and via the collar (form AF).
Conforms to standard JIS B 6339-2: Form JD/JF -> inner coolant feed optionally through the centre (form JD) and via the collar (form JF).
DIN 69871: Coolant supplied centrally (= form AD) or laterally via the collar (= form B).

≤50 bar

Internal coolant supply limited to maximum 50 bar, or suitable for internal coolant supply.

Arbors with cooling channel bores and **closable threads.**

Arbors with cooling channel bores **cannot be plugged.**

Radial run-out

≤2µm | ≤3µm | ≤5µm | ≤6µm | ≤10µm | ≤20µm | ≤30µm | ≤50µm

Radial run-out of various arbors and short drill chucks.

Run-out of ER collets: HP = High precision ER collet **(2 µm)** FAHRION
ER standard collet **(5 µm)** FAHRION
ER standard collet **(10 µm)** HOLEX

≤3µm HP+CP | ≤6µm ER+CP | ≤10µm OZ+CP | 6µm ER+HDC | 3µm HP+HDC

System radial run-out FAHRION ER precision collet chuck **Centro P (CP) and HDC in connection** with FAHRION ER collets **(HP or standard)** or **OZ collet (type 444E).**

Balancing speed

G 6.3 8000 min^{-1} | G 6.3 12000 min^{-1} | G 6.3 15000 min^{-1} | G 2.5 18000 min^{-1} | G 6.3 20000 min^{-1} | G 2.5 25000 min^{-1} | G 2.5 30000 min^{-1} | G 2.5 40000 min^{-1} | G 6,3 18000 min^{-1}

Balancing quality of various arbors: e.g. precision balanced to G2.5 at 25000 rpm.

Application

HSC — Arbor suitable for High speed machining (high speed cutting)

HPC — Arbor suitable for high performance cutting.

IP 67 — Tool dust-tight and watertight.

≤14 Nm — Maximum tightening torque (M_{Dmax}).

Form A — **For HSK arbors:**
– Application in machining centres.
– Torque transmission by 2 drive slots at the end of the taper.

Form E — **For HSK arbors:**
– Used for high frequency spindles (e.g. woodworking machines)
– Rotationally symmetrical, without drive slots.
– Torque transmission by friction.

Vibration damping

Prepared for zero point clamping system

BT-DC — BT arbors with double contact

EH — Energy harvesting – battery-free tool.
Power supply for the pressure indicator by rotation of the point.
Power is obtained from the integral generator.

Hoffmann Group Connected Suite

Bluetooth interface

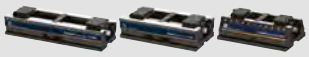
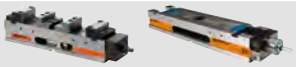
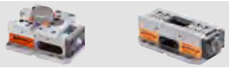
HCT — Compatible with the HCT mobile app

Workpiece clamping

Find the right tool quickly and easily.



Lathe chucks – Group 31		Colour code	Ø in mm					Page
	**RÖHM Geared scroll chucks** ■ DIN 6350 / DIN702-4 ■ DIN 55027 / DIN702-3 ■ DIN 55029 / DIN 702-2		160 400	80 200	100 250	125 315		**1028**
	**HOLEX** **Geared scroll chucks** ■ DIN 6350 / DIN 702-4 ■ DIN 55027 / DIN 702-3			80 200	100 250	125 315	160 400	**1031**
	**SCHUNK** **Self-centring lathe chucks** ■ DIN 55027 / DIN 702-3 ■ DIN 6350 / DIN 702-4			160	200	250	315	**1035**
	**RÖHM** **Self-centring lathe chucks** ■ DIN 6350 / DIN 702-4 ■ DIN 55027 / DIN 702-3			160	200	250	315	**1034**

Vices – Group 36		Colour code	Width in mm					Page
	GARANT centring vice		80	120				**1155**
	GARANT centring vice, pneumatic			100		160		**1158**
	GARANT XGripp embossing station	–				150		**1160**
	GARANT XTric		50	80	125			**1162**
	HOLEX centring vice					75	120	**1171**
	GARANT Xpent			100	125			**1173**
	ALLMATIC TeleCentric ALLMATIC TeleSense		70		125			**1182** **1183**
	ALLMATIC NC8			90	125	160	200	**1186**
	GARANT HiPo Clamp				125	160		**1187**
	GARANT LC				125			**1188**
	HOLEX NC vice				125	160		**1189**
	ALLMATIC DUO ALLMATIC DUO PLUS			90	 125			**1190**
	ALLMATIC T-REX ALLMATIC CENTRO GRIPP				125			**1192** **1191**
	ALLMATIC TITAN2 ALLMATIC TITANSense				125	160		**1197** **1196**
	GARANT LCV 125G				125			**1198**
	ALLMATIC HD GARANT HD			100	125 125	160 160		**1204** **1205**
	HOLEX high-pressure vice		113		135		160	**1205**
	GERARDI HOLEX MODULAR				125 125	150 150	200	**1208** **1209**
	HOLEX stationary machine vice					150		**1206**

Colour code in Group 30, 31, 32, 33 and 35

Find the right tool quickly and easily.

A simple colour coding can be found in respective tables for a quick visual assignment and linking of tool groups across different products.

Arbors group 30, 31, 32, 33	ISO taper arbors									ISO taper arbors with double contact									
	DIN 69871			DIN 2080			MAS BT JIS B 6339			DIN 69871			MAS BT JIS B 6339			DIN 69893 (Form A, E)			
Taper size	SK 30	SK 40	SK 50	SK 30	SK 40	SK 50	BT 30	BT 40	BT 50	SK-DC 30	SK-DC 40	SK-DC 50	BT-DC 30	BT-DC 40	BT-DC 50	HSK 25	HSK 32	HSK 40	HSK 50
Colour code																			
	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page
Weldon arbor	939	939	939	○	969	○	971	971	971	○	○	○	983	983	983	-	○	○	○
Whistle Notch arbor	-	941	941	-	-	-	-	○	○	-	○	○	-	○	○	-	○	○	○
Combination arbor Weldon/ Whistle-Notch	-	941	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ER collet chuck	943	942	942	○	970	○	972	972	972	○	○	○	983	983	983	990	○	988	○
OZ collet chuck	○	946	○	○	○	○	○	○	○	○	○	○	○	○	○	-	-	-	○
Combination face mill adapter	○	947	947	○	970	970	○	976	976	○	○	○	○	984	○	-	○	○	○
Face mill arbor	948	948	948	-	○	○	976	976	977	○	○	○	984	984	○	-	-	-	○
Reducing sleeve arbor	○	950	950	○	○	○	○	975	975	-	○	○	-	○	○	-	-	-	○
Screw-in milling arbor	952	951	951	-	-	-	○	978	978	-	○	○	-	○	○	-	-	-	-
Short drill chuck	957	957	957	○	969	969	981	981	981	○	○	○	○	○	○	-	○	1001	○
Micro drill chuck	○	-	-	-	-	-	○	-	-	-	-	-	-	-	-	○	○	○	-
Hydraulic chucks	○	958	958	-	-	-	978	978	980	○	○	○	○	○	○	-	○	999	999
Heavy-duty chuck	○	946	946	-	-	-	○	975	975	-	○	○	-	○	○	-	-	○	○
Shrink-fit arbor	963	962	962	-	-	-	982	981	982	○	○	○	984	984	○	-	○	1002	1002
Toolholders for indexable inserts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reduction / extensions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quick-change tapping chucks	○	1106	1106	○	○	○	1107	1107	1107	○	○	○	○	○	○	-	-	○	○
Axial / radial toolholder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VDI toolholder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indexable drill arbor	-	951	951	-	-	-	-	977	977	-	○	○	-	○	○	-	-	-	-
Boring bar holder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parting-off toolholder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Driven tools	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blanking plug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	1078	○

○ = available on request / – = not available

Tool clamping

Colour code examples:

In groups 30, 31, 32, 33 and 35 these products and tool groups have SK40 tapers.
This ensures that SK40 arbors, clamping fixtures in group 35 and UNIT storage systems in group 97 are compatible.

Hollow shank taper arbors												 BMT toolholders							 VDI toolholders					
DIN 69893 (Form A, E)			(Form F)	HSK-T ISO 12164-3 (Form T)			Polygonal shank ISO 26623-1												DIN 69880					
HSK 63	HSK 80	HSK 100	HSK 63	HSK 40	HSK T63	HSK T100	PSC 32	PSC 40	PSC 50	PSC 63	PSC 80	40	45	55	60	68	WT100	WT150	Size 16	Size 20	Size 25	Size 30	Size 40	Size 50
Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page	Page
986	○	986	986	-	-	-	1007	1007	1007	1007	1007	-	-	-	-	-	-	-	-	-	-	-	-	-
987	○	987	-	-	-	-	-	○	○	○	○	-	-	-	-	-	-	-	-	-	-	-	-	-
987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
988	○	○	989	-	-	-	1008	1008	1008	1008	1008	-	-	-	-	-	-	-	○	1062	○	1062	1062	○
○	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	○	○	○	1062	1062	○
993	○	993	993	-	-	-	○	○	○	○	○	-	-	-	-	-	-	-	-	-	-	-	-	-
993	○	994	993	-	-	-	○	1009	1009	1009	1009	-	-	-	-	-	-	-	-	-	-	-	-	-
990	○	990	○	-	-	-	-	-	-	-	○	-	-	-	-	-	-	-	-	-	-	-	-	-
997	-	997	○	-	-	-	○	○	○	1009	○	-	-	-	-	-	-	-	-	-	-	-	-	-
1001	○	1001	1001	-	-	-	○	1010	○	1010	○	-	-	-	-	-	-	-	-	1061	○	1061	1061	○
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
998	○	999	998	-	-	-	○	○	○	1009	○	-	-	-	-	-	-	-	-	-	-	○	○	-
992	○	992	○	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1003	○	1004	1003	-	-	-	1010	1010	1010	1010	1010	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	1082	1082	○	○	1077	1077	1077	○	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	○	1079	○	-	1078	1078	1078	○	-	-	-	-	-	-	-	-	-	-	-	-	-
1107	○	1107	○	-	-	-	○	○	○	1107	○	-	-	-	-	-	-	-	○	1060	○	1060	1060	○
-	-	-	-	1077	1077	○	○	1079	1079	1079	1079	1076	1076	1076	1076	1076	1076	1076	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1052	1052	1052	1052	1052	1052
996	-	996	-	○	○	○	○	○	○	1006	○	1075	1075	1075	1075	1075	1075	1075	1056	1056	1056	1056	1056	1056
-	-	-	-	1078	1078	○	○	1080	1080	1080	○	1075	1075	1075	1075	1075	1075	1075	1056	1056	1056	1055	1055	1056
-	-	-	-	○	1078	○	○	-	○	1081	○	○	○	○	○	○	○	○	1054	1054	1054	1054	1054	1054
-	-	-	-	-	-	-	-	-	-	-	-	1074	1074	1074	1074	1074	1074	1074	1071	1071	1071	1071	1071	1071
1078	○	○	-	1078	1078	○	○	1075	1075	1075	○	-	-	-	-	-	-	-	1061	1061	1061	1061	1061	1061

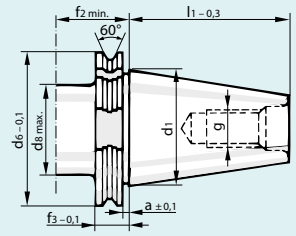
○ = available on request / – = not available

Shank versions for milling machines and machining centres

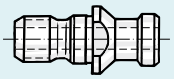
The extremely high tool quality protects the machine spindle and extends the service life of the tools.
Tolerance is tighter than required by DIN: Taper accuracy to AT 3 (max. 3 µm), surface roughness RZ < 0.001 mm.

Note: See page 985 for information on hollow shank interfaces (HSK).

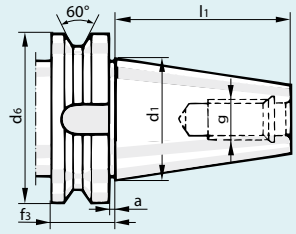
Shanks for NC machines and machining centres

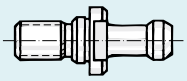


Form A: Without through hole.
Form AD: With through hole **for central coolant feed.**
Form B/Form AF: **For lateral coolant feed** via the tool collar.
Form ADB/Form ADF: **For central and lateral coolant feed** via the tool collar.



Pull studs acc. to DIN ISO 7388-3 (previously DIN 69872) or ISO 7388/II type B or with snap ring groove.





Pull studs to JIS standard.

DIN ISO 7388-1 (previously 69871)

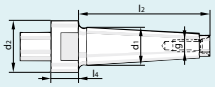
	SK 30	SK 40	SK 50
l 1	47.80	68.40	101.75
d 1	31.75	44.45	69.85
d 6	50.00	63.55	97.50
d 8	45.00	50.00	80.00
f 2	35.00	35.00	35.00
f 3	19.10	19.10	19.10
a	3.20	3.20	3.20
g	M 12	M 16	M 24

DIN ISO 7388-2 (previously JIS B 6339)

	BT 30	BT 40	BT 50
l 1	48.40	65.40	101.80
d 1	31.75	44.45	69.85
d 6	46.00	63.00	100.00
f 3	22.00	27.00	38.00
a	2.00	2.00	3.00
g	M 12	M 16	M 24

Shanks for conventional milling machines and NC machines

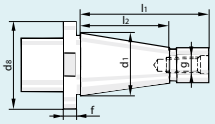
MT 3, MT 4 and MT 5 with Morse taper and internal draw thread.



DIN 2207

	MT 3	MT 4	MT 5
l 2	86	109	136
l 4	18	23	28
d 1	23.825	31.267	44.399
d 2	36	43	60
g	M 12	M 16	M 20

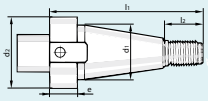
SK 30 and SK 50
with internal draw thread
SK 30 – in stock at the manufacturer.



DIN 2080

	SK 30	SK 50
l 1	68.40	126.80
l 2	50.00	105.00
d 1	31.75	69.85
d 8	50.00	97.50
f	9.50	15.10
g	M 12	M 24

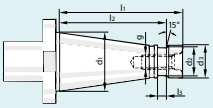
SK 40
for all Deckel machines with **external buttress threads.**



Cover

	SK 40
l 1	120
l 2	30
d 1	44.450
d 2	58
g	S 20×2

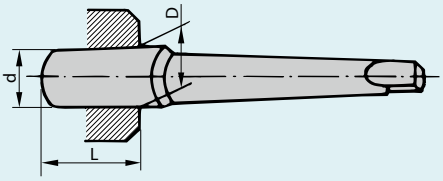
SK 40
with internal draw thread **with manual clamping** and with snap ring groove **for automatic clamping** (for example, Maho, Deckel, Mikron).



Similar to DIN 2080 with snap ring groove

	SK 40
l 1	93.40 ± 0.15
l 2	82.00 ± 0.15
l 3	7
d 1	44.45
d 2	21.10 – 0.10
d 3	25.00 – 0.08
g	M 16

Drill chuck spigots DIN 238 (June 1962 issue)



Spigot size	D mm	d mm	L mm	For combination with Morse taper	for drill chucks with clamping range	Large clamping ∅ for drill chuck
B6	6.350	5.85	10.00	MT0 - MT2	≤ 3 mm	
B10	10.094	9.40	14.50	MT0 - MT2	3 mm – 4 mm	8
B12	12.065	11.10	18.50	MT0 - MT2	6 mm - 8 mm	10
B16	15.733	14.50	24.00	MT1 - MT3	10 mm – 13 mm	16
B181)	17.431	16.20	32.00	MT1 - MT3	16 mm	16
B22	21.793	19.80	40.50	MT2 - MT4	20 mm	20
B24	23.825	21.30	50.50	MT3 - MT5	26 mm - 32 mm	26

1) Shortened version.

Garant HOLEX Pull stud

Material	Material condition	Machining condition	Advantages
GARANT = chrome-nickel steel **GARANT** No. 30 8605 / 8615=18CrNiMo7 **HOLEX** = 16 MnCr5	– High hardness (60 HRC) – High tensile strength – Tough core	– High radial run-out accuracy/ axial run-out accuracy – Functional faces ground – Thread true to gauge	– Shock-resistance – Reduced risk of breakage – Prevents tool skewing – Good surface finish on components

DIN 6359 | ISO 7388-1 | ≤3µm | HPC

Form ADB | G 2.5 25000 min⁻¹


30 0230

Side lock arbor (Weldon) – DIN ISO 7388-1 (formerly DIN 69871)

With Balluff/RFID chip bore.

30 0048/0120/0210/0235/0271/0276/0298/0341/0346/0351/0371 –
With coolant supply holes that can be plugged.

30 0120 – Special nickel plating.

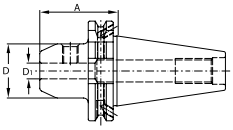
30 0048/0100/0120/0210/0230/0235/0270/0271/0275/0276/0285/0295/0298/0330/0341/0345/0346/0350/0351/0370/0371 –
GARANT –
All shanks hard turned (for smooth cutting action!).
Balancing quality G 2.5 / G 25,000 rpm·

30 0050/0205/0225/0245/0255/0267/0277/0315/0325/0335/0347/0355 –
All shanks fine bead blasted. Balancing quality G 6.3 / 18,000 rpm.

30 0225/0255/0325 –**With cooling channel bores. Cannot be plugged.**

Application: For clamping tools with side flat to DIN 1835 B and DIN 6535 HB.

Optional extras: Pull studs (PS) No. 308600 – 308806.
Pull stud wrenches No. 308820; 308835.



Form ADB |  | G 2.5 25000 min⁻¹


30 0210

Form AD | G 6,3 18000 min⁻¹


30 0205

Optimised cooling concept

- 4 cooling channel bores instead of 2
- Different approach angles of the cooling channel bores

Form ADB |  | G 2.5 25000 min⁻¹


30 0120

Clamping ∅ D_1			mm	6	8	10	12	14	16	18	20	25	32	40
31A 30 0048	Garant	Side lock arbor Form ADB **with cooling channel bores**	SK 30 short	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–	–
32A 30 0050	HOLEX	Side lock arbor Form AD	SK 30 short	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–	–
31A 30 0100		Side lock arbor Form ADB	SK 40 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 0120	Garant	Side lock arbor Form ADB **with cooling channel bores, nickel-plated**	SK 40 short	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–	–
32A 30 0205	HOLEX	Side lock arbor Form AD	SK 40 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 0210	Garant	Side lock arbor Form ADB **with cooling channel bores**	SK 40 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
32A 30 0225	HOLEX	Side lock arbor Form AD **with cooling channel bores**	SK 40 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 0230	Garant	Side lock arbor Form ADB	SK 40 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31A 30 0235		Side lock arbor Form ADB **with cooling channel bores**	SK 40 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
32A 30 0245	HOLEX	Side lock arbor Form AD	SK 40 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
32A 30 0255		Side lock arbor Form AD **with cooling channel bores**	SK 40 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31A 30 0270	Garant	Side lock arbor Form ADB	SK 40 A = 130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
32A 30 0267	HOLEX	Side lock arbor Form AD	SK 40 A = 130	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop	eShop	–
31A 30 0271		Side lock arbor Form ADB **with cooling channel bores**	SK 40 A = 130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 0275	Garant	Side lock arbor Form ADB	SK 40 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 0276		Side lock arbor Form ADB **with cooling channel bores**	SK 40 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
32A 30 0277	HOLEX	Side lock arbor Form AD	SK 40 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 0285		Side lock arbor Form ADB	SK 40 A = 200	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 0295	Garant		SK 50 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 0298		Side lock arbor Form ADB **with cooling channel bores**	SK 50 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
32A 30 0315	HOLEX	Side lock arbor Form AD	SK 50 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 0325		Side lock arbor Form AD **with cooling channel bores**	SK 50 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 0330	Garant	Side lock arbor Form ADB	SK 50 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 0335	HOLEX	Side lock arbor Form AD	SK 50 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 0341	Garant	Side lock arbor Form ADB **with cooling channel bores**	SK 50 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 0345		Side lock arbor Form ADB	SK 50 A = 130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
32A 30 0347	HOLEX	Side lock arbor Form AD	SK 50 A = 130	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop	eShop	–
31A 30 0346		Side lock arbor Form ADB **with cooling channel bores**	SK 50 A = 130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 0350	Garant	Side lock arbor Form ADB	SK 50 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 0351		Side lock arbor Form ADB **with cooling channel bores**	SK 50 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–

Clamping ∅ D_1			mm	6	8	10	12	14	16	18	20	25	32	40
32A 30 0355	HOLEX	Side lock arbor Form AD	SK 50 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 0370	Garant	Side lock arbor Form ADB	SK 50 A = 200	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31A 30 0371	Garant	Side lock arbor Form ADB **with cooling channel bores**	SK 50 A = 200	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–	–
Dimension A (30 0048, 30 0050, 30 0100, 30 0120, 30 0205, 30 0210, 30 0225)			mm	50	50	50	50	50	63	63	63	100	100	120
Dimension A (30 0295, 30 0298, 30 0315, 30 0325)			mm	63	63	63	63	63	63	63	63	80	100	120
∅ D			mm	25	28	35	42	44	48	50	52	65	72	80
Spare clamping screw No. 30 9900				6	8	10	12	12	16	16	20	25	32	32

DIN 6359 | ISO 7388-1 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HPC | HSC

Garant Performance milling chucks – DIN ISO 7388-1 (formerly DIN 69871)

- All shanks hard turned.
- Supplied with 4 table cooling channel bores.

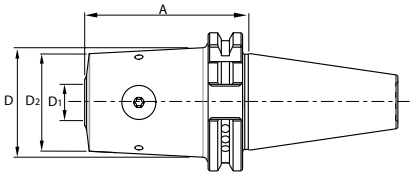
Advantage:
- No risk of the cutter being pulled out, not even a tug.
- Optimised external contour – vibration-damping behaviour.
- Pleasant handling thanks to the differential thread.
- Breakage of the milling cutter shank is improbable.
- Precision version.

Application: For clamping tools with side drive flats to DIN 1835 Form B and DIN 6535 Form HB. Best suited for TPC milling or high feed rate applications. No risk of the cutter being pulled out, more precise radial run-out, **process reliability!**

Optional extras: Pull studs (PS) No. 308600 – 308806, PS wrenches No. 308820 – 308835.



30 0395





- *Spring in the base body presses the milling cutter or HB shank into the correct position.*
- *Contact piece on the tightening screw holds the milling cutter in the HB face.*

Clamping range ∅ D_1			mm	6	8	10	12	16	20
31A 30 0395	Performance milling chuck with cooling channel bore **Form ADB**	SK 40 short		eShop	eShop	eShop	eShop	eShop	eShop
31A 30 0398		SK 50 short		eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 0395)			mm	50	50	50	50	63	63
Dimension A (30 0398)			mm	63					
∅ D (30 0395)			mm	25.5	28	35	40.5	47.1	49.5
∅ D (30 0398)			mm	26.7	29.2	36.2	41.7	47.1	50.6
∅ D_2			mm	22.5	25	32	37.5	43	46.5

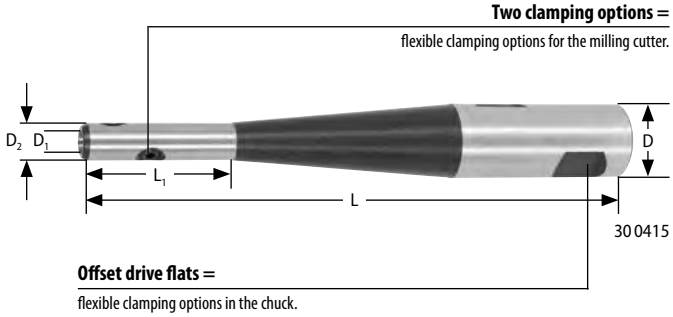
Garant Side lock arbor (Weldon), extra-slim

Cylindrical holder with Weldon shank and a clamping screw for clamping the tool. ∅6 mm through hole for **internal cooling** provided.

Advantage: Low interference contour due to slim design and variation of the clamped lengths.

Application: For clamping tools with side flat to DIN 1835 B and DIN 6535 HB.

Supplied with: Including insert screw No. 300416.



30 0415

Clamping range ∅ D_1		mm	6	8	10	12	14	16	18	20
31A 30 0415	Holder for Weldon shanks, cylindrical, slim		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D		mm	20	20	20	20	20	25	25	32
L_1		mm	40	40	40	100	100	100	100	100
∅ D_2		mm	9.8	15	18	21	23	26	28	31
L		mm	150	150	150	150	150	156	156	160

DIN 6359 | ISO 7388-1 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HPC

Garant Combi side lock arbor, slim version

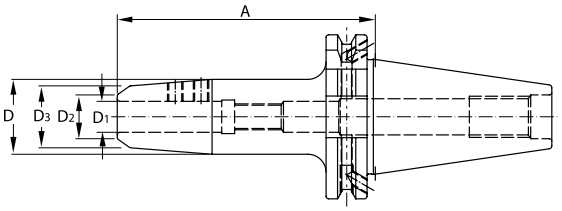

30 0422_12

Shanks hard turned (smooth cutting action!). With RFID/Balluffchip bore.

Application: For clamping tools with plain shank to DIN 1835 Form B + E and DIN 6535 Form HB + HE.

Supplied with: With ball-jointed clamping screw **for Weldon and Whistle Notch systems** and through drilled back stop screw.

Optional extras: Pull studs (PS) No. 308600 – 308806, PS pull stud wrenches No. 308820 – 308835, spare clamping screw 309905 M6, 309905 M8.



Clamping range ∅ D_1			mm	6	8	10	12	14	16	18	20
31A 30 0422	Combination side lock arbor, slim **Form ADB**	**SK 40 A = 100**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D			mm	28.33	30.33	32.28	34.22	36.22	38.22	40.38	42.53
∅ D_2			mm	13	15	16	17	19	21	23	25
∅ D_3			mm	18	20	21	22	24	26	28	30

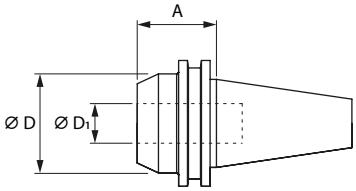
DIN 6359 | ISO 7388-1 | Form AD | G 2.5 25000 min^{-1} | ≤3µm

Garant Side lock arbor (Weldon), ultra-short – similar to ISO 7388-1


30 0410_16/_20

Size 25 – With only a single shorter locking screw.
Size 32 – Additionally with second locking screw in the slot.
Size 16; 20 – Locking screw in tool gripper groove.

Optional extras: Pull studs (PS) No. 308600 – 308806, PS wrenches No. 308820; 308830, spare screw No. 309901.



Clamping range ∅ D_1			mm	16	20	25	32
31A 30 0410	Side lock arbor **Form AD**	**SK 40 ultra short**		eShop	eShop	eShop	eShop
Dimension A			mm	35	40	60	70
∅ D			mm	48	50	65	72

DIN 6359 | ISO 7388-1 | Form ADB | G 6.3 25000 min^{-1} | ≤3µm | HPC

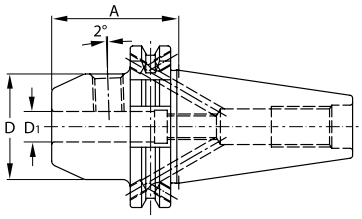
Garant Whistle-Notch arbor


30 0430_10

With back stop screw. Shanks hard turned (smooth cutting action!).
With RFID/Balluffchip bore.

Application: For clamping tools with parallel shank **and whistle notch shanks** (2°) to DIN 1835 E and DIN 6535 HE.

Optional extras: Pull studs (PS) No. 308600 – 308806.
Pull stud wrenches No. 308820; 308835.

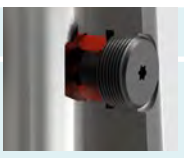


Clamping range ∅ D_1			mm	6	8	10	12	14	16	18	20	25	32
31A 30 0430	Whistle Notch arbor **Form ADB**	**SK 40 short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 0450		**SK 50 short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 0430)			mm	50	50	50	50	50	63	63	63	100	100
Dimension A (30 0450)			mm	63	63	63	63	63	63	63	63	80	100
∅ D			mm	25	28	35	42	44	48	50	52	65	72
Spare clamping screw No. 30 9900				6	8	10	12	12	16	16	20	25	32

Garant Performance milling chuck

GARANT milling chucks (precision version) ensure the following advantages:

- No risk of the cutter being pulled out, not even when jerked
- Optimised external contour → vibration-damping behaviour.
- Thread self-locking, even when subjected to micro-vibrations.
- Pleasant handling thanks to the differential thread.
- Nasty surprises in the form of shank breakages are virtually fully excluded.


Contact piece on the tightening screw holds the milling cutter in the HB face.


Spring in the base body presses the milling cutter or HB shank into the correct position.

ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹ | ≤3µm | HSC | HPC

Garant HiRunER precision ER collet chuck – (formerly DIN 69871)



30 0642


Mini – size 11M/16M (extremely slim design).
30 0643

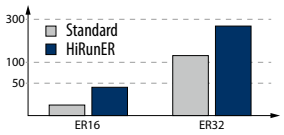
External and internal tapers are ground. All shanks are hard turned for smooth running.
Including RFID/Balluffchip bore, high-performance clamping nut up to 25000 rpm.

Advantage:
- 3 µm radial run-out with a 2 µm clamping nut, 6 µm radial run-out with a 5 µm clamping nut.
- **Extremely strong holding force** (up to **factor 2**better than the standard ER chuck).
- **Vibration reduction effect** due to 2-part clamping nut (size 11M and 16M 1-piece).

Supplied with: **Precision clamping nut.**

Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835,
ER chuck keys No. 309757, 309758 (for 11M and 16M);
ER collets Fahrion No. 308901 – 309434.
ER collets No. 308901 – 309432,
hook spanner No. 628400 or torque wrench No. 309749 or 628520.

Note:
- Clamps only nominal ∅ up to shank ∅ tolerance h 10.
- Do not use the clamping nut in combination with a sealing washer.
- Use in combination with Fahrion collets.
- The blue design ring must be removed for Fahrion HP 2µm ER collets.



for ER collet size			11M	16M	16	20	25	32	40
31A 30 0642	HiRunER precision ER collet chuck	SK 40 A = 70	–	–	eShop	eShop	eShop	eShop	eShop
31A 30 0643		SK 40 A = 100	eShop	eShop	eShop	–	eShop	eShop	eShop
31A 30 0645		SK 40 A = 160	eShop	eShop	–	–	–	–	–
31A 30 0647		SK 50 A = 100	–	–	–	–	eShop	eShop	eShop
Clamping range		mm	1 – 7	0.5 – 10	0.5 – 10	1 – 13	1 – 16	2 – 20	3 – 26
∅ D		mm	16	24	34	38	44	52	62
Spare ER clamping nut No. 309617			–	–	16	20	25	32	40
Spare ER clamping nut No. 309618			11M	16M	–	–	–	–	–


- *Standard ER chuck*
- *Collet is not inserted 100 % in the chuck.*


- *HiRunER collet is fully seated in the chuck*
- *higher clamping forces!*
- *reduced radial run-out!*

G 2.5 25000 min⁻¹ | HSC

Collet chuck, extra slim – (formerly DIN 69871)

- Taper ground internally and externally.
- Shanks hard turned.
- With RFID/Balluffchip bore.
- The collet is clamped by a threaded connection from behind **through** the chuck, **no clamping nut required!**

Advantage: Extremely slim design permits machining of components where access is difficult, e.g. during toolmaking and mould-making.
30 0772 – Large working range and optimised contour for reduced vibration. Cooling with the collet by the tool or along the shank.

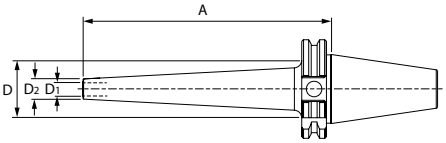
Application: For clamping tools with plain shank to DIN 6499.

Supplied with: Clamping screw and wrench with T-handle.

Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835,
GARANT collets No. 309563,
ALBRECHT collets No. 309572 – 309573.

Form A | ≤5µm

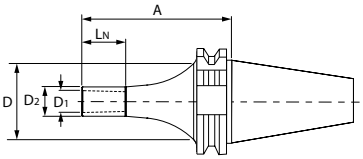

30 0782



Clamping range			mm	2-6
31A 30 0782	Garant Collet chuck, extra slim		SK 40 A = 120	eShop
31A 30 0784			SK 40 A = 160	eShop
∅ D_1			mm	9.6
∅ D_2			mm	13
∅ D			mm	27

Form AD | ≤3µm

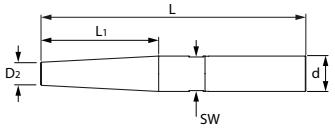

30 0772



Clamping range			mm	1-6
34F 30 0772	ALBRECHT Präzisions Spannfutter	Collet chuck, extra slim, with internal cooling	SK 40 A = 120	eShop
34F 30 0774		Micro precision chuck extension with plain shank		eShop
∅ D_1 (30 0772)			mm	10.1
∅ D_2 (30 0772)			mm	13.5
∅ d (30 0774)			mm	20
∅ D (30 0772)			mm	42
∅ D_2 (30 0774)			mm	13
AF (30 0774)			mm	19
L (30 0774)			mm	150
L_1 (30 0774)			mm	67
L_N (30 0772)			mm	20




30 0774



ISO 7388-1 | ≤3µm | HSC

ER collet chuck – DIN ISO 7388-1 (formerly DIN 69871)

Form ADB | G 2.5 25000 min⁻¹



30 0515

Corrosion protection

Special surface treatment

Taper ground internally and externally. With Balluff/RFID chip bore.

30 0515 – Special nickel plating.

30 0463/0470/0510/0515/0525/0530/0545/0550/0570/0575/0610/0625 –

GARANT –

- Balancing quality G2.5 / 25,000 rpm
- All shanks hard turned (for smooth running!).
- GARANT precision clamping nut, fine balanced (G 2.5 / 25,000 rpm) and coated, giving high clamping force and low wear.
- Through bored.

Form ADB | G 2.5 25000 min⁻¹



30 0470

30 0465/0475/0505/0535/0555/0585/0615 –

HOLEX –

HOLEX precision clamping nut, balanced (G6.3 / 18,000 rpm, all shanks fine bead blasted. Balancing quality G6.3 / 18,000 rpm).

Form ADB | G 2.5 25000 min⁻¹



30 0530

Application: For clamping tools with plain shank in collets to DIN 6499 – Form A and B.

Supplied with: Clamping nut.

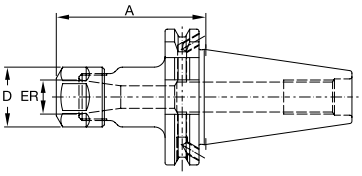
Optional extras: Pull studs (PS) No. 308600 – 308806, PS pull stud wrenches No.308820 – 308835, ER chuck key No. 309680 – 613300, ER collets No. 308901 – 309449, ER clamping nuts No. 309615 (for sealing rings), sealing rings No. 309625 – 309645 (for No. 309615).

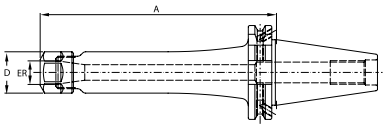
for ER collet size				16	20	25	32	40
31A 30 0463	Garant	ER collet chuck **Form ADB**	**SK 30 short**	eShop	–	eShop	eShop	–
32A 30 0465	HOLEX	ER collet chuck **Form AD**	**SK 30 short**	eShop	–	eShop	eShop	–
31A 30 0470	Garant	ER collet chuck **Form ADB**	**SK 40 A = 70**	eShop	eShop	eShop	eShop	eShop
32A 30 0475	HOLEX	ER collet chuck **Form AD**	**SK 40 A = 70**	eShop	eShop	eShop	eShop	eShop
31A 30 0510	Garant	ER collet chuck **Form ADB**	**SK 40 A = 100**	eShop	–	eShop	eShop	eShop
31A 30 0515		ER collet chuck **Form ADB, nickel plated**	**SK 40 A = 70**	eShop	–	eShop	eShop	eShop
32A 30 0505	HOLEX	ER collet chuck **Form AD**	**SK 40 A = 100**	eShop	–	eShop	eShop	eShop
31A 30 0525	Garant	ER collet chuck **Form ADB**	**SK 40 A = 130**	eShop	–	eShop	eShop	eShop
31A 30 0530			**SK 40 A = 160**	eShop	–	eShop	eShop	eShop
32A 30 0535	HOLEX	ER collet chuck **Form AD**	**SK 40 A = 160**	eShop	–	eShop	eShop	eShop
31A 30 0545	Garant	ER collet chuck **Form ADB**	**SK 40 A = 200**	eShop	–	eShop	eShop	eShop
31A 30 0550			**SK 50 A = 70**	eShop	eShop	eShop	eShop	eShop
32A 30 0555	HOLEX	ER collet chuck **Form AD**	**SK 50 A = 70**	eShop	–	eShop	eShop	eShop
31A 30 0570	Garant	ER collet chuck **Form ADB**	**SK 50 A = 100**	eShop	eShop	eShop	eShop	eShop
32A 30 0585	HOLEX	ER collet chuck **Form AD**	**SK 50 A = 100**	eShop	–	eShop	eShop	eShop
31A 30 0575	Garant	ER collet chuck **Form ADB**	**SK 50 A = 130**	eShop	–	eShop	eShop	eShop
31A 30 0610			**SK 50 A = 160**	eShop	–	eShop	eShop	eShop
32A 30 0615	HOLEX	ER collet chuck **Form AD**	**SK 50 A = 160**	eShop	–	eShop	eShop	eShop
31A 30 0625	Garant	ER collet chuck **Form ADB**	**SK 50 A = 200**	eShop	–	eShop	eShop	eShop
Clamping range			mm	0.5 – 10	1 – 13	1 – 16	2 – 20	3 – 26
Dimension A (30 0463, 30 0465)			mm	55	–	55	60	–
∅ D			mm	28	34	42	50	63
Spare GARANT high-speed clamping nut No. 309610				16	20	25	32	40
Spare HOLEX nut No. 309580				16	20	25	32	40

Form AD | G 6,3 18000 min⁻¹



30 0475





ER collet chuck sets – maximum system accuracy

Supplied with: ER collet chuck with nut (No. 300470 sizes 16, 25 or 32), ER chuck key (No. 613300 size 25 and 309680 size 32) and ER collets (No. 308901, 308941 or 308981):
ER 16 (426 E): D = 2, 3, 4, 5, 6, 7, 8, 9, and 10 mm.
ER 25 (428 E): D = 3, 4, 5, 6, 8, 10, 12, 14, and 16 mm.
ER 32 (470 E): D = 4, 6, 8, 10, 12, 14, 16, 18, and 20 mm.
Supplied in plastic case.



30 0630_16

for ER collet size			16	25	32
37D 30 0630	ER collet chuck set	**SK 40**	eShop	eShop	eShop



30 0630_32

ISO 7388-1 | G 2.5 25000 min^{-1} | HSC

FAHRION® Precision ER collet chuck – (formerly DIN 69871)

- Taper ground internally and externally with RFID/Balluffchip bore.
- **Concentricity and repetition accuracy 3 µm** at 3×D, maximum 50 mm when using a HP precision collet.
- **HDC = Heavy Duty Chuck,** a mount specially designed for rough machining.
  A reinforced chuck body ensures better stability and plenty of radial stiffness.
  Taper ground internally and externally. Ball-bearing clamping nut with trapezoidal-shaped fine thread for optimum tightening torques and clamping forces, reduces vibrations that occur.
- **Very high clamping forces** due to the collet fully seated in the chuck and coated clamping nut.
- **Vibration damping** due to the element collet and mass of the chuck.
- **Alternatively for CENTRO P -> without seals,** with ER clamping nut CP No. 309655
  or sealed system with ER clamping nut CP for HP sealing rings No. 309665 in conjunction with HP sealing rings No. 309666 – 309668 (for internal coolant supply or as a dirt trap).

Advantage: Patented optimum seating of the collet, double guides, trapezoidal thread and low-friction coated clamping nut amalgamate when clamped into a sturdy unit, thus ensuring a very high degree of rigidity and precision.

Application: For high precision clamping of tools with plain shank.
HDC especially well-suited for roughing (including TPC milling) and finishing operations and machining of high-tensile or tough materials.

Supplied with:

30 0686–0689 – **Without clamping nut**.

30 0694/0697 – **Supplied with ball-bearing clamping nut.**

Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835,
precision ER collets for HP No. 309368 - 309381 and for taps No. 309402 – 309419 (not for Holex).
ER clamping nuts CP No. 309655; 309665,
ER clamping nut HDC No. 309657,
HP sealing rings No. 309666 – 309668,
CP roller bearing wrench No. 309754; 309756,
HDC roller bearing wrench No. 309745; 309756.

Note:
- **Clamps only nominal ∅ up to shank ∅ tolerance h10.**
- Use in combination with Fahrion collets.
- 30 0694/0697 – Not compatible with CP clamping nut.

Please order CP clamping nuts separately



Mini *– size 11M / 16M (extremely slim design!).*



Tapered *– size 16C*



Standard *– sizes 16, 25 and 32.*

HDC clamping nut included

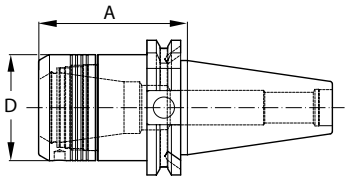


30 0694_32AD

HDC clamping nut included



30 0697_32AD



for ER collets			32AD
33F 30 0694	Precision ER collet chuck **HDC**	**SK 40 A = 65**	eShop
33F 30 0697		**SK 50 A = 100**	eShop
Clamping range		mm	2 – 20
∅ D		mm	53

Type CP for ER			11M	16M	16C	16	16AD	25	25AD	32	32AD	40AD
33F 30 0686	Precision ER collet chuck **CENTRO P**	**SK 40 short**	–	–	–	–	–	eShop	–	eShop	–	–
33F 30 0687		**SK 40 A = 70**	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
33F 30 0688		**SK 40 A = 100**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
33F 30 0689		**SK 40 A = 160**	eShop	eShop	(eShop)	eShop	–	(eShop)	–	eShop	–	–
Clamping range		mm	1 – 7	1 – 10	1 – 10	1 – 10	1 – 10	2 – 16	2 – 16	2 – 20	2 – 20	3 – 26
Dimension A (30 0686)		mm	–	–	–	–	–	45	–	50	–	–
∅ D		mm	16	22	24	30	30	40	40	50	50	63

ISO 7388-1 | ≤3µm | HSC

ER collet chucks with mini nut, slim version

Detailed dimensions can be found in the eShop.

Clamping nut fine balanced **for HSC.** ER11 through bored. Shanks hard turned (smooth cutting action!).
Supplied with: High speed ER mini nut No. 309650.
Optional extras: ER collets No. 308881 – 309434, ER lock wrench No. 309740.

G 2.5 | 25000 min^{-1} | Form ADB

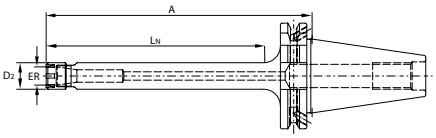


30 0665

G 6,3 | 18000 min^{-1} | Form AD



30 0651



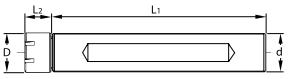
for ER collet size				11	16	20	25
31A 30 0649	Garant	ER collet chuck mini / slim **Form ADB**	**SK 40 A = 70**	eShop	eShop	–	–
31A 30 0650			**SK 40 A = 100**	eShop	eShop	eShop	eShop
32A 30 0651	HOLEX	ER collet chuck mini / slim **Form AD**	**SK 40 A = 100**	eShop	eShop	–	–
31A 30 0652	Garant	ER collet chuck mini / slim **Form ADB**	**SK 40 A = 130**	eShop	eShop	eShop	eShop
31A 30 0665			**SK 40 A = 160**	eShop	eShop	eShop	eShop
32A 30 0661	HOLEX	ER collet chuck mini / slim **Form AD**	**SK 40 A = 160**	eShop	eShop	–	–
31A 30 0667	Garant	ER collet chuck mini / slim **Form ADB**	**SK 50 A = 100**	eShop	eShop	–	eShop
Clamping range			mm	0.5 – 7	0.5 – 10	1 – 13	1 – 16
∅ D			mm	16	22	28	35
Suitable chuck key No. 309740				11	16	20	25

G 2.5 | 25000 min^{-1} | ≤3µm | HSC

ER collet holder for extending the reach of side lock arbors or collet chucks



30 0685



Through hole for internal cooling provided.
30 0682 – Fahrion CENTRO P cylindrical holder **without clamping nuts.**
30 0685/0683 – Cylindrical holder with Weldon shank and ER nut.
30 0684 – Cylindrical holder with ER nut.

Optional extras:
30 0685/0681/0683/0684 – ER collets No. 308878 – 309434, Spare ER nuts No. 309580; 309650.
30 0682 – ER collets No. 309365 – 309372, ER mini nut CP No. 309655; 309665.

NEW



30 0681

Please order clamping nut separately!



30 0682

Note: Not suitable for shrink processes.
Size 8 – No length adjustment available.

for ER collet size				8	11	16	20	25	32	40
31A 30 0685	Garant	ER mini collet holder **cylindrical**		–	eShop	eShop	eShop	–	–	–
32A 30 0681	HOLEX			eShop	eShop	eShop	–	–	–	–
33F 30 0682	FAHRION®	CENTRO P ER collet holder **cylindrical**		eShop	eShop	eShop	–	–	–	–
32A 30 0683	HOLEX	ER collet holder **cylindrical**		–	–	–	eShop	eShop	eShop	eShop
32A 30 0684		ER mini collet holder **cylindrical**		eShop	eShop	eShop	eShop	–	–	–
∅ d (30 0685, 30 0681, 30 0683)			mm	12	16	20	25	25	32	40
Clamping range			mm	0.5 – 5	0.5 – 7	0.5 – 10	1 – 13	1 – 16	2 – 20	3 – 26
∅ D (30 0685, 30 0682)			mm	10	16	22	28	–	–	–
∅ D (30 0681, 30 0683)			mm	12	16	22	34	42	50	63
∅ D (30 0684)			mm	12	16	22	28	–	–	–
∅ d (30 0682)			mm	10	16	16	–	–	–	–
∅ d (30 0684)			mm	12	16	20	20	–	–	–
L_1 (30 0685)			mm	–	150	140	140	–	–	–
L_1 (30 0681, 30 0683)			mm	200	200	200	85.5	65	70	75
L_1 (30 0682)			mm	138	133	117	–	–	–	–
L_1 (30 0684)			mm	70	140	140	140	–	–	–
L_2 (30 0685)			mm	–	19	23	24	–	–	–
L_2 (30 0681, 30 0683)			mm	15.6	20.5	27.5	19.5	28	32	40
L_2 (30 0682)			mm	10	17	33	–	–	–	–
L_2 (30 0684)			mm	15.6	19	23	29.5	–	–	–



30 0683



30 0684

ISO 7388-1 | Form AD | G 2.5 25000 min⁻¹ | ≤3µm | HSC

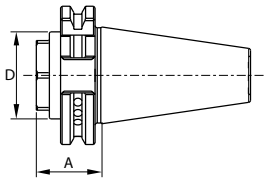
Garant ER collet chuck, ultra-short – (formerly DIN 69871)

Taper ground internally and externally. **Ultra-short type with internal precision clamping nut.**
Best suited to working in restricted working areas, with higher stability.

Application: For clamping tools with parallel shank in collets to DIN 6499 Form A and B.
Supplied with: ER clamping nut (internal).
Optional extras: ER collets No. 308941 – 309448,
Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835.

Note: Matching clamping nut No. 309621.


30 0445



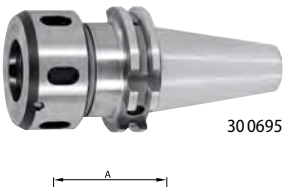
for ER collet size			16	25	32	40
31A 30 0445	ER collet chuck, ultra-short	SK 40	eShop	eShop	eShop	–
31A 30 0446		SK 50	–	eShop	eShop	eShop
Dimension A		mm	27	25	30	29
∅ D		mm	24	32	40	50

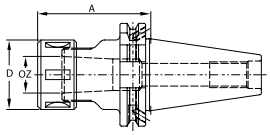
ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹ | ≤3µm

Garant OZ collet chuck – (formerly DIN 69871)

External and internal taper ground.
Ball-bearing power-clamping nut. For higher clamping force and improved radial run-out.
GARANT – With RFID / Balluffchip bore. All shanks hard turned (for smooth running!).
Clamping nut balanced (G 2.5 / 25,000 rpm).

Application: For clamping tools with plain shank in collets to DIN 6388 - Form A and B.
Supplied with: Clamping nut
Optional extras: Pull studs (PS) No. 308600 – 308806, PS wrench No. 308820; 308835,
OZ collets No. 309540 – 309565, Hook spanner No. 628400.


30 0695



Clamping range		mm	2-16	2-25
31A 30 0695	OZ collet chuck **Form ADB**	SK 40 A = 70	eShop	eShop
∅ D		mm	43	60
Spare clamping nut No. 309670			2 – 16	2 – 25
Suitable C-hook (pin) spanner No. 628400			40 / 42	58 / 62

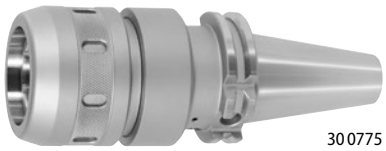
ISO 7388-1 | Form AD | G 6.3 15000 min⁻¹ | ≤5µm | HPC

Heavy-duty chuck – DIN ISO 7388-1 (formerly DIN 69871)

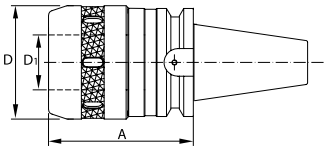
- Low friction due to needle bearings.
- Protected with anti-corrosion coating.
- Dust-tight and watertight.
- Very high clamping force prolongs tool life and improves surface quality.
- Flexible clamping range by means of collets.

30 0785/0787 – ■ Centred tool clamping with optimum concentricity.
■ **Internal coolant feed.**

Application: For clamping tools with plain shanks.
Supplied with: Clamping nut.
Optional extras: Pull studs No. 308600 – 308806.
30 0775/0778 – Collets No. 309566 – 309570.
30 0785/0787 – Collets No. 309575 – 309576.


30 0775

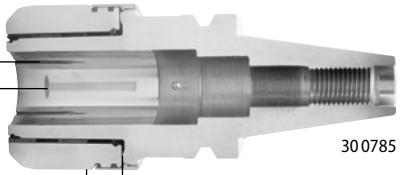

30 0785



∅ D_1		mm	20	32
32A 30 0775	HOLEX Heavy-duty chuck	SK 40	eShop	eShop
32A 30 0778		SK 50	eShop	eShop
33K 30 0785		SK 40	eShop	eShop
33K 30 0787	NT TOOL	SK 50	eShop	eShop
Dimension A (30 0775, 30 0778, 30 0785)		mm	90	105
Dimension A (30 0787)		mm	105	
∅ D (30 0775, 30 0778)		mm	52	66
∅ D (30 0785, 30 0787)		mm	52	73
Clamping force up to (30 0775, 30 0778)		Nm	500	900
Clamping force up to (30 0785, 30 0787)		Nm	1000	4000
Suitable C-hook (pin) spanner No. 628400			52 / 55	68 / 75

T-slots collect the oil and grease.

Internal axial recesses effectively prevent the tool slipping.


30 0785

Absolutely smooth running of the clamping nut.

High radial stiffness due to repetition accuracy of the clamping compared to flat face contact seating.

DIN 6358 | ISO 7388-1 | HPC

Combination face mill adapters – DIN ISO 7388-1 (formerly DIN 69871)

Taper shank, spigot, and all contact surfaces are ground at the collar. With Balluff/RFID chip bore.
30 0835/0845/0885/0895/0910/0930/0950/0985/0990/1010 –
GARANT –All shanks hard turned (for smooth cutting action!).
30 0837/0875/0975 –All shanks fine bead blasted.

Application:
- With drive key for mills **with longitudinal keyway, e. g. DIN 841.**
- With face mill drive ring for face mills **with cross keyway, DIN 1880 and cutter heads to DIN 1830.**

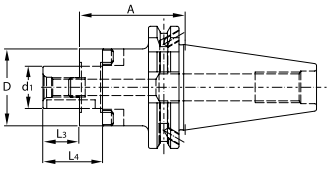
Supplied with: Drive key, face mill drive ring, and lock screw.

Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835,
Special toggle spanner No. 309840.

Note: Internal cooling available only with suitable tightening screw No. 309861.

≤5µm
Form ADB
G 2.5 25000 min⁻¹


30 0835



Form A
G 6,3 18000 min⁻¹
≤6µm


30 0875

Spigot ∅ d_1			mm	13	16	22	27	32	40
31A 30 0835	Garant	Combination face mill adapter **Form ADB**	SK 40 short	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 0837	HOLEX	Combination face mill adapter **Form A**	SK 40 short	–	eShop	eShop	eShop	eShop	eShop
31A 30 0845	Garant	Combination face mill adapter **Form ADB**	SK 40 A = 100	–	eShop	eShop	eShop	eShop	eShop
32A 30 0875	HOLEX	Combination face mill adapter **Form A**	SK 40 A = 100	–	eShop	eShop	eShop	eShop	eShop
31A 30 0885			SK 40 A = 130	–	eShop	eShop	eShop	eShop	eShop
31A 30 0895			SK 40 A = 160	–	eShop	eShop	eShop	eShop	eShop
31A 30 0910	Garant	Combination face mill adapter **Form ADB**	SK 40 A = 200	–	eShop	eShop	eShop	eShop	eShop
31A 30 0930			SK 50 A = 55	–	eShop	eShop	eShop	eShop	eShop
31A 30 0950			SK 50 A = 100	–	eShop	eShop	eShop	eShop	eShop
32A 30 0975	HOLEX	Combination face mill adapter **Form A**	SK 50 A = 100	–	eShop	eShop	eShop	eShop	eShop
31A 30 0985			SK 50 A = 130	–	eShop	eShop	eShop	eShop	eShop
31A 30 0990	Garant	Combination face mill adapter **Form ADB**	SK 50 A = 160	–	eShop	eShop	eShop	eShop	eShop
31A 30 1010			SK 50 A = 200	–	eShop	eShop	eShop	eShop	eShop
Dimension A (30 0835, 30 0837)			mm	55	55	55	55	60	60
∅ D			mm	27	32	40	48	58	70
L_3			mm	18	17	19	21	24	27
L_4			mm	23	27	31	33	38	41
Spare milling cutter lock screw No. 309860 / 309861				13	16	22	27	32	40
Spare drive ring No. 309870				13	16	22	27	32	40
Suitable toggle spanner No. 309840				13	16	22	27	32	40

DIN 6357 | ≤3µm

HOLEX

Face mill arbor extension

Mounting spigot, bore and all contact surfaces are ground at the collar.

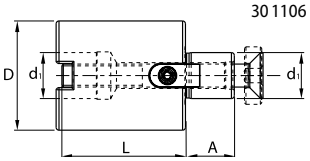
Application: For flexible extensions of face mill arbors.
Economy alternative to expensive custom-made arbors.
3 options for use: short (45 mm) or long (70 mm) extension
or maximum extension by combining two short extensions (2×45 mm).

Supplied with: Suitable lock screw.

Optional extras: Special toggle spanner No. 309840.
30 1105 – Replacement screw No. 301107.


30 1105


30 1106



Spigot ∅ d_1		mm	16	22	27	32	40
32B 30 1105	Face mill arbor extension **short**		eShop	eShop	eShop	eShop	eShop
32B 30 1106	Face mill arbor extension **long**		eShop	eShop	eShop	eShop	eShop
∅ D		mm	38	48	60	78	89
L (30 1105)		mm			45		
L (30 1106)		mm			70		
A		mm	17	19	21	24	27

DIN 6357 | ≤3µm

Garant

Adapter face mill / collet ER

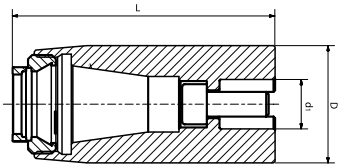
Bore, contact face at collar and ER collet seat ground, body hard turned for best radial run-out and balancing characteristics. For the shortest possible overhang with internal clamping nut (optionally for use with a sealing washer). Through-bored tightening screw for through-coolant supply.

Application: Very flexible and economical solution, turns any face mill arbor into a collet chuck.
Supplied with: Supplied with ER clamping nut (internal), tightening screw.
Optional extras: Sealing rings No. 309630; 309635.

Note: Matching clamping nut No. 309621.



30 1113



Spigot ∅ d_1		mm	16	22	27
31A 30 1113	Adapter **face mill / collet ER**		eShop	eShop	eShop
for ER collets			25	32	32
∅ D		mm	38	48	60
L		mm	78	92	94

DIN 6357 | ISO 7388-1 | HPC

Form ADB | G 2.5 25000 min⁻¹ | ≤5µm

Face mill arbors – (formerly DIN 69871)

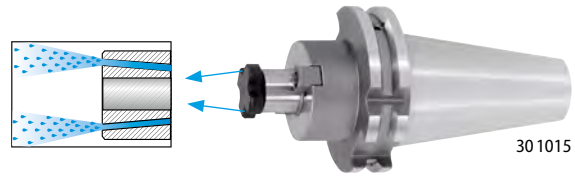
- Taper shank, spigot, and all contact surfaces are ground at the collar.
- Short series.
- Increased collar contact surface.
- With RFID/Balluffchip bore.

30 1013/1015/1025/1030/1035/1070/1075/1090/1130/1135/1150/1154 –
- With **4 cooling channel bores.**
- All shanks hard turned (for smooth running!).

30 1017/1027/1097 – All shanks fine bead blasted.

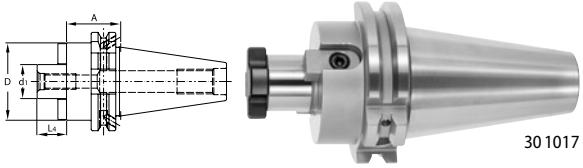
Supplied with: Lock screw
Optional extras: Pull studs (PS) No. 308600 – 308806, PS wrenches No. 308820 – 308835, Special toggle spanner No. 309840. Milling cutter lock screws No. 309860; 309861.

Note:
30 1090 Size 40/1097 Size 40; 60 – With 4 tapped holes for face mills to DIN 2079.



30 1015

Form A | G 6,3 18000 min⁻¹ | ≤6µm



30 1017

Spigot ∅ d_1			mm	16	22	27	32	40	50	60
31A 30 1013	Garant	Face mill arbor **Form ADB with cooling channel bore**	SK 30 short	eShop	eShop	eShop	–	–	–	–
31A 30 1015			SK 40 short	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 1017	HOLEX	Face mill arbor **Form A**	SK 40 short	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 1025	Garant	Face mill arbor **Form ADB with cooling channel bore**	SK 40 medium	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 1030			SK 40 A = 100	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 1027	HOLEX	Face mill arbor **Form A**	SK 40 A = 100	eShop	eShop	eShop	eShop	–	–	–
31A 30 1035	Garant	Face mill arbor **Form ADB with cooling channel bore**	SK 40 A = 120	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 1070			SK 40 A = 160	–	eShop	eShop	–	–	–	–
31A 30 1075			SK 40 A = 200	–	eShop	eShop	–	–	–	–
31A 30 1090			SK 50 short	eShop	eShop	eShop	eShop	eShop	eShop	–
32A 30 1097	HOLEX	Face mill arbor **Form A**	SK 50 short	–	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 1130	Garant	Face mill arbor **Form ADB with cooling channel bore**	SK 50 A = 100	–	eShop	eShop	eShop	eShop	–	–
31A 30 1135			SK 50 A = 120	–	eShop	eShop	eShop	eShop	–	–
31A 30 1150			SK 50 A = 160	–	eShop	eShop	eShop	eShop	eShop	–
31A 30 1154			SK 50 A = 200	–	eShop	eShop	eShop	eShop	–	–
Dimension A (30 1013)			mm	50	50	50	–	–	–	–
Dimension A (30 1015, 30 1090)			mm	35	35	35	50	50	70	–
Dimension A (30 1017)			mm	35	35	35	50	50	–	–
Dimension A (30 1025)			mm	60	60	60	70	70	–	–
Dimension A (30 1097)			mm	–	35	35	50	50	70	70
∅ D (30 1013, 30 1015, 30 1025, 30 1030, 30 1027, 30 1035, 30 1070, 30 1075)			mm	38	48	50	78	89	–	–
∅ D (30 1017)			mm	38	48	50	78	88	–	–
∅ D (30 1090, 30 1130, 30 1135, 30 1150, 30 1154)			mm	38	48	60	78	89	120	–
∅ D (30 1097)			mm	–	48	60	78	89	128	128
L_4			mm	17	19	21	24	27	30	40
Spare milling cutter lock screw No. 309860 / 309861				16	22	27	32	40	50	60
Suitable toggle spanner No. 309840				16	22	27	32	40	50	60

DIN 6357 | ISO 7388-1 | G 6.3 8000 min^{-1} | HPC

Garant

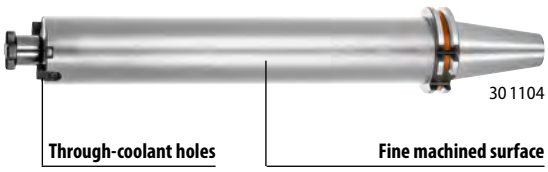
Face mill arbors, vibration-damped – DIN ISO 7388-1 (formerly DIN 69871)

- Taper shank, spigot, and all contact surfaces are ground at the collar.
- With RFID / Balluffchip bore.
- Larger collar contact face.

Supplied with: Cutter lock screw and drive dog.

Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835,
Special toggle spanner No. 309840.
Milling cutter lock screws No. 309860; 309861.

Note: Further sizes on request.



High-performance version with embedded heavy metal core

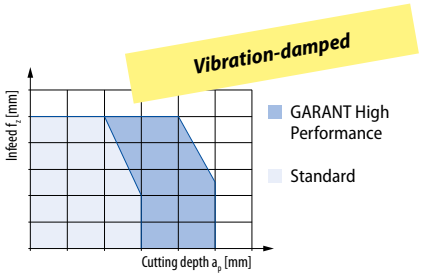
Advantage: The heavy metal core specially matched to the arbors gives optimum machining results even with long overhangs:

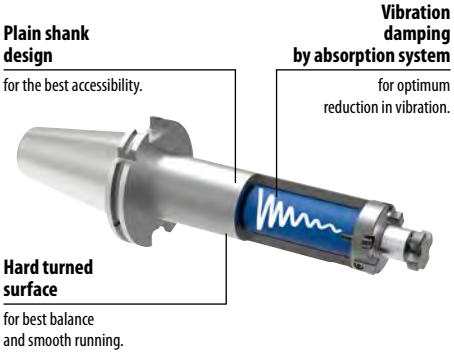
- Saves time, because allows use of the maximum machining parameters.
- Smooth running and thus perfect surface quality results.
- Saves costs, because tool life is increased.
- Less vibrational stress on the machine headstock.

Note: Balance quality G 6.3 dependent on the maximum operating speed.

≤5µm

Form AD





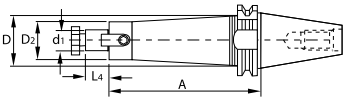
Spigot ∅ d1		mm	16	22	27
31H 30 1102	High-Performance face mill arbor **vibration-damped, cylindrical with cooling channel bores**	SK 40 A = 300	eShop	eShop	–
31H 30 1104		SK 50 A = 300	eShop	eShop	eShop
∅ D		mm	38	48	58
L_4		mm	17	19	21
n_{max} (30 1102)		min^{-1}	4500	3500	–
n_{max} (30 1104)		min^{-1}	6000	5500	5000

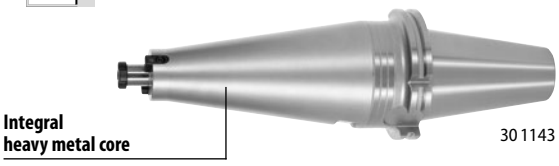
With heavy metal core

Vibration damped version, arbor with vibration-damping core.

Advantage: Significantly lower tendency to vibrate.
Considerable increase in feed rate.

≤6µm





Spigot ∅ d_1		mm	16	22	27	32	40
31A 30 1136	Face mill arbor **cylindrical**	SK 40 A = 200	eShop	eShop	eShop	–	–
31A 30 1137		SK 40 A = 300	eShop	eShop	eShop	–	–
31A 30 1138	Face mill arbor **cylindrical, with cooling channel bore**	SK 40 A = 200	eShop	eShop	eShop	–	–
31A 30 1139		SK 40 A = 300	eShop	eShop	–	–	–
31A 30 1143	Face mill arbor **tapered**	SK 50 A = 200	eShop	eShop	eShop	–	–
31A 30 1144		SK 50 A = 300	eShop	eShop	eShop	eShop	–
31A 30 1146	Face mill arbor **cylindrical**	SK 50 A = 200	eShop	eShop	eShop	–	–
31A 30 1147		SK 50 A = 300	eShop	eShop	eShop	eShop	eShop
31A 30 1148		SK 50 A = 400	eShop	eShop	eShop	–	–
31A 30 1151	Face mill arbor **cylindrical, with cooling channel bore**	SK 50 A = 200	eShop	eShop	eShop	–	–
31A 30 1152		SK 50 A = 300	eShop	eShop	eShop	–	–
∅ D (30 1143, 30 1144)		mm	80	80	80	80	–
∅ D_2		mm	38	48	58	78	89
L_4		mm	17	19	21	24	28

ISO 7388-1 | ≤8µm

Reducing adapter for tools with MT shank – DIN ISO 7388-1 (formerly DIN 69871)

- Ground internally and externally.
- With Balluff/RFID chip bore.

Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835.


30 1155

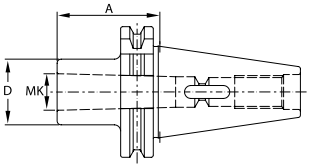

30 1165

For MT tools with tang

Form AD | G 6.3 12000 min^{-1}

30 1155/1170 – **GARANT** –All shanks hard turned (for smooth cutting action!).
30 1165/1185 – All shanks fine bead blasted.

MT internal				1	2	3	4
31A 30 1155	Garant	MT reducing adapter **with tang, Form AD**	SK 40 short	eShop	eShop	eShop	eShop
32A 30 1165	HOLEX		SK 40 short	eShop	eShop	eShop	eShop
31A 30 1170	Garant		SK 50 short	–	eShop	eShop	eShop
32A 30 1185	HOLEX		SK 50 short	–	eShop	eShop	eShop
Dimension A (30 1155, 30 1165)			mm	50	50	70	95
Dimension A (30 1170, 30 1185)			mm	–	60	65	95
∅ D			mm	25	32	40	48



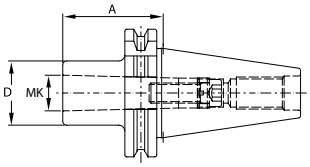
For MT tools with draw thread

Form A | G 6,3 18000 min^{-1}

All shanks fine bead blasted.


30 1245

MT internal				1	2	3	4
32A 30 1245	HOLEX	MT reducing adapter **Form A**	SK 40 short	eShop	eShop	eShop	eShop
Dimension A			mm	50	50	70	95
∅ D			mm	25	32	40	48



ISO 7388-1 | Form A | G 2,5 15000 min^{-1} | ≤5µm

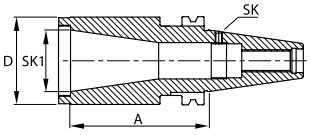
Garant Intermediate sleeves / reducing adapters – DIN ISO 7388-1 (formerly DIN 69871)

Supplied with: With built-in connecting screw for arbors according to ISO 7388-1. (Formerly DIN 69871)

Optional extras: Pull studs (PS) No. 308600 – 308806.
Pull stud wrenches No. 308820; 308835.


30 1272

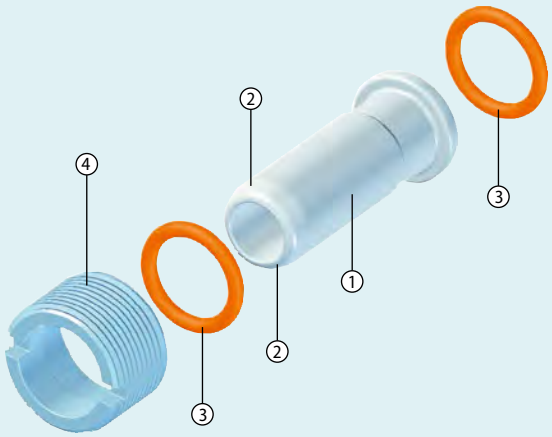
Short taper SK / SK 1				40/40	50/40	50/50
31A 30 1272		Intermediate sleeve	SK 40	eShop	–	–
31A 30 1273			SK 50	–	eShop	eShop
Dimension A			mm	100	70	120
∅ D			mm	63	70	97



Garant Accessories for HSK arbors

HSK coolant pipe – a small component with a big effect!

When tools are changed thousands of times per day it is important that the interface between coolant pipe and machine spindle seal remains clean and, above all, that it maintains process reliability.





No. 30 9880 can be found on page 1025.

① Fine polished surface, hardened and burnished.

② Two polished transition radii.

③ Full freedom of movement thanks to **two coolant-resistant Viton® O-rings.**

④ Hardened threaded sleeve **with rolled, high-compression thread flanks.**

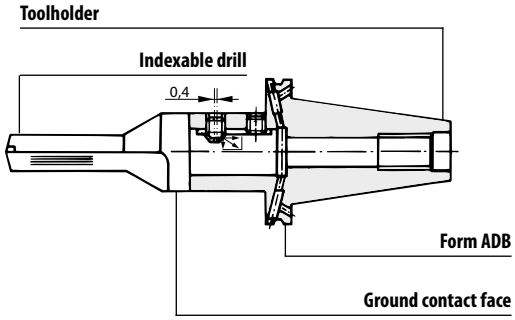
ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹

Garant

Arbor for indexable drill – DIN ISO 7388-1 (formerly DIN 69871)

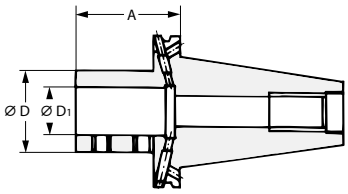
- Position of the grub screw for countersinking in the indexable drill offset by 0.4 mm.
- **When tightening** the increased contact face ∅ is clamped against the front face of the arbor.
- **Better support,** allowing **higher feed rates.**
- **High concentricity** thanks to the mating surface being ground flat to 3µm.
- With RFID/Balluffchip bore.

Suitable for: All indexable drills with parallel shank to DIN 6595, Part 1.
Application: **For mounting all standard indexable drills to DIN 6595, Part 1.**
Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835,
replacement screws No. 309907, 309908.




30 1285

for shank ∅ D_1		mm	20	25	32	40
31A 30 1285	Arbor for indexable drills Form ADB	SK 40	eShop	eShop	eShop	eShop
31A 30 1287		SK 50	eShop	eShop	eShop	eShop
Dimension A (30 1285)		mm	65	70	75	115
Dimension A (30 1287)		mm	70	70	75	80
∅ D (30 1285)		mm	40	45	52	60
∅ D (30 1287)		mm	40	45	52	60



ISO 7388-1 | Form A

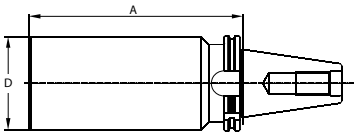
HOLEX

Boring bar blanks for making special tools – DIN ISO 7388-1 (formerly DIN 69871)

Taper arbor and collar hardened and ground.
Material: 16 MnCr5
Optional extras: Pull studs (PS) No. 308600 – 308806.
Pull stud wrenches No. 308820; 308835.


30 1301

A dimension		mm	250	315
32A 30 1301	Boring bar blank Form A	SK 40	eShop	–
32A 30 1302		SK 50	–	eShop
∅ D		mm	63	97



ISO 7388-1 | Form AD | G 2.5 25000 min⁻¹ | ≤3µm | HSC

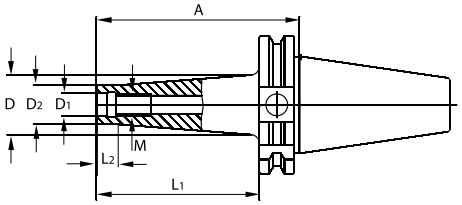
Garant

Arbors for threaded copy milling cutter – DIN ISO 7388-1 (formerly DIN 69871)

Vibration damped version, arbor with vibration-damping core.
Application: To take screw-in milling cutters with thread.
Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835.



30 1313



Thread M×length L1	31A 30 1313	31A 30 1314	Dimension A	∅ D_1	∅ D_2	∅ D	L_1	L_2
	Arbor for screw-in milling cutters with thread							
	SK 40	SK 50	mm	mm	mm	mm	mm	mm
M10×181	eShop	–	200	10.5	18	35	181	7
M10×231	eShop	–	250	10.5	18	41	231	7
M12×181	eShop	–	200	12.5	21	38	181	7.5
M12×231	eShop	–	250	12.5	21	44	231	7.5
M16×231	eShop	–	250	17	29	48	231	7.5
M12×281	–	eShop	300	12.5	21	49	281	7.5
M16×281	–	eShop	300	17	29	57	281	7.5

ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹ | ≤3µm | HSC

Garant

Arbors for threaded copy milling cutter – DIN ISO 7388-1 (formerly DIN 69871)

30 1307 – **Vibration damped version, arbor with vibration-damping core.**
30 1309 – Plain design.
30 1303–1307 – Tapered design.

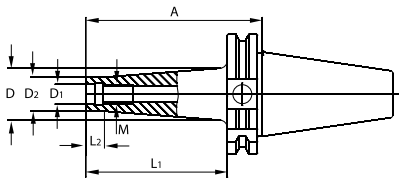
Application: To take screw-in milling cutters with thread.

Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835.



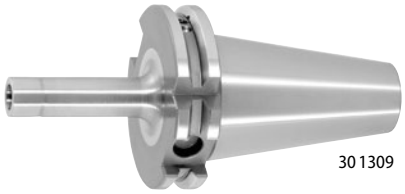
30 1307

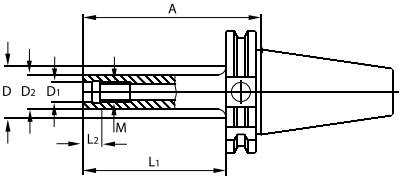

30 1303



Thread M×length L_1	31A 30 1307 vibration damped	31A 30 1303	31A 30 1304	Dimension A	∅ D_1 tolerance IT6	∅ D_2	∅ D	L_1	L_2	
	Arbor for screw-in milling cutters with thread								30 1307 30 1303	30 1304
	SK 40	SK 40	SK 50	mm	mm	mm	mm	mm	mm	mm
M6×25	–	eShop	–	44	6.5	10	13	25	5	–
M8×25	–	eShop	–	44	8.5	13	15	25	5	–
M8×50	–	eShop	eShop	69	8.5	13	23	50	5	5
M8×75	eShop	eShop	–	94	8.5	13	23	75	5	–
M8×100	eShop	eShop	–	119	8.5	13	25	100	5	–
M10×5	–	eShop	–	25	10.5	18	18	5	5	–
M10×25	–	eShop	–	44	10.5	18	20	25	5	–
M10×50	–	eShop	eShop	69	10.5	18	23	50	5	5
M10×75	–	eShop	–	94	10.5	18	27	75	5	–
M10×100	eShop	eShop	eShop	119	10.5	18	32	100	5	10
M10×150	eShop	eShop	eShop	169	10.5	18	36.5	150	5	10
M12×5	–	eShop	–	25	12.5	21	21	5	5	–
M12×25	–	eShop	–	44	12.5	21	24	25	5	–
M12×50	–	eShop	eShop	69	12.5	21	24	50	5	5
M12×75	–	eShop	–	94	12.5	21	31	75	5	–
M12×100	eShop	eShop	eShop	119	12.5	21	33	100	5	10
M12×150	eShop	eShop	eShop	169	12.5	21	40	150	5	10
M16×5	–	eShop	–	25	17	29	29	5	5	–
M16×25	–	eShop	–	44	17	29	29	25	5	–
M16×50	–	eShop	eShop	69	17	29	34	50	5	5
M16×75	–	eShop	–	94	17	29	34	75	5	–
M16×100	–	eShop	eShop	119	17	29	36	100	5	10
M16×150	eShop	eShop	eShop	169	17	29	42.5	150	5	10
M16×200	eShop	–	–	219	17	29	45	200	5	–

Thread M × Length L_1	31A 30 1309	Dimension A	∅ D_1 tolerance IT6	∅ D_2	∅ D	L_1	L_2
	Arbor for screw-in milling cutters with thread						
	SK 40	mm	mm	mm	mm	mm	mm
M5×25	eShop	44	5.5	10	13	25	5
M6×25	eShop	44	6.5	10	13	25	5
M8×25	eShop	44	8.5	13	15	25	5
M8×50	eShop	69	8.5	13	23	50	5
M8×75	eShop	94	8.5	13	23	75	5
M10×25	eShop	44	10.5	18	20	25	5
M10×50	eShop	69	10.5	18	23	50	5
M10×75	eShop	94	10.5	18	28	75	5
M10×100	eShop	119	10.5	18	32	100	5
M10×125	eShop	144	10.5	18	34	125	5
M10×150	eShop	169	10.5	18	36.5	150	5
M12×25	eShop	44	12.5	21	24	25	5
M12×50	eShop	69	12.5	21	24	50	5
M12×75	eShop	94	12.5	21	31	75	5
M12×100	eShop	119	12.5	21	33	100	5
M12×125	eShop	144	12.5	21	34	125	5
M12×150	eShop	169	12.5	21	40	150	5
M16×25	eShop	44	17	29	29	25	5
M16×50	eShop	69	17	29	34	50	5
M16×75	eShop	94	17	29	34	75	5
M16×100	eShop	119	17	29	36	100	5
M16×150	eShop	169	17	29	42.5	150	5

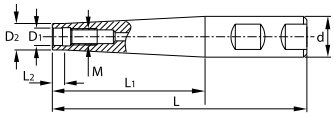

30 1309



HOLEX Arbors for threaded copy mills

Shank tolerance h6.
Application: For mounting in side lock arbors (Weldon).

Weldon arbors



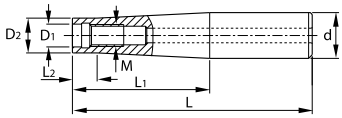

30 1347

Thread M × Length L_1	32A 30 1346	32A 30 1347	32A 30 1349	Ø D_1	Ø D_2	L	L_1	L_2
	Weldon arbor for screw-in milling cutters with internal coolant supply							
	Ø d = 16 mm	Ø d = 20 mm	Ø d = 25 mm	mm	mm	mm	mm	mm
M6×25	–	eShop	–	6.5	10	75	25	5
M8×40	eShop	–	–	8.5	13	88	40	6
M10×25	–	eShop	–	10.5	18	80	25	20.2
M10×97	–	eShop	–	10.5	18	152	97	81.4
M12×40	–	–	eShop	12.5	21	101	40	24
M12×109	–	–	eShop	12.5	21	170	109	67

HOLEX Arbors for threaded copy mills

Plain arbor

Shank tolerance h6.
Application: For mounting shrink-fit chucks.

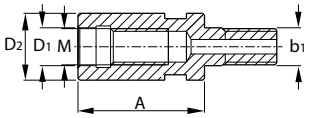



30 1353

Thread M × Length L_2	32A 30 1353	32A 30 1354	32A 30 1357	Ø D_1	Ø D_2	L	L_1	L_2
	Plain arbor for screw-in milling cutters							
	Ø d = 20 mm	Ø d = 25 mm	Ø d = 32 mm	mm	mm	mm	mm	mm
M10×67	eShop	–	–	10.5	18	160	68.7	67
M12×54	–	–	eShop	12.5	21	160	54	23
M12×77	–	eShop	–	12.5	21	240	87.5	77
M12×134	–	–	eShop	12.5	21	300	134	59.5
M16×66	–	–	eShop	17	29	160	68.7	66
M16×146	–	–	eShop	17	29	300	148.7	146

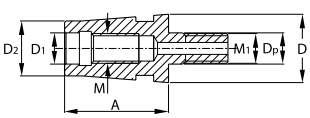
Extension and reducing adapters


30 1358



Thread M × A dimension	32A 30 1358	Dimension A	Ø D	Ø D_1
	Extension for screw-in milling cutters	mm	mm	mm
M8×30	eShop	30	13.5	8.5
M10×35	eShop	35	18	10.5
M12×40	eShop	40	21	12.5
M16×40	eShop	40	29	17


30 1359

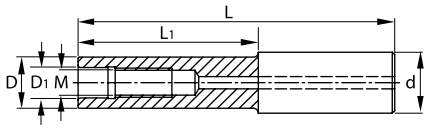


Thread M / Thread M1	32A 30 1359	Dimension A	Ø D	Ø D_1	Ø D_p	Ø D_2
	Reducer for screw-in milling cutters	mm	mm	mm	mm	mm
M5/M8	eShop	30	13	5.5	8.5	10
M8/M10	eShop	30	18	8.5	10.5	13.5
M10/M12	eShop	35	21	10.5	12.5	18.5
M10/M16	eShop	60	29	10.5	17	18.5
M12/M16	eShop	60	29	12.5	17	21

Garant Densimet® tool arbors for screw-in milling cutters

- Vibration-damping characteristics.
- Shank tolerance h6.

Application: Particularly for use in shrink-fit chucks.





30 1376

Thread M × L_{tot}	31A 30 1374	31A 30 1376	31A 30 1378	31A 30 1379	Ø D_1	Ø D_2	L_1
	Densimet® arbor for screw-in milling cutters						
	Ø d = 16 mm	Ø d = 20 mm	Ø d = 25 mm	Ø d = 32 mm	mm	mm	mm
M8×88	eShop	–	–	–	8.5	14	40
M8×128	eShop	–	–	–	8.5	14	80
M8×168	eShop	–	–	–	8.5	14	120
M10×110	–	eShop	–	–	10.5	18	60
M10×150	–	eShop	–	–	10.5	18	100
M10×190	–	eShop	–	–	10.5	18	140
M12×131	–	–	eShop	–	12.5	22	75
M12×181	–	–	eShop	–	12.5	22	125
M12×231	–	–	eShop	–	12.5	22	175
M16×160	–	–	–	eShop	17	30	100
M16×260	–	–	–	eShop	17	30	200
M16×360	–	–	–	eShop	17	30	300

Garant Solid carbide extensions for screw-in milling cutters

Solid carbide extension with vibration-damping properties, shank tolerance h6, long and slim version.

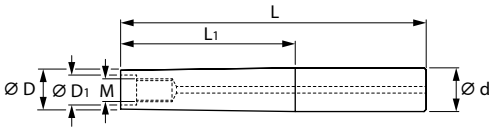
Application: Particularly for use in shrink-fit chucks. Perfect combination of standard steel extensions and Densimet® extensions.

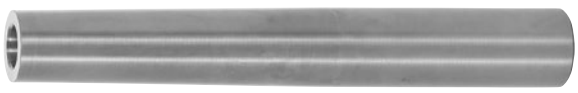
tapered extensions





Combination example:
Threaded copy milling cutter – extension – shrink-fit chuck

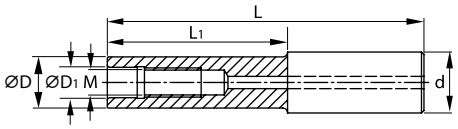




30 1364

Thread M × L	31Z 30 1361	31Z 30 1362	31Z 30 1364	31Z 30 1366	31Z 30 1368	Ø D	Ø D_1	L_1
	Solid carbide extension for screw-in milling cutters							
	Ø d = 12 mm	Ø d = 16 mm	Ø d = 20 mm	Ø d = 25 mm	Ø d = 32 mm	mm	mm	mm
M5×100	eShop	–	–	–	–	9.8	5.5	60
M6×70	eShop	–	–	–	–	9.8	6.5	21
M6×90	eShop	–	–	–	–	9.8	6.5	40
M6×110	eShop	–	–	–	–	9.8	6.5	60
M8×95	–	eShop	–	–	–	12.8	8.5	40
M8×115	–	eShop	–	–	–	12.8	8.5	60
M8×135	–	eShop	–	–	–	12.8	8.5	80
M8×155	–	eShop	–	–	–	12.8	8.5	100
M8×175	–	eShop	–	–	–	12.8	8.5	120
M10×100	–	–	eShop	–	–	17.8	10.5	40
M10×120	–	–	eShop	–	–	17.8	10.5	60
M10×140	–	–	eShop	–	–	17.8	10.5	80
M10×160	–	–	eShop	–	–	17.8	10.5	100
M10×180	–	–	eShop	–	–	17.8	10.5	120
M12×136	–	–	–	eShop	–	23	12.5	80
M12×156	–	–	–	eShop	–	23	12.5	100
M12×176	–	–	–	eShop	–	23	12.5	120
M12×196	–	–	–	eShop	–	23	12.5	140
M12×216	–	–	–	eShop	–	23	12.5	160
M16×160	–	–	–	–	eShop	29	17	100
M16×210	–	–	–	–	eShop	29	17	150
M16×260	–	–	–	–	eShop	29	17	200
M16×310	–	–	–	–	eShop	29	17	250
M16×360	–	–	–	–	eShop	29	17	300

cylindrically offset extensions





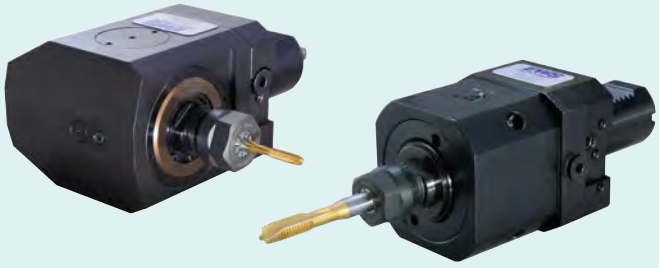
30 1381

Thread M × L	31Z 30 1381	31Z 30 1383	31Z 30 1386	Ø D	Ø D_1	L_1
	Solid carbide extension for screw-in milling cutters					
	Ø d = 12 mm	Ø d = 16 mm	Ø d = 25 mm	mm	mm	mm
M6×70	eShop	–	–	9.8	6.5	20
M6×90	eShop	–	–	9.8	6.5	40
M8×75	–	eShop	–	12.8	8.5	20
M8×95	–	eShop	–	12.8	8.5	40
M8×115	–	eShop	–	12.8	8.5	60
M8×135	–	eShop	–	12.8	8.5	80
M12×125	–	–	eShop	20.8	12.5	60
M12×145	–	–	eShop	20.8	12.5	80
M12×165	–	–	eShop	20.8	12.5	100

EWS Tool Technologies TAPMATIC – high-speed tapping with reversing kinematics

Characteristics
- Automatic reversal of direction of rotation
- Length compensation in tension
- Constant cutting speed

Advantages
- Reduces the machining time by up to 50 %
- Increases the production capacity
- Increases the working life of the tap 3-fold
- Protects the machine (avoiding spindle changeover)
- Saves around 75 % power consumption of the machine due to elimination of braking and starting up



Availability
- **RSR radial tapping heads**
  Tapping range M4.5 – M12
  Speed 2500 rpm (i = 1.5: 1)

ASR axial tapping heads
Tapping range M4.5 – M12
Speed 2500 rpm (i = 1: 1)

Garant VG1 pre-setting device

Pre-setting device VG1
(No. 35 4760)



Functional storage plates

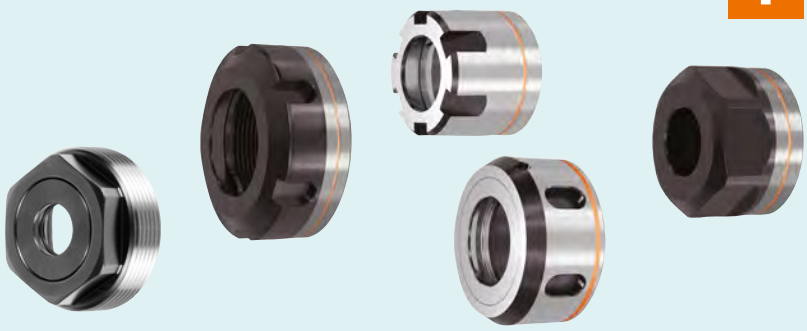
Base body with granite cover

Tidy pipe routing

Garant HOLEX High-performance clamping nuts for ER collet chucks

Only the perfect interaction of collet chuck, collet and **high-quality clamping nut** can ensure good system concentricity.

- High-quality processing of clamping nuts.
- Optimum hardness to reduce wear.
- Ground thread.
- Balanced nuts.
- Extremely simple handling: quickly clicking collets in and out.



≤3µm HSC

Garant Screw-in adapter

For clamping tools with plain shanks.

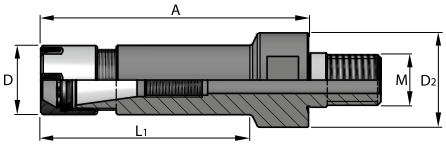
Suitable for: Tool arbors for threaded copy mills.
Supplied with: Clamping nut
Optional extras: ER collets No. 308901 – 309430.
ER collet clamping nuts No. 309650; 309652.

Note: Suitable extension and reducer under No. 301358; 301359.



30 1382

Screw-in adapter with mini clamping nut



Thread M × A dimension	31Z 30 1382	31Z 30 1387	∅ D		∅ D_2	L_1
	Screw-in adapter for collets		30 1382	30 1387		
	ER16	ER25	mm	mm	mm	mm
M12×45	eShop	–	22	–	23	28
M16×50	eShop	eShop	22	35	30	30
M16×85	eShop	–	22	–	30	65
M16×90	–	eShop	–	35	30	70

≤3µm

Garant Screw-in shrink adapter

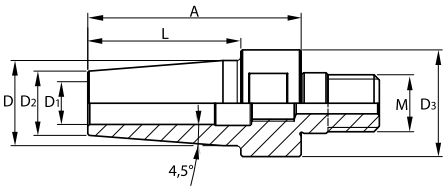
Slim version

High-temperature steel, integral length adjustment of the tools, extra slim design, for HSS and carbide.

Application: Flexible use on the most demanding applications for accuracy and balancing speed, e.g. in combination with extensions.



30 1397



Thread M × clamping ∅ D_1		M10×6	M10×8	M12×6	M12×8	M12×10	M12×12	M16×8	M16×10	M16×12
31Z 30 1397	Screw-in shrink adapter **slim**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A	mm	55	55	60	60	60	60	60	60	60
∅ D	mm	21	21	21	21	24	24	21	24	24
∅ D_2	mm	15	15	15	15	18	18	15	18	18
∅ D_3	mm	18.5	18.5	23	23	23	23	30	30	30
L	mm	37	37	42	42	38	38	42	42	42
maximum tightening torque	Nm	40	40	60	60	60	60	80	80	80

ISO 7388-1

Short drill chucks – with chuck key operation – DIN ISO 7388-1 (formerly DIN 69871)

For clockwise and anticlockwise rotation.

Optional extras: Pull studs (PS) No. 308600 – 308806.
Pull stud wrenches No. 308820; 308835.

GARANT - Precision short drill chucks

≤50 bar | ≤20µm | ≤14 Nm

With Balluff/RFID chip bore. Maximum radial run-out **≤ 20 µm.**

30 1465 Size 0,3-10 – Slim design for the most popular ∅ up to 10.2 mm.

30 1425/1435 – Sandblasted and ground.
- **Slim** design.
- Targeted coolant transfer to tools with IC.
- Optimum holding torques at the tool.

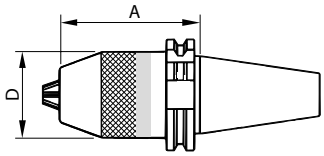
30 1465/1467 – Glass bead blasted.

Supplied with:

30 1425/1435 – **Torx® chuck key** with T-handle **for high clamping force.**

30 1465/1467 – **Clamping wrench** with T-handle.

Clamping range			mm	0,3-8	0,3-10	0,5-13	1-16	0,5-16
31B 30 1425	Garant	Short drill chuck **Form AD**	SK 40	eShop	–	eShop	eShop	–
31B 30 1435			SK 50	–	–	–	eShop	–
31B 30 1465		Short drill chuck **Form AD/B**	SK 40	–	eShop	–	–	eShop
31B 30 1467			SK 50	–	–	–	–	eShop
Type				slim	slim	slim	slim	Standard
Dimension A (30 1425, 30 1435, 30 1465)			mm	70	73	76	80	90
Dimension A (30 1467)			mm	–	–	–	–	106
∅ D			mm	35	38	43	50	57
Spare Torx® chuck key No. 625220				TX25	–	TX25	TX25	–
Spare chuck key No. 627425				–	4 AF	–	–	SW 6



≤14 Nm | Form AD | G 2.5 25000 min⁻¹



30 1425_0.3–8 slim

≤14 Nm | Form AD | G 2.5 25000 min⁻¹



30 1425_0.5-13 slim

≤14 Nm | Form AD | G 2.5 25000 min⁻¹



30 1425_1-16 slim

WTE – short drill chuck

Form A | ≤30µm

Supplied with: Hexagon screwdriver with T-handle.

Clamping range			mm	0,3-8	0,5-13	2,5-16
33W 30 1478	WTE	Short drill chuck **Form A**	SK 30	–	eShop	–
33W 30 1490			SK 40	eShop	eShop	eShop
Dimension A (30 1478)			mm	–	111	–
Dimension A (30 1490)			mm	70	90	95
∅ D			mm	36	50	57
Spare chuck key No. 627425				SW4	6AF	SW6

Form ADB | G 2.5 25000 min⁻¹



30 1465_0,3-10



30 1465_0,5-16

≤30µm | G 2.5 25000 min⁻¹



30 1490_0,5-13

HOLEX – Short drill chuck

Form A | G 6.3 15000 min⁻¹ | ≤50µm | ≤14 Nm

Burnished. With Balluff/RFID chip bore.

Supplied with: **Torx® chuck key** with T-handle **for high clamping force.**

Clamping range			mm	2,5-16
32K 30 1565	HOLEX	Short drill chuck **Form A**	SK 40	eShop
32K 30 1575			SK 50	eShop
Dimension A			mm	80
∅ D			mm	50
Spare Torx® chuck key No. 625220				TX25



30 1565_2,5-16

ISO 7388-1 | G 2.5 25000 min^{-1} | ≤3µm | HPC | HSC

Garant Slim hydraulic chuck 3° – (formerly DIN 69871)

Detailed dimensions can be found in the eShop.

- **Extremely slim design** (3° contour)
- Processed surface structure.
- With RFID/Balluffchip bore.
- Axial length adjustment possible.
- Shanks hard turned.
- Reducing adapters can be used.

Application: Especially for tool and mould making.
Wherever reduced interference contours are required.
For drilling, reaming, and milling.
For clamping tools with shank tolerance h6.

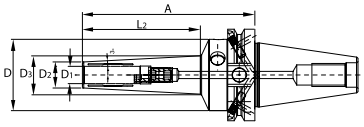
Supplied with: Hexagon socket drive with T-handle.

Optional extras: Pull studs (AB) No. 308600 – 308806,
AB pull stud wrenches No. 308820 / 308835,
Reducing adapters No. 302135 – 302187.

Form ADB



30 2093



Form ADB



30 2095

Clamping ∅ D_1		mm	3	4	5	6	8	10	12	16	20
31A 30 2089	Slim hydraulic chuck	SK 40 A = 80	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2093		SK 40 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2095		SK 40 A = 160	–	–	–	eShop	eShop	eShop	eShop	–	–
∅ D_2 (30 2089)		mm	–	10	11	12	14	16	18	24	28
∅ D_2 (30 2093)		mm	9	10	11	16	14	20	18	24	28
∅ D_2 (30 2095)		mm	–	–	–	16	18	20	22	–	–
∅ D_3 (30 2089)		mm	–	14.2	15.3	16.3	18.3	20.4	22.4	28.2	32.7
∅ D_3 (30 2093)		mm	17.4	18.4	19.4	20.4	22.4	24.5	26.6	32.3	36.4
∅ D_3 (30 2095)		mm	–	–	–	34.4	35.4	37.1	38.7	–	–
∅ D		mm					49.5				

ISO 7388-1 | Form ADB | ≤3µm | HSC | HPC

Hydraulic chuck, version HT (High Torque) – (formerly DIN 69871)

- Very high total rigidity due to optimised design.
- With RFID/Balluffchip bore.
- Axial length adjustment (adjustment 10 mm) available.
- Flexible due to use of reducing sleeves.

Application:
- For drilling, reaming and for **light and heavy-duty machining** when milling.
- Maximum transmissible torque **550 Nm,** version HT (High Torque).
- **Ideal damping characteristics,** resulting in optimum surface finishes, increased tool life and spindle protection.

Optional extras: Pull studs (PS) No. 308600 – 308806,
PS wrenches No. 308820 – 308835,
Reducing adapters No. 302135 – 302187.

Note: Caution in the case of extra-long tools and TPC machining.

G 2.5 25000 min^{-1}

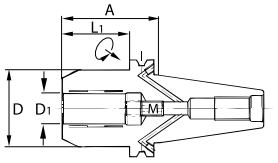


30 2028

G 2.5 20000 min^{-1}



30 2027



Clamping range ∅ D_1			mm	12	16	20	32
31H 30 2028		Hydraulic chuck **short, version HT**	SK 40	eShop	–	eShop	–
31H 30 2029	Garant		SK 50	eShop	–	eShop	eShop
31H 30 2031	Garant	Hydraulic chuck **short, version HT with cooling channel bores**	SK 40	eShop	eShop	eShop	–
32A 30 2027	HOLEX	Hydraulic chuck **short, version HT**	SK 40	–	–	eShop	–
32A 30 2037	HOLEX		SK 50	–	–	eShop	–
Dimension A			mm	50	64.5	64.5	81
∅ D (30 2028, 30 2029, 30 2031)			mm	42	46	49	72
∅ D (30 2027, 30 2037)			mm	–	–	49.5	–
L_1			mm	31	45.5	45.5	62

Slotted reducing adapter with cooling – for HD chuck

With cooling channel slots.

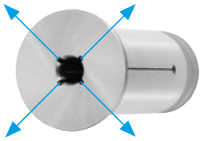
30 2150 – Flexible length pre-setting possible through movable intermediate piece.

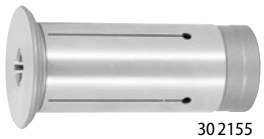
Application:
- For drilling, reaming, milling, and tool sharpening.
- Very high flexibility due to reduction in clamping diameter.
- Very high torque guarantees a higher volume of metal removal compared to direct clamping.
- Concentricity ± 5 µm (system accuracy at 3×D).
- Concentricity ± 2 µm (for reducing adapter).
- Can be used in all commercially available hydraulic chucks.

Detailed dimensions can be found in the eShop.



30 2150





30 2155

Clamping range ∅ D_1			mm	3	4	5	6	8	10	12	14	16	18	20	25
31G 30 2135	Garant	Slotted reducing adapter **with cooling**	∅ 12 mm	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–
33T 30 2145	SCHUNK		∅ 12 mm	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–
33T 30 2150	SCHUNK		∅ 20 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	–	–
31G 30 2155	Garant		∅ 20 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31G 30 2175	Garant		∅ 32 mm	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
33T 30 2177	SCHUNK		∅ 32 mm	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop

Slotted reducing adapter – for HD chuck

Sealed (rubber plug).

30 2165 – Flexible length pre-setting possible through movable intermediate piece.

Application:
- For drilling, reaming, milling, and tool sharpening.
- Very high flexibility due to reduction in clamping diameter.
- High torque guarantees a greater metal removal rate than with direct clamping.
- Concentricity ±5 µm (system accuracy at 3×D).
- Concentricity ±2 µm (for reducing adapter).
- Can be used in all commercially available hydraulic clamping chucks.



30 2165



30 2140

Clamping range ∅ D_1			mm	3	4	5	6	8	10	12	14	16	18	20	25
33D 30 2140		Slotted reducing adapter **sealed**	∅ 12 mm	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–
33T 30 2147	SCHUNK		∅ 12 mm	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–
33D 30 2160			∅ 20 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
33T 30 2165	SCHUNK		∅ 20 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	–	–
33D 30 2180			∅ 32 mm	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
33T 30 2187	SCHUNK		∅ 32 mm	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop

EROGLU Präzisionswerkzeuge Pull-out wrench for reducing adapters – for HD chucks

Suitable for: Reducing adapters ∅ 12, 20 and 32 mm No. 302135 – 302187.

Application: For easy removal of the reducing adapters from hydraulic chucks. Can be used for all popular HD reducing adapters.



30 2183

for reducing adapters ∅		mm	12-32
30N 30 2183	Pull-out wrench for reducing adapters		–

WTE Hydraulic chuck extension

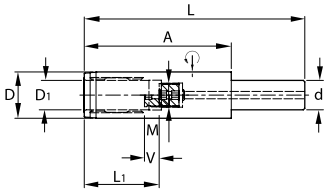
With axial length adjustment. Flexible due to use of reducing sleeves.

Application: Suitable for hydraulic chucks and collet chucks.

Optional extras: Reducing sleeves No. 302135 – 302187.



30 2375



Shank ∅ d / Clamping range ∅ D_1			mm	20/12	20/20	32/20
33W 30 2375	Hydraulic chuck extension	**L = 150 mm**		eShop	eShop	eShop
Dimension A			mm	100	100	90
∅ D			mm	25	31.5	31.5
L_1			mm	46	51	51
M				M10x1	M16×1	M16×1
V			mm		10	

ISO 7388-1 | ≤80 bar | ≤3µm | HSC

Hydraulic chuck (HD chuck) – (formerly DIN 69871)

- **Radial run-out ≤ 3 µm.**
- With RFID / Balluffchip bore.
- Axial length adjustment possible, 10 mm adjustment track.
- Flexible due to use of reducing sleeves.
- Coolant pressure up to 80 bar.

Application: For drilling, reaming and finish milling.

Supplied with:

30 2026/2038/2032/2045/2085/2058/2052 – Hexagon socket drive with T-handle.

Optional extras: Pull studs (PS) No. 308600 – 308806, PS wrenches No. 308810 – 308830, size 12; 20; 32: Reducing adapter No. 302135 – 302187.

30 2026/2038/2032/2043/2053/2052 – Back stop screws for direct clamping / use of reducing sleeves on request.

Detailed dimensions can be found in the eShop.

Form AD | G 2.5 | 25000 min^{-1}



30 2026

Form ADB | G 2.5 | 25000 min^{-1}

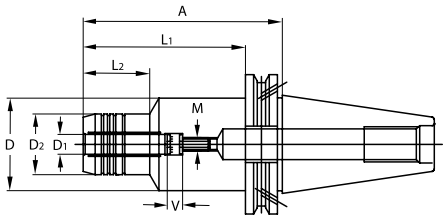


30 2038

Form ADB | G 2.5 | 20000 min^{-1}



30 2045



Form ADB | G 2.5 | 25000 min^{-1}



30 2043

Clamping range ∅ D_1			mm	6	8	10	12	16	20	25	32
33W 30 2026	WTE	Hydraulic chuck **ultra-short form AD**	SK 40 A=24.5	–	–	–	–	–	eShop	–	–
31A 30 2038	Garant	Hydraulic chuck **short, slim, Form ADB**	SK 40	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
33W 30 2032	WTE		SK 40	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2043	Garant	Hydraulic chuck BASIC **short, slim, Form ADB**	SK 40	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop
32A 30 2045			SK 40	eShop	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 2085	HOLEX	Hydraulic chuck **short, slim, Form ADB**	SK 40	eShop	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 2005		Hydraulic chuck **short, heavy, Form ADB**	SK 40	–	–	–	–	–	eShop	–	–
31A 30 2053	Garant	Hydraulic chuck BASIC **short, slim, Form ADB**	SK 50	–	–	–	eShop	eShop	eShop	–	eShop
32A 30 2058	HOLEX		SK 50	–	–	eShop	eShop	eShop	eShop	eShop	–
33W 30 2052	WTE	Hydraulic chuck **short, slim, Form ADB**	SK 50	(eShop)	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 2025	HOLEX	Hydraulic chuck **short, heavy, Form ADB**	SK 50	–	–	–	–	–	–	–	eShop
Dimension A (30 2038, 30 2032, 30 2043, 30 2045, 30 2058)			mm	80.5							
Dimension A (30 2085)			mm	110	110	110	110	110	110	–	–
Dimension A (30 2005, 30 2025)			mm	–	–	–	–	–	64.5	–	81
Dimension A (30 2053)			mm	–	–	–	80.5	80.5	80.5	–	103.2
Dimension A (30 2052)			mm	80.5	80.5	80.5	80.5	80.5	80.5	100	100
∅ D_2 (30 2026, 30 2038, 30 2032, 30 2043, 30 2045, 30 2085, 30 2058, 30 2052)			mm	26	28	30	32	38	42	55	63
∅ D_2 (30 2053)			mm	–	–	–	32	38	42	–	64
∅ D (30 2026, 30 2045, 30 2085, 30 2005, 30 2058, 30 2025)			mm	49.5	49.5	49.5	49.5	49.5	49.5	49.5	72
∅ D (30 2038, 30 2032, 30 2053, 30 2052)			mm	49.5	49.5	49.5	49.5	49.5	49.5	63	70
∅ D (30 2043)			mm	49.5	49.5	49.5	49.5	49.5	49.5	–	73
V (30 2026, 30 2038, 30 2032, 30 2043, 30 2045, 30 2085, 30 2053, 30 2058, 30 2052)			mm	10							
M (30 2026, 30 2038, 30 2032, 30 2043, 30 2045, 30 2085, 30 2053, 30 2058, 30 2052)				M5	M6	M8×1	M10×1	M12×1	M16×1	M16×1	M16×1

ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹ | ≤3µm | HPC | HSC

GARANT Master Chuck hydraulic chuck slim – (formerly DIN 69871)

- **Slim design** (4.5° contour, 1 to 1 shrinking contour according to DIN 69882-8).
- With RFID/Balluffchip bore.
- Axial length adjustment, adjustment travel 10 mm.
- Reducing adapters can be used.
- **Temperature resistant up to 120°C for 4 hours.**
- **Allows for up to 10x more clamping operations compared with a standard hydraulic chuck.**
- Very low tightening torque of the clamping screw – easy handling.
- **Patented new hydraulic clamping system – reliable, durable premium concentricity.**

Application: Especially for tool and mould making.
Wherever reduced interference contours are required.
For drilling, reaming and milling. For clamping tools with shank tolerance h6.

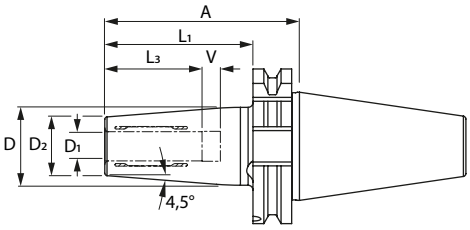
Supplied with: Hexagon socket drive with T-handle.

Optional extras: Pull studs (AB) No. 308600 – 308806,
AB pull stud wrenches No. 308820 / 308835,
Reducing sleeves No. 302135 – 302187.


30 2070

Same properties as shrink-fit chucks
- *Accuracy*
- *Extremely slim, identical interference contour*

Advantages over shrink-fit chucks
- *Better damping*
- *Simpler to use*
- *Flexibility (through reducing adapters)*
- *No shrink-fit units required (costs, energy consumption)*



Clamping ∅D_1		mm	6	8	10	12	14	16	18	20	25	32
31A 30 2070	Hydraulic chuck, slim **Master Chuck**	SK 40 A = 80	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2073		SK 40 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
NEW 31A 30 2074		SK 40 A = 160	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
∅ D_1		mm	6	8	10	12	14	16	18	20	25	32
Dimension A (30 2070)		mm	80									
Dimension A (30 2073)		mm	120	120	120	120	120	120	120	120	–	–
Dimension A (30 2074)		mm	160	160	160	160	–	160	–	160	–	–
∅ D_2		mm	21	21	24	24	27	27	33	33	44	44
∅ D		mm	27	27	32	32	34	34	42	42	53	53

ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹ | ≤3µm | HPC | HSC

GARANT Master Chuck hydraulic chuck performance – (formerly DIN 69871)

- Particularly suitable for highly dynamic milling applications.
- **Optimised outer contour using FEM** (finite element method) –> robustness thanks to max. rigidity, longer tool life, higher metal removal rate, suitable for all machining strategies.
- With RFID/Balluffchip bore.
- Axial length adjustment, adjustment travel 10 mm.
- Reducing adapters can be used.
- **Resistant to temperatures up to 170°C for 4 hours.**
- **Allows for up to 10x more clamping operations compared with a standard hydraulic chuck.**
- Very low tightening torque for the clamping screw – easy handling.
- **Patented new hydraulic clamping system – reliable, durable premium concentricity.**

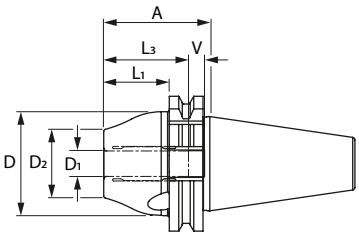
Application: Universally designed for roughing and finishing work.
For clamping tools with shank tolerance h6.

Supplied with: Hexagon socket drive with T-handle.

Optional extras: Pull studs (AB) No. 308600 – 308806,
AB pull stud wrenches No. 308820 / 308835,
Reducing sleeves No. 302135 – 302187.

Maximum metal removal rate, with maximum precision!


30 2195



Clamping ∅D_1		mm	6	8	10	12	16	20	25	32
31A 30 2195	Hydraulic chuck performance **Master Chuck**	SK 40 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D_1		mm	6	8	10	12	16	20	25	32
Dimension A		mm	50	50	50	50	64.5	64.5	110	115
∅ D_2		mm	26	28	30	32	38	38	48	58.5
∅ D		mm	42	42	42	49	49	49	57	62.5

ISO 7388-1 | ≤3µm

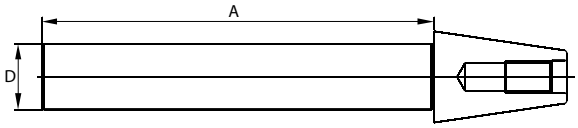
Garant Checking mandrels – (formerly DIN 69871)

Application: For acceptance of machine tools according to ISO recommendation R230.

Supplied with: Wooden box and test certificate.



30 2396



A dimension		mm	300	Ø D mm
31A 30 2396	Checking mandrel ISO 7388-1	SK 40	eShop	40
31A 30 2397		SK 50	eShop	50

ISO 7388-1 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HPC | HSC

Garant Shrink-fit chuck, vibration damped – (formerly DIN 69871)

- High-temperature steel.
- Integrated length adjustment of the tools.
- For HSS and solid carbide tools.
- Shanks hard turned (smooth cutting action!).
- With RFID / Balluffchip bore.
- With coolant channel bores and threads that can be sealed.
- With tapped holes on each side for balancing screws.
- **Reinforced version/contour.**
- **Polished surface.**
- **Specially mounted carbide core in the shrink-fit chuck body.**

Advantage:
- **Vibration-damping.**
- **Better workpiece surface finish.**
- **Optimised tool life.**
- **Increased process reliability.**
- **Lower corrosion tendency due to polished surface.**

Application: For clamping tools with plain shank (h6 shank tolerance). Suitable for inductive, contact and hot air shrink-fit units.

Optional extras: Pull studs (PS) No. 308600 – 308800.
PS wrenches No. 308820 – 308835.
Shrink-fit chuck extensions No. 302410 – 302419.
Shrink-fit units, accessories No. 354210 – 354450.
Balancing screws set No. 309906 size 180.



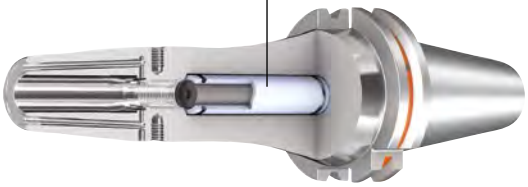
30 2207_6

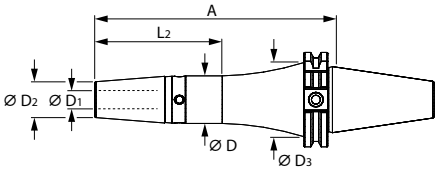
Vibration damping



30 2210

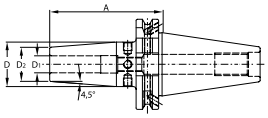
Carbide core drilled through, mounted in an aluminium cylinder – optimum damping characteristics!





Clamping range Ø D_1		mm	6	8	10	12	16
31A 30 2207	Shrink-fit chuck vibration-damped, with cooling channel bores	SK 40 A = 120	eShop	eShop	eShop	eShop	eShop
31A 30 2210		SK 40 A = 160	eShop	eShop	eShop	eShop	eShop
31A 30 2214		SK 50 A = 120	eShop	eShop	eShop	eShop	eShop
31A 30 2216		SK 50 A = 160	eShop	eShop	eShop	eShop	eShop
Ø D_1		mm	6	8	10	12	16
Ø D		mm	27	27	32	32	34
Ø D_2		mm	21	21	24	24	27
Ø D_3 (30 2207, 30 2210)		mm			50		
Ø D_3 (30 2214, 30 2216)		mm			80		
L_2 (30 2207)		mm	60.9	60.9	65.9	65.9	65.9
L_2 (30 2210)		mm	75.9	75.9	85.9	85.9	85.9
L_2 (30 2214)		mm	50.9	50.9	58.9	62.9	65.9
L_2 (30 2216)		mm	50.9	50.9	75.9	75.9	75.9

ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹ | ≤3µm | HSC | HPC



Shrink-fit chuck 4.5°– DIN ISO 7388-1 (formerly DIN 69871)

- High-temperature steel.
- Size 3 -5 for carbide, from size 6 for HSS and carbide.
- All shanks hard turned (for smooth running!).
- With RFID / Balluffchip bore.

30 2230 – **Ultra-short version** for more stability and less vibration.

30 2230/2252/2257/2259/2267/2292/2308/2313 – With **coolant hole bores** tapped for plugging. Coolant hole bores at clamping ∅ D1: 3, 4 and 5 mm cannot be plugged.

30 2237/2261/2287 – Premium version: nickel-plated version with 4 pluggable **cooling channel bores.** Integral tool length adjustment (adjustment track 10 mm).

30 2251/2254 – Glass bead blasted.

Application: For clamping tools with parallel shank to h6 tolerance. Suitable for inductive, contact and hot-air shrink units.

Supplied with:

30 2237/2261/2287 – 4 × M3 nozzle screws.

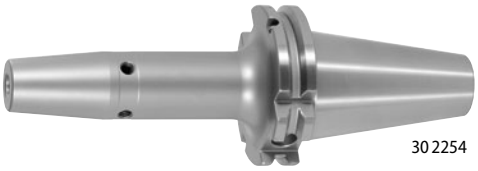
Optional extras: Pull studs (PS) No. 308600 – 308800. PS wrenches No. 308820 – 308835, Shrink-fit chuck extensions No. 302410 – 302419. Shrink-fit units, accessories No. 354210 – 354450, balancing screws set No. 309906 size 180.

Note:

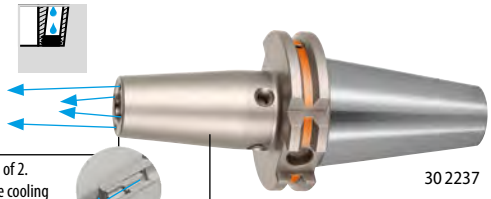
30 2230 – No length adjustment available.



30 2252



30 2254



30 2237

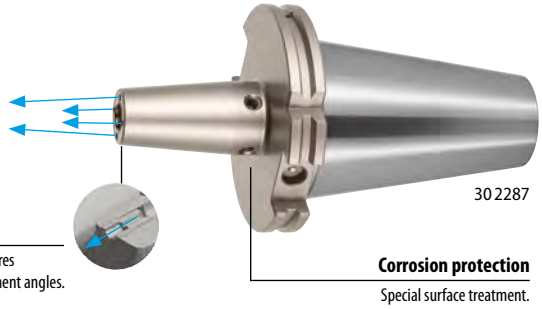
Optimised cooling concept

- 4 cooling channel bores instead of 2.
- Different approach angles of the cooling channel bores.
- With 4 nozzle screws to optimise the coolant pressure and alignment of the coolant stream.

Corrosion protection

Special surface treatment.

Clamping range ∅ D_1			mm	3	4	5	6	8	10	12	14	16	18	20	25	32
31A 30 2225		Shrink-fit chuck	SK 30 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	(eShop)	(eShop)	–	–
31A 30 2230	Garant	Shrink-fit chuck with cooling channel bores	SK 40 ultra short	–	–	–	–	–	eShop	eShop	–	eShop	–	eShop	eShop	–
31A 30 2235		Shrink-fit chuck	SK 40 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
33W 30 2251	WTE		SK 40 short	eShop	eShop	(eShop)	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	eShop
31A 30 2237	Garant	Shrink-fit chuck with 4 cooling channel bores, nickel-plated	SK 40 short	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 2252		Shrink-fit chuck with cooling channel bores	SK 40 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
33W 30 2254	WTE	Shrink-fit chuck	SK 40 A = 120	(eShop)	(eShop)	(eShop)	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)
31A 30 2256			SK 40 A = 120	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 2257		Shrink-fit chuck with cooling channel bores	SK 40 A = 120	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 2261		Shrink-fit chuck with 4 cooling channel bores, nickel-plated	SK 40 A = 120	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 2266	Garant	Shrink-fit chuck	SK 40 A = 130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2267		Shrink-fit chuck with cooling channel bores	SK 40 A = 130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 2258		Shrink-fit chuck	SK 40 A = 160	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 2278		Shrink-fit chuck	SK 40 A = 200	–	–	–	eShop	eShop	eShop	eShop	–	(eShop)	–	eShop	eShop	–
31A 30 2259		Shrink-fit chuck with cooling channel bores	SK 40 A = 160	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
Dimension A (30 2225, 30 2235, 30 2251, 30 2237, 30 2252)			mm	80	80	80	80	80	80	80	80	80	80	80	100	100
Dimension A (30 2230)			mm	–	–	–	–	–	65	65	–	65	–	65	75	–
∅ D (30 2225, 30 2251, 30 2237, 30 2256, 30 2261, 30 2258, 30 2278, 30 2259)			mm	17	22	22	27	27	32	32	34	34	42	42	53	53
∅ D (30 2230)			mm	–	–	–	–	–	33	33	–	37	–	43	50	–
∅ D (30 2235, 30 2252)			mm	17	17	17	27	27	31.4	31.4	34	34	41	41	53	–
∅ D (30 2254)			mm	20	22	22	27	27	32	32	34	34	42	42	53	53
∅ D (30 2257)			mm	–	–	–	26.7	26.7	30.5	31.4	34	34	40.9	41.2	–	–
∅ D (30 2266, 30 2267)			mm	17	17	17	27	27	32	32	34	34	42	42	53	53
∅ D_1 (30 2225, 30 2251, 30 2237, 30 2254, 30 2256, 30 2257, 30 2261, 30 2258, 30 2278, 30 2259)			mm	10	15	15	21	21	24	24	27	27	33	33	44	44
∅ D_2 (30 2230)			mm	–	–	–	–	–	26	26	–	29	–	35	45	–
∅ D_2 (30 2235, 30 2252, 30 2266, 30 2267)			mm	12	12	12	21	21	24	24	27	27	33	33	44	44



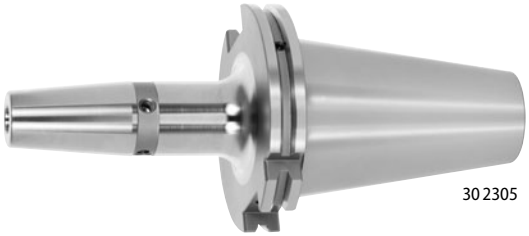
Optimised cooling concept

- 4 cooling channel bores with different alignment angles.

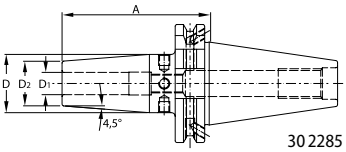
30 2287

Corrosion protection

Special surface treatment.



30 2305



30 2285

Clamping range ∅ D_1				mm	6	8	10	12	14	16	18	20	25	32
31A 30 2285	Garant	Shrink-fit chuck	SK 50 short		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2287		Shrink-fit chuck **with 4 cooling channel bores, nickel-plated**	SK 50 short		eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 2292		Shrink-fit chuck **with cooling channel bores**	SK 50 short		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2305		Shrink-fit chuck	SK 50 A = 120		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2308		Shrink-fit chuck **with cooling channel bores**	SK 50 A = 120		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 2310		Shrink-fit chuck	SK 50 A = 160		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2313		Shrink-fit chuck **with cooling channel bores**	SK 50 A = 160		eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 2355		Shrink-fit chuck	SK 50 A = 200		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D_1				mm	6	8	10	12	14	16	18	20	25	32
Dimension A (30 2285, 30 2287, 30 2292)				mm	80	80	80	80	80	80	80	80	100	100
∅ D (30 2285, 30 2292, 30 2305, 30 2308, 30 2310, 30 2313, 30 2355)				mm	27	27	31.4	31.4	34	34	41	41	53	53
∅ D (30 2287)				mm	27	27	32	32	–	34	–	42	–	–
∅ D_2				mm	21	21	24	24	27	27	33	33	44	44

ISO 7388-1 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

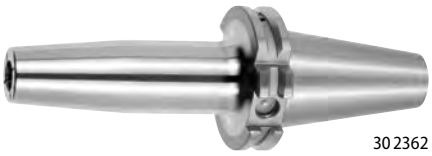
Garant Shrink-fit chuck 4.5°, slotted – (formerly DIN 69871)

- High-temperature steel.
- With 4 cooling channel slots on the clamping hole.
- All shanks hard turned (for smooth running!).
- With RFID/Balluffchip bore.

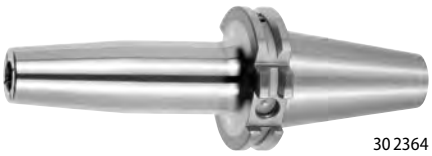
Advantage: Improved cooling directly on the tool shank.
Facilitates the removal of small tool diameters.

Application: For holding end mills and drills with parallel shank to h6 tolerance.
Suitable for inductive, contact and hot air shrink-fitting units.

Optional extras: Pull studs (PS) No. 308600 – 308800,
PS wrenches No. 308820 – 308835.



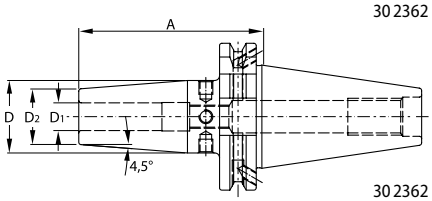
30 2362



30 2364



30 2362



30 2362

Clamping ∅D_1				mm	3	4	5
31A 30 2362	Shrink-fit chuck **with cooling channel slots**		SK 40 short		eShop	eShop	eShop
31A 30 2364			SK 40 A = 130		eShop	eShop	eShop
∅ D_1				mm	3	4	5
Dimension A (30 2362)				mm		80	
∅ D_2				mm		12	
∅ D				mm		17	

ISO 7388-1 | Form ADB | G 2.5 25000 min^{-1} | ~3µm | HSC | HPC | h6 S-λ®

Shrink-fit chuck Power Shrink Chuck with SAFE-λOCK® – (formerly DIN 69871)

Shrink-fit chuck for very high metal removal rates during high-performance cutting (HPC).
The optimised design combines excellent stiffness with vibration damping.
This protects the machine, spindle and tool.

- **Safe-Lock tool pull-out protection** prevents the tool being pulled out accidentally.
- Higher metal removal rate due to higher speeds, higher feed rates and greater cutting depth.
- Shorter machining times.
- Runs more smoothly, which improves the surface quality and protects the tool, spindle and machine.
- With tapped holes for balancing with screws.
- With pluggable Cool Jet holes.
- With length adjustment screw (adjustment path 10 mm).

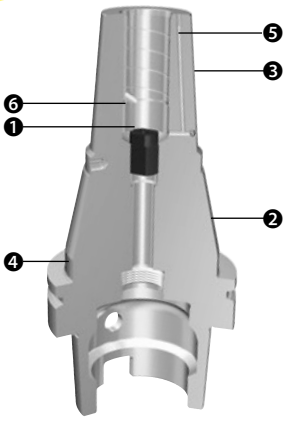
Application: For clamping tools with parallel shank to h6 tolerance **with Safe-Lock ground surface.** Suitable for all types of shrink-fit unit such as inductive, contact and hot air shrink-fit units.

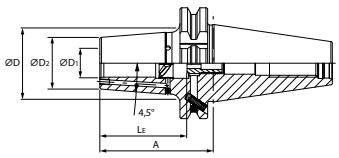
Optional extras: Pull studs (PS) No. 308600 – 308800, PS wrenches No. 308820 – 308835. Shrink-fit units, accessories No. 354210 – 354450, balancing screws set No. 309906 size 180.
For milling cutters with Safe-Lock clamping flat, see solid carbide milling cutters.

Note: Other shrink-fit chucks with **Safe-Lock** available on request.

Detailed information on Safe-Lock can be found under milling.

Key characteristics:
❶ High concentricity (< 0.003 mm).
❷ Low tendency to vibrate due to optimised outer contour.
❸ Slim design at the tip.
❹ Very rigid shank.
❺ Cool-Jet as standard (can be re-locked).
❻ Safe-Lock.







30 2303

Clamping range ∅ D_1			mm	6	8	10	12	14	16	18	20	25	32
341 30 2303	Shrink-fit chuck Power Shrink Chuck with Safe-Lock	SK 40 ultra short		–	–	–	–	–	–	–	–	–	–
341 30 2307		SK 50 short		–	–	–	–	–	–	–	–	–	–
Dimension A (30 2303)			mm	65	65	65	65	65	65	65	65	75	80
Dimension A (30 2307)			mm	80	80	80	80	80	80	80	80	100	–
∅ D (30 2303)			mm	29.5	29.5	34	34	37	37	43	43	50	50
∅ D (30 2307)			mm	70	70	55	55	43	43	54.5	54.5	78	–
∅ D_2 (30 2303)			mm	22	22	26.5	26.5	29.5	29.5	35.5	35.5	45.5	45.5
∅ D_2 (30 2307)			mm	21	21	27	27	33.3	33.3	44.7	44.7	44	–
maximum clamping depth L_E			mm	36	36	42	47	47	50	50	52	58	58

Haimer pre-setting devices available from the Hoffmann Group.

Precision and productivity in production.

Other models on request.



UNO range



VIO range

ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹ | ≤3µm | HSC | HPC

Garant Shrink-fit chucks (extra-slim design) 4.5° – (formerly DIN 69871)

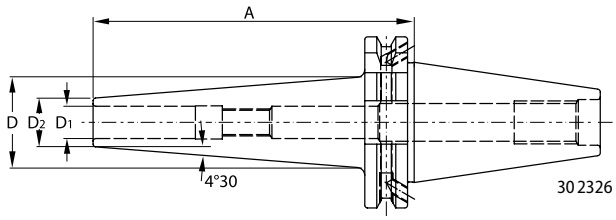
- All shanks hard turned (for smooth running!).
- With RFID / Balluffchip bore.
- Integral tool length adjustment, range 10 mm available only **from size 6 upwards!**
- **Extra slim design(reduced interference contour).**
  30 2326 – ■ With cooling channel bores.

Application:
- Cutting operations in tool and mould making.
- For clamping tools with parallel shank to h6 tolerance.

Optional extras: Pull studs (PS) No. 308600 – 308806.
PS wrenches No. 308820 – 308835,
Shrink-fit chuck extensions No. 302410 – 302419.
Shrink-fitting units No. 354210 – 354450.


30 2325


30 2326



30 2326

Clamping range ∅ D_1		mm	3	4	5	6	8	10	12
31A 30 2326	Shrink-fit chuck **slim, with cooling channel bore**	**SK 40 A = 120**	–	–	–	eShop	eShop	eShop	eShop
31A 30 2325	Shrink-fit chuck **slim**	**SK 40 A = 120**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2333		**SK 40 A = 160**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2342		**SK 50 A = 120**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2344		**SK 50 A = 160**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D_1		mm	3	4	5	6	8	10	12
∅ D (30 2326)		mm	–	–	–	30.9	31.9	33.9	35.9
∅ D (30 2325, 30 2333, 30 2342, 30 2344)		mm	25	25	25	30.9	30.9	33.9	33.9
∅ D_2 (30 2326)		mm	–	–	–	15	16	18	20
∅ D_2 (30 2325, 30 2333, 30 2342, 30 2344)		mm	9	9	9	15	15	18	18

ISO 7388-1 | Form ADB | G 2.5 25000 min⁻¹ | ≤3µm | HSC

Garant Shrink-fit chucks 3° (for tool and mould making) – (formerly DIN 69871)

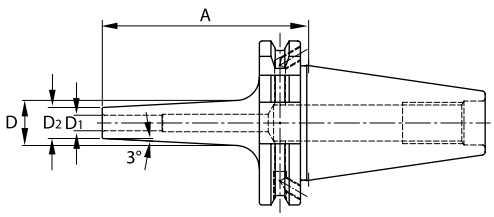
- All shanks hard turned (for smooth running!).
- With RFID / Balluffchip bore.
- **Extra slim design (3° contour).**

Application:
- **Especially for tool and mould making.**
- Wherever reduced interference contours are required.
- For clamping tools with shank tolerance h6.

Optional extras: Pull studs (PS) No. 308600 – 308806.
PS wrenches No. 308820 – 308835.
Shrink-fit chuck extensions No. 302410 size 12/3 and 12/4.
Shrink-fitting units No. 354210 – 304450.

Note:	No length adjustment available!


30 2352



Clamping range ∅ D_1		mm	3	4	5	6	8	10	12
31A 30 2352	Shrink-fit chuck **3°**	**SK 40 A = 80**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 2356		**SK 40 A = 120**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D		mm	14	15	16	23	21	27	25
∅ D_2		mm	9	10	11	12	14	16	18

Garant Shrink-fit chuck extensions 4.5°

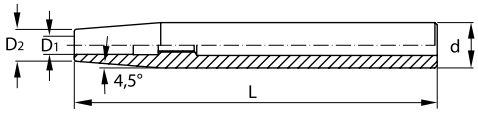
Bored through for internal coolant supply (IC).

30 2410 – **Without** length adjustment screw, **short.**
30 2412 – **With** length adjustment screw, **short.**
30 2413 – **Without** length adjustment screw, **medium.**
30 2416 – **Without** length adjustment screw, **long.**

Application: For use in shrink-fit chucks, hydraulic chucks, and ER collet chucks.

Note: Maximum permissible speed 8,000 rpm.





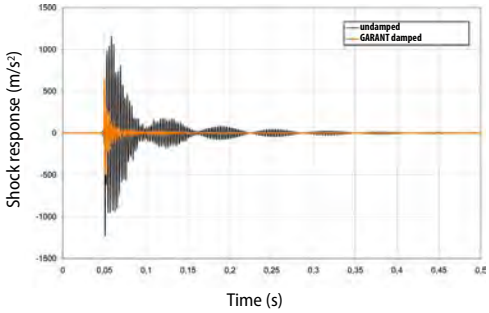
Ø d / Ø D_1	31A 30 2410	31A 30 2412	31A 30 2413	31A 30 2416	Ø D_2
	Shrink-fit chuck extension 4.5°				
	without length adjustment screw L = 160 mm	with length adjustment screw L = 160 mm	without length adjustment screw L = 210 mm	without length adjustment screw L = 300 mm	
mm					mm
12/3	eShop	–	eShop	–	8
12/4	eShop	–	eShop	–	8
12/6	eShop	–	–	–	8
16/3	eShop	–	eShop	–	10
16/4	eShop	–	eShop	–	10
16/5	eShop	–	–	–	10
16/6	eShop	eShop	eShop	–	10
20/5	eShop	–	–	–	14
20/6	eShop	eShop	eShop	eShop	14
20/8	eShop	eShop	eShop	eShop	14
25/8	(eShop)	eShop	–	eShop	19
25/10	eShop	eShop	–	eShop	20
25/12	eShop	eShop	–	eShop	20
25/14	eShop	eShop	–	eShop	20
25/16	eShop	eShop	–	eShop	22
32/10	eShop	eShop	–	eShop	24
32/12	eShop	eShop	–	eShop	24
32/14	eShop	eShop	–	(eShop)	27
32/16	eShop	eShop	–	eShop	27
32/18	(eShop)	eShop	–	–	27
32/20	eShop	eShop	–	eShop	27

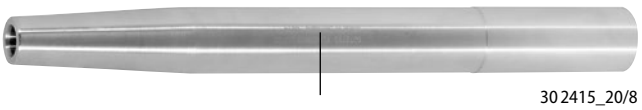
≤80 bar

Garant Vibration-damped shrink-fit chuck extension 3°

Shank bored through for internal coolant supply (ICS) up to maximum 80 bar.
Including length adjustment backstop screw.
A **carbide core embedded** in the adapter damps the tendency to vibrate.
Maximum permissible speed 8,000 rpm.

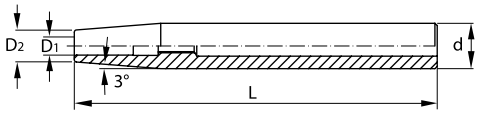
Advantage:
- Avoid vibrations in the clamping system.
- Better workpiece surface finishes.
- Increased tool service lives.





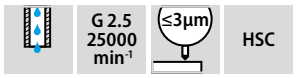
30 2415_20/8

Carbide core embedded in polymer.



Ø d / Ø D_1		mm	20/6	20/8	20/10	20/12
31P 30 2415	Shrink fit chuck extension 3°, vibration-damped	L = 210 mm	eShop	eShop	eShop	eShop
Ø D_2		mm	12	14	16	18

SCHUNK TRIBOS-Mini SVL polygonal clamping extension



By using TRIBOS SVL extensions, standard cutting tools can be used instead of expensive special tools.
The extension with concentricity of < 0.003 mm and a slender interference contour can be combined with a wide variety of chucks. The TRIBOS SVL extensions have already been proven for use in the medical, watch and jewellery industries, as well as in the automotive and electronics industries.

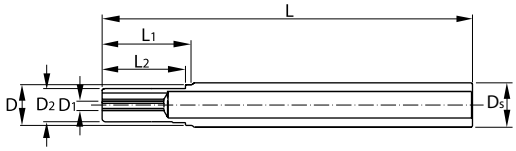
Function: The TRIBOS SVP clamping devices make the polygon-shaped clamping diameter of the extension round and the tool shank can be easily inserted. If the pressure on the clamping diameter decreases, it becomes polygonal again and clamps the inserted tool shank reliably and accurately.

Advantage:
- **Optimised interference contour** – ideal for bores in low-lying areas, e.g. in fixture construction.
- **Axial length adjustment** – length adjustment in the range of 0.01 mm accuracy, with adjustment travel of 10 mm.
- **For the smallest diameters from 0.3 mm** – economical for the most delicate machining operations without special tools.
- **Flexible to use** – suitable for hydraulic chucks and ER collet chucks.
- **All commercially available shank types can be mounted (HA, HB, HE).**
- **Excellent vibration damping** – avoidance of micro break-outs, top workpiece surfaces, less stress on the headstock, increase to tool life and thus reduction in costs.
- **High speeds possible** – up to 52,000 rpm.

Supplied with:
30 2381 – 5 × extension No. 302383 (size of your choice),
1 × clamping device No. 302384 size 9,
1 × HOLEX activation wrench No. 627501 size 6.



30 2381





❶ ***Clamping diameter similar to polygon.***
The polygon-shaped clamping diameter of the toolholder is rounded due to the clamping device TRIBOS SVP and the appropriate application of pressure.
❷ ***Clamping diameter becomes round.***
The tool shank can now be inserted easily.
❸ ***Insert shank.***
If the pressure on the clamping diameter is released, it takes on its polygonal shape again.
❹ ***Tool clamped.***
The inserted tool shank is clamped reliably and with repetition accuracy.

Clamping ∅D_1		mm	1	2	3	4	5	6
33U 30 2381	TRIBOS-Mini SVL Set **cylindrical**		–	–	eShop	eShop	–	eShop
33U 30 2383	TRIBOS-Mini-SVL extension **cylindrical**		eShop	eShop	eShop	eShop	eShop	eShop
∅ D		mm	11					
∅ D_2		mm	9					
∅ D_5		mm	12					
Length L		mm	100					
L_1		mm	24					
L_2		mm	22.5					

Application: Clamping device for clamping/releasing the tool in the TRIBOS extension.

Note: Screw in the actuating screw (hexagon, 6 mm AF) to the stop as a maximum (tightening torque max. 5 Nm).



30 2384

Clamping ∅D_2		mm	9
33T 30 2384	TRIBOS-Mini SVP clamping device		(eShop)

Application: Assembly jig for mounting on a workbench.
For horizontal or vertical use of the TRIBOS-Mini SVP clamping device.



30 2386

Type		1
33U 30 2386	TRIBOS-Mini SVP assembly jig	eShop

Garant GARANT MASTER CHUCK

With the GARANT Master Chuck, we have expanded the **possible application areas enormously.**
Here is an overview of the new features and improvements in both versions.

GARANT Master Chuck Performance.

Maximum performance.
With extra long service life.

- **Even easier to use.**
  Thanks to the new position of the clamping screw.
- **Higher temperature resistance.**
  The new, patented bushing technology reduces the oil volume, improving stability and safety when subject to high temperature influences.
- **Improved application/distribution of the forces.**
  Thanks to new, patented bushing technology.
- **Significantly less manual tightening force required.**
  Thanks to special mechanics, less torque is required whilst simultaneously achieving the highest possible clamping force.
- **Longer tool life.**
  Up to 10 x more clamping cycles than conventional chucks.



30 2195

30 2070,
30 2073

GARANT Master Chuck Slim.

Top form.
For best accessibility.

- **Very easy to operate.**
  No shrink-fit unit required.
- **Better surface quality.**
  As vibrations are minimal.
- **Quicker machining.**
- **Higher clamping force.**
  Compared to conventional hydraulic chucks.
- **Protect your employees.**
  No injuries caused by the shrink fitting process.
- **Higher temperature resistance.**
  Thanks to new, patented bushing technology.

G 2.5
18000
min^{-1}

HSC

Garant MicroClamp drill chuck

- For clockwise and anticlockwise rotation.
- Concentricity ≤ 0.005 mm.
- Transmissible torque 7 Nm.
- Maximum speed 60,000 rpm.
- Operated from the side.
- Permissible tightening torque 2 Nm.

30 2406 – ■ **Clamping range 0.2 – 3.4 mm.**
30 2407 Size 0,2-3 – ■ **Clamping range 0.2 – 3.4 mm.**
Size 0,2-6 – ■ **Clamping range 0.2 – 6.4 mm.**

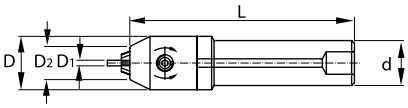
Supplied with: Clamping wrench with T-handle size 2.



30 2406



30 2407



Type			0,2-3	0,2-6
31H 30 2406	MicroClamp drill chuck **plain, L = 80**		eShop	–
31H 30 2407	MicroClamp drill chuck **plain, L = 100**		eShop	eShop
Shank tolerance			h6	
∅ d		mm	16	20
∅ D_1		mm	0.2 – 3.4	0.2 – 6.4
∅ D		mm	19	25
∅ D_2		mm	12	16

DIN 6359

DIN 2080

≤3µm

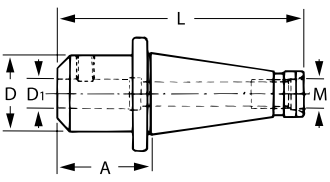
HOLEX Side lock arbors (Weldon) – DIN 2080

Internal thread for manual clamping.
Application: For clamping tools with side flat to DIN 1835 B and DIN 6535 HB.



30 2425

Clamping range ∅ D_1			mm	6	8	10	12	16	20
32A 30 2425	Side lock arbor	SK 40		eShop	eShop	eShop	eShop	eShop	eShop
Dimension A			mm	50	50	50	50	63	63
∅ D			mm	25	28	35	42	48	52
L			mm	143	143	143	143	156	156
M				M16					
Spare clamping screw No. 30 9900				6	8	10	12	16	20



DIN 2080 | Form A | G 6.3 15000 min⁻¹ | ≤50µm | ≤14 Nm

Short drill chucks – DIN 2080

For clockwise and anticlockwise rotation. Internal thread for manual clamping.

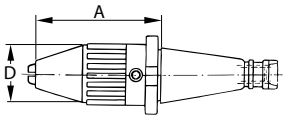
Application: For clamping drills, countersinks, and reamers on milling machines.

Supplied with: Supplied with Torx® chuck key with T-handle, for optimum clamping force.



30 2565

Clamping range		mm	2,5-16
32K 30 2565	Short drill chuck Form A	SK 40	eShop
32K 30 2575		SK 50	eShop
Dimension A		mm	85
Spare chuck key			SW6
∅ D		mm	56



DIN 2080 | ≤3µm

Collet chucks – DIN 2080

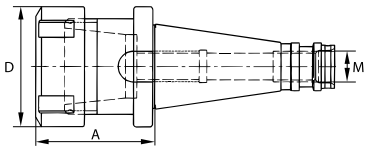
Application: For clamping tools with plain shank in ER / ESX collets to ISO 15488-B.

Optional extras: ER collets No. 308981 – 309040,
ER sets No. 309024 – 309320,
ER clamping wrenches No. 309680 – 309740.


30 2485

ER collet chuck

for ER collet size			25	32	40
32A 30 2485	ER collet chuck	SK 40	eShop	eShop	eShop
Clamping range		mm	1 – 16	2 – 20	4 – 26
Dimension A (30 2465)		mm	–	50	80
Dimension A (30 2485)		mm	50	60	80
∅ D		mm	42	50	63
M				M16	
Spare ER clamping nut			25	32	40



DIN 6358 | DIN 2080 | ≤6µm

Face mill adapters – DIN 2080

Internal thread for manual clamping.

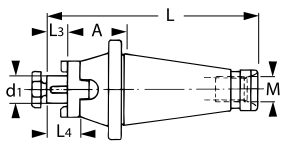
Application: **With drive key** for milling cutters **with longitudinal groove,** e.g. DIN 841.
With face mill drive ring for milling cutters with **transverse slots,** DIN 1880.

Supplied with: Drive key, face mill drive ring, and lock screw.

Optional extras: Special toggle spanner No. 309840.


30 2505

Spigot ∅ d_1		mm	16	22	27	32	40
32A 30 2505	Combination face mill adapter	SK 40 A = 52	eShop	eShop	eShop	eShop	eShop
32A 30 2515		SK 50 A = 55	eShop	eShop	eShop	eShop	eShop
L (30 2500, 30 2505)		mm	162	164	166	169	172
L (30 2515)		mm	199	201	203	206	209
L_3		mm	17	19	21	24	27
L_4		mm	27	31	33	38	41
M (30 2500, 30 2505)					M16		
M (30 2515)					M24		
Spare milling cutter lock screw No. 309860 / 309861			16	22	27	32	40
Spare drive ring No. 309870			16	22	27	32	40
Suitable toggle spanner No. 309840			16	22	27	32	40



DIN 6359 | ISO 7388-2 | JIS B6339 | ≤3µm | HPC

Side lock arbors Weldon – JIS B 6339 (MAS-BT)

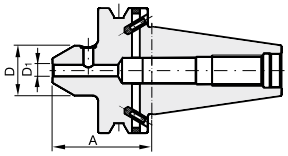
30 2593/2591/2596/2606/2650/2655 – All shanks hard turned (for smooth running). Balancing quality G2.5 / 25,000 rpm.
With coolant supply holes that can be plugged.
30 2597/2607/2617/2657/2667 – All shanks fine bead blasted. Balancing quality G6.3 / 18,000 rpm.
30 2600–2605/2610/2615/2660/2670 – All shanks burnished.
30 2605/2615 – Coolant channel bore can be plugged with an O-ring.
Application: For clamping tools with side flats to DIN 1835 B and DIN 6535 HB.
Optional extras: Pull studs (PS) No. 308760 – 308802. Pull stud wrenches No. 308820; 308835.

Side lock arbors, Weldon

G 2.5 25000 min^{-1} | Form AD



30 2593



G 6.3 15000 min^{-1} | Form ADB



30 2600

G 6,3 18000 min^{-1} | Form AD



30 2607

Clamping ∅ D_1			mm	6	8	10	12	14	16	18	20	25	32
31A 30 2593	Garant	Side lock arbor **Form AD with cooling channel bore**	BT 30 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 2597	HOLEX	Side lock arbors **Form AD**	BT 30 short	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 2591	Garant	Side lock arbor **Form AD with cooling channel bore**	BT 30 A = 100	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 2596	Garant	Side lock arbor **Form ADB with cooling channel bore**	BT 40 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 2607	HOLEX	Side lock arbor **Form AD**	BT 40 short	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop	eShop
36E 30 2600	EROGLU	Side lock arbor **Form ADB**	BT 40 short	–	–	–	–	–	–	–	–	–	–
36E 30 2605	EROGLU	Side lock arbor **Form ADB with cooling channel**	BT 40 short	–	–	–	–	–	–	–	–	–	–
31A 30 2606	Garant	Side lock arbor **Form ADB with cooling channel bore**	BT 40 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 2617	HOLEX	Side lock arbor **Form AD**	BT 40 A = 100	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
36E 30 2610	EROGLU	Side lock arbor **Form ADB**	BT 40 A = 100	–	–	–	–	–	–	–	–	–	–
36E 30 2615	EROGLU	Side lock arbor **Form ADB with cooling channel**	BT 40 A = 100	–	–	–	–	–	–	–	–	–	–
31A 30 2650	Garant	Side lock arbor **Form ADB with cooling channel bore**	BT 50 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 2657	HOLEX	Side lock arbor **Form AD**	BT 50 short	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop	eShop
36E 30 2660	EROGLU	Side lock arbor **Form ADB**	BT 50 short	–	–	–	–	–	–	–	–	–	–
31A 30 2655	Garant	Side lock arbors **Form ADB with cooling channel bore**	BT 50 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 2667	HOLEX	Side lock arbor **Form AD**	BT 50 A = 100	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
36E 30 2670	EROGLU	Side lock arbor **Form ADB**	BT 50 A = 160	–	–	–	–	–	–	–	–	–	–
Dimension A (30 2593, 30 2597)			mm	50	50	50	55	55	63	63	70	–	–
Dimension A (30 2591)			mm	100	100	100	100	–	100	–	–	–	–
Dimension A (30 2596, 30 2607, 30 2600, 30 2605)			mm	50	50	63	63	63	63	63	63	90	100
Dimension A (30 2650, 30 2657)			mm	63	63	70	80	55	80	63	80	100	105
Dimension A (30 2660)			mm	63	63	63	80	80	80	–	80	100	105
∅ D			mm	25	28	35	42	44	48	50	52	65	72
Spare clamping screw No. 30 9900				6	8	10	12	12	16	16	20	25	32

JIS B6339 | ISO 7388-2 | ≤3µm | HSC

ER collet chuck – JIS B6339 (MAS-BT)

External and internal taper ground.

30 2745/2752/2755/2765/2828 –
- All shanks hard turned (for smooth running!). Balancing quality G2.5/25,000 rpm.
- Clamping nut balanced for HSM (G2.5/25,000 rpm).
- Optimum wear characteristics and torque transmission due to the coated precision clamping nut.

30 2747/2757/2767/2817/2827 –
- All shanks fine bead blasted. Balancing quality G6.3 / 18,000 rpm.
- High-quality precision clamping nut.

30 2750/2760/2780/2800/2830 – All shanks burnished.

Application: For clamping tools with parallel shank in collets to **DIN 6499 Form A and B.**

Supplied with: ER clamping nut.

Optional extras: ER collets No. 308881 – 309434,
ER chuck keys No. 309680 – 309745 or No. 613300.
Pull studs (PS) No. 308760 – 308802.
Pull stud wrenches No. 308820; 308835.

Note: Matching clamping nut No. 309580 or 309610.

G 2.5 25000 min^{-1}
Form AD



30 2745

G 2.5 25000 min^{-1}
Form ADB



30 2755

G 2.5 25000 min^{-1}
Form ADB



30 2765

G 6,3 18000 min^{-1}
Form AD



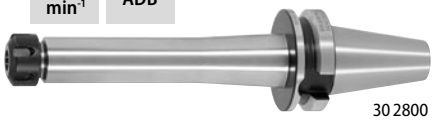
30 2757

G 6.3 20000 min^{-1}
Form ADB



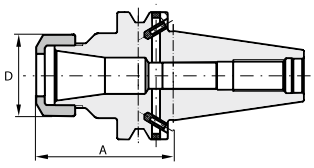
30 2760

G 6.3 20000 min^{-1}
Form ADB



30 2800

for ER collet size				16	20	25	32	40
31A 30 2745	Garant	ER collet chuck **Form AD**	BT 30 A = 60	eShop	eShop	eShop	eShop	–
32A 30 2747	HOLEX		BT 30 A = 60	eShop	eShop	eShop	eShop	–
36E 30 2750	EROGLU		BT 30 A = 70	–	–	–	–	–
31A 30 2752			BT 30 A = 100	eShop	eShop	eShop	eShop	–
31A 30 2755	Garant	ER collet chuck **Form ADB**	BT 40 short	eShop	eShop	eShop	eShop	eShop
32A 30 2757	HOLEX	ER collet chuck **Form AD**	BT 40 short	eShop	eShop	eShop	eShop	eShop
36E 30 2760	EROGLU	ER collet chuck **Form ADB**	BT 40 short	–	–	–	–	–
31A 30 2765	Garant		BT 40 A = 100	eShop	eShop	eShop	eShop	eShop
32A 30 2767	HOLEX	ER collet chuck **Form AD**	BT 40 A = 100	eShop	–	eShop	eShop	eShop
36E 30 2780	EROGLU	ER collet chuck **Form ADB**	BT 40 A = 100	–	–	–	–	–
36E 30 2800			BT 40 A = 160	–	–	–	–	–
32A 30 2817	HOLEX	ER collet chuck **Form AD**	BT 50 short	eShop	–	eShop	eShop	eShop
31A 30 2828	Garant	ER collet chuck **Form ADB**	BT 50 A = 100	eShop	eShop	eShop	eShop	eShop
32A 30 2827	HOLEX	ER collet chuck **Form AD**	BT 50 A = 100	eShop	–	eShop	eShop	eShop
36E 30 2830	EROGLU	ER collet chuck **Form ADB**	BT 50 A = 160	–	–	–	–	–
Clamping range		mm		0.5 – 10	1 – 13	1 – 16	2 – 20	3 – 26
Dimension A (30 2745, 30 2747)		mm		60	60	60	60	–
Dimension A (30 2760)		mm		63	–	60	70	80
Dimension A (30 2817)		mm		80	–	80	80	80
∅ D		mm		28	34	42	50	63
Spare ER clamping nut				16	20	25	32	40
ER chuck key				16	20	25	32	40



ISO 7388-2 | JIS B6339 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

Garant HiRunER Precision ER collet chuck – JIS B6339 (MAS-BT)

External and internal tapers are ground. All shanks are hard turned for smooth running.
Including RFID / Balluffchip bore, high-performance clamping nut (up to 25000 rpm).

Advantage:
- **Excellent concentricity in the system** (chuck + collet + clamping nut), 3µm radial run-out with a 2µm collet, 6µm radial run-out with a 5µm collet.
- **Extremely strong holding force** (up to **factor 2** better than the standard ER chuck).
- **Vibration reduction effect** due to 2-part clamping nut.

Application: For clamping tools with plain shank in collets to DIN 6499 – Form A and B.

Supplied with: **Precision clamping nut**.

Optional extras: Pull studs (PS) No. 308760 – 308802,
PS wrenches No. 308820 – 308835,
ER chuck keys No. 309757, 309758 (for 11M and 16M);
ER collets Fahrion No. 308901 – 309434.
ER collets No. 308901 – 309432,
hook spanner 628400 or torque wrench 309749 or 628520.

Note:
- Clamps only nominal ∅ up to shank ∅ tolerance h 10.
- Do not use the clamping nut in combination with a sealing washer.
- Use it in only combination with Fahrion collets.
- The blue design ring must be removed for Fahrion HP 2µm ER collets.



HiRunER → the collet is fully seated in the chuck → higher retention forces! → better concentricity!



Standard ER chuck → Collets are not inserted 100% into the chuck.

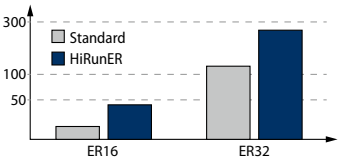


30 2844



30 2844

Mini – size 11M/ 16M (extremely slim design).



for ER collet size			11M	16M	16	20	25	32	40
31A 30 2839	HiRunER precision ER collet chuck	BT 30 A = 60	eShop	eShop	eShop	–	eShop	–	–
31A 30 2843		BT 40 A = 70	–	–	eShop	eShop	eShop	eShop	eShop
31A 30 2844		BT 40 A = 100	eShop	eShop	–	–	–	–	–
Clamping range		mm	1 – 7	1 – 10	0.5 – 10	1 – 13	1 – 16	2 – 20	3 – 26
∅ D		mm	16	24	34	38	44	52	62
Spare ER clamping nut			309618 11M	309618 16M	–	–	–	–	–
Spare ER clamping nut No. 309617			–	–	16	20	25	32	40

ISO 7388-2 | JIS B6339 | Form AD | G 2.5 25000 min^{-1} | ≤3µm | HSC

Garant ER collet chuck, ultra-short – JIS B6339 (MAS-BT)

Taper ground internally and externally. **Ultra-short type with internal precision clamping nut.**
Best suited to working in restricted working areas, with higher stability.

Application: For clamping tools with parallel shank in collets to DIN 6499 – Form A and B.

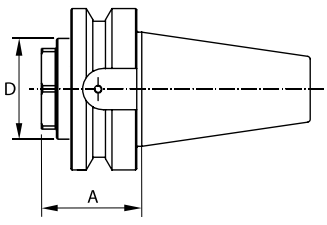
Supplied with: ER clamping nut (internal).

Optional extras: ER collets No. 308881 – 309434,
pull studs (PS) No. 308760 – 308802,
PS wrenches No. 308820 – 308835.

Note: Matching clamping nut No. 309621.



30 2875



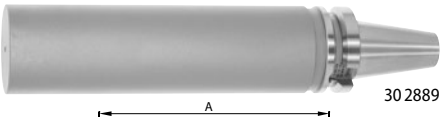
for ER collet size			25	32
31A 30 2875	ER collet chuck, ultra-short	BT 40	eShop	eShop
Dimension A		mm	33	38
∅ D		mm	27	40

JIS B6339 | ISO 7388-2 | Form A

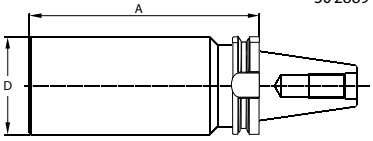
HOLEX Boring bar blanks for making special tools – JIS B6339 (MAS-BT)

Taper with collar, hardened and ground. Soft shank for further machining.

Optional extras: Pull studs (PS) No. 308760 – 308802.



30 2889



Dimension A		mm	250	315
32A 30 2889	Boring bar blank Form A	BT 40	eShop	–
32A 30 2891		BT 50	–	eShop
∅ D		mm	63	97

ISO 7388-2	JIS B6339	G 2.5 25000 min⁻¹	≤6µm ER+CP	≤3µm HP+CP	6µm ER+HDC	3µm HP+HDC	HSC

FAHRION® Precision ER collet chuck – JIS B6339 (MAS-BT)



- Taper ground internally and externally with RFID/Balluffchip bore.
- **Concentricity and repetition accuracy** 3 µm at 3×D, maximum 50 mm when using a HP precision collet.
- **HDC = Heavy Duty Chuck,** a mount specially designed for rough machining. A reinforced chuck body ensures better stability and plenty of radial stiffness. Taper ground internally and externally. Ball-bearing clamping nut with trapezoidal-shaped fine thread for optimum tightening torques and clamping forces, reduces vibrations that occur.
- **Very high clamping forces** due to the collet fully seated in the chuck and coated clamping nut.
- **Vibration damping** due to the element collet and mass of the chuck.
- **Alternatively for CENTRO P -> without seals,** with ER clamping nut CP No. 309655 **or sealed system** with ER clamping nut CP for HP sealing rings No. 309665 in conjunction with HP sealing rings No. 309666 – 309668 (for internal coolant supply or as a dirt trap).

Advantage: Patented optimum seating of the collet, double guides, trapezoidal thread and low-friction coated clamping nut amalgamate when clamped into a sturdy unit, thus ensuring a very high degree of rigidity and precision.

Application: For high precision clamping of tools with plain shank. HDC especially well-suited for roughing (including TPC milling) and finishing operations and machining of high-tensile or tough materials.

Supplied with:

30 2896 – **Supplied with ball-bearing clamping nut.**

30 2884–2888 – **Without clamping nut**.

Optional extras: Pull studs (PS) No. 308600 – 308806, PS wrenches No. 308820 – 308835, precision ER collets for HP No. 309368 - 309381 and for taps No. 309402 – 309419 (not for Holex). ER clamping nuts CP No. 309655; 309665, ER clamping nut HDC No. 309657, HP sealing rings No. 309666 – 309668, CP roller bearing wrench No. 309754; 309756, HDC roller bearing wrench No. 309745; 309756.

Note:
- **Clamps only nominal Ø up to shank Ø tolerance h10.**
- Use in combination with Fahrion collets.

30 2896 – ■ Not compatible with CP clamping nut.

Please order CP clamping nut separately

Form ADB



30 2886

Mini – size 11M (extremely slim design!)

Form ADB



30 2886

Tapered – size 16C

Form AD



30 2884

Standard – sizes 16AD, 25AD and 32AD

Please order CP clamping nut separately



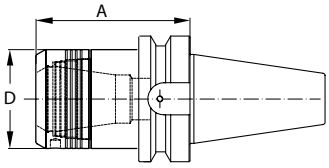
30 2896_32AD

for ER collets			32AD
33F 30 2896	Precision ER collet chuck **HDC**	**BT 40 A = 90**	eShop
Clamping range		mm	2 – 20
Ø D		mm	53

Type CP for ER			11M	16C	16AD	25AD	32AD
33F 30 2884	Precision ER collet chuck **CENTRO P**	**BT 40 A = 75**	–	–	eShop	eShop	eShop
33F 30 2886		**BT 40**	eShop	eShop	eShop	eShop	eShop
33F 30 2888		**BT 40 A = 160**	(eShop)	(eShop)	–	–	–
Clamping range		mm	1 – 7	1 – 10	1 – 10	2 – 16	2 – 20
Dimension A (30 2886)		mm	100	100	90	90	90
Ø D		mm	16	24	30	40	50



Inclined ball bearing HDC
Force flow is transferred by the balls when tensioning (red) and by the safety ring when loosening (blue).

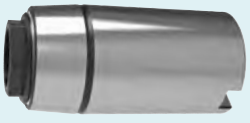


Pure flexibility

If you're looking for adapters, extensions and problem solvers:



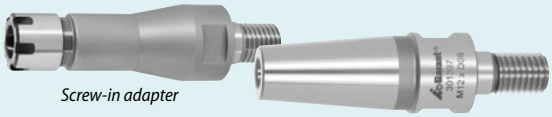
Face mill arbor extension



Adapter face mill / ER collet



Reducer



Screw-in adapter



Hydraulic chuck extension

...and much more.

JIS B6339 | ISO 7388-2 | Form AD | G 6.3 15000 min^{-1} | ≤5µm | HPC

Heavy-duty chuck – JIS B6339 (MAS-BT)

- Low friction due to needle bearings.
- Protected with anti-corrosion coating.
- Dust-tight and watertight.
- Very high clamping force prolongs tool life and improves surface quality.
- Flexible clamping range by means of collets.

30 2861 – ■ **Clamping force up 1000 Nm at Ø 20, 4000 Nm at Ø 32.**

30 2865/2870 – ■ **Clamping force up to 1000 Nm.**

Advantage:

30 2861 – ■ Long tool life.
■ Vibration damping properties.
■ High stability due to strengthened clamping nut.

Application: For clamping tools with plain shanks.

Supplied with: Clamping nut

Optional extras: C wrench No. 628400.
Pull studs No. 308760 – 308795.

30 2861 – Collets No. 309575 – 309576.

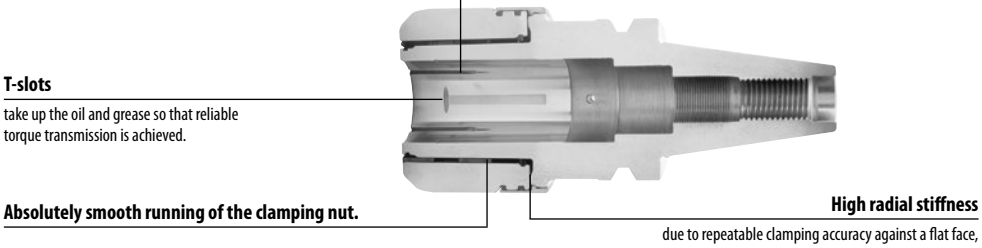
30 2865/2870 – Collets No. 309566 – 309570.



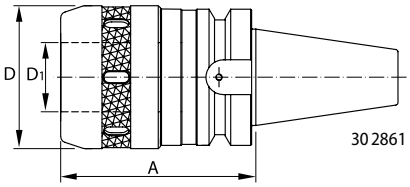
30 2861



30 2865



Ø D_1		mm	20	32
33K 30 2861	NT TOOL Heavy-duty chuck	BT 40	eShop	eShop
32A 30 2865	HOLEX	BT 40	eShop	eShop
32A 30 2870		BT 50	eShop	eShop
Dimension A		mm	90	105
Ø D (30 2861)		mm	52	73
Ø D (30 2865, 30 2870)		mm	52	66
Suitable C-hook (pin) spanner No. 628400			52 / 55	68 / 75



30 2861

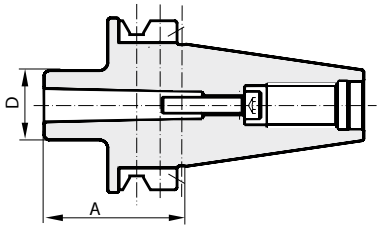
DIN 6383 | JIS B6339 | ISO 7388-2 | Form AD | G 6.3 15000 min^{-1} | ≤8µm

HOLEX Reducing adapters for tools with MT shank – JIS B 6339 (MAS-BT)

Ground internally and externally.

Application: For clamping tools **with MT shank.**

Optional extras: Pull studs (PS) No. 308760 – 308806.



For MT tools with tang to DIN 228-B



30 3082

MT internal			1	2	3	4
32A 30 3082	Reducing adapter SK / MT for tangs, form AD	BT 40	eShop	eShop	eShop	eShop
32A 30 3087		BT 50	eShop	eShop	eShop	eShop
Dimension A (30 3082)		mm	50	50	70	95
Dimension A (30 3087)		mm	45	60	65	95
Ø D		mm	25	32	40	48

ISO 7388-2 | JIS B6339 | ≤5µm | HPC

Face mill adapter – JIS B 6339 (MAS-BT)

Taper shank, spigots, and contact surfaces ground on collar.
Optional extras: Pull studs (PS) No. 308760 – 308802. Special toggle spanner No. 309840.

Combination face mill adapters

DIN 6358

30 2895/2905 – All shanks hard turned (for smooth running!). Balancing quality G2.5 / 25,000 rpm. Form ADB.
30 2897/2917/2957 – All shanks fine bead blasted. Balancing quality G6.3 / 18,000 rpm. Form A.
Application: **With drive key** for face mills with longitudinal slot, e.g. DIN 841.
With drive ring for face mills with crosswise slot DIN 1880 and cutter heads DIN 1830.
Supplied with: Drive key, face mill drive ring, and lock screw.
Note: Internal cooling available only with suitable tightening screw No. 309861.

G 2.5 25000 min⁻¹



30 2895

G 2.5 25000 min⁻¹



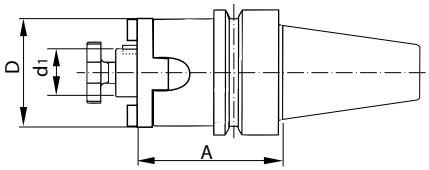
30 2905

Spigot ∅ d_1			mm	13	16	22	27	32	40
31A 30 2895	Garant	Combination face mill adapter **Form ADB**	**BT 40 short**	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 2897	HOLEX	Combination face mill adapter **Form A**	**BT 40 short**	–	eShop	eShop	eShop	eShop	eShop
31A 30 2905	Garant	Combination face mill adapter **Form ADB**	**BT 40 A = 100**	–	eShop	eShop	eShop	eShop	eShop
32A 30 2917	HOLEX	Combination face mill adapter **Form A**	**BT 40 A = 100**	–	eShop	eShop	eShop	eShop	–
32A 30 2957			**BT 50 A = 100**	–	eShop	eShop	eShop	eShop	–
Dimension A (30 2895, 30 2897)			mm	55	55	55	55	60	70
∅ D			mm	27	32	40	48	58	70
Spare milling cutter lock screw No. 309860 / 309861				13	16	22	27	32	40
Spare drive ring No. 309870				13	16	22	27	32	40
Suitable toggle spanner No. 309840				13	16	22	27	32	40

G 6,3 18000 min⁻¹



30 2897



Face mill arbors

DIN 6357

30 3007/3017/3027/3037 – All shanks fine bead blasted. Balancing quality G6.3 / 18,000 rpm. Form A.
30 3010–3015/3025/3035 – All shanks hard turned (for smooth running!). Balancing quality G2.5 / 25,000 rpm. Form ADB.
With **4** cooling channel bores.
30 3020/3045 – All shanks burnished.
Supplied with: Lock screw.

G 2.5 25000 min⁻¹



30 3015

Spigot ∅ d_1			mm	16	22	27	32	40
31A 30 3010	Garant	Face mill arbor **with cooling channel bore Form ADB**	**BT 30 short**	eShop	eShop	eShop	–	–
32A 30 3007	HOLEX	Face mill arbor **Form A**	**BT 30 short**	eShop	eShop	eShop	–	–
31A 30 3012	Garant	Face mill arbor **with cooling channel bore Form ADB**	**BT 30 A = 100**	eShop	eShop	eShop	–	–
31A 30 3015			**BT 40 short**	eShop	eShop	eShop	eShop	eShop
32A 30 3017	HOLEX	Face mill arbor **Form A**	**BT 40 short**	eShop	eShop	eShop	eShop	eShop
36E 30 3020	EROGLU	Face mill arbor **with cooling channel bore Form ADB**	**BT 40 short**	–	–	–	–	–
31A 30 3025	Garant		**BT 40 A = 100**	eShop	eShop	eShop	eShop	eShop

G 2.5 25000 min⁻¹



30 3012

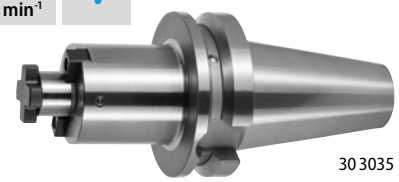
G 6,3 18000 min⁻¹



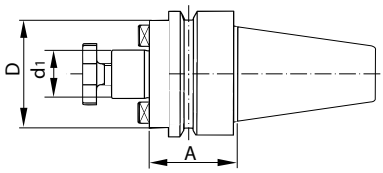
30 3017

Spigot ∅ d_1			mm	16	22	27	32	40
32A 30 3027	HOLEX	Face mill arbor **Form A**	BT 40 A = 100	eShop	eShop	eShop	eShop	–
31A 30 3035	Garant	Face mill arbor **with cooling channel bore Form ADB**	BT 50 A = 100	–	eShop	eShop	eShop	eShop
32A 30 3037	HOLEX	Face mill arbor **Form A**	BT 50 A = 100	–	eShop	eShop	eShop	eShop
36E 30 3045	EROGLU	Face mill arbor **with cooling channel bore Form ADB**	BT 50 A = 100	–	–	–	–	–
Dimension A (30 3010, 30 3007, 30 3020)			mm	35	40	40	50	50
Dimension A (30 3015, 30 3017)			mm	35	35	35	50	50
∅ D (30 3010, 30 3007, 30 3012, 30 3015, 30 3017, 30 3025, 30 3027)			mm	38	48	50	78	89
∅ D (30 3020)			mm	–	48	60	78	88
∅ D (30 3035, 30 3037)			mm	–	48	60	78	89
∅ D (30 3045)			mm	–	48	58	78	88
Spare milling cutter lock screw No. 309860 / 309861				16	22	27	32	40
Suitable toggle spanner No. 309840				16	22	27	32	40

G 2.5 25000 min^{-1}



30 3035



DIN 6357 | DIN 69882-3 | ISO 7388-2 | JIS B6339 | Form A | G 6.3 8000 min^{-1} | ≤6µm | HPC

Garant Face mill arbors, vibration damped

- Cylindrical form.
- Taper shank, spigot, and all contact surfaces are ground at the collar.
- With RFID/Balluffchip bore.
- Larger collar contact face.
- **Vibration damped version, arbor with vibration-damping core.**

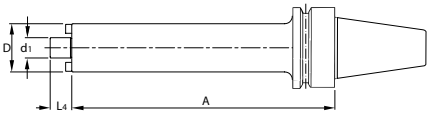
Advantage: Significantly lower tendency to vibrate. Considerable increase in feed rate.
Supplied with: Cutter lock screw and drive dog.
Optional extras: Special toggle spanner No. 309840.

Note: Further sizes on request.



30 3050

Spigot ∅ d_1			mm	16	22	27	32
31A 30 3050	Face mill arbor **vibration damped**	BT 40 A = 200		eShop	eShop	eShop	–
31A 30 3051		BT 40 A = 300		eShop	eShop	–	–
31A 30 3054		BT 50 A = 200		eShop	eShop	eShop	–
31A 30 3055		BT 50 A = 300		eShop	eShop	eShop	eShop
31A 30 3056		BT 50 A = 400		eShop	eShop	eShop	–
∅ D			mm	38	48	58	78
L_4			mm	17	19	21	24



ISO 7388-2 | JIS B6339 | Form ADB | G 2.5 25000 min^{-1} | HPC

Garant Arbor for indexable drill - JIS B 6339 (MAS-BT)

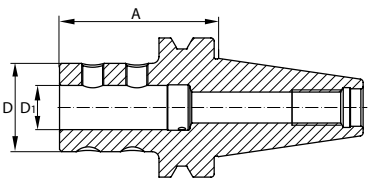
- All shanks hard turned.
- Position of the grub screw for countersinking in the indexable drill offset by 0.4 mm.
- **When tightening** the increased contact face ∅ is clamped against the front face of the arbor.
- **Better support,** allowing **higher feed rates.**
- **High concentricity** thanks to the mating surface being ground flat to 3µm.

Suitable for: All indexable drills with parallel shank to DIN 6595, Part 1.
Application: **For mounting all standard indexable drills to DIN 6595, Part 1.**
Optional extras: Pull studs (PS) No. 308760 – 308802. Replacement screws No. 309907; 309908.



30 3128

for shank ∅ D_1			mm	20	25	32	40
31A 30 3128	Arbor for indexable drills **Form ADB**	BT 40		eShop	eShop	eShop	eShop
31A 30 3129		BT 50		eShop	eShop	eShop	eShop
Dimension A (30 3128)			mm	72	76	80	100
Dimension A (30 3129)			mm	90	90	90	100
∅ D			mm	40	45	52	60

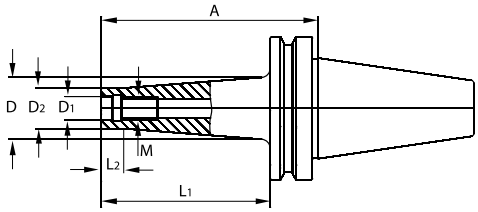


JIS B6339 | ISO 7388-2 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HSC

Garant Arbors for threaded copy mills – JIS B 6339 (MAS-BT)


30 3139

All shanks hard turned.
Application: To take screw-in milling cutters with thread.
Optional extras: Pull studs (PS) No. 308760 – 308802.



Thread M × Usable length L_1	31A 30 3139	31A 30 3141	Dimension A		∅ D_1 tolerance IT6	∅ D_2	∅ D	L_1	L_2	
	Arbor for screw-in milling cutters with thread		30 3139	30 3141					30 3139	30 3141
	BT 40	BT 50	mm	mm	mm	mm	mm	mm	mm	mm
M6×25	eShop	–	52	–	6.5	10	13	25	5	–
M6×50	eShop	–	77	–	6.5	10	20	50	5	–
M6×75	eShop	–	102	–	6.5	10	23	75	5	–
M8×25	eShop	–	52	–	8.5	13	15	25	5	–
M8×50	eShop	eShop	77	88	8.5	13	23	50	5	5
M8×75	eShop	–	102	–	8.5	13	23	75	5	–
M10×25	eShop	–	52	–	10.5	18	20	25	5	–
M10×50	eShop	eShop	77	88	10.5	18	23	50	5	5
M10×100	eShop	eShop	127	138	10.5	18	32	100	5	10
M12×25	eShop	–	52	–	12.5	21	24	25	5	–
M12×50	–	eShop	–	88	12.5	21	24	50	–	10
M12×75	eShop	–	102	–	12.5	21	31	75	5	–
M12×100	–	eShop	–	138	12.5	21	33	100	–	10
M12×125	eShop	–	152	–	12.5	21	36	125	5	–
M16×25	eShop	–	52	–	17	29	29	25	5	–
M16×50	–	eShop	–	88	17	29	29	50	–	10
M16×75	eShop	–	102	–	17	29	34	75	5	–
M16×100	–	eShop	–	138	17	29	36	100	–	10
M16×125	eShop	–	152	–	17	29	40	125	5	–
M16×150	–	eShop	–	188	17	29	42.5	150	–	10

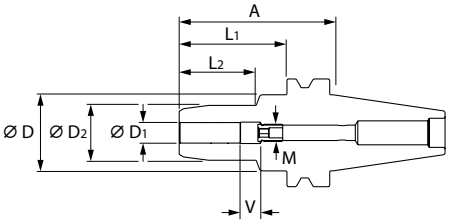
ISO 7388-2 | JIS B6339 | ≤80 bar | G 2.5 25000 min^{-1} | ≤3µm | HSC

Garant Hydraulic chuck (HD chuck) – JIS B6339 (MAS-BT)


30 3473

- **Radial run-out ≤ 3 µm.**
- With RFID/Balluffchip bore.
- Axial length adjustment possible (adjustment range V = 10 mm).
- Flexibility thanks to the use of reducing adapters.
- Coolant pressure up to 80 bar.

Application: For drilling, reaming and finish milling.
Optional extras: Pull studs (PS) No. 308760 – 308802, reducing sleeves No. 302135 – 302187.



Clamping ∅ D_1		mm	6	8	10	12	16	20
31A 30 3471	BASIC hydraulic chuck **short, slim, Form AD**	BT 30	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3473	BASIC hydraulic chuck **short, slim, Form ADB**	BT 40	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 3471)		mm	55	55	55	55	90	90
Dimension A (30 3473)		mm	90					
∅ D_2		mm	26	28	30	32	38	42
∅ D (30 3471)		mm	46	46	46	46	45	45
∅ D (30 3473)		mm	44.5					
M (30 3471)			M5	M6	M8×1	M10×1	M12×1	M8×1
M (30 3473)			M5	M6	M8×1	M10×1	M12×1	M16×1

ISO 7388-2 | JIS B6339 | Form AD | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

Garant Slim hydraulic chuck 3° – JIS B6339 (MAS-BT)

- **Extremely slim design** (3° contour).
- Ideal damping characteristics.
- Axial length adjustment facility.
- Shanks hard turned.

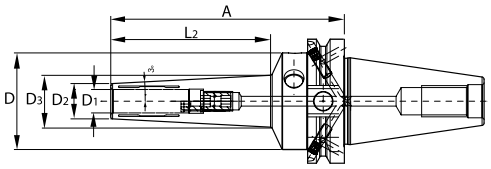
Application:
- Especially for tool and mould making.
- **Wherever reduced interference contours are required.**
- For drilling, reaming and milling.
- For clamping tools with shank tolerance h6.

Supplied with: Hexagon socket drive with T-handle.

Optional extras: Pull studs (PS) No. 308760 – 308802, slotted reducing sleeves No. 302135 – 302187.



30 3465



Clamping ∅ D_1		mm	3	4	5	6	8	10	12	16	20
31A 30 3446	Slim hydraulic chuck	BT 30 A = 85	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 3465		BT 40 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D_2 (30 3446)		mm	10	12	13	14	16	18	20	–	–
∅ D_2 (30 3465)		mm	9	10	11	12	14	16	18	24	28
∅ D_3 (30 3446)		mm	14.7	16.7	17.7	18.8	20.8	22.9	24.9	–	–
∅ D_3 (30 3465)		mm	16.5	17.5	18.5	19.5	21.5	23.7	25.8	31.4	35.5
∅ D (30 3446)		mm	40	40	40	40	40	40	40	–	–
∅ D (30 3465)		mm					49.5				
L_2 (30 3446)		mm	45	45	45	46	46	47	47	–	–
L_2 (30 3465)		mm	71	71	71	73	74	74	75	79	80

ISO 7388-2 | JIS B6339 | G 2.5 25000 min^{-1} | ≤3µm | HPC | HSC | Form AD | Form ADB

Garant GARANT Master Chuck hydraulic chuck slim – JIS B6339 (MAS-BT)

- **Slim design** (4.5° contour, 1 to 1 shrinking contour according to DIN 69882-8).
- With RFID/Balluffchip bore.
- Axial length adjustment, adjustment travel 10 mm.
- Reducing adapters can be used.
- **Temperature resistant up to 120 °C** for 4 hours.
- **Up to 10× more clamping operations** possible compared to a standard hydraulic chuck.
- Very low tightening torque of the clamping screw – easy handling.
- **Patented new hydraulic clamping system** – reliable, durable premium concentricity.

Application: Especially for tool and mould making.
Wherever **reduced interference contours** are required.
For drilling, reaming and milling.
For clamping tools with shank tolerance h6.

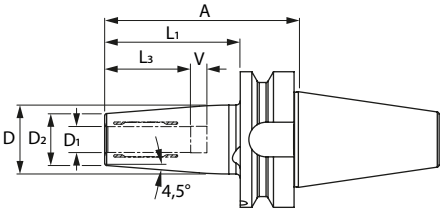
Supplied with: Hexagon socket drive with T-handle.

Optional extras: Pull studs (AB) No. 308600 – 308802, AB pull stud wrenches No. 308820 / 308835, Reducing sleeves No. 302135 – 302187.



30 3438

Same properties as shrink-fit chucks:
– Accuracy.
– Extremely slim, identical interference contour.
Advantages over shrink-fit chucks:
– Better damping.
– Simpler to use.
– Flexibility (through reducing adapters).
– No shrink-fit units required (costs, energy consumption).



Clamping ∅D_1		mm	6	8	10	12	16	20
31A 30 3435	Hydraulic chuck, slim **Master Chuck, form AD**	BT 30 A = 85	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3438	Hydraulic chuck, slim **Master Chuck, form ADB**	BT 40 A = 90	eShop	eShop	eShop	eShop	eShop	eShop
∅ D_2		mm	21	21	24	24	27	33
∅ D		mm	27	27	32	32	34	42

JIS B6339 | ISO 7388-2 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

Hydraulic chuck – version HT (High Torque) – JIS B6339 (MAS-BT)

- Very high overall stiffness due to optimised design.
- Axial length adjustment, adjustment travel 10 mm.

Advantage:
- **Maximum transmissible torque 550 Nm,** version HT (High Torque), for high process reliability.
- **Ideal damping characteristics,** resulting in optimum surface finishes, increased tool life and spindle protection.
- **Temperature resistance up to 120 °C.**

Application: **Especially for heavy-duty milling.**

Supplied with: Hexagon cross-bar wrench.

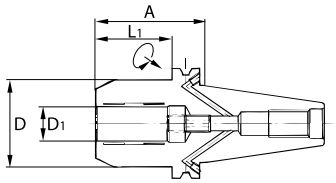
Optional extras: Pull studs (PS) No. 308760 – 308802.

Note: Caution in the case of extra-long tools and TPC machining.


30 3450


30 3451


30 3459



Clamping range ∅ D_1				mm	12	16	20	32
31H 30 3450	Garant	HT chuck	BT 40 short		eShop	–	eShop	–
31H 30 3451	Garant	HT chuck **with cooling channel bores**	BT 40 short		eShop	eShop	eShop	–
32A 30 3459	HOLEX	HT chuck	BT 40 short		–	–	eShop	–
31H 30 3452	Garant		BT 50 short		–	–	eShop	eShop
32A 30 3469	HOLEX		BT 50 short		–	–	eShop	–
Dimension A (30 3450, 30 3451, 30 3459)				mm	58	72.5	72.5	–
Dimension A (30 3452, 30 3469)				mm	–	–	83.5	90
∅ D (30 3450, 30 3451, 30 3452)				mm	42	46	49	72
∅ D (30 3459, 30 3469)				mm	–	–	49.25	–
L_1 (30 3450, 30 3459)				mm	31	–	45	–
L_1 (30 3451, 30 3452, 30 3469)				mm	31	45.5	45.5	52
suitable reducing adapter					302140; 302135	–	302160; 302155; 302150; 302165	302180; 302175

ISO 7388-2 | JIS B6339 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

GARANT Master Chuck hydraulic chuck performance – JIS B6339 (MAS-BT)

- Particularly suitable for highly dynamic milling applications.
- **Optimised outer contour using FEM** (finite element method) –> robustness thanks to max. rigidity, longer tool life, higher metal removal rate, suitable for all machining strategies.
- With RFID/Balluffchip bore.
- Axial length adjustment, adjustment travel 10mm.
- Reducing adapters can be used.
- **Temperature resistant up to 170°C for 4 hours.**
- **Allows for up to 10x more clamping operations compared with a standard hydraulic chuck.**
- Very low tightening torque of the clamping screw – easy handling.
- **Patented new hydraulic clamping system – reliable, durable premium concentricity.**

Application: Universally designed for roughing and finishing operations. For clamping tools with shank tolerance h6.

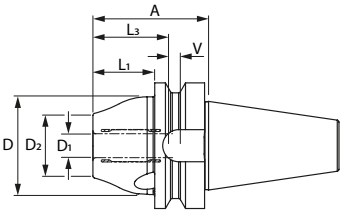
Supplied with: Hexagon socket drive with T-handle.

Optional extras: Pull studs (AB) No. 308600 – 308802, AB pull stud wrenches No. 308820 / 308835, Reducing sleeves No. 302135 – 302187.

Maximum metal removal rate, with maximum precision!



30 3480



Clamping ∅D_1			mm	6	8	10	12	16	20
31A 30 3480	Hydraulic chuck performance **Master Chuck, form ADB**	BT 40 short		eShop	eShop	eShop	eShop	eShop	eShop
Dimension A			mm	58	58	58	58	72.5	72.5
∅ D_2			mm	26	28	30	32	38	38
∅ D			mm	42	42	42	49	49	49

ISO 7388-2 | JIS B6339

Short drill chucks – with chuck key operation – JIS B6339 (MAS-BT)

For clockwise and anticlockwise rotation.

30 3165–3172 –
- Slim design.
- Specific coolant transfer to tools with IC.
- Optimum holding torques at the tool.

30 3171–3176 – Concentricity ≤ 20 µm.

Supplied with: **Clamping wrench.**

Optional extras: Pull studs (PS) No. 308760 – 308806.
Pull stud wrenches No. 308820; 308835.

Form ADB | ≤50 bar | G 2.5 25000 min^{-1} | ≤20µm



30 3175_0,5-16



30 3175_0,3-10

Form AD | ≤50 bar | G 2.5 25000 min^{-1} | ≤20µm | ≤14 Nm



30 3171_0,5-13

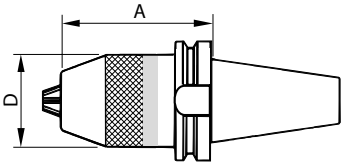


30 3171_1-16

Form A | G 6.3 12000 min^{-1} | ≤50µm | ≤14 Nm



30 3165



Clamping range			mm	0,3-10	0,5-13	0,5-16	1-16	2,5-16
31B 30 3171	Garant	Short drill chuck Form AD	BT 40	–	eShop	–	eShop	–
31B 30 3172			BT 50	–	–	–	eShop	–
31B 30 3175		Short drill chuck Form ADB	BT 40	eShop	–	eShop	–	–
31B 30 3176			BT 50	–	–	eShop	–	–
32K 30 3165	HOLEX	Short drill chuck Form A	BT 40	–	–	–	–	eShop
32K 30 3166			BT 50	–	–	–	–	eShop
Dimension A (30 3171, 30 3175, 30 3165)			mm	73	92	98	95	95
Dimension A (30 3172, 30 3176, 30 3166)			mm	–	–	110	106	106
∅ D			mm	38	43	57	50	50
Spare Torx® chuck key No. 625220				–	TX25	–	TX25	TX25
Spare chuck key No. 627425				4 AF	–	6 AF	–	–

Form A | G 2.5 25000 min^{-1} | ≤30µm



30 3197

Clamping range			mm	0,3-8	0,5-13	2,5-16
33W 30 3196	WTE	Short drill chuck Form A	BT 30	–	eShop	–
33W 30 3197			BT 40	eShop	eShop	eShop
Dimension A (30 3196)			mm	–	96	–
Dimension A (30 3197)			mm	78	98	103
∅ D			mm	36	50	57
Spare chuck key No. 627425				SW 4	6 AF	6 AF

JIS B6339 | ISO 7388-2 | Form ADB | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

Garant Shrink-fit chucks 3° (for tool-making and mould-making) – JIS B6339 (MAS-BT)

- All shanks hard turned.
- **Extra slim design (3° contour).**

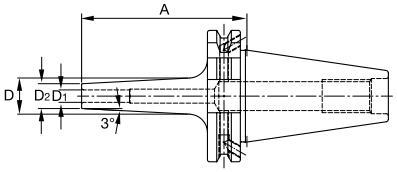
Application:
- **Especially for tool and mould making.**
- Wherever reduced interference contours are required.
- For clamping tools with shank tolerance h6.

Optional extras: Pull studs (PS) No. 308760 – 308806,
shrink-fit chuck extensions No. 302410, sizes 12/3 and 12/4,
shrink-fit units No. 354210 – 304450,
PS wrenches No. 308820 – 308835.

Note: No length adjustment available!



30 3443



Clamping range ∅ D$_1$			mm	3	4	5	6	8	10	12
31A 30 3443	Shrink-fit chuck 3°	BT 40 A = 90		eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D			mm	14	15	16	19	21	23	25
∅ D$_2$			mm	9	10	11	12	14	16	18

JIS B6339 | ISO 7388-2 | G 2.5 25000 min⁻¹ | ≤3µm | HSC | HPC

Garant

Shrink-fit chucks 4.5° – JIS B6339 (MAS-BT)

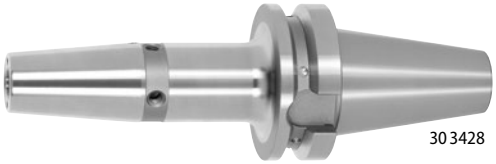
- Integral tool length adjustment, range 10 mm (from ∅ 6).
- Size 3-5 for carbide, from size 6 for HSS and carbide.

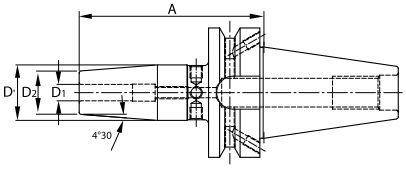
Standard: **Similar to E-DIN 69882-8, form G.**
Application: For clamping tools with parallel shank to h6 tolerance.
Optional extras: Pull studs (PS), No. 308760 – 308806, shrink-fit chuck extension No. 302410 – 302417, shrink-fit units No. 354210 – 354400.

Form AD


30 3405

Form ADB


30 3428



Form ADB


30 3410

Clamping range ∅ D_1			mm	3	4	5	6	8	10	12	14	16	18	20	25
31A 30 3405	Shrink-fit chuck **Form AD**	**BT 30 short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 3406	Shrink-fit chuck **Form AD with cooling channel bore**	**BT 30 short**		–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–
31A 30 3410	Shrink-fit chuck **Form ADB**	**BT 40 short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3415	Shrink-fit chuck **Form ADB with cooling channel bore**	**BT 40 short**		–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3425	Shrink-fit chuck **Form ADB**	**BT 40 A = 120**		–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3427		**BT 40 A = 130**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3428	Shrink-fit chucks **Form ADB with cooling channel bore**	**BT 40 A = 130**		–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 3430	Shrink-fit chuck **Form ADB**	**BT 40 A = 160**		–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3445		**BT 50 A = 100**		–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3437	Shrink-fit chuck **Form ADB with cooling channel bore**	**BT 50 A = 100**		–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop
31A 30 3461	Shrink-fit chuck **Form ADB**	**BT 50 A = 160**		–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop
Dimension A (30 3405, 30 3406)			mm	80	80	80	80	80	80	80	80	80	90	90	–
Dimension A (30 3410, 30 3415)			mm	90	90	90	90	90	90	90	90	90	90	90	100
∅ D			mm	17	17	17	27	27	32	32	34	34	42	42	53
∅ D_2			mm	12	12	12	21	21	24	24	27	27	33	33	44

ISO 7388-2 | JIS B6339 | ≤80 bar | G 2.5 25000 min⁻¹ | ≤3µm | HSC | BT-DC

Garant

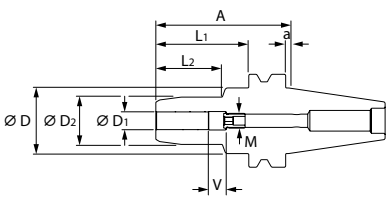
Hydraulic chuck (HD chuck) – JIS B6339 (MAS-BT) with double contact

- **Radial run-out ≤ 3 µm.**
- Balluffchip bore.
- Axial length adjustment up to 10 mm available.
- Flexibility thanks to the use of reducing adapters.
- Coolant pressure up to 80 bar.

Application: For drilling, reaming and finish milling.
Optional extras: Pull studs (PS) No. 308760 – 308806, reducing sleeves No. 302135 – 302187.

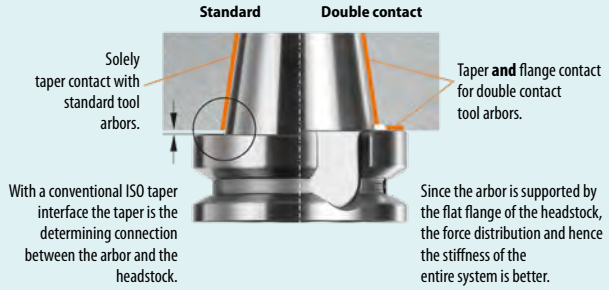

30 3820

Clamping ∅ D_1			mm	12	20
31A 30 3820	BASIC hydraulic chuck **slim, Form AD**	**BT 30 short**		eShop	eShop
31A 30 3825	BASIC hydraulic chuck **slim, Form ADB**	**BT 40 short**		eShop	eShop
Dimension A (30 3820)			mm	55	90
Dimension A (30 3825)			mm	90	
a			mm	1	
∅ D (30 3820)			mm	46	44.5
∅ D (30 3825)			mm	44.5	
∅ D_2			mm	32	42



30

Garant Tool arbors JIS B 6339 (MAS-BT) with double contact



The double contact between the taper **and** the flat flange creates a more stable and precise clamping situation.

The result:

- Better surface quality.
- Longer tool life times.
- Consistent seating in the headstock, even at high speeds.
- Smaller radial run-out.



Send us your enquiry or ask your contact person.

DIN 6359 | ISO 7388-2 | JIS B6339 | Form AD | G 2.5 25000 min^{-1} | ≤3µm | HPC | BT-DC

Garant Side lock arbor (Weldon) – JIS B6339 (MAS-BT) with double contact

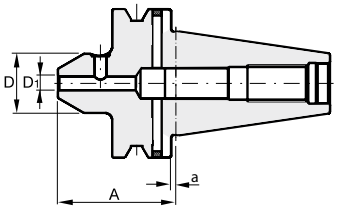
All shanks hard turned (for smooth running!).

Application: For clamping tools with side flats to DIN 1835 B and DIN 6535 HB.

Optional extras: Pull studs (PS) No. 308760 – 308806.
Pull stud wrenches No. 308820; 308835.


30 3640

Clamping range ∅ D_1			mm	6	8	10	12	16	20	25
31A 30 3610	Side lock arbor **Form AD**	**BT 30 short**		eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 3640		**BT 40 short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3650		**BT 40 A = 100**		eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 3670		**BT 50 short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 3610)			mm	50	50	50	55	63	70	–
Dimension A (30 3640)			mm	50	50	63	63	63	63	90
Dimension A (30 3670)			mm	63	63	70	80	80	80	100
a (30 3610, 30 3640, 30 3650)			mm				1			
a (30 3670)			mm				1.5			
∅ D			mm	25	28	35	42	48	52	65
Spare clamping screw No. 30 9900				6	8	10	12	16	20	25



JIS B6339 | ISO 7388-2 | Form AD | G 2.5 25000 min^{-1} | ≤3µm | HSC | BT-DC

Garant ER collet chuck – JIS B6339 (MAS-BT) with double contact

Taper ground internally and externally. All shanks hard turned (for smooth running!).
With RFID/Balluffchip bore.

- High-quality precision clamping nut.
- Clamping nut balanced for HSM (G2.5/25,000 rpm).
- Optimum wear characteristics and torque transmission due to the coated precision clamping nut.

Application: For clamping tools with parallel shank in collets to **DIN 6499 Form A and B.**

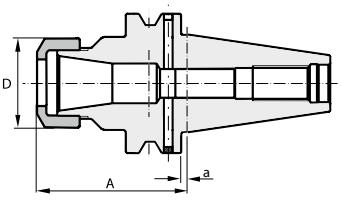
Supplied with: ER clamping nut.

Optional extras: ER collets No. 308881 – 309434,
ER chuck keys No. 309680 – 309720 or 613300,
ER clamping nut 309610.
Pull studs (PS) No. 308760 – 308806.
Pull stud wrenches No. 308820; 308835.

Note: Matching clamping nut No. 309580 or 309610.


30 3710

for ER collet size			16	20	25	32	40
31A 30 3690	ER collet chuck **Form AD**	**BT 30 short**	eShop	eShop	eShop	eShop	–
31A 30 3710		**BT 40 short**	eShop	–	eShop	eShop	eShop
31A 30 3720		**BT 40 A = 100**	eShop	–	eShop	eShop	eShop
31A 30 3740		**BT 50 short**	eShop	–	eShop	eShop	eShop
Clamping range		mm	0.5 – 10	1 – 13	1 – 16	2 – 20	3 – 26
Dimension A (30 3690)		mm	60	60	60	70	–
Dimension A (30 3710)		mm	70	–	70	70	80
Dimension A (30 3740)		mm	80	–	80	80	80
a (30 3690, 30 3710, 30 3720)		mm			1		
a (30 3740)		mm	1.5	–	1.5	1.5	1.5
∅ D		mm	28	34	42	50	63
Spare ER clamping nut No. 309580			16	20	25	32	40
ER chuck key No. 309680			16	20	25	32	40



DIN 6358 | JIS B6339 | ISO 7388-2 | Form AD | G 2.5 25000 min^{-1} | ≤5µm | HPC | BT-DC

Garant Combination face mill adapter – JIS B6339 (MAS-BT) with double contact

Taper shank, spigots, and contact surfaces ground on collar.
All shanks hard turned (for smooth running!). With RFID/Balluffchip bore.

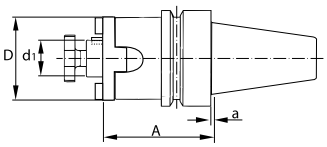
Application: **With drive key** for face mills with longitudinal slot, e.g. DIN 841.
With drive ring for face mills with crosswise slot DIN 1880 and cutter heads DIN 1830.

Supplied with: Drive key, face mill drive ring, and lock screw.

Optional extras: Pull studs (PS) No. 308760 – 308806.
Special toggle spanner No. 309840.


30 3760

Spigot ∅ d_1		mm	16	22	27	32
31A 30 3760	Combination face mill adapter **Form AD**	**BT 40 short**	eShop	eShop	eShop	eShop
Dimension A		mm	55	55	55	60
a		mm	1			
∅ D		mm	32	40	48	58
Spare milling cutter lock screw No. 309860 / 309861			16	22	27	32
Spare drive ring No. 309870			16	22	27	32
Suitable toggle spanner No. 309840			16	22	27	32



DIN 6357 | JIS B6339 | ISO 7388-2 | Form AD | G 2.5 25000 min^{-1} | ≤5µm | HPC | BT-DC

Garant Face mill arbors – JIS B6339 (MAS-BT) with double contact

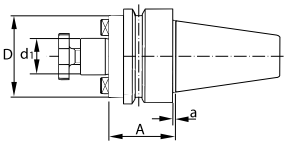
All shanks hard turned (for smooth running!).
With RFID/Balluffchip bore and cooling channel bores.

Supplied with: Lock screw.

Optional extras: Pull studs (PS) No. 308760 – 308806.
Special toggle spanner No. 309840.


30 3810

Spigot ∅ d_1		mm	16	22	27	32
31A 30 3780	Face mill arbor **Form AD**	**BT 30 short**	eShop	eShop	eShop	–
31A 30 3800		**BT 40 short**	eShop	eShop	eShop	eShop
31A 30 3810		**BT 40 A = 100**	eShop	eShop	eShop	eShop
Dimension A (30 3780)		mm	35	40	40	–
Dimension A (30 3800)		mm	35	35	35	50
a		mm	1			
∅ D		mm	38	48	50	78
Spare milling cutter lock screw No. 309860 / 309861			16	22	27	32
Suitable toggle spanner No. 309840			16	22	27	32



JIS B6339 | ISO 7388-2 | Form AD | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC | BT-DC

Garant Shrink-fit chucks 4.5° – JIS B6339 (MAS-BT) with double contact

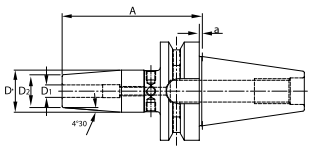
- High-temperature steel.
- Integral tool length adjustment, adjustment track 10 mm.
- Suitable for shrink fitting of HSS and carbide tools.
- All shanks hard turned (for smooth running!).
- With RFID/Balluffchip bore.

Standard: **Similar to E-DIN 69882-8, form G.**

Application: For clamping tools with parallel shank to h6 tolerance.

Optional extras: Pull studs (PS), No. 308760 – 308806,
Shrink-fit chuck extension No. 302410 – 302417,
Shrink-fit units No. 354210 – 354400.


30 3860



Clamping range ∅ D_1		mm	6	8	10	12	16	20	25
31A 30 3830	Shrink-fit chuck **Form AD**	**BT 30 short**	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 3850		**BT 40 short**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 3860		**BT 40 A = 120**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 3830)		mm	80	80	80	80	80	90	–
Dimension A (30 3850)		mm	90	90	90	90	90	90	100
a		mm	1						
∅ D		mm	27	27	32	32	34	42	53
∅ D_2		mm	21	21	24	24	27	33	44

The hollow shank interface HSK – Forms and features

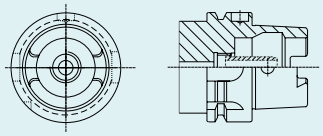
►Note: See page 938 for information on ISO taper (SK) – interfaces.

Taper hollow shanks for automatic tool change

With tool gripper groove

ISO 12164-1 (DIN 69893-1 Form A and Form T)

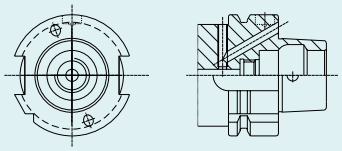
DIN 69893



- Used for machining centres, milling machines, special machines with automatic tool change.
- **Pipe for central axial coolant feed.**
- Torque transmission by **2 driving slots** at the end of the taper. **For Form T, the tolerance (dimension b5) is narrowed.**
- **2 collar grooves** for tool magazine, positioning notch.
- Bore for data carrier DIN 69 873 in the collar.

DIN 69893-2 Form B

DIN 69893

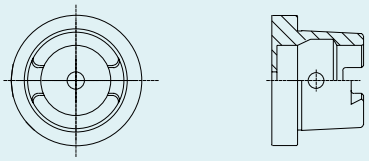


- Used for machining centres, heavy duty milling machines, lathes.
- With enlarged collar and position notch.
- **Decentralised coolant supply via the collar or central supply via the coolant pipe.**
- Torque transmission by **2 collar grooves.**
- Bore for data carrier DIN 69 873 in the collar.

Taper hollow shanks for manual tool change

ISO 12164-1 (DIN 69893-1 Form C)

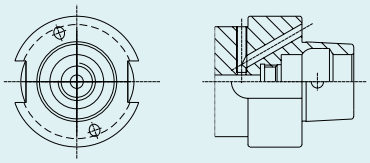
DIN 69893



- Preferred for use on spindles in transfer lines and special machines without automatic tool change or stub drill spindles and tool extensions / reducers.
- **Central axial coolant feed.**
- Torque transmission by **2 driving slots** at the end of the taper.

DIN 69893-2 Form D

DIN 69893



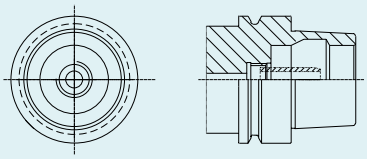
- Used in all areas which require a large flat face for even better support during manual tool changing.
- With enlarged collar.
- **Decentralised coolant supply via the collar or central supply via the coolant pipe.**
- Torque transmission by **2 collar grooves.**

Taper hollow shanks for higher speeds (HSC)

With tool gripper groove

Prelim standard (DIN 69893-5 Form E)

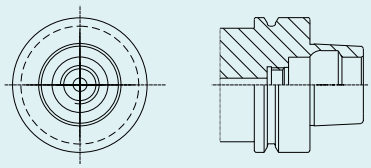
DIN 69893



- Used for high frequency spindles, woodworking machines.
- Rotationally symmetrical, **without any driving slot.**
- Torque transmission by friction.
- **Pipe for central coolant feed.**

E-DIN 69893-6 Form F

DIN 69893



- With reduced taper.
- Central coolant supply possible via a through hole – no thread for coolant pipe

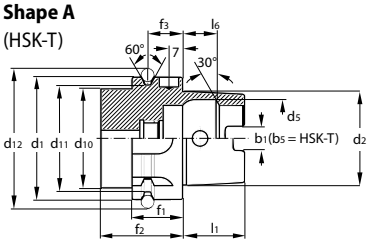
The HSK interface has the following advantages compared to the ISO taper:

- High repetition accuracy when changing tools.
- Fixed axial positioning due to flat face.
- Suitable for high-speed cutting.
- No pull-studs required.

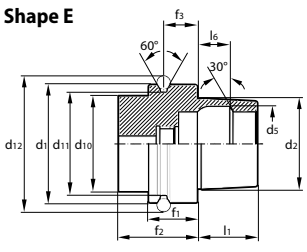
Material:

- Special steel for highly stressed components.
- Surface hardness: 58 – 62 HRC.
- **Tensile strength at core at least 1000 N/mm2.**

Shape A
(HSK-T)



Shape E



HSK	b1 ± 0.04	b5 ± 0.035	d1*) h10	d2	d5 H11	d10 max.	d11 -0.1	d12 -0.1	f1 -0.1	f2 min.	f3 ±0.1	l1 −0.2	l6 JS10
32	7.05	6.932	32	24.007	20.5	26	26.5	37	20	35	16	16	8.92
40	8.05	7.932	40	30.007	25.5	34	34.8	45	20	35	16	20	11.42
50	10.54	10.425	50	38.009	32	42	43	59.30	26	42	18	25	14.13
63	12.54	12.425	63	48.010	40	53	55	72.30	26	42	18	32	18.13
80	16.04	15.93	80	60.012	50	68	70	88.80	26	42	18	40	22.85
100	20.02	19.91	100	75.013	63	88	92	109.75	29	45	20	50	28.56

*) Nominal Ø d_1 = collar Ø

ISO 12164-1 | DIN 69882-4 | DIN 69893 | ≤3µm | HSC | HPC

Side lock arbor – ISO 12164 (DIN 69893)

- With RFID/Balluffchip bore.
- HSK mating faces machined.

30 4270/4272/4305/4306/4309/4315/4328/4335/4336/4390/4392/4402/4410/4411 –
GARANT: All shanks hard turned (for smooth cutting action!).

30 4272/4392 – Special nickel plating.

30 4278/4272/4305/4328/4319/4336/4398/4392/4402/4411 –
With coolant supply holes that can be plugged.

Application: For clamping tools with Weldon shank to DIN 1835 Form B and DIN 6535 Form HB.

Optional extras: Coolant pipe No. 309880, coolant pipe wrench No. 309890

Note: HSK 40 and 50, Form A and E available ex works by the manufacturer.
30 4306 – Without a thread for the coolant pipe.

Form A | G 2.5 25000 min^{-1}



30 4270
30 4309

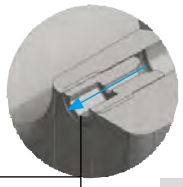
Form A | G 6.3 20000 min^{-1}



30 4277

Optimised cooling concept

- **4** cooling channel bores instead of 2.
- Different approach angles of the cooling channel bores.
- With 4 nozzle screws to optimise the coolant pressure and alignment of the coolant stream.



Corrosion protection
due to special surface treatment.

Form A | G 2.5 25000 min^{-1}

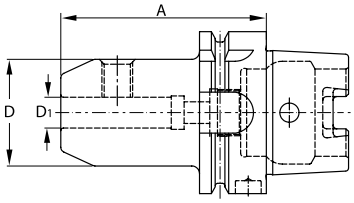


30 4272 / 4392

Form A | G 2.5 25000 min^{-1}



30 4305



Clamping range ∅ D_1			mm	6	8	10	12	14	16	18	20	25	32	40
31A 30 4270	Garant	Side lock arbor	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 4277			HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 4278	HOLEX	Side lock arbor **with cooling channel bore**	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 4272		Side lock arbor **Nickel-plated, with cooling channel bore**	HSK-A 63 short	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–	–
31A 30 4305	Garant	Side lock arbor **with cooling channel bore**	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 4306		Side lock arbor	HSK-F 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 4309			HSK-A 63 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31A 30 4315			HSK-A 63 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
32A 30 4317	HOLEX		HSK-A 63 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31A 30 4328	Garant	Side lock arbor **with cooling channel bore**	HSK-A 63 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
32A 30 4319	HOLEX		HSK-A 63 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31A 30 4335		Side lock arbor	HSK-A 63 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 4336	Garant	Side lock arbor **with cooling channel bore**	HSK-A 63 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
32A 30 4337	HOLEX		HSK-A 63 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31A 30 4390	Garant	Side lock arbor	HSK-A 100 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 4397			HSK-A 100 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 4398	HOLEX	Side lock arbor **with cooling channel bore**	HSK-A 100 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–

Clamping range ∅ D_1				mm	6	8	10	12	14	16	18	20	25	32	40
31A 30 4392		Side lock arbor **Nickel-plated, with cooling channel bore**	HSK-A 100 short		eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–	–
31A 30 4402	Garant	Side lock arbor **with cooling channel bore**	HSK-A 100 short		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 4410		Side lock arbor	HSK-A 100 A = 160		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
32A 30 4417	HOLEX		HSK-A 100 A = 160		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
31A 30 4411	Garant	Side lock arbor **with cooling channel bore**	HSK-A 100 A = 160		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
Dimension A (30 4270, 30 4277, 30 4278, 30 4272, 30 4305, 30 4306)				mm	65	65	65	80	80	80	80	80	110	110	125
Dimension A (30 4309)				mm	100	100	100	100	100	100	100	100	–	–	–
Dimension A (30 4315, 30 4317, 30 4328, 30 4319)				mm	120	120	120	120	120	120	120	120	–	–	–
Dimension A (30 4335, 30 4336, 30 4337, 30 4410, 30 4417, 30 4411)				mm	160	160	160	160	160	160	160	160	160	160	–
Dimension A (30 4390, 30 4397, 30 4398, 30 4392, 30 4402)				mm	80	80	80	80	80	100	100	100	100	100	120
∅ D				mm	25	28	35	42	44	48	50	52	65	72	80
Spare clamping screw No. 30 9900					6	8	10	12	12	16	16	20	25	32	32

ISO 12164-1 | DIN 69893 | Form A | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

Garant Combi side lock arbors – slim version – ISO 12164 (DIN 69893-1)

- With **ball-jointed clamping screw for Weldon and Whistle Notch systems** (clamping flat inclination 2°).
- With RFID/Balluffchip bore.
- All shanks hard turned (for smooth running!).
- HSK mating faces machined.

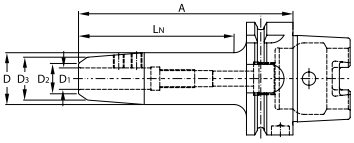
Application: For clamping tools with parallel shank to DIN 1835 Form B + E and DIN 6535 Form HB + HE.

Supplied with: Ball-jointed clamping screw and through-drilled back stop screw.

Optional extras: Coolant tube No. 309880, socket wrench No. 309890, spare screw No. 309905 size M6 / M8.



30 4705



Clamping range ∅ D_1			mm	6	8	10	12	14	16	18	20
31A 30 4705	Combination side lock arbor, slim	HSK-A 63		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 4715		HSK-A 63 A = 160		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 4705)			mm	100	100	100	120	120	120	120	120
Dimension A (30 4715)			mm	160							
∅ D			mm	24	26	28	29	32	34	36	38
∅ D_2			mm	13	15	16	17	19	21	23	25
∅ D_3			mm	18	20	21	22	24	26	28	30
L_N (30 4705)			mm	67	67	67	87	87	87	89	89
L_N (30 4715)			mm	85	85	85	85	85	85	85	129

ISO 12164-1 | DIN 69882-5 | DIN 69893 | Form A | G 6.3 12000 min^{-1} | ≤3µm | HSC | HPC

Garant Whistle Notch arbors – ISO 12164 (DIN 69893-1)

Feature:
The tool is firmly clamped at the side with the clamping screw and supported at the back with the back stop screw. Clamping free of play, giving low vibration running.

- With back stop screw.
- With RFID/Balluffchip bore.

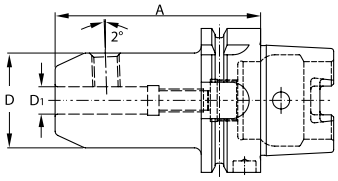
Application: For clamping tools with parallel shank and inclined clamping flat (2°) to DIN 1835 E and DIN 6535 HE.

Tool can be adjusted axially. Specially for clamping solid carbide drills. The length adjustment due to regrinding the ends of drills can be corrected by axial adjustment backscrew in the toolholder.

Optional extras: Coolant pipe No. 309880, coolant pipe wrench No. 309890



30 4870



Clamping range ∅ D_1			mm	6	8	10	12	14	16	18	20	25	32
31A 30 4870	Whistle Notch arbor	HSK-A 63		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 4970		HSK-A 100		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 4870)			mm	80	80	80	90	90	100	100	100	110	110
Dimension A (30 4970)			mm	90	90	90	100	100	100	100	110	120	120
∅ D			mm	25	28	35	42	44	48	50	52	65	72
Spare clamping screw No. 30 9900				6	8	10	12	12	16	16	20	25	32

ISO 12164-1 | DIN 69882-4 | DIN 69893 | Form A | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

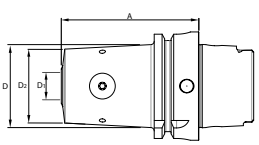
Garant Performance milling chuck – ISO 12164 (DIN 69893-1)

- With RFID/Balluffchip bore.
- All shanks hard turned.
- Supplied with 4 table cooling channel bores.

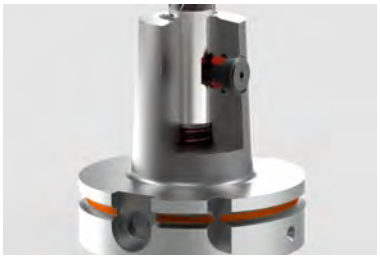
Advantage:
- No risk of the cutter being pulled out, not even a tug.
- Optimised external contour – vibration-damping behaviour.
- Pleasant handling thanks to the differential thread.
- Breakage of the milling cutter shank is improbable.
- Precision version.

Application: For clamping tools with side drive flats to DIN 1835 Form B and DIN 6535 Form HB.
Best suited for TPC milling or high feed rate applications.
No risk of the cutter being pulled out, more precise radial run-out, **process reliability!**

Optional extras: Coolant pipe No. 309880,
coolant pipe wrench No. 309890




30 4450



- *Spring in the base body presses the milling cutter or HB shank into the correct position.*
- *Contact piece on the tightening screw holds the milling cutter in the HB face.*

Clamping ∅ D_1		mm	6	8	10	12	16	20
31A 30 4450	Performance milling chuck **with cooling channel bores**	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 4460		HSK-A 100 short	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 4450)		mm	65	65	70	80	80	80
Dimension A (30 4460)		mm	80	80	80	85	100	100
∅ D (30 4450)		mm	26.5	29	36.5	43	48.5	52
∅ D (30 4460)		mm	27.5	30	37	43	50	53.5
∅ D_2		mm	22.5	25	32	37.5	43	46.5

DIN 69893 | ISO 12164-1 | Form A | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

Garant HiRunER Precision ER collet chuck – ISO 12164 (DIN 69893)

External and internal tapers are ground. All shanks are hard turned for smooth running.
Including RFID/Balluffchip bore, high-performance clamping nut up to 25000 rpm.

Advantage:
- **Excellent concentricity in the system** (chuck + collet + clamping nut), 3 µm radial run-out with a 2 µm collet, 6 µm radial run-out with a 5 µm collet.
- **Extremely strong holding force** (up to **factor 2** better than the standard ER chuck).
- **Vibration reduction effect** due to 2-part clamping nut (one part for mini version).

Application: For clamping tools with plain shank in collets to DIN 6499 - Form A and B.

Supplied with: **Precision clamping nut**.

Optional extras: Coolant tube No. 309880,
Socket wrench No. 309890,
ER collets Fahrion No. 308901 and 309432.
Hook wrench No. 628400, or torque wrench No. 309749 or No. 628520.

Note:
- Clamps only nominal ∅ up to shank ∅ tolerance h 10.
- Do not use the clamping nut in combination with a sealing washer.
- Use the precision collet chuck always in conjunction with the precision clamping nut No. 309617; 309618.
- Use in combination with Fahrion collets.
- The blue design ring must be removed for Fahrion HP 2µm ER collets.



HiRunER
- *Collet is fully seated in the chuck*
- *Higher clamping forces!*
- *Improved radial run-out!*

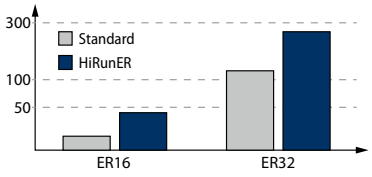


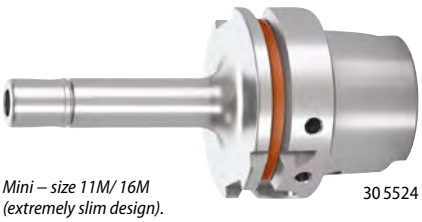
Standard ER chuck
- *Collet is not inserted 100 % in the chuck.*

Slide-optimised surface treatment


30 5523

Ball-bearing-mounted clamping nut
for higher tightening torques




30 5524

Mini – size 11M/ 16M (extremely slim design).

for ER collet size			11M	16M	16	20	25	32	40
31A 30 5518	HiRunER precision ER collet chuck	HSK-E 40 short	eShop	eShop	–	–	–	–	–
31A 30 5523		HSK-A 63 short	–	–	eShop	eShop	eShop	eShop	eShop
31A 30 5524		HSK-A 63 medium	eShop	eShop	eShop	–	eShop	eShop	eShop
31A 30 5527		HSK-A 63 A = 160	eShop	eShop	–	–	–	–	–
Clamping range		mm	1 – 7	1 – 10	0.5 – 10	1 – 16	1 – 16	2 – 20	3 – 26
Dimension A (30 5518, 30 5523)		mm	70	70	75	75	75	75	85
Dimension A (30 5524)		mm	100	100	100	–	100	100	120
∅ D		mm	16	24	34	38	44	52	62
Spare ER clamping nut No. 309617			–	–	16	20	25	32	40
Spare ER clamping nut No. 309618			11M	16M	–	–	–	–	–

ER collet chuck and ER set – ISO 12164 (DIN 69893)

ISO 12164-1 | DIN 69882-6 | DIN 69893 | ≤3µm | HSC

- All shanks hard turned (for smooth running!).
- Through bored (without adjustment screw).
- HSK mating faces machined.

30 5394/5486 – Nickel-plated to prevent corrosion.

Application: For clamping tools with plain shanks in ER collets to DIN 6499 – Form A and B.

Supplied with: Coated high-speed clamping nut.

Optional extras: Coolant tube No. 309880, socket wrench for coolant tubes No. 309890, ER collets No. 308881 – 309434, ER chuck key No. 309680 or 613300.

Note:
30 5155–5100/5426/5391/5436 – Without RFID/Balluffchip bore.
30 5426/5391/5436 – Without a thread for the coolant pipe.

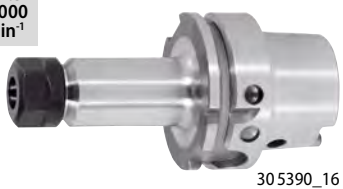
Corrosion protection
due to special surface treatment.

G 2.5 25000 min⁻¹ | Form A

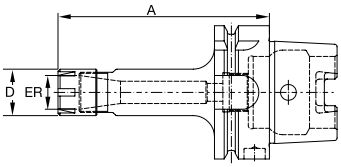


30 5394

G 2.5 25000 min⁻¹



30 5390_16



G 2.5 25000 min⁻¹ | Form F



30 5426_25

G 6.3 20000 min⁻¹ | Form A



30 5397

for ER collet size				11	16	20	25	32	40
31A 30 5150	Garant	ER collet chuck	HSK-E 40 short	eShop	eShop	–	eShop	–	–
31A 30 5100	Garant	ER collet chuck	HSK-A 40	eShop	eShop	–	eShop	–	–
31A 30 5155	Garant	ER collet chuck	HSK-E 50 short	eShop	eShop	–	eShop	–	–
31A 30 5425		ER collet chuck	HSK-A 63 ultra short	–	eShop	–	eShop	eShop	eShop
32A 30 5427	HOLEX	ER collet chuck	HSK-A 63 ultra short	–	eShop	–	eShop	eShop	eShop
31A 30 5426		ER collet chuck	HSK-F 63 ultra short	–	eShop	–	eShop	eShop	eShop
31A 30 5390	Garant	ER collet chuck	HSK-A 63 long	–	eShop	eShop	eShop	eShop	eShop
31A 30 5394		ER collet chuck nickel-plated	HSK-A 63 long	–	eShop	–	eShop	eShop	eShop
32A 30 5397	HOLEX	ER collet chuck	HSK-A 63 long	–	eShop	eShop	eShop	eShop	eShop
31A 30 5391	Garant	ER collet chuck	HSK-F 63 A = 100	–	eShop	–	eShop	eShop	eShop
31A 30 5437	Garant	ER collet chuck	HSK-A 63 A = 130	–	eShop	–	eShop	eShop	eShop
32A 30 5434	HOLEX	ER collet chuck	HSK-A 63 A = 130	–	eShop	–	eShop	eShop	eShop
31A 30 5435	Garant	ER collet chuck	HSK-A 63 A = 160	–	eShop	–	eShop	eShop	eShop
32A 30 5439	HOLEX	ER collet chuck	HSK-A 63 A = 160	–	eShop	–	eShop	eShop	eShop
31A 30 5436		ER collet chuck	HSK-F 63 A = 160	–	eShop	–	eShop	eShop	eShop
31A 30 5438		ER collet chuck	HSK-A 63 A = 200	–	eShop	–	eShop	eShop	–
31A 30 5485	Garant	ER collet chuck	HSK-A 100 long	–	eShop	–	eShop	eShop	eShop
31A 30 5486		ER collet chuck nickel-plated	HSK-A 100 long	–	eShop	–	eShop	eShop	eShop
32A 30 5487	HOLEX	ER collet chuck	HSK-A 100 long	–	eShop	–	eShop	eShop	eShop
31A 30 5488	Garant	ER collet chuck	HSK-A 100 A = 130	–	eShop	–	eShop	eShop	eShop
31A 30 5515	Garant	ER collet chuck	HSK-A 100 A = 160	–	eShop	–	eShop	eShop	eShop
32A 30 5517	HOLEX	ER collet chuck	HSK-A 100 A = 160	–	eShop	–	eShop	eShop	eShop
Clamping range			mm	0.5 – 7	0.5 – 10	1 – 13	1 – 16	2 – 20	3 – 26
Dimension A (30 5150)			mm	60	60	–	80	–	–
Dimension A (30 5100)			mm	80	80	–	80	–	–
Dimension A (30 5155)			mm	60	60	–	70	–	–
Dimension A (30 5425, 30 5427)			mm	–	75	–	75	75	85
Dimension A (30 5426)			mm	–	60	–	75	75	75
Dimension A (30 5390, 30 5394, 30 5397, 30 5485, 30 5486, 30 5487)			mm	–	100	100	100	100	120
∅ D			mm	19	28	34	42	50	63

ER collet chuck sets – HSK-A63

Maximum system accuracy

Advantage: Longer working life due to system run-out ≤ 10 µm.

Supplied with: ER chuck **(with nut)** No. 305390, including a plastic case.

Size 16 – ER lock wrench No. 613300 size 25, ER collets No. 308901
ER 16 (426 E): D = 2, 3, 4, 5, 6, 7, 8, 9 and 10 mm.

Size 32 – ER lock wrench No. 309680 – 32, ER collet No. 308981
ER 32 (470 E): D = 4, 6, 8, 10, 12, 14, 16, 18 and 20 mm.

Size 25 – ER lock wrench No. 628400 size 16/20, ER collet No. 308941
ER 25 (430 E): D = 3, 4, 5, 6, 8, 10, 12, 14 and 16 mm.



for ER collet size			16	25	32
37D 30 5450	ER collet chuck set	HSK-A 63	eShop	eShop	eShop

ISO 12164-1	DIN 69893	Form A	G 2.5 25000 min^{-1}	≤6µm ER+CP	≤3µm HP+CP	6µm ER+HDC	3µm HP+HDC	HSC

FAHRION® FAR BEYOND PRECISION

Precision ER collet chuck – ISO 12164-1 (DIN 69893-1)

- Ground externally and internally with RFID / Balluffchip bore.
- **Concentricity and repetition accuracy 3 µm** at 3×D, maximum 50 mm when using a HP precision collet.
- **HDC = Heavy Duty Chuck**, a mount specially designed for rough machining.
  A reinforced chuck body ensures better stability and plenty of radial stiffness.
  Ball-bearing clamping nut with trapezoidal-shaped fine thread for optimum tightening torques and clamping forces reduces vibration.
- **Very high clamping forces** due to the collet fully seated in the chuck and coated clamping nut.
- **Vibration damping** due to the element collet and mass of the chuck.

Application: For high precision clamping of tools with plain shank.
30 5912–5954 – **HDC** especially well-suited for roughing (including TPC milling) and finishing operations and machining of high-tensile or tough materials.

Supplied with:
30 5910–8436 – Without clamping nut.
30 5912–5954 – Supplied with ball-bearing clamping nut.

Optional extras: Coolant pipe No. 309880, socket wrench No. 309890, precision ER collets for HP No. 309368 – 309381, and for taps No. 309402 – 309419 (not for Holex), ER CP clamping nuts No. 309655; 309665, ER HDC clamping nuts No. 309657, HP sealing rings No. 309666 – 309668, CP roller bearing wrenches No. 309754; 309756, HDC roller bearing wrenches No. 309745/309756.

Note:
- **Clamps only nominal Ø up to shank Ø tolerance h10.**
- Use in combination with Fahrion collets.
- 30 5912–5954 – Not compatible with Centro P clamping nut.





Mini *– size 11M (extremely slim design!).*

Please order CP clamping nut separately!



Tapered *– size 16C*



Tapered – size 16C

for ER collets			32
33F 30 5912	Precision ER collet chuck **HDC**	HSK-A 63 A = 70	eShop
33F 30 5914		HSK-A 63 A = 100	eShop
33F 30 5954		HSK-A 100 A = 100	eShop
Clamping range		mm	2 – 20
Ø D		mm	53



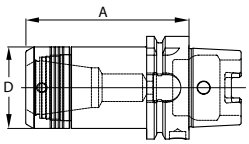
30 5912_32

HDC clamping nut included!



30 5954_32

Type CP for ER			11M	16M	16C	16	25	32	40
33F 30 5910	Precision ER collet chuck **CENTRO P**	HSK-A 63 short	–	–	–	eShop	eShop	eShop	eShop
33F 30 5920		HSK-A 63 A = 100	eShop	–	eShop	eShop	eShop	eShop	–
33F 30 5925		HSK-A 63 A = 130	eShop	–	–	eShop	eShop	eShop	–
33F 30 5930		HSK-A 63 A = 160	eShop	–	eShop	eShop	eShop	eShop	–
33F 30 5950		HSK-A 100 A = 100	–	–	–	eShop	eShop	eShop	–
33F 30 8423		HSK-E 25 A = 45	–	eShop	–	–	–	–	–
33F 30 8436		HSK-E 40 A = 55	–	eShop	–	–	–	–	–
Clamping range		mm	1 – 7	1 – 10	1 – 10	1 – 10	2 – 16	2 – 20	3 – 26
Dimension A (30 5910, 30 8423)		mm	–	45	–	55	60	70	80
Ø D		mm	16	22	24	30	40	50	63



ISO 12164-1	DIN 69893	Form A	G 2.5 25000 min^{-1}	≤8µm	HSC

Garant

Reducing adapters for tools with MT shank – ISO 12164 (DIN 69893)

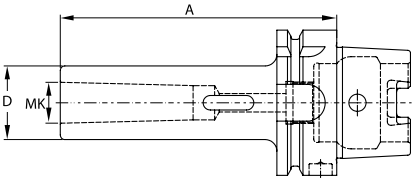
- Precision ground internal and external taper.
- With RFID/Balluffchip bore.
- Shanks hard turned (smooth cutting action!).
- HSK mating faces machined.

Optional extras: Coolant pipe No. 309880, coolant pipe wrench No. 309890



30 6930

MT internal			1	2	3	4
31A 30 6930	MT reducing adapter **with tang**	HSK-A 63	eShop	eShop	eShop	eShop
31A 30 6970		HSK-A 100	eShop	eShop	eShop	eShop
Dimension A (30 6930)		mm	100	120	140	160
Dimension A (30 6970)		mm	110	120	150	170
Ø D		mm	25	32	40	48



ISO 12164-1 | DIN 69893 | Form A | ≤3µm | HSC

ER collet chuck with mini nut, slim version – ISO 12164-1 (DIN 69893-1)

- All shanks hard turned (for smooth running!).
- With RFID/Balluffchip bore.
- Bored open (= ER11).
- HSK mating faces machined.

30 5707/5717 – Balancing quality G6.3 / 20,000 rpm.

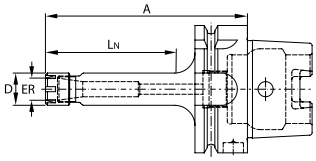
Supplied with: High Speed ER mini nut, precision balanced (G2.5 / 25,000 rpm).

Optional extras: Coolant tube No. 309880, coolant tube socket wrench No. 309890, ER collets No. 308881 – 309430, ER mini clamping wrench No. 309740.

Detailed dimensions can be found in the eShop!



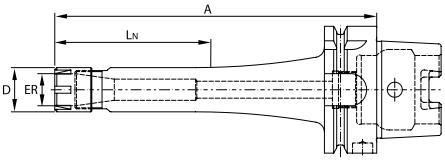
30 5709/5710_10_11-25
30 5715_11



for ER collet size				11	16	20	25
31A 30 5709	Garant	ER collet chuck Mini **slim**	HSK-A 63 A = 70	eShop	eShop	–	–
31A 30 5710	Garant		HSK-A 63 A = 100	eShop	eShop	eShop	eShop
32A 30 5707	HOLEX		HSK-A 63 A = 100	eShop	eShop	–	–
31A 30 5712	Garant		HSK-A 63 A = 130	eShop	eShop	eShop	eShop
31A 30 5715	Garant		HSK-A 63 A = 160	eShop	eShop	eShop	eShop
32A 30 5717	HOLEX		HSK-A 63 A = 160	eShop	eShop	–	–
31A 30 5723	Garant		HSK-A 100 A = 160	eShop	eShop	–	eShop
Ø D			mm	16	22	28	35
Spare ER mini nut No. 309650				11	16	20	25



30 5715_16-25



ISO 12164-1 | DIN 69893 | Form A | G 2.5 25000 min^{-1} | HSC

Collet chuck, extra slim – ISO 12164 (DIN 69893-1)

- HSK mating faces machined.
- Shanks hard turned.
- With RFID/Balluffchip bore.
- The collet is clamped by a threaded connection from behind **through** the chuck, **no clamping nut required.**

Advantage: Extremely slim design permits machining of components where access is difficult, e.g. during toolmaking and mould-making.

30 4982 – Large working range and optimised contour for reduced vibration. Cooling with the collet by the tool or along the shank.

Application: For clamping tools with plain shank to DIN 6499.

Supplied with: Clamping screw and wrench with T-handle.

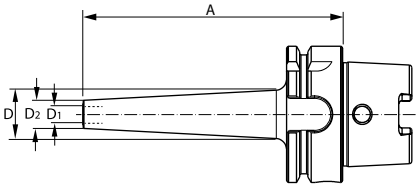
Optional extras: Plug-in socket No. 309890, **GARANT collets No. 309563.**

30 4982 – **ALBRECHT collets No. 309572 and 309573.**

≤5µm



30 4972



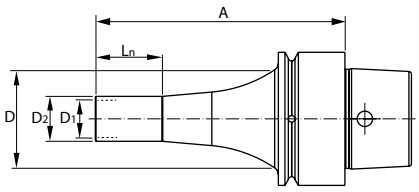
Clamping range			mm	2-6
31A 30 4972	Garant	Collet chuck, extra slim	HSK-A 63 A = 120	eShop
31A 30 4974	Garant		HSK-A 63 A = 160	eShop
Ø D_1			mm	9.6
Ø D_2			mm	13
Ø D (30 4972)			mm	22.854
Ø D (30 4974)			mm	27

≤3µm



30 4982/4981

Clamping range			mm	1-6
34F 30 4982	ALBRECHT Präzisions Spannfutter	Collet chuck, extra slim, with internal cooling	HSK-A 63 A = 120	eShop
Ø D_1			mm	10.1
Ø D_2			mm	13.5
Ø D			mm	44
L_N			mm	30



ISO 12164-1	DIN 69893	Form A	G 6.3 15000 min^{-1}	≤5µm	HPC

Heavy-duty chuck – ISO 12164-1 (DIN 69893-1)

- Low friction due to needle bearings.
- Protected with anti-corrosion coating.
- Dust-tight and watertight.
- Very high clamping force prolongs tool life and improves surface quality.

30 5535/5538 –
- Centred tool clamping with optimum concentricity.
- **Internal coolant feed.**

Advantage:

30 5535/5538 – Long tool life. Vibration damping properties. High stability due to strengthened clamping nut.

Application: For clamping tools with plain shanks.

Supplied with: Clamping nut

Optional extras: Coolant pipe No. 309880, Collets No. 309566 – 309570 and No. 309575 – 309576.

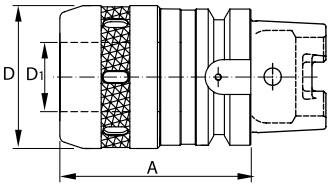


30 5535



30 5525

∅ D_1		mm	20	32
33K 30 5535	NT TOOL Heavy-duty chuck	HSK-A 63	eShop	eShop
33K 30 5538		HSK-A 100	(eShop)	(eShop)
32A 30 5525	HOLEX	HSK-A 63	eShop	eShop
32A 30 5528		HSK-A 100	eShop	eShop
Dimension A (30 5535)		mm	90	105
Dimension A (30 5538)		mm	105	
Dimension A (30 5525)		mm	90	135
Dimension A (30 5528)		mm	100	135
∅ D (30 5535, 30 5538)		mm	52	73
∅ D (30 5525, 30 5528)		mm	52	66
Clamping force up to (30 5535, 30 5538)		Nm	1000	4000
Clamping force up to (30 5525, 30 5528)		Nm	500	900
Suitable C-hook (pin) spanner No. 628400			52 / 55	68 / 75



Angle heads

When is an angle head recommended?

1. Milling or drilling work on hard-to-reach components.
2. When extending the machine tool with an additional axis.
3. Internal machining of workpieces (if they cannot be accessed with a normal machine spindle).

What aspects should you pay attention to when selecting an angle head?

1. Drive of the machine spindle (e.g. SK or HSK)
2. Version of the angle head
   – Standard variant
   – Double spindle (for machining on both sides)
   – Set-back variant (for hard-to-reach areas)
3. Torque forces supported at headstock or machine spindle
4. Tool interface (e.g. collet, Weldon, etc.)
5. Design of the angle head (e.g. slim variant, offset)
6. Cooling (version etc.)

EWS Tool Technologies

Premium partner EWS with the EWS.millLine

Choose from a wide range from the Hoffmann Group.



GERARDI



ISO 12164-1 | DIN 69882-3 | DIN 69893 | ≤6µm | HPC

Combination face mill adapters – face mill arbor – ISO 12164 (DIN 69893)

Combination face mill adapters HSK

With RFID/Balluffchip bore. HSK mating faces machined.
30 6137/6277 – Balancing quality G 6.3 at 20000 rpm.

Application: For clamping shell end mills and milling cutter heads with longitudinal or transverse groove.

Supplied with: Including drive key, face mill drive ring, and milling cutter lock screw No. 309860.

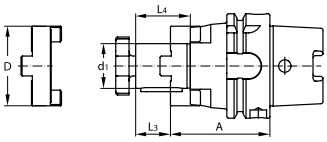
Optional extras:
30 6121 – Toggle spanner No. 309840, locking screw for internal coolant supply No. 309861.
30 6110/6130/6137/6170/6270/6277/6290 – Coolant tube No. 309880, socket wrench No. 309890, toggle spanner No. 309840, milling cutter lock screw for internal coolant supply No. 309861.

Note:
30 6121 – Without a thread for the coolant pipe.

Form A | G 2.5 25000 min^{-1}



30 6110



Spigot ∅ d_1			mm	13	16	22	27	32	40
31A 30 6110		Combination face mill adapter	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 6121	Garant		HSK-F 63 short	–	eShop	eShop	eShop	eShop	eShop
31A 30 6130			HSK-A 63 A = 100	–	eShop	eShop	eShop	eShop	–
32A 30 6137	HOLEX		HSK-A 63 A = 100	–	eShop	eShop	eShop	eShop	–
31A 30 6170	Garant		HSK-A 63 A = 160	–	eShop	eShop	eShop	eShop	eShop
31A 30 6270			HSK-A 100 A = 100	–	eShop	eShop	eShop	eShop	eShop
32A 30 6277	HOLEX		HSK-A 100 A = 100	–	eShop	eShop	eShop	eShop	eShop
31A 30 6290	Garant		HSK-A 100 A = 160	–	eShop	eShop	eShop	eShop	eShop
Dimension A (30 6110)			mm	60	60	60	60	60	70
Dimension A (30 6121)			mm	–	60	60	60	65	70
∅ D			mm	28	32	40	48	58	70
L_3			mm	13	17	19	21	24	27
L_4			mm	23	27	31	33	38	41
Spare milling cutter lock screw No. 309860 / 309861				13	16	22	27	32	40
Spare drive ring No. 309870				13	16	22	27	32	40

Face mill arbor HSK

- Clamping ∅ 40 with 4 tapped holes for drive blocks to DIN 2079.
- With RFID/Balluffchip bore.
- Increased collar contact surface.
- HSK mating faces machined.

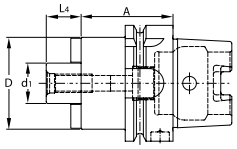
30 6541/6530/6537/6531 – With **cooling channel bores.**

Application: For clamping shell end mills and milling cutter heads.

Supplied with: Lock screw

Optional extras:
30 6531 – Toggle spanner No. 309840, locking screw for internal coolant supply No. 309861.
30 6541–6537 – Coolant tube No. 309880, socket wrench No. 309890, toggle spanner No. 309840, milling cutter lock screw for internal coolant supply No. 309861.

Note:
30 6531 – Without a thread for the coolant pipe.



G 2.5 25000 min^{-1}



30 6510

G 6.3 20000 min^{-1}



30 6537

Spigot ∅ d_1			mm	16	22	27	32	40
31A 30 6510	Garant	Face mill arbor	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop
31A 30 6530			HSK-A 63 short	eShop	eShop	eShop	eShop	eShop
32A 30 6537	HOLEX	Face mill arbor with cooling channel bore	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop
31A 30 6531	Garant		HSK-F 63 short	eShop	eShop	eShop	eShop	eShop
31A 30 6541			HSK-A 63 medium	eShop	eShop	eShop	eShop	eShop
Dimension A (30 6510, 30 6530, 30 6537)			mm	50	50	60	60	60
Dimension A (30 6531)			mm	45	50	55	60	65
Dimension A (30 6541)			mm	75	75	80	80	80
∅ D (30 6510, 30 6530)			mm	38	48	60	78	88
∅ D (30 6537)			mm	38	50	60	78	88
∅ D (30 6531)			mm	38	48	58	78	88
∅ D (30 6541)			mm	38	48	60	78	89
L_4			mm	17	19	21	24	27
Spare milling cutter lock screw No. 309860 / 309861				16	22	27	32	40

ISO 12164-1 | DIN 69882-3 | DIN 69893 | ≤6µm | HPC

Face mill arbor – ISO 12164 (DIN 69893)

Form A

G 2.5
25000 min^{-1}



30 6550

- Clamping ∅ 40 with 4 tapped holes for drive blocks to DIN 2079.
- With Balluff/RFID chip bore.
- Increased collar contact surface.
- HSK mating faces machined.

30 6562–6677/6687/6684/6686/6691 – With **cooling channel bores.**

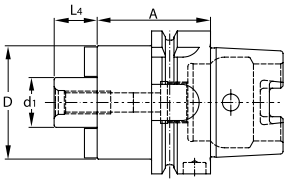
Application: For clamping shell end mills and milling cutter heads.

Supplied with: Lock screw.

Optional extras:

30 6563 – Special toggle spanner No. 309840.

30 6550–6557/6566–6691 – Coolant tube No. 309880, socket wrench for coolant tubes No. 309890, toggle spanner No. 309840.



Spigot ∅ d_1				mm	16	22	27	32	40	50	60
31A 30 6550	Garant	Face mill arbor		HSK-A 63 A = 100	eShop	eShop	eShop	eShop	–	–	–
31A 30 6562				HSK-A 63 A = 100	eShop	eShop	eShop	eShop	eShop	–	–
32A 30 6557	HOLEX			HSK-A 63 A = 100	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 6563				HSK-F 63 A = 100	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 6566	Garant	Face mill arbor **with cooling channel bore**		HSK-A 63 A = 130	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 6575				HSK-A 63 A = 160	eShop	eShop	eShop	eShop	–	–	–
31A 30 6675				HSK-A 100 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32A 30 6677	HOLEX			HSK-A 100 short	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 6678	Garant	Face mill arbor		HSK-A 100 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	–
32A 30 6687	HOLEX			HSK-A 100 A = 100	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 6684		Face mill arbor **with cooling channel bore**		HSK-A 100 A = 100	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 6686				HSK-A 100 A = 130	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 6690	Garant	Face mill arbor		HSK-A 100 A = 160	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 6691		Face mill arbor **with cooling channel bore**		HSK-A 100 A = 160	eShop	eShop	eShop	eShop	eShop	–	–
Dimension A (30 6675, 30 6677)				mm	50	50	50	50	60	70	70
∅ D (30 6550, 30 6562, 30 6557, 30 6566, 30 6575, 30 6675, 30 6678, 30 6684, 30 6686, 30 6690, 30 6691)				mm	38	48	60	78	89	120	140
∅ D (30 6563)				mm	38	48	58	78	88	–	–
∅ D (30 6677, 30 6687)				mm	38	50	60	78	89	120	–
L_4				mm	17	19	21	24	27	30	40
Spare milling cutter lock screw No. 309860 / 309861					16	22	27	32	40	50	60

RÖHM Lubritool® lubrication device for HSK machine headstocks

For regular lubrication and maintenance of clamping systems in the machine spindle of HSK machines. Automatic and fast lubrication of the HSK clamping set by inserting the lubrication device from the magazine into the machine spindle.

Exclusively available in the following countries: DE, CH, GB, NL, IT, ES, PT, FR, BE, DK, FI, SE, PL, CZ, SK, HU.



Lubrication pulse when inserted or exchanged.

Suitable for: Machine tools with HSK clamping sets – form A, form T, form E.

Advantage:
- The right lubricant, at the right time, in the right quantity.
- No manual lubrication necessary – and you never have to remember.
- Reduced maintenance time (just 5 seconds).
- Compact design.

Application: HSK tool clamping systems should be maintained **regularly and as instructed by the manufacturer.** One cartridge provides approx. 50 lubrication cycles.

Note: Grease cartridge not included in scope of delivery.

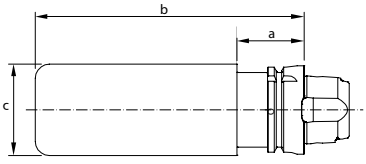


304211



304210

HSK size			63	100
30W 30 4210	Lubritool® lubrication device		–	–
a		mm	48	51
Shoulder length b		mm	191.5	194
c		mm	65	
Net weight		kg	1.6	2.7





Suitable for: Lubrication device No. 304210.

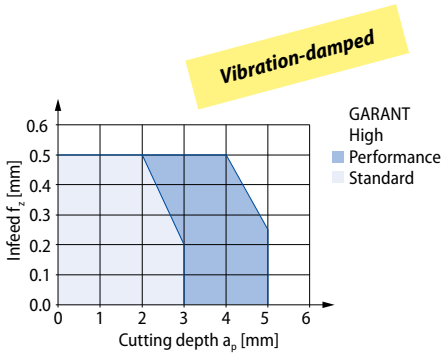
number			1
30W 30 4211	Grease cartridge		–

DIN 6357 | DIN 69882-3 | DIN 69893 | ISO 12164-1 | Form A | HPC

Garant Face mill arbors, vibration damped

- Taper shank, spigot, and all contact surfaces are ground at the collar.
- With Balluff/RFID chip bore.
- Increased collar contact surface.

Supplied with: Cutter lock screw and drive dog.



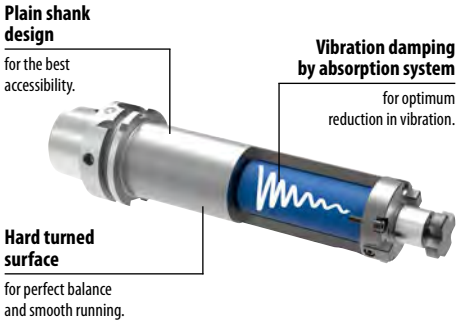
High-performance version with embedded heavy metal core

≤5µm

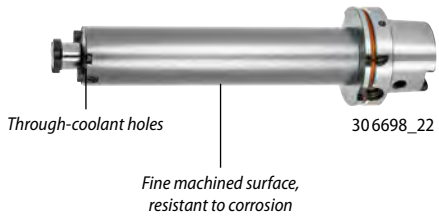
Advantage: The heavy metal core specially matched to the arbors gives optimum machining results even with long overhangs:
- Saves time, because allows use of the maximum machining parameters.
- Smooth running and thus perfect surface quality results.
- Saves costs, because tool life is increased.
- Less vibrational stress on the machine headstock.

Optional extras: Special coolant pipe wrench No. 309840, coolant pipe No. 309880.

Note: Balance quality G 6.3 dependent on the maximum operating speed.



Spigot ∅ d_1		mm	16	22	27
31H 30 6692	High-Performance face mill arbor **vibration-damped, cylindrical, with cooling channel bores**	HSK-A 63 A = 200	eShop	eShop	–
31H 30 6693		HSK-A 63 A = 300	eShop	eShop	–
31H 30 6698		HSK-A 100 A = 300	eShop	eShop	eShop
∅ D		mm	38	48	58
L_4		mm	17	19	21
n_{max} (30 6692)		min^{-1}	8000	8000	–
n_{max} (30 6693)		min^{-1}	5000	5500	–
n_{max} (30 6698)		min^{-1}	5800	6000	6000



30 6698_22

With heavy metal core

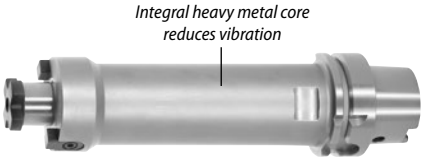
G 6.3 8000 min^{-1} | ≤6µm

Vibration damped version, arbor with vibration-damping core.

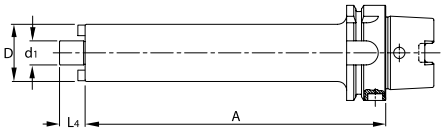
Advantage: Significantly lower tendency to vibrate. Considerable increase in feed rate.

Optional extras: Special coolant pipe wrench No. 309840, coolant pipe No. 309880.


30 6708_22



30 6708_27



Spigot ∅ d_1			mm	16	22	27	32	40
31A 30 6705	Face mill arbor **vibration-damped, cylindrical**	HSK-A 63 A = 200		eShop	eShop	eShop	–	–
31A 30 6712	Face mill arbor **vibration-damped, cylindrical, with cooling channel bore**	HSK-A 63 A = 200		eShop	eShop	–	–	–
31A 30 6708	Face mill arbor **vibration-damped, cylindrical**	HSK-A 100 A = 200		eShop	eShop	eShop	–	–
31A 30 6714	Face mill arbor **vibration-damped, cylindrical, with cooling channel bore**	HSK-A 100 A = 200		eShop	eShop	eShop	–	–
31A 30 6709	Face mill arbor **vibration-damped, cylindrical**	HSK-A 100 A = 300		eShop	eShop	eShop	eShop	eShop
31A 30 6715	Face mill arbor **vibration-damped, cylindrical, with cooling channel bore**	HSK-A 100 A = 300		eShop	eShop	eShop	eShop	–
∅ D_2			mm	38	48	58	78	89
L_4			mm	17	19	21	24	27

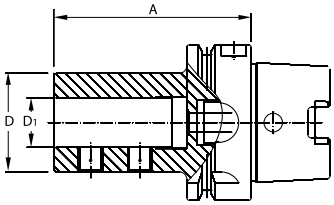
ISO 12164-1 | DIN 69893 | Form A | G 2.5 25000 min^{-1} | HPC

Garant Arbor for indexable drill – ISO 12164-1 (DIN 69893-1)

Position of the threaded pin for countersinking in the indexable drill offset by 0.4 mm.
Tightening the lock screw clamps the indexable drill collar against the front face of the holder.
In addition the contact face ∅ is larger than for conventional toolholders.

Suitable for: All indexable drills with parallel shank to DIN 6595, Part 1.
Application: **For mounting all standard indexable drills to DIN 6595, Part 1.**
Optional extras: Coolant tube No. 309880,
socket wrench No. 309890,
spare screws No. 309907 and 309908.


30 7005



for shank ∅ D_1		mm	20	25	32	40
31A 30 7005	Arbor for indexable drills	HSK-A 63	eShop	eShop	eShop	eShop
31A 30 7007		HSK-A 100	eShop	eShop	eShop	eShop
Dimension A (30 7005)		mm	80	90	90	105
Dimension A (30 7007)		mm	90	95	100	110
∅ D		mm	40	45	52	60

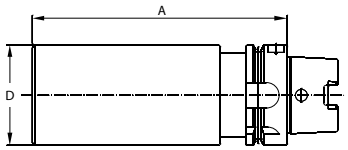
ISO 12164-1 | DIN 69893 | Form A

HOLEX Boring bar blanks, making special tools, ISO 12164 (DIN 69893)

- Taper and collar hardened and ground.
- Shank soft for further machining.

Material: 16MnCr5.
Application: For making special tools.
Optional extras: Coolant pipe No. 309880, coolant pipe wrench No. 309890


30 7025



A dimension		mm	160	250
32A 30 7025	Boring bar blank	HSK-A 63	eShop	–
32A 30 7027		HSK-A 100	–	eShop
∅ D		mm	63	97

ISO 12164-1 | DIN 69893 | ≤3µm

Garant Checking mandrel – ISO 12164 (DIN 69893)

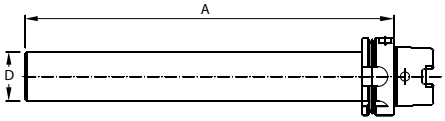
Application: For accepting tool machines to ISO recommendation R 230.
Supplied with: Wooden box and test certificate.

Form A


30 7012

Form F


30 7016



A dimension		mm	300	∅ D mm
31A 30 7012	Checking mandrel DIN 69893	HSK-A 63	eShop	40
31A 30 7014		HSK-A 100	eShop	50
31A 30 7016		HSK-F 63	eShop	40

Garant Vibration damping during milling

In order to reduce vibrations and oscillations during milling, the Hoffmann Group offers a wide variety of solutions for a wide variety of machine interfaces.
Select the right arbor for the respective tool type.

- Face mill arbor
- Screw-in milling cutter arbor
- Carbide/Densimet extensions
- Shrink-fit chuck
- Hydraulic clamping technology
- Precision collet chucks and many more.


30 2095


30 8344


30 5523


30 6698


30 1376


30 1307

ISO 12164-1	DIN 69893	Form A	G 2.5 25000 min^{-1}	≤3µm	HSC

Garant

Arbor – for threaded copy mills – ISO 12164-1 (DIN 69893-1)

With Balluff/RFID chip bore.

30 7042 – Plain design.

30 7044/7046 – Tapered design.

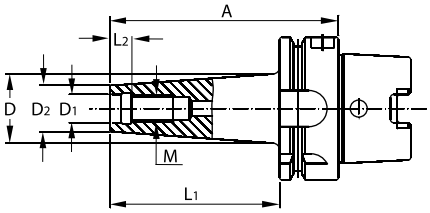
Application: To take screw-in milling cutters with thread.

Optional extras: Extensions No. 301358, reducers No. 301359, coolant pipe No. 309880, socket for coolant pipe No. 309890.

Note: Solid carbide arbors and extensions for screw-in milling cutters No. 301374 – 301379 and No. 301361 – 301368.

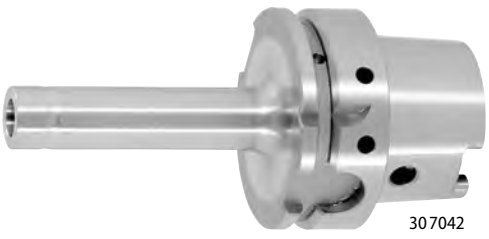


30 7044

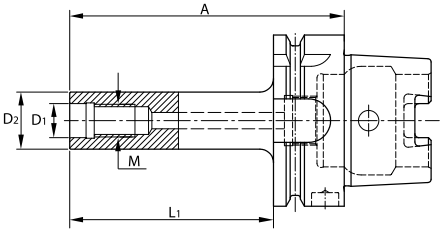


Thread M × Length L_1	31A 30 7044	31A 30 7046	Dimension A		Ø D_1	Ø D_2	Ø D	L_1	L_2	
	Arbor for screw-in milling cutters with thread tapered form									
	HSK-A 63	HSK-A 100	30 7044 mm	30 7046 mm	mm	mm	mm	mm	30 7044 mm	30 7046 mm
M5×25	eShop	–	51	–	5.5	10	13	25	5	–
M6×25	eShop	–	51	–	6.5	10	13	25	5	–
M8×25	eShop	–	51	–	8.5	13	15	25	5	–
M8×50	eShop	eShop	76	79	8.5	13	23	50	5	5
M8×75	eShop	–	101	–	8.5	13	23	75	5	–
M10×25	eShop	–	51	–	10.5	18	20	25	5	–
M10×50	eShop	eShop	76	79	10.5	18	23	50	5	5
M10×75	eShop	–	101	–	10.5	18	23	75	5	–
M10×100	eShop	eShop	126	129	10.5	18	32	100	5	10
M10×150	eShop	eShop	176	179	10.5	18	36.5	150	5	10
M12×25	eShop	–	51	–	12.5	21	24	25	5	–
M12×50	eShop	eShop	76	79	12.5	21	24	50	5	5
M12×75	eShop	–	101	–	12.5	21	31	75	5	–
M12×100	eShop	eShop	126	129	12.5	21	33	100	5	10
M12×150	eShop	eShop	176	179	12.5	21	40	150	5	10
M16×25	eShop	–	51	–	17	29	29	25	5	–
M16×50	eShop	eShop	76	79	17	29	34	50	5	5
M16×75	eShop	–	101	–	17	29	34	75	5	–
M16×100	eShop	eShop	126	129	17	29	36	100	5	10
M16×150	eShop	eShop	176	179	17	29	42.5	150	5	10

Thread M × Length L_1	31A 30 7042	Dimension A	Ø D_1	Ø D_2	L_1	L_2
	Arbor for screw-in milling cutters with thread cylindrical form					
	HSK-A 63	mm	mm	mm	mm	mm
M5×25	eShop	51	5.5	10	25	5
M6×25	eShop	51	6.5	10	25	5
M8×25	eShop	51	8.5	13	25	5
M8×50	eShop	76	8.5	13	50	5
M8×75	eShop	101	8.5	13	75	5
M8×100	eShop	126	8.5	13	100	5
M10×25	eShop	51	10.5	18	25	5
M10×50	eShop	76	10.5	18	50	5
M10×75	eShop	101	10.5	18	75	5
M10×100	eShop	126	10.5	18	100	5
M10×125	eShop	151	10.5	18	125	5
M10×150	eShop	176	10.5	18	150	5
M12×25	eShop	51	12.5	21	25	5
M12×50	eShop	76	12.5	21	50	5
M12×75	eShop	101	12.5	21	75	5
M12×100	eShop	126	12.5	21	100	5
M12×125	eShop	151	12.5	21	125	5
M12×150	eShop	176	12.5	21	150	5
M16×25	eShop	51	17	29	25	5
M16×50	eShop	76	17	29	50	5
M16×75	eShop	101	17	29	75	5
M16×100	eShop	126	17	29	100	5
M16×150	eShop	176	17	29	150	5



30 7042



ISO 12164-1 | DIN 69893 | Form A | G 2.5 25000 min^{-1} | ≤3µm | HSC

Garant

Arbor – for threaded copy mills – ISO 12164-1 (DIN 69893-1)

With RFID/Balluffchip bore. Tapered design.
Vibration damped version, arbor with vibration-damping core.

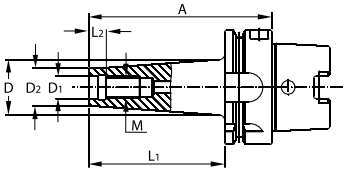
Application: To take screw-in milling cutters with thread.

Optional extras: Extensions No. 301342,
reducers No. 301344,
coolant tube No. 309880,
coolant tube socket wrench No. 309890.

Note: Solid carbide arbors and extensions for screw-in milling cutters No. 301374 – 301379 and No. 301361 – 301368.



30 7037



Thread M×length L_1	31A 30 7037	31A 30 7038	Dimension A	∅ D_1	∅ D_2	∅ D	L_1	L_2
	Arbor for screw-in milling cutters with thread **vibration-damped, tapered form**							
	HSK-A 63	HSK-A 63	mm	mm	mm	mm	mm	mm
M8×75	eShop	–	101	8.5	13	23	75	5
M8×100	eShop	–	126	8.5	13	23	100	5
M10×100	eShop	–	126	10.5	18	32	100	5
M10×150	eShop	–	176	10.5	18	36.5	150	5
M12×100	eShop	–	126	12.5	21	33	100	5
M12×150	eShop	–	176	12.5	21	40	150	5
M16×150	eShop	–	176	17	29	42.5	150	5
M16×200	eShop	–	226	17	29	45	200	5
M10×174	–	eShop	200	10.5	18	40	174	5
M10×224	–	–	250	10.5	18	40	224	5
M12×174	–	eShop	200	12.5	21	40	174	5
M12×224	–	–	250	12.5	21	40	224	5
M16×224	–	–	250	17	29	40	224	5

ISO 12164-1 | DIN 69893 | DIN 69882-7 | ≤80 bar | G 2.5 25000 min^{-1} | ≤3µm | HSC

Hydraulic chuck (HD chuck) – ISO 12164 (DIN 69893)

- Axial length adjustment, adjustment travel 10 mm.
- With RFID/Balluffchip bore.

Application: ■ For drilling, reaming, and milling.

Optional extras: Reducing sleeves No. 302135 – 302187,
coolant tube No. 309880,
socket wrench No. 309890,
parallel wipers No. 343720.

Form A



30 7507

Form A

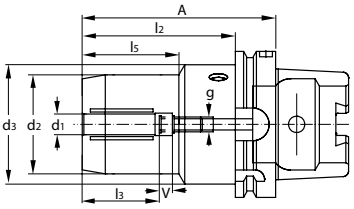


30 7512

Form A



30 7513



Detailed dimensions can be found in the eShop.

Clamping range ∅ D_1			mm	6	8	10	12	16	20	25	32
32A 30 7507	HOLEX	Hydraulic chuck BASIC **short, slim**	HSK-A 63	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 7513	Garant		HSK-A 63	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
33W 30 7508	WTE	Hydraulic chuck **short, slim**	HSK-A 63	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 7512			HSK-A 63	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 7516	Garant	Hydraulic chuck BASIC **short, slim**	HSK-F 63	–	–	–	eShop	–	eShop	–	–
∅ D_1			mm	6	8	10	12	16	20	25	32
Dimension A			mm	70	70	80	85	90	90	120	125
∅ D_2			mm	26	28	30	32	38	42	57	63
∅ D			mm	50	50	50	50	50	50	53	59
L_2 (30 7513, 30 7508, 30 7516)			mm	24	25	35	40	46	48	61	63
L_3 (30 7507, 30 7508, 30 7512)			mm	24	24	32	40	45	48	62	60
L_3 (30 7513, 30 7516)			mm	37	37	41	46	49	51	57	61
V			mm	10							
M				M5	M6	M8×1	M10×1	M12×1	M16×1	M16×1	M16×1
suitable reducing adapter				–	–	–	302135; 302140; 302145; 302147	–	302155; 302160; 302165; 302150	–	302175; 302180; 302177; 302187

Clamping range ∅ D_1			mm	6	8	10	12	16	20	25	32
31A 30 7523	Garant	Hydraulic chuck BASIC short, slim	HSK-A 100	–	–	–	eShop	eShop	eShop	–	eShop
32A 30 7517	HOLEX		HSK-A 100	eShop	eShop	eShop	eShop	eShop	eShop	–	–
33W 30 7525	WTE	Hydraulic chuck short, slim	HSK-A 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A			mm	75	75	90	95	100	105	110	110
∅ D_2			mm	26	28	30	32	38	42	57	63
∅ D			mm	50	50	50	50	50	50	63	67
V			mm	10							
M				M5	M6	M8×1	M10×1	M12×1	M16×1	M16×1	M16×1
suitable reducing adapter				–	–	–	302135; 302140; 302145; 302147	–	302155; 302160; 302165; 302150	–	302175; 302180; 302177; 302187

DIN 69893 | ISO 12164-1 | Form A | G 2.5 25000 min⁻¹ | ≤3µm | HPC | HSC

Garant Slim hydraulic chuck 3° – ISO 121641 (DIN 69893-1)

- **Extremely slim design** (3°-contour).
- With RFID/Balluffchip bore.
- Axial length adjustment possible.
- Shanks hard turned.
- Reducing adapters can be used.

Advantage:
- **Temperature-resistant** due to completely enclosed system, i.e. no soldered pressure chambers.
- Ideal damping characteristics.
- High transmissible torques, providing high process reliability.

Application: Especially in operations in toolmaking and mould making. **Wherever reduced interference contours are required**. For drilling, reaming and milling. For clamping tools with shank tolerance h6.

Supplied with: Hexagon socket drive with T-handle.

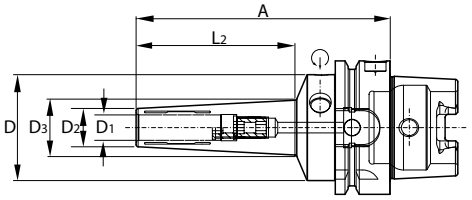
Optional extras: Reducing sleeves No. 302135 – 302165.



30 7533



30 7536



Clamping ∅ D_1			mm	3	4	5	6	8	10	12	16	20
31A 30 7526	Slim hydraulic chuck	HSK-E 40 A = 85		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 7528		HSK-E 50 A = 70		–	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 7531		HSK-A 63		–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 7533		HSK-A 63 A = 120		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 7536		HSK-A 63 A = 160		–	–	–	eShop	eShop	eShop	eShop	–	–
31A 30 7543		HSK-A 100 A = 120		–	–	–	eShop	eShop	eShop	eShop	eShop	eShop
∅ D_2 (30 7526, 30 7528, 30 7531, 30 7533, 30 7543)			mm	9	10	11	12	14	16	18	24	28
∅ D_2 (30 7536)			mm	–	–	–	16	18	20	22	–	–
∅ D_3 (30 7526)			mm	13.7	14.7	15.7	16.8	18.8	20.9	22.9	–	–
∅ D_3 (30 7528)			mm	–	13.88	14.88	15.99	17.99	20.1	20.1	–	–
∅ D_3 (30 7531)			mm	–	13.46	14.46	15.57	17.57	20.1	22.72	28.93	33.45
∅ D_3 (30 7533)			mm	16.7	17.7	18.7	20.4	22.4	24.5	26.6	31.5	35.5
∅ D_3 (30 7536)			mm	–	–	–	33.5	29.63	31.84	33.84	–	–
∅ D_3 (30 7543)			mm	–	–	–	19.34	21.45	23.45	25.55	31.13	35.24
∅ D (30 7526)			mm	34	34	34	34	34	34	34	–	–
∅ D (30 7528)			mm	–	42	42	42	42	42	42	–	–
∅ D (30 7531, 30 7533, 30 7536, 30 7543)			mm	50								
L_2 (30 7526)			mm	45	45	45	46	46	47	47	–	–
L_2 (30 7528)			mm	–	37	37	38	38	39	39	–	–
L_2 (30 7531)			mm	–	33	33	34	34	39	45	47	52
L_2 (30 7533)			mm	73	73	73	73	74	74	75	71.5	72
L_2 (30 7536)			mm	–	–	–	111	111	113	113	–	–
L_2 (30 7543)			mm	–	–	–	70	71	71	72	68	69

ISO 12164-1 | DIN 69893 | Form A | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

Hydraulic chuck – version HT (High Torque) – ISO 12164-1 (DIN 69893-1)

- Very high total rigidity due to optimised design.
- With RFID/Balluffchip bore.
- Axial length adjustment, adjustment travel 10 mm.
- Flexible due to use of reducing sleeves.

Advantage:
- **Very high transmitted torque (550 Nm),** providing high process reliability.
- **Ideal damping characteristics,** resulting in optimum surface finishes, increased tool life and spindle protection.

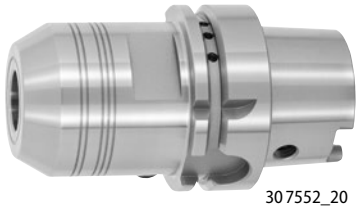
Application:
- **Especially for heavy-duty milling.**
- For clamping tools with shank tolerance h6.

Supplied with: Hexagon cross-bar wrench.

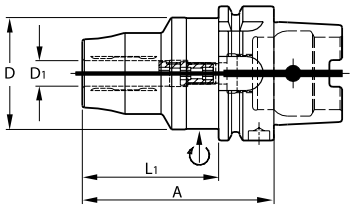
Optional extras: Coolant tube No. 309880, socket wrench No. 309890, reducing adapters No. 302135 – 302187.

Note: Caution in the case of extra-long tools and TPC machining.


30 7550_20


30 7552_20


30 7553_20



Clamping range ∅ D_1			mm	12	16	20	32
31H 30 7550	Garant	Hydraulic chuck HT	HSK-A 63 short	eShop	–	eShop	–
32A 30 7552	HOLEX	Hydraulic chuck HT	HSK-A 63 short	–	–	eShop	–
31H 30 7553	Garant	Hydraulic chuck HT **with cooling channel bores**	HSK-A 63 short	eShop	eShop	eShop	–
31H 30 7555		Hydraulic chuck HT	HSK-A 100 short	eShop	–	eShop	eShop
32A 30 7557	HOLEX	Hydraulic chuck HT	HSK-A 100 short	–	–	eShop	–
Dimension A (30 7550, 30 7552, 30 7553)			mm	80	80	80	–
Dimension A (30 7555)			mm	85	–	85	100
Dimension A (30 7557)			mm	–	–	90	–
∅ D			mm	52.5	52.5	52.5	72
L_1 (30 7550, 30 7552, 30 7553)			mm	54	54	54	–
L_1 (30 7555)			mm	56	–	56	71
L_1 (30 7557)			mm	–	–	61	–

ISO 12164-1 | DIN 69893 | Form A | | G 2.5 25000 min^{-1} | ≤3µm | HPC | HSC

GARANT Master Chuck hydraulic chuck slim – ISO 12164-1 (DIN 69893-1)

- **Slim design** (4.5° contour, identical to shrink contour according to DIN 69882-8)
- With RFID/Balluffchip bore.
- Axial length adjustment, adjustment travel 10 mm.
- Reducing adapters can be used.
- **Temperature resistant up to 120°C for 4 hours.**
- **Up to 10× more clamping operations possible compared to a standard hydraulic chuck.**
- Very low tightening torque of the clamping screw – easy handling.
- **Patented new hydraulic clamping system – reliable and durable premium radial run-out.**

Application: Particularly for use in tool and mould making where a reduced interference contour is required. For drilling, reaming and milling. For clamping tools with shank tolerance h6.

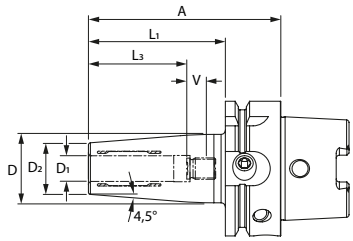
Supplied with: Hexagon socket drive with T-handle.

Optional extras: Coolant tube No. 309880, socket wrench No. 309890, reducing adapters No. 302140; 302135 302145 302147 each size 12 and No. 302150; 302155; 302160; 302165 each size 20.


30 7502

Same properties as shrink-fit chucks:
- *Accuracy.*
- *Extremely slim, identical interference contour.*

Advantages over shrink-fit chucks:
- *Better damping.*
- *Simpler to use.*
- *Flexibility (through reducing adapters).*
- *No shrink-fit units required (costs, energy consumption).*



Clamping ∅D_1			mm	6	8	10	12	14	16	18	20	25	32
31A 30 7502			HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 7503			HSK-A 63 long	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 7506	Slim hydraulic chuck **Master Chuck**		HSK-A 63 long	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	– NEW
31A 30 7504			HSK-A 100 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 7509			HSK-A 100 long	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	– NEW
Dimension A (30 7502)			mm	80	80	85	90	90	95	95	100	115	120
Dimension A (30 7503)			mm	120	120	120	120	120	120	120	120	–	–
Dimension A (30 7506, 30 7509)			mm	160	160	160	160	–	160	–	160	–	–
Dimension A (30 7504)			mm	85	85	90	95	95	100	100	105	115	120
∅ D_2			mm	21	21	24	24	27	27	33	33	44	44
∅ D			mm	27	27	32	32	34	34	42	42	52.5	52.5

ISO 12164-1 | DIN 69893 | Form A | G 2.5 25000 min⁻¹ | ≤3µm | HSC | HPC

GARANT Master Chuck hydraulic chuck performance – ISO 12164-1 (DIN 69893-1)

- Particularly suitable for highly dynamic milling applications.
- **Optimised outer contour due to FEM** (finite element method) – robustness due to maximum rigidity, longer tool lives, higher metal removal rate, suitable for all machining strategies.
- With RFID/Balluffchip bore.
- Axial length adjustment, adjustment travel 10mm.
- Reducing adapters can be used.
- **Temperature resistant up to 170°C for 4 hours.**
- **Up to 10× more clamping operations possible compared to a standard hydraulic chuck.**
- Very low tightening torque of the clamping screw – easy handling.
- **Patented new hydraulic clamping system – reliable, durable premium radial run-out.**

Application: Universally designed for roughing and finishing operations. For clamping tools with shank tolerance h6.

Supplied with: Hexagon socket drive with T-handle.

Optional extras: Coolant tube No. 309880. socket wrench No. 309890, reducing adapters No. 302140; 302135 302145 302147 each size 12 and No. 302150; 302155; 302160; 302165 each size 20.

Maximum metal removal rate with maximum precision!

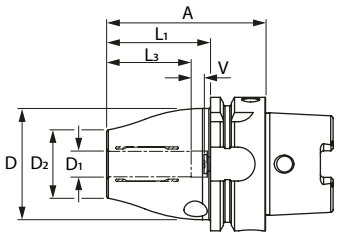


30 7630



30 7635

Clamping ∅D_1			mm	6	8	10	12	16	20	25	32
31A 30 7630	Hydraulic chuck performance **Master Chuck**	HSK-A 63 short		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 7635		HSK-A 100 short		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 7630)			mm	65	65	75	75	79	79	95	110
Dimension A (30 7635)			mm	73	73	83	83	87	87	95	100
∅ D_2 (30 7630)			mm	26	28	30	32	38	38	48	58.5
∅ D_2 (30 7635)			mm	26	28	30	32	38	38	56	60
∅ D (30 7630)			mm	50	50	50	52.5	52.5	52.5	57	62.5
∅ D (30 7635)			mm	50	50	50	52.5	52.5	52.5	70	75



Short drill chucks with chuck key operation – ISO 12164-1 (DIN 69893-1)

- For clockwise and anticlockwise rotation.
- With RFID/Balluffchip bore.

30 7725/7735/7765/7775 –
- **Slim design.**
- Specific coolant transfer to tools with IC.
- Optimum holding torques at the tool.

30 7681–7684/7725/7735 – With through coolant feed up to max. 50 bar.

Supplied with: **Clamping wrench** with T-handle.

Optional extras:

30 7681–7684/7725–7775 – Socket wrench No. 309890. Coolant tube No. 309880.

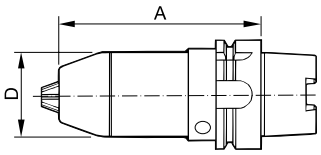
Form A | G 2.5 25000 min⁻¹ | ≤20µm | ≤14 Nm | ≤50 bar



30 7725_0,5-13 *slim*



30 7725_1-16 *slim*



Form A | G 2.5 25000 min⁻¹ | ≤50 bar | ≤20µm



30 7682_0,5-16

Form A | G 6.3 15000 min⁻¹ | ≤50 bar | ≤14 Nm



30 7765_2,5-16

Form A | G 2.5 25000 min⁻¹ | ≤30µm



30 7730_0,5-13

Clamping range				mm	0,3-8	0,3-10	0,5-13	0,5-16	1-16	2,5-16
31B 30 7681		Short drill chuck **Form E**	HSK-E 40		–	eShop	–	–	–	–
31B 30 7682		Short drill chuck **Form A**	HSK-A 63		–	eShop	–	eShop	–	–
31B 30 7684	Garant		HSK-A 100		–	–	–	eShop	–	–
31B 30 7725			HSK-A 63		eShop	–	eShop	–	eShop	–
33W 30 7705		Short drill chuck **Form F**	HSK-F 63		–	–	–	eShop	–	–
32K 30 7765	HOLEX	Short drill chuck **Form A**	HSK-A 63		–	–	–	–	–	eShop
33W 30 7730	WTE		HSK-A 63		eShop	–	eShop	–	–	eShop
31B 30 7735	Garant		HSK-A 100		–	–	–	–	eShop	–
32K 30 7775	HOLEX		HSK-A 100		–	–	–	–	–	eShop
Type (30 7681, 30 7682, 30 7684, 30 7725, 30 7705, 30 7765, 30 7735, 30 7775)					slim	slim	slim	standard	slim	slim
Type (30 7730)					standard	–	standard	–	–	standard
Dimension A (30 7681, 30 7684, 30 7725, 30 7765)				mm	93	91	101	111	104	104
Dimension A (30 7682, 30 7730, 30 7735)				mm	96	96.5	104	104	110	109
Dimension A (30 7705, 30 7775)				mm	–	–	–	102	–	110
∅ D (30 7681, 30 7682, 30 7684, 30 7725, 30 7705, 30 7765, 30 7735, 30 7775)				mm	35	38	43	57	50	50
∅ D (30 7730)				mm	36	–	50	–	–	57

ISO 12164-1 | DIN 69893 | Form A | G 2.5 25000 min⁻¹ | ~3µm | HSC | HPC | h6 S-λ®

Shrink-fit chuck Power Shrink Chuck with SAFE-λOCK® – ISO 12164-1 (DIN 69893-1)

Shrink-fit chuck for very high metal removal rates during high-performance cutting (HPC).
The optimised design combines excellent stiffness with vibration damping.
This protects the machine, spindle and tool.

- **Safe-Lock tool pull-out protection** prevents the tool being pulled out accidentally.
- Higher metal removal rate due to higher speeds, higher feed rates and greater cutting depth.
- Shorter machining times.
- Runs more smoothly, which improves the surface quality and protects the tool, spindle and machine.
- With tapped holes for balancing with screws.
- With pluggable Cool Jet holes.
- With length adjustment screw (adjustment path 10 mm).

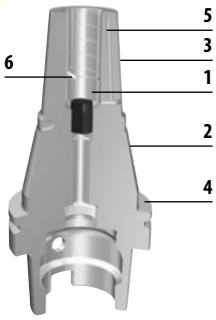
Application: For clamping tools with parallel shank to h6 tolerance **with Safe-Lock ground surface.** Suitable for all types of shrink-fit unit such as inductive, contact and hot air shrink-fit units.

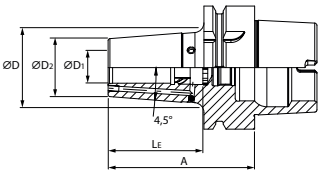
Optional extras: For milling cutters with Safe-Lock clamping flat, see solid carbide milling cutters. Coolant pipe No. 309880, socket wrench No. 309890, shrink-fit units No. 354210 – 354450, balancing screw set No. 309906 size 180.

Note: Other shrink-fit chucks with **Safe-Lock** available on request.

Detailed information on Safe-Lock can be found under milling.

The main features:
1. High concentricity (< 0.003 mm).
2. Low tendency to vibrate due to optimised outer contour.
3. Slim design at the tip.
4. Very deep shank.
5. Cool-Jet as standard (can be locked).
6. Safe-Lock.






30 7935

Clamping range Ø D_1		mm	6	8	10	12	14	16	18	20	25	32
34I 30 7935	Shrink-fit chuck **Power Shrink Chuck with Safe-Lock**	HSK-A 63 ultra short	–	–	–	–	–	–	–	–	–	–
34I 30 7940		HSK-A 100 short	–	–	–	–	–	–	–	–	–	–
Dimension A (30 7935)		mm	70	70	70	70	75	75	75	75	85	85
Dimension A (30 7940)		mm	85	85	90	95	95	100	100	105	115	–
Ø D (30 7935)		mm	29	29	33.5	33.5	37.5	37.5	43.5	43.5	51	51
Ø D (30 7940)		mm	60	60	53	73	60	78	76	85	85	–
Ø D_2 (30 7935)		mm	22	22	26.5	26.5	29.5	29.5	35.5	35.5	45	45
Ø D_2 (30 7940)		mm	21	21	27	27	33	33	44	44	44	–
maximum clamping depth L_E (30 7935)		mm	38	38	43	46	48	49	49	49	57	59
maximum clamping depth L_E (30 7940)		mm	36	36	42	47	47	50	50	52	58	–

ISO 12164-1 | DIN 69893 | G 2.5 25000 min⁻¹ | ≤3µm | HSC

Garant Shrink-fit chucks 4.5° – ISO 12164-1 (DIN 69893-1)

- High-temperature steel.
- Integral tool length adjustment, adjustment track 10 mm.
- Sizes 3 – 5 for carbide, from size 6 for HSS and carbide.
- All shanks hard turned (for smooth running!).
- With RFID/Balluffchip bore.

GARANT: – HSK mating faces machined.

Application: For holding end mills and drills with parallel shank to h 6 tolerance. Suitable for inductive, contact and hot air shrink-fitting units.

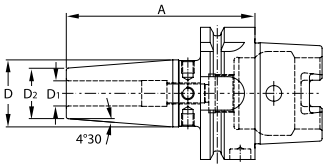
Optional extras: Coolant feed pipe No. 309880. Plug-in socket No. 309890. Shrink-fit chuck extension No. 302410 – 302416. Shrink-fit units No. 354210 – 304755.

Note:
30 8028 Size 12; 16 – Not prepared for coolant pipe.

Versions with cooling channel bores on request!

Form A


30 7950



Clamping range Ø D_1		mm	3	4	5	6	8	10	12	16
31A 30 7950	Shrink-fit chuck	HSK-A 40	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8028		HSK-E 40	–	–	–	eShop	eShop	eShop	eShop	eShop
31A 30 8030		HSK-E 40	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8035		HSK-E 50	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 7950, 30 8030)		mm	60	60	60	80	80	80	90	–
Dimension A (30 8028)		mm	–	–	–	60	60	60	60	60
Dimension A (30 8035)		mm	60	60	60	80	80	85	90	95
Ø D		mm	17	17	17	27	27	32	32	32
Ø D_2		mm	12	12	12	21	21	24	24	27

ISO 12164-1 | DIN 69893 | G 2.5 25000 min⁻¹ | ≤3µm | HSC | HPC

Shrink-fit chucks 4.5° – ISO 12164-1 (DIN 69893-1)

- High-temperature steel.
- Sizes 3 – 5 for carbide, from size 6 for HSS and carbide.
- With RFID/Balluffchip bore.

30 8165 – **Ultra short:** More stability and stiffness, less vibration. This ensures longer tool life and better surface quality. No length adjustment available.

30 8165/8170/8183/8187/8189/8191/8192/8195/8196/8205/8206/8208/8235/8265/8277/8282/8285/8283/8284/8286/8294 – From clamping Ø D_1 6 mm with tapped holes for balancing screws.

30 8170/8183/8184/8187/8189/8191/8192/8193/8195/8196/8205/8206/8208/8235/8265/8277/8282/8285/8283/8284/8286/8294 – Integral length adjustment of the tool from clamping Ø D_1 6 mm (adjustment travel 10 mm).

30 8187/8196/8286 – With **cooling channel bores** tapped for plugging. Ø D1: 3 mm, 4 mm, 5 mm cannot be plugged.

30 8165/8192/8206/8277/8283/8284 – With **cooling channel bores** tapped for plugging.

30 8165/8170/8184/8187/8189/8192/8193/8195/8196/8205/8206/8235/8265/8277/8282/8285/8283/8284/8286/8294 – **GARANT:** HSK mating faces machined. **All shanks hard turned (for smooth running!).**

30 8172/8194/8267 – Premium version: Nickel plated version with 4 pluggable **cooling channel bores.** Integral tool length adjustment (adjustment track 10 mm).

30 8184/8193 – Without tapped holes for balancing screws and **without thread for coolant pipe**.

Application:
- For holding end mills and drills with parallel shank to h6 tolerance.
- Suitable for inductive, contact and hot air shrink-fit units.

Supplied with: For chucks with length adjustment including a length adjustment screw (from clamping Ø D_1 6 mm).

30 8172/8194/8267 – 4 × M3 nozzle screws.

Optional extras: Coolant tube No. 309880, socket wrench No. 309890, shrink-fit chuck extension No. 302410 – 302416, shrink-fit units No. 354210 – 354450, balancing screw set No. 309906 180.

Form A



30 8165

Form A



30 8170

Form A



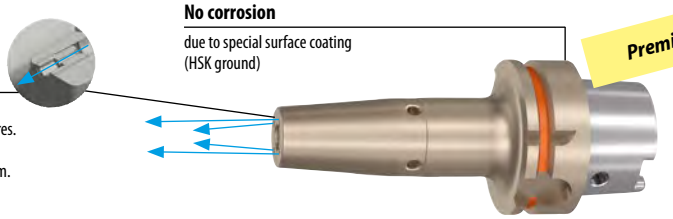
30 8191

Form F



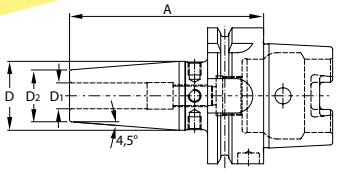
30 8193

Optimised cooling concept
- 4 cooling channel bores instead of 2.
- Different approach angles of the cooling channel bores.
- With 4 nozzle screws to optimise the coolant pressure and alignment of the coolant stream.



No corrosion due to special surface coating (HSK ground)

Premium version



Clamping range Ø D_1			mm	3	4	5	6	8	10	12	14	16	18	20	25	32
31A 30 8165		Shrink-fit chuck **with cooling channel bore**	HSK-A 63 ultra short	–	–	–	–	–	eShop	eShop	–	eShop	–	eShop	eShop	–
31A 30 8170	Garant	Shrink-fit chuck	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8172		Shrink-fit chuck **with 4 cooling channel bores, nickel-plated**	HSK-A 63 short	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
33W 30 8183	WTE	Shrink-fit chuck	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8184			HSK-F 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 8187	Garant	Shrink-fit chuck **with cooling channel bore**	HSK-A 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8189		Shrink-fit chuck	HSK-A 63 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
33W 30 8191	WTE		HSK-A 63 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	eShop	–
31A 30 8192	Garant	Shrink-fit chuck **with cooling channel bore**	HSK-A 63 A = 120	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 8193		Shrink-fit chuck	HSK-F 63 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 8165)			mm	–	–	–	–	–	70	70	–	75	–	75	85	–
Dimension A (30 8170, 30 8172, 30 8183, 30 8184, 30 8187)			mm	80	80	80	80	80	85	90	90	95	95	100	115	120
Ø D (30 8165)			mm	–	–	–	–	–	33	33	–	37	–	43	50	–
Ø D (30 8170, 30 8172, 30 8187, 30 8189, 30 8192)			mm	17	17	17	27	27	32	32	34	34	42	42	53	–
Ø D (30 8183)			mm	15	22	22	27	27	32	32	34	34	42	42	53	53
Ø D (30 8184, 30 8193)			mm	20	22	22	27	27	31	31	34	34	40	40	53	53
Ø D (30 8191)			mm	20	22	22	27	27	32	32	34	34	42	42	53	–
Ø D_2 (30 8165)			mm	–	–	–	–	–	26	26	–	29	–	35	45	–
Ø D_2 (30 8170, 30 8172, 30 8187, 30 8189, 30 8192)			mm	12	12	12	21	21	24	24	27	27	33	33	44	–
Ø D_2 (30 8183, 30 8191)			mm	10	15	15	21	21	24	24	27	27	33	33	44	44
Ø D_2 (30 8184, 30 8193)			mm	10	15	15	20	20	24	24	27	27	33	33	44	44

Clamping range ∅ D_1			mm	3	4	5	6	8	10	12	14	16	18	20	25	32
31A 30 8194		Shrink-fit chuck **with 4 cooling channel bores, nickel-plated**	HSK-A 63 A = 120	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 8195		Shrink-fit chuck	HSK-A 63 A = 130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	eShop	eShop	(eShop)	eShop
31A 30 8196	Garant	Shrink-fit chuck **with cooling channel bore**	HSK-A 63 A = 130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8205		Shrink-fit chuck	HSK-A 63 A = 160	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8206		Shrink-fit chuck **with cooling channel bore**	HSK-A 63 A = 160	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
33W 30 8208	WTE		HSK-A 63 A = 160	eShop	eShop	eShop	eShop	(eShop)	eShop	eShop	eShop	(eShop)	eShop	(eShop)	eShop	–
31A 30 8235		Shrink-fit chuck	HSK-A 63 A = 200	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8265			HSK-A 100 short	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8267		Shrink-fit chuck **with 4 cooling channel bores, nickel-plated**	HSK-A 100 short	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31A 30 8277		Shrink-fit chucks **with cooling channel bore**	HSK-A 100 short	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8282	Garant	Shrink-fit chuck	HSK-A 100 A = 120	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8285			HSK-A 100 A = 160	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8283		Shrink-fit chucks **with cooling channel bore**	HSK-A 100 A = 120	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8284			HSK-A 100 A = 130	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8286			HSK-A 100 A = 160	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31A 30 8294		Shrink-fit chuck	HSK-A 100 A = 200	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 8265, 30 8267, 30 8277)			mm	–	–	–	85	85	90	95	95	100	100	105	115	120
∅ D (30 8194, 30 8195, 30 8196, 30 8205, 30 8206, 30 8235, 30 8265, 30 8267, 30 8277, 30 8282, 30 8285, 30 8283, 30 8284, 30 8286, 30 8294)			mm	17	17	17	27	27	32	32	34	34	42	42	53	53
∅ D (30 8208)			mm	20	22	22	27	27	32	32	34	34	42	42	53	–
∅ D_1 (30 8194, 30 8195, 30 8196, 30 8205, 30 8206, 30 8235, 30 8265, 30 8267, 30 8277, 30 8282, 30 8285, 30 8283, 30 8284, 30 8286, 30 8294)			mm	12	12	12	21	21	24	24	27	27	33	33	44	44
∅ D_2 (30 8208)			mm	10	15	15	21	21	24	24	27	27	33	33	44	–

ISO 12164-1 | DIN 69893 | Form A | G 2.5 25000 min^{-1} | ≤3µm | HPC | HSC

Garant Shrink-fit chucks 4.5°, slotted – ISO 12164-1 (DIN 69893-1)

- High-temperature steel.
- With 4 cooling channel slots on the clamping hole.
- All shanks hard turned (for smooth running!).
- With RFID/Balluffchip bore.



Advantage: Improved cooling directly on the tool shank.
Facilitates the removal of small tool diameters.

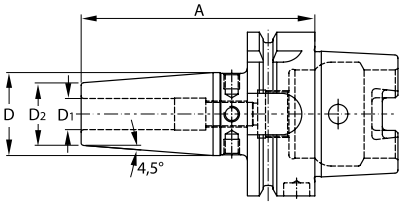
Application: For holding end mills and drills with parallel shank to h6 tolerance.
Suitable for inductive, contact and hot air shrink-fitting units.

Optional extras: Coolant feed pipe No. 309880.
Plug-in socket No. 309890,
Shrink-fit chuck extension No. 302410 – 302416.
Shrink-fit units No. 354210 – 304755.



30 8311

Clamping ∅ D_1			mm	3	4	5
31A 30 8309	Shrink-fit chuck **with cooling channel slots**	HSK-A 63 short		eShop	eShop	eShop
31A 30 8311		HSK-A 63 A = 130		eShop	eShop	eShop
∅ D_1			mm	3	4	5
Dimension A (30 8309)			mm	80		
Dimension A (30 8311)			mm	130		
∅ D			mm	17		
∅ D_2			mm	12		



DIN 69893 | ISO 12164-1 | ≤3µm | HSC

Garant

Shrink-fit chucks 3° (for tool and mould making) – ISO 12164-1 (DIN 69893-1)

- All shanks hard turned (for smooth running!).
- HSK mating faces machined.
- **Slim design (3° contour).**

30 8302–8314 – **Balancing quality 2.5 / 40,000 rpm.**
30 8316–8322 – **Balancing quality 2.5 / 25,000 rpm.** With RFID/Balluffchip bore.

Application:
- **Especially in tool and mould making.**
- For clamping tools with shank tolerance h6.

Optional extras: Coolant tube No. 309880. Socket No. 309890.
Shrink-fit chuck extensions No. 302410 sizes 12/3 and 12/4.
Shrink-fitting units No. 354210 – 354450.

Further HSK-E holders are available on request.

G 2.5 40000 min^{-1} | Form E



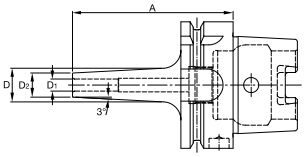
30 8302

G 2.5 25000 min^{-1} | Form A



30 8318





Clamping range ∅ D_1		mm	3	4	5	6	8	10	12
31A 30 8302	Shrink-fit chuck 3°, slim	HSK-E 40 A = 60	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8304		HSK-E 40 A = 70	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8306		HSK-E 40 A = 80	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8308		HSK-E 50 A = 70	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8314		HSK-E 50 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8316		HSK-A 63 A = 80	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8318		HSK-A 63 A = 120	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31A 30 8322		HSK-A 100 A = 120	–	eShop	–	eShop	eShop	eShop	eShop
∅ D (30 8302, 30 8308)		mm	14	15	16	17	19	21	23
∅ D (30 8304, 30 8316)		mm	15	16	17	18	20	22	24
∅ D (30 8306)		mm	16	17	18	19	21	23	25
∅ D (30 8314)		mm	17	18	19	20	22	24	26
∅ D (30 8318, 30 8322)		mm	19	20	21	22	24	26	28
∅ D_2		mm	9	10	11	12	14	16	18

DIN 69893 | ISO 12164-1 | Form A | G 2.5 25000 min^{-1} | ≤3µm | HSC

Garant

Shrink-fit chucks 4.5°, long version – ISO 12164-1 (DIN 69893-1)

- External taper 4°30'.
- With RFID/Balluffchip bore.
- HSK mating faces machined.

30 8329/8337 – With **cooling channel bores.**

Application:
- **For working in places where access is difficult.**
- For clamping tools with parallel shank to h6 tolerance.

Optional extras: Coolant pipe No. 309880, Plug-in socket No. 309890,
Shrink-fit extension No. 302410 size 12/3 and 12/4.
Shrink-fitting units No. 354210 – 354450.



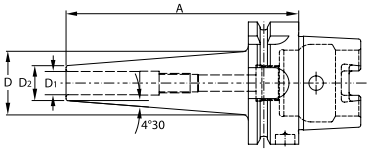
30 8328



30 8329



30 8339



Clamping range ∅ D_1		mm	6	8	10	12
31A 30 8328	Shrink-fit chuck, slim, long 4°30'	HSK-A 63 A = 120	eShop	eShop	eShop	eShop
31A 30 8329	Shrink-fit chuck, slim, long 4°30', with cooling channel bores	HSK-A 63 A = 120	eShop	eShop	eShop	eShop
31A 30 8334	Shrink-fit chuck, slim, long 4°30'	HSK-A 63 A = 160	eShop	eShop	eShop	eShop
31A 30 8337	Shrink-fit chuck, slim, long 4°30', with cooling channel bores	HSK-A 63 A = 160	eShop	eShop	eShop	eShop
31A 30 8339	Shrink-fit chuck, slim, long 4°30'	HSK-A 100 A = 120	eShop	eShop	eShop	eShop
∅ D		mm	30	30	33	33
∅ D_2 (30 8328, 30 8334, 30 8339)		mm	15	15	18	18
∅ D_2 (30 8329, 30 8337)		mm	15	16	18	18

DIN 69893 | ISO 12164-1 | Form A | G 2.5 25000 min^{-1} | ≤3µm | HPC | HSC

Garant Shrink-fit chuck, vibration-damped – ISO 12164-1 (DIN 69893-1)

- High-temperature steel.
- Integrated length adjustment of the tools.
- For HSS and solid carbide tools.
- Shanks hard turned (smooth cutting action!).
- With RFID/Balluffchip bore.
- With coolant channel bores and threads that can be sealed.
- With tapped holes on each side for balancing screws.
- **Reinforced version/contour.**
- **Polished surface.**
- **Specially mounted carbide core in the shrink-fit chuck body.**

Advantage:
- **Vibration-damping.**
- **Better workpiece surface finish.**
- **Optimised tool life.**
- **Increased process reliability.**
- **Lower corrosion tendency due to polished surface.**

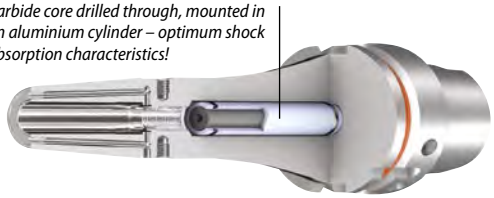
Application: For clamping tools with plain shank (h6 shank tolerance). Suitable for inductive, contact and hot air shrink-fitting units.

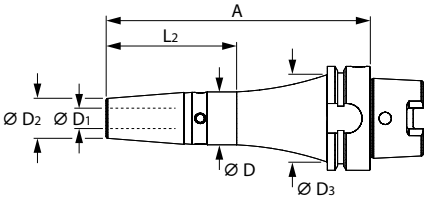
Optional extras: HSK coolant tube No. 309880, Socket wrench No. 309890, Shrink-fit unit, accessories No. 354210 – 354440, Balancing screws set No. 309906 size 180.



30 8344

Carbide core drilled through, mounted in an aluminium cylinder – optimum shock absorption characteristics!





Clamping range Ø D_1		mm	6	8	10	12	16
31A 30 8342	Shrink-fit chuck **vibration-damped, with cooling channel bores**	HSK-A 63 A = 120	eShop	eShop	eShop	eShop	eShop
31A 30 8344		HSK-A 63 A = 160	eShop	eShop	eShop	eShop	eShop
31A 30 8346		HSK-A 100 A = 120	eShop	eShop	eShop	eShop	eShop
31A 30 8348		HSK-A 100 A = 160	eShop	eShop	eShop	eShop	eShop
Ø D_1		mm	6	8	10	12	16
Ø D_2		mm	21	21	24	24	27
Ø D_3 (30 8342, 30 8344)		mm			53		
Ø D_3 (30 8346, 30 8348)		mm			88		
L_2 (30 8342)		mm	57	57	62	62	65
L_2 (30 8344)		mm	70	70	79	79	79
L_2 (30 8346)		mm	50	50	60	63	68
L_2 (30 8348)		mm	60	60	70	70	70

ISO 26623-1 | G 2.5 25000 min^{-1} | ≤3µm | HSC | HPC

Garant Arbor for indexable drill with polygonal shank (PSC) – ISO 26623-1

- Position of the grub screw for countersinking in the indexable drill offset by 0.4 mm.
- **When tightening** the increased contact face Ø is clamped against the front face of the arbor.
- **Better support,** allowing **higher feed rates.**
- **High concentricity** due to 3 µm ground flat contact face.
- With RFID/Balluffchip bore.

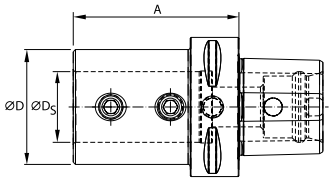
Suitable for: All indexable drills with parallel shank to DIN 6595, Part 1.

Application: **For mounting all standard indexable drills to DIN 6595, Part 1.**

Optional extras: Coolant tube No. 309885; socket No. 309893.



30 8585

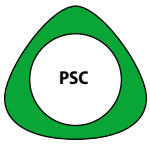


for shank Ø D_3		mm	16	20	25	32	40
31A 30 8583	Arbor for indexable drills	PSC 40 short	eShop	eShop	eShop	–	–
31A 30 8584		PSC 50 short	eShop	eShop	eShop	eShop	–
31A 30 8585		PSC 63 short	–	eShop	eShop	eShop	eShop
Dimension A (30 8583)		mm	56	60	77	–	–
Dimension A (30 8584)		mm	65	60	71	75	–
Dimension A (30 8585)		mm	–	40	45	52	63
Ø D (30 8583, 30 8584)		mm	36	40	45	52	–
Ø D (30 8585)		mm	–	70	72	75	85

ISO 26623-1 | G 2.5 25000 min⁻¹ | ≤3µm | HSC | HPC

Garant Tool arbors with polygonal shank (PSC) – ISO 26623-1

- With RFID/Balluffchip bore.
- All shanks hard turned (for smooth running!).
- Mating faces of the PSC internal contour machined.



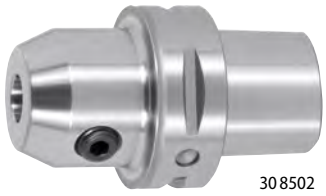
Sidelock arbors (Weldon)

Application: For clamping tools with Weldon shank to DIN 1835 Form B and DIN 6535 Form HB.

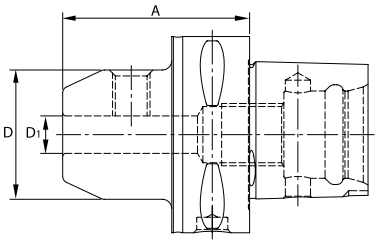
Optional extras:

30 8497–8503 – Coolant pipe No. 309885, coolant pipe wrench No. 309893.

Note: Suitable reduction from PSC 63 to PSC 40 or PSC 50 No. 318892.
Suitable reducing adapter from SK 40 or HSK 63 to PSC32, PSC 40 or PSC 50 on request.
Suitable reducing adaptor from SK 50 or HSK 100 to PSC 63 or PSC 80 on request.
Suitable extensions can be found under No. 318894, No. 318895 and No. 318896.



30 8502

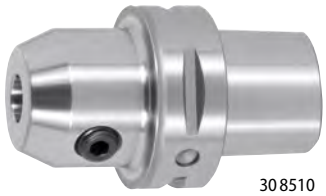


Clamping ∅ D_1		mm	6	8	10	12	14	16	18	20	25	32
31A 30 8496	Side lock arbor	PSC 32 short	eShop	eShop	eShop	eShop	–	–	–	–	–	–
31A 30 8497	Side lock arbor with cooling channel bores	PSC 40 short	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–
31C 30 8498		PSC 50 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31C 30 8502	Side lock arbor	PSC 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31C 30 8506	Side lock arbor with cooling channel bores	PSC 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31C 30 8504	Side lock arbor	PSC 63 A = 100	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31C 30 8509	Side lock arbor with cooling channel bores	PSC 63 A = 100	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31C 30 8508	Side lock arbor	PSC 63 A = 130	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31C 30 8503		PSC 80 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 8496)		mm	45	45	50	55	–	–	–	–	–	–
Dimension A (30 8497)		mm	50	50	50	55	55	55	–	–	–	–
Dimension A (30 8498)		mm	50	50	55	60	60	60	60	60	80	–
Dimension A (30 8502, 30 8506)		mm	55	55	60	60	60	65	65	65	80	90
Dimension A (30 8504, 30 8509)		mm	100	100	100	100	100	100	100	100	–	–
Dimension A (30 8508)		mm	130	130	130	130	–	130	–	130	–	–
Dimension A (30 8503)		mm	70	70	70	70	70	70	70	70	80	80
∅ D		mm	25	28	35	42	44	48	50	52	65	72

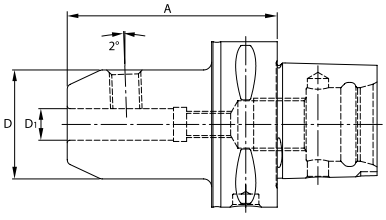
Whistle-Notch

Application: For clamping tools with suitable clamping flat (2°) to DIN 1835 Form E and DIN 6535 Form HE (= Whistle Notch).

Optional extras: Coolant pipe No. 309885, coolant pipe wrench No. 309893.



30 8510



Clamping range ∅ D_1		mm	6	8	10	12	14	16	18	20	25	32
31C 30 8510	Whistle-Notch arbor	PSC 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A		mm	75	75	75	80	80	80	80	85	90	95
∅ D		mm	25	28	35	42	44	48	50	52	65	72

ISO 26623-1 | G 2.5 25000 min⁻¹ | ≤3µm | HPC | HSC

Garant HiRunER precision ER collet chuck - ISO26623-1

External and internal tapers are ground. All shanks are turned for smooth running. Including RFID/Balluffchip bore, high-performance clamping nut up to 25000 rpm.

Advantage:
- **Excellent concentricity in the system** (chuck + collet + clamping nut), 3 µm radial run-out with a 2 µm clamping nut, 6 µm radial run-out with a 5 µm clamping nut.
- **Extremely strong holding force** (up to **factor 2** better than the standard ER chuck).
- **Vibration reduction effect** due to 2-part clamping nuts.

Application: For clamping tools with plain shank in collets to DIN 6499 – Form A and B.

Supplied with: Supplied with **precision clamping nut.**

Optional extras: Coolant tube No. 309885, assembling key No. 309893, ER collets No. 308901 – 309432, hook spanner No. 628400 or torque wrench No. 309749 or 628520.

Note:
- Clamps only nominal ∅ up to shank ∅ tolerance h 10.
- Do not use the clamping nut in combination with a sealing washer.
- Use the precision collet chuck always in conjunction with the precision clamping nut No. 309617.
- Use in combination with Fahrion collets.
- The blue design ring must be removed for Fahrion HP 2µm ER collets



Standard ER chuck -> Collets are not inserted 100 % into the chuck.



HiRunER -> the full surface of the collet is seated in the chuck -> higher retention forces! -> reduced radial run-out!

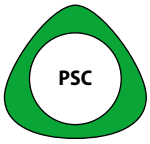


30 8542

for ER collet size			16	25	32
31C 30 8542	HiRunER precision ER collet chuck	PSC 63 A = 100	eShop	eShop	eShop
Clamping range		mm	0.5 – 10	1 – 16	2 – 20
∅ D		mm	34	44	52
Spare ER clamping nut No. 309617			16	25	32

ISO 26623-1 | G 2.5 25000 min⁻¹ | ≤3µm | HSC

Garant Tool arbors with polygonal shank (PSC) – ISO 26623-1



- With RFID/Balluffchip bore.
- All shanks hard turned (for smooth running!).
- Mating faces of the PSC internal contour machined.

Application: For clamping tools with plain shank in ER collets to DIN 6499 Form A and B.

Supplied with: Coated High-Speed clamping nut.

Optional extras:

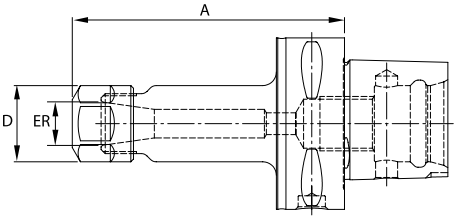
30 8512 – ER collets No. 308881 – 309434, ER chuck key No. 309680 or 613300.

30 8513–8539 – ER collets No. 308881 – 309434, ER chuck key No. 309680 or 613300, coolant pipe No. 309885 and socket No. 309893.

Coolant tube and assembling key for coolant tubes No. 309885 and 309893.



30 8513_25



for ER collet size			16	20	25	32	40
31A 30 8512	ER collet chuck	PSC 32 short	eShop	eShop	–	–	–
31C 30 8513		PSC 40 short	eShop	–	eShop	eShop	–
31C 30 8514		PSC 50 short	eShop	–	eShop	eShop	–
31C 30 8515		PSC 63 short	eShop	–	eShop	eShop	eShop
31C 30 8522		PSC 63 A = 100	eShop	–	eShop	eShop	eShop
31C 30 8530		PSC 63 A = 130	–	–	eShop	eShop	–
31C 30 8535		PSC 63 A = 160	eShop	–	eShop	–	–
31C 30 8539		PSC 80 short	eShop	–	eShop	eShop	eShop
Clamping range		mm	0.5 – 10	1 – 13	1 – 16	2 – 20	3 – 26
Dimension A (30 8512, 30 8530)		mm	50	50	130	130	–
Dimension A (30 8513)		mm	70	–	55	55	–
Dimension A (30 8514)		mm	55	–	55	60	–
Dimension A (30 8515)		mm	60	–	60	60	65
Dimension A (30 8522)		mm	100	–	100	100	100
Dimension A (30 8535)		mm	160	–	160	–	–
Dimension A (30 8539)		mm	65	–	70	70	70
∅ D		mm	28	34	42	50	63
Spare GARANT high-speed clamping nut No. 309610			16	20	25	32	40

ISO 26623-1 | HPC

PSC

Garant Tool arbors with polygonal shank (PSC) – ISO 26623-1

- With RFID/Balluffchip bore.
- All shanks hard turned (for smooth running!).
- Mating faces of the PSC internal contour machined.

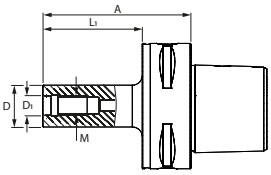
Arbor for screw-in milling cutter, cylindrical

≤3µm

Application: To take screw-in milling cutters with thread.


30 8553

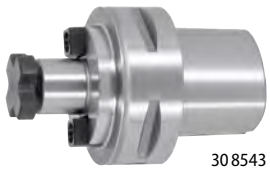
Thread size M			M8×50	M10×50	M12×50	M16×50
31A 30 8553	Arbor for screw-in milling cutter, cylindrical	PSC 63	eShop	eShop	eShop	eShop
Dimension A		mm	74.5			
∅ D_1		mm	8.5	10.5	12.5	17
∅ D		mm	13	18	21	29
L_1		mm	50			



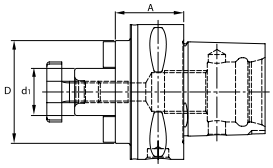
Face mill arbors

G 2.5 25000 min⁻¹ | ≤6µm

Application: For holding shell end mills and face mills with cross keyway.
Supplied with: Lock screw.
Optional extras: Toggle spanner No. 309840, cutter lock screw No. 309860.
Coolant tube and assembling key for coolant tubes No. 309885; 309893.


30 8543

Spigot ∅ d_1			mm	16	22	27	32	40
31C 30 8543	Face mill arbor with cooling channel bores	PSC 40 short		eShop	eShop	–	–	–
31C 30 8544		PSC 50 short		eShop	eShop	eShop	–	–
31C 30 8547		PSC 63 A = 65		eShop	eShop	eShop	eShop	–
31C 30 8551		PSC 80 short		eShop	eShop	eShop	eShop	eShop
Dimension A (30 8543)			mm	32	25	–	–	–
Dimension A (30 8544)			mm	35	25	25	–	–
Dimension A (30 8547)			mm	65	65	65	65	–
Dimension A (30 8551)			mm	50	50	50	60	60
∅ D (30 8543)			mm	38	40	–	–	–
∅ D (30 8544, 30 8547, 30 8551)			mm	38	48	60	63	89



ISO 26623-1 | ISO 26623-1 | G 2.5 25000 min⁻¹ | ≤3µm | HSC | HPC

PSC

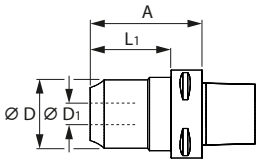
Garant Hydraulic chucks, version HT (High Torque) – ISO26623-1

- With RFID/Balluffchip bore.
- Axial length adjustment (adjustment 10 mm) available.
- Flexible due to use of reducing sleeves.

Application: Maximum transmissible torque **550 Nm,** version HT (High Torque).
Optional extras: Boring bar shanks No. 302150, 302155, 302160 and 302165.


30 8556

Clamping range ∅ D_1			mm	20
31C 30 8556	Hydraulic chuck HT **short**	PSC 63		eShop
Dimension A			mm	80
∅ D			mm	49
L_1			mm	41



ISO 26623-1 | ≤3µm

PSC

Garant Tool arbors with polygonal shank (PSC) – ISO 26623-1

- With RFID/Balluffchip bore.
- All shanks hard turned (for smooth running!).
- Mating faces of the PSC internal contour machined.

Shrink-fit chucks 4° 30′

G 2.5 | 25000 min⁻¹ | HSC | HPC

30 8559/8562/8573/8574 – With coolant channel bores and threads that can be sealed.

Application: For clamping tools with shank tolerance h6.

Optional extras:

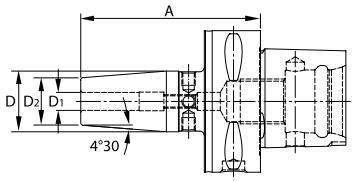
30 8559 – Balancing screws set No. 309906 size 180.
Shrink–fit chuck extensions No. 302410 – 302416. Shrink-fitting units No. 354210 – 354400.

30 8560–8575 – Shrink–fit chuck extensions No. 302410 – 302417. Shrink-fitting units No. 354210 – 354450.
Coolant tube No. 309885; socket No. 309893 and balancing screw set No. 309906 size 180.

Note:
30 8568 Size 3; 4; 5 – No length adjustment available.



30 8568



Clamping ∅ D_1		mm	3	4	5	6	8	10	12	14	16	18	20	25	32
31A 30 8559	Shrink-fit chucks with cooling channel bore	PSC 32 short	–	–	–	eShop	eShop	eShop	eShop	–	–	–	–	–	–
31A 30 8560		PSC 40 short	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31A 30 8562		PSC 50 short	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
31C 30 8568	Shrink-fit chuck	PSC 63 short	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31C 30 8571		PSC 63 A = 120	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31C 30 8573	Shrink-fit chuck with cooling channel bore	PSC 63 short	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31C 30 8574		PSC 63 A = 120	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–
31C 30 8575	Shrink-fit chuck	PSC 80 short	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (30 8559)		mm	–	–	–	65	65	70	75	–	–	–	–	–	–
Dimension A (30 8560, 30 8562)		mm	–	–	–	75	75	75	75	80	80	80	85	90	–
Dimension A (30 8568, 30 8573, 30 8575)		mm	80	80	80	80	80	80	80	85	85	85	85	90	95
∅ D (30 8559)		mm	–	–	–	27	27	32	32	–	–	–	–	–	–
∅ D		mm	17	17	17	27	27	32	32	34	34	42	42	53	53
∅ D_2		mm	12	12	12	21	21	24	24	27	27	33	33	44	44

Precision short drill chucks with polygonal shank (PSC)

G 2.5 | 18000 min⁻¹ | ≤14 Nm

- For clockwise and anticlockwise rotation.
- Sand-blasted.

Supplied with:

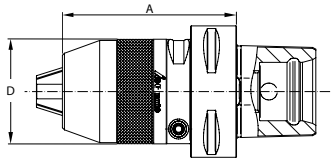
30 8587 – **Clamping wrench.**

30 8595 – **Torx® clamping wrench.**

Optional extras: Coolant tube No. 309885; socket No. 309893.



30 8595



Clamping range		mm	0,3-10	1-16
31B 30 8587	Short drill chuck	PSC 40	eShop	–
31B 30 8595		PSC 63	–	eShop
Dimension A		mm	74	93.1
∅ D		mm	36	50
Spare Torx® chuck key No. 625220			–	TX25
Spare chuck key No. 627425			4 AF	–

30

Wrench for pull studs

Single-piece wrench.

Advantage: Unlike conventional clamping wrenches it cannot slip, no risk of injury!

Application: For safe tightening of pull studs.

See pages 1005 – 1006 for suitable pull studs.

suitable for ISO taper size			mm	30	40	50
37D 30 8820		Wrench for pull studs DIN ISO 7388-1 (formerly DIN 69872)		–	eShop	eShop
31Z 30 8825	Garant			–	eShop	eShop
37D 30 8830		Wrench for pull studs ISO 7388		–	eShop	eShop
31Z 30 8835	Garant			eShop	eShop	–
Width across flats AF (30 8820, 30 8825, 30 8835)			mm	13	19	30
Width across flats AF (30 8830)			mm	–	18	30



30 8820



30 8825

Pull studs (PS) for tool arbors – accessories

Application:
- For tools with taper shanks see also **DIN 69871 and JIS B 6339** (MAS-BT).
- In machining centres (machines **with** automatic tool changers).
- In NC machines (machines **without** automatic tool changers).

Note: When installing the pull stud, cheque the correct tightening torque.

Pull stud

Note: **ISO 7388-3** meets the old standard DIN 69872.

ISO 7388-3

suitable for steep tapers				30	40	50
31Z 30 8600	Garant	Pull stud **Form A**	**with bore**	–	eShop	eShop
31Z 30 8605	Garant	Pull stud, 18CrNiMo7 **Form A**	**with bore**	–	eShop	eShop
32Z 30 8613	HOLEX	Pull stud **sealed, form A**	**with bore**	eShop	eShop	eShop
31Z 30 8615	Garant	Pull stud, 18CrNiMo7 **sealed, form B**	**without bore**	–	eShop	eShop
31Z 30 8620		Pull stud **sealed, form B**	**without bore**	–	eShop	eShop
32Z 30 8623	HOLEX	Pull stud **Mori-Seiki, sealed, form A**	**with bore Ø 7 mm**	–	eShop	–
32Z 30 8633			**with bore Ø 7 mm**	–	eShop	–
Ø D			mm	17	23	36
Ø D_1			mm	13	19	28
L			mm	44	54	74
L_1 (30 8600, 30 8605,30 8613, 30 8615, 30 8620, 30 8623)			mm	24	26	34
L_1 (30 8633)			mm	–	29	–
M				M12	M16	M24
Angle A			degrees		15	
maximum tightening torque			Nm	20	50	150
suitable for taper arbors with colour code						



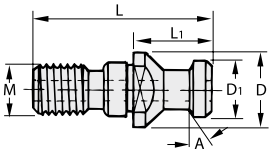
30 8600 / 8605



30 8613_40



30 8615 / 8620



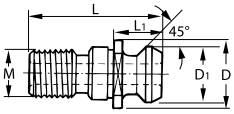
Suitable for:

30 8635 – FADAL, similar to ISO 7388, 3 mm, extended.

suitable for steep tapers				40
32Z 30 8635	HOLEX	Pull stud **sealed**	**with bore**	eShop
Ø D			mm	22
Ø D_1			mm	18.95
L			mm	47.5
L_1			mm	19.25
M				M16
maximum tightening torque			Nm	50
suitable for taper arbors with colour code				



30 8635



ISO 7388

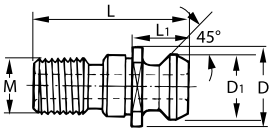
suitable for steep tapers				40	50
31Z 30 8640	Garant	Pull stud **Form B**	**with bore**	eShop	eShop
32Z 30 8650	HOLEX	Pull stud **sealed, form B**	**with bore**	eShop	eShop
31Z 30 8660	Garant	Pull stud **sealed**	**without bore**	eShop	eShop
Ø D			mm	22.5	36
Ø D_1			mm	18.95	29.1
L			mm	44.5	65.5
L_1			mm	16.25	25.55
M				M16	M24
maximum tightening torque			Nm	50	150
suitable for taper arbors with colour code					



30 8640



30 8660



Pull studs - Mazak (with end face ground flat)

- End face turned flat.
  Size 50M – Not sealed.

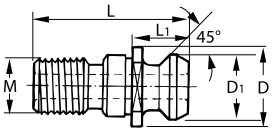
Size 40M; 40M7 – Sealed.

CAT

suitable for steep tapers				40M	40M7	50M
32Z 30 8670	HOLEX	Pull stud **Mazak, form A**	**with bore**	eShop	eShop	eShop
Ø D			mm	21.8	21.8	35.56
Ø D_1			mm	18.79	18.79	28.95
L			mm	41.25	41.25	65.4
L_1			mm	16.25	16.25	25.4
M				M16	M16	M24
maximum tightening torque			Nm	50	50	150
suitable for taper arbors with colour code						
Bore Ø			mm	6	7	10



30 8670_40M



Colour code: SK 30 SK 40 SK 50

HOLEX Pull studs (PS) for tool arbors – accessories

Note: When installing the pull stud, cheque the correct tightening torque.

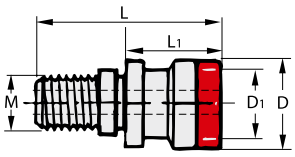
Special pull stud with snap ring groove

Application: For tools with taper shanks see also **DIN 69871 / ISO 7388-1**.



30 8700_40

suitable for steep tapers				40	50
32Z 30 8700	Special pull stud with no internal thread **sealed**	**without bore**		eShop	–
32Z 30 8740	Special pull stud with internal thread	**with bore**		eShop	eShop
∅ D			mm	25.1	39.3
∅ D_1			mm	21.1	32
L			mm	53	65
L_1			mm	25.1	
M				M16	M24
Internal thread (30 8740)				M16	M24
Internal thread depth (30 8740)			mm	17	17.5
maximum tightening torque			Nm	50	150
suitable for taper arbors with colour code					





30 8740_40

Pull studs 45°, 60°, 90°

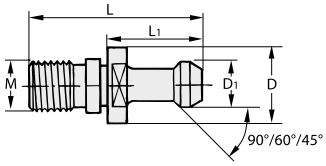
MAS 403

Application: For tools with taper shanks see also **JIS B 6339** (MAS-BT) / **ISO 7388-2.**



30 8760_40

suitable for steep tapers				30	40	50
32Z 30 8760	Pull stud 45° **sealed**	**without bore**		eShop	eShop	eShop
32Z 30 8765		**with bore**		eShop	eShop	eShop
32Z 30 8785	Pull stud 60° **sealed**	**with bore**		eShop	eShop	eShop
32Z 30 8790	Pull stud 90° **sealed**	**without bore**		–	eShop	eShop
32Z 30 8795		**with bore**		–	eShop	eShop
∅ D			mm	16.5	23	38
∅ D_1			mm	11	15	23
L			mm	43	60	85
L_1			mm	23	35	45
M				M12	M16	M24
maximum tightening torque			Nm	20	50	150
suitable for taper arbors with colour code						



Application: For tools with taper shanks see also **DIN 69871 / ISO 7388-1.**



30 8803

suitable for steep tapers			40
32Z 30 8801	Hurco 45° pull stud with 4-mm bore and fit **sealed**		eShop
32Z 30 8802	Pull stud Hurco 45° with fit **sealed**		eShop
32Z 30 8680	Pull stud Haas-Mikron R 3 / 45° with bore and fit **sealed**		eShop
32Z 30 8685	Pull stud Haas-Mikron R 3 / 45° without bore **sealed**		eShop
∅ D		mm	23
∅ D_1		mm	15
L (30 8801, 30 8802)		mm	57.15
L (30 8680, 30 8685)		mm	57
L_1		mm	32
M			M16
maximum tightening torque		Nm	50
suitable for taper arbors with colour code			



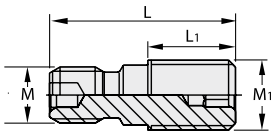
30 8680

Pull studs with buttress thread S20×2



30 8800

suitable for steep tapers			40
32Z 30 8800	Special pull stud **S20×2**		eShop
L		mm	53
L_1		mm	25
M			M16
M_1			S20×2
maximum tightening torque		Nm	50
suitable for taper arbors with colour code			



Colour code: SK 40 SK 50 SK 30

FAHRION® Precision ER collets – for ER collet chucks – accessories

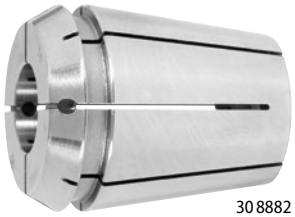
≤5µm

Through hardened and ground.
Corrosion protection: Collets fully coated with FAHRION Protect, including the functional faces.
30 8907/8917/8947/8987/8993 – Metallic sealed.
Advantage: The coating increases the service life of the collet and ensures full functionality and precision.

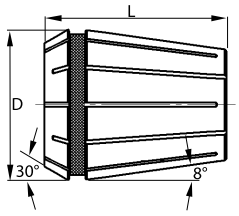
Note:
308882/308947 Size 3; 4; 5 / 308987 Gr. 3; 4; 5 / 309993 Size 6 – with rubber seal (can be used up to 60 bar).
30 8878–8881/8901/8911/8941/8981/8990 – The **collet clamping Ø range** is **always up to 1 mm less than nominal,** e.g. Ø 10 – 9 mm, **except for Ø 1, 1.5 and 2 (where it is only 0.5 mm).**
30 8882/8907/8917/8947/8987/8993 – With **seal** for through-coolant only the nominal size can be clamped.
Similar to ISO 15488-A.

Nominal clamping Ø d		30 8878	30 8881	30 8882	30 8901	NEW 30 8907	30 8911	NEW 30 8917
		ER collet						
				with seal		with seal		with seal
	mm	ER 8	ER 11	ER 11	ER 16	ER 16	ER 20	ER 20
1		eShop	eShop	–	eShop	–	eShop	–
1,5		eShop	eShop	–	eShop	–	eShop	–
2		eShop	eShop	–	eShop	–	eShop	–
2,5		eShop	eShop	–	eShop	–	eShop	–
3		eShop	eShop	eShop	eShop	eShop	eShop	eShop
3,5		eShop	eShop	–	–	–	–	–
4		eShop	eShop	eShop	eShop	eShop	eShop	eShop
4,5		eShop	eShop	–	–	–	–	–
5		eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
5,5		–	eShop	–	–	–	–	–
6		–	eShop	eShop	eShop	eShop	eShop	eShop
6,5		–	eShop	–	–	–	–	–
7		–	eShop	–	eShop	eShop	eShop	(eShop)
8		–	–	–	eShop	eShop	eShop	eShop
9		–	–	–	eShop	eShop	eShop	(eShop)
10		–	–	–	eShop	eShop	eShop	eShop
11		–	–	–	–	–	eShop	(eShop)
12		–	–	–	–	–	eShop	eShop
13		–	–	–	–	–	eShop	–
Type		4004 E	4008 E	4012 E	426 E	425 E	428 E	427 E
Ø D	mm	8.5	11.3	11.2	17	16.7	21	20.7
L	mm	13.6	18	18	27.5	27.5	31.5	31.5

FAHRION Protect

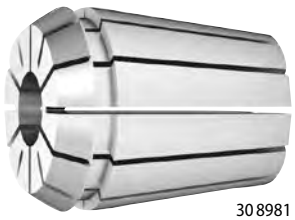


30 8882



Nominal clamping Ø d		NEW 30 8941	30 8947	NEW 30 8981	30 8987	NEW 30 8990	30 8993
		ER collet					
			with seal		with seal		with seal
	mm	ER 25	ER 25	ER 32	ER 32	ER 40	ER 40
2		eShop	–	–	–	–	–
2,5		eShop	–	–	–	–	–
3		eShop	eShop	eShop	eShop	–	–
4		eShop	eShop	eShop	eShop	eShop	–
5		eShop	eShop	eShop	eShop	eShop	–
6		eShop	eShop	eShop	eShop	eShop	eShop
7		eShop	eShop	eShop	eShop	eShop	–
8		eShop	eShop	eShop	eShop	eShop	eShop
9		eShop	eShop	eShop	eShop	eShop	–
10		eShop	eShop	eShop	eShop	eShop	eShop
11		eShop	eShop	eShop	eShop	eShop	–
12		eShop	eShop	eShop	eShop	eShop	eShop
13		eShop	eShop	eShop	eShop	eShop	–
14		eShop	eShop	eShop	eShop	eShop	eShop
15		eShop	eShop	eShop	(eShop)	eShop	–
16		eShop	eShop	eShop	eShop	eShop	eShop
17		–	–	eShop	(eShop)	eShop	–
18		–	–	eShop	eShop	eShop	eShop
19		–	–	eShop	eShop	eShop	–
20		–	–	eShop	eShop	eShop	eShop
21		–	–	–	–	eShop	–
22		–	–	–	–	eShop	eShop
23		–	–	–	–	eShop	–
24		–	–	–	–	eShop	–
25		–	–	–	–	eShop	eShop
26		–	–	–	–	eShop	–
Type		430 E	429 E	470 E	469 E	472 E	471 E
Ø D	mm	26	25.7	33	32.7	41	40.7
L	mm	34	34	40	40	46	46

ISO 15488-B



30 8981

ISO 15488-A



30 8987

Recommended tightening torque (MA) ER collets

Type	Shank∅ [mm]	MA [Nm]	Shank∅ [mm]	MA [Nm]	Shank∅ [mm]	MA [Nm]	Shank∅ [mm]	MA [Nm]
ER 11	1.0 - 2.5	7	3.0 - 7.0	10	–	–	–	–
ER 16	1.0	10	1.5 - 3.5	25 - 30	4.0 -10.0	50 -55	–	–
ER 20	1.0 - 3.0	15 - 20	3.0 - 5.5	30 - 35	6.0 - 9.0	50 - 55	9.5 - 13.0	70 - 75
ER 25	1.0 - 3.0	25 - 30	3.5 - 6.5	35 - 40	7.0 - 10.0	55 - 60	10.5 - 16.0	80 - 90
ER 32	2.0 - 3.0	30 - 35	3.5 - 6.5	55 - 60	7.0 - 15.5	110 - 120	16.0 - 20.0	130 - 140
ER 40	3.0 - 7.0	60 - 70	8.0 - 11.0	100 - 110	12.0 - 17.0	140 - 150	18.0 - 26.0	190 - 200

30 9017 – Metallic sealed.

Supplied with:

30 9013 Size ER8; ER11 – In a wooden box, 0.5 mm increments.

30 9013 Size ER16–ER32 – In a wooden box, 1 mm increments.



30 9013



30 9017_ER32

Collet size		ER8	ER11	ER16	ER20	ER25	ER32	ER40
39Y 30 9013	ER collet set	eShop	eShop	eShop	eShop	eShop	eShop	eShop
NEW 39Y 30 9017	ER collet set **with seal**	–	–	eShop	eShop	eShop	eShop	–
sizes included (30 9013)	mm	1 – 5	1 – 7	1 – 10	2 – 13	2 – 16	3 – 20	4 – 26
sizes included (30 9017)	mm	–	–	3; 4; 5; 6; 8; 10	3; 4; 5; 6; 8; 10; 12	6; 8; 10; 12; 14; 16	6; 8; 10; 12; 14; 16; 20	–

≤10µm

HOLEX ER collets – for ER collet chucks – accessories

Through hardened and ground. Polished.

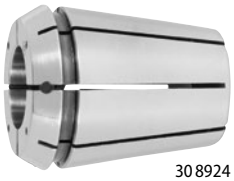
30 8924/8964/9004 – Sealed versions with spray nozzles only for nominal ∅.

Note:

30 8913 – The collet clamping ∅ range is always up to 0.5 mm less than nominal.

30 8923/8933/8963/9003/9043 – The **collet clamping ∅ range** is **always up to 1 mm less than nominal,** e.g. ∅ 10 – 9 mm, **except for ∅ 1, 1.5 and 2 (where it is only 0.5 mm).**

30 8923/8963/9003 – Collets ER16, ER25 and ER32 without a seal also available in inch sizes via the eShop.



30 8924



30 9003

Nominal clamping ∅ d	32Z 30 8913	32Z 30 8923	32Z 30 8924	32Z 30 8933	32Z 30 8963	32Z 30 8964	32Z 30 9003	32Z 30 9004	32Z 30 9043
	ER collet								
			with seal and spray nozzles			with seal and spray nozzles		with seal and spray nozzles	
mm	ER 11	ER 16	ER 16	ER 20	ER 25	ER 25	ER 32	ER 32	ER 40
1	eShop	eShop	–	eShop	–	–	–	–	–
2	eShop	eShop	–	eShop	eShop	–	–	–	–
3	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
4	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
5	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
6	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
7	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
8	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
9	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
10	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
11	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop
12	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop
13	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop
14	–	–	–	–	eShop	eShop	eShop	eShop	eShop
15	–	–	–	–	eShop	eShop	eShop	eShop	eShop
16	–	–	–	–	eShop	eShop	eShop	eShop	eShop
17	–	–	–	–	–	–	eShop	eShop	eShop
18	–	–	–	–	–	–	eShop	eShop	eShop
19	–	–	–	–	–	–	eShop	eShop	eShop
20	–	–	–	–	–	–	eShop	eShop	eShop
21	–	–	–	–	–	–	–	–	eShop
22	–	–	–	–	–	–	–	–	eShop
23	–	–	–	–	–	–	–	–	eShop
24	–	–	–	–	–	–	–	–	eShop
25	–	–	–	–	–	–	–	–	eShop
26	–	–	–	–	–	–	–	–	eShop
Type	4008 E	426 E	425 E	428 E	430 E	430 E	470 E	469 E	472 E
∅ D mm	11.3	17	16.7	21	26	25.7	33	32.7	41
L mm	18	27.5	27.5	31.5	34	34	40	40	46

ISO 15488-B ≤10µm

HOLEX ER collet set

Through hardened and ground. Polished.

30 9166 – Form A. Sealed versions with spray nozzles only for nominal ∅.
Size ER16 – ∅ 1 mm and 2 mm are without spray nozzles and are not sealed.
Size ER25 – ∅ 2 mm without spray nozzles and not sealed.

Supplied with: In a case with rigid foam inlay, 1 mm increments.



30 9161

Collet size		ER11	ER16	ER20	ER25	ER32	ER40
32Z 30 9161	ER collet set	eShop	eShop	eShop	eShop	eShop	eShop
32Z 30 9166	ER collet set **with seal and spray nozzles**	–	eShop	–	eShop	eShop	–
sizes included mm		1 – 7	1 – 10	2 – 13	2 – 16	3 – 20	4 – 26

ISO 15488-A ≤10µm

HOLEX ER collets, sealed - for ER collet chucks

∅ 2 mm without seal.

30 9164 – ∅ 1 mm and 2 mm are without seal.
30 9244 – ∅ 2 mm without seal.

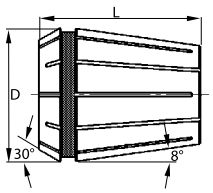
Supplied with:
30 9164–9284 – In a case with rigid foam inlay, 1 mm increments.

Collets ER16, ER25 and ER32 with seal also available in inch sizes via the eShop.



Sealed variant, no sealing washer necessary.

Nominal clamping ∅ d mm	32Z 30 8921 ER16	32Z 30 8959 ER collet **with seal** ER25	32Z 30 9001 ER32
3	eShop	eShop	eShop ■
4	eShop	eShop	eShop
5	eShop	eShop	eShop
6	eShop ■	eShop	eShop
7	eShop	eShop	eShop
8	eShop	eShop	eShop
9	eShop	eShop	eShop
10	eShop	eShop	eShop
11	–	eShop	eShop
12	–	eShop	eShop
13	–	eShop	eShop
14	–	eShop	eShop
15	–	eShop	eShop
16	–	eShop	eShop
17	–	–	eShop
18	–	–	eShop
19	–	–	eShop
20	–	–	eShop ■
Type	425 E	429 E	469 E
∅ D mm	17	26	33
L mm	27.5	34	40




30 8921


30 9001

32Z 30 9164	32Z 30 9244	32Z 30 9284
ER collet set 10 pieces 1–10 mm	ER collet set 15 pieces 2–16 mm	ER collet set 18 pieces 3–20 mm
ER16	**with seal** ER25	ER32
eShop	eShop	eShop


30 9164

≤2µm

ISO 15488-A | ISO 15488-B

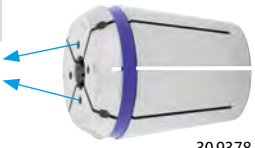
FAHRION® HP precision ER collets for CENTRO P – accessories

System concentricity and repetition accuracy **3 µm** (3×D, maximum = 50 mm), in conjunction with FAHRION CENTRO P chucks.
Corrosion protection: Collets fully coated with FAHRION Protect, including the functional faces.
Suitable for: Precision ER collet chuck CENTRO P.
Advantage: The coating increases the service life of the collet and ensures full functionality and precision.

Note:
- Optimum concentricity only when used in CENTRO P chucks.
- Clamping range h10 (nominal size only).

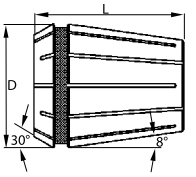
30 9369/9371/9374/9377 – With **seal** for through-coolant feed (for use up to 60 bar). **Similar to** ISO 15488-A.
30 9372/9375/9378 – With **seal** for through-coolant feed (for use up to 60 bar) and **spray nozzles. Similar to** ISO 15488-A.




30 9378


30 9377


30 9376



30 9365

Nominal clamping Ø d	39Y 30 9365	39Y 30 9368	33F 30 9369	39Y 30 9370	33F 30 9371	33F 30 9372	39Y 30 9373	33F 30 9374	33F 30 9375
	ER collet HP								
			with seal		with seal	with seal and spray nozzles		with seal	with seal and spray nozzles
mm	ER 8	ER 11	ER 11	ER 16	ER 16	ER 16	ER 25	ER 25	ER 25
1	eShop	eShop	–	eShop	–	–	–	–	–
2	eShop	eShop	–	eShop	–	–	eShop	–	–
3	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–
4	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
5	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–
6	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
7	–	eShop	–	eShop	eShop	–	eShop	(eShop)	–
8	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop
9	–	–	–	eShop	eShop	–	eShop	eShop	–
10	–	–	–	eShop	eShop	–	eShop	eShop	eShop
11	–	–	–	–	–	–	eShop	(eShop)	–
12	–	–	–	–	–	–	eShop	eShop	eShop
13	–	–	–	–	–	–	(eShop)	(eShop)	–
14	–	–	–	–	–	–	eShop	eShop	(eShop)
15	–	–	–	–	–	–	eShop	(eShop)	–
16	–	–	–	–	–	–	eShop	eShop	–
Type	4004 E	4008 E	4012 E	426 E	425 E	425 E	430 E	429 E	429 E
Ø D mm	8.5	11.5	11.2	17	16.7	16.7	26	25.7	25.7
L mm	13.6	18	18	27.5	27.5	27.5	34	34	34


30 9365

High concentricity and repetition accuracy due to optimum design.

Nominal clamping Ø d	39Y 30 9376	33F 30 9377	33F 30 9378	39Y 30 9379
	ER collet HP			
		with seal	with seal and spray nozzles	
mm	ER 32	ER 32	ER 32	ER 40
2	eShop	–	–	–
3	eShop	eShop	–	eShop
4	eShop	eShop	eShop	(eShop)
5	eShop	eShop	–	(eShop)
6	eShop	eShop	eShop	(eShop)
7	(eShop)	eShop	–	(eShop)
8	eShop	eShop	eShop	(eShop)
9	eShop	eShop	–	(eShop)
10	eShop	eShop	eShop	eShop
11	eShop	eShop	–	(eShop)
12	eShop	eShop	eShop	(eShop)
13	(eShop)	(eShop)	–	(eShop)
14	eShop	eShop	eShop	(eShop)
15	(eShop)	(eShop)	–	(eShop)
16	eShop	eShop	eShop	eShop
17	(eShop)	(eShop)	–	(eShop)
18	eShop	eShop	eShop	(eShop)
19	(eShop)	eShop	–	(eShop)
20	eShop	eShop	eShop	eShop
21	–	–	–	(eShop)
22	–	–	–	(eShop)
23	–	–	–	(eShop)
24	–	–	–	(eShop)
25	–	–	–	eShop
26	–	–	–	(eShop)
Type	470 E	469 E	469 E	472 E
Ø D mm	33	32.7	32.7	41
L mm	40	40	40	46


30 9396

	39Y 30 9390	33F 30 9391	39Y 30 9393	33F 30 9394	39Y 30 9396	33F 30 9397
	ER collet set HP					
	(3; 4; 5; 6; 8; 10mm), 426 E	with seal (3; 4; 5; 6; 8; 10mm), 425 E	(4; 6; 8; 10; 12; 14; 16mm) 430 E	with seal (4; 6; 8; 10; 12; 14; 16mm) 429 E	(4; 6; 8; 10; 12; 14; 16; 20mm), 470 E	with seal (4; 6; 8; 10; 12; 14; 16; 20mm), 469 E
	ER 16	ER 16	ER 25	ER 25	ER 32	ER 32
	(eShop)	eShop	(eShop)	eShop	(eShop)	eShop

ISO 15488-B ≤5µm

REGO-FIX▲ secuRgrip® ER collet system with pull-out protection

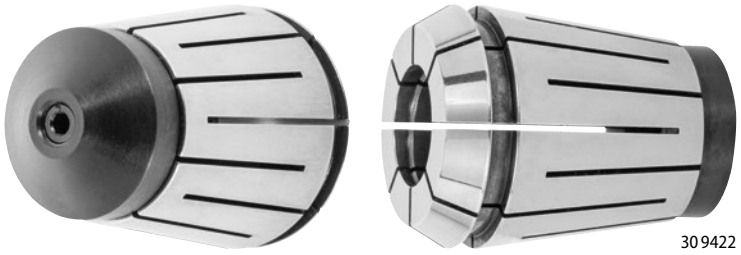


Collets with secuRgrip® have a contour similar to the thread in the clamping bore. By inserting the threaded insert into the ground HB flat (Weldon) of the milling cutter, the combination of milling cutter + threaded insert can be screwed in the collet, thus preventing the tool pulling out.

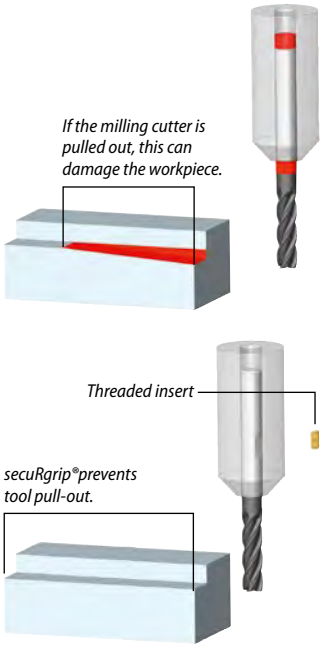
Advantage:
- Process reliability when working – 100% pull-out protection for the tools.
- Longer tool life times.
- Vibration-damping effect of the collet.
- Complete flexibility due to the ER collet system.
- User-friendly handling – no need to modify the collet chuck.

Application: The secuRgrip® system transforms a conventional collet chuck into a chuck with pull-out protection, whilst retaining the advantages of the flexible ER collet system.

Note: Only clamps the nominal diameter. Ensure correct seating in the collet chuck: if used, for example, in ultra-short collet chucks, remove the length compensation disc on the underside of the collet if necessary.



30 9422



Process reliability thanks to REGO-FIX secuRgrip®.

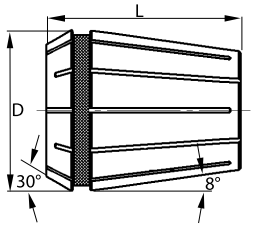
secuRgrip® ER collet with pull-out protection

Through hardened and ground.
The length can be roughly pre-set using an integrated screw at the bottom of the collet.

Suitable for: All carbide milling cutters with standard Weldon flat.

Application: First, click the collet into the clamping nut. Then screw in the milling cutter to the desired length (if not already done: the length adjustment screw must lightly lie against the milling cutter).

Optional extras: Threaded insert No. 309426.

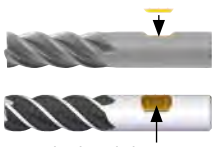


Clamping ∅ d mm		10	12	16	20	25	∅ D mm	L mm
33B 30 9422	ER 32 collet **secuRgrip pull-out protection**	eShop	eShop	eShop	–	–	33	50.4
33B 30 9423	ER 40 collet **secuRgrip pull-out protection**	–	–	eShop	eShop	eShop	41	57.5

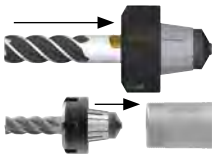
Threaded insert for secuRgrip® collet

Threaded insert made of metal, TiN-coated.

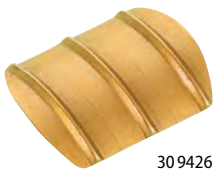
Suitable for: ER collet secuRgrip® No. 309422 and 309423.



Insert the threaded insert into the Weldon flat.



Screw into secuRgrip collet.



30 9426

for clamping dia. d mm		10	12	16	20	25
33B 30 9426	Threaded insert for ER collet **secuRgrip pull-out protection**	eShop	eShop	eShop	eShop	eShop

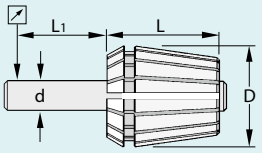
FAHRION® ER collets – Quality features

DIN 6499 B

d mm via	d mm to	L_1 mm	DIN classes 2	DIN classes 1	HOLEX	FAHRION quality Standard	FAHRION quality HP
1.0	1.6	6	0.015	0.010	0.010	0.005	0.002
1.6	3.0	10					
3.0	7.0	16					
7.0	10.0	25					
10.0	18.0	40	0.020	0.015			
18.0	25.0	50					
25.0	34.0	60	0.025	0.020	0.010	0.012	–

Advantage „super finish“ and polished:

- Better corrosion resistance.
- More contact area.
- Increased rigidity and clamping force.
- Higher precision and system concentricity.
- FAHRION with corrosion protection FAHRION protect for all types.



Standard

FAHRION® Standard collets for tapping – with axial compensation



30 9425

Collet for thread tapping, similar to DIN 6499 / ISO 15488, Form CET-GB, concentricity 20 µm.

Suitable for: All standard ER collet chucks.

Note: Clamps only the nominal ∅. **Not compatible with the CENTRO P precision ER collet chuck.**

Nominal clamping ∅ d		34F 30 9425	34F 30 9430	34F 30 9432
		ET collet for thread tapping, with axial compensation		
mm		ET 16	ET 25	ET 32
2,8		(eShop)	(eShop)	–
3,5		eShop	eShop	–
4,5		eShop	eShop	(eShop)
6		(eShop)	eShop	(eShop)
7		–	eShop	eShop
8		–	eShop	(eShop)
9		–	eShop	(eShop)
10		–	(eShop)	eShop
11		–	–	eShop
12		–	–	eShop
Type		4033 E	4285 E	4538 E
∅ D	mm	17	26	33
L	mm	27	34	43
Axial range	mm	7	8	10

Standard

HOLEX Standard collet for tapping and reaming – with radial compensation

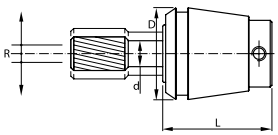


30 9447

Hardened and ground.

Suitable for: All standard ER collet chucks.

Note: Clamps only the nominal ∅. **Not compatible with the CENTRO P precision ER collet chuck.**



Nominal clamping ∅ d		32Z 30 9445	32Z 30 9447	32Z 30 9448
		ET collet with radial compensation for tapping and reaming		
mm		ET 16	ET 25	ET 32
2		eShop	–	–
2,8		eShop	–	–
3		eShop	eShop	–
3,5		eShop	eShop	–
4		eShop	eShop	eShop
4,5		eShop	eShop	eShop
5		eShop	eShop	eShop
6		eShop	eShop	eShop
7		–	eShop	eShop
8		–	eShop	eShop
9		–	eShop	eShop
10		–	eShop	eShop
11		–	–	eShop
12		–	–	eShop
14		–	–	eShop
∅ D	mm	17	26	33
L	mm	29	35	42.5
Axial compensation	mm	0.1	0.1	0.1
Radial compensation R thread tapping	mm	0.3	0.4	0.5
Radial compensation R reaming	mm	0.05	0.05	0.1

ISO 15488-A ≤10µm

ER collets for thread tapping – with square socket drive

With square socket drive for positive engagement of the tap.

30 9402/9404/9406/9409/9413/9414/9418/9419 – **FAHRION® corrosion protection:**

- Collet completely coated, including the mating faces.
- This increases the service life of the collet and ensures full functionality and precision.

30 9402/9406/9409/9414 – With sealing plugs for through coolant supply (up to 60 bar!).

30 9399/9407/9421/9427 – With sealing plugs for through coolant supply (up to 70 bar!).

30 9419 – With sealing plugs for through coolant supply (up to 100 bar!).

30 9404/9413/9418 – With sealing plugs for through coolant supply (up to 60 bar!) and spray nozzles.

Suitable for: All standard ER collet chucks, FAHRION collets also for the Centro P precision ER collet chuck.

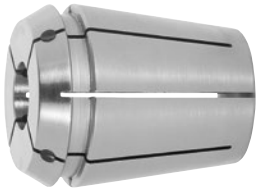
Note:

30 9399/9407/9421/9427 – **HOLEX® ER collets are incompatible with Centro P and HiRunER collet chucks.**

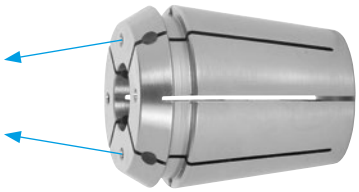
30 9399 Size 2,5; 2,8 – Without seal.

30 9402–9406/9409–9419 – **FAHRION®** collets similar to ISO 15488-A.





FAHRION® 30 9414



FAHRION® 30 9418



HOLEX 30 9407

Nominal clamping ∅ d			mm	2,5	2,8	3,5	4	4,5	6	7	8	9	10	Type	∅ D mm	L mm
32Z 30 9399	HOLEX	ER collet for machine taps	ER11	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	4031 E	11.3	18
39Y 30 9402	FAHRION®	ER collet for machine taps with seal	ER 16	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	4031 E	16.7	27.5
32Z 30 9407	HOLEX		ER 16	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	4031 E	16.7	27.5
39Y 30 9406	FAHRION®		ER 20	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4276 E	20.7	31.5
39Y 30 9409			ER 25	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	4282 E	25.7	34
32Z 30 9421	HOLEX		ER 25	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	4282 E	25.7	34
39Y 30 9414	FAHRION®		ER 32	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	4537 E	32.7	40
32Z 30 9427	HOLEX		ER 32	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	4537 E	32.7	40
39Y 30 9419			ER 40	–	–	–	–	–	eShop	eShop	eShop	eShop	eShop	4716 E	40.7	46
39Y 30 9404	FAHRION®	ER collet for machine taps with seal and spray nozzles	ER 16	–	–	eShop	–	eShop	eShop	eShop	eShop	–	–	4031 E	16.7	27.5
39Y 30 9413			ER 25	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	4282 E	25.7	34
39Y 30 9418			ER 32	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	4537 E	32.7	40

Nominal clamping ∅ d			mm	11	12	14	16	18	20	22	25	Type	∅ D mm	L mm
39Y 30 9409	FAHRION®	ER collet for machine taps with seal	ER 25	eShop	eShop	eShop	eShop	–	–	–	–	4282 E	25.7	34
32Z 30 9421	HOLEX		ER 25	eShop	eShop	eShop	eShop	–	–	–	–	4282 E	25.7	34
39Y 30 9414	FAHRION®		ER 32	eShop	eShop	eShop	eShop	eShop	eShop	–	–	4537 E	32.7	40
32Z 30 9427	HOLEX		ER 32	eShop	eShop	eShop	eShop	eShop	eShop	–	–	4537 E	32.7	40
39Y 30 9419			ER 40	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4716 E	40.7	46
39Y 30 9413	FAHRION®	ER collet for machine taps with seal and spray nozzles	ER 25	eShop	eShop	eShop	–	–	–	–	–	4282 E	25.7	34
39Y 30 9418			ER 32	eShop	eShop	eShop	eShop	eShop	eShop	–	–	4537 E	32.7	40

HOLEX ER collets for thread tapping – with quick-release chuck

- The tap is clamping by a recirculating ball clamping mechanism.
- Integral quick-change device.
- Collets for thread tapping, similar to DIN 6499 / ISO 15488.

Suitable for: All standard ER collet chucks.

Advantage: Quick locking/unlocking by spring mechanism.
No screw clamping required on the square drive flats of the tap.

Note: Clamps only the nominal ∅.
Not compatible with the CENTRO P precision ER collet chuck.


30 9457

Nominal clamping ∅ d		mm	3,5	4	4,5	6	7	8	9	10	11	12	14	∅ D mm	L mm
32Z 30 9455	ER collet for machine taps	ER 16	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–	16	32.5
32Z 30 9457		ER 25	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	25	40
32Z 30 9458		ER 32	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	32	49

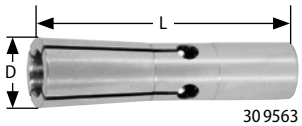
Collets, extra slim (micro-machining, for toolmaking and mould-making)

Through hardened and ground. Extremely slim design. The collet is drawn into the taper seating by a **threaded connection** from behind through the chuck. **Reduced distortion** due to elimination of the clamping nut.

30 9572 – With special coating for higher holding torque.

Suitable for:

30 9563 – Extra-slim collet chucks No. 300782; 300784; 304972; 304974.
30 9572 – Extra-slim collet chucks No. 300772; 304981; 304982; 309571.



30 9563


30 9572

Nominal clamping ∅ d			mm	1	2	3	4	5	6	∅ D mm	L mm
31A 30 9563	Garant	Extra slim collet		–	eShop	eShop	eShop	eShop	eShop	9.6	36
34F 30 9572	ALBRECHT Präzisions Spannfutter	Extra slim collet **Through-coolant**		eShop	eShop	eShop	eShop	eShop	eShop	10.1	50

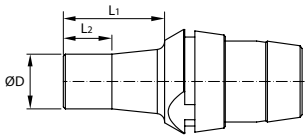
ALBRECHT Präzisions Spannfutter ER collet adaptor/extra slim collet

Through hardened, ground and pre-balanced.
Adaption of standard ER collets to extra slim collets No. 309572 and 309573.

Advantage: **Reduced interference contours** permit machining even where access to the component is difficult. Coolant transfer by the tool or along the shank.

Application: For use on lathes with static or driven tools, and also on ER collet chucks.


30 9571



for ER collet			25	32	∅ D mm	L_1 mm
34F 30 9571	ER adapter / extra-slim collet		eShop	eShop	13.5	25
L_2		mm	12			

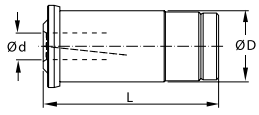
Collet for heavy-duty chuck

Cylindrical collet or reducing adapter.

30 9566/9570 – For **Holex** heavy-duty chucks No. 300775, 300778, 302865, 302870, 305525, 305528.
With length adjustment.

30 9575/9576 – For **NT** heavy-duty chucks No. 300785, 300787, 302861, 302862, 305535, 305538.
Sealed system, suitable for internal coolant feed.


30 9566



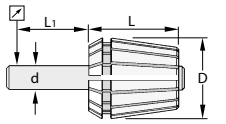
Nominal clamping ∅ d			mm	6	8	10	12	14	16	18	20	25
33K 30 9575	NT TOOL	Collet for heavy-duty chuck	∅ 20 mm	eShop	eShop	eShop	eShop	–	eShop	–	–	–
33K 30 9576			∅ 32 mm	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop
32A 30 9566	HOLEX		∅ 20 mm	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
32A 30 9570			∅ 32 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

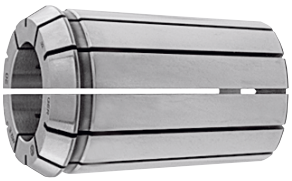
ISO 10897

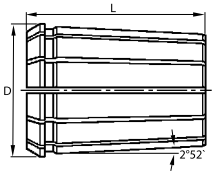
FAHRION® OZ collets – accessories

Spring steel, through hardened and ground. The through bore (longer clamping range than DIN collets) increases the clamping force. More slits than DIN collets, giving a greater insertion depth in the collet chuck. Suitable for jobber drills, for clamping on the guide land **Clamping range = Nominal size down to minus 0.5 mm.** 5 or 6 slits each end.

Nominal clamping ∅ d	39Y 30 9540	39Y 30 9550	39Y 30 9560
		OZ collet for chuck	
mm	2 - 16 mm	2 - 25 mm	4 - 32 mm
4	eShop	eShop	–
5	eShop	eShop	–
6	eShop	eShop	–
7	eShop	eShop	–
8	eShop	eShop	–
9	eShop	eShop	–
10	eShop	eShop	eShop
11	(eShop)	eShop	–
12	eShop	eShop	eShop
13	(eShop)	eShop	–
14	eShop	eShop	eShop
15	eShop	eShop	–
16	eShop	eShop	eShop
17	–	eShop	–
18	–	eShop	eShop
19	–	eShop	–
20	–	eShop	eShop
21	–	eShop	–
22	–	eShop	eShop
23	–	eShop	–
24	–	eShop	–
25	–	eShop	eShop
28	–	–	eShop
30	–	–	eShop
32	–	–	eShop
Type	415 E	462 E	467 E
∅ D mm	25.5	35.05	43.7
L mm	40	52	60









30 9562

OZ collet set for OZ collet chucks

Supplied with: OZ collets (No. 309550) ∅ 5–16 mm (in 1 mm increments) and ∅ 18, 20, and 25 mm, in a wooden box.

39Z 30 9562	OZ collet set type 462 E 15 pieces, **for chucks 5–25 mm**	eShop

ALBRECHT Präzisions Spannfutter Balancing screws set

Application: For manual (re-)balancing. 9 different sizes in fine increments, colour-coded. Suitable for all type of chuck with tapped hole for balancing screws.

Supplied with: 20 pieces each of 9 screw sizes, screwdriver for Torx® TX15.



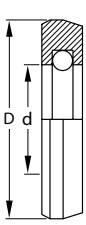
30 9906

Number of screws		180
34F 30 9906	Balancing screws set	eShop
Thread size		M6

REGO-FIX Sealing rings for ER clamping nuts

Suitable for: ER clamping nuts No. 309616; 309621.

Note:
- Clamping range = nominal size – 0.5 mm.
- Clamping ∅ in 1 mm increments
- Please specify required clamping ∅ with order.
- Suitable for up to 80 bar.
- Installation situation: Labelling on the inner face of clamping nuts.





30 9628



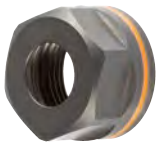
30 9628_SATZ

Clamping ∅ d		mm	3...10	11...16	17...20	21...26	SATZ	Set contents	∅ D mm
39Z 30 9622	Sealing ring for ER clamping nuts	ER 16	eShop	–	–	–	eShop	7	13
39Z 30 9624		ER 25	eShop	eShop	–	–	eShop	13	21
39Z 30 9628		ER 32	eShop	eShop	eShop	–	eShop	17	27
39Z 30 9632		ER 40	eShop	eShop	eShop	eShop	eShop	23	33.5

Accessories for toolholders – clamping nuts

ER clamping nuts

DIN 6499 D



30 9595_11-20

Thread and taper ground in a single setup for highest concentricity.

30 9595 Size 11 – **With hexagon** 17 AF.

30 9612 – With plain bearings, delivering lower friction and higher clamping force.

30 9617 – Surface smoothly coated, ball-bearing mounted. Low coefficient of friction, high clamping forces.

30 9618 – Slim, symmetrical design.

30 9619 – 6 screws allow the radial run-out to be reduced to zero.

30 9621 – Internal clamping nut with an external thread.

30 9585/9595/9616/9621 Size 16; 20 – **With hexagon** 25 AF.

30 9585/9595/9612/9616/9617/9621 Size 25–40 – **With slots.**

30 9595/9616 – Nut coated for: lower friction and **increased clamping force** coupled with high wear resistance and corrosion resistance.



30 9595_25-40

Suitable for:

30 9617 – HiRunER precision ER collet chuck No. 300642; 300643; 300647; 302839; 302843; 302844; 305523; 305524; 305532.

30 9618 – HiRunER mini precision ER collet chuck. No. 300643 11M, 16M; 302839 11M, 16M; 302844 11M, 16M; 305518 11M, 16M; 305524 11M, 16M; 305527 11M, 16M.

30 9619 – Ideally suitable for lathes, both for stationary and driven tools.

30 9621 – ER collet chucks with internal thread.

30 9585–9616/9619 – All standard ER collet chucks.

Optional extras:

30 9617 – Hook wrench No. 628400, or torque wrench No. 309749 or No. 628520.

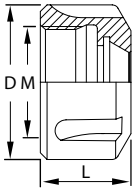
30 9618 – ER chuck key No. 309757; 309758.

30 9621 – Single open ended spanner (for size 16), No. 613300 size 25.

30 9585–9616/9619 – ER clamping wrenches, No. 309680 – 309740.
Single open ended spanner (for size 16), No. 613300 size 25.

30 9616/9621 – Sealing rings No. 309622; 309624; 309628; 309632.

Note: Collet chuck and clamping nut are balanced separately!
30 9619 – Up to 6000 rpm.



G 2.5
25000 min^{-1}



30 9612



30 9617

G 6.3
15000 min^{-1}



30 9585_25-40



30 9585_16-20



30 9619



30 9618



30 9616



30 9621_25

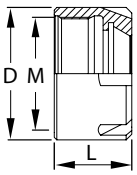
for ER			11	16	20	25	32	40	11M	16M
32Z 30 9585	HOLEX	ER clamping nut	–	eShop	eShop	eShop	eShop	eShop	–	–
31Z 30 9595	Garant	ER clamping nut **High Speed**	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31Z 30 9612		ER plain bearing clamping nut	–	eShop	–	eShop	eShop	eShop	–	–
39Z 30 9616	REGO-FIX	ER clamping nut **for sealing rings**	–	eShop	eShop	eShop	eShop	eShop	–	–
31Z 30 9617	Garant	ER clamping nut **for HiRunER collet chucks**	–	eShop	eShop	eShop	eShop	eShop	–	–
31Z 30 9618		ER mini mono-nut **for HiRunER mini collet chuck**	–	–	–	–	–	–	eShop	eShop
33E 30 9619	EWS Tool Technologies	ER clamping nut **with radial run-out adjustment**	–	eShop	–	eShop	eShop	eShop	–	–
31Z 30 9621	Garant	ER clamping nut **Internal**	–	eShop	–	eShop	eShop	eShop	–	–
L (30 9585, 30 9595, 30 9618)		mm	12	18	19.5	21	23	26	19.1	21.6
L (30 9612)		mm	–	18	–	20.5	23	26	–	–
L (30 9616)		mm	–	22.5	19.5	25	27.5	30.5	–	–
L (30 9617)		mm	–	20.6	22.6	24	26	29	–	–
L (30 9619)		mm	–	21	–	21.8	23	27.5	–	–
L (30 9621)		mm	–	11	–	14.5	17.5	20	–	–
∅ D (30 9585, 30 9595, 30 9616, 30 9618)		mm	19	28	34	42	50	63	16	24
∅ D (30 9612)		mm	–	32	–	42	50	63	–	–
∅ D (30 9617)		mm	–	33.5	38	44	51.8	61.9	–	–
∅ D (30 9619)		mm	–	34	–	50	63	78	–	–
∅ D (30 9621)		mm	–	24	–	32	40	50	–	–
Thread (30 9585, 30 9595, 30 9616, 30 9618)			M14x0.75	M22x1.5	M25x1.5	M32x1.5	M40x1.5	M50x1.5	M20×1	M24×0.75
Thread (30 9612, 30 9619)			–	M22×1.5	–	M32×1.5	M40×1.5	M50×1.5	–	–
Thread (30 9617)			–	M24×1	M28×1	M34×1.5	M42×1	M52×1	–	–
Thread (30 9621)			–	M24×1	–	M32×1.5	M40×1.5	M50×1.5	–	–
maximum tightening torque (30 9585, 30 9595, 30 9612, 30 9618)		Nm	40	80	110	140	180	240	20	30
maximum tightening torque (30 9616)		Nm	–	80	100	140	180	240	–	–
maximum tightening torque (30 9617)		Nm	–	54	80	101	136	169	–	–
maximum tightening torque (30 9621)		Nm	–	40	–	55	70	120	–	–

Clamping nuts Mini - for ER collet chucks

DIN 6499	G 2.5 25000 min^{-1}	HSC

Small external dimensions, case-hardened and ground on all faces.

Suitable for: **ER collet chuck Mini** No. 300650; 300652; 300665; 300685; 305710; 305712; 305715; 300649; 300651; 300661; 300684; 300667; 300669; 305707; 305709; 305717; 305721; 305723.





30 9605

for ER		8	11	16	20	25
31Z 30 9605 Garant ER Mini clamping nut		eShop	eShop	eShop	eShop	eShop
L	mm	11	12	18	19.5	21
∅ D	mm	12	16	22	28	35
Thread		M10×0.75	M13×0.75	M19×1	M24×1	M30×1
maximum tightening torque	Nm	12	25	35	40	45

FAHRION® Accessories for CENTRO P – ER clamping nut and sealing ring

Mini = all sizes with **"M"**, extremely slim design.
MiniSlim = sizes with **"MS"**, extremely super slim design.
Taper = all sizes with **"C"**.
Standard= all other sizes.

Note: **FAHRION system** ER clamping nuts type CP and sealing rings type HP **do not fit on to other systems!** FAHRION ER clamping nut CENTRO P HDC not suitable for standard ER collet chucks CENTRO P.



Mini *– size 11M, 16MS and 16MSDI.*

30 9655 – With trapezoidal thread for high clamping forces. Extra long double guidance of the ER clamping nut. ER clamping nuts coated for reduction of **friction.**

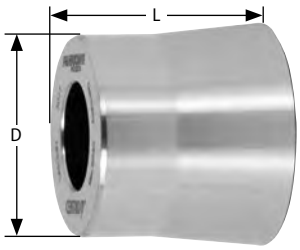
30 9657 – With trapezoidal fine thread for high clamping forces. Extra long double guidance of the ER clamping nut. Ball-bearing clamping nut for higher tightening torques.

Suitable for: FAHRION ER collet chuck CENTRO P and FAHRION ER collet chuck HDC.

Optional extras:

30 9655 – Sealing rings No. 309666 – 309668, precision ER collets No. 308878 - 308992, clamping wrenches No. 309754 – 309756, HP collets No. 309365 - 309379.

30 9657 – Precision ER collets No. 308981 – 308986, HP No. 309376 – 309378 and for tapping collets No. 309414; 309418, roller bearing wrench HDC No. 309754; 309756.



Tapered *– size 16C and 16CDI.*

Type CP for ER		8M	11M	16MS	16C	16	25	32	40
34F 30 9655 ER clamping nut CENTRO P **Standard**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Clamping range	mm	1 – 5	1 – 7	1 – 10	1 – 10	1 – 10	2 – 16	2 – 20	3 – 26
L	mm	12	16.2	20.9	23.2	23.4	25.6	26.9	31.5
∅ D	mm	10	16	22	24	30	40	50	63
maximum tightening torque	Nm	8	10	30	55	55	90	140	200
Thread		M9×0.5	Tr14×0.75	Tr20×1	Tr21×1.5	Tr22×1.5	Tr32×1.5	Tr40×1.5	Tr50×1.5

Type HDC for ER		32HDC
34F 30 9657 ER clamping nut CENTRO P HDC		eShop
Clamping range	mm	2 – 20
L	mm	27
∅ D	mm	53
maximum tightening torque	Nm	180
Thread		Tr42×1



30 9657 _32HDC

Type CP for ER		16MSDI	16CDI	16DI	25DI	32DI	40DI
34F 30 9665 ER clamping nut CENTRO P **for HP sealing rings**		eShop	eShop	eShop	eShop	eShop	eShop
Clamping range	mm	1 – 10	1 – 10	1 – 10	2 – 16	2 – 20	3 – 26
L	mm	23.9	26.2	26.4	28.9	30.1	34.8
∅ D	mm	22	24	30	40	50	63
maximum tightening torque	Nm	30	55	55	90	140	200
Thread		Tr20×1	Tr21×1.5	Tr22×1.5	Tr32×1.5	Tr40×1.5	Tr50×1.5

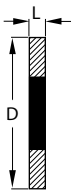


Standard *– size 16, 25, 32 and 40 and size 16DI, 25DI, 32DI and 40DI.*

Sealing rings HP – for ER clamping nuts CP

Vulcanised **high-pressure sealing rings** up to 80 bar.
0.5 mm clamping dia. range (+ 0.4 / – 0.1).

Note:
- Sealing rings in 0.5 mm increments on request.
- DI40 sealing rings on request.





30 9668

Clamping ∅ (1 mm increments)		mm	1	2	3...10	11...16	17...20	∅ D mm	L mm
34F 30 9666	Sealing ring HP for ER clamping nut CENTRO P	DI16	eShop	eShop	eShop	–	–	12.6	2
34F 30 9668		DI32	–	eShop	eShop	eShop	eShop	26.2	2

Accessories for collet chucks – ER special wrenches

Chuck key for ER collet chucks

Standard

30 9680/9740 – For an **uncontrolled** tightening torque.
30 9700/9720/9745 – For a **controlled** tightening torque using a torque wrench (14×18 / 1/2 inch or 9×12)



30 9680



30 9700



30 9720



30 9740



30 9745

for ER collet chuck			8	11	16	20	25	32	40
35A 30 9680		ER chuck key	–	–	eShop	–	eShop	eShop	eShop
35A 30 9700	AMF	ER chuck key **1/2 inch socket**	–	–	eShop	–	eShop	eShop	eShop
35A 30 9720		ER chuck key **1/2 inch 25AF**	–	–	(eShop)	–	–	–	–
33F 30 9740		Wrench for ER Mini nuts	eShop	eShop	eShop	eShop	eShop	–	–
39Z 30 9745		Torque insert for ER Mini nuts	eShop	eShop	eShop	eShop	eShop	–	–
overall length (30 9680)		mm	–	–	163	–	203	253	285.5
∅ D (30 9740)		mm	13	17	22.5	28	36	–	–
Suitable torque wrench No. 656050 (30 9700, 30 9720)			–	–	200	–	200	200	200
Plug-in shank ☐ (30 9745)		mm	9×12	9×12	9×12	9×12	9×12	–	–

Wrench for precision ER collet chucks

Suitable for:
Size 16C – ER clamping nut CP No. 309655 size 16C and 16M.
Size 32HDC – Special chuck key for HDC clamping nut No. 309657.
30 9754/9756 – **FAHRION** ER collet chuck CENTRO P.
30 9757/9758 – HiRunER Mini GARANT precision collet chuck.

Note:
30 9757/9758 – Size M for the mini version.



30 9754



30 9754_32HDC



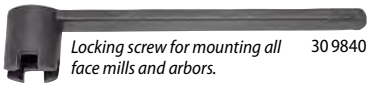
30 9756_32HDC

Type			8M	11M	16M	16MS	16C	16	25	32	32HDC	40
34F 30 9754		CP roller bearing wrench	–	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
34F 30 9756	FAHRION	CP roller bearing wrench for torque wrenches	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
31T 30 9757		HiRunER roller bearing wrench	–	eShop	eShop	–	–	–	–	–	–	–
31A 30 9758	Garant	HiRunER roller bearing wrench for torque wrench	–	eShop	eShop	–	–	–	–	–	–	–
Plug-in shank ☐		mm	9×12	9×12	9×12	9×12	9×12	14×18	14×18	14×18	14×18	14×18
Suitable torque wrench No. 656055			25	25	60	60	60	200	200	200	200	200

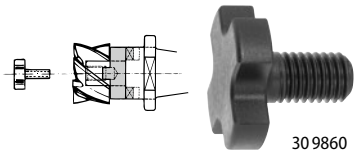
Accessories for arbors – for combination mandrels, HSK and PSC

Suitable for: HSK and combination face mill adaptors

for mandrel ∅		mm	13	16	22	27	32	40	50	60
35A 30 9840	AMF	Toggle spanner DIN 6368	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
overall length		mm	160	180	200	225	250	280	315	355
suitable for cutter lock screw			M6	M8	M10	M12	M16	M20	M24	M30

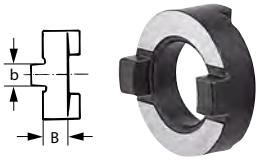

Locking screw for mounting all face mills and arbors. 30 9840

for mandrel ∅		mm	13	16	22	27	32	40	50	60
39Z 30 9860	Garant	Milling cutter lock screw DIN 6367	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
30N 30 9861	EROGLU	Milling cutter lock screw **through bored** DIN 6367	–	–	–	–	–	–	–	–
Thread M			M6	M8	M10	M12	M16	M20	M24	M30
Thread length		mm	12	16	18	22	26	30	36	45
Head ∅		mm	17	20	28	35	42	52	63	75
Head thickness		mm	5	6	7	8	9	10	12	14


30 9860


30 9861

for mandrel ∅		mm	13	16	22	27	32	40
39Z 30 9870	Garant	Face mill drive ring DIN 6366	eShop	eShop	eShop	eShop	eShop	eShop
B-0.2		mm	10	10	12	12	14	14
b		mm	8	8	10	12	14	16



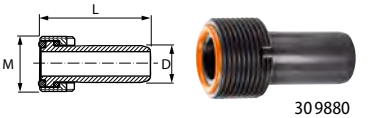
30 9870

HSK – Coolant tube and socket wrench

30 9880 – Special O-ring up to 120 bar, angular movement from ± 1°, polished, with 2 sealing rings. **Coolant-resistant Viton® seals.**

Size 40F; 63F; 100F – With filter (mesh size 100µm) for dirt particle-free cooling.

Note:
30 9880 Size 40F; 63F; 100F – Only use pressure up to a maximum of 80 bar (otherwise there is a risk that the entire mounting lock and filter will be pushed out of the tube.)



30 9880



					NEW			NEW			NEW
for HSK			25	32	40	40F	50	63	63F	80	100	100F
39Z 30 9880	Garant	HSK coolant tube	eShop	eShop	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop
Thread M			M8×1	M10×1	M12×1	M12×1	M16×1	M18×1	M18×1	M20×1.5	M24×1.5	M24×1.5
∅ D		mm	5	6	8	8	10	12	12	14	16	16
L		mm	16.8	26	29	29	33	36.5	36.5	39.5	43.5	43.5

for HSK		25	32	40	50	63	80	100
39Z 30 9890	Socket wrench for coolant tubes	eShop	eShop	eShop	eShop	eShop	eShop	eShop


30 9890

PSC coolant tube and assembling key

for PSC			40	50	63	80
39Z 30 9885	SWISS TOOLS	PSC coolant tube	eShop	eShop	eShop	eShop
Thread M			M14×1.5	M16×1.5	M20×2	M20×2
∅ D		mm	6	7	8	10
L		mm	26	29	31.5	31.5
L_1		mm	12	14	15	15


30 9885

for PSC			40	50	63	80
39Z 30 9893	SWISS TOOLS	Assembling key for coolant tubes	eShop	eShop	eShop	eShop



30 9893

Garant Accessories for arbors – spare clamping screw

Suitable for: Side lock and Whistle Notch arbors.

Note: Up to 20 mm clamping ∅ with one, from 25 mm clamping ∅ with 2 clamping screws.
Size 12 – **suitable also for chucks with clamping ∅ 14 mm.**
Size 16 – **suitable also for chucks with clamping ∅ 18 mm.**
Size 32 – **suitable also for chucks with clamping ∅ 40 mm.**


30 9900

for chucks with clamping ∅ D_1		mm	6	8	10	12	16	20	25	32
39Z 30 9900	Spare clamping screw		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Thread size			M6	M8	M10	M12	M14	M16	M18×2	M20×2
Length		mm	10	10	12	16	16	16	20	20

DIN 2084

Accessories for arbors – arbor spacer rings

Arbor spacer rings – narrow

0.03 to 1 mm wide. Cut from hardened strip steel. Variation from the width b1 and its parallelism depends on the tolerance of the basic semi-finished product to DIN 1544.



30 9920

Inner ∅×thickness b1	mm	13×0,03	13×0,04	13×0,3	13×0,6	16×0,03	16×0,04	16×0,05	16×0,1	16×0,2	16×0,3	16×0,5	16×0,6	16×1
37D 30 9920 Arbor spacer ring	**narrow**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	21	21	21	21	25	25	25	25	25	25	25	25	25

Inner ∅×thickness b1	mm	22×0,03	22×0,04	22×0,05	22×0,1	22×0,2	22×0,3	22×0,5	22×0,6	22×1
37D 30 9920 Arbor spacer ring	**narrow**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	33								

Inner ∅×thickness b1	mm	27×0,03	27×0,04	27×0,05	27×0,1	27×0,2	27×0,3	27×0,5	27×0,6	27×1
37D 30 9920 Arbor spacer ring	**narrow**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	39								

Inner ∅×thickness b1	mm	32×0,03	32×0,04	32×0,05	32×0,1	32×0,2	32×0,3	32×0,5	32×0,6	32×1
37D 30 9920 Arbor spacer ring	**narrow**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	45								

Inner ∅×thickness b1	mm	40×0,03	40×0,04	40×0,05	40×0,1	40×0,2	40×0,3	40×0,5	40×0,6	40×1
37D 30 9920 Arbor spacer ring	**narrow**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	54								

Arbor spacer rings – wide

2.0 – 60 mm wide. Made of case-hardening steel, hardened. External ∅ ground, flat surfaces lapped. Permissible variation in parallelism for the width is IT 3, referred to bore dia. d1. Tolerance of the ring width ± 0.1 mm.



30 9930

Inner ∅×thickness b1	mm	13×2	13×3	13×10	16×2	16×3	16×4	16×5	16×10	16×20	16×30
37D 30 9930 Arbor spacer ring	**wide**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	22	22	22	27	27	27	27	27	27	27

Inner ∅×thickness b1	mm	22×2	22×3	22×4	22×5	22×10	22×20	22×30	22×60
37D 30 9930 Arbor spacer ring	**wide**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	34							

Inner ∅×thickness b1	mm	27×2	27×3	27×4	27×5	27×10	27×20	27×30
37D 30 9930 Arbor spacer ring	**wide**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	41						

Inner ∅×thickness b1	mm	32×2	32×3	32×4	32×5	32×10	32×20	32×30
37D 30 9930 Arbor spacer ring	**wide**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	47						

Inner ∅×thickness b1	mm	40×2	40×3	40×4	40×5	40×10	40×20	40×30
37D 30 9930 Arbor spacer ring	**wide**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	55						

Arbor spacer ring sets

Supplied with: Plastic wallet.
(Ring width mm / number of rings)
No. 309920 size 0.03/5; 0.04/5; 0.05/5; 0.1/6; 0.2/3; 0.3/3; 0.5/3; 0.6/2; 1/2; 1.5/1.



30 9940

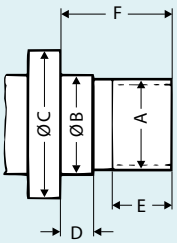
Internal ∅	mm	16	22	27	32	40
37D 30 9940 Arbor spacer ring set **35 pieces**		eShop	eShop	eShop	eShop	eShop

Lathe chuck overview: Mounting and machine spindle noses

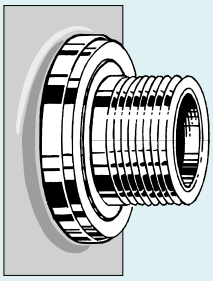
Lathe chucks with cylindrical centring mount to DIN 702-4.

(corresponds to the old standard DIN 6350 and DIN 6350-1)

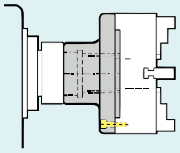
For machine spindles with cylindrical centring edge.
These lathe chucks can also be screwed to DIN 800 spindle noses using a flange.
They are secured using hexagon socket head screws.
The lathe chucks are also applicable on spindle noses with a short taper, using a short taper flange. However, it is preferable to use lathe chucks with an integral short taper because of the lower overhang.



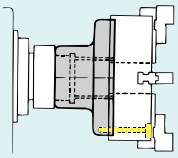
Spindle noses DIN 800



Lathe chuck DIN 6350-1



Secured from the back for geared scroll chucks



Secured from the front for self-centring chucks.

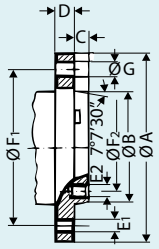
A Tolerance medium	B (g5) mm	C (smallest size) mm	D mm	E mm	F mm
M 20	21	30	6.3	10	20
M 24	25	36	8	12	24
M 33	34	50	9	14	30
M 39	40	56	10	16	35
M 45	46	67	11	18	40
M 52	55	80	12	20	45
M 60	62	90	14	22	50
M 76×6	78	112	16	30	63
M 105×6	106	150	20	40	80

Lathe chucks with short taper mount to DIN 702-1.

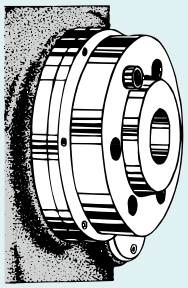
(corresponds to old standard DIN 55028A)

These lathe chucks fit directly on to DIN 55026 and DIN 55021 spindle noses (secured from the front).
They are secured with socket head screws.
Form A: Tapped holes in the outer pitch circle of the flange.
No inner pitch circle. Taper sizes 4 and upwards have 4 driving slots.

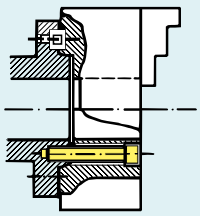
Note: DIN 55021
No longer included in the new standard.
Outer hole circle F available from lathe chuck Ø 250.



Spindle noses DIN 55026



Lathe chuck DIN 55028A



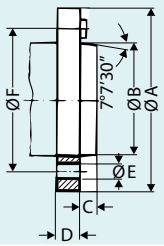
Secured with socket head screws on the spindle nose.

Spindle nose size	A mm	B mm	C (Form A) mm	D (Form B) mm	D mm	No. of holes on the external pitch circle (F1) E1	F1 (external pitch circle) mm	No. of holes on the internal pitch circle (F2) E2	F2 (internal pitch circle diameter) mm
3	92	53.983	11	–	16	3×M 10	70.6	–	–
4	108	63.521	11	–	20	11×M 10	82.6	–	–
5	133	82.573	13	14.288	22	11×M 10	104.8	8×M 10	61.9
6	165	106.385	14	15.875	25	11×M 12	133.4	8×M 12	82.6
8	210	139.731	16	17.462	28	11×M 16	171.4	8×M 16	111.1
11	280	196.883	18	19.050	35	11×M 20	235.0	8×M 20	165.1
15	380	285.791	19	20.638	42	12×M 14	330.2	11×M 24	247.6

Lathe chucks with short taper mount to DIN 702-3.

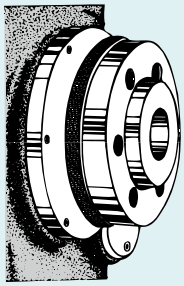
(corresponds to old standard DIN 55027)

These lathe chucks are secured directly on to DIN 55027 spindle noses.
They are secured with studs, collar nuts and the bayonet plate attached to the spindle nose. With driving slots from taper size 4 upwards.

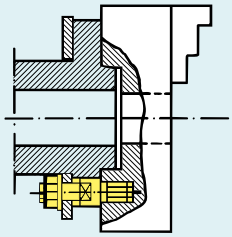


Spindle noses DIN 55027

Most commonly used type on new lathes.



Lathe chuck DIN 55027



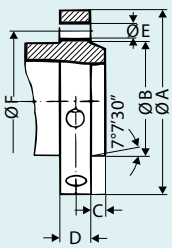
Secured with stud and collar nut

Spindle nose Size	A mm	B mm	C mm	D mm	E mm	F mm
3	102	53.985	11	16	3×21	75.0
4	112	63.525	11	20	3×21	85.0
5	135	82.575	13	22	4×21	104.8
6	170	106.390	14	25	4×23	133.4
8	220	139.735	16	28	4×29	171.4
11	290	196.885	18	35	6×36	235.0

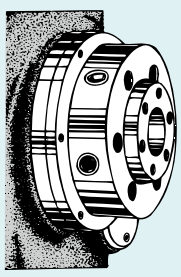
Lathe chucks with short taper mount to DIN 702-2.

(equivalent to old standard DIN 55029 or ASA B5.9)

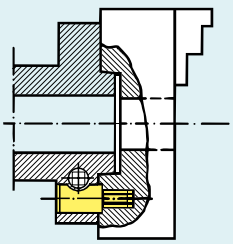
These lathe chucks are secured directly to spindle noses to DIN 55029 or ASA B5.9.
They are fastened with Camlock studs. The studs to DIN 55029 have metric threads, those to ASA B5.9 have imperial threads.



Spindle noses DIN 5502 9 or ASA B5.9



Lathe chuck DIN 55029



Secured with Camlock studs

Spindle nose Size	A mm	B mm	C mm	D mm	E mm	F mm
3	92.1	53.985	11.1	31.8	3×15.1	70.66
4	117.5	63.525	11.1	33.3	3×16.7	82.55
5	146.0	82.575	12.7	38.1	6×19.8	104.80
6	181.0	106.390	14.3	44.5	6×23.0	133.40
8	225.4	139.735	15.9	50.8	6×26.2	171.40
11	298.5	196.885	17.5	60.3	6×30.1	235.00

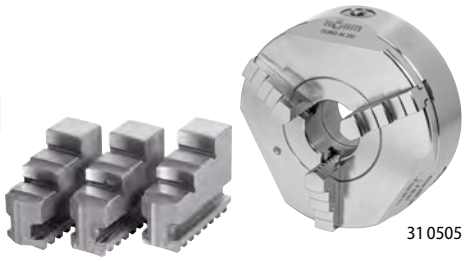
Three-jaw lathe chucks / geared scroll chucks

- Manual chucks with gear scroll, centrically clamping.
- Weight-reduced body of steel.
- Gear scroll drop-forged, balanced, and hardened.
- Flanks of scroll and of jaw serrations are ground.
- High concentricity.

Supplied with: 1 clamping wrench and fastening screws or studs depending on the chuck.

Optional extras: **Spare and additional jaws** see No. 314000 – 315200.
Swarf protection see No. 312800.

Note: For self-centring three-jaw lathe chucks see No. 313120 – 313140.



31 0505

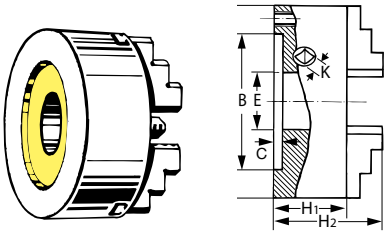
With recessed mount

Standard: **DIN 702-4.**

Application: For machine spindles with recessed centring mount or for mounting using a flange. Secured with screws from the rear. The flange blanks must always be fitted first to the machine and then to the chuck.

Supplied with: 1 set = 3 hard inside jaws, stepped on the outside and 1 set = 3 hard inside jaws, stepped on the inside.

Note: DIN 702-4 satisfies the old standard DIN 6350-1.



External ∅ A	365 31 0505	Aperture E	Height without jaws H_1	Height with jaws H_2	Centring ∅ B	Centring depth C	Chuck key square K	Weight	maximum speed
	Three-jaw lathe chuck steel with recessed mount								
mm	DIN 702-4	mm	mm	mm	mm	mm	mm	kg	min^{-1}
80	eShop	19	39.5	53.5	56	3	6	1.5	7000
100	eShop	20	50	68	70	3	8	3.3	6300
125	eShop	32	56	78.5	95	4	9	5.4	5500
160	eShop	42	65	91	125	4	10	8.8	4600
200	eShop	55	73.5	106	160	4	11	15.2	4000
250	eShop	76	82	122	200	5	12	25.6	3000
315	(eShop)	103	95	141	260	5	14	51.2	2300
400	(eShop)	136	105	148	330	5	17	80.5	1800
Colour code for accessories									

With short taper mount

Standard:

31 0655 – **DIN 702-2.**

31 0705 – **DIN 702-3.**

Application: **The chuck is always fitted to the spindle nose directly without an intermediate flange.**

31 0655 – For spindle noses DIN 55029 with **Camlock studs.**

31 0705 – For spindle noses DIN 55027 **with studs and collar nuts.**

Supplied with: 1 set = 3 hard inside jaws, stepped on the outside and 1 set = 3 hard outside jaws, stepped on the inside.

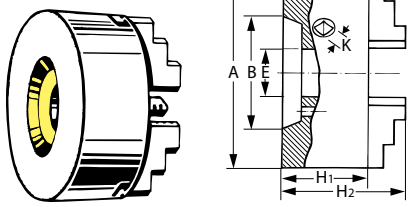
Note:

31 0655 – DIN 702-2 satisfies the old standard DIN 55029.

31 0705 – DIN 702-3 satisfies the old standard DIN 55027.



31 0705



Outer ∅ A / taper	365 31 0655	365 31 0705	Aperture E	Height without jaws H_1	Height with jaws H_2	Number of studs		Centring ∅ B	Size of studs		Chuck key square K	Weight	maximum speed
	Three-jaw lathe chuck steel short taper mount					31 0655	31 0705		31 0655	31 0705			
mm	DIN 702-2	DIN 702-3	mm	mm	mm			mm			mm	kg	min^{-1}
125/4	–	eShop	32	69	93	–	3	63.5	–	M10	9	6.2	5500
160/4	(eShop)	eShop	42	66	92	3	3	63.5	PG11	M10	10	9.5	4600
160/5	–	eShop	42	66	92	–	4	82.5	–	M10	10	9.5	4600
200/5	(eShop)	eShop	55	74.5	107	6	4	82.5	1/2-20	M10	11	16.7	4000
200/6	(eShop)	eShop	55	74.5	107	6	4	106.4	5/8-18	M12	11	16.7	4000
250/6	(eShop)	eShop	76	83	124	6	4	106.4	5/8-18	M12	12	28	3000
250/8	(eShop)	eShop	76	83	124	6	4	139.7	3/4-16	M16	12	28.5	3000
315/6	–	(eShop)	76	96	142	–	4	106.4	–	M12	14	52.5	2300
315/8	(eShop)	(eShop)	103	96	142	6	4	139.7	3/4-16	M16	14	54	2300
Colour code for accessories													

Colour code: Röhm geared scroll chucks and jaws

RÖHM Four-jaw lathe chuck / geared scroll chuck

- Gear scroll drop-forged, balanced, and hardened.
- Flanks of scroll and of jaw serrations are ground.
- Weight-reduced body of steel.
- High concentricity.

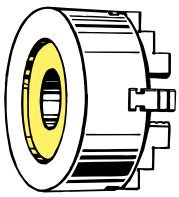
Drop-forged, resulting in a long working life and **suitability for high speed machines.**

Supplied with: 1 set = 4 hardened inside jaws, stepped on the outside.
1 set = 4 hardened outside jaws, stepped on the inside.
1 clamping wrench and fastening screws or studs depending on the chuck.

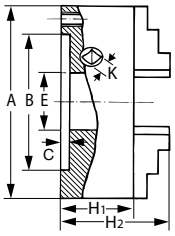
Optional extras: **For spare and additional jaws** see No. 314100 – 315300. For swarf protection see No. 312800.



31 2505



Recessed mount to DIN 702-4 (fastening screw from rear).



With recessed mount

Standard: **DIN 702-4**.

Application: For machine spindles with recessed centring mount or for mounting using a flange.

Note: DIN 702-4 satisfies the old standard DIN 6350-1.

External ∅ A	365 31 2505 Four-jaw lathe chuck steel with recessed mount DIN 702-4	Aperture E	Height without jaws H_1	Height with jaws H_2	Centring ∅ B	Centring depth C	Chuck key square K	Weight	maximum speed
mm		mm	mm	mm	mm	mm	mm	kg	min^{-1}
80	eShop	19	39.5	53.5	56	3	6	1.7	7000
100	eShop	20	50	68	70	3	8	3.3	6300
125	(eShop)	32	56	78.5	95	4	9	5.3	5500
160	eShop	42	65	91	125	4	10	9.2	4600
200	eShop	55	73.5	106	160	4	11	15.8	4000
250	eShop	76	82	122	200	5	12	26.8	3000
315	(eShop)	103	95	141	260	5	14	52.3	2300
Colour code for accessories									

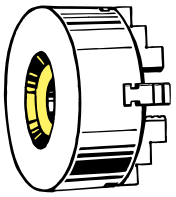
With short taper mount

Standard: **DIN 702-3**.

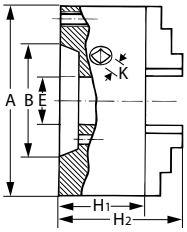
Material: Steel

Application: For spindle noses DIN 55027 with studs and collar nuts. The chuck is always fitted to the spindle nose directly without an intermediate flange.

Note: DIN 702-3 satisfies the old standard DIN 55027.



Short taper mount to DIN 702-3 (stud and collar nut).

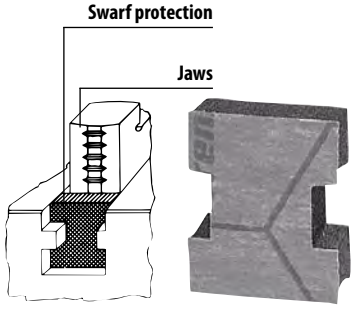


Outer ∅ A / taper	365 31 2705 Four-jaw lathe chuck steel with short taper mount DIN 702-3	Aperture E	Height without jaws H_1	Height with jaws H_2	Number of studs	Size of studs	Centring taper ∅ B	Chuck key square K	Weight	maximum speed
mm		mm	mm	mm			mm	mm	kg	min^{-1}
125/4	(eShop)	32	69	93	3	M10	63.525	9	6.7	5500
160/4	(eShop)	42	66	92	3	M10	63.525	10	9.9	4600
160/5	eShop	42	66	92	4	M10	82.575	10	9.8	4600
200/5	(eShop)	55	74.5	107	4	M10	82.575	11	17.2	4000
200/6	eShop	55	74.5	107	4	M12	106.39	11	17.3	4000
250/6	eShop	76	83	124	4	M12	106.39	12	28.8	3000
250/8	(eShop)	76	83	124	4	M16	139.735	12	30.3	3000
Colour code for accessories										

Swarf protection

Suitable for: Chuck No. 310505 – 310705 and No. 312505 – 312705.

Application: For insertion into jaw slides. Prevents ingress of swarf into chuck body.



for chuck type		160	200	250	315	500
33R 31 2800	Swarf protection piece	eShop	eShop	eShop	eShop	eShop
Length	mm	23	21	27	35	41
Width	mm	18	20	24	34	42
also suitable for chuck type		140	–	–	350 / 400	630

Colour code: Röhm geared scroll chucks and jaws

Spare and additional jaws, geared scroll chucks

31 4400/4425 – **Precision milled** contact face, **not burnished.**

Suitable for:

31 4000/4400/44254600/5000/5200 – **Three-jaw lathe chucks No. 310505; 310655; 310705.**

31 4100/4700/5100/5300 – **Four-jaw lathe chucks No. 312505; 312705.**

Material:

31 4400/4425/4700 – 16 MnCr5

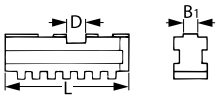
Application:

31 4000/4100 – For fitting hardened reversible jaws or soft top jaws.

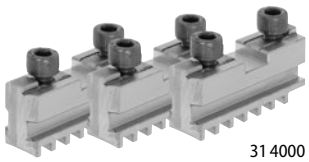
31 4400/4425 – For fitting to hardened base jaws.

Note:
- Jaws can generally be renewed in the chuck as long as the guide in the body is not worn out.
- Top, turning, and drilling jaws **bought subsequently must be ground in the chuck** for radial and axial run-out.

Base jaws hardened



31 4000



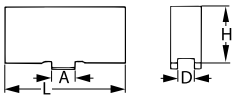
31 4000



31 4100

for chuck type		mm	100	125	140	160	200	250	315	350	suitable for colour code
33R 31 4000	RÖHM	Base jaw set, 3 pieces, hardened	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	
33R 31 4100	RÖHM	Base jaw set, 4 pieces, hardened	(eShop)	–	–	(eShop)	(eShop)	eShop	(eShop)	–	
L		mm	46	55	65	65	78	92	108	127	
D +0.01		mm	9.5	12.68	12.68	12.68	12.68	19.03	19.03	19.03	
B_1 –0.05		mm	7.94	7.94	7.94	7.94	7.94	12.7	12.7	12.7	
also suitable for chuck type		mm	–	–	–	–	–	–	–	400	
Thread			M6	M8	M8	M8	M8	M12	M12	M16	

Soft top jaws





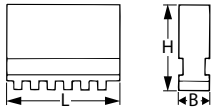
31 4400

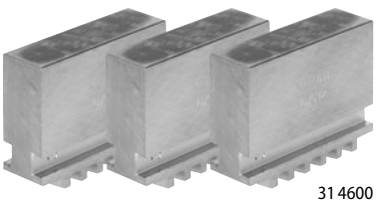


31 4425

for chuck type		mm	100	125	140	200	250	315	350	suitable for colour code
33R 31 4400	RÖHM	Top jaw set, 3 pieces, soft	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	
32R 31 4425	HOLEX	Top jaw set, 3 pieces, soft	eShop	eShop	eShop	eShop	eShop	eShop	–	
L		mm	53	62	74	87	103	120	137	
H		mm	30	38	42	43	53	58	63	
D		mm	7.96	7.96	7.96	7.96	12.72	12.72	12.72	
b		mm	24	32	38.1	44.45	53.95	63.5	76.2	
A		mm	9.49	12.67	12.67	12.67	19.02	19.02	19.02	
also suitable for chuck type		mm	–	–	160	–	–	–	400	

Scroll jaws soft





31 4600
31 4700



31 4625
31 4720

for chuck type		mm	80	100	125	140	160	200	250	315	350	500	suitable for colour code
33R 31 4600	RÖHM	Scroll jaw set, 3 pieces, soft	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	
32R 31 4625	HOLEX	Scroll jaw set, 3 pieces, soft	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	–	–	
33R 31 4700	RÖHM	Scroll jaw set, 4 pieces, soft	–	(eShop)	(eShop)	–	eShop	eShop	eShop	eShop	(eShop)	–	
32R 31 4720	HOLEX	Scroll jaw set, 4 pieces, soft	–	–	–	–	eShop	eShop	eShop	–	–	–	
L		mm	37	48	52	61	61	69	90	130	130	190	
B		mm	12	14	18	18	18	20	24	34	34	42	
H		mm	26	33.5	41.5	41.5	47.5	53.5	67.5	79.5	79.5	95	
also suitable for chuck type		mm	–	–	–	–	–	–	–	–	400	630	

Colour code: Röhm geared scroll chucks and jaws — HOLEX geared scroll chucks and jaws

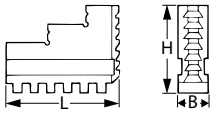
Spare inside and outside jaws, hardened

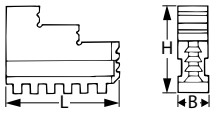


Application: Inside jaws

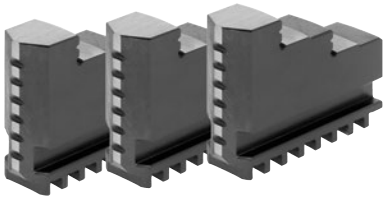


Application: Outside jaws

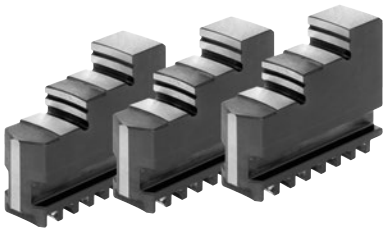




31 5000
31 5100



31 5200
31 5300



for chuck type			80	100	125	140	160	200	250	315	350	suitable for colour code
33R 31 5000	RÖHM	Inside jaw set, 3 pieces, hardened	eShop	eShop	eShop	(eShop)	eShop	eShop	eShop	eShop	–	
33R 31 5100		Inside jaw set, 4 pieces, hardened	–	–	–	–	(eShop)	(eShop)	(eShop)	–	–	
33R 31 5200		Outside jaw set, 3 pieces, hardened	–	eShop	eShop	–	eShop	eShop	eShop	(eShop)	(eShop)	
33R 31 5300		Outside jaw set, 4 pieces, hardened	–	–	–	–	–	(eShop)	(eShop)	–	–	
L		mm	37	48	52	61	61	69	90	130	130	
B		mm	12	14	18	18	18	20	24	34	34	
H		mm	26	33.5	41.5	41.5	47.5	53.5	67.5	79.5	79.5	
also suitable for chuck type		mm	–	–	–	–	–	–	–	–	400	

HOLEX Three-jaw lathe chuck / additional jaws (geared scroll chucks)

With recessed mount

- Manual chucks with gear scroll, centrically clamping.
- Body made of cast iron or steel.
- Gear scroll drop-forged, balanced, and hardened.
- Flanks of scroll and of jaw serrations are ground.
- High concentricity, more precise than DIN 6386 requirement.

Standard: **DIN 702-4.**

Application: For machine spindles with recessed centring mount or for mounting using a flange. The chuck is secured from the rear by means of screws. The flange blanks must always be fitted first to the machine and then to the chuck.

Supplied with: Includes: 1 set = 3 hardened inside jaws, stepped on the outside.
1 set = 3 hardened outside jaws, stepped on the inside.
1 clamping wrench and fastening screws or studs depending on the chuck.

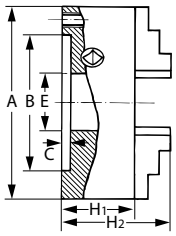
Optional extras: **Spare and additional jaws** No. 312971 – 312986.



31 2906



Rear face size 100 31 2906



External ∅ A	32W 31 2906	32W 31 2911	Aperture E		Height without jaws H_1		Height with jaws H_2		Centring ∅ B	Centring depth C	Weight	maximum speed	
	Three-jaw lathe chuck cast-iron with recessed mount	Three-jaw lathe chuck steel with recessed mount	31 2906	31 2911	31 2906	31 2911	31 2906	31 2911				31 2906	31 2911
mm	DIN 702-4	DIN 702-4	mm	mm	mm	mm	mm	mm	mm	mm	kg	min^{-1}	min^{-1}
80	eShop	eShop	16	16	44	44	57	57	56	3	1.5	5000	7000
100	eShop	eShop	20	20	50	50	67	67	70	3	2.8	4500	6300
125	eShop	eShop	32	35.5	56	59.5	76	79.5	95	4	5	4000	5500
160	eShop	eShop	42	42	64.5	68	96.5	100	125	4	10	3600	4600
200	eShop	eShop	55	55	75	78	104	107	160	4	17.5	3000	4000
250	eShop	eShop	76	76	85	89	119	123	200	5	29	2500	3500
315	eShop	eShop	103	103	94	97.2	137	140.2	260	5	50	2000	2800
Colour code for accessories													

Colour code: Röhm geared scroll chucks and jaws — HOLEX geared scroll chucks and jaws

Other lathe chucks



A wide variety of other chucks such as face plates, oversize geared scroll chucks or special chucks available on request from the Hoffmann Group.



With short taper mount

- Manual chucks with gear scroll, centrically clamping.
- Body made of cast iron or steel.
- Gear scroll drop-forged, balanced, and hardened.
- Flanks of scroll and of jaw serrations are ground.
- High concentricity.

Standard: **DIN 702-3.**

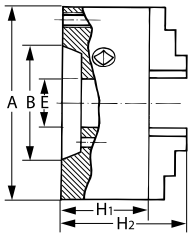
Application: **The chuck is always fitted to the spindle nose directly without an intermediate flange.**
For spindle noses DIN 55027 with **studs and collar nuts.**

Supplied with: Includes: 1 set = 3 hardened inside jaws, stepped on the outside.
1 set = 3 hardened outside jaws, stepped on the inside.
1 clamping wrench and fastening screws or studs depending on the chuck.

Optional extras: **Spare and additional jaws** No. 312971 – 312986.



Rear face DIN 702-3. 31 2931_200-6

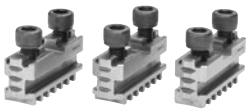


Outer ∅ A / taper	32W 31 2931 Three-jaw lathe chuck steel short taper mount DIN 702-3	Aperture E	Height without jaws H_1	Height with jaws H_2	Centring ∅ B	Weight	maximum speed
mm		mm	mm	mm	mm	kg	min^{-1}
160/5	eShop	42	68	100	82.5	9	4600
200/5	eShop	55	78	107	82.5	19	4000
200/6	eShop	55	78	107	106.4	19	4000
250/6	eShop	76	89	123	106.4	32	3500
Colour code for accessories							

Additional jaws



31 2971



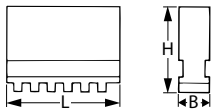
31 2976



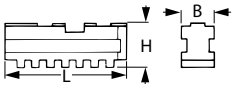
31 2981



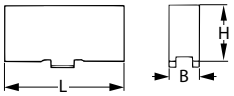
31 2986



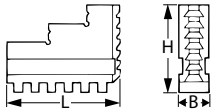
31 2971



31 2976



31 2981



31 2986

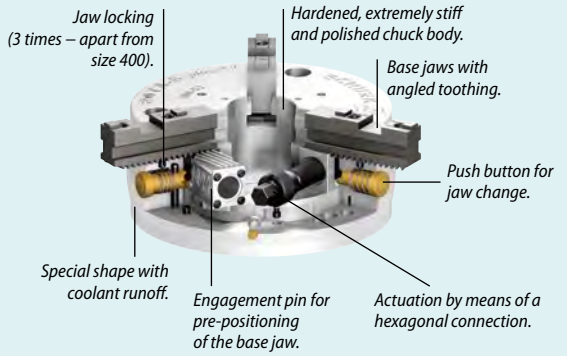
for chuck type		80	100	125	160	200	250	315	suitable for colour code
32W 31 2971	Scroll jaw set, 3 pieces, soft	eShop	eShop	eShop	eShop	eShop	eShop	eShop	
32W 31 2976	Base jaw set, 3 pieces, hardened	–	–	eShop	eShop	eShop	eShop	eShop	
32W 31 2981	Top jaw set, 3 pieces, soft	–	–	eShop	eShop	eShop	eShop	eShop	
32W 31 2986	Inside jaw set, 3 pieces, hardened	eShop	eShop	eShop	eShop	eShop	eShop	eShop	
L (31 2971, 31 2986)	mm	32	42	51	70	85	105	125	
L (31 2976)	mm	–	–	54	65	79	92	110	
L (31 2981)	mm	–	–	64	78	90	106	120	
B (31 2971, 31 2976, 31 2986)	mm	11	15	20	20	25	28	32	
B (31 2981)	mm	–	–	22	25	27	32	37	
H (31 2971, 31 2986)	mm	28	32	40	53	54	63	73	
H (31 2976)	mm	–	–	28	29	33	36	40	
H (31 2981)	mm	–	–	38.5	41.5	43.5	51.5	55	
Thread (31 2976)		–	–	M8	M10	M10	M12	M12	

Colour code: HOLEX geared scroll chucks and jaws

SCHUNK ROTA-S plus 2.0 self-centring three-jaw lathe chuck

- Maximum concentricity and jaw exchange repeatability.
- Long service life with very high precision.
- Modular protective sleeve system.
- Very short set-up times.
- Chuck body case-hardened up to 315 mm ∅.
- Large aperture (dimension E!).
- Safety peg for maximum operator safety.
- **Base jaws compatible with chucks of the "F" system and "Duro" system.**
- Flexible clamping of small and large components.
- High-precision clamping of very small internal ∅.
- Entirely made of steel, thus suitable for high speeds.

Available in different ISO / DIN connections!

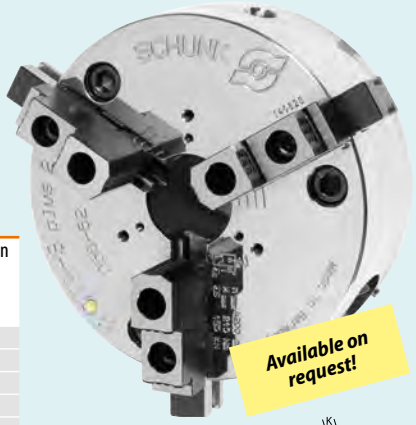


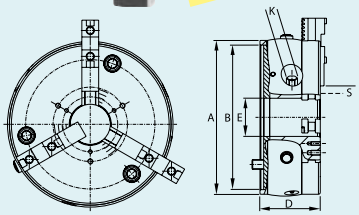


Protection against ingress of dirt thanks to self-centring system with wipers



Optimised lubrication system.





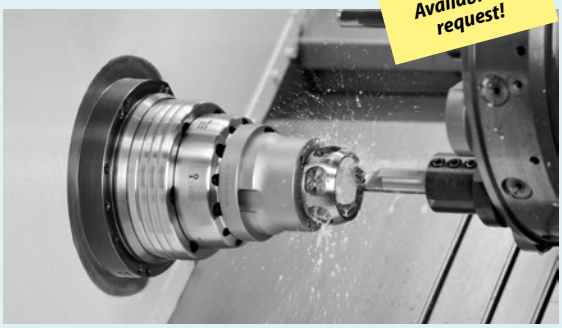
Technical data:

Designation	Maximum speed	Maximum clamping force	Maximum torque	Lifting surface	Pass-though hole in chuck
	rpm	kN	Nm	mm	mm
ROTA-S plus 2.0 160-42	5400	65	80	6,5	42
ROTA-S plus 2.0 160-42/2	5400	40	55	6,5	42
ROTA-S plus 2.0 200-52	4800	100	120	7	52
ROTA-S plus 2.0 200-52/2	4800	65	80	7	52
ROTA-S plus 2.0 250-62	4200	160	210	7,5	62
ROTA-S plus 2.0 250-62/2	4200	105	140	7,7	62
ROTA-S plus 2.0 315-92	3400	180	220	9,7	92
ROTA-S plus 2.0 315-92/2	3400	120	150	9,8	92
ROTA-S plus 400-102	2200	230	280	12	102
ROTA-S plus 500-162	1500	270	320	12	162
ROTA-S plus 630-252	1000	270	350	15	252
ROTA-S plus 800-252	1000	270	350	15	252
ROTA-S plus 1000-402	900	270	350	15	402

HAINBUCH Mandrels – modern clamping technology for internal clamping

Modern alternative to a jaw chuck or to conventional mandrels with slotted clamping sleeves for complete machining work in turning and milling applications.





Technical data:
- High concentricity
- High holding forces and stability
- Easy to set up
- Workpiece can be accessed from 5 sides

Different versions:
- with draw bolt or without draw bolt for clamping blind bores
- MANDO with round clamping geometry
- MANDO Adapt as mandrel adapter for the HAINBUCH SYSTEM
- MAXXOS with hexagonal clamping geometry
- MANDO G designed specifically for gear cutting
- Micro mandrel for the smallest clamping Ø



RÖHM DURO self-centring three-jaw chuck

- Maximum concentricity and changeover accuracy.
- **With jaw retention, centrically clamping.**
- **Large pass-through diameter.**
- Accuracy twice that specified by DIN 6386.
- High clamping force with low force exertion.
- **Higher speeds thanks to safety blocking slide.**
- Jaws can quickly and easily be reversed or exchanged.
- **Outer contour with drop-off wedge for water.**
- **Grease nipple for greasing all sliding faces.**

Material: **Entirely made of steel, fully surface-hardened.**

Advantage: Wherever extremely high clamping forces, high concentricity, and reliable continuous repeatability are required.

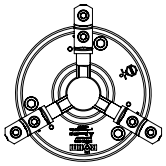
Supplied with: Includes: 1 set of jaws, 1 chuck key, 1 set fastening screws.

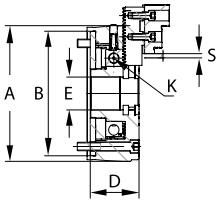


31 3110

With recessed mount

Application: For machine spindles with recessed centring mount or for mounting using a flange. Secured with screws from the front. The flange blanks must always be fitted first to the machine and then to the chuck.

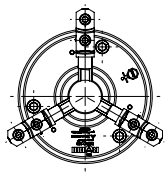


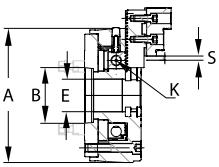


Type			160	200	250	315	Colour code for accessories
33R 31 3120	Self-centring lathe chuck **with base and hard top jaws**	**DIN 702-4**	(eShop)	eShop	eShop	(eShop)	
Clamping range with external hard top jaws		mm	5 – 161	7 – 207	8 – 253	12 – 323	
Clamping range with internal hard top jaws		mm	67 – 174	71 – 214	99 – 261	102 – 319	
Clamping stroke per jaw S		mm	6.2	6.8	8	10.2	
∅ A		mm	164	206	256	322	
Aperture E		mm	42	52	62	87	
Chuck height D		mm	63	81	92	111	
Centring ∅ B		mm	145	185	235	300	
Chuck key square socket K		mm	10	12	14	17	
Weight		kg	9.3	18.6	34.5	64	
maximum speed		min^{-1}	5400	4600	4200	3300	

With short taper mount

Application: For spindle noses DIN 702-3. With studs and collar nuts. The chuck is always fitted to the spindle nose directly without an intermediate flange.



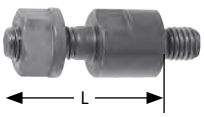


Type			160/5	200/6	250/6	250/8	315/8	Colour code for accessories
33R 31 3140	Self-centring lathe chuck **with base and hard top jaws**	**DIN 702-3**	eShop	(eShop)	eShop	(eShop)	(eShop)	
Clamping range with external hard top jaws		mm	5 – 161	7 – 207	8 – 253	8 – 253	12 – 323	
Clamping range with internal hard top jaws		mm	67 – 174	71 – 214	99 – 261	99 – 261	102 – 319	
Clamping stroke per jaw S		mm	6.2	6.8	8	8	10.2	
∅ A		mm	164	206	256	256	322	
Aperture E		mm	42	52	62	62	87	
Centring taper ∅ B		mm	82.563	106.375	106.375	139.719	139.719	
Number of studs					4			
Size of studs			M10	M12	M12	M16	M16	
Chuck key square socket K		mm	10	12	14	14	17	
Weight		kg	8.7	16.5	33	33	60	
maximum speed		min^{-1}	5400	4600	4200	4200	3300	

RÖHM Spare studs and collar nuts

Standard: DIN 55027; ISO 702-3.

Suitable for: All lathe chucks and spindle noses with short taper arbor according to DIN 702-3.



31 3050

for taper		4	5	6	8
33R 31 3050	Spare stud and collar nut	(eShop)	eShop	eShop	eShop
required quantity		3	4	4	4
Thread		M10	M10	M12	M16
Length L	mm	39	43	50	60

Colour code: Röhm self-centring chucks and jaws

Spare and additional jaws – self-centring chucks

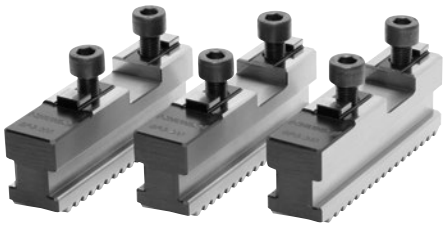
Application: As the jaws can be changed or adjusted to the required diameter **in just a few seconds,** it is useful to have several jaw sets on hand ready for use at the machine. **This minimises set-up times.** The jaw units consist for example of several sets of base jaws with soft top jaws, which can be machined out to the required diameters. This rationalisation method is not only necessary for NC machines but also important for every lathe type.

Base jaws hardened

Suitable for:

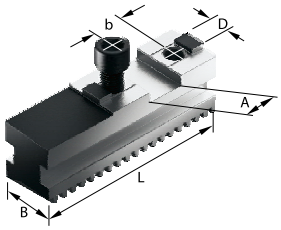
31 3200/3205 – Schunk self-centring chucks No. 313115; 313117; 313135; 313137, Röhm self-centring chucks Duro No. 313120; 313140 and other self-centring chuck systems.

Application: To accept hard or soft top jaws. Fastening screws for top jaws are supplied.



31 3205_200

for chuck type			160	200	250	315	400	suitable for colour code
33R **31 3200**	RÖHM	Base jaw set, 3 pieces, **angled serration**	eShop	eShop	eShop	eShop	eShop	
33T **31 3205**	SCHUNK		eShop	eShop	eShop	eShop	eShop	
33T **31 3207**	SCHUNK	Base jaw set, 3 pieces, **straight serration**	eShop	eShop	eShop	eShop	eShop	–
L (31 3200, 31 3205)		mm	74	90	110	125	160	
L (31 3207)		mm	65	85	104	115	125	
B (31 3200, 31 3205)		mm	20	22	26	32	45	
B (31 3207)		mm	20	22	26	32	32	
A (31 3200, 31 3205)		mm	18	20	20	26	30	
A (31 3207)		mm	18	20	20	20	26	
b (31 3200, 31 3205)		mm	32	40	40	54	60	
b (31 3207)		mm	32	40	40	40	54	
D (31 3200, 31 3205)		mm	8	10	12	12	18	
D (31 3207)		mm	8	10	12	12	12	
also suitable for chuck type (31 3205)		mm	–	–	–	–	500	



Hard top jaws

Suitable for: Schunk self-centring chucks No. 313115; 313117; 313135; 313137, Röhm self-centring chucks Duro No. 313120; 313140 and other self-centring chuck systems.

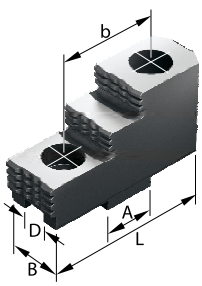
Application: For fitting to hardened base jaws. Applicable as reversible jaws in conjunction with the base jaws.

Note: ■ **Hard top and stepped jaws purchased subsequently must be ground internally in the chuck for concentricity and run-out.**



31 3210

for chuck type			160	200	250	315	400	suitable for colour code
33T **31 3210**	SCHUNK	Hardened top jaw set, 3 pieces	eShop	eShop	eShop	eShop	(eShop)	
33R **31 3250**	RÖHM		eShop	eShop	eShop	eShop	–	
L (31 3210)		mm	63	71.7	90	105	130	
L (31 3250)		mm	63	72	92	107	130	
B (31 3210)		mm	20	22	30	36	45	
B (31 3250)		mm	20	24	34	36	50	
D		mm	8	10	12	12	18	
b		mm	32	40	40	54	60	
A		mm	18	20	20	26	30	



Colour code: Röhm self-centring chucks and jaws Schunk self-centring chucks and jaws

Soft top jaws

31 3220 – Unstepped, for boring out to individual clamping ∅. **Precision milled** contact face, **burnished.**

31 3300 – **Ground** location faces, **burnished.**
Unstepped, for boring out to individual clamping ∅. **Precision milled** contact face, **not burnished.**

31 3315 – Unstepped, for boring out to individual clamping ∅. **Milled** location faces, **not burnished.**

Suitable for: Schunk self-centring chucks No. 313115; 313117; 313135; 313137, Röhm self-centring chucks Duro No. 313120; 313140 and other self-centring chuck systems.

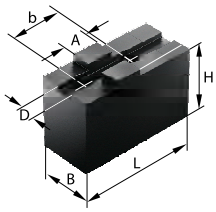
Material: Quality product made of 16MnCr5.

Application: For fitting to hardened base jaws. For clamping irregularly shaped or already machined components which have to be protected against damage. The jaws are machined according to the contours of the component.


31 3220

Note: Aluminium top jaws **on request.**
31 3315 – **Size 400 also suitable for chuck size 500.**

for chuck type		160	200	250	315	400	suitable for colour code
33T **31 3220**	SCHUNK	eShop	eShop	eShop	eShop	eShop	
33R **31 3300**	RÖHM Soft top jaw set, 3 pieces	eShop	eShop	eShop	eShop	eShop	
32R **31 3315**	HOLEX	eShop	eShop	eShop	eShop	eShop	
Length L	mm	85	105	125	145	180	
B (31 3220, 31 3315)	mm	20	22	30	35	50	
B (31 3300)	mm	20.3	22	30	34.3	50.5	
H (31 3220)	mm	36	43	50.5	54	73	
H (31 3300, 31 3315)	mm	36.5	40	50	50	73	
D	mm	8	10	12	12	18	
b	mm	32	40	40	54	60	
A	mm	18	20	20	26	30	
also suitable for chuck type (31 3220)	mm	–	–	–	–	500	



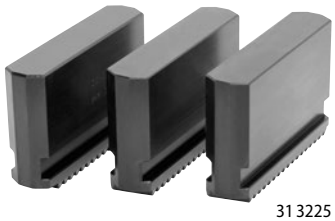
Soft monoblock jaws

Serrations hardened and ground.

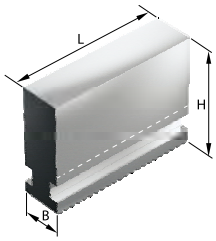
Suitable for: Schunk self-centring chucks No. 313115; 313117; 313135; 313137, Röhm self-centring chucks Duro No. 313120; 313140 and other self-centring chuck systems.

Material: C45, annealed

Note:
31 3227 – ■ **Hard top and stepped jaws purchased subsequently must be ground internally in the chuck for concentricity and run-out.**
■ **Please check the serrations when matching to lathe chucks.**


31 3225

for chuck type		160	200	250	315	400	suitable for colour code
33T **31 3225**	SCHUNK Soft monoblock jaw set, 3 pieces **angled serration**	eShop	eShop	eShop	eShop	(eShop)	
33T **31 3227**	Soft monoblock jaw set, 3 pieces **straight serration**	eShop	eShop	eShop	eShop	(eShop)	–
L (31 3225)	mm	79	94	115	140	176	
L (31 3227)	mm	65	84	99	121	148	
B (31 3225)	mm	20	22	26	32	45	
B (31 3227)	mm	20	22	26	32	32	
H (31 3225)	mm	45	60	70	81	93	
H (31 3227)	mm	55.5	65	84	90	100	



Claw jaws

Suitable for: Schunk self-centring chucks No. 313115; 313117; 313135; 313137, Röhm self-centring chucks Duro No. 313120; 313140 and other self-centring chuck systems.

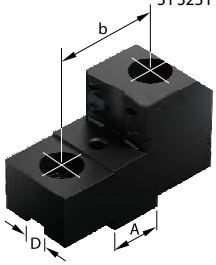
Material: Quality product made of 16MnCr5, hardened.

Application: For external clamping, ideally suited to clamping blanks.

Note: Example of clamping range of No. 313115 - 313137. Depth of the clamping step 25 mm.


31 3231

Type			1	2	3	4	D mm	b mm	A mm	suitable for colour code
33T **31 3231**	SCHUNK Claw jaws set, 3 pieces, for chucks	∅ 200 mm	eShop	eShop	–	eShop	10	40	20	
33T **31 3232**		∅ 250 mm	eShop	eShop	–	eShop	12	40	20	
33T **31 3233**		∅ 315 mm	eShop	–	eShop	–	12	54	26	
Clamping range (31 3231)		mm	34 – 99	64 – 175	–	144 – 210				
Clamping range (31 3232)		mm	31 – 101	78 – 234	–	186 – 267				
Clamping range (31 3233)		mm	44 – 211	–	119 – 320	–				



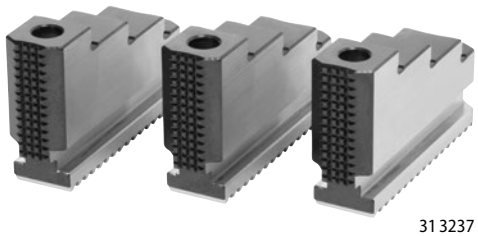
Colour code: Röhm self-centring chucks and jaws Schunk self-centring chucks and jaws

Stepped block jaws, hardened

Suitable for: Schunk self-centring chucks No. 313115; 313117; 313135; 313137, Röhm self-centring chucks Duro No. 313120; 313140 and other self-centring chuck systems.

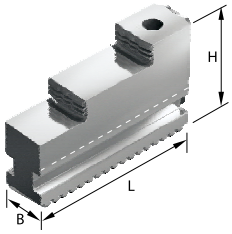
Application: For turning or drilling.

Note:
- **Hard top and stepped jaws purchased subsequently must be ground internally in the chuck for concentricity and run-out.**
- **Please check the serrations when matching to lathe chucks.**



31 3237

for chuck type			160	200	250	315	suitable for colour code
33T **31 3235**	SCHUNK	Stepped jaws set, 3 pieces, **angled serration**	eShop	eShop	eShop	eShop	
33T **31 3237**	SCHUNK	Stepped jaws set, 3 pieces, **straight serration**	(eShop)	eShop	eShop	eShop	–
Length L (31 3235)	mm		79	94	114	129	
Length L (31 3237)	mm		66.6	84.8	107.4	116.3	
B	mm		20	22	26	32	
H (31 3235)	mm		45	60	70	81	
H (31 3237)	mm		46	54	65	66	
Version			3-step	3-step	2-step	2-step	

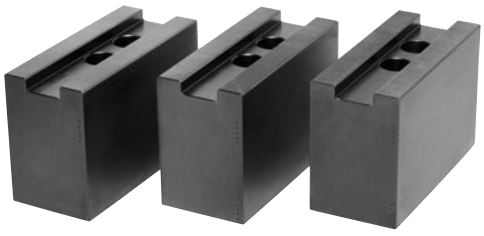


Clamping jaws with sharp serration 1/16 inch ×90°

Suitable for: **Heavy-duty chucks** from Schunk, Röhm and other heavy-duty chuck manufacturers.

Optional extras: T-nuts No. 313505 – 313605.

Note:
- **When fitting to a chuck, please check serrations, slot width (D), and hole spacing (a, b).**
- Aluminium top jaws **on request.**

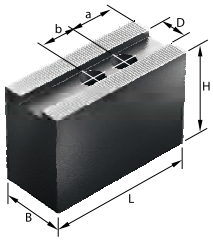


31 3415_210

Soft top jaws, standard, serration 90°

31 3400 – **Precision milled** slots and serrations, **burnished.**
31 3405 – **Precision milled** slots and serrations, **not burnished.**
Clamping jaws with sharp serrations 1/16 inch × 90°.
31 3415 – **Precision milled** slots and **precision ground** serrations, **burnished.**

Material: Quality product made of 16MnCr5.



for chuck type			160	165	200	210	250	400
33R **31 3400**	RÖHM	Top jaws set, 3 pieces	eShop	–	eShop	–	eShop	–
33T **31 3415**	SCHUNK		–	eShop	–	eShop	eShop	–
32R **31 3405**	HOLEX		eShop	–	eShop	–	eShop	eShop
Length L (31 3400, 31 3405)	mm		67	–	75	–	95	130
Length L (31 3415)	mm		–	70	–	90	120	–
B (31 3400, 31 3405)	mm		36	–	36	–	45	50
B (31 3415)	mm		–	40	–	40	50	–
H (31 3400, 31 3405)	mm		53	–	53	–	54	80
H (31 3415)	mm		–	60	–	60	80	–
a (31 3400, 31 3405)	mm		12	–	12	–	15	20
a (31 3415)	mm		–	15	–	25	30	–
b (31 3400, 31 3405)	mm		19	–	19	–	25	31
b (31 3415)	mm		–	22	–	22	28	–
D	mm		17	17	17	17	21	25.5
for thread DIN 912			M12	M12	M12	M12	M16	M20
also suitable for chuck type	mm		–	–	–	–	315	500/630

Colour code: Röhm self-centring chucks and jaws Schunk self-centring chucks and jaws

Soft top jaws, long, serration 90°

Bevelled for small clamping ∅.

31 3450 – **Precision milled** slots and serrations, **burnished.**

31 3455 – **Precision milled** slots and **precision ground** serrations, **burnished.**

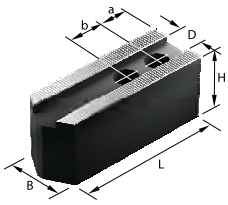
31 3475 – **Precision milled** slots and serrations, **not burnished.**

Clamping jaws with sharp serrations 1/16 inch × 90°.

Material: Quality product made of 16MnCr5.



31 3455_210



for chuck type		160	165	200	210	250	315
33R 31 3450	ROHM	(eShop)	–	eShop	–	eShop	eShop
33T 31 3455	SCHUNK Top jaws set, 3 pieces	–	eShop	–	eShop	eShop	eShop
32R 31 3475	HOLEX	eShop	–	eShop	–	eShop	–
Length L	mm	78	80	98	98	120	140
B	mm	35	35	35	35	50	50
H	mm	40	40	40	40	50	50
a	mm	15	15	15	15	20	30
b	mm	22	20	22	22	28	28
D	mm	17	14	17	17	21	21
for thread DIN 912		M12	M10	M12	M12	M16	M16

Hard stepped top jaws, serration 90°

Precision milled slots and **precision ground** serrations, **burnished.**
Hardened.

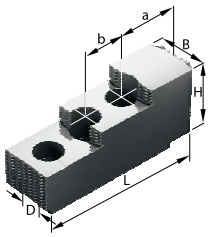
Material: Quality product made of 16MnCr5.

Application: For external and internal clamping.

Note: **Hard top and stepped jaws purchased subsequently must be ground internally in the chuck for concentricity and runout.**



31 3470_210



for chuck type		165	210	250	315
33T 31 3470	SCHUNK Stepped top jaws set, 3 pieces	eShop	eShop	eShop	(eShop)
L	mm	72.5	84.3	103.5	128
B	mm	40	40	50	50
H	mm	49	49	58	58
a	mm	18	28.7	34	46
b	mm	19	19	25	30
D	mm	17	17	21	21

Soft segment jaws, serration 90°

Precision milled slots and **precision ground** serrations, **burnished.**

Material:

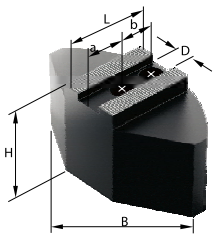
31 3435 – Quality product made of 16MnCr5.

31 3437 – Aluminium

Application: All-round low-distortion clamping.



31 3435_210

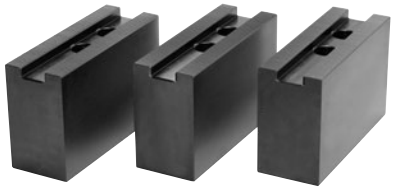


for chuck type		165	210	250	315
33T 31 3435	SCHUNK Segment jaws set, 3 pieces, **Steel**	eShop	eShop	eShop	(eShop)
33T 31 3437	Segment jaws set, 3 pieces, **Aluminium**	eShop	eShop	eShop	(eShop)
L (31 3435)	mm	59.5	69.5	80	110
L (31 3437)	mm	59.5	72.5	87.5	117
B	mm	120	140	180	240
H (31 3435)	mm	60	60	70	70
H (31 3437)	mm	58	58	78	78
a (31 3435)	mm	25	35	30	60
a (31 3437)	mm	22	35	40	70
b	mm	22	22	28	28
D	mm	17	17	21	21

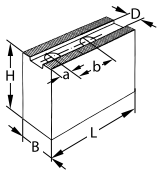
Soft top jaws with sharp serration 1.5 mm×60°

Suitable for: **Heavy-duty chucks** from Schunk, Röhm and other heavy-duty chuck manufacturers.
Optional extras: T-nuts No. 313505 – 313605.

Note:
- **When fitting to a chuck, please check serrations, slot width (D), and hole spacing (a, b).**
- Aluminium top jaws **on request.**



31 3715_210



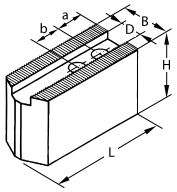
Soft top jaws, standard, serration 1.5×60°

31 3700 – **Precision milled** slots and serration, **burnished.**
31 3715 – **Precision milled** slots and **precision ground** serration, **burnished.**
31 3725 – **Precision milled** slots and serration, **not burnished.**
Material: Quality product made of 16MnCr5.

for chuck type		165	170	210	250	254	315	315/21	suitable for colour code
33R 31 3700	RÖHM	–	eShop	eShop	–	eShop	–	–	
33T 31 3715	SCHUNK Top jaws set, 3 pieces	eShop	–	eShop	eShop	–	eShop	eShop	
32R 31 3725	HOLEX	–	eShop	eShop	–	eShop	eShop	eShop	
Length L (31 3700, 31 3715)	mm	72	72	95	110	110	130	129	
Length L (31 3725)	mm	–	72	95	–	110	130	130	
B	mm	32	32	35	40	50	50	50	
H (31 3700, 31 3725)	mm	–	40	45	–	45	50	58	
H (31 3715)	mm	32	–	40	42	–	50	60	
a	mm	15	15	24	30	30	40	39	
b	mm	20	20	25	30	30	30	30	
D	mm	12	12	14	16	16	18	21	
for thread DIN 912		M10	M10	M12	M12	M12	M14	M16	

Soft top jaws, long, serration 1.5×60°

Bevelled for small clamping ∅.
31 3745 – **Precision milled** slots and serration, **not burnished.**
31 3750 – **Precision milled** slots and serration, **burnished.**
31 3755 – **Precision milled** slots and **precision ground** serrations, **burnished.**
Material: Quality product made of 16MnCr5.





31 3755_210

for chuck type		165	170	210	250	254	315	315/21	suitable for colour code
33R 31 3750	RÖHM	–	eShop	eShop	–	eShop	(eShop)	–	
33T 31 3755	SCHUNK Top jaws set, 3 pieces	eShop	–	eShop	eShop	–	eShop	eShop	
32R 31 3745	HOLEX	–	eShop	eShop	–	eShop	eShop	–	
Length L	mm	82	82	102	125	125	145	145	
B	mm	32	31	35	42	40	50	50	
H	mm	32	32	40	40	40	50	50	
a	mm	15	15	20	30	30	30	30	
b	mm	20	20	25	30	30	30	30	
D	mm	12	12	14	16	16	18	21	
for thread DIN 912		M10	M10	M12	M12	M12	M14	M16	

Soft segment jaws, serration 1.5 × 60°

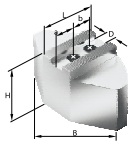
31 3737 – **Precision milled** slots and **precision ground** serrations.
31 3738 – **Precision milled** slots and **precision ground** serrations, **burnished.**
Material:
31 3738 – Quality product made of 16MnCr5.
Application: All-round low-distortion clamping.

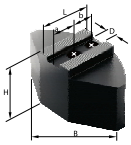


31 3737



31 3738





for chuck type		165	210	250	315	suitable for colour code
33T 31 3737	SCHUNK Segment jaws set, 3 pieces, **Aluminium**	eShop	eShop	eShop	(eShop)	
33T 31 3738	Segment jaws set, 3 pieces, **Steel**	eShop	eShop	eShop	(eShop)	
Length L (31 3737)	mm	59.5	72.5	87.5	117	
Length L (31 3738)	mm	60	70	80	117	
B	mm	120	140	180	240	
H (31 3737)	mm	58	80	80	78	
H (31 3738)	mm	50	80	80	70	
a (31 3737)	mm	25	35	40	45	
a (31 3738)	mm	25	30	30	45	
b	mm	20	25	30	30	
D	mm	12	14	16	21	

Colour code: Schunk heavy-duty chucks and jaws

Hard stepped top jaws, serration 1.5 × 60°

Precision milled slots and **precision ground** serration, **burnished.**
Hardened.

Material: Quality product made of 16MnCr5.

Application: For external and internal clamping.

Note: **Hard top and stepped jaws purchased subsequently must be ground internally in the chuck for concentricity and runout.**



31 3770_210

for chuck type		165	210	250	315	suitable for colour code
33T **31 3770**	SCHUNK Stepped top jaws set, 3 pieces	eShop	eShop	eShop	(eShop)	
Length L	mm	67	87	101.5	104	
B	mm	28	35	40	50	
H	mm	36	51	54	52	
a	mm	14	15.5	25.5	20	
b	mm	20	25	30	30	
D	mm	12	14	16	21	
for thread DIN 912		–	–	–	M16	

Fastening screws for hard and soft top jaws

for chuck type		160/200	250	315	suitable for colour code
33R **31 3420**	Fastening screw for hard and soft top jaws	eShop	eShop	eShop	
Thread		M8x1	M12×1.5	M12×1.5	
Length	mm	20	30	35	



31 3420

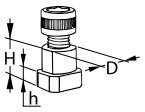
T-nuts

Precision ground, quenched, and tempered.

Suitable for: All **popular heavy-duty chucks manufactured by** Schunk, Forkardt, Röhm, and SMW (with sharp serration).

Supplied with: Socket head screws DIN 912 - 12.9!

Note: Other T-nuts available ex works.





31 3505_17

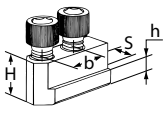
Slot width D	mm	17	21	25,5	Suitable for:
33T **31 3505**	SCHUNK	eShop	–	–	Forkardt: NH 160-200, NHF 160-200 Schunk: TH/THF 165-210, HSL 165-210 SMW: HFKS 160-200, HFK 160-200
33R **31 3520**	RÖHM	eShop	–	–	Röhm: KFD 160-200
33T **31 3555**	SCHUNK T-nut annealed	–	eShop	–	Forkardt: NH 250-315, NHF 250-315 Schunk: TH/THF 250-315, HSL 250-315 SMW: HFKS 250-315, HFK 250-315
33R **31 3570**	RÖHM	–	eShop	–	Röhm: KFD 250-315, KFH 250-315
33T **31 3605**	SCHUNK	–	–	eShop	Forkardt: NH 400-500; NHF 400-500 Schunk: TH/THF 380-500, HSL 400 SMW: HFKS 400, HFK 400-500
maximum tightening torque	Nm	70	150	220	
Thread G		M12	M16	M20	
H (31 3505, 31 3555, 31 3605)	mm	23	27	29	
H (31 3520, 31 3570)	mm	21.7	25.5	–	
h (31 3505, 31 3555, 31 3605)	mm	9	11.5	11	
h (31 3520, 31 3570)	mm	9.5	11	–	

SCHUNK T-nuts suitable for Schunk and Röhm chucks

Precision ground, quenched, and tempered.

Supplied with: Socket head screws DIN 912 - 12.9!

Note: Other T-nuts available ex works.





31 3805_18

Slot width S	mm	12	14	16	18	21
33T **31 3805**	T-nut annealed	eShop	eShop	eShop	eShop	eShop
maximum tightening torque	Nm	50	70	70	130	150
Thread G		M10	M12	M12	M14	M16
b	mm	20	25	30	30	30
S	mm	12	14	16	18	21
H	mm	18.5	20.5	21.5	33.5	28
h	mm	7.5	8.5	8.5	13.5	11.5
suitable for Röhm KFD-HE		170	210	254	315	315 / 21

Colour code: Schunk heavy-duty chucks and jaws; Schunk self-centring chucks and jaws; Röhm self-centring chucks and jaws

SCHUNK Claw jaws for chucks / accessories

Hardened clamping jaws. For external clamping of blanks, with serration 1.5×60°.

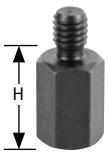
Note: Suitable for BISON – 2405K; Kitagawa B 200 / BA / HOB / NL / N / NA; Matsumoto H / HA / ZA.



31 3953

Type			1	2	3	4	5
33T 31 3953	Claw jaws set, 3 pieces, for chucks	Ø 200 mm	eShop	eShop	eShop	eShop	eShop
33T 31 3955		Ø 250 mm	eShop	eShop	eShop	eShop	eShop
Clamping range (31 3953)		mm	35 – 63	62 – 90	92 – 121	122 – 151	144 – 173
Clamping range (31 3955)		mm	43 – 81	84 – 123	128 – 167	173 – 212	202 – 260
Slot width n (31 3953)		mm	14				
Slot width n (31 3955)		mm	16				

Height H		mm	5	10	15	20	25	Thread M	Width across flats mm
33T 31 3981	Mounting bolt M6 (piece)		eShop	eShop	eShop	eShop	–	M6	10
33T 31 3983	Mounting bolt M8 (piece)		eShop	eShop	eShop	eShop	eShop	M8	14



31 3981

Garant Magnetic workpiece backstop - for lathe chuck

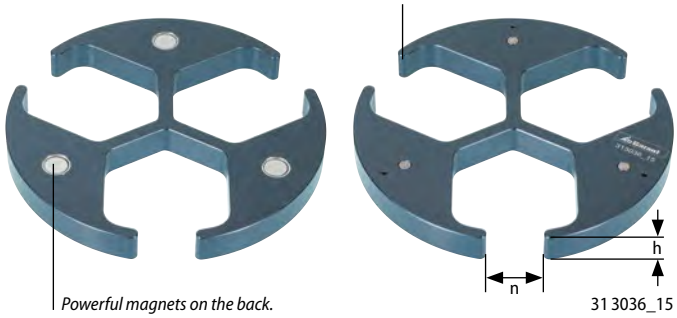
Stop with 3 magnets at the rear. Steel blue anodised.

Suitable for: Three-jaw lathe chucks with jaw width up to 55 mm.

Application:
- For clamping short components.
- For component Ø 15-150 mm.
- Flexible extension of the height by attaching the magnetic height elements No. 313037 5.

Height h		mm	15
31W 31 3036	Workpiece back-stop, base module		eShop
n		mm	25
Material			Aluminium

By milling off the ribs up to jaw width (see dimension n) 55 mm can be achieved.



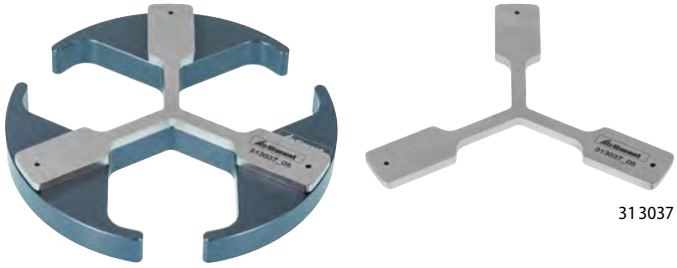
Powerful magnets on the back.

31 3036_15

Height element

- Centrifugal force protection (positive locking).
- Magnetic attraction by means of 3 magnets.

Height h		mm	5
31W 31 3037	Height element, star support		eShop
Material			Steel



31 3037

Base module with height element.

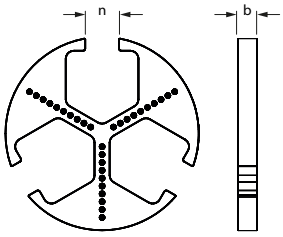
HOLEX Magnetic workpiece backstop - for lathe chuck

31 3033 – Stop with 3 magnets at the rear. Red anodised.
31 3034 – 9 replacement studs.

Suitable for:
31 3033 – Three-jaw lathe chucks with jaw width up to 55 mm.
31 3034 – Workpiece back-stop No. 313033 15.

Application:
31 3033 –
- For clamping short components.
- For component Ø 15-150 mm.
- Flexible extension of the height by screwing in the height elements supplied.

Supplied with:
31 3033 – 9-piece height support set No. 313034 9.
Contents: 3×10 mm, 3×15 mm and 3×20 mm.

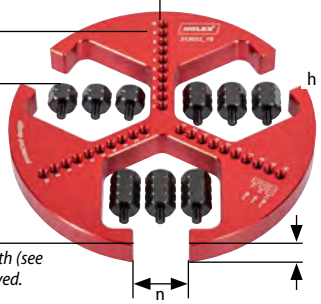


M5 thread for positioning the height elements.

Numbered 1–10 as an aid to positioning.

9-piece height support set with M5 thread and height orientation notch.

By milling off the ribs up to jaw width (see dimensions n) 55 mm can be achieved.



31 3033

Height h		mm	15
31V 31 3033	Workpiece backstop		eShop
n		mm	25
Material			Aluminium

Number of pins		9
31V 31 3034	Stud set	eShop

Clamping devices: Grease regularly

Why?

Regular lubrication maintains the clamping force and ensures reliable operation of the lathe chuck. Reduction in maintenance and repair costs.

Risks!

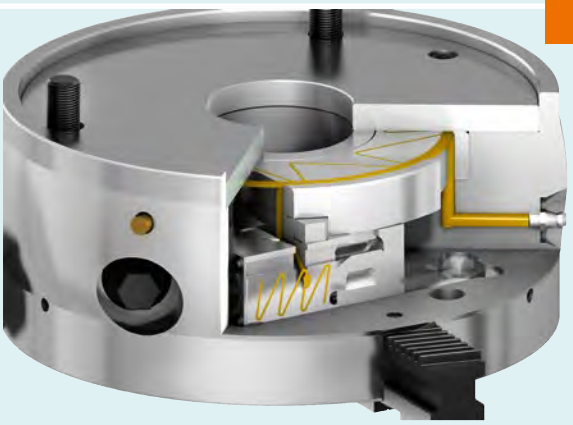
- Clamping force is up to 50% less when the chuck is dry.
- The workpiece may fly out whilst being machined.

What must be complied with?

- Maintenance and lubrication intervals specified by the chuck manufacturer (to DIN EN 1550) must be strictly complied with.
  This instruction can be found in the instruction manuals.
- Ensure equal distribution of the lubricant to avoid imbalances.

Manufacturers recommend:

Linomax:	Particularly suitable for manual chucks
Linomax 200:	Particularly suitable for heavy-duty chucks
F 80:	Suitable for manual chucks and heavy-duty chucks



Central lubrication system of a ROTA S Plus 2.0



For delivery exclusively within Germany!

LINOMAX plus 500 g cartridge

Chuck jaws finder – Powered by Schunk and the Hoffmann Group

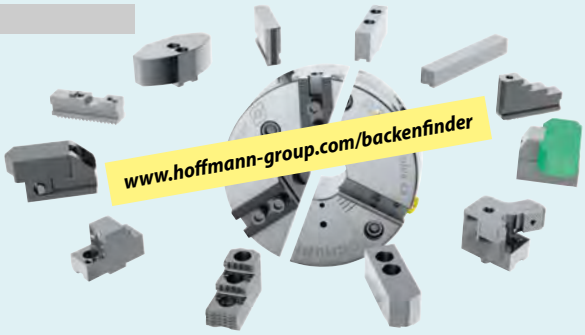
Easily find the right jaws.

SCHUNK offers the largest range of standard chuck jaws in the world.
With just 4 clicks here you can choose the right jaws from more than **1200 standard jaws**.

Large selection of jaws for geared scroll chucks, self-centring chucks or heavy-duty chucks from a wide range of manufacturers.

Chucks range

- Schunk
- Kitagawa
- Berg
- Forkard
- Howa
- Röhm
- Samchully
- SMW



Jaws ranges

- Base jaws
- Top jaws
- Stepped jaws
- Lathe jaws
- Stepped jaws
- Reversible jaws
- Claw jaws
- Segment jaws
- and much more

Quickly and easily find the right jaws for your lathe chuck.
Just 4 steps take you to the right jaw, using our online Jaws Pilot.

www.hoffmann-group.com/backenfinder

Select

1. Chuck manufacturer
2. Chuck type
3. Chuck size
4. Chuck details



Chucks range

- Huge selection of standard clamping jaws for many manufacturers and chuck types.
- Quick and easy.
- No incorrect ordering.
- Mostly available ex stock.

Take advantage of the Hoffmann Group Jaws Pilot and send us a request for a quote without obligation.

SCHUNK Lubricating grease LINOMAX plus

Partially synthetic high-performance grease for regular lubrication of manual chucks and heavy-duty chucks. High bonding capability and water resistance permit constant clamping forces with regular application. The special grease adheres even in the event of rotation in the lathe chuck.

Supplied with: 500 g grease cartridge.

Note:	**Note the dimensions of the grease gun!** Cartridge dimensions: Ø 55 mm × 237 mm.

Available exclusively in the following countries: DE, ESP, PT, FR, IT, CZ



31 3190

Weight		g	500
30N	**31 3190**	Lubricating grease LINOMAX plus	–

BISON Combination four-jaw lathe chucks – with individual and centric jaw adjustment

Standard:

31 5635 – **DIN 702-4.**

31 5645 – **DIN 702-3.**

Material: Cast iron

Application: Combined clamping option due to two different jaw adjustments:
a) Self-centring adjustment of the base jaws (geared scroll);
b) Individual adjustment of top jaws.
This allows irregularly shaped components to be clamped as if to a face plate. The gear scroll for jaw adjustment is **through-hardened,** the flanks of the scroll and of the bottom jaw teeth are **ground on both sides.**

31 5635 – **With cylindrical centring mount to DIN 702-4**. The chuck is fitted to a flange from the rear by means of screws and this flange is then mounted on to the lathe spindle.

31 5645 – **With short taper mount to DIN 702-3** with studs and collar nuts for spindle noses to DIN 55027. (DIN 55027 and international standard ISO 702/III are identical to DIN 55022 (old standard)). The chuck is fitted to the spindle nose directly, without an intermediate adaptor.

Supplied with:

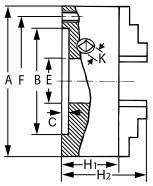
1 set = 4 hardened base jaws,
1 set = 4 hardened reversible jaws (internally and externally applicable)
1 chuck key,



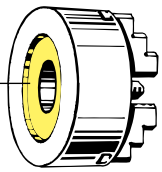
Individual adjustment
of the combined jaws.

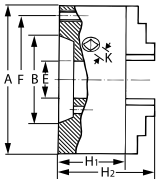
Self-centring adjustment
of the jaws.



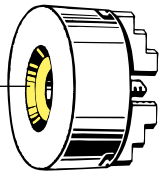


Recessed mount
to DIN 702-4
(fastening screw)





short taper mount
to DIN 702-3
(stud and collar nut)



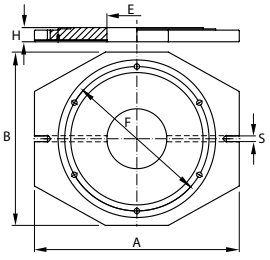
Outer Ø A / taper	36B 31 5635	36B 31 5645	Aperture E	Height without jaws H_1	Height with jaws H_2	Pitch circle diameter F	Number of studs	Size of studs	Centring Ø B	Centring taper B	Centring depth C	Chuck key square K	Weight
	Combination four-jaw lathe chucks												
	recessed mount	short taper mount											
mm	DIN 702-4	DIN 702-3	mm	mm	mm	mm			mm	mm	mm	mm	kg
125	eShop	–	38	75	95	108	–	–	95	–	4	9	6
160	eShop	–	42	84	116	140	–	–	125	–	4	11	11
200	eShop	–	55	96	127	176	–	–	160	–	5	11	19
200/5	–	(eShop)	55	112	143	104.8	4	M10	–	82.575	–	11	19
200/6	–	(eShop)	55	112	143	133.4	4	M10	–	106.39	–	11	19
250	eShop	–	76	102	135	224	–	–	200	–	6	14	31

BISON Base plates

Swivel base with longitudinal tenon slot for fast and exact alignment of the vice. Clamping slots for easy fitting to the machine table.

Application: For attachment of lathe chucks with recessed mount to DIN 6350.

Supplied with: T-nuts, fastening screws.





31 3910

for chuck type	36B 31 3910	Length A	Width B	Height H	Slot width S	Pitch circle diameter F	Aperture E	Total weight
	Base plate							
mm		mm	mm	mm	mm	mm	mm	kg
160	eShop	250	190	28	14	140	90	4.8
200	eShop	300	234	32	18	176	130	7.5
250	eShop	354	292	32	18	224	147	11.5

RotoRi jaw turning out ring set with RotoFix premium bolts

The special patented design of the turning out rings with **curved segments** permits stepless adjustment of the jaws to achieve the required diameter. The patented flexible RotoFix clamping bolts in the set make it possible to compensate for the large counter-bore tolerances in the clamps of different manufacturers by means of a 2-mm adjustment range. No reworking of screw counterbores is necessary.

Application: The rings made from high-strength special steel allow soft clamping jaws to be bored precisely under clamping pressure or hard clamping jaws to be ground. Can be used on internal or external machining of the jaws.

Supplied with: Sheet metal stand, RotoFix premium bolts and RotoFix rings.

Size S – 20 rings and 3 bolts each M8 / M10.

Size LX – 29 rings and 3 bolts each M10 / M12 / M16.

Size XL – 10 rings and 3 bolts each M16 / M20.

Note: On request also available for 4 and 6-jaw chucks.



Suitable for 3-jaw, manual chucks or heavy-duty chucks!

Type		S
30N 31 5910	RotoRi jaw turning out ring set	eShop
Internal clamping ∅	mm	25 – 121
External clamping ∅	mm	39 – 153
suitable for chuck dia.	mm	80 – 200
suitable for counterbore for outside jaws		M8; M10



31 5910_S

Type		LX
30N 31 5910	RotoRi jaw turning out ring set	eShop
Internal clamping ∅	mm	25 – 213
External clamping ∅	mm	39 – 249
suitable for chuck dia.	mm	80 – 315
suitable for counterbore for outside jaws		M10; M12; M16



31 5910_LX

Type		XL
30N 31 5910	RotoRi jaw turning out ring set	eShop
Internal clamping ∅	mm	195 – 315
External clamping ∅	mm	249 – 369
suitable for chuck dia.	mm	315 – 630
suitable for counterbore for outside jaws		M16; M20



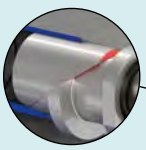
31 5910_XL

Operation of RotoFix premium bolts and clamping options

1. RotoFix clamping bolt is open. RotoFix clamping bolt is used in the screw countersink up to the shoulder.

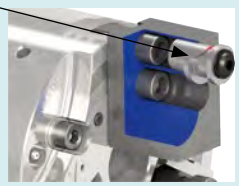


2. Rotating the screw adapts the diameter of the RotoFix clamping bolt to the countersink.





3. The RotoFix clamping bolt is now fixed in the bore and the RotoRi ring can be used in the mounting groove of the bolt.



External clamping with RotoFix



Internal clamping with RotoFix



External clamping with ROTORI



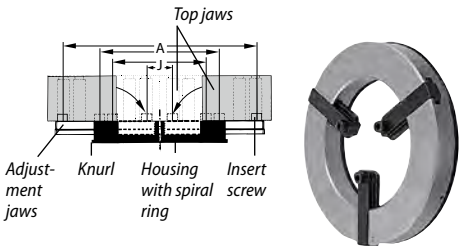
Internal clamping with ROTORI



Jaw cutting attachment – for three-jaw chucks

Within the body is a **drop-forged gear scroll**, which is rotated via a knurl ring on the periphery of the body. This gear scroll moves 3 **reversible** adjustment jaws steplessly inwards or outwards. For turning, the clamping screws of the adjustment jaws are positioned in the bore of the lathe chuck top jaws and the chuck is tightened. **During turning the chuck is in the same condition (preloaded) as for the subsequent workpiece machining.**

Application: For precision machining **internal and external diameters of soft top jaws** on lathe chucks. **Also suitable for external and internal re-grinding** of hardened top jaws to **correct radial runout.**



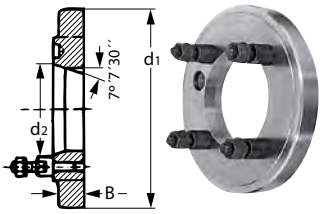
Outer / inner ∅	mm	153/110	176/110	215/135	244/162	290/208	342/260
38L 31 5900	Jaw cutting attachment	eShop	eShop	eShop	eShop	(eShop)	(eShop)
Insert area ∅ position J	mm	50 – 115	35 – 125	70 – 140	100 – 175	145 – 215	160 – 270
Insert area ∅ position A	mm	150 – 215	170 – 260	215 – 285	240 – 360	290 – 360	330 – 440
Weight	kg	1.5	3.5	5	6	7	8
suitable for chucks up to ∅	mm	250	200	250	250	315	400
suitable for chuck dia.	mm	80 – 200	–	–	–	–	–

Short taper adapters

Finish machined on all sides.

Material: C45 steel

Application: **For retrofitting** to lathe chucks with recessed mount to DIN 6350 A. **Lathe chucks with incorporated short tapers are preferable due to shorter overhang.**
For spindle noses **DIN 55027** and ISO 702/III (equals the old standard **DIN 55022**) with studs and collar nuts.



∅ d_1 / taper	mm	160/5	200/5	200/6	250/6	250/8	315/6	315/8	400/11
33R 31 7500	Short taper chuck flange DIN 55027	eShop	(eShop)	eShop	eShop	eShop	(eShop)	(eShop)	eShop
Taper ∅ d_2	mm	82.575	82.575	106.39	106.39	139.735	106.39	139.735	196.885
Thickness B	mm	21	21	23	23	26	26	26	31
Number of studs		4	4	4	4	4	4	4	6

Spare chuck key

31 7810 – **With spring-mounted sleeve** to prevent the key being inadvertently left in the chuck.

Application: For chucks No. 310100 – 312700.

Note: For chuck size 74, see hexagon key No. 626000.



for chuck ∅	mm	80	100	125	160	200	250	315	350	400
33R 31 7800	Standard chuck key	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)
33R 31 7810	Safety chuck key **sprung, with ejector.**	–	(eShop)	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)
Square	mm	6	8	9	10	11	12	14	14	17
also suitable for chuck ∅	mm	–	–	140	–	–	–	–	–	–

Length stop for lathes (hollow spindle stop)

Function: Twisting the clamping stud tightens the 4 integral jaws against the inner wall.

Application: Optimum aid for axial locking to any point on the hollow spindle.

Supplied with: Including special wrench for the clamping pin.

Note: Not suitable for automatic chucks with a clamping tube.



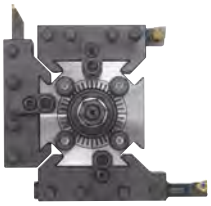
Type		1	2	3	4	5	6	7	8	9	10	11
32Z 31 3145	Length stop for lathe	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
for spindle ∅	mm	20 – 23	23 – 27	27 – 31	31 – 39	39 – 47	47 – 57	57 – 65	65 – 78	78 – 94	94 – 110	110 – 130
Length of clamping wrench	mm	600	600	600	600	600	750	750	750	750	750	750

Quick-change toolholders and clamping sleeves




WD universal


WDR / WD combined


WDR external turning


WDL internal machining

Quick-change toolholder

Type			1/12	1/20	2/25	3/32	3/40	4/40	4/50
33P 31 6120	PARAT	WD quick-change holder **Universal**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
33P 31 6140	PARAT	WDL quick-change holder **Internal machining**	(eShop)	(eShop)	eShop	eShop	eShop	(eShop)	(eShop)
33P 31 6160	PARAT	WDR quick-change holder **External machining**	(eShop)	(eShop)	eShop	eShop	eShop	(eShop)	(eShop)
33P 31 6180	PARAT	WDPL quick-change holder **for round lathe tools**	eShop	–	eShop	eShop	–	(eShop)	–

Type / Internal ∅ R	mm		1/30	2/40	3/40	3/50	4/60
33P 31 6200		PARAT	WB quick-change holder **internal machining**	(eShop)	eShop	eShop	eShop	(eShop)


31 6120 WD


31 6140 WDL


31 6160 WDR


31 6180 WDPL


31 6200 WB


31 6220 WBW

Clamping sleeves

Application: For use with quick-change toolholder WB.
For holding tools with **MT shank.**

Type			2/3	2/4	3/3	3/4	4/4	4/5
33P 31 6240	PARAT	Clamping sleeve **For MT shank**	eShop	eShop	eShop	eShop	(eShop)	(eShop)
Suitable for No. 316200			2/40; 3/40	2/40; 3/40	3/50	3/50	4/60	4/60
L		mm	112	135	112	135	138	138
∅		mm	40	40	50	50	60	60
Suitable for Morse taper			MK3	MK4	MK3	MK4	MK4	MK5

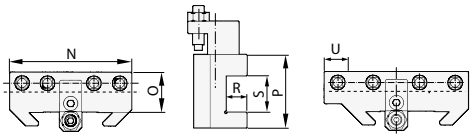

31 6240

Application: For holding tools with **plain shank.**

Note: **Please specify required clamping ∅ with order.**

Type / Clamping ∅	mm		1/8	2/10	3/20	4/25
33E 31 6260	EWS Tool Technologies	Clamping sleeve **for plain shank**	(eShop)	(eShop)	(eShop)	(eShop)
specify required clamping ∅	mm		8; 10; 12; 15; 16; 20; 25	10; 12; 15; 16; 20; 25; 32	20; 25; 32; 40	25; 32; 40; 50
Suitable for No. 316200			1/30	2/40; 3/40	3/50	4/60
L		mm	50	78	88	88
∅		mm	30	40	50	60
Collar thickness		mm	4			


31 6260



Type	Size	N	O	P	R	S	U	kg
WD	1/12	84	24	47	14	22	–	0.7
WDL/WDR	1/12	100	24	47	14	22	16	0.8
WD	1/20	84	33	52	20	22	–	0.8
WDL/WDR	1/20	100	33	52	20	22	16	0.9
WDPL	1/12	100	28	47	16	22	16	0.9
WB/WBW	1/30	84	39	47	∅ 30	–	–	0.8
WD	2/25	110	36	66	19	33	–	1.9
WDL/WDR	2/25	130	36	66	19	33	20	2.1
WDPL	2/25	130	51	62	31	33	20	2.3
WB/WBW	2/40	110	51	63	∅ 40	–	–	1.8

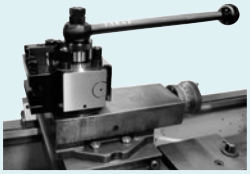
Type	Size	N	O	P	R	S	U	kg
WD	3/32	140	44	76	25	33	–	3.0
WDL/WDR	3/32	165	44	76	25	33	25	3.4
WDPL	3/32	165	53	66	∅ 31	33	25	3.6
WD	3/40	140	44	76	25	43	–	3.1
WDL/WDR	3/40	165	44	76	25	43	–	3.4
WB/WBW	3/40	140	53	76	∅ 40	–	–	2.7
WB/WBW	3/50	140	60	76	∅ 50	–	–	3.5
WD	4/40	160	53	96	30	44	–	5.0
WDL/WDR	4/40	190	53	96	30	44	30	5.8
WDPL	4/40	190	63	96	40	52	30	6.5
WD	4/50	160	63	96	40	54	–	5.5
WDL/WDR	4/50	190	63	96	40	54	30	6.0
WB/WBW	4/60	160	77	94	∅ 60	–	–	6.0

4-way turrets (RD) available on request


PSC on request.



Assembly service on bracket or top support available for sizes RD1 – RD5.

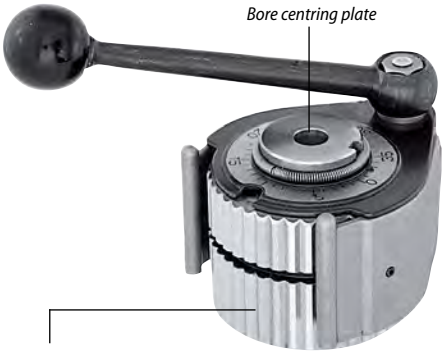


AXA Quick-change toolholders

Quick-change lathe tool post with eccentric clamping

Application: Place the lathe tool post with its surface-ground face on to the cross slide in a horizontal position and clamp it. To do this, the bore of the centring plate must have been turned beforehand. Alignment is performed with the boring bar and boring bar holder clamped in position, aligned at right angles to the face plate. Then adjust the pointer to the zero mark of the cover disc and tighten the T-bolt securely. For precision lathe work or heavy roughing cuts, it is advisable to secure the post with two dowel pins. The holes are pre-drilled.

Supplied with: 1 eccentric lever for No. 318000, 1 tool post key for No. 318100; 318200.



31 8000

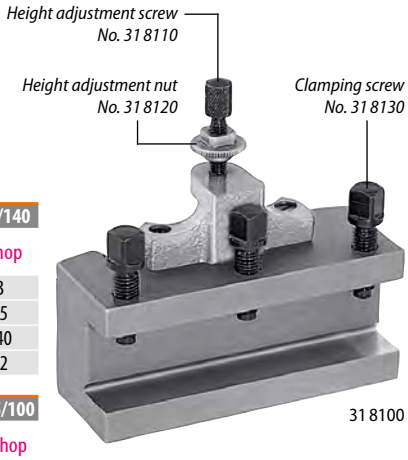
Type		AA	A	B	C	E
36A 31 8000	Quick-change lathe tool post	eShop	eShop	eShop	eShop	eShop
maximum drive power of lathe	kW	1.104	1.472	5.888	11.04	5
maximum cross slide width SB	mm	80	100	150	180	120
maximum turning tool height h	mm	12	20	32	45	25
Bore ∅ of the head	mm	13	20	32	40	20
Bore ∅ of the centering plate	mm	10	10	16	16	10
Width	mm	70	100	150	200	137
Height	mm	37	54	75	105	66
maximum reach A	mm	30	48	71	100	69

Version and further applications can be found in the table on page 1044

Quick-change turning toolholder

With flat tool base. Equipped with locking height adjustment screw and 3 tool clamping screws.

Note: When ordering spare parts No. 318110 – 318130 please state the spare part number and the size of the quick-change lathe tool post A, B C or E.



31 8100

Type		AA12/50	A16/75	A16/90	A20/75	A20/90	B25/120	B25/140
36A 31 8100	Quick-change turning toolholder	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Suitable for No. 318000		AA	A	A	A	A	B	B
Height of the toolholder	mm	12	16	16	20	20	25	25
Length	mm	50	75	90	75	90	120	140
Thickness of tool support W	mm	6	8.75	8.75	10	10	12	12

Type		B32/120	B32/140	C32/150	C32/170	C40/150	C40/170	E20/100	E25/100
36A 31 8100	Quick-change turning toolholder	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Suitable for No. 318000		B	B	C	C	C	C	E	E
Height of the toolholder	mm	32	32	32	32	40	40	20	25
Length	mm	120	140	150	170	150	170	100	100
Thickness of tool support W	mm	14	14	17	17	17	18	10	12

Quick-change boring bar holder with prism

Application: For holding boring bars and other tools with a cylindrical shank. Equipped with locking height adjustment screw and 3 tool clamping screws.



31 8200

Type		AA	A	B	C40	C50	E
36A 31 8200	Quick-change boring bar holder	eShop	eShop	eShop	eShop	eShop	eShop
Suitable for No. 318000		AA	A	B	C	C	E
for boring bar ∅	mm	12	20	32	40	50	20
Length	mm	50	85	130	160	160	100

Vee block base

Application: For boring bar holder No. 318200 size B. For holding small boring bars and boring heads.



31 8210

36A 31 8210	Vee block base	eShop
Suitable for No. 318200		B
Length	mm	130

Quick-change toolholder with plain bore

Equipped with locking height adjustment screw and 2 clamping screws.

Application: For mounting Morse taper sleeves No. 318400.

Type		A	B	C40	C50	E
36A 31 8300	Quick-change toolholder with plain bore	eShop	eShop	eShop	eShop	eShop
Suitable for No. 318000		A	B	C	C	E
Bore ∅	mm	30	40	40	50	40
Length	mm	80	120	160	160	100



31 8300

Morse taper sleeves

Morse taper sleeve with release screw for quick-change toolholder No. 318300. The sleeve is cylindrical on the outside.

Application: For tools with Morse taper shank (e.g. drills, countersinks, reamers etc.).

Type		A1	A2	B3	B4	C3	C4
36A 31 8400	MT sleeve for quick-change toolholder	(eShop)	eShop	eShop	eShop	eShop	eShop
Suitable for No. 318300		A	A	B; C40	B; C40	C50	C50
Shank MT		1	2	3	4	3	4
External ∅	mm	30	30	40	40	50	50

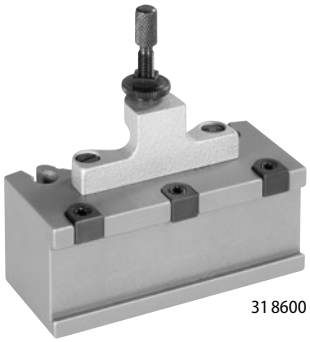


31 8400

Quick-change parting-off toolholder

Rigid toolholder for parting-off tools.
The parting-off tool projection is especially short and non-vibrating, and the side of the tool is flush with the toolholder.

Type		A	B
36A 31 8600	Quick-change parting-off toolholder without tool	eShop	eShop
Suitable for No. 318000		A	B
suitable for blade height	mm	26	32

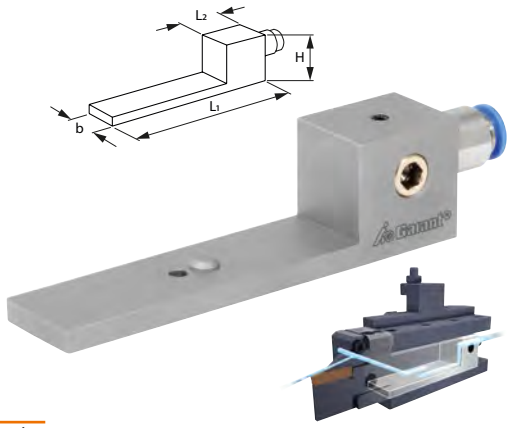


31 8600

Garant Eco retrofit kit for square toolholder

- For coolant transfer to Eco system screw-on toolholders and grooving toolholders.
- **Suitable for AXA quick-change lathe toolholder no. 318100 and PARAT change toolholders no. 316120 – 316160.**
- The coolant feed is performed via a hose coupling from the left, right or rear.

Supplied with: Includes a screw plug and quick-change coupling (G 1/8 inch) for connection of a hose with external ∅ 6 mm. Coupling length 17.4 mm.



Shank width b	31V 31 7900	for shank height H_1	Overall length L_1	Length L_2	Overall height H
mm	Eco retrofit kit	mm	mm	mm	mm
16	eShop	16	79	25	20
20	eShop	20	94	25	25
25	eShop	25	109	25	32



31 7900

Garant Eco shim

Shim made from heat treatable steel, hardened. Insert height ± 0.05 mm for precise mounting of the clamping toolholder. With side markings with regard to the coolant transfer.

Application: For use of Eco screw-on toolholders with shank dimension 20 mm, also VDI40 and VDI50 holders.

Type		25/20
31V 31 7903	Eco shim	eShop
Length	mm	85
Width	mm	22
Height	mm	5

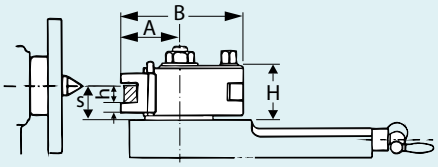


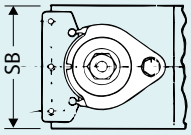
31 7903

Quick-change lathe toolholders

Size determination for tool post No. 31 8000 and turning toolholder No. 318100.

1. Cross slide width SB.
   The length L of the turning toolholder No. 31 8100 should be about equal to the cross slide width SB.
2. Minimum cutting edge height S when using turning tool height h.





Example for size determination:

Existing: Cross slide width "SB" = 145 mm
height of cutting edge "S" = 33 mm

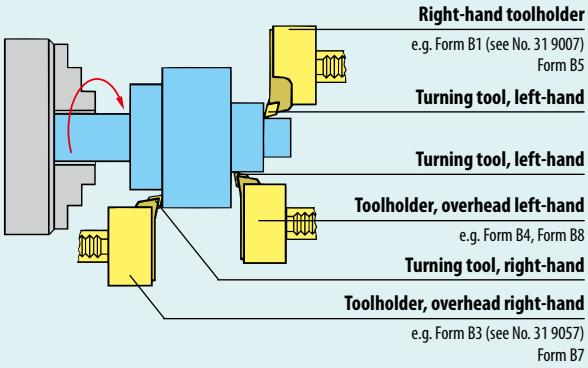
Required:
1. Turning toolholder No. 31 8100 size B25/140
   140 – for cross slide width SB 145
   B25 – for cutting edge height 33
   (maximum turning tool height h = 20 mm).
2. Tool post No. 31 8000 size B.

Tool height h	Turning toolholder size												
	AA	A		E		B		C	D				
	12	16	20	20	25	25	32	32	40	1/40	1/50	1/63	2/50	2/63
mm	Necessary minimum cutting edge height S (mm)													
6	12													
8	14	17												
10	16	19	20	20	22									
12	18	21	22	22	24	24								
(14)		23	24	24	26	26								
16		25	25	26	28	28								
20			29	30	32	32	33							
25					37	37	38	40,5						
32							45	47,5	47,5	52			52	
40									55,5	60	60		60	65
50											70	70	70	75
63												83		88

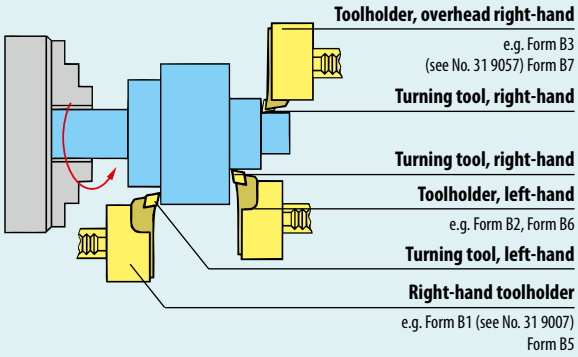
Information on the operation of VDI arbors to DIN 69880, Part 1

Application of radial toolholders

for **anti-clockwise** headstock rotation

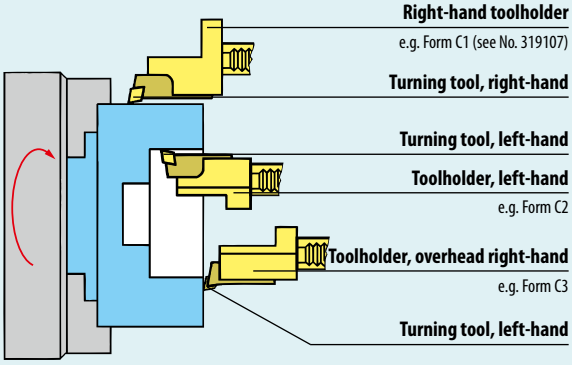


for **clockwise** headstock rotation

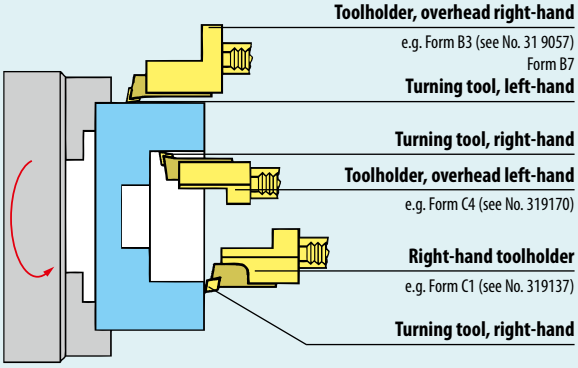


Application of axial toolholders

for **anti-clockwise** headstock rotation



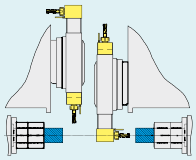
for **clockwise** headstock rotation

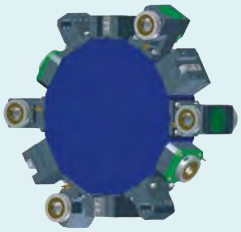
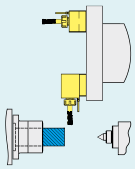


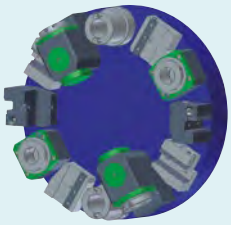
Use of tools on radial, BMT, and disc turrets

Driven tools for disc turrets and radial turrets

Optimise your machining processes.
The use of EWS precision tools makes your production process more efficient due to:
- More flexible use of your machine.
- Complete machining of complex workpieces.
- Rationalisation of former operations.



VDI radial turret



BMT radial turret


VDI disc turret

Turret interface


DIN 5480


DIN 5482

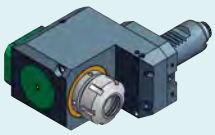

DIN 1809

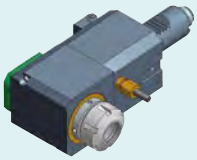

DIN TOEM


Okuma LB

Tool overview for radial turrets


Axial drilling and milling head


Radial drilling and milling head, recessed


Radial drilling and milling head

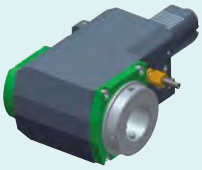

Radial drilling and milling head, double-sided

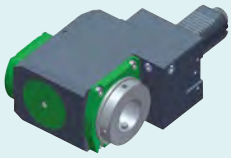

Pivot head ± 90°


Disc milling head

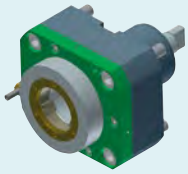
EWS VARIA quick-change system

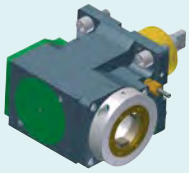

Axial drilling and milling head, VARIA


Radial drilling and milling head, VARIA


Radial drilling and milling head VARIA, recessed

Driven tools VARIA – BMT


Axial drilling and milling head, VARIA


Radial drilling and milling head, VARIA

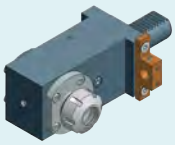

Radial drilling and milling head, double-sided VARIA

Overview tool range – Stationary tools for radial turrets

VDI arbor: DIN 69880


Fixed boring bar holder

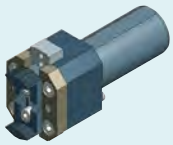

Boring bar holder, double face, fixed


ER collet chuck


Square transverse toolholder


Offset toolholder VDI / VDI


Parting-off toolholder


Bar holder

BMT stationary tools


Square transverse toolholder


Square longitudinal toolholder


Multiple toolholders


Boring bar holder

All tools alternatively also available with e.g. ER collet, Weldon arbor or milling mandrel arbor, VARIA or VARIA VX/VXT also available with internal (IC) or external (EC) coolant supply, and step-up or step-down gearing.

Overview of the tool range – disc turrets / radial turrets

B = Square transverse toolholders


GARANT **eco B1,**
right-hand, short (No. 31 9006)


GARANT **eco B2,**
left-hand, short/No. 31 9016)


GARANT **eco B3,**
overhead right-hand, short (No. 31 9026)


GARANT **eco B4,**
overhead left-hand, short (No. 31 9036)


HOLEX **B1,**
right-hand, short (No. 31 9007)


HOLEX **B2,**
left-hand, short (No. 31 9017)


HOLEX **B3,**
overhead right-hand, short (No. 31 9027)


HOLEX **B4,**
overhead left-hand, short (No. 31 9037)


HOLEX **B5,**
right-hand, long (No. 31 9047)


HOLEX **B6,**
left-hand, long (No. 31 9057)


GARANT **B7,**
overhead right-hand, long (No. 31 9066)


GARANT **B8,**
overhead left-hand, long (No. 31 9076)

C = Square longitudinal toolholders


GARANT **eco C1,**
right-hand (No. 31 9106)


GARANT **eco C2,**
left-hand (No. 31 9116)


GARANT **eco C3,**
overhead right-hand (No. 31 9126)


GARANT **eco C4,**
overhead left-hand (No. 31 9136)


HOLEX **C1,**
right-hand (No. 31 9107)


HOLEX **C2,**
left-hand (No. 31 9117)


HOLEX **C3,**
overhead right-hand (No. 31 9127)

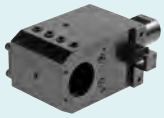

HOLEX **C4,**
overhead left-hand (No. 31 9137)

E = Toolholders with plain shank


HOLEX **E1,**
Indexable drill holder (No. 31 9205)


HOLEX **E2,**
Boring bar holder (No. 31 9330)


GARANT **E2,**
Slotted boring bar holder (No. 31 9276)

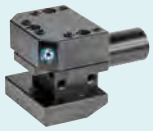

EWS **E2,**
Boring bar holder (No. 31 9733 / 9735)


HOLEX **E3,**
OZ collet chuck (No. 31 9501 / 9505)


HOLEX **E4,**
ER collet chuck (No. 31 9510 / 9512 / 9515)

D = Multiple toolholders


HOLEX **D1,**
Multiple toolholder (No. 31 9185)

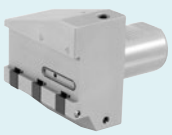

HOLEX **D2,**
Multiple toolholder, overhead (No. 31 9190)

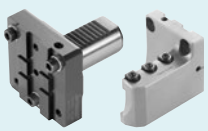

GARANT **drill chuck,**
(No. 31 9715 / 9725_1-16)


Z2,
Blanking plug (No. 31 9770)


GARANT **eco,**
Double-sided (No. 31 9191)

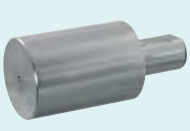
Parting-off toolholders, bar holders, blanks


GARANT **eco,**
Parting-off toolholder (No. 31 9133)


Base toolholder (No. 31 9135) and parting-off toolholder (No. 31 9140)


EWS parting-off toolholder (No. 31 9149)


Bar holder (No. 31 9711 ff.)


A2,
Cylindrical blank

GARANT Master Eco VDI toolholders

Form B1, B2, B3, B4, B5, B6, B7 and B8

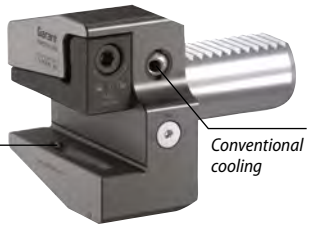
Form B

- Case-hardened HRC 58 ± 2.
- All functional faces ground.
- With ball spray nozzles.

Standard: **ISO 10889 / DIN 69880 / VDI 3425,** sheet 2.

Application: Mainly for external machining.

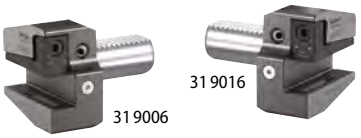
Size 20-40: with screw-in coolant nozzle up to 80 bar

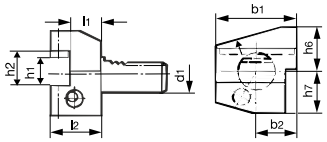


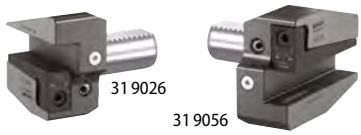
Shank ∅ d_1		mm	16	20	25	30	40	50
31V 31 9006	Garant	GARANT Master Eco VDI toolholder, Form B1 **radial right-hand, short**	–	eShop	eShop	eShop	eShop	eShop
32V 31 9007	HOLEX	Toolholder, form B1 **radial right-hand, short**	eShop	eShop	–	eShop	eShop	eShop
31V 31 9016	Garant	GARANT Master Eco VDI toolholder, Form B2 **radial left-hand, short**	–	eShop	eShop	eShop	eShop	eShop
32V 31 9017	HOLEX	Toolholder form B2 **radial left-hand, short**	eShop	eShop	–	eShop	eShop	eShop
31V 31 9026	Garant	GARANT Master Eco VDI toolholder, Form B3 **radial right-hand, short**	–	eShop	eShop	eShop	eShop	eShop
32V 31 9027	HOLEX	Toolholder form B3 **radial right-hand, short**	eShop	eShop	–	eShop	eShop	eShop
31V 31 9036	Garant	GARANT Master Eco VDI toolholder, Form B4 **radial left-hand, short**	–	eShop	eShop	eShop	eShop	eShop
32V 31 9037	HOLEX	Toolholder form B4 **radial left-hand, short**	eShop	eShop	–	eShop	eShop	eShop
31V 31 9046	Garant	GARANT Master Eco VDI toolholder, Form B5 **radial right-hand, long**	–	–	–	eShop	eShop	–
32V 31 9047	HOLEX	Toolholder form B5 **radial right-hand, long**	–	–	–	eShop	eShop	–
31V 31 9056	Garant	GARANT Master Eco VDI toolholder, Form B6 **radial left-hand, long**	–	–	–	eShop	eShop	–
32V 31 9057	HOLEX	Toolholder form B6 **radial left-hand, long**	–	–	–	eShop	eShop	–
31V 31 9066	Garant	GARANT Master Eco VDI toolholder, Form B7 **radial right-hand, long**	–	–	–	eShop	eShop	–
31V 31 9076	Garant	GARANT Master Eco VDI toolholder, Form B8 **radial left-hand, long**	–	–	–	eShop	eShop	–
h_1 (31 9006, 31 9016, 31 9026, 31 9036, 31 9046, 31 9047, 31 9056, 31 9057, 31 9066, 31 9076)		mm	–	16	16	20	25	25
h_1 (31 9007, 31 9017, 31 9027, 31 9037)		mm	12	16	–	20	25	32
h_2 (31 9007, 31 9017, 31 9027, 31 9037, 31 9047, 31 9057)		mm	17	22	–	29	25	41
b_1 (31 9006, 31 9007, 31 9016, 31 9017, 31 9026, 31 9027, 31 9036, 31 9037)		mm	42	55	55	70	85	100
b_1 (31 9046, 31 9047, 31 9056, 31 9057, 31 9066, 31 9076)		mm	–	–	–	100	118	–
b_2 (31 9006, 31 9007, 31 9016, 31 9017, 31 9026, 31 9027, 31 9036, 31 9037)		mm	23	30	30	35	42.5	50
b_2 (31 9046, 31 9047, 31 9056, 31 9057, 31 9066, 31 9076)		mm	–	–	–	65	75.5	–
h_6 (31 9006, 31 9007, 31 9016, 31 9017, 31 9026, 31 9027, 31 9036, 31 9037, 31 9046, 31 9056, 31 9066, 31 9076)		mm	30	30	30	38	48	60
l_1		mm	13	16	16	22	22	30
l_2		mm	24	30	30	40	44	55
Colour code for VDI shanks								

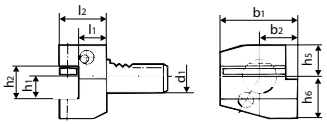












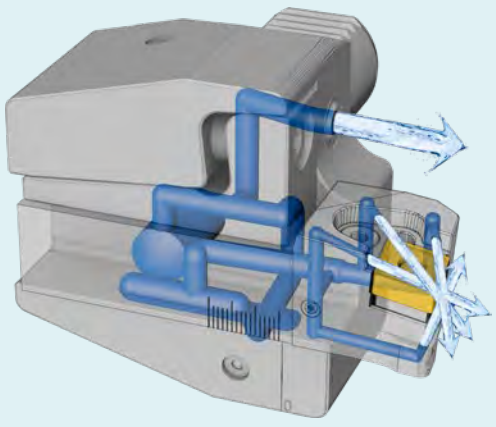


Garant Master eco

Reliable and precise:

GARANT Master eco includes the latest generation of our tried-and-tested GARANT toolholders with internal coolant feed. Our performance promise is efficient cooling of your machining processes.





Direct coolant transfer from the machine to the GARANT Master eco VDI toolholder, to the toolholder. Perfect cooling and chip evacuation at the cutting edge.

Colour code: VDI 16 VDI 20 VDI 25 VDI 30 VDI 40 VDI 50

The new GARANT Master eco-VDI toolholder family form B and C

Novel coolant adjustment.



3 different coolant supply variants via coolant switch using adjusting screw:
Internal: eco cooling by the toolholder.
External: cooling via ball spray nozzle.
Mix: internal + external

Very easy to operate.



The toolholder is fixed to the GARANT Master eco VDI holder by means of only **one** fastening screw.

Optimised accessibility.

The toolholder can be changed directly on the turret in the machine using the front mounting concept.



Before



Afterwards: GARANT Master eco

Form C1, C2, C3, and C4

Form C

- Case-hardened HRC 58 ± 2.
- All functional faces ground.
- With ball spray nozzles.

Standard: **ISO 10889 / DIN 69880 / VDI 3425,** sheet 2.
Application: For face cutting in.

Size 20-40: with screw-in coolant nozzle up to 80 bar

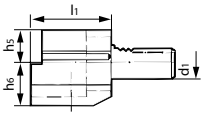
Shank ∅ d_1		mm	16	20	25	30	40	50
31V 31 9106	Garant	GARANT Master Eco VDI toolholder, Form C1 **axial, right hand**	–	eShop	eShop	eShop	eShop	eShop
32V 31 9107	HOLEX	Toolholder form C1 **axial, right hand**	eShop	eShop	–	eShop	eShop	eShop
31V 31 9116	Garant	GARANT Master Eco VDI toolholder, Form C2 **axial, left-hand**	–	eShop	eShop	eShop	eShop	eShop
32V 31 9117	HOLEX	Toolholder form C2 **axial, left-hand**	eShop	eShop	–	eShop	eShop	eShop
31V 31 9126	Garant	GARANT Master Eco VDI toolholder, Form C3 **axial, right hand**	–	eShop	eShop	eShop	eShop	eShop
32V 31 9127	HOLEX	Toolholder form C3 **axial, right hand**	eShop	eShop	–	eShop	eShop	eShop
31V 31 9136	Garant	GARANT Master Eco VDI toolholder, Form C4 **axial, left-hand**	–	eShop	eShop	eShop	eShop	eShop
32V 31 9137	HOLEX	Toolholder form C4 **axial, left-hand**	eShop	eShop	–	eShop	eShop	eShop
h_1 (31 9106, 31 9116, 31 9126, 31 9136)		mm	–	16	16	20	25	25
h_1 (31 9107, 31 9117, 31 9127, 31 9137)		mm	12	16	–	20	25	32
h_2 (31 9106, 31 9116, 31 9126, 31 9136)		mm	–	22	–	29	34	41
h_2 (31 9107, 31 9117, 31 9127, 31 9137)		mm	17	22	–	29	34	34
b_1		mm	43	52	58	70	85	100
b_2		mm	24	27	33	35	42.5	50
b_3 (31 9106, 31 9107, 31 9116, 31 9117, 31 9126, 31 9127, 31 9136)		mm	13	13	19	17	20.5	26
b_3 (31 9137)		mm	13	13	–	23	25.5	30
h_5		mm	20	25	25	28	32.5	50
h_6		mm	22	30	30	38	48	60
l_1		mm	44	55	55	70	85	100
Colour code for VDI shanks								

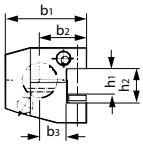


31 9106



31 9107







31 9117



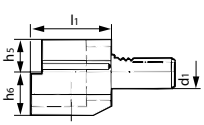
31 9127

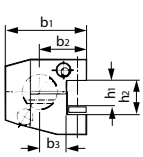


31 9116



31 9126







31 9136



31 9137

Colour code: VDI 16 VDI 20 VDI 25 VDI 30 VDI 40 VDI 50

Double-sided axial toolholder

- Case-hardened HRC 58 ±2.
- All functional faces ground.
- With ball type coolant nozzles.

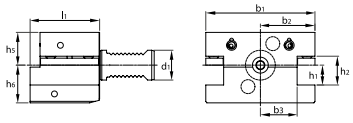
Standard: **DIN ISO 10889 / DIN 69880 / VDI 4325,** sheet 2.

Application:

31 9191 – Double serrations allow normal use or overhead use.

Shank ∅ d_1			mm	25	30	40	50
32V 31 9185	HOLEX	VDI multiple toolholder		–	eShop	eShop	(eShop)
32V 31 9190	HOLEX	VDI multiple toolholder, overhead		–	eShop	eShop	(eShop)
31V 31 9191	Garant	Eco VDI double-sided axial toolholder		eShop	eShop	eShop	–
h_1			mm	16	20	25	32
h_2			mm	22	29	34	41
b_1 (31 9185, 31 9190)			mm	–	76	90	105
b_1 (31 9191)			mm	66	110	130	–
b_2 (31 9185, 31 9190)			mm	–	35	42.5	50
b_2 (31 9191)			mm	33	55	65	–
b_3 (31 9185, 31 9190)			mm	–	17	20.5	25.5
b_3 (31 9191)			mm	19	37	43	–
h_5 (31 9185, 31 9190)			mm	–	28	32.5	35
h_5 (31 9191)			mm	25	33	43.5	–
h_6			mm	46	38	48	60
l_1 (31 9185, 31 9190)			mm	–	60	72	85
l_1 (31 9191)			mm	70	70	85	–
Colour code for VDI shanks							



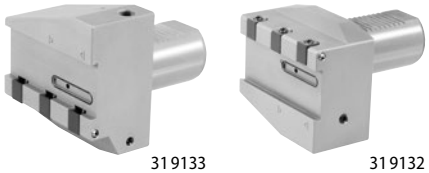


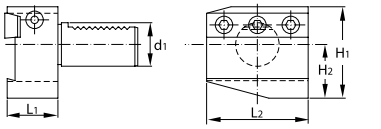
Parting-off toolholder

- With special adjustable ball type coolant nozzle for optimum cooling of the cutting edge, irrespective of the groove depth.
- This reduces the temperature both at the main cutting edge and the auxiliary cutting edge, and permits a **significant increase in cutting speed.**
- Rigid toolholder for parting-off tools.
- Blade clamped using clamping plate.

Application: Allows parting-off tools of different makes to be used.

Note: Screw plug for ball spray nozzle included. If conventional grooving tools are used, the lateral coolant transfer is blocked by the grooving tool. Suitable clamping claws No. 279840 2 and suitable screws No. 279815 14. See spare parts list.





Shank ∅ d_1			mm	16	20	25	30	40	50
31V 31 9132	Garant	Eco parting-off toolholder with ICS		eShop	eShop	eShop	eShop	eShop	eShop
31V 31 9133	Garant	Eco parting-off toolholder overhead with ICS		eShop	eShop	eShop	eShop	eShop	eShop
suitable for blade height			mm	19	26	26	32	32	32
L_1			mm	29	36	36	47	54	62
L_2			mm	42	55	60	70	85	100
Height H_1			mm	42	47	47	57.4	73	75.5
H_2			mm	20	29	29	37	47	47
Colour code for VDI shanks									

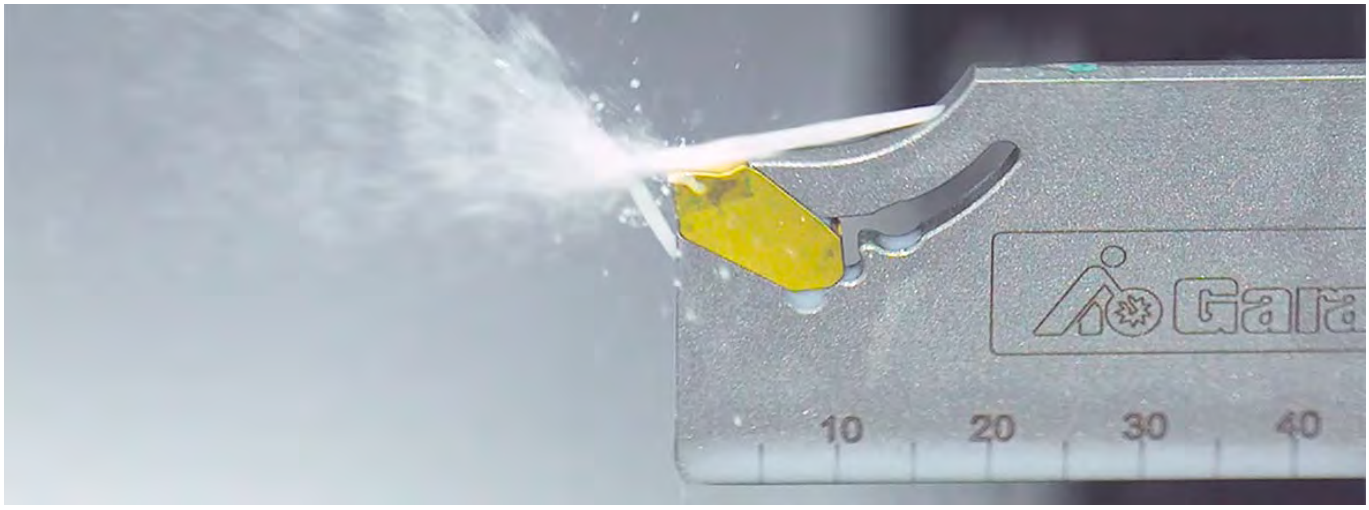
Advantages with GARANT eco:

Flat helical swarf for outstanding chip evacuation, instead of long and tangled coiled swarf

Hardly any traces of wear after the test run.

Surface roughness measurement shows smooth surfaces.





Colour code: VDI 20 VDI 30 VDI 40 VDI 50 VDI 16 VDI 25

VDI parting-off toolholder

For use on DMG Gildemeister CTX CNC lathes with radial turrets.

- With double serrations on the VDI shank for left-handed and right-handed use.
- With ball spray nozzle for optimum cooling of the cutting edge.
- Clamping the grooving tool by means of a clamping strip.
- Height adjustment range ±1 mm.

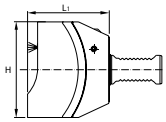
Suitable for: DMG Gildemeister CTX.

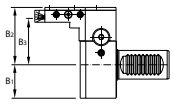
Application: Allows parting-off tools of different makes to be used.

Note: Sizes 30-UEK and 40-UEK as overhead versions.



31 9148_30







31 9149_30-UEK

Shank ∅ d_1	mm	30	30-UEK	40	40-UEK
33E 31 9148	VDI parting-off toolholder blade height 26	eShop	eShop	eShop	eShop
33E 31 9149	VDI parting-off toolholder blade height 32	eShop	eShop	eShop	eShop
B_1	mm	35			
B_2	mm	60			
B_3	mm	48			
L_1	mm	85.5	85.5	88.5	88.5
H	mm	100			
Colour code for VDI shanks					

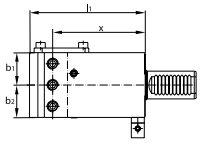
VDI boring bar toolholder

For use on DMG Gildemeister CTX CNC lathes with radial turrets. Combination toolholder with capability for internal and external cooling.

Suitable for: DMG Gildemeister CTX.

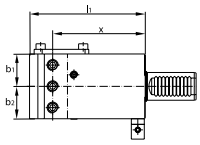
Application: For clamping boring bars.

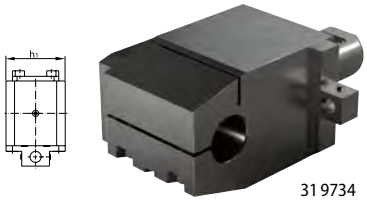
Supplied with: Including **standard pin strip** for alignment.



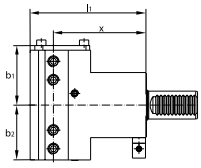


31 9733





31 9734





31 9735

Type		30-32-100	40-40-100	30-40-100	40-32-100	D30-32-100	D40-40-100
33E 31 9733	Combination toolholder for boring bar	eShop	eShop	–	–	–	–
33E 31 9734	Combination toolholder for boring bar, slotted	eShop	eShop	eShop	eShop	–	–
33E 31 9735	Combination double toolholder for boring bar	–	–	–	–	eShop	eShop
x	mm	100					
l_1	mm	125	130	125	125	125	140
b_1	mm	35	42.5	35	35	64	63
b_2	mm	35	42.5	35	35	59	58
h_1	mm	64	85	64	64	64	76
Cooling		internal / external					
VDI		30	40	30	30	30	40

Colour code: VDI 30 VDI 40

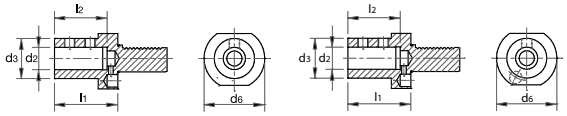
Form E

VDI toolholders


31 9155_16

Form E1

Standard: **DIN 69880 / VDI 3425,** sheet 2.
Application: For drilling with indexable drill with internal coolant supply.

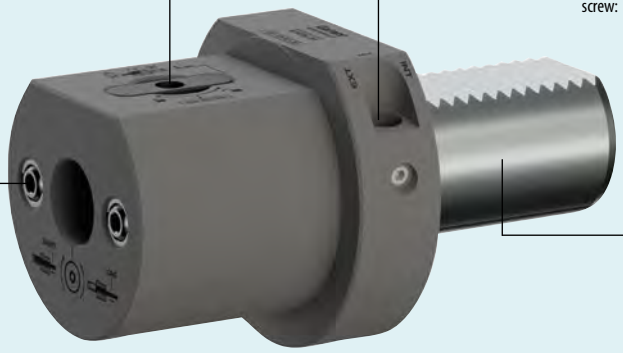


Bore d_2 (H6)		mm	16	20	25	32	40	50	d_6 mm	Colour code for VDI shanks
32U 31 9155	HOLEX Indexable drill holder **Form E1**	VDI 20	eShop	eShop	eShop	–	–	–	50	
32U 31 9165		VDI 25	eShop	eShop	eShop	–	–	–	58	
32U 31 9175		VDI 30	eShop	eShop	eShop	eShop	eShop	–	68	
32U 31 9205		VDI 40	eShop	eShop	eShop	eShop	eShop	–	83	
32U 31 9215		VDI 50	–	eShop	eShop	eShop	eShop	eShop	98	
Ø d_3 (31 9205, 31 9215)		mm	36	40	45	52	65	75		
l_1 -0.2 (31 9215)		mm	–	67	75	71	90	100		
l_2		mm	54	54	59	63	73	83		

Garant The new GARANT Master Eco VDI toolholders in form E2

Very easy to operate.
The boring bar is fixed in the GARANT Master Eco VDI holder by means of only **one** fastening screw.

Full cooling performance.
Two adjustable coolant spray nozzles as standard for optimum cooling of the cutting edge up to 70 bar.



Novel coolant adjustment.
3 different coolant supply variants via coolant switch using adjusting screw:

- **Internal:** Eco cooling through the boring bar.
- **External:** cooling via ball spray nozzle.
- **Mix:** internal + external.

Through-bored VDI shank.
With individually adjustable stop/length adjustment screw.

Advantages:
- Longer boring bars can be inserted.
- Position the boring bars with excellent repetition accuracy.

Form E2 GARANT Master Eco

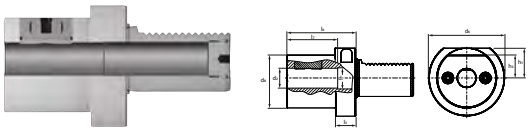
- Case-hardened HRC 58+/-2.
- All functional faces ground.
- Through-bored VDI shank.
- With two ball spray nozzles.

Advantage:
- Also suitable for longer boring bars.
- Individual length adjustment for the boring bars.

Application: For internal machining with boring bar holder.

Comprehensive dimensions see eShop


31 9235



Bore dia. d_2 (H7)		mm	8	10	12	16	20	25	32	40	50	d_7 mm	Colour code for VDI shanks
31V 31 9225	Garant GARANT Master Eco boring bar holder **Form E2**	VDI 30	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	16.5	
31V 31 9235		VDI 40	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	20.5	
Ø L_3		mm					22						
Ø L_6 (31 9225)		mm	65	65	65	65	65	70	80	–	–		
Ø L_6 (31 9235)		mm	75	75	75	75	75	75	75	90	100		
Ø L_7 (31 9225)		mm	92.5	92.5	92.5	92.5	51	51	51	–	–		
Ø L_7 (31 9235)		mm	110.5	110.5	110.5	110.5	110.5	61	61	76	86		

Colour code: VDI 20 VDI 25 VDI 30 VDI 40 VDI 50

Form E2, slotted

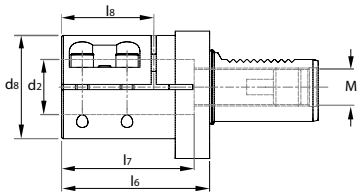
- Wrapping around the boring bar, generates vibration damping and avoids vibration.
- Internal and external cooling available.

31 9275 – The boring bar can be inserted through when using shanks size 10 and 12.
31 9276 – The boring bar can be inserted through when using shanks size 10 and 20.

Note: Spare parts No. 319287 - 319288 can be found in the spare parts list.



31 9275



Bore d_2 (H7)		mm	10	12	16	20	25	32	40	Colour code for VDI shanks
31V 31 9275	Garant Slotted boring bar holder **Form E2**	VDI 30	eShop	eShop	eShop	eShop	eShop	eShop	–	
31V 31 9276		VDI 40	eShop	eShop	eShop	eShop	eShop	eShop	eShop	
l_6		mm	90	90	90	108	108	130	160	
l_7 (31 9275)		mm	90	90	80	100	100	120	–	
l_7 (31 9276)		mm	95	95	95	100	100	120	150	
l_8		mm	50	50	50	63	63	80	100	
Thread M (31 9275)			M14×1.5	M14×1.5	M14×1.5	M14×1.5	M14×1.5	M14×1.5	–	
Thread M (31 9276)						M22×1.5				

Form E2

31 9305 –
- Case-hardened HRC 58+/-2.
- All functional faces ground.
- Through-bored VDI shank.
- With two ball spray nozzles.

Standard: **DIN 69880 / VDI 3425,** sheet 2.

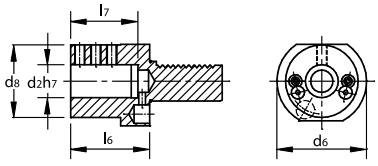
Advantage:

31 9305 –
- Also suitable for longer boring bars.
- Individual length adjustment for the boring bars.

Application: For internal machining with boring bar holder.



31 9305



Bore d_2 (H7)		mm	6	8	10	12	16	20	25	32	40	50	d_6 mm	Colour code for VDI shanks
32U 31 9305	HOLEX Boring bar holder **Form E2**	VDI 16	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	40	
32U 31 9310		VDI 20	–	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	50	
32U 31 9315		VDI 25	–	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	58	
32U 31 9320		VDI 30	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	68	
32U 31 9330		VDI 40	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	83	
32U 31 9335		VDI 50	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	98	
l_6 (31 9305)		mm	44	44	44	44	44	–	–	–	–	–		
l_6 (31 9310, 31 9315)		mm	–	50	50	50	50	50	60	–	–	–		
l_6 (31 9320)		mm	–	60	60	60	60	60	60	75	–	–		
l_6 (31 9330)		mm	–	75	75	75	75	75	75	75	90	100		
l_6 (31 9335)		mm	–	–	–	90	90	90	90	90	90	100		
l_7 (31 9305)		mm	34	34	34	34	34	–	–	–	–	–		
l_7 (31 9310, 31 9315)		mm	–	41	41	41	41	41	51	–	–	–		
l_7 (31 9320)		mm	–	51	51	51	51	51	51	61	–	–		
l_7 (31 9330)		mm	–	61	61	61	61	61	61	61	76	86		
l_7 (31 9335)		mm	–	–	–	76	76	76	76	76	76	86		

Colour code: VDI 16 VDI 20 VDI 25 VDI 30 VDI 40 VDI 50

Coolant nozzles

For targeted cooling and lubrication on the cutting edge/evacuation of chips.

RIHETEC

Stainless steel version, the flexible pipe can be bent towards the cutting edge. Maximum pressure of up to 10 bar.

31 9470 – Designed specially for compact VDI and BMT toolholders **with coolant hole**.

31 9471 – Designed specially for compact VDI and BMT toolholders **with threaded connector**.



31 9470



31 9471

Note: See 319476 or 319477 for suitable thread adapters and extensions.

Type × pipe length		M5×50	10×50	M6×50	10×70	10×100	11×50	11×70	11×100	12×50	12×70	12×100	Pipe feed-through ∅ mm
33C 31 9470	MiniKD coolant nozzle **with ball connection**	–	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4
33C 31 9471	MiniKD coolant nozzle **with threaded connection**	eShop	–	eShop	–	–	–	–	–	–	–	–	4
Length of pipe mm		50	50	50	70	100	50	70	100	50	70	100	
Connection thread		M5	–	M6	–	–	–	–	–	–	–	–	
Contact point ∅ mm		–	10	–	10	10	11	11	11	12	12	12	

Primarily developed for use on driven tools. Simple installation using a threaded connector.
The flexible and swivelling pipe can be turned or bent towards the cutting edge and locked using a galvanised union nut.
Maximum pressures of up to 10 bar.



31 9472

Note: See 319476 or 319477 for suitable thread adapters and extensions.

Thread × pipe length		M8×50	M8×70	M8×100	M10×50	M10×70	M10×100	G1/8×50	G1/8×70	G1/8×100	Pipe feed-through ∅ mm
33C 31 9472	DriveKD coolant nozzle **with threaded connection**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	4
Length of pipe mm		50	70	100	50	70	100	50	70	100	
Connection thread		M8×1	M8×1	M8×1	M10×1	M10×1	M10×1	G1/8	G1/8	G1/8	

High-pressure nozzle – sturdy coolant nozzle suitable for high pressures, direction can be adjusted manually, large adjustment range of up to 45° in any direction and a pipe feed-through dia. of 4 mm.

Application: For use on static and driven toolholders via threaded connector.



31 9473

Note: See 319476 or 319477 for suitable thread adapters and extensions.

Thread × nozzle length		M8×12	M8×20	M10×12	M10×20	G1/8×12	G1/8×20	Pipe feed-through ∅ mm
33C 31 9473	JetKD-A coolant nozzle **with threaded connection**	eShop	eShop	eShop	eShop	eShop	eShop	4
Length of nozzle mm		12	20	12	20	12	20	
Connection thread		M8×1	M8×1	M10×1	M10×1	G1/8	G1/8	

Stainless steel ball in combination with a pipe made of a flexible composite material. Securing of the pipe with a union nut.

Application: Insert the coolant nozzle into the coolant hole and then align the pipe with the cutting edge.



31 9478

Note: See 319476 or 319477 for suitable thread adapters and extensions.

Type × pipe length		14×70	15×70	Pipe feed-through ∅ mm
33C 31 9478	SmartKD coolant nozzle **with ball connection**	eShop	eShop	4
Length of nozzle mm		70		
Contact point ∅ mm		14	15	

Piranha clamp

High-pressure nozzle – specially designed for high pressures up to 80 bar. Adjustable nozzle angle position.
Sturdy and durable version made of aluminium.

31 9474 – Straight round nozzle, multi-hole version 5 (holes) × dia. 1 mm.

31 9475 – 60° angled nozzle, multi-hole version 7 (holes) × dia. 1 mm.

Application: For use on static and driven toolholders via a threaded connector.



31 9474



31 9475

Thread		M8×1	M10×1	M12×1	G1/8	Pipe feed-through ∅ mm
33C 31 9474	HighPressure coolant nozzle **straight**	eShop	eShop	eShop	eShop	1
33C 31 9475	HighPressure coolant nozzle **angled 60°**	eShop	eShop	eShop	eShop	1
Connection thread		M8×1	M10×1	M12×1	G1/8	

Coolant pipe for VDI arbors

Application: In VDI arbors in ball type coolant nozzles with metric threads.



31 9115



31 9118

Type		3,5×50	5×50	5×100	6×50	6×100
36D 31 9115	VDI coolant pipe, copper	eShop	eShop	eShop	eShop	eShop
36D 31 9118	VDI coolant pipe, stainless steel	eShop	eShop	eShop	eShop	eShop
Thread size		M3.5	M5	M5	M6	M6
Overall length	mm	50	50	100	50	100
Colour code for VDI shanks						

Garant Boring bar stabiliser

Base body of high-quality tool steel, surface and functional faces hardened.

Suitable for: All popular boring bars.

Advantage: Reduces oscillation and vibration when used with all types of boring bars.

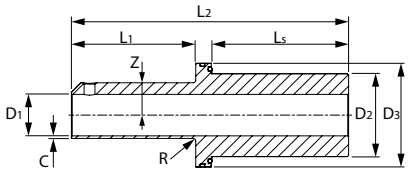
Note: To determine the right type of boring bar stabiliser, it is essential to perform a collision check using the Hoffmann e-Tool data from the eShop or via the ToolScout!
We recommend a maximum overhang length of 3×D of the types of boring bar used.

31 9454/9458 – Maximum overhang, stabiliser incl. boring bar 6×D.
31 9461–9465 – Maximum overhang, stabiliser incl. boring bar 8×D.
31 9467/9469 – Maximum overhang, stabiliser incl. boring bar 10×D.

Comprehensive dimensions see eShop



31 9458



Type		10R	10L	12R	12L	16R	16L	20R	20L
31V 31 9454	Boring bar stabiliser 3×D **mini**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31V 31 9458	Boring bar stabiliser 3×D **maxi**	–	–	–	–	eShop	eShop	eShop	eShop
Cutting direction		right-hand	left-hand	right-hand	left-hand	right-hand	left-hand	right-hand	left-hand
Ø D_1	mm	10	10	12	12	16	16	20	20
Ø D_2	mm	32							
Ø D_3	mm	40							
L_1	mm	30	30	36	36	48	48	60	60
L_s	mm	53	53	53	53	53	53	60	60
Overall length L_2	mm	89	89	95	95	107	107	126	126
Radius R	mm	1.2							

Type		10R	10L	12R	12L	16R	16L	20R	20L
31V 31 9461	Boring bar stabiliser 5×D **mini**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31V 31 9463	Boring bar stabiliser 5×D **midi**	eShop	eShop	eShop	eShop	eShop	eShop	–	–
31V 31 9465	Boring bar stabiliser 5×D **maxi**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Cutting direction		right-hand	left-hand	right-hand	left-hand	right-hand	left-hand	right-hand	left-hand
Ø D_1	mm	10	10	12	12	16	16	20	20
Ø D_2	mm	32							
Ø D_3	mm	40							
L_1	mm	50	50	60	60	80	80	100	100
L_s	mm	53	53	53	53	53	53	60	60
Overall length L_2	mm	109	109	119	119	139	139	166	166
Radius R	mm	1.2							

Type		10R	10L	12R	12L	16R	16L	20R	20L
31V 31 9467	Boring bar stabiliser 7×D **mini**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31V 31 9469	Boring bar stabiliser 7×D **maxi**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Cutting direction		right-hand	left-hand	right-hand	left-hand	right-hand	left-hand	right-hand	left-hand
Ø D_1	mm	10	10	12	12	16	16	20	20
Ø D_2	mm	32							
Ø D_3	mm	40							
L_1	mm	70	70	84	84	112	112	140	140
L_s	mm	53	53	53	53	53	53	60	60
Overall length L_2	mm	129	129	143	143	171	171	206	206
Radius R (31 9467)	mm	2							
Radius R (31 9469)	mm	1.2							

Colour code: VDI 20 VDI 30 VDI 40

VDI toolholders

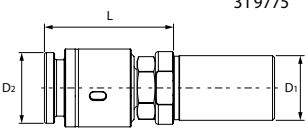
VDI stop damper

Application: Sturdy bar stop with spring damping, ground back-stop disc.
Damping compensation of maximum 3 mm.

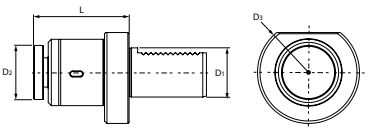
31 9775 – **Cylindrical version** suitable for all types of turret.
Plain shank with length adjustment.

31 9777 – **VDI variant** primarily for disc turrets.


31 9775



Shank ∅D_1			mm	25	32	30	40
31V 31 9775	Garant	Stop damper with spring **cylindrical**		eShop	eShop	–	–
31V 31 9777		Stop damper with spring **VDI**		–	–	eShop	eShop
∅ D_2			mm	35	35	35	44
∅ D_3			mm	–	–	68	83
L			mm	62	65	75	78
L_{max}			mm	100	115	–	–
Colour code for VDI shanks				–	–		




31 9777

Quick-change tapping chuck for right- and left-hand threads

Resilient length compensation, smooth action due to ball bearing sleeve.

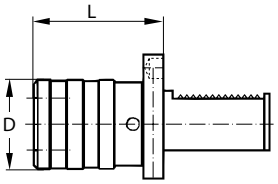
Standard: **DIN ISO 10889 / DIN 69880** and **VDI 3425,** sheet 2.

Optional extras: **Quick-change tapping collets** No. 335420 – 335620.



31 9445

Shank ∅ d			mm	20	30	40	Length compensation by compression mm	Length compensation by tension mm	∅ D mm
32P 31 9445	HOLEX	Quick-change tapping chuck **M3 – M12**		eShop	eShop	eShop	7	7	38
32P 31 9447		Quick-change tapping chuck **M6 – M20**		–	eShop	eShop	12	12	54
L (31 9445)			mm	56	61.5	61.5			
L (31 9447)			mm	–	86	86			
Colour code for VDI shanks									



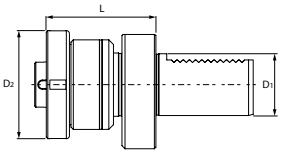
Die toolholder

Robust toolholder, all functional faces hardened and ground. Length compensation by compression and tension for cutting external threads exactly true to gauge size. To take standard DIN dies (round version).

Application: Cutting external threads by means of a die. For use primarily on lathes, but also suitable for milling machines.

Optional extras: Die adapter no. 319795.


31 9790



Shank ∅D_1			mm	25	30	40
31V 31 9790	Garant	Die toolholder with length compensation **cylindrical**		eShop	–	–
31V 31 9793		Die toolholder with length compensation **VDI**		–	eShop	eShop
∅ D_2			mm	71	70	70
Length compensation by compression			mm		4	
Length compensation by tension			mm		12	
L			mm	47.2	71	73
Colour code for VDI shanks				–		

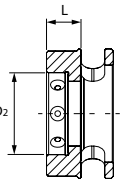

31 9793

Die adapter

Adapter to take dies to DIN EN 22568 (round version).

Suitable for: Die toolholder No. 319790; 319793.

Note: Maximum thread depth 47 mm.




31 9795

for threads			M3-M6	M7-M9	M10	M12-M14
31V 31 9795	Garant	Die adapter **Exchangeable insert**	eShop	eShop	eShop	eShop
∅ D_2		mm	20	25	30	38
L		mm			16	

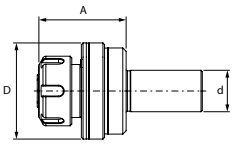
Colour code: VDI 30 VDI 40 VDI 20

Compensating holder

Compensating holder with ER collet adaption. **Adjustable radial and angular compensation**.
With through coolant feed.

Application: Optimum for compensating alignment errors between workpiece and tool, for instance when reaming or tapping (without tension / compression compensation).
For use primarily on lathes, but also suitable for milling machines.


31 9780




31 9785

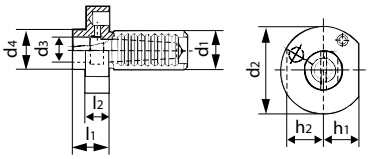
Type			20-16	25-25	25-32	30	40
31V 31 9780	Garant	ER compensating floating holder **Cylindrical**	eShop	eShop	eShop	–	–
31V 31 9785		ER compensating floating holder **VDI**	–	–	–	eShop	eShop
Ø d		mm	20	25	25	30	40
Dimension A		mm	44	53	58	64	68
Ø D		mm	42	57	69	68	83
Radial compensation		mm	1	1	1.5	1	1.5
suitable for ER size			16	25	32	25	32
Colour code for VDI shanks			–	–	–		

Toolholder Form F

Form F

Application: For tools with MT shank.


31 9741



for MT shank			1	2	3	4	Colour code for VDI shanks
32V 31 9741	HOLEX	Toolholder with taper arbor **Form F** VDI 30	eShop	eShop	eShop	–	
32V 31 9744		VDI 40	–	eShop	eShop	eShop	
d_2 (31 9741)		mm	68	68	68	–	
d_2 (31 9744)		mm	–	83	83	83	
d_3		mm	12.065	17.78	23.825	31.267	
Ø d_4 (31 9744)		mm	–	55	58	68	
l_1 (31 9741)		mm	27	27	66	–	
l_1 (31 9744)		mm	–	36	36	80	

Blanking plug Form Z2


31 9770

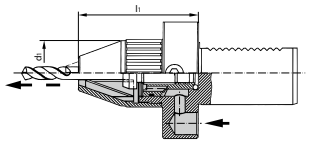
Ø d_1		mm	16S	20S	25S	30S	40S	50S	16K	20K	25K	30K	40K
36A 31 9770	HOLEX	VDI blanking plug **Form Z2**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Material			Steel						Plastic, glass fibre reinforced				
Colour code for VDI shanks													

Garant VDI toolholders

- Coolant supply via indexing bore.
- Maximum coolant pressure 50 bar.
- **GARANT type** with Torx® clamping wrench for high clamping force.

Standard: **DIN ISO 10889 / DIN 69880 / VDI 3425,** sheet 2.

Application: On NC turning machines and machining centres.



Precision short drill chuck for clockwise and anticlockwise rotation


31 9715

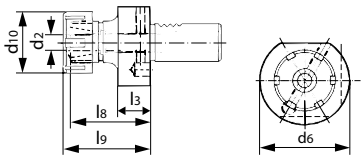
Clamping range		mm	1-16	Colour code for VDI shanks
31B 31 9715	Short drill chuck	VDI 30	eShop	
31B 31 9725		VDI 40	eShop	
d_1		mm	50.5	
l_1		mm	90	
Chuck key			TX25	

Colour code: VDI 30 VDI 40 VDI 16 VDI 20 VDI 25 VDI 50

Form E

VDI toolholders

Standard: **ISO 10889 / DIN 69880 / VDI 3425,** sheet 2.
Application: Mainly for drilling and centring.



Collet chucks form E3 and E4

Type			1,5-16	1,5-25	3,5-32	Colour code for VDI shanks
32U 31 9501	OZ collet chuck **Form E3**	VDI 30	eShop	eShop	–	
32U 31 9505		VDI 40	–	eShop	eShop	
suitable collets			415 E	462 E	467 E	
Clamping range d_2		mm	2 – 16	2 – 25	4 – 32	
Ø d_6 (31 9501)		mm	68	68	–	
Ø d_6 (31 9505)		mm	–	83	83	
l_9		mm	57	75	90	


31 9501

for ER collet size			16	25	32	40	Colour code for VDI shanks
32U 31 9510	ER collet chuck **Form E4**	VDI 20	eShop	eShop	–	–	
32U 31 9512		VDI 30	–	eShop	eShop	–	
32U 31 9515		VDI 40	–	–	eShop	eShop	
suitable collets			426 E (ER16)	430 E (ER 25)	470 E (ER 32)	472 E (ER 40)	
Clamping range d_2		mm	1 – 10	1 – 16	2 – 20	3 – 26	
d_6 (31 9510, 31 9515)		mm	50	50	83	83	
d_6 (31 9512)		mm	–	68	68	–	
l_9 (31 9510, 31 9515)		mm	37	50	62	75	
l_9 (31 9512)		mm	–	57	62	–	

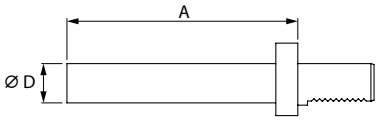

31 9510

Checking mandrel

Application: For accepting machine tools to ISO recommendation R230, checking of tool spindle/turret position.
Supplied with: Wooden box and test certificate.


31 9755

A dimension		mm	200
31V 31 9755	Checking mandrel **ISO 10889**	VDI 30	eShop
31V 31 9757		VDI 40	eShop

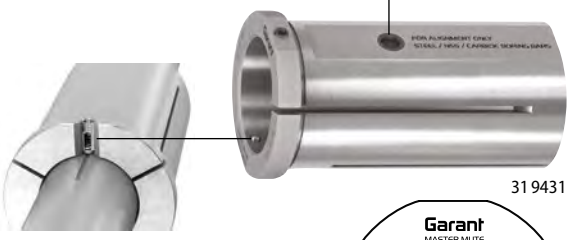


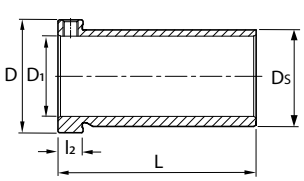
GARANT Master Mute reducing adapter

Suitable for all kinds of boring bar holders. Optimal in combination with vibration-damped boring bars such as GARANT Master Mute, and also beneficial when using other boring bars (e.g. carbide boring bars).

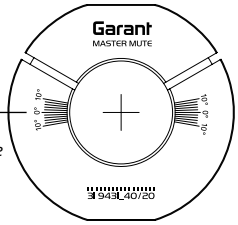
Advantage: Due to the slotted version, the reducing adapter wraps around 100% of the boring bar, i.e. vibrations are reduced. Simple and fast alignment of the boring bar via ball or screw is possible.
Application: For Ø reduction for tools with plain shanks.

Adjustment screw on standard boring bar clamping face.


31 9431



Individual adjustment of the centre height via degree scale possible.



Shank Ø D_2 /clamping Ø D_1		mm	32/6	32/8	32/10	32/12	32/16	32/20	32/25	40/6	40/8	40/10	40/12	40/16	40/20	40/25	40/32
31V 31 9431	GARANT Master Mute reducing adapter **Master Mute**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
l_2		mm	5														
Ø D		mm	36	36	36	36	36	36	36	44	44	44	44	44	44	44	44
L		mm	65	65	65	65	65	65	65	75	75	75	75	75	75	75	75

Colour code: VDI 30 VDI 40 VDI 20

HOLEX Reducing sleeves for tools with plain shank

Suitable for VDI arbors form E2 (No. 319275 – 319405).

31 9426 – Suitable for internal cooling, not slotted. Tool is fixed and clamped with 2 clamping screws.

31 9428 – Slotted version - alignment of the tool via fixing screws, clamping via the boring bar holder.

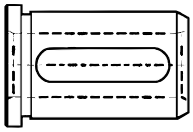
Application: For ∅ reduction for tools with plain shanks.



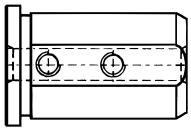
31 9426_25/12



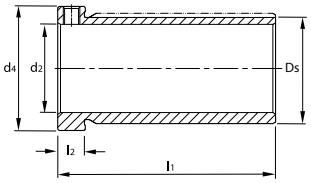
31 9428



Slot



Clamping pin



Shank ∅ d_1 / clamping ∅ d_2	mm	25/4	25/5	25/6	25/8	25/10	25/12	25/14	25/16	25/18	25/20
32V **31 9426**	Reducing adapter	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32V **31 9428**	Split bush	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ d_4 (31 9426)	mm	29									
∅ d_4 (31 9428)	mm	–	–	–	30	30	30	30	30	30	30
l_1 (31 9426)	mm	50									
l_1 (31 9428)	mm	–	–	–	60	60	60	60	60	60	60
l_2 (31 9426)	mm	4									
l_2 (31 9428)	mm	–	–	–	10	10	10	10	10	10	10
Version (31 9426)		Clamping pin	Clamping pin	Clamping pin	Clamping pin	Clamping pin	Clamping pin	Slot	Slot	Slot	Slot

Shank ∅ d_1 / clamping ∅ d_2	mm	32/5	32/6	32/8	32/10	32/12	32/14	32/16	32/18	32/20	32/25
32V **31 9426**	Reducing adapter	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32V **31 9428**	Split bush	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ d_4 (31 9426)	mm	40									
∅ d_4 (31 9428)	mm	–	–	37	37	37	37	37	37	37	37
l_1 (31 9426)	mm	58									
l_1 (31 9428)	mm	–	–	69	69	69	69	69	69	69	69
l_2 (31 9426)	mm	5									
l_2 (31 9428)	mm	–	–	10	10	10	10	10	10	10	10
Version (31 9426)		Clamping pin	Clamping pin	Clamping pin	Clamping pin	Clamping pin	Slot	Slot	Slot	Slot	Slot

Shank ∅ d_1 / clamping ∅ d_2	mm	40/6	40/8	40/10	40/12	40/14	40/16	40/18	40/20	40/25	40/32
32V **31 9426**	Reducing adapter	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32V **31 9428**	Split bush	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ d_4 (31 9426)	mm	44									
∅ d_4 (31 9428)	mm	–	45	45	45	45	45	45	45	45	45
l_1 (31 9426)	mm	58									
l_1 (31 9428)	mm	–	79	79	79	79	79	79	79	79	79
l_2 (31 9426)	mm	5									
l_2 (31 9428)	mm	–	10	10	10	10	10	10	10	10	10
Version (31 9426)		Clamping pin	Clamping pin	Clamping pin	Clamping pin	Slot	Slot	Slot	Slot	Slot	Slot

Shank ∅ d_1 / clamping ∅ d_2	mm	50/12	50/14	50/16	50/18	50/20	50/25	50/32	50/40
32V **31 9426**	Reducing adapter	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32V **31 9428**	Split bush	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ d_4 (31 9426)	mm	54							
∅ d_4 (31 9428)	mm	55							
l_1 (31 9426)	mm	75							
l_1 (31 9428)	mm	90							
l_2 (31 9426)	mm	5							
l_2 (31 9428)	mm	10							
Version (31 9426)		Clamping pin	Slot	Slot	Slot	Slot	Slot	Slot	Slot

Garant Quick-change boring bar system

Note: Pre-setting e.g. using GARANT No. 354760 VG1 or 355010 VGBASIC with reducer No. 354773 (sleeve No. 313291 size 25 with additional reducing adapter No. 319426; 319428 each in size 40/32).

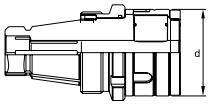
Quick change adapter

For direct adaption the quick-change toolholder is screwed into the cylindrical clamping sleeve or VDI toolholder by a clamping nut with an external thread.

Suitable for: Boring bars with 1, 2 or 3 drive flats.

Supplied with: Blanking screws for cooling channel holes, blind nuts.


31 9283



Clamping ∅			mm	4	6	8	10	12	16	20	25
31V 31 9283	Quick-change toolholder ER16	d=35		eShop	eShop	eShop	eShop	–	–	–	–
31V 31 9285	Quick-change toolholder ER25	d=42.5		–	–	eShop	eShop	eShop	eShop	–	–
31V 31 9286	Quick-change toolholder ER32	d=42.5		–	–	eShop	eShop	eShop	eShop	eShop	–
31V 31 9289	Quick-change toolholder ER40	d=64.5		–	–	–	–	eShop	eShop	eShop	eShop

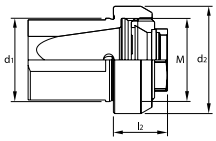
Cylindrical clamping sleeve

To accept the external diameter in a standard boring bar holder or indexable drill holder.

Supplied with: Including clamping nut with an external thread.

Note: ER collets can also be clamped directly.


31 9291



ER collet			16	25	32	40
31V 31 9291	Clamping sleeve, cylindrical		eShop	eShop	eShop	eShop
∅ d_1		mm	25	32	40	50
∅ d_2		mm	32.5	41.5	49.5	64
l_2 with exchangeable adapter		mm	40	49.5	53	60.5
l_2 with ER collet		mm	18	21	25.5	28

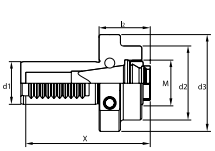
Axial toolholder for direct adaptation

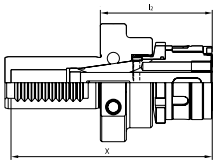
Quick-change toolholders No. 319285; 319286; 319289 are screwed directly into the holder. A very stable combination with minimum overhang.

Supplied with: Including clamping nut with an external thread.

Note: ER collets can also be clamped directly.


31 9292

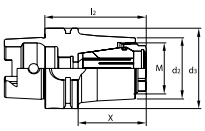


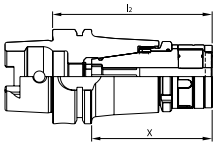


ER collet			25	32	40
31V 31 9292	VDI toolholder		eShop	eShop	eShop
∅ d_1		mm	30	40	40
∅ d_2		mm	52	58	65
∅ d_3		mm	68	83	83
l_2 with exchangeable adapter		mm	64.5	65.7	101
l_2 with ER collet		mm	36	39	69
x with exchangeable adapter		mm	116	125	158
x with ER collet		mm	87	98	125

ER collet			32
31V 31 9294	Milling and turning chuck	HSK-T 63	eShop
31V 31 9295		PSC 63	eShop
∅ d_2		mm	48
∅ d_3		mm	63
l_2 with exchangeable adapter (31 9294)		mm	107
l_2 with exchangeable adapter (31 9295)		mm	103
l_2 with ER collet (31 9294)		mm	80
l_2 with ER collet (31 9295)		mm	76
x with exchangeable adapter (31 9294)		mm	81
x with exchangeable adapter (31 9295)		mm	89
x with ER collet (31 9294)		mm	54
x with ER collet (31 9295)		mm	62


31 9294





Assembly block

For easy assembly the quick-change toolholders are placed in an assembly block. For mounting in a pre-setting device with an SK50 spindle.

Note: A suitable fitting jig 319299 can be found in the spare parts list.


31 9293

ER collet		16	25	32	40
31V 31 9293	Quick-change toolholder mounting block	eShop	eShop	eShop	eShop

Garant Hydraulic arbors

Unique clamp bridging, clamps h6 and h7 shanks. Laser finished on the end face and alignment screw on the bracket, for simple and clear orientation of the boring bar. Including length adjustment backstop screw. Suitable for through-coolant.

Advantage:
- Ideal damping characteristics, resulting in optimum component surfaces. and increased tool life.
- Quick and easy handling.
- Flexible use of reducing adapters.
- Perfect centring.

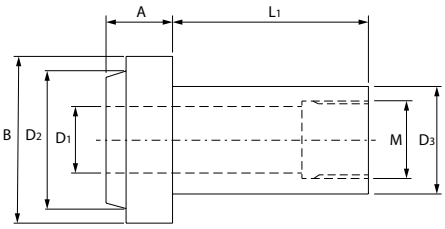
Application: Suitable for drilling, reaming, countersinking and also for use of boring bars.

Hydraulic arbor with plain shank

Flexible use on all types of turret.



∅D_1		mm	16	20	25
31M 31 9751	Hydraulic arbor **Shank ∅ 32 mm**		eShop	eShop	–
31M 31 9752	Hydraulic arbor **Shank ∅ 40 mm**		eShop	eShop	eShop
∅ D_1		mm	16	20	25
Dimension A		mm		19.5	
∅ D_2 (31 9751)		mm	41	41	–
∅ D_2 (31 9752)		mm		46	
∅ D_3 (31 9751)		mm	32	32	–
∅ D_3 (31 9752)		mm		40	
L_1 (31 9751)		mm	59	59	–
L_1 (31 9752)		mm		69	
B (31 9751)		mm	50	50	–
B (31 9752)		mm		56	
M			M22×1	M22×1	M27×1

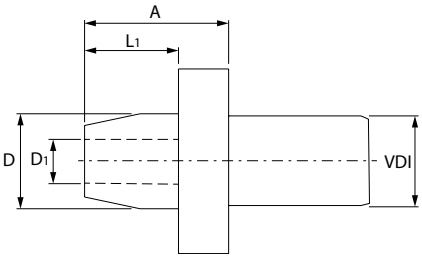


Hydraulic arbor with VDI shank

Two attachment screws for the best accessibility, be it at the headstock or tailstock. Supplied with ball spray nozzle.



∅D_1			mm	20
31M 31 9753	Hydraulic arbor **VDI 30**	**VDI 30**		eShop
31M 31 9754	Hydraulic arbor **VDI 40**	**VDI 40**		eShop
∅ D_1			mm	20
Dimension A			mm	64
∅ D			mm	42
L_1			mm	42



Garant ER collet closure

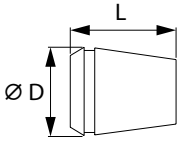
Plastic collet made of POM.

Application: For sealing driven tools with ER collet interface.



31 9518_25

for ER collet		25	32
31W 31 9518	ER collet closure	eShop	eShop
∅ D		26 mm	33 mm
L		34 mm	40 mm



CoolSpeed® High-speed spindle

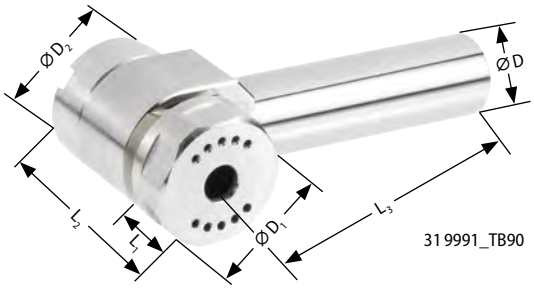
31 9991 – High-speed spindle, driven by coolant (10 – 60 bar), speeds up to 75,000 rpm.

Suitable for:

31 9993 Size UNI – Tool shank diameter with ∅ 3, 4 and 6 mm.

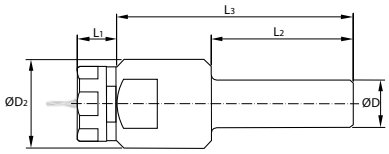
Application:

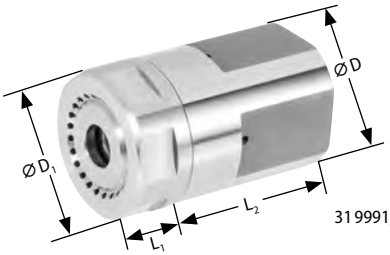
31 9991 – Increased feed rate and cutting speed, for use above all with small-diameter tools (shank ∅ 3 – 6 mm). For use for drilling, deburring, engraving, and milling to a restricted degree.



31 9991_TB90

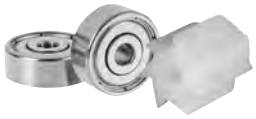

31 9991_TBL





31 9991_TB

Type		TB	TBL	TB90
36D 31 9991	High-speed spindle housing	eShop	eShop	eShop
∅ D	mm	25	16	16
∅ D_1	mm	25.5	25	25.5
L_1	mm	10	13.5	13.5
L_2	mm	30	48	40
L_3	mm	–	80	70
∅ D_2	mm	–	30	25


31 9992

Tool shank diameter	mm	3	4	6
36D 31 9992	Bearing/turbine set for spindles of type TB	eShop	eShop	eShop


31 9993

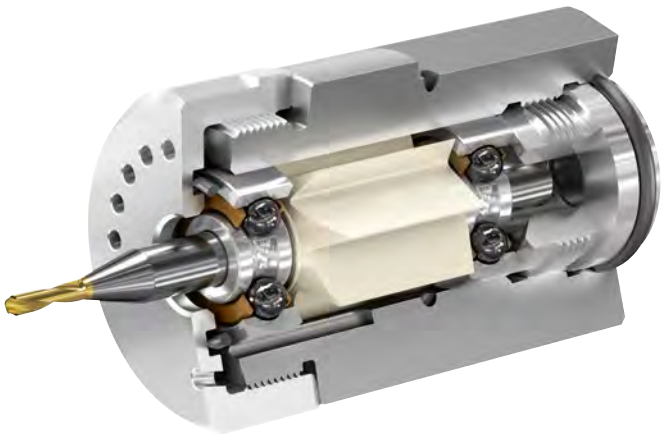
Tool shank diameter	mm	UNI
36D 31 9993	Assembly set for spindles of type TB	eShop

Note: Necessary for determination of the pressure at the spindle or turret, to determine the desired speed.


31 9994

Type		PK25
36D 31 9994	Pressure gauge for spindles of type TB	eShop





REGO-FIX reCool® coolant supply system for driven tools

- **Easy conversion** of driven tools with external cooling to internal cooling.
- Precise cooling on the cutting edge and improved chip evacuation.
- Particularly suitable for deep pockets and cavities.
- Excellent surface quality.

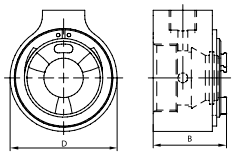
Advantage:
- Cost-effective conversion of existing driven tool systems to internal cooling.
- Suitable for use with emulsion and oil.
- Coolant pressure up to 100 bar (150 bar with high-pressure hose, available on request).
- Low-maintenance bearings.
- For internal cooling (with sealing rings No. 309630 and 309635).

Size ER25 – Speeds up to 12,000 rpm.
Size ER32 – Speeds up to 40,000 rpm.

Application: Suitable for driven tools with ER thread and G1/8 inch coolant connection, as well as for ER collets to DIN 6499 / ISO 15488.

Supplied with: 1 pc. reCool® clamping nut, 1 pc. spiral spring and hose Ø 6 mm, 400 mm long, 2 pcs. screw connection G1/8 inch BSP straight, 2 pcs. screw connection G1/8 inch BSP 90° angled.

Note: When using the coolant supply system with internal cooling, the suitable sealing ring No. 309630 and 309635 must be used! Coolant flushing rings for peripheral cooling available on request.
On driven tools with a hole in the spindle to the gearbox (e.g. length adjustment screw), it is essential to seal the hole!





31 9704


External cooling becomes internal cooling via the tool.

for ER collet	33B 31 9704 reCool® coolant supply system	∅ D mm	B mm
ER25	eShop	50	27
ER32	eShop	62.5	29.5

Adapter for M8 coolant connection

Thread adapter for mounting the reCool® coolant supply system for driven tools with M8 coolant connection.
Supplied with: 2 pcs. adapter M8×1.


31 9706

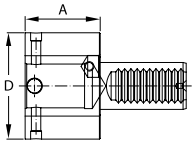
Type	mm	M8×1
33B 31 9706	Adapter	eShop

EWS Static holder for axial and radial use – VARIA VX

Size 32/VX3; 32/VX4 – Version with cylindrical shank.
Standard:
Size 30/VX3; 40/VX4 – DIN ISO 10889 / DIN 69880 / VDI 4325, sheet 2.
Suitable for: Inserts VARIA No. 319801 – 319838, 319872 – 319874.


31 9853_32/VX3

VDI / VARIA		30/VX3	40/VX4	32/VX3	32/VX4
33E 31 9853	Axial holder static VARIA VX	(eShop)	(eShop)	(eShop)	(eShop)
External ∅ D	mm	68	83	64.8	74.8
Dimension A	mm	64	71	40	46
Shank ∅	mm	–	–	32	32
Colour code for VDI shanks				–	–



EWS VARIA VX inserts

Application: For mounting EWS-VARIA VX inserts.


31 9877

suitable for arbor		VX3	VX4
33E 31 9877	Mounting block VARIA VX	eShop	eShop
suitable for arbor		VX3	VX4

Colour code: VDI 30 VDI 40

≤3µm

Garant

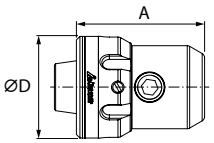
ER quick-change toolholder for driven tools

- Two-part design consisting of base body and precision clamping nut.
- Made from high quality tool steel; all functional faces hardened and reworked.

Advantage: Extremely easy-to-use quick-change system for driven tools. Prepare the quick-change adapter with a tool and change it using a driven tool. The clamping nut is ball-bearing mounted.
Multi-flexible use:
- Quick and easy exchange of adapters for the driven tool used.
- Suitable for all driven tools from various manufacturers with ER collet connection.

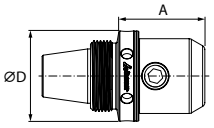
Application: For drilling and milling with driven tools with ER collet connection.

Quick-change toolholder, Weldon





31 9761

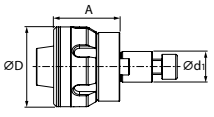




31 9763

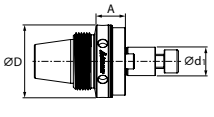
Clamping Ø	31V 31 9761	31V 31 9762	31V 31 9763	31V 31 9764	Dimension A			
	Quick-change toolholder, Weldon with external nut		Quick-change toolholder, Weldon for internal nut		31 9761	31 9762	31 9763	31 9764
mm	ER 25	ER 32	ER 25	ER 32	mm	mm	mm	mm
6	eShop	eShop	eShop	eShop	52.5	46.5	32.4	30
8	eShop	eShop	eShop	eShop	52.5	46.5	32.4	30
10	eShop	eShop	eShop	eShop	52.5	50	35.9	33.5
12	eShop	eShop	eShop	eShop	52.5	50	39.9	37.5
16	–	eShop	–	eShop	–	56	–	39.5
Ø D mm	41.7	49	41	45				

Quick-change toolholder, face mill





31 9766

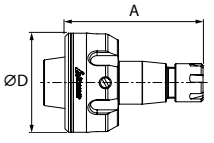




31 9768

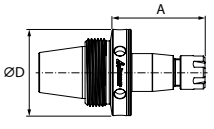
Spigot Ød1	31V 31 9766	31V 31 9767	31V 31 9768	31V 31 9769	Dimension A		
	Quick-change toolholder, face mill with external nut		Quick-change toolholder, face mill for internal nut		31 9766 31 9769	31 9767	31 9768
mm	ER 25	ER 32	ER 25	ER 32	mm	mm	mm
16	eShop	eShop	eShop	–	34.5	34	17.2
22	–	–	–	eShop	22	–	–
Ø D mm	41.7	49	41	48			

Quick-change toolholder, ER-mini





31 9771





31 9773

for ER collet size	31V 31 9771	31V 31 9772	31V 31 9773	31V 31 9774	Dimension A			
	Quick-change toolholder, ER-mini with external nut		Quick-change toolholder, ER-mini for internal nut		31 9771	31 9772	31 9773	31 9774
	ER 25	ER 32	ER 25	ER 32	mm	mm	mm	mm
11	eShop	eShop	eShop	eShop	58	61	44.9	43.5
16	eShop	–	eShop	–	61	–	48.4	–
Ø D mm	41.7	49	41	45				

Inserts VARIA and VARIA VX

Advantage:
- Quick change using a single clamping point, therefore tool change without risk of injury.
- Cutter tools lie pre-set at the machine.
- Compact design - low unit costs.

ER collet inserts – VARIA / VARIA VX – with internal cooling

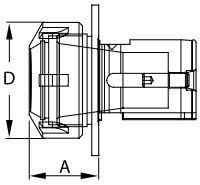
31 9802/9804 – **VX** – Three-point clamping of the integral segment ring, free of transverse forces. **Polygon torque resistance up 200 Nm.**

Application: Mainly for drilling and centring.

Note: Maximum tightening torque for VX3 and VX4 is 5.7 Nm, which can be achieved using the appropriate torque screwdriver No. 211750 size 5.7. Maximum tightening torque for V5 is 10 Nm. When releasing the deposits, do not travel beyond the stop. We recommend the EWS Clean and cleaning set for cleaning the Varia toolholders and replaceable inserts.


31 9802


31 9805



for ER collet size			16	20	25	32	40
33E 31 9802	Varia collet chuck VARIA VX3	VX3	eShop	eShop	eShop	eShop	–
33E 31 9804	Varia collet chuck VARIA VX4	VX4	(eShop)	(eShop)	eShop	eShop	eShop
33E 31 9805	ER collet chuck VARIA	V5	–	–	eShop	eShop	eShop
Dimension A (31 9802)		mm	27	27	30	63	–
Dimension A (31 9804)		mm	30	25	30	30	57
Dimension A (31 9805)		mm	–	–	30	30	30
∅ D		mm	28	34	42	50	63

Weldon / Whistle Notch inserts – VARIA / VARIA VX – with internal cooling

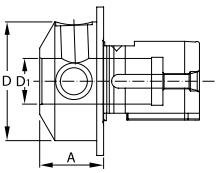
31 9823/9827 – **VX** – Three-point clamping of the integral segment ring, free of transverse forces. **Polygon torque resistance up to 200 Nm.**

Application: For clamping tools with drive flats.

Note: Maximum tightening torque for VX3 and VX4 is 5.7 Nm, which can be achieved using the appropriate torque screwdriver No. 211750 size 5.7. Maximum tightening torque for V5 is 10 Nm. When releasing the deposits, do not travel beyond the stop.
Extra short version available on request. We recommend the EWS Clean and cleaning set for cleaning the Varia toolholders and replaceable inserts.


31 9823


31 9829



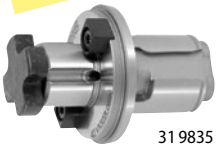
Clamping range ∅ D_1		mm	6	8	10	12	14	16	20	25	32
33E 31 9823	Indexable drill toolholder VARIA VX3	VX3	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
33E 31 9827	Indexable drill toolholder VARIA VX4	VX4	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
33E 31 9829	Indexable drill toolholder VARIA	V5	eShop	(eShop)	eShop	eShop	–	eShop	(eShop)	eShop	eShop
Dimension A (31 9823)		mm	16	17	26	26	28	28	58	60	–
Dimension A (31 9827)		mm	16	19	26	28	28	28	28	33	–
Dimension A (31 9829)		mm	19	22	29	31	–	31	31	36	56
∅ D (31 9823)		mm	25	25	42	42	46	48	34	42	–
∅ D (31 9827)		mm	25	25	42	42	42	48	52	42	–
∅ D (31 9829)		mm	25	28	35	42	–	48	52	65	72

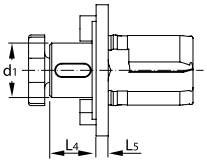
Milling cutter spigot inserts – VARIA VX

VX – Three-point clamping of the integral segment ring, free of transverse forces. **Polygon torque resistance up to 200 Nm.**

Note: Maximum tightening torque for VX3 and VX4 is 5.7 Nm, which can be achieved using the appropriate torque screwdriver No. 211750 size 5.7. Maximum tightening torque for V5 is 10 Nm. When releasing the deposits, do not travel beyond the stop. We recommend the EWS Clean and cleaning set for cleaning the Varia toolholders and replaceable inserts.

With through coolant feed on request


31 9835



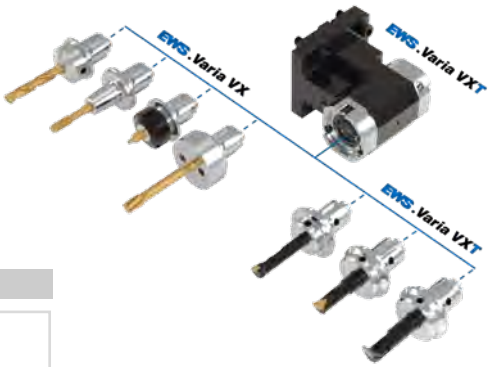
Spigot ∅ d_1		mm	16	22	27
33E 31 9835	Axial milling cutter spigot VARIA VX3	VX3	(eShop)	(eShop)	eShop
33E 31 9838	Axial milling cutter spigot VARIA VX4	VX4	(eShop)	(eShop)	(eShop)
L_4		mm	25	27	29
L_5 (31 9835)		mm	4	4	4.5
L_5 (31 9838)		mm		4	

EWS VARIA VXT inserts

VXT – double cone flex system. **Polygon torque resistance up 200 Nm.**

Advantage:
- Optimised stability and dampening
- Tool change, flexibility and modularity.
- Highest precision and repeatability (+/- 0.002).
- Backward compatibility with VARIA VX

Application: Quick-change system for static rotary applications.



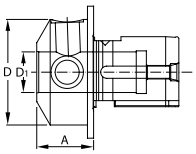
Boring bar inserts - VARIA VXT

Note: Maximum tightening torque for VXT3 and VXT4 is 5.4 Nm, which can be achieved using the appropriate torque wrench No. 211750 size 5.7. When releasing the inserts, do not travel beyond the stop. We recommend the EWS Clean and cleaning set for cleaning the Varia toolholders and replaceable inserts.



31 9845

Clamping ∅ D_1			mm	6	8	10	12	16	20
33E 31 9845	Indexable drill toolholder VARIA	VXT3		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	–
33E 31 9846		VXT4		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Dimension A			mm	18	18	20	20	20	23
∅ D (31 9845)			mm	32	32	36	36	46	–
∅ D (31 9846)			mm	36	36	42	42	46	55

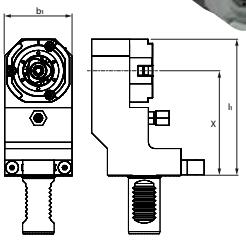


VARIA VXT VDI holders

Suitable for: Size: 30 – 100 inserts VARIA No. 319845.
Size: 40 – 100 inserts VARIA No. 319846

Other sizes available on request.


31 9847



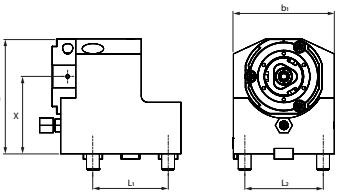
VDI / X dimension				30-100	40-100
33E 31 9847	VDI toolholder VARIA VXT			(eShop)	(eShop)
l_1			mm	130	135
b_1			mm	64	76
suitable for arbor				VXT3	VXT4

VARIA VXT BMT holders

Suitable for: Size: 40-95; 55-70; 55-100 inserts, VARIA No. 319845.
Size: 60-80; 65-72 inserts VARIA No. 319846

Other sizes available on request.


31 9848



BMT / X dimension				40-95	55-70	55-100	60-90	65-72
33E 31 9848	VDI toolholder VARIA VXT			(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
L_1			mm	70	64	64	94	70
L_2			mm	62	64	64	84	73
l_1			mm	125	100	100	125	107
b_1			mm	76.8	85	85	108	94
suitable for arbor				VXT3	VXT3	VXT3	VTX4	VTX4

Garant EWS Driven tools with "CyberCon4" sensor system

The digital view for capturing kinematic processes.
System monitoring via Bluetooth of powered tools.

- Rotational speed and temperature: Live mode display.
- Statistical values are stored on the tool chip.
- Displays whether the tool is flooded with coolant if the seal is defective.
- Switching on and off (overall cycles counter).
- Displays the total operating hours.
- Records the longest machining cycle.
- Intelligent service counter.

The data can be visualised on a mobile device (such as a mobile phone or tablet) in conjunction with an app suitable for the purpose.

Available on request



Garant Driven tools (AGW)

For use on all **DMG Gildemeister CTX** CNC lathes with **Sauter** turret and drive coupling **DIN 5480** or machines with **BMT turret** with drive coupling **DIN 1809.**
Clamping of tools in driven tool using ER collet with external/internal nut or VARIA VX quick-change system under license from EWS.
External cooling via innovative coolant management, internal cooling through the tool centrally through the spindle.

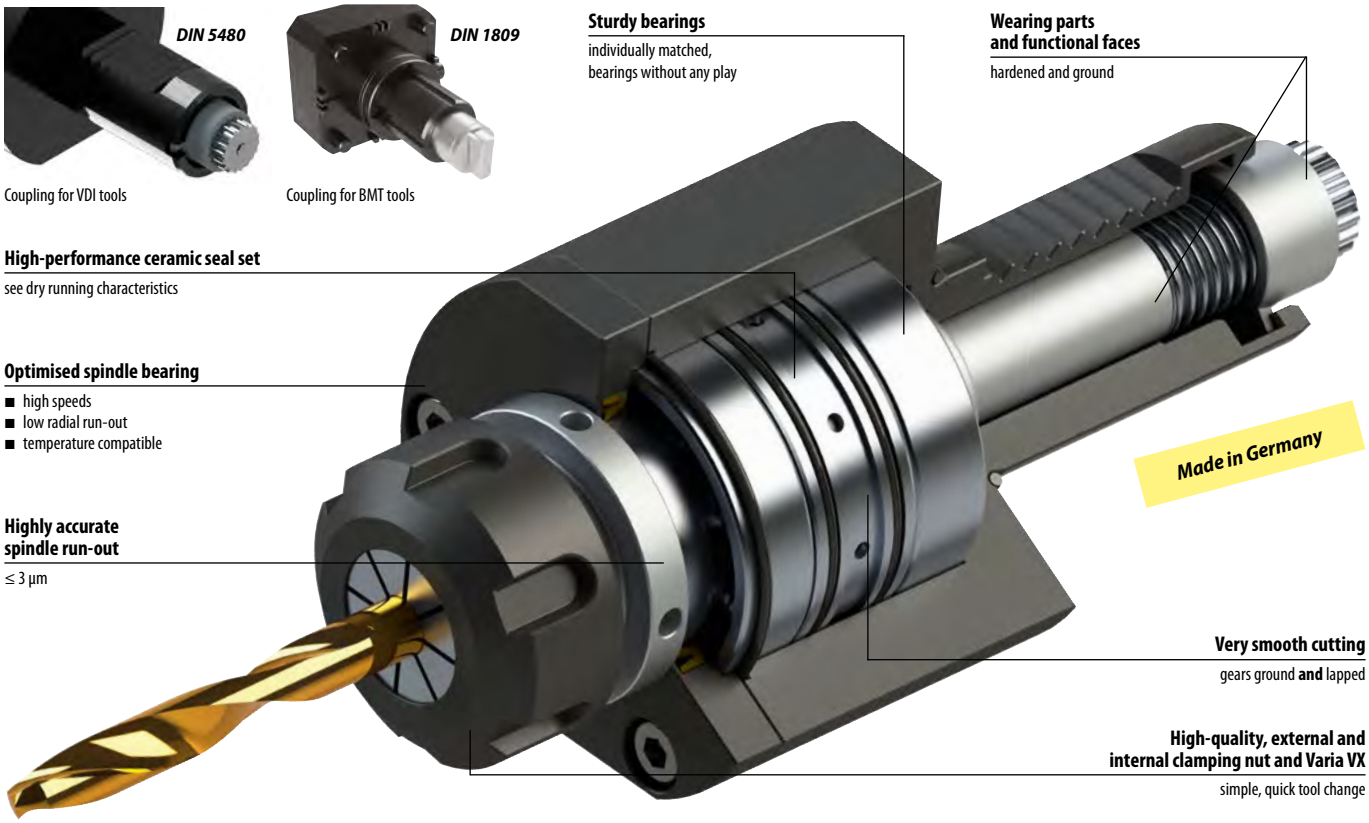
Suitable for: DMG Gildemeister CTX. In some cases, Emco, Hardinge, Monforts, Scherer etc. with DIN 5480 or BMT turret with DIN 1809.

Advantage:
- Design optimised for weight and geometry.
- Process reliability thanks to high-quality components, long working life.
- Transmission of high torques.
- 100% inspection – every driven tool undergoes a run-in program.
- Through cooling: specially developed and patented seal.

Application: As many machining steps as possible in one clamping set-up. Where space (available clamping positions) in the revolver is at a premium.

Supplied with: Driven tool for collet: including clamping nut and hook spanner. Driven tool VARIA VX: including chuck key.

Note:
- Other drive types (such as DIN 5482), ratios, dimensions, BMT etc. on request, see: www.hoffmann.ews-tools.com
- IC tools (internal cooling), can run dry, coolant filtering < 50 µm.
- Recommendation: operate version VARIA VX with a torque tool (max. 6 Nm).
- For heavy-duty milling work, a variant with tapered roller bearings is recommended on request.

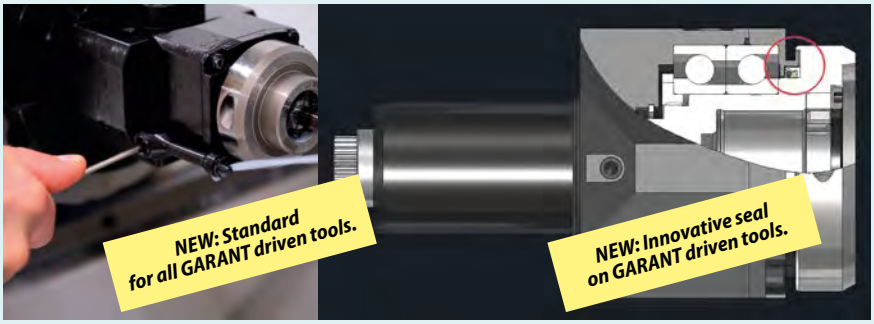


Garant Driven tools:

Butterfly seal and coolant management.

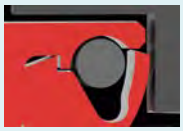
New **type of butterfly seal,** which prevents dirt and coolant from penetrating into the inside of the driven tool –> significantly **less maintenance** and almost **wear-free**.

Robust and general-purpose **coolant management.**
- Quick and easy to use.
- Coolant flow adjustable.
- Targeted cooling on the cutting edge.





At low speeds, the sealing lip is in contact.



At high speeds, the sealing lip lifts off.

Driven tools - axial version - for DMG CTX

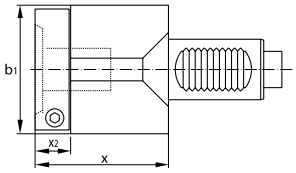
Version IK – with ceramic seal set, pressures up to 70 bar, with full dry-run capability.
Version IM – with internal clamping nut.
For use on both disc and radial turrets.
Ratio 1:1. Version with internal cooling (internal) max. 70 bar.

Special IK seal for high pressures and dry machining

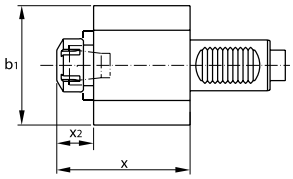

31 9962_30-ER25


Radial turret


Disc turret




31 9962_30-ER25-IM




31 9964_30-VX3

Type			30-ER25	30-ER25-IK	30-ER25-IM	30-25IM-IK	30-VX3	30-VX3-IK	VDI
31W 31 9962	Driven tool, axial	ER25	eShop	eShop	eShop	eShop	–	–	30
31W 31 9964		VX3	–	–	–	–	eShop	(eShop)	30
b_1		mm	68						
x		mm	93.5	93.5	74.9	74.9	75	75	
x_1		mm	–	–	–	–	79	79	
x_2		mm	35	35	16.4	16.4	58.5	58.5	
Cooling			external	internal	external	internal	external	internal	
maximum pressure		bar	70						

Type			40-ER32	40-ER32-IK	40-ER32-IM	40-32IM-IK	40-VX4	40-VX4-IK	VDI
31W 31 9965	Driven tool, axial	ER32	eShop	eShop	eShop	eShop	–	–	40
31W 31 9966		VX4	–	–	–	–	eShop	(eShop)	40
b_1		mm	85						
x		mm	102	102	79.1	79.1	80	80	
x_1		mm	–	–	–	–	84	84	
x_2		mm	39.4	39.4	16.2	16.2	62.6	62.6	
Cooling			external	internal	external	internal	external	internal	
maximum pressure		bar	70						

Driven tools - radial version disc turret - for DMG CTX

Version IK – with ceramic seal set, pressures up to 70 bar, with full dry-run capability.
Version IM – with internal clamping nut.
For use on **disc turrets**. Right-hand version. Ratio 1:1.
Version with internal cooling (internal) max. 70 bar. Alignment using **standard-pin bar.**
31 9975/9977/9985/9986 – Recessed version for more machining space.


DIN 5480

Special IK seal for high pressures and dry machining


Standard pin strip

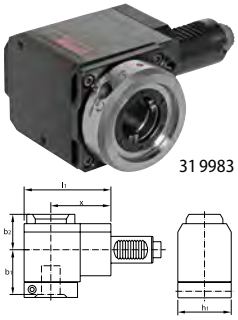
Type			30-25-R	30-25-R-IK	30-25-R-IM	30-25RIMIK	30-VX3-R	30-VX3-RIK	VDI
31W 31 9971	Driven tool, radial	ER25	eShop	eShop	eShop	eShop	–	–	30
31W 31 9973		VX3	–	–	–	–	eShop	eShop	30
l_1		mm	89						
b_1		mm	84	84	62.4	62.4	65.5	65.5	
b_2		mm	43	50	43	50	43	50	
h_1		mm	68						
x		mm	55						
Cooling			external	internal	external	internal	external	internal	



Type			Z30-25-R	Z30-25R-IK	Z30-25R-IM	Z3025RIMIK	Z30-VX3-R	Z30-VX3RIK	VDI
31W 31 9975	Driven tool, radial recessed	ER25	eShop	eShop	eShop	eShop	–	–	30
31W 31 9977		VX3	–	–	–	–	eShop	eShop	30
l_1		mm	103.5						
b_1		mm	41.5	41.5	19.9	19.9	23	23	
b_2		mm	85.5	92.5	85.5	92.5	85.5	92.5	
h_1		mm	64	64	64	64	68	68	
x		mm	70						
Cooling			external	internal	external	internal	external	internal	

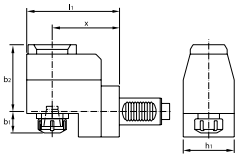

31 9971

Type			40-32-R	40-32-R-IK	40-32-R-IM	40-32RIMIK	40-VX4-R	40-VX4-RIK	VDI
31W 31 9981	Driven tool, radial	ER32	eShop	eShop	(eShop)	eShop	–	–	40
31W 31 9983		VX4	–	–	–	–	eShop	eShop	40
l_1		mm	138						
b_1		mm	96	96	71.1	71.1	72.5	72.5	
b_2		mm	52	58	52	58	52	58	
h_1		mm	76						
x		mm	100						
Cooling			external	internal	external	internal	external	internal	


31 9983

Type			Z40-32-R	Z40-32R-IK	Z40-32R-IM	Z4032RIMIK	Z40-VX4-R	Z40-VX4RIK	VDI
31W 31 9985	Driven tool, radial **recessed**	ER32	(eShop)	eShop	(eShop)	eShop	–	–	40
31W 31 9986		VX4	–	–	–	–	eShop	eShop	40
l_1		mm	138						
b_1		mm	48.5	48.5	23.6	23.6	25	25	
b_2		mm	99.5	105.5	99.5	105.5	99.5	105.5	
h_1		mm	76						
x		mm	100						
Cooling			external	internal	external	internal	external	internal	


31 9985



Driven tools - radial version radial turret - for DMG CTX

For use on **radial turrets.** Left-hand version, i.e. machining in the direction of the main spindle.
Ratio 1:1. Version with internal cooling (internal) max. 70 bar.
Version IK – with ceramic seal set, pressures up to 70 bar, with full dry-run capability. Standard alignment rail (pin).



DIN 5480



Type			30-25-L	30-25-LIK	30-VX3-L	30-VX3-LIK	30-25-L-IM	30-25LIMIK	VDI
31W 31 9987	Driven tool, radial, standard pin	ER25	eShop	(eShop)	–	–	eShop	eShop	30
31W 31 9988		VX3	–	–	eShop	eShop	–	–	30
l_1		mm	134						
b_1		mm	84	84	65.5	65.5	62.4	62.4	
b_2		mm	43	50	43	50	43	50	
h_1		mm	68						
x		mm	100						
Cooling			external	internal	external	internal	external	internal	


Machining the end face of the workpiece

Type			40-32-L	40-32-LIK	40-VX4-L	40-VX4-LIK	40-32-L-IM	40-32LIMIK	VDI
31W 31 9989	Driven tool, radial, standard pin	ER32	eShop	eShop	–	–	eShop	eShop	40
31W 31 9998		VX4	–	–	(eShop)	eShop	–	–	40
l_1		mm	138						
b_1		mm	85	85	76.5	72.5	71.1	71.1	
b_2		mm	53	72	53	58	52	58	
h_1		mm	76						
x		mm	100						
Cooling			external	internal	external	internal	external	internal	

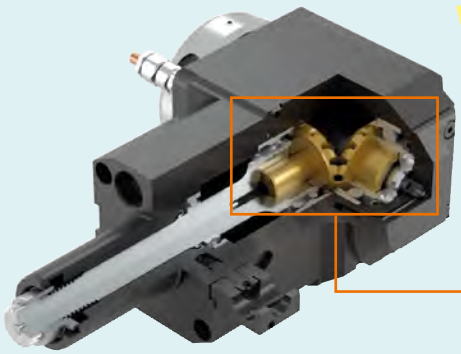

Pin rail

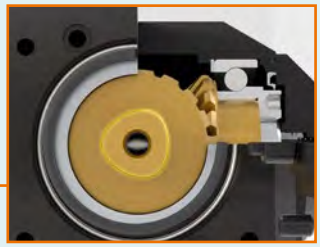
Garant Driven tools:

Polygon connection and VDI double toothing

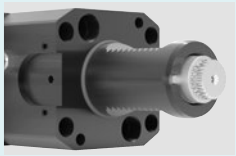
Unique power and speed transmission through **new polygon connection** (drive/output shaft to gear pinion). Compared to conventional groove-spring connection:

- Significantly less maintenance.
- Better torque transmission.





Significantly more flexible use of radial driven tools, thanks **to VDI double-toothing** -> one tool for the main **spindle and** counterspindle.



Driven tools - axial version - for BMT turret

Version IK – with ceramic seal set, pressures up to 70 bar, with full dry-run capability.
Version IM – with internal clamping nut.



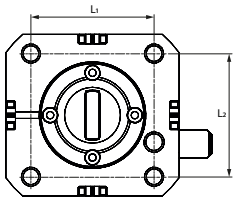
31 9929_55-25-IK

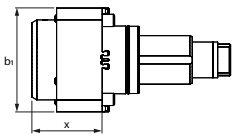


Radial turret



Special IK seal for high pressures and dry machining







31 9929_55-VX3-IK

Type			55-25	55-25-IK	55-VX3	55-VX3-IK	60-40	60-40-IK	60-V5	60-V5-IK
31V 31 9929	Driven tool, axial	BMT55	eShop	eShop	eShop	eShop	–	–	–	–
31V 31 9930		BMT60	–	–	–	–	eShop	eShop	eShop	eShop
Tool clamping			ER25	ER25	VX3	VX3	ER40	ER40	V5	V5
L_1		mm	64	64	64	64	94	94	94	94
L_2		mm	64	64	64	64	84	84	84	84
b_1		mm	84	84	84	84	108	108	108	108
x		mm	58.9	58.9	57	57	98	98	83.5	83.5
Cooling			external	internal	external	internal	external	internal	external	internal

Type			65-32	65-32-IK	65-VX4	65-VX4-IK
31V 31 9932	Driven tool, axial	BMT65	eShop	eShop	eShop	eShop
Tool clamping			ER32	ER32	VX4	VX4
L_1		mm	70			
L_2		mm	73			
b_1		mm	97			
x		mm	61.1	61.1	57	57
Cooling			external	internal	external	internal

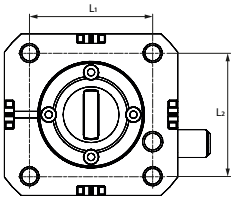


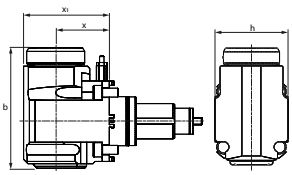
31 9930_60-40-IK

Driven tools - radial version - for BMT turret

Version IK – with ceramic seal set, pressures up to 70 bar, with full dry-run capability.
For use on BMT turrets. Ratio 1:1.
Version with internal cooling (internal) max. 70 bar.







Special IK seal for high pressures and dry machining



31 9934_55-25-IK

Type			55-25	55-25-IK	55-VX3	55-VX3-IK	60-40	60-40-IK	60-V5	60-V5-IK
31V 31 9934	Driven tool, radial	BMT55	eShop	eShop	eShop	eShop	–	–	–	–
31V 31 9936		BMT60	–	–	–	–	eShop	eShop	eShop	eShop
Tool clamping			ER25	ER25	VX3	VX3	ER40	ER40	V5	V5
L_1		mm	64	64	64	64	94	94	94	94
L_2		mm	64	64	64	64	84	84	84	84
x		mm	60	60	60	60	90	90	90	90
x_1		mm	96	96	96	96	139	139	136	136
b		mm	132.4	139.4	134.5	141.5	206	207.5	160.5	160.5
h		mm	84	84	84	84	108	108	89	89
Cooling			external	internal	external	internal	external	internal	external	internal

Type			65-32	65-32-IK	65-VX4	65-VX4-IK
31V 31 9938	Driven tool, radial	BMT65	eShop	eShop	eShop	eShop
Tool clamping			ER32	ER32	VX4	VX4
L_1		mm	70			
L_2		mm	73			
x		mm	72			
x_1		mm	113			
b		mm	154.6	159.6	152.5	157.5
h		mm	94			
Cooling			external	internal	external	internal



31 9936_60-40-IK

BMT toolholders

High-precision arbors adapted to the specific machine, for flexible use on main and counter-spindle machines.
Contact face and functional face ground. Perfectly matched for the respective lathe.

Suitable for: CNC lathes with BMT tool turret.

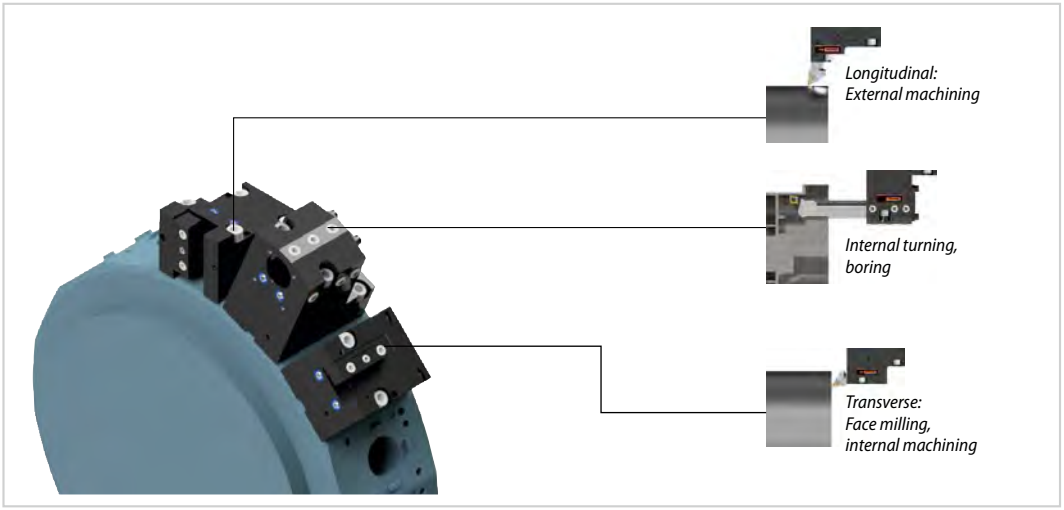
Advantage:
- Design optimised for weight and geometry.
- Process reliability thanks to high-quality materials, long working life.
- Burnished for better corrosion protection.
- With secured ball injection nozzles up to 80 bar.

Application: Internal and external machining in CNC lathes with BMT tool turrets.

Note: Other BMT holders with different sizes and dimensions are available on request.



31 9888_60





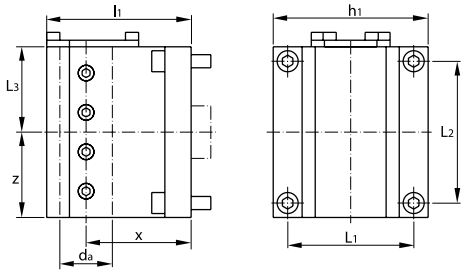
31 9887_60

Boring bar / combination holder

For internal and external cooling.

31 9888 – Suitable for efficient cooling systems such as GARANT eco, but also for other systems. Optimised outer contour.

Application: For internal machining with boring bar holder or indexable drills.



BMT			40	55-70 NEW	55-100 NEW	60	65-72 NEW	65-100 NEW	68-95 NEW
31V 31 9888	Garant	BMT boring bar toolholder	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Z		mm	65	62	60	70	77	77	64
x		mm	100	70	100	80	72	100	95
l_1		mm	125	100	130	110	106	131	123
d_a		mm	32	40	40	40	40	40	40
L_1		mm	62	64	64	84	73	73	68
L_2		mm	70	64	64	94	70	70	110
L_3		mm	10	18	20	30	40	7	21
h_1		mm	78	85	85	108	96	96	84



31 9888_68

BMT			40	45-65	45-85	55	60	65-72	65-100	68	WT100-75	WT100-92,5	WT150
NEW 32U 31 9887	HOLEX	BMT boring bar toolholder	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Z		mm	65	45	45	56	70	64	64	64	31	31	40
x		mm	100	65	85	70	80	72	100	95	75	92.5	75
l_1		mm	125	90	110	90	120	105	132	132	92	110	100
d_a		mm	32	32	32	40	40	40	40	40	25	25	32
L_1		mm	62	58	58	64	84	73	73	68	55	55	60
L_2		mm	70	58	58	64	94	70	70	110	40	40	50
L_3		mm	13	40	40	45	25	51	51	26	31	31	40
h_1		mm	78	75	75	85	108	95	95	85	80	80	80

Longitudinal and transverse toolholders

Suitable for conventional toolholders.

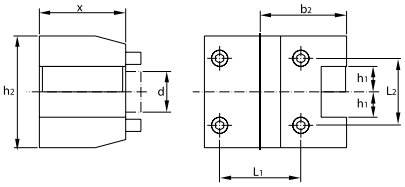
31 9884/9886 – Suitable for efficient cooling systems such as GARANT eco, but also for other systems.
Optimised outer contour. Scale to optimally adjust the machining tool.
Spring-mounted pressure pad for uniform clamping of the turning tools.
For internal and external cooling.

Application:

31 9886 – Primarily for facing and internal machining.
31 9884/9885 – Mainly for external machining.

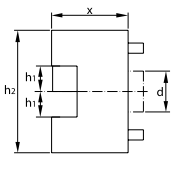


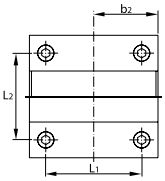
Highly efficient cooling directly at the cutting edge with GARANT eco





31 9884_60 31 9885_60







31 9886_68

BMT		40	45	55	60	65	68	WT100	WT150
31V 31 9884	Garant Eco BMT longitudinal toolholder	eShop	–	eShop	eShop	eShop	eShop	–	–
NEW 32U 31 9885	HOLEX BMT longitudinal toolholder	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31V 31 9886	Garant Eco BMT transverse toolholder	eShop	–	eShop	eShop	eShop	eShop	–	–
x (31 9884)	mm	70	–	60	70	75	75	–	–
x (31 9885)	mm	70	65	60	70	80	80	62	65
x (31 9886)	mm	80	–	95	100	60	98	–	–
L_1 (31 9884, 31 9885)	mm	70	58	64	94	70	110	40	50
L_1 (31 9886)	mm	70	–	64	94	64	100	–	–
L_2 (31 9884, 31 9885)	mm	62	58	64	84	73	68	55	60
L_2 (31 9886)	mm	62	–	64	84	64	68	–	–
b_2 (31 9884)	mm	65	–	70.5	65	–	64	–	–
b_2 (31 9885)	mm	65	62	81	65	80	64	52	40
b_2 (31 9886)	mm	65	–	45	70	70.5	64	–	–
h_1 (31 9884)	mm	20	–	20	25	25	25	–	–
h_1 (31 9885)	mm	20	20	25	25	25	25	20	20
h_1 (31 9886)	mm	20	–	20	25	20	25	–	–
h_2 (31 9884)	mm	78	–	90	70	97	94	–	–
h_2 (31 9885)	mm	78	75	97	108	95	95	80	80
h_2 (31 9886)	mm	78	–	91	108	85	94	–	–

Choosing the right size for our BMT tools:

Hole pattern for screws:










	Size 40	Size 45	Size 55	Size 60	Size 65	Size 68	WT100	WT150
Suitable machines:	MORI NL/NLX MORI NTX MORI NT MORI NZ MORI ALX MORI DuraTurn GANESH ASL TAKISAWA	DN SOLUTIONS/ DOOSAN PUMA DN SOLUTIONS/ DOOSAN LYNX EMCO HYUNDAI WIA HARDINGE HWACHEON HAAS Spinner SMEC TAKAMAZ TAKISAWA VICTOR VTurn	ACCUWAY ALEX-TECH DN SOLUTIONS/ DOOSAN PUMA DN SOLUTIONS/ DOOSAN LYNX EMAG VL EMCO HYUNDAI WIA HARDINGE HWACHEON SMEC TAKAMAZ TAKISAWA VICTOR VTurn YCM	MORI NL/NLX MORI NTX MORI NT FOCUS CNC TAKISAWA TS	DN SOLUTIONS/ DOOSAN PUMA EMAG EMCO ECOCA FOCUS CNC GANESH GOODWAY HAAS HARDINGE HWACHEON HYUNDAI WIA JOHNFORD SMEC SPINNER TAKISAWA Tongtai VICTOR	QT Smart QT Compact QTE QT-Ez QTU	Nakamura-Tome NA44A Nakamura-Tome WT-100 Nakamura-Tome NTJ-100 Nakamura-Tome SC CMZ TTS Muratec MT	Nakamura-Tome WT-150 Nakamura-Tome SC Nakamura-Tome Super Nakamura-Tome NA55A Nakamura-Tome NTY[3] Nakamura-Tome AS Nakamura-Tome TW Nakamura-Tome JX CMZ TA CMZ TD

See eShop for exact machine specifications

ISO 12164-3

Toolholder with hollow taper shank (HSK) – Form T for turning / milling centres

Application: For use on lathes and milling centres.

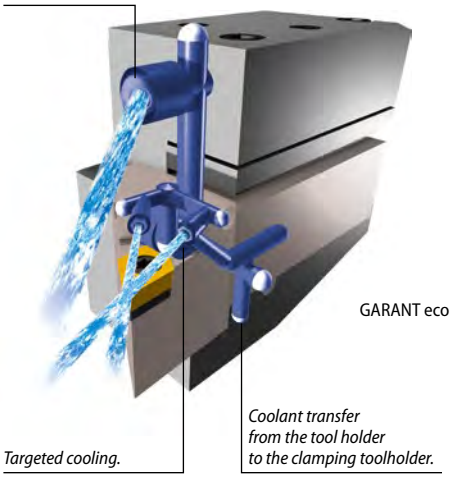
Toolholder for square shanks

With adjustable cooling nozzle with internal thread.
31 8602–8606/8622/8624 – Slim contour for better accessibility.
31 8620–8628 – **GARANT** - Optimisation of tool life, better surface finishes, increased process reliability and increased productivity due to GARANT Eco.

Application: For mounting ISO toolholders with square shanks.

Note:
31 8628 – With pass-through shim. Suitable for toolholders with shank 20 **and** 25 mm.

HSK-T



Additional cooling using a high-pressure spherical spray nozzle.

Targeted cooling.

Coolant transfer from the tool holder to the clamping toolholder.

GARANT eco



Adapted mating face for strong grip.

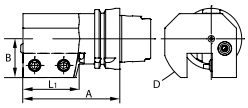
With pass-through shim. Suitable for toolholders with shank 20 and 25 mm.

31 8622

for toolholder square			mm	20	25
36D 31 8602	SWISS TOOLS	Toolholder **axial, single, right-hand**	HSK-T 40	eShop	–
36D 31 8606	SWISS TOOLS	Toolholder **axial, single, left-hand**	HSK-T 40	eShop	–
36D 31 8618	SWISS TOOLS	Toolholder **radial**	HSK-T 40	(eShop)	–
31G 31 8620	Garant	Eco toolholder **axial single, right-hand**	HSK-T 63	–	eShop
31G 31 8621	Garant	Eco toolholder **axial single, left-hand**	HSK-T 63	–	eShop
NEW 31G 31 8622	Garant	Eco toolholder **axial single, right-hand**	HSK-T 63	–	eShop
NEW 31G 31 8624	Garant	Eco toolholder **axial single, left-hand**	HSK-T 63	–	eShop
36D 31 8802	SWISS TOOLS	Toolholder **axial, single, right-hand**	HSK-T 63	eShop	–
36D 31 8806	SWISS TOOLS	Toolholder **axial, single, left-hand**	HSK-T 63	eShop	–
31G 31 8623	Garant	Eco toolholder **axial double, right-hand**	HSK-T 63	–	eShop
36D 31 8814	SWISS TOOLS	Toolholder **axial, triple, right-hand**	HSK-T 63	eShop	(eShop)
31G 31 8625	Garant	Eco toolholder **radial**	HSK-T 63	–	eShop
36D 31 8818	SWISS TOOLS	Toolholder **radial**	HSK-T 63	eShop	eShop
31G 31 8627	Garant	Eco toolholder **diagonal 45°, right-hand**	HSK-T 63	–	eShop
31G 31 8628	Garant	Eco toolholder **diagonal 45°, left-hand**	HSK-T 63	–	eShop
36D 31 8822	SWISS TOOLS	Toolholder **diagonal 45°, right-hand**	HSK-T 63	(eShop)	(eShop)
36D 31 8826	SWISS TOOLS	Toolholder **diagonal 45°, left-hand**	HSK-T 63	(eShop)	(eShop)
Dimension A (31 8602, 31 8606, 31 8620, 31 8621, 31 8622, 31 8623, 31 8624)			mm	80	130
Dimension A (31 8618, 31 8625)			mm	75	90
Dimension A (31 8802, 31 8806, 31 8627, 31 8628)			mm	90	112.7
Dimension A (31 8814)			mm	90	100
Dimension A (31 8818)			mm	90	
Dimension A (31 8822, 31 8826)			mm	100	
L_1 (31 8602, 31 8606, 31 8620, 31 8621, 31 8622, 31 8624, 31 8802, 31 8806, 31 8623, 31 8625)			mm	45	88
L_1 (31 8814, 31 8822, 31 8826)			mm	45	58
L_1 (31 8627, 31 8628)			mm	–	80
B (31 8602, 31 8606, 31 8618, 31 8620, 31 8621, 31 8802, 31 8806, 31 8623, 31 8814, 31 8625, 31 8818, 31 8627, 31 8628, 31 8822, 31 8826)			mm	30	40
B (31 8622, 31 8624)			mm	–	25
∅ D (31 8602, 31 8606, 31 8618, 31 8620, 31 8621, 31 8802, 31 8806, 31 8623, 31 8625, 31 8818, 31 8822, 31 8826)			mm	80	102
∅ D (31 8622, 31 8624)			mm	–	78
∅ D (31 8814)			mm	90	102
∅ D (31 8627, 31 8628)			mm	–	94
f (31 8627, 31 8628)			mm	–	12.7
f (31 8822, 31 8826)			mm	15	

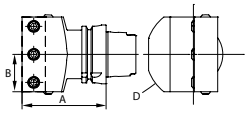


31 8623



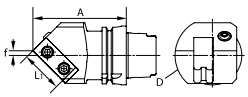


31 8618





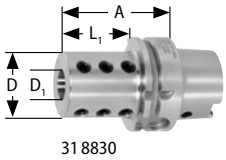
31 8822



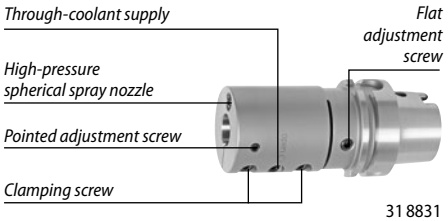
Boring bar holder

31 8831 – **GARANT** - more stability and vibration damping effect due to wrapping around the boring bar.

Application: For mounting boring bars.



31 8830



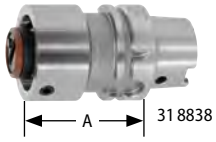
31 8831

Clamping range ∅ D_1			mm	6	8	10	12	16	20	25	32	40
36D 31 8829	SWISS TOOLS	Boring bar holder	HSK-T 40	(eShop)	(eShop)	eShop	eShop	eShop	–	–	–	–
36D 31 8830	SWISS TOOLS	Boring bar holder	HSK-T 63	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31G 31 8831	Garant	Boring bar holder **slotted**	HSK-T 63	–	–	eShop	eShop	eShop	eShop	eShop	eShop	–
Dimension A (31 8829)			mm	55	55	55	55	70	–	–	–	–
Dimension A (31 8830)			mm	60	60	60	60	75	75	75	90	90
Dimension A (31 8831)			mm	–	–	105	105	105	105	105	105	–
∅ D (31 8829, 31 8830)			mm	34	34	34	36	40	44	50	56	63
∅ D (31 8831)			mm	–	–	45	45	45	55	55	65	–
L_1 (31 8829)			mm	35	35	35	35	50	–	–	–	–
L_1 (31 8830)			mm	34	34	34	34	49	49	49	64	64
L_1 (31 8831)			mm	–	–	79.05	79.05	79.05	79.05	79.05	80	–

Extensions

Application: For extension of HSK interfaces.

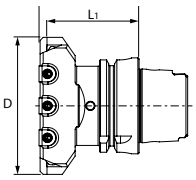
A dimension			mm	80	120
36D 31 8838	SWISS TOOLS	Extension HSK-T63 / HSK-T63	HSK-T 63	eShop	eShop
∅ D			mm	63	

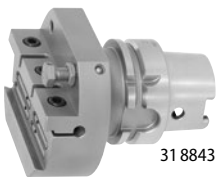


31 8838

Parting-off toolholder

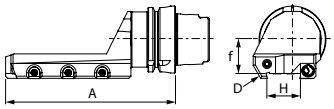
Application: To take parting-off blades with coolant delivery from all popular manufacturers. Transfer holes not used can be closed off using the screws supplied. Supplied with ball spray nozzle.




31 8843

for blade height H			mm	32
36D 31 8843		Eco parting-off toolholder, radial	HSK-T 63	(eShop)
36D 31 8844	Garant	Eco parting-off toolholder, axial, right-hand	HSK-T 63	eShop
36D 31 8845		Eco parting-off toolholder, axial, left-hand	HSK-T 63	eShop
Dimension A (31 8843)			mm	65
Dimension A (31 8844, 31 8845)			mm	160
L_1 (31 8843)			mm	60
∅ D (31 8843)			mm	90
∅ D (31 8844, 31 8845)			mm	75
f (31 8844, 31 8845)			mm	32

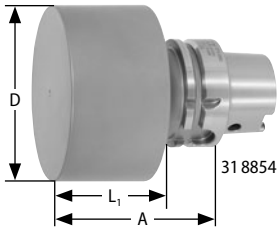

31 8844



Blanks

Application: For making special tools.

∅ D×A dimension			mm	63×200	102×100
36D 31 8854	SWISS TOOLS	Blank	HSK-T 63	(eShop)	eShop
L_1			mm	174	74

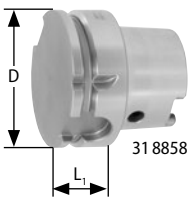


31 8854

Blanking plug

Application: For closing off unused HSK clamping units.

HSK-T				40	63
36D 31 8858	SWISS TOOLS	HSK-T - blanking plug		eShop	eShop
Adapter				HSK-T 40	HSK-T 63
∅ D			mm	40	63
L_1			mm	20	26



31 8858

ISO 26623-1

Toolholder with polygonal shanks (PSC) – for turning / milling centres

Application: For use on lathes and milling centres.

Note: PSC clamping stud on request.

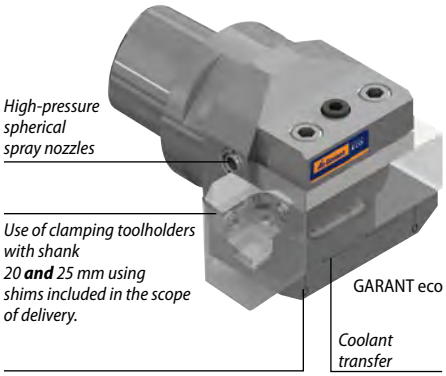
Toolholder for square shanks

GARANT - Optimisation of tool life, better surface finishes, increased process reliability and increased productivity due to GARANT eco.

31 8851/8852/8861/8862/8855/8856/8857/8859 –
GARANT - Optimisation of tool life, better surface finishes, increased process reliability and increased productivity due to GARANT Eco.

Application: For mounting ISO toolholders with square shanks.

PSC



for toolholder square			mm	20	25	32
36D 31 8901	SWISS TOOLS	Toolholder **axial single, right-hand**	PSC 40	(eShop)	–	–
36D 31 8902	SWISS TOOLS	Toolholder **axial single, left-hand**	PSC 40	(eShop)	–	–
36D 31 8905	SWISS TOOLS	Toolholder **radial**	PSC 40	eShop	–	–
36D 31 8921	SWISS TOOLS	Toolholder **axial single, right-hand**	PSC 50	eShop	–	–
36D 31 8922	SWISS TOOLS	Toolholder **axial single, left-hand**	PSC 50	(eShop)	–	–
36D 31 8926	SWISS TOOLS	Toolholder **radial**	PSC 50	eShop	–	–
31G 31 8851	Garant	Eco toolholder **axial single, right-hand**	PSC 63	–	eShop	–
31G 31 8852	Garant	Eco toolholder **axial single, left-hand**	PSC 63	–	eShop	–
NEW 31G 31 8861	Garant	Arbor **axial, single, right-hand**	PSC 63	–	eShop	–
NEW 31G 31 8862	Garant	Arbor **axial, single, left-hand**	PSC 63	–	eShop	–
36D 31 8860	SWISS TOOLS	Toolholder **axial single, right-hand**	PSC 63	eShop	–	–
36D 31 8864	SWISS TOOLS	Toolholder **axial single, left-hand**	PSC 63	eShop	–	–
31G 31 8855	Garant	Eco toolholder **axial double, right-hand**	PSC 63	–	eShop	–
36D 31 8872	SWISS TOOLS	Toolholder **axial triple, right-hand**	PSC 63	eShop	(eShop)	–
31G 31 8856	Garant	Eco toolholder **radial**	PSC 63	–	eShop	–
36D 31 8876	SWISS TOOLS	Toolholder **radial**	PSC 63	(eShop)	eShop	–
31G 31 8857	Garant	Eco toolholder **diagonal 45°, right-hand**	PSC 63	–	eShop	–
31G 31 8859	Garant	Eco toolholder **diagonal 45°, left-hand**	PSC 63	–	eShop	–
36D 31 8941	SWISS TOOLS	Toolholders **axial single, right-hand**	PSC 80	–	–	eShop
36D 31 8942	SWISS TOOLS	Toolholders **axial single, left-hand**	PSC 80	–	–	(eShop)
36D 31 8946	SWISS TOOLS	Toolholders **radial**	PSC 80	–	–	(eShop)
Dimension A (31 8901, 31 8902, 31 8857, 31 8859)			mm	80	110	–
Dimension A (31 8905)			mm	55	–	–
Dimension A (31 8921, 31 8922)			mm	98	–	–
Dimension A (31 8926)			mm	58	–	–
Dimension A (31 8851, 31 8852, 31 8861, 31 8862, 31 8860, 31 8864, 31 8855, 31 8941, 31 8942)			mm	100	130	140
Dimension A (31 8872)			mm	125	130	–
Dimension A (31 8856, 31 8876, 31 8946)			mm	60	71	85
L_1 (31 8901, 31 8902, 31 8861, 31 8862)			mm	60	88	–
L_1 (31 8921, 31 8922, 31 8851, 31 8852, 31 8860, 31 8864, 31 8855, 31 8941, 31 8942)			mm	75	102	98
L_1 (31 8872)			mm	95	102	–
B (31 8901, 31 8902, 31 8905, 31 8921, 31 8922, 31 8926, 31 8851, 31 8852, 31 8860, 31 8864, 31 8855, 31 8872, 31 8856, 31 8876, 31 8857, 31 8859, 31 8941, 31 8942, 31 8946)			mm	30	40	55
B (31 8861, 31 8862)			mm	–	25	–
∅ D (31 8901, 31 8902, 31 8905, 31 8921, 31 8922, 31 8926, 31 8851, 31 8852, 31 8860, 31 8864, 31 8855, 31 8856, 31 8876, 31 8941, 31 8942)			mm	80	102	110
∅ D (31 8861, 31 8862)			mm	–	78	–
∅ D (31 8872)			mm	90	102	–
∅ D (31 8857, 31 8859, 31 8946)			mm	–	94	132
f (31 8857, 31 8859)			mm	–	12.7	–


31 8901


31 8905

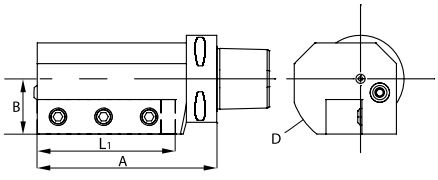


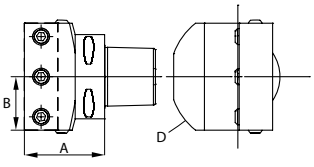
31 8861


31 8855


31 8857

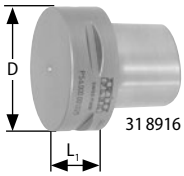

31 8860





Blanking plug

Application: For closing off unused PSC clamping units.

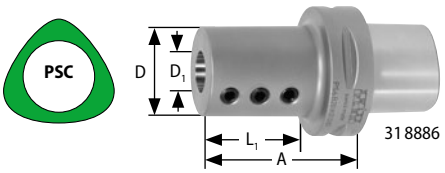


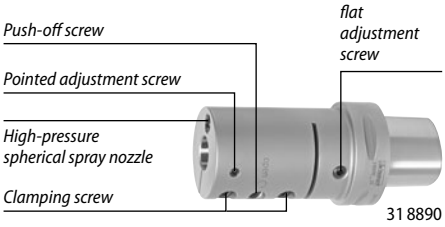
Type			40	50	60
36D 31 8916	SWISS TOOLS	PSC - blanking plug	eShop	eShop	eShop
Adapter			PSC 40	PSC 50	PSC 63

Boring bar holder

31 8890 – **GARANT** - more stability and vibration damping effect due to wrapping around the boring bar.

Application: For mounting boring bars.

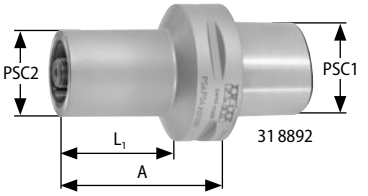




Clamping range ∅ D_1			mm	6	8	10	12	16	20	25	32	40
36D 31 8886			PSC 40	eShop	eShop	(eShop)	eShop	eShop	eShop	–	–	–
36D 31 8887	SWISS TOOLS	Boring bar holder	PSC 50	(eShop)	(eShop)	eShop	eShop	eShop	eShop	eShop	–	–
36D 31 8888			PSC 63	(eShop)	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31G 31 8890	Garant	Boring bar holder **slotted**	PSC 63	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Dimension A (31 8886)			mm	65	65	65	65	65	65	–	–	–
Dimension A (31 8887)			mm	70	70	70	70	70	70	70	–	–
Dimension A (31 8888)			mm	80	80	80	80	80	80	100	100	105
Dimension A (31 8890)			mm	–	–	105	105	105	105	105	105	105
∅ D (31 8886, 31 8887, 31 8888)			mm	34	34	34	36	40	44	50	56	63
∅ D (31 8890)			mm	–	–	45	45	45	55	55	65	75
L_1 (31 8886)			mm	43	43	43	43	43	43	–	–	–
L_1 (31 8887)			mm	48	48	48	48	48	48	48	–	–
L_1 (31 8888)			mm	58	58	58	58	58	58	78	78	83
L_1 (31 8890)			mm	–	–	83	83	83	83	83	85	85

Reduction

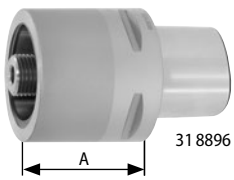
Application: For reduction of PSC interfaces.



PSC1 / PSC2				63/40	63/50
36D 31 8892	SWISS TOOLS	PSC - reduction	PSC 63	eShop	(eShop)
Dimension A			mm	80	
L_1			mm	58	51.5

Extensions

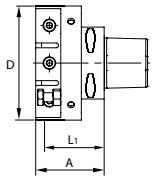
Application: For extending PSC interfaces.



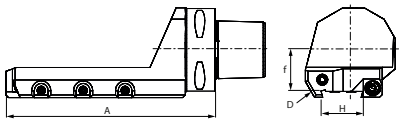
Dimension A			mm	60	80	100
36D 31 8894		Extension PSC-40 / PSC-40	PSC 40	eShop	–	–
36D 31 8895	SWISS TOOLS	Extension PSC-50 / PSC-50	PSC 50	–	eShop	–
36D 31 8896		Extension PSC-63 / PSC-63	PSC 63	eShop	–	eShop
Dimension A			mm	60	80	100

Parting-off toolholder

Application: To take parting-off blades with coolant delivery from all popular manufacturers.
Transfer holes not used can be closed off using the screws supplied.
Supplied with ball spray nozzle.




31 8906




31 8907

for blade height H				mm	32
36D 31 8906		Eco parting-off toolholder, radial	PSC 63		(eShop)
36D 31 8907	Garant	Eco parting-off toolholder, axial, right-hand	PSC 63		(eShop)
36D 31 8909		Eco parting-off toolholder, axial, left-hand	PSC 63		eShop
Dimension A (31 8906)				mm	50
Dimension A (31 8907, 31 8909)				mm	160
L_1 (31 8906)				mm	45.5
∅ D (31 8906)				mm	107
∅ D (31 8907, 31 8909)				mm	96
f (31 8907, 31 8909)				mm	32.5

SWISSTOOLS High-pressure cooling nozzle (HP) for screw-on / lever-lock toolholders

Optimum cooling using a High Pressure (HP) cooling nozzle.
Application: Attachment to a screw-on / lever-lock toolholder with a HP channel.
Supplied with: 1 attachment screw, O-ring, plug screw for the standard cooling channel.


1. Plug the standard cooling channel with a screw plug.


2. Attach the HP nozzle to the appropriate hole.



3. The HP function is immediately ready for use.


32 0001

Type			63
36D 32 0001		High-pressure cooling nozzle (HP)	eShop

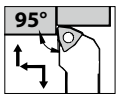
SWISSTOOLS Toolholder for indexable inserts

Note: Order the suitable **HP nozzle** No. 320001 separately.
Spare parts No.320610 – 320626 can be found in the spare parts list.
PSC clamping stud on request.

PSC32 and PSC80 available on request

HSK-T PSC

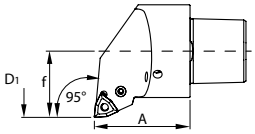
PWLN R/L 95° lever lock toolholder for WN.. 0804..





HP ready

ISO 26623-1



Shank ∅ / insert size	36D 32 0005	36D 32 0006	36D 32 0305	36D 32 0306	Dimension A		∅ D_1 min	f	suitable indexable insert	Spare part
	Lever-lock toolholder				32 0005 32 0006	32 0305 32 0306				
	right-hand	left-hand	right-hand	left-hand						
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/08HP	(eShop)	(eShop)	(eShop)	eShop	55	50	50	27	WN.. 0804..	P04
50/08HP	–	–	eShop	(eShop)	–	60	63	35	WN.. 0804..	P04
63/08HP	eShop	(eShop)	(eShop)	(eShop)	70	65	80	45	WN.. 0804..	P04

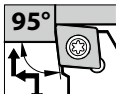
ISO 12164-3

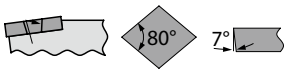

32 0005

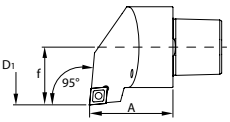
ISO 26623-1


32 0305

SCLC R/L 95° screw-on toolholder for CC.. 1204..







ISO 12164-3

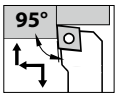


ISO 26623-1

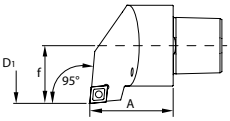


Shank Ø / insert size	36D 32 0010	36D 32 0011	36D 32 0310	36D 32 0311	Dimension A		Ø D_1 min	f	suitable indexable insert	Spare part
	Screw-on toolholder									
	right-hand	left-hand	right-hand	left-hand	32 0010 32 0011	32 0310 32 0311				
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/12HP	(eShop)	(eShop)	eShop	eShop	55	50	50	27	CC.. 1204..	S01
50/12HP	–	–	eShop	(eShop)	–	60	63	35	CC.. 1204..	S01
63/12HP	(eShop)	(eShop)	(eShop)	(eShop)	70	65	80	45	CC.. 1204..	S01

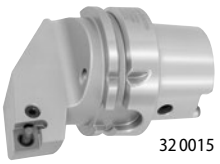
PCLN R / L 95° lever-lock toolholder for CN..







ISO 12164-3

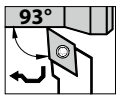


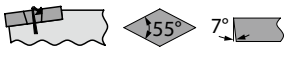
ISO 26623-1

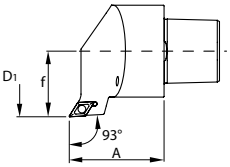


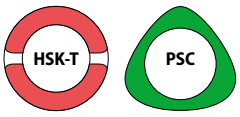
Shank Ø / insert size	36D 32 0015	36D 32 0016	36D 32 0315	36D 32 0316	Dimension A		Ø D_1 min	f	suitable indexable insert	Spare part
	Lever-lock toolholder									
	right-hand	left-hand	right-hand	left-hand	32 0015 32 0016	32 0315 32 0316				
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/12HP	(eShop)	eShop	(eShop)	eShop	55	50	50	27	CN.. 1204..	P01
50/12HP	–	–	(eShop)	eShop	–	60	63	35	CN.. 1204..	P01
63/12HP	(eShop)	eShop	eShop	(eShop)	70	65	80	45	CN.. 1204..	P01
63/16HP	(eShop)	(eShop)	(eShop)	(eShop)	70	65	80	45	CN.. 1606..	P02

SDJC R/L 93° screw-on toolholder for DC.. 11T3..









ISO 12164-3

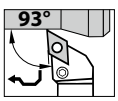


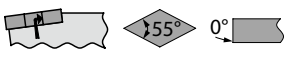
ISO 26623-1

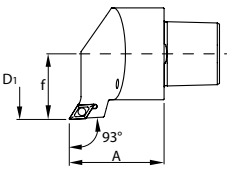


Shank Ø / insert size	36D 32 0030	36D 32 0031	36D 32 0330	36D 32 0331	Dimension A		Ø D_1 min	f	suitable indexable insert	Spare part
	Screw-on toolholder									
	right-hand	left-hand	right-hand	left-hand	32 0030 32 0031	32 0330 32 0331				
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/11HP	(eShop)	eShop	(eShop)	(eShop)	55	50	50	27	DC.. 11T3..	S05
50/11HP	–	–	eShop	eShop	–	60	63	35	DC.. 11T3..	S05
63/11HP	(eShop)	eShop	eShop	eShop	70	65	80	45	DC.. 11T3..	S05

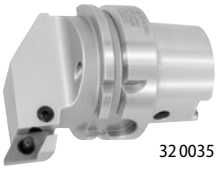
PDJN R/L 93° lever-lock toolholder for DN.. 1506..







ISO 12164-3

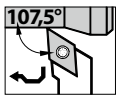


ISO 26623-1



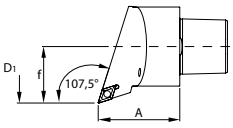
Shank Ø / insert size	36D 32 0035	36D 32 0036	36D 32 0335	36D 32 0336	Dimension A		Ø D_1 min	f	suitable indexable insert	Spare part
	Lever-lock toolholder									
	right-hand	left-hand	right-hand	left-hand	32 0035 32 0036	32 0335 32 0336				
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/15HP	(eShop)	(eShop)	eShop	(eShop)	55	50	50	27	DN.. 1506..	P05
50/15HP	–	–	eShop	(eShop)	–	60	63	35	DN.. 1506..	P05
63/15HP	(eShop)	eShop	(eShop)	(eShop)	70	65	80	45	DN.. 1506..	P05

SDHC R/L 107.5° screw-on toolholder for DC.. 11T3..





HP ready



ISO 12164-3

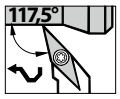

32 0040

ISO 26623-1


32 0340

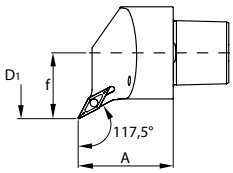
Shank ∅ / insert size	36D 32 0040	36D 32 0041	36D 32 0340	36D 32 0341	Dimension A		∅ D_1 min	f	suitable indexable insert	Spare part
	Screw-on toolholder									
	right-hand	left-hand	right-hand	left-hand	32 0040 32 0041	32 0340 32 0341				
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/11HP	(eShop)	(eShop)	(eShop)	eShop	55	50	50	27	DC.. 11T3..	S05
50/11HP	–	–	(eShop)	eShop	–	60	63	35	DC.. 11T3..	S05
63/11HP	eShop	(eShop)	eShop	eShop	70	65	80	45	DC.. 11T3..	S05

SVPB R/L 117.5° screw-on toolholder for VB.. 1604..

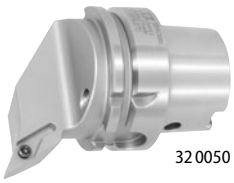




HP ready



ISO 12164-3


32 0050

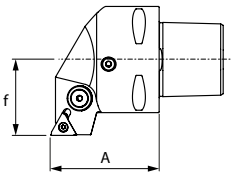
ISO 26623-1


32 0350

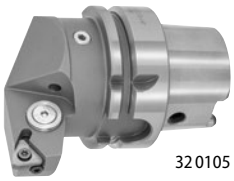
Shank ∅ / insert size	36D 32 0050	36D 32 0051	36D 32 0350	36D 32 0351	Dimension A		∅ D_1 min	f	suitable indexable insert	Spare part
	Screw-on toolholder									
	right-hand	left-hand	right-hand	left-hand	32 0050 32 0051	32 0350 32 0351				
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/16HP	(eShop)	(eShop)	eShop	(eShop)	55	50	50	27	VB.. 1604..	S07
50/16HP	–	–	(eShop)	(eShop)	–	60	63	35	VB.. 1604..	S07
63/16HP	eShop	eShop	(eShop)	eShop	70	65	80	45	VB.. 1604..	S07

R/L external thread screw-on toolholder, radial, for 16E...

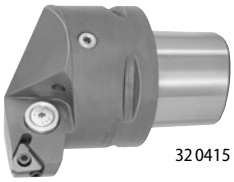
HP ready



ISO 12164-3


32 0105

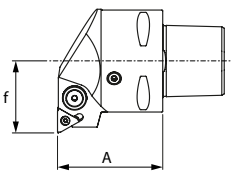
ISO 26623-1


32 0415

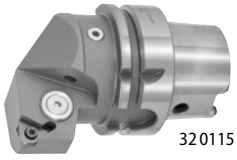
Shank ∅ / insert size	36D 32 0105	36D 32 0106	36D 32 0415	36D 32 0416	Dimension A		f	suitable indexable insert
	Screw-on toolholder							
	right-hand	left-hand	right-hand	left-hand	32 0105 32 0106	32 0415 32 0416		
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	
40/16HP	(eShop)	(eShop)	(eShop)	(eShop)	55	50	27	16E..
50/16HP	–	–	(eShop)	(eShop)	–	60	35	16E..
63/16HP	(eShop)	(eShop)	(eShop)	(eShop)	70	65	45	16E..

R/L external thread screw-on toolholder, axial, for 16E...

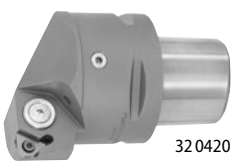
HP ready



ISO 12164-3

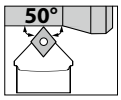

32 0115

ISO 26623-1


32 0420

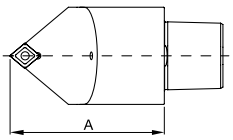
Shank ∅ / insert size	36D 32 0115	36D 32 0116	36D 32 0420	36D 32 0421	Dimension A		f	suitable indexable insert
	Screw-on toolholder							
	right-hand	left-hand	right-hand	left-hand	32 0115 32 0116	32 0420 32 0421		
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	
40/16HP	(eShop)	(eShop)	(eShop)	(eShop)	55	50	27	16E..
50/16HP	–	–	(eShop)	(eShop)	–	60	35	16E..
63/16HP	(eShop)	(eShop)	(eShop)	(eShop)	70	65	45	16E..

PCMN N 50° lever-lock toolholder for CN..





HP ready



ISO 12164-3



32 0065

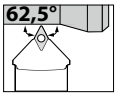
ISO 26623-1



32 0365

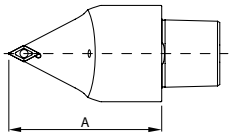
Shank ∅ / insert size – A dimension	36D 32 0065	36D 32 0365	Dimension A	suitable indexable insert	Spare part
	Lever-lock toolholder neutral				
mm	HSK-T	PSC	mm		
4012-80HP	(eShop)	–	80	CN.. 1204..	P01
6312-100HP	eShop	eShop	100	CN.. 1204..	P01
6312-130HP	eShop	eShop	130	CN.. 1204..	P01
6316-100HP	eShop	(eShop)	100	CN.. 1606..	P02
6316-130HP	(eShop)	eShop	130	CN.. 1606..	P02

SDNC N 62.5° screw-on toolholder for DC.. 11T3





HP ready



ISO 12164-3



32 0070

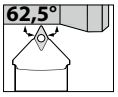
ISO 26623-1



32 0370

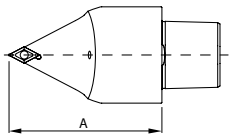
Shank ∅ / insert size – A dimension	36D 32 0070	36D 32 0370	Dimension A	suitable indexable insert	Spare part
	Screw-on toolholder neutral				
mm	HSK-T	PSC	mm		
4011-80HP	eShop	–	80	DC.. 11T3..	S05
6311-130HP	(eShop)	(eShop)	130	DC.. 11T3..	S05
6311-100HP	eShop	eShop	100	DC.. 11T3..	S05

PDNN N 62.5° lever-lock toolholder for DN.. 1506..





HP ready



ISO 12164-3



32 0075

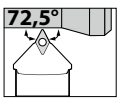
ISO 26623-1



32 0375

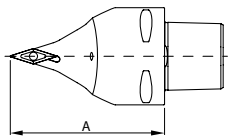
Shank ∅ / insert size – A dimension	36D 32 0075	36D 32 0375	Dimension A	suitable indexable insert	Spare part
	Lever-lock toolholder neutral				
mm	HSK-T	PSC	mm		
4015-80HP	(eShop)	–	80	DN.. 1506..	P06
6315-100HP	eShop	(eShop)	100	DN.. 1506..	P06
6315-130HP	eShop	(eShop)	130	DN.. 1506..	P06

SVVC N 72.5° screw-on toolholder for VC.. 1604..





HP ready



ISO 12164-3



32 0081

ISO 26623-1



32 0381

Shank ∅ / insert size – A dimension	36D 32 0081	36D 32 0381	Dimension A	suitable indexable insert	Spare part
	Screw-on toolholder neutral				
mm	HSK-T	PSC	mm		
4016-80HP	(eShop)	–	80	VC.. 1604..	S07
6316-100HP	(eShop)	(eShop)	100	VC.. 1604..	S07
6316-130HP	eShop	(eShop)	130	VC.. 1604..	S07

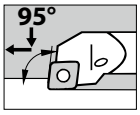
SWISS TOOLS

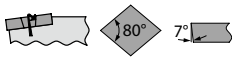
Toolholder / boring bars for indexable inserts

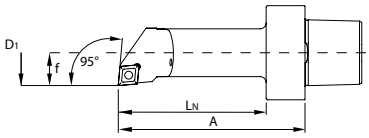
Note: Order the suitable **HP nozzle** No. 320001 separately. Spare parts No. 320610 – 320626 can be found in the spare parts list.
PSC clamping stud on request.

HSK-T PSC

SCLC R/L 95° boring bar for CC.. 1204..







Shank ∅ / insert size – A dimension	36D 32 0085	36D 32 0086	36D 32 0385	36D 32 0386	Dimension A	∅ D_1 min		f	suitable indexable insert	Spare part
	Screw-on boring bar									
	right-hand	left-hand	right-hand	left-hand		32 0085 32 0086	32 0385 32 0386			
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/12-90	–	–	eShop	eShop	90	–	32	17	CC.. 1204..	S01
40/12-110	eShop	eShop	eShop	eShop	110	32	40	22	CC.. 1204..	S01
40/12-140	eShop	eShop	–	–	140	32	–	17	CC.. 1204..	S01
50/12-90	–	–	eShop	(eShop)	90	–	32	17	CC.. 1204..	S01
50/12-110	–	–	eShop	eShop	110	–	40	22	CC.. 1204..	S01
63/12-125	(eShop)	eShop	(eShop)	eShop	125	40	40	22	CC.. 1204..	S01
63/12-140	eShop	(eShop)	eShop	eShop	140	50	50	27	CC.. 1204..	S01
63/12-160	eShop	eShop	eShop	(eShop)	160	40	40	22	CC.. 1204..	S01
63/12-180	eShop	(eShop)	eShop	eShop	180	50	50	27	CC.. 1204..	S01

ISO 12164-3



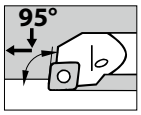
32 0085

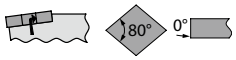
ISO 26623-1

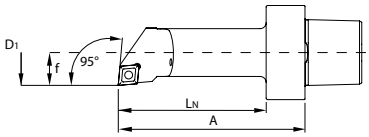


32 0385

PCLN R/L 95° boring bar for CN.. 1204..







Shank ∅ / insert size – A dimension	36D 32 0090	36D 32 0091	36D 32 0390	36D 32 0391	Dimension A	∅ D_1 min	f	suitable indexable insert	Spare part
	Lever-lock boring bar								
	right-hand	left-hand	right-hand	left-hand					
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm		
40/12-110	–	–	eShop	(eShop)	110	40	22	CN.. 1204..	P01
50/12-110	–	–	eShop	(eShop)	110	40	22	CN.. 1204..	P01
63/12-140	(eShop)	(eShop)	(eShop)	(eShop)	140	50	27	CN.. 1204..	P01
63/12-180	(eShop)	eShop	eShop	eShop	180	50	27	CN.. 1204..	P01

ISO 12164-3



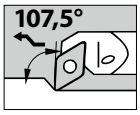
32 0090

ISO 26623-1

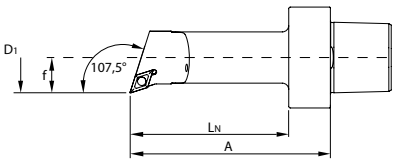


32 0390

SDQC R/L 107.5° boring bar for DC.. 11T3..







Shank ∅ / insert size – A dimension	36D 32 0095	36D 32 0096	36D 32 0395	36D 32 0396	Dimension A	∅ D_1 min		f	suitable indexable insert	Spare part
	Screw-on boring bar									
	right-hand	left-hand	right-hand	left-hand		32 0095 32 0096	32 0395 32 0396			
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm	mm		
40/11-90	–	–	eShop	(eShop)	90	–	32	17	DC.. 11T3..	S05
40/11-110	eShop	eShop	(eShop)	(eShop)	110	32	40	22	DC.. 11T3..	S05
40/11-140	(eShop)	eShop	–	–	140	32	–	17	DC.. 11T3..	S05
50/11-90	–	–	eShop	eShop	90	–	32	17	DC.. 11T3..	S05
50/11-110	–	–	eShop	eShop	110	–	40	22	DC.. 11T3..	S05
63/11-125	(eShop)	(eShop)	eShop	eShop	125	40	40	22	DC.. 11T3..	S05
63/11-140	(eShop)	(eShop)	eShop	eShop	140	50	50	27	DC.. 11T3..	S05
63/11-160	(eShop)	eShop	eShop	(eShop)	160	40	40	22	DC.. 11T3..	S05
63/11-180	(eShop)	(eShop)	(eShop)	eShop	180	50	50	27	DC.. 11T3..	S05

ISO 12164-3



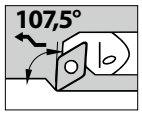
32 0095

ISO 26623-1



32 0395

PDQN R/L 107.5° boring bar for DN.. 1506..

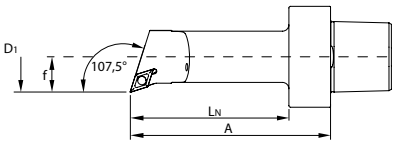




ISO 12164-3



32 0100



ISO 26623-1

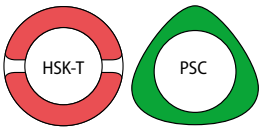


32 0405

Shank ∅ / insert size – A dimension	36D 32 0100	36D 32 0101	36D 32 0405	36D 32 0406	Dimension A	∅ D_1 min	f	suitable indexable insert	Spare part
	Lever-lock boring bar								
	right-hand	left-hand	right-hand	left-hand					
mm	HSK-T	HSK-T	PSC	PSC	mm	mm	mm		
40/15-110	–	–	eShop	eShop	110	40	22	DN.. 1506..	P05
50/15-110	–	–	eShop	eShop	110	40	22	DN.. 1506..	P05
63/15-140	(eShop)	(eShop)	eShop	eShop	140	50	27	DN.. 1506..	P05
63/15-180	(eShop)	(eShop)	(eShop)	eShop	180	50	27	DN.. 1506..	P05

SWISSTOOLS ST boring bar shanks for exchangeable heads

ISO 26623-1 ISO 12164-3



- For efficient turning.
- For left-hand and right-hand turning.

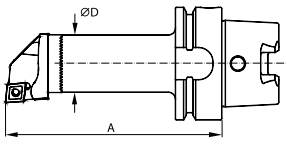
Advantage:

32 0104/0409 –
- Productivity gain - thanks to suppression of vibration the cutting data can be significantly increased.
- Improved surface quality.
- Improved process reliability.
- Improved chip clearance.

Application: For mounting exchangeable cutting heads.

Note: For suitable interchangeable heads see No. 264826 – 264827.

Suitable SwissTools interchangeable cutting heads can be found in the Turning section.

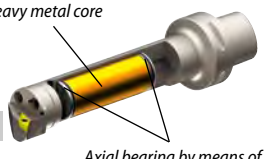




32 0102



32 0104



Boring bar shanks for HP ready

Shank ∅ / ∅ D - A dimension	36D 32 0102	36D 32 0407
	Boring bar shank	
mm	HSK-T	PSC
40/25-90	eShop	(eShop)
40/25-110	eShop	–
40/32-110	–	eShop
40/32-115	eShop	–
40/40-120	eShop	(eShop)
50/25-90	–	eShop
50/32-110	–	eShop
50/40-140	–	eShop
63/25-100	–	(eShop)
63/25-105	eShop	–
63/32-125	eShop	(eShop)
63/32-160	eShop	(eShop)
63/40-140	eShop	eShop
63/40-180	eShop	(eShop)

∅ D – A dimension	36D 32 0410
	Plain boring bar shank
mm	
25-200	(eShop)
32-218	eShop
40-283	eShop



32 0410

Shank ∅ / ∅ D - A dimension	36D 32 0104	36D 32 0409
	Boring bar shank vibration-damped	
mm	HSK-T	PSC
63/25-161	(eShop)	–
63/32-186	(eShop)	–
63/40-226	(eShop)	–
63/25-167	–	(eShop)
63/32-194	–	(eShop)
63/40-238	–	(eShop)

Garant Revolving lathe centres for inserts

- Sprung version for axial length compensation whilst machining.
- Fully hardened and ground. Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.

32 0615 Size 20/0617 Size 20–40 – Plain shank for clamping in boring bar holders, collet chucks or hydraulic chucks; for mounting in the second turret.

Size 32; 40 – For machining heavy components.

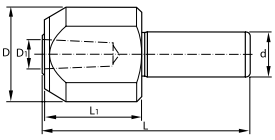
Application: Flexible application thanks to exchangeable inserts. For general use on turrets and counter-spindles on CNC machines.

Supplied with:

32 0615 – Including chuck removal tool for releasing the inserts.

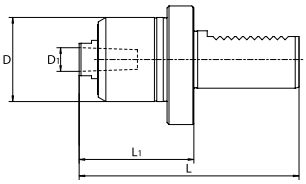
Optional extras: Exchangeable inserts No. 320625.

Size 32; 40 – Exchangeable inserts No. 320629.



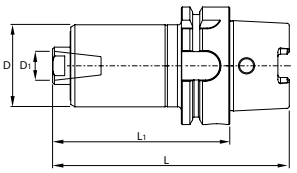


32 0615_20



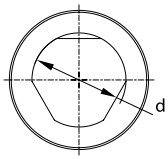


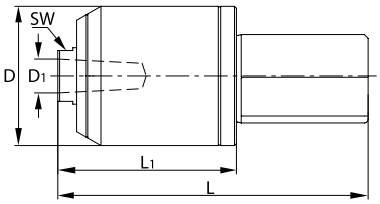
32 0617_VDI30





32 0617_HSK63







32 0617_40



32 0617_50/3

Type		20	25	32	40	VDI30	VDI40	HSK40	HSK50	HSK63
31Z 32 0615	Revolving lathe centre for insert	eShop	–	–	–	–	–	–	–	–
31Z 32 0617		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Adapter		Shank ∅ 20 mm	Shank ∅ 25 mm	Shank ∅ 32 mm	Shank ∅ 40 mm	VDI 30	VDI 40	HSK 40	HSK 50	HSK 63
Body ∅ D (32 0615)	mm	40	–	–	–	–	–	–	–	–
Body ∅ D (32 0617)	mm	44	44	66	74	44	44	44	44	44
∅ D_1	mm	12	12	18	18	12	12	12	12	12
for workpiece weight (32 0615)	kg	200	–	–	–	–	–	–	–	–
for workpiece weight (32 0617)	kg	300	300	500	550	300	300	300	300	300
L (32 0615)	mm	90	–	–	–	–	–	–	–	–
L (32 0617)	mm	118	118	155	165	115	123	115	120	127
L_1 (32 0615)	mm	41	–	–	–	–	–	–	–	–
L_1 (32 0617)	mm	51	51	95	95	60	60	95	95	95
Sprung travel (32 0615)	mm	2.4	–	–	–	–	–	–	–	–
Sprung travel (32 0617)	mm	3	3	4	4	3	3	3	3	3
maximum speed (32 0615)	min^{-1}	4000	–	–	–	–	–	–	–	–
maximum speed (32 0617)	min^{-1}	3000	3000	5000	4000	3000	3000	3000	3000	3000
Radial run-out	mm					0.01				
suitable for colour code										

Garant Exchangeable inserts for the revolving lathe centres

- High flexibility due to range of geometries on the same carrier tool.
- Fully hardened and ground.
- Quick and efficient exchange of worn tools.

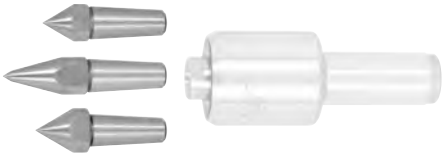
Suitable for:

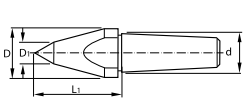
32 0625 – Lathe centre No. 320615, No. 320617, No. 320659 size 2, No. 321265 size 3, No. 321335 size 2.

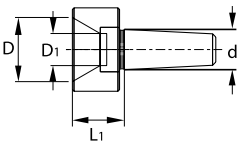
32 0627 – Lathe centre No. 320659 size 3, No. 321265 size 4, No. 321335 size 3.

32 0629 – Lathe centre No. 320617 size 32, 40, 50/3; No. 320659 size 4; No. 321265 size 5; No. 321335 size 4.

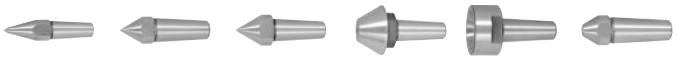
32 0631 – Lathe centre No. 320659 size 5, No. 321335 size 5.







Colour code: K12 K18



Type		1	2	3	4	5	6	suitable for colour code
31Z 32 0625	Insert for the revolving lathe centre	eShop	eShop	eShop	eShop	eShop	eShop	
Ø D	mm	14	14	17	28	20	14	
Ø D_1	mm	4	–	–	13	10	4	
Ø d	mm	12						
L_1	mm	32	20	23	23	17	15	
Point angle	degrees	60; 30	60	60	60	60	60	
Width across flats	mm	12	12	14	17	22	12	



Type		1	2	3	4	suitable for colour code
31Z 32 0627	Insert for the revolving lathe centre	eShop	eShop	eShop	eShop	
Ø D	mm	18	16	25	44	
Ø D_1	mm	8	–	–	24	
Ø d	mm	14				
L_1	mm	35	21	31	28	
Point angle	degrees	60; 30	60	60	60	
Width across flats	mm	14	14	22	19	

Type		1	2	3	4	suitable for colour code
31Z 32 0629	Insert for the revolving lathe centre	eShop	eShop	eShop	eShop	
Ø D	mm	22	22	32	55	
Ø D_1	mm	8	–	–	30	
Ø d	mm	18				
L_1	mm	43	27	40	34	
Point angle	degrees	60; 30	60	60	60	
Width across flats	mm	19	19	27	22	

Type		1	2	3	4	suitable for colour code
31Z 32 0631	Insert for the revolving lathe centre	eShop	eShop	eShop	eShop	
Ø D	mm	28	28	38	68	
Ø D_1	mm	10	–	–	36	
Ø d	mm	24				
L_1	mm	52	34	45	41	
Point angle	degrees	60; 30	60	60	60	
Width across flats	mm	24	24	32	27	

Garant Extremely slim revolving lathe centres - SlimLine

- **Precision version with additional stiffness in the bearings.**
- Precision roller bearings for high concentricity.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.
- MT shank hardened and ground.
- **With extended centre,** point angle 60° / 30°.
- With push-off thread and push-off nut.
- outstandingly suitable for cutting threads and splining.

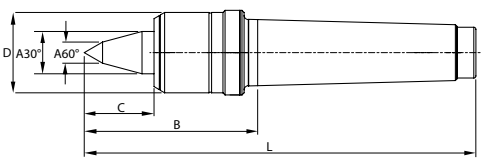
Advantage: **Push-off nut can be removed forwards** thus eliminating any obstruction to the machining process.

Application: Machining small and very small parts such as thread machining with optimum access to the flat face.

Supplied with: Including draw-off nut.



32 0643





Draw-off nut included

Morse taper		2	3	4	5
31Z 32 0643	SlimLine revolving lathe centre **60°/30°**	eShop	eShop	eShop	eShop
Body Ø D	mm	26	30	38	50
L	mm	123	149	185	223
Reach B	mm	59	68	82	93
largest centre point Ø 60° A	mm	6	7	10	12
largest centre point Ø 30° A	mm	12	14	20	25
maximum radial run-out	mm	0.005			
Centre point length C	mm	21	24	33	41.5
maximum speed	min^{-1}	6000	5000	4000	3000
for workpiece weight	kg	850	1000	1400	1600

Colour code: K12 K14 K18 K24

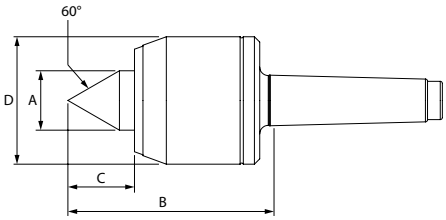
Garant Revolving lathe centres – shock-absorbing

- Point angle 60°.
- **Sprung live centre to compensate pressure and length, shock-absorbing.**
- Live centre of through hardened tool steel precision ground to match the bearing.
- Precision roller bearing, lubricated for life.
- Shaft seal prevents ingress of dirt and coolant.
- Extremely rigid version with additional shaft bearing.
- Entire tool is hardened and ground.



32 1405

Morse taper		3	4	5
31Z 32 1405	Revolving lathe centre **shock absorbing**	eShop	eShop	eShop
Body ∅ D	mm	60	68	92
Reach B	mm	95	111	146
largest centre point ∅ A	mm	25	35	40
maximum radial run-out	mm		0.005	
maximum speed	min^{-1}	5000	4000	3500
for workpiece weight	kg	300	600	1000



Garant Lightweight revolving lathe centres

- **Lightweight version with slim body.**
- Precision roller bearings for high concentricity.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.
- MT shank hardened and ground.

32 0649 – Extremely slim, cylindrical tip geometry for maximum accessibility on the flat face.

Application: Mainly used for machining small and smallest parts on all types of lathes.

32 0647 – Extended point allows unobstructed access for the turning tool on the end face of the component. Particularly suitable for copy turning.

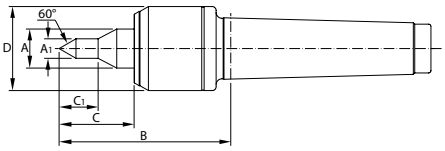
32 0649 – Particularly suitable for the production of even smaller external threads directly on the face side (space for the threading chaser). Allows clamping on internal (recessed) centrings.


32 0645


32 0647


32 0649

Morse taper		2	3	4	5
31Z 32 0645	Revolving lathe centre **60°**	eShop	eShop	eShop	eShop
31Z 32 0647	Revolving lathe centre **60° / 30°**	eShop	eShop	eShop	eShop
31Z 32 0649	Revolving lathe centre **60°**	eShop	eShop	eShop	eShop
Body ∅ D (32 0645, 32 0647)	mm	32	34	43	58
Reach B (32 0645)	mm	64	64	77	105
Reach B (32 0647)	mm	74	74	86	116
Reach B (32 0649)	mm	73	74	88	119
largest centre point ∅ 60° A (32 0645, 32 0647)	mm	15	15	20	30
largest centre point ∅ 30° A (32 0647)	mm	8	8	10	12
smallest tip ∅ 60° A1 (32 0649)	mm	6	8	10	12
maximum radial run-out (32 0645, 32 0647)	mm		0.005		
Centre point length C (32 0645)	mm	19.5	19.5	27	37
Centre point length C (32 0647)	mm	29	29	36	48
Centre point length C (32 0649)	mm	29	30	38	49
Tip length C1 (32 0649)	mm	12	16	20	26
maximum speed (32 0645, 32 0647)	min^{-1}	6000	6000	6000	4000
for workpiece weight (32 0645)	kg	200	400	800	1600
for workpiece weight (32 0647)	kg	150	300	700	1400
for workpiece weight (32 0649)	kg	130	280	680	1380

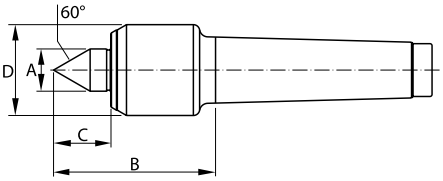


HOLEX Lightweight revolving lathe centres

- Tip angle 60°.
- **Lightweight version with slim body.**
- Precision roller bearings for high concentricity.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.


32 0652

Morse taper		2	3	4	5
32L 32 0652	Lightweight revolving lathe centre	eShop	eShop	eShop	eShop
Body ∅ D	mm	49	49	54	69
Reach B	mm	79	79	85.5	103
largest centre point ∅ 60° A	mm	25	25	25	32
maximum radial run-out	mm		0.006		
Centre point length C	mm	29.5	29.5	29.5	40
maximum speed	min^{-1}	5000	5000	5000	3800
for workpiece weight	kg	500	500	500	800



Lightweight revolving lathe centres

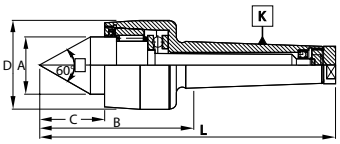
- Point angle 60°.
- **Lightweight version.**
- Precision roller bearings for high concentricity.
- maintenance-free.

Application: Mainly used for machining small and smallest parts on all types of lathes.



32 0655

Morse taper		2	3	4	5
36C **32 0655** BISON Lightweight revolving lathe centre		eShop	eShop	eShop	eShop
Body ∅ D	mm	44	48	60	75
Overall length L	mm	137.5	166	196.5	246
Reach B	mm	73	85	94.5	116.5
largest centre point ∅ 60° A	mm	24	28	38	50
maximum radial run-out	mm	0.006			
Centre point length C	mm	26.5	32.5	43.5	55.5
maximum speed	min^{-1}	8000	6000	4500	4000
for workpiece weight	kg	100	200	400	650





32 0650

Morse taper		2	3	4	5
35R **32 0650** RÖHM Lightweight revolving lathe centre		eShop	eShop	eShop	eShop
Body ∅ D	mm	32	34	42	58
Reach B	mm	62	62	75.5	104
largest centre point ∅ 60° A	mm	15	15	20	30
maximum radial run-out	mm	0.005	0.005	0.005	0.01
for workpiece weight	kg	200	400	800	1600

Garant Revolving lathe centres

- Punch axis of through-hardened steel mounted on shank bearings.
- Live centre through hardened, multiple regrinding possible.
- Precision roller bearings for high concentricity.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.
- Complete tool hardened and ground.

Application:

32 0659 – Flexible application thanks to exchangeable inserts. For general use on turrets and counter-spindles on CNC machines.

32 0657/0659 – For all types of lathe, equally suitable for roughing and finish turning.

Optional extras:

32 0659 – Exchangeable inserts No. 320625 - 320631

Note:

32 0659 – Changing the inserts in the key surfaces by counter-rotation.



32 0657
With 60° point.

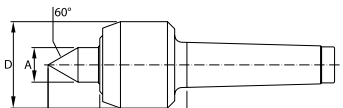


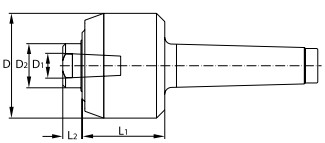
32 0658
With extended point 60°/30°.

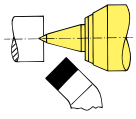


32 0659

Morse taper		2	3	4	5	6
31Z **32 0657**	Revolving lathe centre **60°**	eShop	eShop	eShop	eShop	eShop
31Z **32 0658**	Revolving lathe centre **60° / 30°**	eShop	eShop	eShop	eShop	eShop
31Z **32 0659**	Revolving lathe centre **for interchangeable heads.**	eShop	eShop	eShop	eShop	–
Body ∅ D (32 0657, 32 0658)	mm	45	60	60	78	110
Body ∅ D (32 0659)	mm	45	60	76	96	–
Reach B (32 0657)	mm	76	95	97	118	155
Reach B (32 0658)	mm	87	106	107	132	178
largest centre point ∅ 60° A (32 0657, 32 0658)	mm	20	24	24	32	52
largest centre point ∅ 30° A (32 0658)	mm	8	10	10	12	20
maximum radial run-out	mm	0.005				
Centre point length C (32 0657)	mm	26	36	36	47	62
Centre point length C (32 0658)	mm	37	47	47	61	86
maximum speed (32 0657, 32 0658)	min^{-1}	5000	4300	4300	3200	2000
maximum speed (32 0659)	min^{-1}	5000	4300	3200	2600	–
for workpiece weight (32 0657)	kg	200	400	800	2000	4500
for workpiece weight (32 0658)	kg	140	400	500	1200	2500
for workpiece weight (32 0659)	kg	100	300	350	1100	–
L_1 (32 0659)	mm	43	50	58	72	–
L_2 (32 0659)	mm	10	12	13	14	–
∅ D_1 (32 0659)	mm	12	14	18	24	–
∅ D_2 (32 0659)	mm	20	24	32	42	–
suitable for colour code (32 0659)						–







Extended point for unobstructed access to the turning tool.

Colour code: K12 K14 K18 K24

HOLEX Revolving lathe centres

- Body and live centre hardened.
- Live centre through hardened, multiple regrinding possible.
- Precision roller bearings for high concentricity.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.

32 0672 – ■ Point angle 60°.

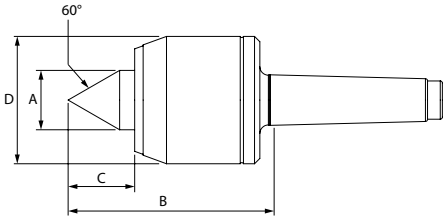
32 0673 – ■ **With extended centre**, point angle 60° / 30°.

Application: For all types of lathe, equally suitable for roughing and finish turning.

32 0673 – The extended point allows the turning tool unobstructed access to the end face of the component. Particularly suitable for copy turning.

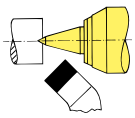


32 0672





32 0673



Extended point *for unobstructed access to the turning tool.*

Morse taper		2	3	4	5	6
32L 32 0672	Revolving lathe centre **60°**	eShop	eShop	eShop	eShop	eShop
32L 32 0673	Revolving lathe centre **60° / 30°**	eShop	eShop	eShop	eShop	eShop
Body ∅ D	mm	50	50	69	88	105
Reach B (32 0672)	mm	79	79	103	128.5	150
Reach B (32 0673)	mm	89.5	94.5	116	143	169
largest centre point ∅ 60° A	mm	25	25	32	40	50
largest centre point ∅ 30° A (32 0673)	mm	12	12	14	18	30
maximum radial run-out	mm	0.006	0.006	0.006	0.006	0.01
Centre point length C (32 0672)	mm	29.5	29.5	40	50.5	58.2
Centre point length C (32 0673)	mm	40	45	53	65	77.5
for workpiece weight (32 0672)	kg	500	500	800	2000	3500
for workpiece weight (32 0673)	kg	500	500	500	1500	2500

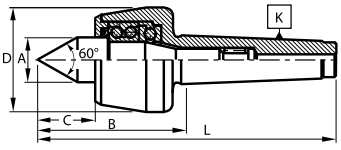
BISON Revolving lathe centres

- Point angle 60°.
- Lightweight version, maintenance-free.

Application: For roughing and precision turning on lathes.



Morse taper		3	4	5
36C 32 0675	Lightweight revolving lathe centre	eShop	eShop	eShop
Body ∅ D	mm	50	70	90
Overall length L	mm	151	204	257.5
Reach B	mm	70	101.5	128
largest centre point ∅ 60° A	mm	22	32	40
maximum radial run-out	mm		0.005	
Centre point length C	mm	27.5	40	49.5
maximum speed	min^{-1}	6300	3800	3000
for workpiece weight	kg	400	800	2000



Revolving lathe centres

- Body and live centre hardened.
- Live centre through hardened, multiple regrinding possible.
- Precision roller bearings for high concentricity.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.

32 0660 – ■ Point angle 60°.

32 0670 – ■ **With extended centre,** point angle 60° / 30°.

Application: For all types of lathe, equally suitable for roughing and finish turning.

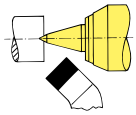
32 0670 – Extended point allows unobstructed access for the turning tool on the end face of the component. Particularly suitable for copy turning.



32 0660



32 0670



Extended point for unobstructed access to the turning tool.

Morse taper		1	2	3	4	5	6
35R **32 0660**	Revolving lathe centre **60°**	eShop	eShop	eShop	eShop	eShop	eShop
35R **32 0670**	Revolving lathe centre with extended point **60°/30°**	eShop	eShop	eShop	eShop	eShop	(eShop)
Body ∅ D (32 0660)	mm	34.5	43	48.5	68.5	88.5	102.5
Body ∅ D (32 0670)	mm	34.5	43	58.5	68.5	88.5	102.5
Reach B (32 0660)	mm	60.5	65	70.5	102.5	129	152
Reach B (32 0670)	mm	70.5	75	95.5	114.5	143.5	172.5
largest centre point ∅ 60° A (32 0660)	mm	15	20	22	32	40	50
largest centre point ∅ 60° A (32 0670)	mm	15	20	25	32	40	50
largest centre point ∅ 30° A (32 0670)	mm	9	10	12	14	16	18
maximum radial run-out	mm	0.005	0.005	0.005	0.005	0.005	0.01
Centre point length C (32 0670)	mm	27	34	47	53	64	78
for workpiece weight (32 0660)	kg	100	200	400	800	2000	3500
for workpiece weight (32 0670)	kg	80	140	400	500	1200	2500

Revolving lathe centres – precision version with slim body

- **Extremely slim body and high concentricity.**
- Precision needle and thrust bearings result in a maximum variation of 0.003 mm and a very small body ∅.
- Taper and chamfered parts are made of hardened bearing steel (61 – 63 Rockwell).

Application: For turning and grinding **where a small head ∅ and high accuracy are required.**



32 0700



32 0900

With extended point 60°/30°.



32 1100

Morse taper		2	3	4	5
34D **32 0700**	Revolving lathe centre high precision version **Point angle 60°**	eShop	eShop	eShop	eShop
34D **32 0900**	Revolving lathe centre high precision version **Point angle 60°/30°**	eShop	eShop	eShop	eShop
34D **32 1100**		–	eShop	eShop	–
Body ∅ D	mm	28	32.5	45	62
Reach B (32 0700)	mm	23	28	38	51
Reach B (32 0900)	mm	35	45	65	90
Reach B (32 1100)	mm	–	50	80	–
largest centre point ∅ 60° A (32 0700)	mm	24	28	40	54
largest centre point ∅ 60° A (32 0900)	mm	12	12	14	18
largest centre point ∅ 60° A (32 1100)	mm	–	10	12.5	–
largest centre point ∅ 30° A (32 0900, 32 1100)	mm	23	28	40	54
maximum radial run-out	mm	0.003			
for workpiece weight (32 0700)	kg	200	400	700	1300
for workpiece weight (32 0900)	kg	120	320	560	1000
for workpiece weight (32 1100)	kg	–	280	500	–

Garant Revolving lathe centre – for particularly high loads – with draw-off nut

- **With extended centre and draw-off nut, specially for CNC machines.**
- **Complete tool hardened and ground.**
- Special roller bearings for high loads and speeds.
- Live centre through hardened, can be reground many times.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.

32 1255 – Point angle 60°.
32 1260 – Point angle 60°/30°
32 1266 – Extremely slim casing, flattened on one side, for optimum access; very high concentricity due to high-end bearing; also suitable for grinding applications.

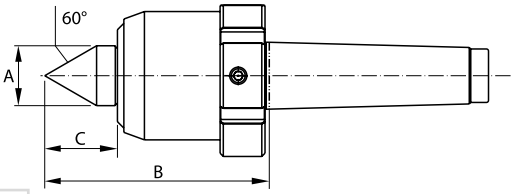
Application: For high loads and speeds, specially for NC machines.
32 1260 – Extended point allows unobstructed access for the turning tool on the end face of the component. Particularly suitable for copy turning.
32 1265/1266 – Flexible application thanks to exchangeable inserts. For general use on turrets and counter-spindles on CNC machines.

Optional extras:
32 1265/1266 – Exchangeable inserts No. 320627 - 320631

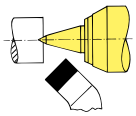
Note: Draw-off nut for NC machines to remove tip from tailstock sleeve.
32 1265/1266 – Changing the inserts in the key surfaces by counter-rotation.



32 1255




32 1260

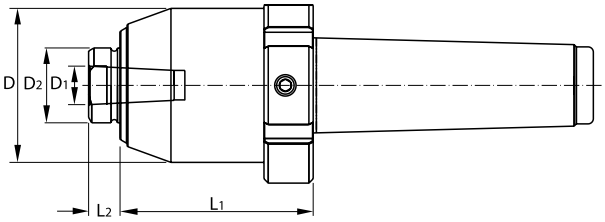

Extended point for unobstructed access to the turning tool.

Morse taper		3	4	5
31Z 32 1255	Revolving lathe centre **60°**	–	eShop	eShop
31Z 32 1260	Revolving lathe centre **60° / 30°**	eShop	eShop	eShop
31Z 32 1265	Revolving lathe centre **for interchangeable heads**	eShop	eShop	eShop
31Z 32 1266	Revolving lathe centre, flattened **for interchangeable heads**	–	eShop	–
Body ∅ D (32 1255, 32 1260, 32 1266)	mm	52	60	72
Reach B (32 1255)	mm	–	106	136
Reach B (32 1260)	mm	104	116	146
Reach B (32 1266)	mm	–	85	–
largest centre point ∅ 60° A (32 1255)	mm	–	28	35
largest centre point ∅ 60° A (32 1260)	mm	8	8	10
largest centre point ∅ 30° A (32 1260)	mm	25	28	35
maximum radial run-out (32 1255, 32 1260, 32 1266)	mm		0.003	
maximum radial run-out (32 1265)	mm		0.005	
Centre point length C (32 1255)	mm	–	35	43
Centre point length C (32 1260)	mm	40	45	53
maximum speed	min^{-1}	12000	10000	8000
for workpiece weight (32 1255)	kg	–	1200	2200
for workpiece weight (32 1260)	kg	500	1000	2000
for workpiece weight (32 1265)	kg	400	800	1400
for workpiece weight (32 1266)	kg	–	400	–
L_1 (32 1265)	mm	56	63	82
L_1 (32 1266)	mm	–	74	–
L_2 (32 1265, 32 1266)	mm	10	10	14
∅ D_1 (32 1265, 32 1266)	mm	12	14	18
∅ D_2 (32 1265)	mm	25	28	35
suitable for colour code (32 1265, 32 1266)				


32 1265

Flattened casing for optimum access – even for grinding applications!


32 1266



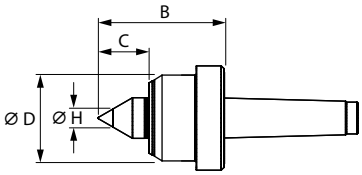
Colour code: K12 K14 K18

Garant Revolving lathe centres with draw-off nut and carbide insert

- Punch axis with carbide insert for applications with a high abrasive influence on the centring.
- Point angle 60°.
- Draw-off nut flattened at the side.
- High-precision bearing for high concentricity.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.

Application: For machining thin workpieces at high speeds and in high quantities with automatic loading in series production.
Designed for high axial forces during heavy-duty machining thanks to special bearing arrangement.


32 1240

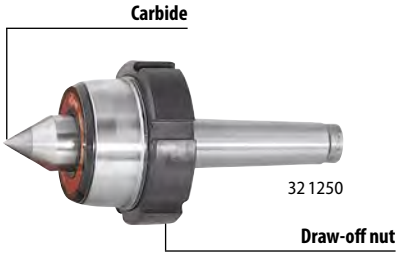


Morse taper (MK)		3	4	5
31Z 32 1240	Revolving lathe centre with carbide insert and draw-off nut	eShop	eShop	eShop
Body Ø D	mm	60	76	96
Reach B	mm	95	112	134
Carbide Ø H	mm	14	14	18
maximum radial run-out	mm		0.005	
Centre point length C	mm	36	43	49
maximum speed	min^{-1}	4300	3200	2600
for workpiece weight	kg	400	750	2000
Axial force	kN	2.55	4.3	6.6

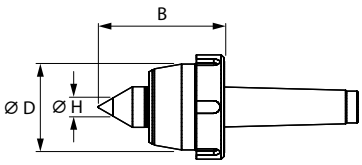
RÖHM Revolving lathe centres with draw-off nut and carbide insert

- Tip angle 60°.
- **With carbide tip for small centres and draw-off nut.**
- Body and live centre are hardened (multiple regrinding possible).
- Precision roller bearings for high concentricity.
- Maintenance-free due to lifetime lubrication.
- Special seal prevents ingress of dirt and coolant.

Application: For machining **thin components at high speeds.**



for NC machines to remove tip from tailstock sleeve.



Morse taper		2	3	4	5
35R 32 1250	Revolving lathe centre with carbide insert and draw-off nut	(eShop)	(eShop)	(eShop)	(eShop)
Body Ø D	mm	45	74	70	90
Reach B	mm	65	79.4	102.5	129
Carbide Ø H	mm	11	14	14	18
maximum radial run-out	mm		0.005		
for workpiece weight	kg	120	360	500	1000

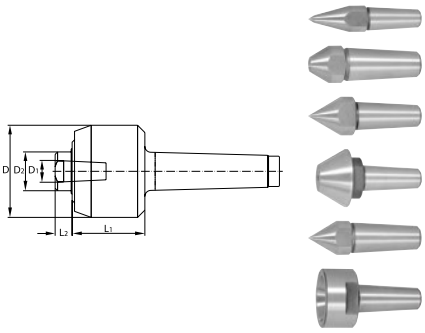
Garant Universal revolving lathe centres – with exchangeable inserts

- **Complete tool hardened and ground.**
- With interchangeable inserts.
- Body and live centre are die-forged and hardened.
- Precision roller bearings guarantee high concentricity.
- Special seal prevents ingress of dirt and coolant.
- Maintenance-free due to lifetime lubrication.

Supplied with: 1 lathe centre No. 320659, 1x each copying punch 60° / 30°, small centre punch 60°, large centre punch 60°, point 60°, hollow point 60°, hollow punch 60°.
With modular box with foam inlay.



Morse taper		2	3	4	5
31Z 32 1335	Revolving lathe centre with inserts	eShop	eShop	eShop	eShop
Body ∅ D	mm	45	60	76	96
maximum radial run-out	mm	0.005	0.005	0.007	0.01
maximum speed	min^{-1}	5000	4300	3200	2600
for workpiece weight	kg	50	200	300	800
L_1	mm	43	50	58	72
L_2	mm	10	12	13	14
∅ D_1	mm	12	14	18	24
∅ D_2	mm	20	24	32	42
suitable for colour code					



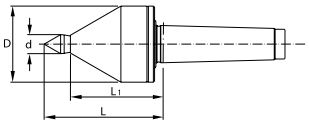
Garant Revolving combination lathe centres 60°/60°

- Tool fully hardened and ground.
- Bearings designed to take high axial forces.
- Maintenance-free greased for life.
- Shaft seal prevents ingress of dirt and cooling fluids.

Application:
- Combi tool for standard centring and machining pipes.
- Perfect all-purpose tip for general use on manual and CNC machines.


32 1360

very large ∅ / Morse taper		54/2	54/3	64/3	64/4	86/4	86/5
31Z 32 1360	Precision revolving lathe centre with extended point	eShop	eShop	eShop	eShop	eShop	eShop
smallest ∅ d	mm	13	13	16	16	19	19
reduced head length L_1	mm	68.5	68.5	78	78	93.5	93.5
Head length L	mm	86.5	86.5	100	100	121.5	121.5
maximum radial run-out	mm	0.005					
maximum speed	min^{-1}	4200	4200	3800	3800	3200	3200
for workpiece weight	kg	170	170	330	330	550	550
Taper angle a	degrees	60					



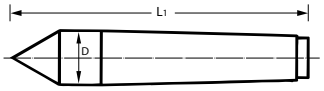
HOLEX Solid lathe centres

Point angle 60°, surfaces ground.

32 3400 – Full point of tool steel, through hardened.
32 3600 – Full point with deep inserted **carbide centre.**
32 3800 – **Half point** with deep inserted **carbide centre.** This offers particularly good access for the turning tool to the end face of the component.
32 3600/3800 – The carbide tipped lathe centres are marked with a groove to indicate maximum regrinding allowance.

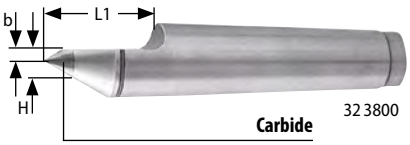
Standard: **DIN 806**


32 3400





32 3600



32 3800

Morse taper		1	2	3	4	5
32L 32 3400	Solid lathe centre WS	eShop	eShop	eShop	eShop	eShop
32L 32 3600	Solid lathe centre with carbide insert	eShop	eShop	eShop	eShop	eShop
32L 32 3800	Solid half centre with carbide insert	–	eShop	eShop	eShop	–
External ∅ D	mm	12.2	18	24.1	31.6	44.7
Overall length L	mm	80	100	125	160	200
Carbide ∅ H (32 3600, 32 3800)	mm	7	7	11	14	18
Face length L_1	mm	–	30	38	50	–
Face-point distance b	mm	–	2	3	5	–

Colour code: K12 K14 K18 K24

Garant Fixed solid carbide lathe centre

- High-precision solid carbide tip. Close-fitting carbide design for optimum stability and freedom from breakage, **no additional safety equipment required.**
- Tip angle 60°.
- High surface quality on the shank for optimum fit.
- Complete tool hardened and ground.
- With carbide tips for applications with high wear.

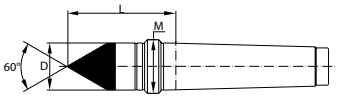
Application: For grinding high-precision components.

Optional extras: Draw-off nut No. 323230.

Note: Order the draw-off nut separately. Geometric dimensions to DIN 806 E.



32 3200_32/4





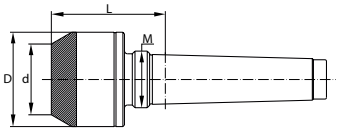
32 3210_50/4



32 3210_32/4



32 3200_50/4



very large ∅ / Morse taper		18/2	24/3	40/3	50/3	60/3	70/3
31Z 32 3200	Fixed solid carbide lathe centre 60°	eShop	eShop	eShop	eShop	eShop	eShop
Head length L	mm	36	44	44	44	44	44
External ∅ D	mm	18	24.1	40	50	60	70
∅ d	mm	–	–	25	35	45	55
maximum radial run-out	mm	0.001					

very large ∅ / Morse taper		32/4	40/4	50/4	60/4	70/4	80/4	44/5
31Z 32 3200	Fixed solid carbide lathe centre 60°	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Head length L	mm	57.5	57.5	57.5	57.5	57.5	57.5	70.5
External ∅ D	mm	31.6	40	50	60	70	80	44.7
∅ d	mm	–	25	35	45	55	65	–
maximum radial run-out	mm	0.001						

very large ∅ / Morse taper		18/2	24/3	40/3	50/3
31Z 32 3210	Fixed solid carbide lathe centre 60° **with push-off thread**	eShop	eShop	eShop	eShop
Head length L	mm	48	57	57	57
External ∅ D	mm	18	24.1	40	50
∅ d	mm	–	–	25	35
maximum radial run-out	mm	0.001			
Thread M		M22×1.5	M27×1.5	M27×1.5	M27×1.5

very large ∅ / Morse taper		32/4	40/4	60/4	70/4	80/4	44/5
31Z 32 3210	Fixed solid carbide lathe centre 60° **with push-off thread**	eShop	eShop	eShop	eShop	eShop	eShop
Head length L	mm	72.5	72.5	72.5	72.5	72.5	87.5
External ∅ D	mm	31.6	40	60	70	80	44.7
∅ d	mm	–	25	45	55	65	–
maximum radial run-out	mm	0.001					
Thread M		M36×1.5	M36×1.5	M36×1.5	M36×1.5	M36×1.5	M48×1.5

Garant Draw-off nuts

Dimensions to DIN 807.

Suitable for: No. 323210.

Application: For drawing off tools with draw-off threads. Specially for CNC machines without through-bored sleeves.

Type		M27	M36	M48
31Z 32 3230	Draw-off nut	eShop	eShop	eShop
Thread		M27×1.5	M36×1.5	M48×1.5
Width	mm	17.5	21	23
Width across flats AF		41	55	75
for MT		3	4	5

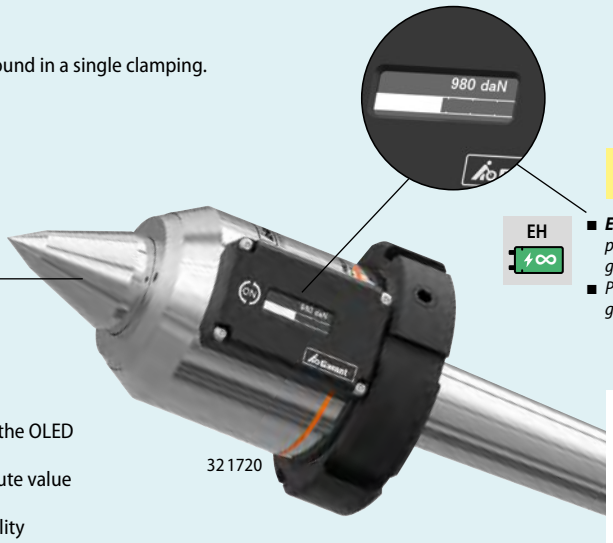


32 3230

Garant Digital lathe centre

- Top quality "Made in Germany".
- Precise and long-lived.
- Tool through hardened, internally and externally ground in a single clamping.
- Lubricated for life.
- Punch axis of through-hardened steel.
- Shaft seal prevents ingress of dirt and coolant.

Very high concentricity
Point is not ground until it is mounted.



32 1720

No batteries required!

EH

- ***Energy harvesting*** *(tool with no battery) power supply for the pressure indicator generated by rotation of the lathe centre.*
- *Power is obtained from the integral generator.*

- Simple visual display of the axial clamping force via the OLED display on the outer body of the housing.
- Digital real-time pressure indicator both as an absolute value and as a bar in the display.
- Bright display with high contrast for optimum legibility during the machining process.
- Splash-proof to IP55.

reddot design award winner 2019

IP 55 EH

Garant Revolving lathe centres with analogue or digital pressure indicator and draw-off nut

- The momentary clamping pressure is directly readable on the analogue or digital display on the base body.
- The live centre is supported by a disc spring pack with a spring travel of approx. 3.7 mm analogue and 2.6 mm or 2.8 mm digital.
- Short sturdy design with active longitudinal axis. Live centre through hardened and finish ground.
- **Maximum accuracy due to precision roller bearings.**
- With push-off thread and push-off nut.
- With special seal against dirt and coolant ingress, maintenance-free due to lifetime lubrication.

With extended centre, point angle 60°/40°.

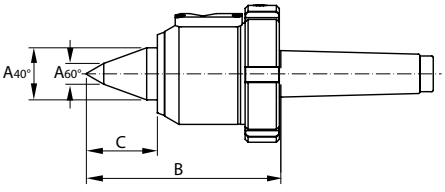
Application: Whenever **the clamping force should be kept within certain limits,** either to prevent deformation of the component or to ensure secure clamping with sufficient pressure.

- As **a tailstock centre in conjunction with hydro-mechanical face drivers** No. 327451 – 327541 because the drive teeth have to dig into the component.
- For components that expand significantly due to high machining heat.
- For clamping **long slender components to prevent lateral displacement.**
- **For clamping heavy components where a controlled clamping force is required.**


32 1720

Morse taper		3	4	5
31Z 32 1720	Revolving lathe centre with digital pressure indicator and extended point	eShop	eShop	eShop
31Z 32 1740	Revolving lathe centre with analogue pressure indicator and extended point	–	eShop	eShop
Body ∅ (32 1720)	mm	70	70	96
Body ∅ (32 1740)	mm	–	68	92
Reach B (32 1720)	mm	150	149	179
Reach B (32 1740)	mm	–	131	162
largest centre point ∅ 60° A (32 1720)	mm	35	35	50
largest centre point ∅ 60° A (32 1740)	mm	–	14	18
largest centre point ∅ 40° A (32 1720)	mm	12	14	18
largest centre point ∅ 40° A (32 1740)	mm	–	35	50
maximum radial run-out	mm		0.005	
Centre point length C (32 1720)	mm	46	45	64
Centre point length C (32 1740)	mm	–	48	67
for workpiece weight (32 1720)	kg	300	500	900
for workpiece weight (32 1740)	kg	–	500	800
maximum axial clamping force (32 1720)	daN	1080	1080	1270
maximum axial clamping force (32 1740)	daN	–	1000	1430


32 1740



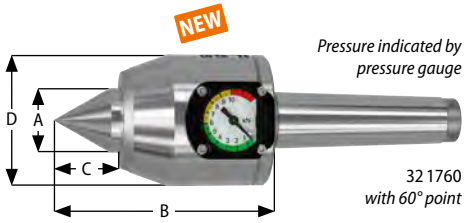
Garant Revolving lathe centres with pressure indicator

- The pressure (clamping force) to be adjusted can be read off in kN directly on the manometer sight glass.
- Short sturdy design with active longitudinal axis. Tool is through hardened and finish ground.
- **Precision bearing for high axial loads and high concentricity.**
- With special seal against dirt and coolant ingress, maintenance-free due to lifetime lubrication.
- Length adjustment by means of spring package.

32 1760 – Point angle 60°.
32 1780 – **With extended centre,** point angle 60° / 30°.

Application: **Whenever the clamping pressure has to be kept within certain limits**, either to prevent deformation of the component or to ensure secure clamping with sufficient pressure.

- As a **tailstock centre in conjunction with face drivers** No. 327400 – 327403, 327455 - 327465 because the drive teeth have to dig into the component.
- For components that expand significantly due to high machining heat.
- For clamping **long slender components to prevent lateral displacement.**
- **For clamping heavy components where a controlled clamping force is required.**



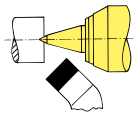
Pressure indicated by pressure gauge

32 1760
with 60° point



32 1780
with extended point 60°/30°

Morse taper			3	4	5
31Z 32 1760	Revolving lathe centre with pressure indicator		eShop	eShop	eShop
31Z 32 1780	Revolving lathe centre with pressure indicator and extended point		eShop	eShop	eShop
Body ∅ D		mm	66	72	92
Reach B (32 1760)		mm	112	124	152
Reach B (32 1780)		mm	124	140	178
largest centre point ∅ 60° A		mm	12	16	20
largest centre point ∅ 30° A		mm	28	35	50
maximum radial run-out		mm		0.01	
Centre point length C (32 1760)		mm	31	37	50
Centre point length C (32 1780)		mm	43	53	77
for workpiece weight (32 1760)		kg	450	850	1650
for workpiece weight (32 1780)		kg	300	600	1200
maximum axial clamping force		daN	650	1000	1650
Sprung travel		mm	2	1.7	2.8



Extended point for unobstructed access to the turning tool.

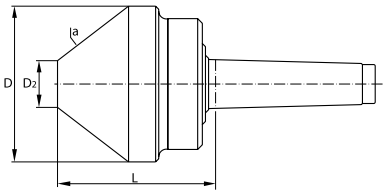
Garant Revolving centering taper, truncated cone

- **Centering taper with truncated cone.**
- Particularly sturdy design **with oversize bearings.**
- The bearings have a special lubricant and require no maintenance.
- The centering taper and tapered arbor are made of high quality material, through hardened and finish ground.

Application: For machining **hollow parts, tubes** etc. Particularly suitable for heavy machining where at the same time high accuracy is required.



32 3000



very large ∅ / Morse taper			60/2	80/3	100/3	100/4	125/4
31Z 32 3000	Revolving centering taper, truncated cone		eShop	eShop	eShop	eShop	eShop
smallest ∅		mm	20	30	30	30	50
Head length L		mm	73	86	100	101	91
maximum radial run-out		mm	0.005	0.005	0.005	0.005	0.007
maximum speed		min^{-1}	4000	3500	3000	3000	3000
for workpiece weight at D		kg	200	450	500	650	800
for workpiece weight at D1		kg	140	250	250	300	500
Taper angle a		degrees	60	60	75	75	75

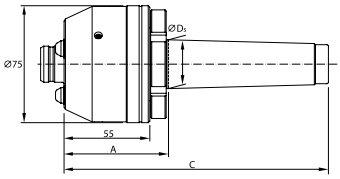
very large ∅ / Morse taper			125/5	150/5	200/5	150/6	200/6
31Z 32 3000	Revolving centering taper, truncated cone		eShop	eShop	eShop	eShop	eShop
smallest ∅		mm			50		
Head length L		mm	92	112	136	112	136
maximum radial run-out		mm	0.007	0.007	0.01	0.01	0.01
maximum speed		min^{-1}	3000	2800	1800	2800	1800
for workpiece weight at D		kg	1800	1900	2000	2800	2800
for workpiece weight at D1		kg	1400	1200	1000	2000	1800
Taper angle a		degrees			75		

Garant Constant face driver for lathes

Face driver sets

- Constant face driver head with 60° tip angle for use in turning and grinding.
- Face driver with spring-loaded, clampable centring point for a backlash-free, stable clamping situation.
- **High concentricity** thanks to fully ground mechanical components.
- Perfect in combination with our lathe centres No. 321720, 311750 or 321770.
- Conveniently in the GARANT system box 630320.

Supplied with:
- 1 pc. face driver base body No. 327465 (suitable for clockwise and anti-clockwise rotation).
- 2 pcs. centring point No. 327488.
- 2 pcs. driver heads No. 327470.



Application example:
The drive heads are compensated by synchronised, mechanical support rams.



32 7455

Fast changeover of attachable driver heads. These heads and the exchangeable centres fit all base body sizes.

Type		3	4	5	D32
31G 32 7455	Face driver set **With morse taper / cylindrical, clockwise operation**	eShop	eShop	eShop	eShop
Working range ∅ mm		9 – 16; 13 – 24	17 – 32; 26 – 50	21 – 40; 33 – 64	17 – 32; 26 – 50
Centre tip ∅ mm		4; 6	10; 16	12; 16	10; 16



Face drivers, basic body

Face driver with spring-loaded centring point. The clamping of the centring point when the driver head makes flat surface contact ensures a backlash-free, stable clamping situation. High concentricity thanks to fully ground mechanical components, without centring point and driver heads, suitable for clockwise and anti-clockwise operation. Fully mechanical design with spring force. No leakages from hydraulic fluid.
Option for direct clamping on the head on raised collar in soft shaped jaws.

Suitable for: Lathe centres No. 321720, 321750 and 321770.

Optional extras: Driver heads No. 327470 - 327486 and old version No. 327601 – 327651, centring point No. 327488, taper sleeves No. 327492.



32 7465_3

Type		3	4	5	D32
31G 32 7465	Face driver **With morse taper / cylindrical**	eShop	eShop	eShop	eShop
maximum body ∅ mm		75			
∅ D_s mm		67	67	67	55
Length C mm		148	170	197	148
Weight kg		2.6	2.7	3.6	2.3
Version		Morse taper	Morse taper	Morse taper	cylindrical



32 7470_17_32



32 7470_9-16

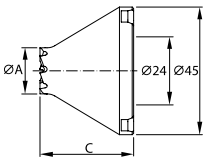
Driver head

32 7470/7472 – Driver heads made of high-alloy tool steel, **direct toothing** with defined ground tooth geometry. This ensures precisely defined edge radii for a longer tool life and optimum grip.

32 7480/7482 – Driver heads including **interchangeable carbide drive teeth.**

Suitable for: Face driver base body No. 327455, 327465.

Note: **Driver heads compatible with old No. 327601/7611/7641/7651 Röhm CoAE system.**





32 7472

Working range ∅	mm	9-16	11-20	13-24	17-32	21-40	26-50	33-64
31G 32 7470	Direct toothed driver head, ground **Right-hand**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
31G 32 7472	Direct toothed driver head, ground **Left-hand**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Clamping ∅ A	mm	8	10	12	16	20	25	32
Length C	mm	38	38	36	33	30	30	30
for which suitable centre point ∅ D	mm	4	4	6	10	12	16	16

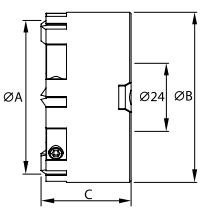


32 7480_25



32 7480_60

Type		25	45	60
31G 32 7480	Driver head with carbide inserts **Right-hand**	eShop	eShop	eShop
31G 32 7482	Driver head with carbide inserts **Left-hand**	eShop	eShop	eShop
Clamping ∅ A	mm	25	44	58
External ∅ B	mm	45	45	60
Length C	mm	33	30	30
for which suitable centre point ∅ D	mm	10	16	16
Number of inserts		3	6	6





32 7482_25



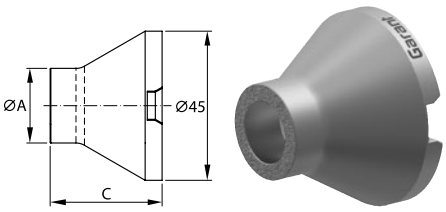
32 7482_60

Driver heads for grinding applications

Driver heads with special coating for friction-lock drive on workpieces during grinding and hard turning.

Suitable for: Base body No. 327455, 327465.

Note: **Driver heads compatible with Röhm CoAE system.**



32 7484_25

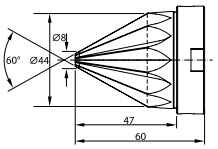
			25	35
31G 32 7484	Driver head **For grinding applications**		eShop	eShop
Clamping ∅ A		mm	25	35
External ∅ B		mm	45	
Length C		mm	33	
for which suitable centre point ∅ D		mm	10	

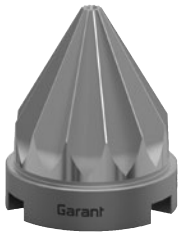
Rotary gripper with external teeth 60°

Ideal for use during turning work on centreless and tubular workpieces. Large clamping range can be covered.

Suitable for: Face driver base body No. 327455; 327465 and Röhm CoAE.

Note: Use with face driver base body without using the centring point.





32 7486

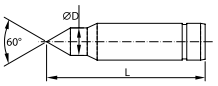
Clamping range		mm	8-44
31G 32 7486	Rotary gripper **60° external toothing**		eShop
L		mm	60

Centring points

Suitable for: Face driver base body No. 327455, 327465.

Advantage: Quick change of centring point without tools.

Note: Not suitable for the old system Röhm CoA and CoAE.





32 7488

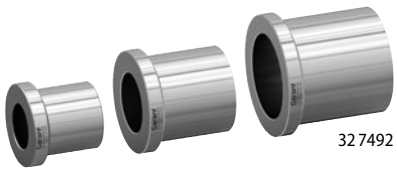
Centring tip ∅ D		mm	4	6	10	12	16
31G 32 7488	Centring point for face driver		eShop	eShop	eShop	eShop	eShop

Cylindrical taper sleeves, with collar and internal taper

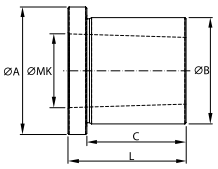
Ground tapered sleeves for adapting the Morse taper shank to cylindrical clamping in the lathe chuck or collet chuck. The collar prevents axial displacement in the chuck.

Suitable for: Face driver base body No. 327455; 327465 and Röhm CoAE.

Note: When used in lathe chucks, it is recommended to turn/grind the clamping jaws.



32 7492



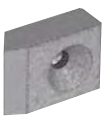
MT/external ∅ B			3/35	4/45	5/55
31G 32 7492	Cylindrical taper sleeve **With inner taper**		eShop	eShop	eShop
A		mm	44	54	64
Length C		mm	32	42	52
L		mm	40	50	60

Carbide driving plate

Suitable for: Driver heads No. 327480 and 327482.

Supplied with: 3 pieces carbide driving plates.

Note: Compatible with Röhm driver heads No. 327651 21-40, 26-50 and 33-64.



32 7670

Type			3	
31G 32 7670	Carbide driving plate **for driver head**		eShop	1
Side length		mm	6	
Thickness		mm	3.2	

Garant Face driver applications







HOLEX Constant face drivers

- Tip angle 60°, clamping ∅ 17 mm – 54 mm.
- Clockwise and anti-clockwise rotation.
- Outstandingly suitable for use on lathes and when hobbing.

Suitable for: Lathe centres No. 321405, No. 321720, No. 321730 and 321740.
Application: For mounting in the headstock taper of the lathe.
Supplied with: Face driver with centring points 327410 and driver 327412.
Optional extras: No. 327410 centring point, No. 327412 driver, No. 327414 damping elements.

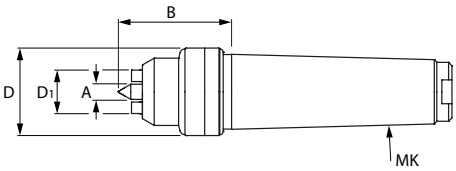
Note:	Suitable taper sleeves for adapting in lathe chucks available on request.



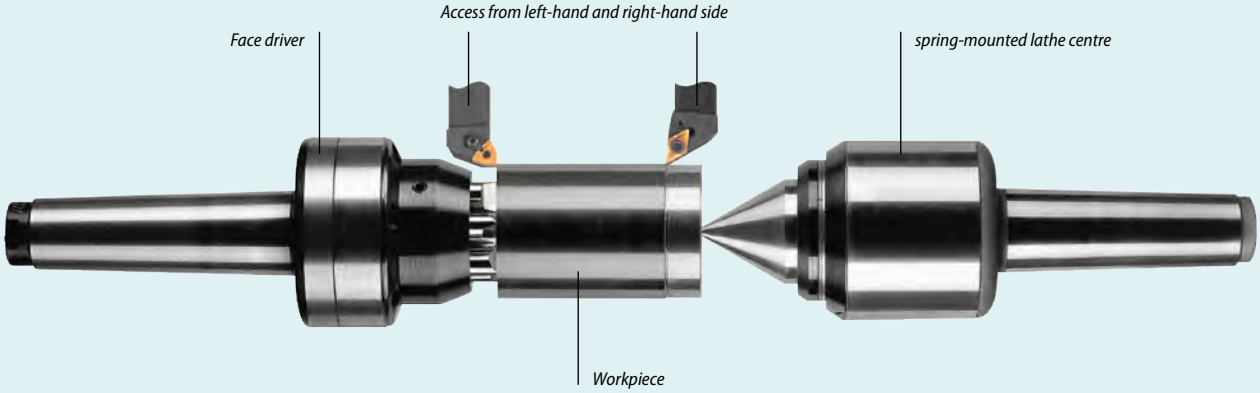
32 7400

Face driver with working range ∅ 19 - 100 mm

Morse taper (MK)			4	5
32P 32 7400	Face driver **with Morse taper**		eShop	–
32P 32 7401			eShop	eShop
32P 32 7402			eShop	eShop
32P 32 7403			eShop	eShop
Overall length (32 7402)		mm	190	218
Working range ∅ (32 7400)		mm	19 – 34	–
Working range ∅ (32 7401)		mm	28 – 50	
Working range ∅ (32 7402)		mm	40 – 72	
Working range ∅ (32 7403)		mm	55 – 100	
Clamping ∅ D1 (32 7400)		mm	17	–
Clamping ∅ D1 (32 7401)		mm	26	
Clamping ∅ D1 (32 7402)		mm	38	
Clamping ∅ D1 (32 7403)		mm	54	
Reach B (32 7400)		mm	62	–
Reach B (32 7401)		mm	70.3	
Reach B (32 7402)		mm	89	
Reach B (32 7403)		mm	104.1	
Workpiece weight (32 7400)		kg	50	–
Workpiece weight (32 7401)		kg	55	
Workpiece weight (32 7402)		kg	65	
Workpiece weight (32 7403)		kg	100	
External ∅ (32 7400)		mm	42	–
External ∅ (32 7401)		mm	52	
External ∅ (32 7402)		mm	70	
External ∅ (32 7403)		mm	82	
largest centre point ∅ 60° A (32 7400)		mm	5	–
largest centre point ∅ 60° A (32 7401)		mm	9	
largest centre point ∅ 60° A (32 7402)		mm	14	
largest centre point ∅ 60° A (32 7403)		mm	20	



HOLEX Face driver in use



HOLEX Push-out and draw-in collets

Collets, **round profile in 1 mm increments. Please specify required clamping ∅ with order.**

Accuracy: **Concentricity tolerances:** D = 1 to 10 mm = 0.02 mm D = 10 to 30 mm = 0.03 mm D = 30 to 60 mm = 0.04 mm

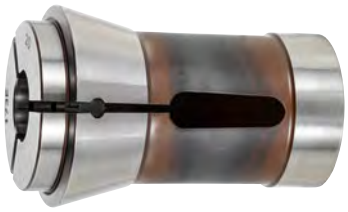
Note: Other diameters and profiles (e.g. square or hexagon) **on request!**

Push-out collets

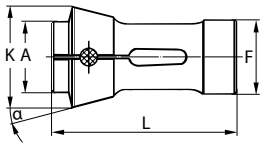
Standard: **DIN 6343**

Note:
32 9560 – Profile ∅ 1.0 – 8.0 mm smooth. From ∅ 8.5 mm with transverse serrations.
32 9565 – Profile ∅ 4.0 – 8.0 mm smooth. From ∅ 9.0 mm with transverse serrations.

Other types and special collets available on request.



32 9560



Clamping ∅		mm	3...42	4...60
32Z 32 9560	Push-out collet, round, to DIN 6343	173 E	eShop	–
32Z 32 9565		185 E	–	eShop
F		mm	48	66
A		mm	50	73
K		mm	60	84
Overall length L		mm	94	110
Angle α		degrees	15	20

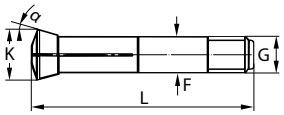
Draw-in collets

32 9705 – Saw thread
32 9755 – Trapezoidal thread

Standard: **DIN 6341**



32 9755



Clamping ∅		mm	3...18	3...29
32B 32 9705	Draw-in collet, round, to DIN 6341	355 E	eShop	–
32B 32 9755		386 E	–	eShop
F		mm	20	32
K		mm	28	45
Overall length L		mm	123	115
Buttress thread G		mm	S20×2	–
Trapezoidal thread G		mm	–	Tr32×1.5
Angle α		degrees	17.5	20

HAINBUCH Manual stationary chuck MANOK

32 9810 – Stationary chuck of solid cast. High clamping force, precision and rigidity.
32 9832 – Changeover device for manual clamping head change.

Suitable for:
32 9835 – Clamping head for boring out No. 329916; 329926; 329936; 329946; 329976.

Application:
32 9810/9832 – Versatile application, e.g. machining centres, measuring machines, pillar drills.

Supplied with:
32 9810 – Including 1 chuck key.

Note:
32 9810/9832 – For suitable clamping heads see No.329910–329946.



Ground f7 for front stop option.

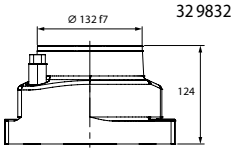


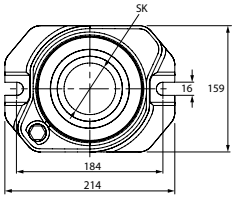
32 9835



32 9832

Note for No. 32 9810 size 80: For dimensions, see eShop



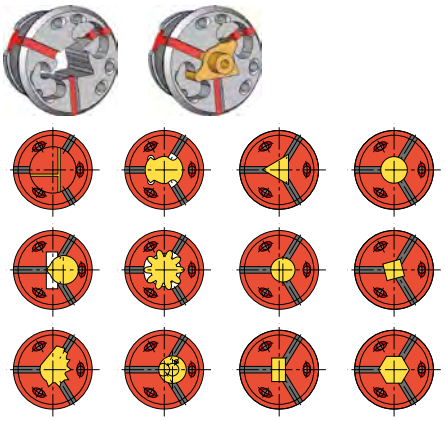


Clamping head (SK)			42	52	42/52	65	80
33H 32 9810	Stationary chuck MANOK		(eShop)	(eShop)	–	(eShop)	(eShop)
33H 32 9832	Manual changeover device for MANOK		–	–	(eShop)	(eShop)	(eShop)
33H 32 9835	Twist-out ring for clamping heads		–	–	–	(eShop)	(eShop)
Weight (32 9810)		kg	15	14	–	13	23

HAINBUCH Clamping heads version RD

Clamping heads, **round profile, in 0.5 mm or 1 mm increments. Please specify the required clamping ∅ when ordering.**

Note:	**Clamping heads for special profiles to your individual requirements on request.** Other taper sizes and shapes (e.g. square) and machinable blanks **on request!**



Clamping ∅ (0.5 mm increments)		mm	4...42			
33H 32 9910	Clamping head **smooth**	SK 42	(eShop)			
Clamping ∅ (0.5 mm increments)		mm	11...42			
33H 32 9914	Clamping head **with transverse and longitudinal serrations.**	SK 42	(eShop)			
Initial bore ∅		mm	8	15	30	
33H 32 9916	Clamping head **soft**	SK 42	(eShop)	(eShop)	(eShop)	
Clamping ∅ (0.5 mm increments)		mm	4...52			
33H 32 9920	Clamping head **smooth**	SK 52	(eShop)			
Clamping ∅ (0.5 mm increments)		mm	11...52			
33H 32 9924	Clamping head **with transverse and longitudinal serrations.**	SK 52	(eShop)			
Initial bore ∅		mm	8	15	30	
33H 32 9926	Clamping head **soft**	SK 52	(eShop)	(eShop)	(eShop)	
Clamping ∅ (0.5 mm increments)		mm	3...65			
33H 32 9930	Clamping head **smooth**	SK 65	(eShop)			
Clamping ∅ (0.5 mm increments)		mm	8...10			
33H 32 9932	Clamping head **with transverse serrations.**	SK 65	(eShop)			
Clamping ∅ (0.5 mm increments)		mm	11...65			
33H 32 9934	Clamping head **with transverse and longitudinal serrations**	SK 65	(eShop)			
Initial bore ∅		mm	5	8	20	40
33H 32 9936	Clamping head **soft**	SK 65	(eShop)	(eShop)	(eShop)	(eShop)
Clamping ∅ (1 mm increments)		mm	5...80			
33H 32 9940	Clamping head **smooth**	SK 80	(eShop)			
Clamping ∅ (1 mm increments)		mm	11...80			
33H 32 9944	Clamping head **with transverse and longitudinal serrations.**	SK 80	(eShop)			
Initial bore ∅		mm	8	20	40	60
33H 32 9946	Clamping head **soft**	SK 80	(eShop)	(eShop)	(eShop)	(eShop)
Clamping ∅ (1 mm increments)		mm	15...100			
33H 32 9950	Clamping head **smooth**	SK 100	(eShop)			
Clamping ∅ (1 mm increments)		mm	15...24			
33H 32 9952	Clamping head **with transverse serrations**	SK 100	(eShop)			
Clamping ∅ (1 mm increments)		mm	25...100			
33H 32 9954	Clamping head **with transverse and longitudinal serrations**	SK 100	(eShop)			
Initial bore ∅		mm	15	30	45	65	90
33H 32 9956	Clamping head **soft**	SK 100	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)

*Clamping head **smooth**, for boring out.*



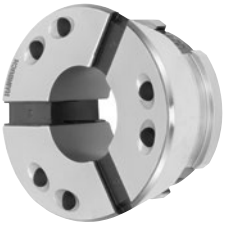
*Clamping head with **transverse serrations**, for small ∅ raw material.*



*Clamping head with **transverse and longitudinal serrations**, for raw material.*



*Clamping head **soft**, for boring out.*



HAINBUCH Manual stationary chuck MANOK plus

Stationary chuck of solid cast. High clamping force, precision, and stiffness.
Ground face for horizontal mounting, integral stop.

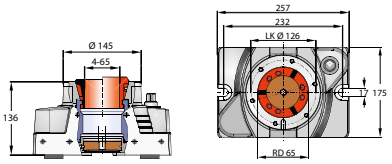
Suitable for:

Size RD65 – Clamping heads No. 329910 – 329946.
Size SE65 – Clamping heads No. 329970 – 329976.

Application: Versatile application e. g. machining centres, measuring machines, pillar drills etc.

Supplied with: Including 1 chuck key.

Note:	Use changing device No. 329832 size 65.





32 9960

Type / size		RD65	SE65
33H 32 9960	Stationary chuck MANOK plus	(eShop)	(eShop)
Weight	kg	23.5	

HAINBUCH Clamping heads – SE version (Top 52/65)

Clamping heads, **round profile, in 0.5 mm increments. Please specify required clamping Ø with order.**

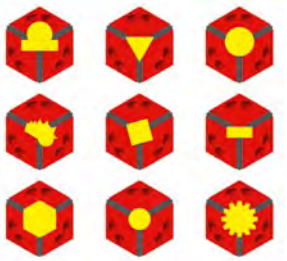
32 9974 – With transverse and longitudinal serrations for raw material.
32 9976 – Soft (reduced hardness of 40 HRC in the bore) for boring out.
32 9966/9970 – Smooth version for precision machining.

Advantage:
- **25% greater clamping force** than clamping head RD.
- No radial movement between clamping head and clamping element mounting, therefore immune to dirt.
- **Unique stiffness due to large seating area of the clamping segments.**

Application: Versatile application range, machining centres, measuring machines or pallet clamping.

Recommendation: **Clamping heads for special profiles to your individual requirements on request.**

Note:	Other taper sizes and shapes (e.g. square) and machinable blanks **on request!**





32 9966/9970



32 9974



32 9976

Clamping Ø (0.5 mm increments)			mm	3…52
33H 32 9966	Clamping head **smooth**	**Top 52**		(eShop)

Clamping Ø (0.5 mm increments)			mm	4…65
33H 32 9970	Clamping head **smooth**	**Top 65**		(eShop)

Clamping Ø (0.5 mm increments)			mm	11…65
33H 32 9974	Clamping head **with transverse and longitudinal serrations**	**Top 65**		(eShop)

Initial bore Ø			mm	5	8	20	40
33H 32 9976	Clamping head **soft**	**Top 65**		(eShop)	(eShop)	(eShop)	(eShop)

EDALMATIC tapping heads

- For machines with only one direction of rotation.
- Adjustable safety clutch protects tap from breakage.
- Length compensation by tension and compression, compensating for difference between machine feed and thread pitch.
- Automatic feed; ensures thread is true to gauge size.
- Automatic quick return traverse 1.6: 1.
- Right-hand and left-hand rotation possible without conversion.
- Accepts Rubber-Flex collets and quick-change sockets.

33 3500 – Size M3–M12 and M10–M30 with double clamping mechanism.

Application:
- For cutting threads **exactly true to gauge size.**
- Can be used without changing the set up for left-hand or right-hand threads, blind and through holes.

Supplied with: Including anti-rotation arm and for No. 333500 also 2 multi-range collets (rubber-flex), 2 spanners and 1 screwdriver for hexagon socket screws to suit the tapping head!

Optional extras:

33 3500 – Multi-range collets (Rubber Flex) No 333640. For a spare clamping device No. 333630 see the spare parts list.

33 3600 – Quick-change tapping chucks No. 335420 – 335640.

Note: Suitable tapered arbors No. 342500; 342600.



33 3500

Nut
for accurate adjustment of thread depth, ± 0.1 mm.

33 3600

Type		M1,4-7	M3-12	M5-20	M10-30
35D 33 3500	Rubber-Flex tapping head **for tapping collet**	eShop	eShop	eShop	eShop
35D 33 3600	Tapping head **for quick-change inserts,**	–	eShop	eShop	–
Thread range		M1.4 – M7	M3 – M12	M5 – M20	M10 - M30
∅ range of the 1st collets	mm	2.5 – 4.5	3.5 – 6.5	4.5 – 10	10 – 16
∅ range of the 2nd collets	mm	4.5 – 6.5	6.5 – 10	10 – 16	16 – 23
maximum speed, advance	min^{-1}	1400	1100	750	350
automatic stroke length	mm	10	15	22	30
Tapered shank mount DIN 238		B 12	B 16	B 22	B 24

Tapping collets (Rubber-Flex)

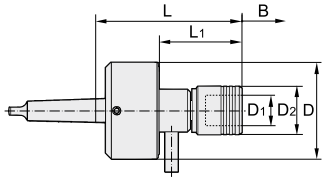
Suitable for: Edalmatic tapping head No. 333500.

Clamping range shank ∅	mm	2,5-4,5	4,5-6,5	2-4,5	3,5-6,5	6,5-10	4,5-10	9-15	10-16	16-23
33F 33 3640	Multi-range collet Rubber-Flex	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
suitable for equipment type		M1.4 – M7	M1.4 – M7	M3 - M12	M3 – M12	M3 – M12	M5 – M20	M5 – M20	M10 - M30	M10 - M30
ID number of the collet		J 116	J 117	J 423	J 421	J 422	J 441	J 445	J 461	J 462



Garant Tapping heads for machines with only one direction of rotation

- With built-in reversing gears for automatic return. After reaching the thread depth, the unit automatically reverses by raising the machine spindle (low-wear ball system!).
- Accelerated return (approx. factor 1.8×n_{max}).
- Length compensation in tension.
- With anti-rotation arm.
- Maintenance-free
- For cutting right- and left-hand threads.
- With quick-change collet system.



Application:

Size 12/1; 12/2 – For automatic tapping on non-reversing machines with manual feed. For tapping through holes (with collets No. 335420) and blind holes (with inserts No. 335610).

Size 20/2–20/4 – For automatic tapping on non-reversing machines with manual feed. For tapping through holes (with collets No. 335430) and blind holes (with inserts No. 335620).

Optional extras: For quick-change tapping collets see: No. 335420; 335430 (**without** safety clutch), No. 335610; 335620 (**with** safety clutch).

Type		12/1	12/2	20/2	20/3	20/4
31M 33 4100	Tapping head	eShop	eShop	eShop	eShop	(eShop)
Thread range		M3 – M12	M3 – M12	M8 – M20	M8 – M20	M8 – M20
maximum speed, advance	min^{-1}	1200	1200	500	500	500
Length compensation in tension	mm	12.5	12.5	16.5	16.5	16.5
Length from the machine spindle	mm	140	140	170	170	170
L_1	mm	60	60	86	86	86
Disengagement travel B	mm	6	6	8	8	8
External ∅ D	mm	80	80	100	100	100
∅ D_1	mm	19	19	31	31	31
∅ D_2	mm	32	32	50	50	50
Morse taper MT		1	2	2	3	4

Tapping chucks for machines with right-hand and left-hand directions of rotation

- **Double clamping** is achieved by 3 jaws which centre the tap shank and by 4 additional jaws which clamp the tap square drive.
- When set correctly, the **safety clutch** prevents tap breakage.
- Blind hole threads can be tapped down to the bottom.
- **The self-adjustment mechanism** compensates for misalignment errors between the machine spindle and the component.
- The flexible **length compensation** is effective on compression and tension. It prevents the thread being cut incorrectly with manual or power feed.

Application: For tapping internal threads on reversible drilling machines, turret lathes. Applicable horizontally and vertically for right-handed threads.

Supplied with: 1 chuck key.



Type		12	20
35B 33 4510	Tapping chuck type DSPL with shank	eShop	eShop
Thread range		M3 – M12	M8 – M20
for Whitworth threads		G1/8 – G1/2	G1/4 – G13/16
for Whitworth pipe threads		R1/8	R1/8 – R1/2
Clamping range square	mm	0 – 8	4.7 – 12
Shank ∅ range	mm	2.5 – 10	6 – 16
pivoting parallel to axis	mm	1	1.5
Length compensation in compression	mm	10	
Length compensation in tension	mm	20	20
Length from the machine spindle	mm	135	170
Body ∅	mm	58	83
Morse taper MT		2	3

Quick-change tapping chuck for right-hand and left-hand rotation

- Compact design, with flexible length compensation by compression and tension.
- Adjustable lead-in pressures for different materials and taps.

Application:
- To produce threads that are true to gauge.
- For right-hand and left-hand thread.
- For NC machines and machining centres.

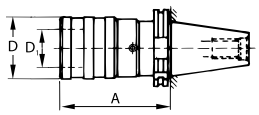
Optional extras: See No. 335420 – 335660 for quick-change tapping collets.

Note:
- Quick-change tapping heads in **other shank types size M14 – M33 available on request.**
- Quick-change tapping heads **not suitable for internal coolant supply.**

With parallel shank

With ball bearing-mounted sleeve for smooth no–play length compensation.

33 4620/4624 – Parallel shank to DIN 1835 – Form B and E.



Tapping range				M3-12	M6-20	M14-33
31P 33 4620	Garant	Quick-change tapping chuck	Shank ∅ 20 mm	eShop	–	–
32P 33 4622	HOLEX		Shank ∅ 20 mm	eShop	–	–
31P 33 4624	Garant		Shank ∅ 25 mm	eShop	eShop	–
32P 33 4626	HOLEX		Shank ∅ 25 mm	eShop	eShop	–
32P 33 4628	HOLEX		Shank ∅ 32 mm	–	–	eShop
Length compensation by compression			mm	7.5	12.5	20
Length compensation by tension			mm	7.5	12.5	20
External ∅ D			mm	38	55	78
∅ D_1			mm	19	31	48
Dimension A (33 4620, 33 4624, 33 4628)			mm	39	64	132.5
Dimension A (33 4622, 33 4626)			mm	41	64	–


33 4620



33 4622

With steep taper (SK) to DIN

DIN 69871 | ISO 7388-1

33 4630/4638 – **With ball bearing-mounted sleeve for smooth no–play length compensation.**

Optional extras: Pull studs (PS) No. 308600 – 308806.
Pull stud wrenches No. 308820; 308835.


33 4630



33 4634

Tapping range				M3-12	M6-20	M14-33
31P 33 4630	Garant	Quick-change tapping chuck	SK 40	eShop	eShop	eShop
32P 33 4634	HOLEX		SK 40	eShop	eShop	–
31P 33 4638	Garant		SK 50	eShop	eShop	eShop
32P 33 4642	HOLEX		SK 50	eShop	eShop	–
Length compensation by compression			mm	7.5	12.5	24
Length compensation by tension			mm	7.5	12.5	24
External ∅ D			mm	38	55	79
∅ D_1			mm	19	31	48
Dimension A (33 4630, 33 4634)			mm	60	100	138
Dimension A (33 4638, 33 4642)			mm	62	83	133

With Morse taper (MT) to DIN

Morse taper DIN 228 B.

Tapping range				M3-12	M6-20
32P 33 4644	HOLEX	Quick-change tapping chuck	MT2	eShop	–
32P 33 4645	HOLEX	Quick-change tapping chuck	MT3	eShop	eShop
32P 33 4646	HOLEX	Quick-change tapping chuck	MT4	–	eShop
Length compensation by compression			mm	7.5	12.5
Length compensation by tension			mm	7.5	12.5
External ∅ D			mm	38	55
∅ D_1			mm	19	31
Dimension A			mm	46	70



33 4644

With hollow shank taper (HSK) / polygonal shank (PSC) to DIN

ISO 12164-1 | DIN 69893

With ball bearing-mounted sleeve for smooth no–play length compensation.
Optional extras: Socket No. 309890.

Tapping range				M3-12	M6-20	M14-33
31P 33 4652	Garant	Quick-change tapping chuck	HSK-A 63	eShop	eShop	eShop
31P 33 4656	Garant	Quick-change tapping chuck	HSK-A 100	eShop	eShop	eShop
Length compensation by compression			mm	7.5	10	17.5
Length compensation by tension			mm	7.5	12.5	17.5
External ∅ D			mm	41	60	86
∅ D_1			mm	19	31	48
Dimension A (33 4652)			mm	72	110	141
Dimension A (33 4656)			mm	80	100	144


33 4652

Tapping range				M3-12	M6-20
31M 33 4660	Garant	Quick-change tapping chuck	PSC 63	eShop	eShop
Length compensation by compression			mm	7.5	10
Length compensation by tension			mm	7.5	10
External ∅ D			mm	41	60
∅ D_1			mm	19	31
Dimension A			mm	73	97

ISO 26623-1

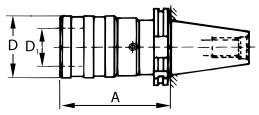



33 4660

JIS B6339 | ISO 7388-2

Optional extras: Pull studs (PS) No. 308600 – 308806.
Pull stud wrenches No. 308820; 308835.

Tapping range				M3-12	M6-20	M14-33
31M 33 4662	Garant	Quick-change tapping chuck	BT 30	eShop	–	–
31M 33 4663	Garant	Quick-change tapping chuck	BT 40	eShop	eShop	–
32P 33 4665	HOLEX	Quick-change tapping chuck	BT 40	eShop	eShop	eShop
32P 33 4670	HOLEX	Quick-change tapping chuck	BT 50	eShop	eShop	eShop
Length compensation by compression			mm	7.5	12.5	20
Length compensation by tension			mm	7.5	12.5	20
External ∅ D			mm	38	55	78
∅ D_1			mm	19	31	48
Dimension A (33 4662)			mm	63	–	–
Dimension A (33 4663)			mm	68	93	–
Dimension A (33 4665)			mm	60	100	162.5
Dimension A (33 4670)			mm	62	83	141

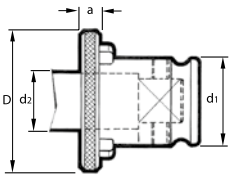




33 4665

HOLEX Reducer for quick-change inserts

Application: For reducing large tapping heads of sizes M6 – 20 or M14 – 33 to smaller M3 – 12 or M6 – 20 quick-change inserts.



Reducer ∅ d_1 / ∅ d_2		mm	31/19	48/19	48/31
32P 33 5665	Reducer quick-change inserts		eShop	eShop	eShop
∅ D		mm	46	68	68
a		mm	4.75	8.3	8.3
for thread insert (d_2)			M3 – M12	M3 – M12	M6 - M20
for check size (d_1)			M6–20	M14 – 33	M14 – 33

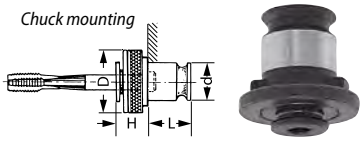

33 5665

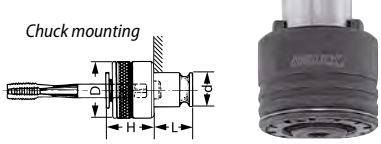
Rigid quick-change tapping collet with or without safety slip clutch

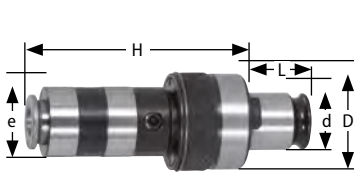
Application:

33 5645 – For GARANT extensions No. 338140 – 338142.
33 5420–5440 – For use with disengaging tapping head.
33 5610/5620/5640/5650/5660 – For blind holes.

Note: Inserts with slip clutch are supplied with the torque setting for machining steel (R_m 600 – 800 N/mm²). The setting can be modified as required by adjusting the nut.







Tap shank ∅	32H 33 5420	32H 33 5430	32H 33 5440	32H 33 5610	32H 33 5620	32H 33 5640	31M 33 5645	Shank square
	HOLEX						Garant	
	Quick-change collet without safety slip clutch			Quick-change collet with safety slip clutch			Base extension with safety slip clutch	
mm	M3 – 12	M6 – M20	M14 – M33	M3 – 12	M6–20	M14 – 33	M3 – 12	mm
3,5	eShop	–	–	eShop	–	–	–	2.7
4,5	eShop	–	–	eShop	–	–	eShop	3.4
6	eShop	eShop	–	eShop	eShop	–	eShop	4.9
7	eShop	eShop	–	eShop	eShop	–	(eShop)	5.5
8	eShop	eShop	–	eShop	eShop	–	eShop	6.2
9	eShop	eShop	–	eShop	eShop	–	eShop	7
10	eShop	eShop	–	eShop	eShop	–	eShop	8
11	eShop	eShop	–	eShop	eShop	–	–	9
12	–	eShop	eShop	–	eShop	eShop	–	9
14	–	eShop	–	–	eShop	eShop	–	11
16	–	eShop	eShop	–	eShop	eShop	–	12
18	–	–	eShop	–	–	eShop	–	14.5
20	–	–	eShop	–	–	eShop	–	16
22	–	–	eShop	–	–	eShop	–	18
25	–	–	eShop	–	–	eShop	–	20
28	–	–	eShop	–	–	eShop	–	22
∅ D mm	30	46	68	32	50	72	32	
∅ d mm	19	31	48	19	31	48	19	
L mm	21.5	35	55.5	21.5	35	55.5	21.5	
H mm	7	11	14	25	34	45	70	
∅ e mm	–	–	–	–	–	–	23	

32H 33 5460	32H 33 5470	32H 33 5650	32H 33 5660
HOLEX			
Quick-change collet set without safety slip clutch, 8 pieces	Quick-change collet set without safety slip clutch, 9 pieces	Quick-change collet set with safety slip clutch, 8 pieces	Quick-change collet set with safety slip clutch, 9 pieces
M3 – 12	M6–20	M3 – 12	M6 – M20
eShop	eShop	eShop	eShop


33 5460


33 5650

FAHRION® Quick-change chuck

When the ring is moved down, the steel balls snap back into place in the sleeve.

Application: For quick change of subsequent tools.

Optional extras: Drill sleeves No. 336820.

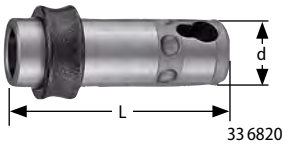
Bore ∅ D_1 / mounting shank (mm / MT)		26MK2	34MK3	46MK4
33F 33 6800	Quick-change chuck	(eShop)	(eShop)	(eShop)
Chuck outside ∅ D	mm	48	61	86
Overall length	mm	150	176	222
Length from the machine spindle	mm	75.5	82.5	104.3


33 6800

Drill sleeves for quick-change chucks

Suitable for: Quick-change chuck No. 336800.

Application: For tools with Morse taper and with tang such as twist drills, countersinks etc. For tools with plain shanks, use the Morse taper clamping sleeve No. 345000.



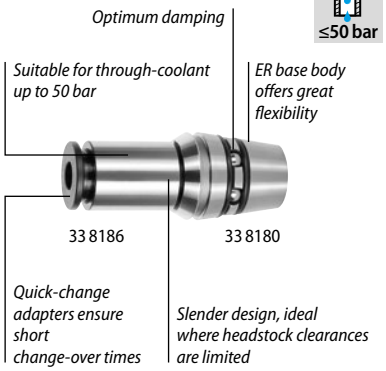
33 6820

Plug-in ∅ d / internal taper (mm / MT)		26MK1	26MK2	34MK1	34MK2	34MK3	46MK1	46MK2	46MK3	46MK4
33F 33 6820	Drill sleeve	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
L	mm	78	90	80	91	108	102	98.5	109	135
Length from chuck	mm	18	30	15	26	43	20	16.5	27	53
Length from the machine spindle	mm	93.5	105.5	97.5	108.5	125.5	124.3	120.8	131.3	157.3

Garant Synchro insert with ER collet base body

- Tapping and thread forming on machines with synchronised spindles.
- Minimum Length Adjustment: +0.5mm / -0.2 mm.
- Compensation for synchronisation errors, hence better thread quality and clear increase in tool life.
- For collet chucks and driven tools to ISO 15488 (DIN 6499).
- Suitable for left-hand and right-hand threads.

≤50 bar



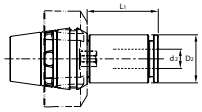
Synchro collet

Suitable for: ER collet chuck.

for ER collets		16	25	32
31P 33 8180	Synchro collet	eShop	eShop	eShop

Synchro tool heads

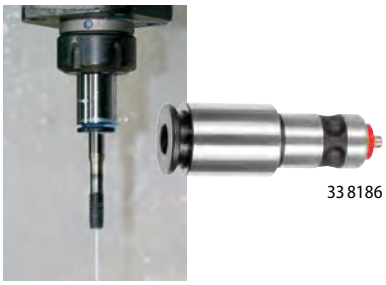
Suitable for: ER synchro collet No. 338180.





33 8180_32

Tap shank ∅ d_2	31P 33 8183	31P 33 8185	31P 33 8186	for tap shank ∅ d_2 DIN 371	for tap shank ∅ d_2 DIN 374/376	L_1			Shank square
	Synchro tool head					33 8183	33 8185	33 8186	
mm	for ER16	for ER25	for ER32			mm	mm	mm	mm
3,5	eShop	–	–	M3	M5	24	–	–	2.7
4,5	eShop	–	–	M4	M6	24	–	–	3.4
5	eShop	–	–	M4	M5	24	–	–	4
6	eShop	eShop	eShop	M5-6	M8	32	27	8	4.9
7	–	eShop	eShop	M7	M9-10	–	30	19	5.5
8	–	eShop	eShop	M8	M11	–	30	37	6.2
9	–	eShop	eShop	M9	M12	–	40	37	7
10	–	eShop	eShop	M10	–	–	41	37	8
11	–	–	eShop	–	M14	–	–	37	9
12	–	–	eShop	M12	M16	–	–	37	9
∅ D_2 mm	12.7	19	25						



33 8186

Synchro ER collet adapter

Application: For use on ER collets for the synchro collet No. 338180 size 25.



33 8188

ER external / internal		25/16
31P 33 8188	ER adapter	eShop

HOLEX Weldon element for thread tapping

Plain toolholder, hardened and ground with **quick-release coupling**. Internal square to take taps and transmit the torque. Clamping mechanism prevents the tap being pulled out.

Advantage:
- Attractively priced solution.
- Sturdy, slim version.
- Variation in the clamping and overhang lengths.

Application: To take taps and others in a Weldon arbor.

Weldon element with minimum adjustment for thread tapping

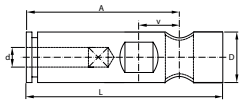
Tensile/compression compensation each of 0.2 mm by means of compensation element. Clamping of the Weldon element either by means of the drive flats or the compensation element.

Optional extras: Compensation element No. 335730.

Note: Minimum compensation function **only** in combination with No. 300415 and 335730. The standard Weldon chuck permits only rigid clamping, see No. 335740.



33 5720



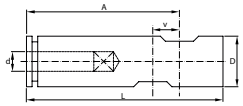
For nominal ∅ d	mm	3,5	4,5	6	7	8	9	10	11	12
32P 33 5720	Weldon element with compensation, short	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop
32P 33 5725	Weldon element with compensation, long	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D	mm	12	12	14	16	16	18	18	20	20
A (33 5720)	mm	36	36	37	–	39.5	41.5	45.5	52	52
A (33 5725)	mm	136	136	137	139	139.5	141.5	145.5	152	152
Adjustment travel V	mm					10				
L (33 5720)	mm	45	45	45	–	48	48	48	50	50
L (33 5725)	mm	145	145	145	148	148	148	148	150	150



33 5740

Rigid Weldon element for thread tapping

Two drive flats, offset by 180° and 10 mm.



For nominal ∅ d	mm	3,5	4	4,5	6	7	8	9	10	11	12	14	16
32P 33 5740	Rigid Weldon element	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D	mm	12	12	12	14	16	16	18	18	20	20	25	25
A	mm	36	36	36	37.5	39.5	39.5	41.5	45.5	52	52	56.5	56.5
Adjustment travel V	mm							10					
L	mm	49	49	49	49	52	52	52	52	54	54	69	69

≤50 bar

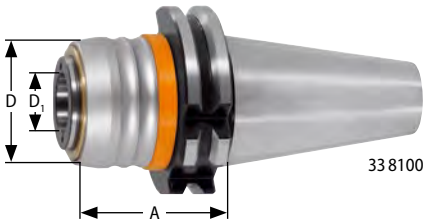
Garant Quick-change tapping heads for synchronised spindles

- With **minimum length adjustment (MLA),** by means of a damping element.
- Increases tool life of taps/thread formers by up to 300 %.
- Internal coolant supply up to 50 bar.
- Secure clamping for ER collets in quick-change tapping collets.
- Radial run-out of shank taper to the tapping collet taper < 3 µm.

Application: On **machining centres with synchronised spindles.**
- For compensating the difference in pitch between tap and synchronised spindle.
- For compensating the pitch tolerances of taps.

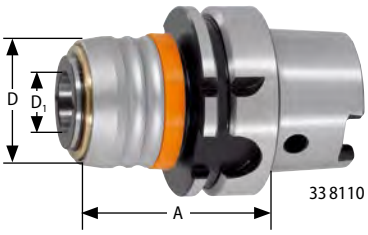
Optional extras: See No. 308600 - 308806 for pull studs.
Coolant feed pipes for HSK, see No. 309880.
See No. 309890 for plug-in sockets for HSK.
Quick-change tapping collets and extensions, see No. 338120 – 338142.

Form AD
DIN 69871
ISO 7388-1

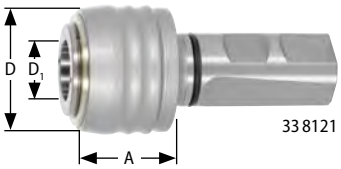


33 8100

Form A
DIN 69893



33 8110



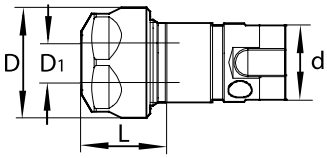
33 8121

Tapping range			M1-12	M6-20
31M 33 8100	Tapping head **MLA IC 50 bar**	**SK 40**	eShop	eShop
31M 33 8105		**SK 50**	eShop	eShop
31M 33 8106		**BT 30**	eShop	–
31M 33 8107		**BT 40**	eShop	eShop
31M 33 8110		**HSK-A 63**	eShop	eShop
31M 33 8115		**HSK-A 100**	eShop	eShop
31M 33 8121		**Shank Ø 25 mm**	eShop	eShop
Length compensation by compression		mm	0.2	
Length compensation by tension		mm	1	
External Ø D		mm	43	60
Ø D_1		mm	20	32
Dimension A (33 8100)		mm	53	90
Dimension A (33 8105)		mm	53	74
Dimension A (33 8106)		mm	57	–
Dimension A (33 8107)		mm	61	82
Dimension A (33 8110)		mm	64	97
Dimension A (33 8115)		mm	70	91
Dimension A (33 8121)		mm	34	56
suitable for ER size			11 / 16	25

Garant Quick-change tapping collets and extensions (ER system!)

Suitable for: MLA quick-change tapping heads with minimum length adjustment No. 338100 – 338121.
Optional extras: ER tapping collets, see No. 309399 – 309447.

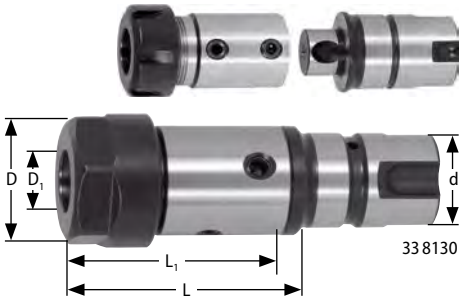

33 8120



for ER collet size			11	16	25
31M 33 8120	Tapping collet for tapping head **MLA**		eShop	eShop	eShop
for cutting range			M1 – M5	M3 – M12	M6 – M20
L		mm	17	24	27
Ø D		mm	19	28	42
Ø D_1		mm	2 – 6	2 – 10	2 – 16
Ø d		mm	20	20	32
Spare GARANT high-speed clamping nut No. 309610			11	16	25
maximum tightening torque		Nm	20	60	70

Extended quick-change tapping collets for synchronous tapping heads MLA

Application: For tapping in places that are difficult to access.
Optional extras: ER tapping collets, see No. 309399 – 309447.



33 8130

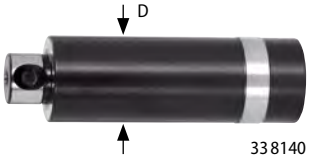
for ER collet size			16	25
31M 33 8130	Base extension **MLA**		eShop	eShop
for cutting range			M3 – M12	M6 – M20
L		mm	55	84
Ø D		mm	28	42
Ø D_1		mm	2 – 10	2 – 16
Ø d		mm	20	32
L_1		mm	38	63



Intermediate sections for basic extension MLA

Suitable for: Base extensions **MLA,** No. 338130.
33 8140 – Quick-change tapping chuck **ER16.**
33 8142 – Quick-change tapping chuck **ER25.**
Application: For extending the base extension for inaccessible places.


33 8140



33 8140

Length		mm	25	50	100	External ∅ D mm
31M 33 8140	Intermediate section MLA	M3 – 12	eShop	eShop	–	23
31M 33 8142		M6–20	–	(eShop)	(eShop)	35

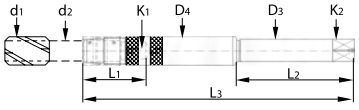
HOLEX Tap extensions

- Long and extra long version.
- The **front end** of the extension acts as a collet. The collet is clamped to the tap by hand-tightening the knurled clamping nut.
- The drive torque is provided by the square drive.
- The **rear part** of the extension is to DIN, so that the extension can be mounted in quick-change tapping collets or ER tapping collets with a square drive.
  33 8425 – h6 shank with Weldon flat for use in Weldon/shrink-fit chucks or hydraulic chucks.
  33 8435 – With internal coolant supply.

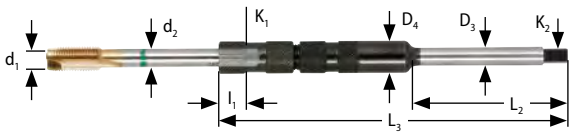
Application: For tapping in confined places, such as recesses, offsets, sharp edges on jigs, extremely deep internal threads, or directly into casting walls.

Note: Alternative hexagon collet for fixing the tap available on request.






33 8405



Type	32H 33 8405	32H 33 8425	32H 33 8435	for thread nominal ∅ d_1 DIN 371	for thread nominal ∅ d_1 DIN 374/376	for thread shank ∅ d_2	∅ D_3		∅ D_4	L_2		L_3
	Tap extension						33 8405 33 8435	33 8425	33 8405 33 8435	33 8405 33 8435	33 8425	
		with HB flat	with through-coolant			mm	mm	mm	mm	mm	mm	mm
1	eShop	eShop	eShop	M2 – M2.6	M4	2.8	6	6	6.1	60	60	130
1L	eShop	–	–	M2 – M2.6	M4	2.8	6	–	6.1	70	–	230
2	eShop	eShop	eShop	M3	M4.5 – M5	3.5	6	6	7.5	60	60	130
2L	eShop	–	–	M3	M4.5 – M5	3.5	6	–	7.5	70	–	230
3	eShop	eShop	eShop	M4	M6	4.5	6	6	8.4	60	60	130
3L	eShop	–	–	M4	M6	4.5	6	–	8.4	70	–	230
4	eShop	eShop	eShop	M4.5 – M6	M8	6	7	8	12.1	60	60	130
4L	eShop	eShop	eShop	M4.5 – M6	M8	6	7	8	12.1	70	70	230
5	eShop	eShop	eShop	M7	M9 – M10	7	7	8	12.1	60	60	130
5L	eShop	eShop	eShop	M7	M9 – M10	7	7	8	12.1	70	70	230
6	eShop	eShop	eShop	M8	M11	8	8	8	13	60	60	130
6L	eShop	eShop	eShop	M8	M11	8	8	8	13	80	80	230
7	eShop	eShop	eShop	M9	M12	9	9	10	15	60	60	130
7L	eShop	eShop	eShop	M9	M12	9	9	10	15	80	80	230
8	eShop	eShop	eShop	M10	–	10	10	10	15	60	60	130
8L	eShop	eShop	eShop	M10	–	10	10	10	15	80	80	230
9	eShop	eShop	eShop	–	M14	11	11	12	18	90	90	130
9L	eShop	eShop	eShop	–	M14	11	11	12	18	90	90	230
10	eShop	eShop	eShop	–	M16	12	12	12	18	90	90	130
10L	eShop	eShop	eShop	–	M16	12	12	12	18	90	90	230
11	eShop	eShop	eShop	–	M18	14	14	14	22	90	90	200
11L	eShop	eShop	eShop	–	M18	14	14	14	22	90	100	330
12	eShop	eShop	eShop	–	M20	16	16	16	22	90	90	200
12L	eShop	eShop	eShop	–	M20	16	16	16	22	90	100	330
13	eShop	eShop	eShop	–	M22 – M24	18	18	18	26	100	100	200
13L	eShop	eShop	eShop	–	M22 – M24	18	18	18	26	100	100	330

≤50 bar

HOLEX ER synchro tapping chuck, one piece

- With **minimum length adjustment (MLA)**, by means of a damping element.
- Internal coolant supply up to 50 bar.
- Increases the tool life of taps/thread formers.

Application:
- On machining centres with **synchronised spindles**.
- For compensating the difference in pitch between tap and synchronised spindle.
- For compensating the pitch tolerances of taps.

Optional extras: ER collets for machine taps No. 309399 and 309447.
33 8190 – Pull studs No. 308600 – 308806.
33 8193 – Pull studs No. 308760 – 308806.
33 8195 – Coolant feed pipe for HSK No. 309880.

Form AD | ISO 7388-1



33 8190

Form AD | ISO 7388-2 | JIS B6339



33 8193

Form A | DIN 69893



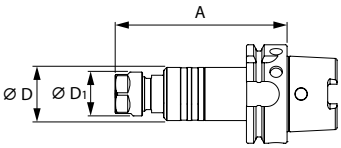
33 8195

DIN 1835 B, E



33 8198

for ER collet size			16	25
32P 33 8190	Tapping chuck, ER synchro	SK 40	eShop	eShop
32P 33 8193		BT 40	eShop	eShop
32P 33 8195		HSK-A 63	eShop	eShop
32P 33 8198		Shank ∅ 25 mm	eShop	eShop
Tapping range			M4 – M12	M6 - M20
Length compensation by compression		mm	0.5	
Length compensation by tension		mm	0.5	
External ∅ D		mm	34	45
∅ D_1		mm	28	42
Dimension A (33 8190, 33 8193)		mm	85	100
Dimension A (33 8195)		mm	110	130
Dimension A (33 8198)		mm	75	110

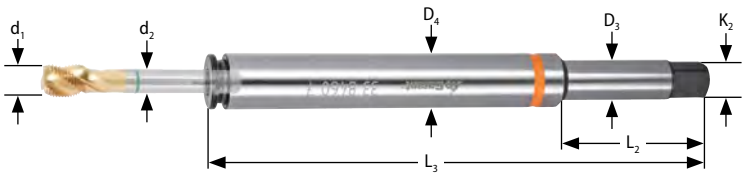


Garant Tap extensions

Suitable for: For mounting in quick-change tapping collets or ER tapping collets with a square drive.

Advantage:
- Time-saving exchange of taps with repetition accuracy and quick-change adapter.
- Almost any combination of extensions available, due to the identical diameter D_3 and drive square K_2.

Application: For tapping in confined places, such as recesses, offsets, sharp edges on jigs, extremely deep internal threads, or directly into casting walls.



Type	31M 33 8460 Tap extension with quick-release chuck	for thread nominal ∅ d_1 DIN 371	for thread nominal ∅ d_1 DIN 374/376	for thread shank ∅ d_2 mm	∅ D_3 mm	∅ D_4 mm	K_2 mm	L_2 mm	L_3 mm
2	eShop	M3	M4.5 – M5	3.5	12	12	9	45	145
3	eShop	M4	M6	4.5	12	12	9	45	145
4	eShop	M4.5 – M6	M8	6	12	14	9	45	145
5	eShop	M7	M9 – M10	7	12	16	9	45	145
6	eShop	M8	M11	8	12	16	9	45	145
7	eShop	M9	M12	9	12	18	9	45	145
8	eShop	M10	–	10	12	18	9	45	145
9	eShop	–	M14	11	12	20	9	45	145
10	eShop	–	M16	12	12	20	9	45	145
11	eShop	–	M18	14	18	24	14.5	49	149
12	eShop	–	M20	16	18	26	14.5	49	149
13	eShop	–	M22 – M24	18	18	29	14.5	49	149

≤80 bar

FAHRION® CENTRO|P SYNCHRO tapping chuck

- Extremely low axial forces for low flank pressure and perfect surface quality.
- Torsion damper and compensation mechanism in the circumferential direction.
- Depth of up to 150 mm can be achieved with ∅10 interference contour (for thread size M0.5-M3).
- Suitable for internal coolant supply of up to 80 bar.
- Suitable for taps and fluteless taps.
- Suitable for right-hand and left-hand threads.
- Suitable for blind and through holes.
- Minimum length compensation in push and pull direction.
- Drastically reduces the flank pressure on old and new CNC machining centres.

Advantage:
- Reliable processes thanks to smooth operation, even under torque load.
- Longer tool life for the tap and fluteless tap.
- Significantly smaller outer diameter than previously available.
- Significantly more internal cooling directly on the tool than conventional synchro chucks (for ER8).
- Concentricity is twice as good, for the lowest flank pressure.
- Damping when reversing the direction of rotation ensures fewer tool breakages.

Note: **Products No. 338131 – 338135 only when used with CENTRO/P collets (No. 309365 – 309372)**. The weaker the axial force, the better the quality, the lower the wear, the longer the service life, and the safer the process.

CENRO|P SYNCHRO chucks are characterised by particularly long and precise guidance of the shaft with consistently high FAHRION quality.

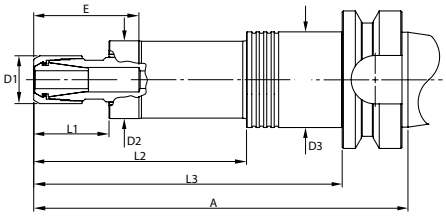


33 8131_11



33 8131_16

for ER collet size			8	11	16
33F 33 8131	Tapping chuck, ER synchro	SK 40 short	–	eShop	eShop
33F 33 8132		SK 40 long	–	(eShop)	–
33F 33 8134		HSK-A 63 short	eShop	eShop	eShop
33F 33 8135		HSK-A 63 long	(eShop)	(eShop)	–
Tapping range (33 8131, 33 8132, 33 8135)			M0.5 - M3	M3 - M6	M5 - M8
Tapping range (33 8134)			M0.5 - M3	M3 - M6	–
Dimension A (33 8131)		mm	–	122	135
Dimension A (33 8132)		mm	–	247	–
Dimension A (33 8134)		mm	109	129	142
Dimension A (33 8135)		mm	191	254	–
∅ D_1		mm	10	16	30
∅ D_2		mm	20	26	34
∅ D_3		mm	26	32	40
L_1 (33 8131, 33 8134)		mm	18	25	34
L_1 (33 8132, 33 8135)		mm	100	150	–
L_2 (33 8131, 33 8134)		mm	55	71	84
L_2 (33 8132, 33 8135)		mm	137	196	–
L_3 (33 8131, 33 8134)		mm	83	103	116
L_3 (33 8132, 33 8135)		mm	165	228	–
E		mm	25	35	37



LLAMBRICH Keyless drill chuck made of stainless steel

- Self-clamping keyless drill chuck with high clamping forces.
- Very ergonomic, user-friendly.
- Ideal for the medical industry thanks to autoclave resistance.
- Made of highly corrosion-resistant steel.
- Highest quality and safety standards thanks to certification according to **ISO 13485**.
- Through-hole allows drills, reamers, pins and other tools to be used safely.

Application: For use in the chemical, food and beverage, medical and aviation industries.



34 1760

Type			7,4-3/8	7,4-10	3,2-3/8
39Z 34 1760	Keyless drill chuck		eShop	eShop	eShop
Clamping range		mm	0.3 – 7.4	0.3 – 7.4	0.3 – 3
External ∅		mm	32	32	27
Drill head length open		mm	59	59	47
Drill head length closed		mm	66	66	51
Adapter		in	3/8-24	B10	3/8-24
Weight		kg	0.218	0.218	0.13

Self-tightening drill chucks

High performance precision three-jaw drill chucks. High concentricity, keyless, self-tightening, high clamping force. Easily released by hand. Wearing parts hardened and exchangeable.

34 1000 Size 15 – With vernier for pre-setting micro drills and for micro drill adapter No. 341200.

Standard: **DIN 238**

Application: For bench and pillar drilling machines, milling machines, lathes, for use with arbors No. 342300 – 342850 or directly on machine spindles.



34 1250


34 1000_15


34 1000_30-160


34 1010

Type	31K 34 1250 Garant	33A 34 1000 ALBRECHT	39R 34 1010 RÖHM	Clamping range	External ∅	Drill head length open	Drill head length closed	Drill chuck taper	largest drill chuck taper ∅
	Self-tightening drill chuck	High-performance self-tightening drill chuck	Spiro	mm	mm	mm	mm		mm
15	–	eShop	–	0.2 – 1.5	19	35	37	B 6	6.35
30	–	eShop	–	0.2 – 3	24	44	47.5	B 10	10.094
65/10	–	eShop	(eShop)	0.5 – 6.5	34	61.5	68	B 10	10.094
65/12	–	eShop	eShop	0.5 – 6.5	34	61.5	68	B 12	12.056
100/12	–	eShop	eShop	0.5 – 10	43	80	91.5	B 12	12.056
100/16	–	eShop	eShop	0.5 – 10	43	80	91.5	B 16	15.733
130	eShop	eShop	eShop	1 – 13	50	90.5	103	B 16	15.733
160/16	eShop	eShop	eShop	3 – 16	56	95.5	109	B 16	15.733
160/18	eShop	eShop	eShop	3 – 16	56	95.5	109	B 18 stub	17.431

Self-tightening drill chuck with diamond-coated jaws

With **diamond-coated jaws,** self-tightening.

Standard: **DIN 238**

Application: Especially suitable **for clamping solid carbide drills** (Group 12) and for **drills with hard shanks.** For bench and pillar drilling machines, milling machines, lathes, for use with arbors No. 342300 – 342850 or directly on machine spindles.

Note: Use high precision straight shank drill chuck arbors No. 342600.





34 1050

Type	31K 34 1050 Garant	Clamping range	External ∅	Drill head length open	Drill head length closed	Drill chuck taper	largest drill chuck taper ∅
	Self-tightening drill chuck with diamond-coated jaws	mm	mm	mm	mm		mm
130	eShop	1 – 13	50	91	103	B 16	15.733

SBF-plus self-tightening high-performance drill chucks with MT shank (single-piece)

34 1122 – **High performance** precision three-jaw drill chucks. High concentricity, keyless, self-tightening, high clamping force. Easily released by hand. Wearing parts hardened and exchangeable.

34 1115/1122 –
- Drill chuck and MT shank are a single unit.
- High concentricity, optimum stability.
- Easy and quick change due to short design, advantageous for confined working areas.

Standard:

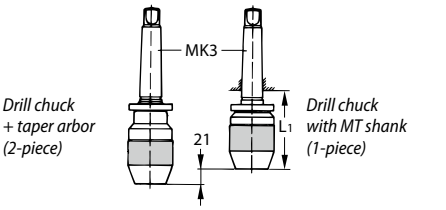
34 1122 – **DIN 238**

Application:

34 1122 – For bench and pillar drilling machines, milling machines, lathes, for use with arbors No. 342300 – 342850 or directly on machine spindles.

Note:

34 1115/1122 – The self-tightening effect works only for clockwise rotation.



MT shank		2	3	4
33A 34 1115	ALBRECHT	eShop	–	–
31K 34 1122	Garant	eShop	eShop	eShop
33A 34 1120	ALBRECHT	eShop	eShop	eShop
33A 34 1125	Self-tightening high-performance drill chuck with MT shank	eShop	eShop	eShop
Clamping range (34 1115)	mm	0.5 – 6.5	–	–
Clamping range (34 1122, 34 1120)	mm		1 – 13	
Clamping range (34 1125)	mm		3 – 16	
External ∅ (34 1115)	mm	34	–	–
External ∅ (34 1122, 34 1120)	mm		50	
External ∅ (34 1125)	mm		56	
L_1 open (34 1115)	mm	66	–	–
L_1 open (34 1122, 34 1120)	mm	85	85	86.5
L_1 open (34 1125)	mm	89	89	90
L_1 closed (34 1115)	mm	71	–	–
L_1 closed (34 1122, 34 1120)	mm	97.5	97.5	99
L_1 closed (34 1125)	mm	102.5	102.5	103.5



34 1122


34 1115

Spare jaws

Suitable for:

34 1150 – Drill chucks No. 341000, 341250, 341120, 341122, 341125.
34 1160 – Drill chuck No. 341050.



34 1150

for drill chuck size		100	130	160
33A 34 1150	Jaws set, 3 pieces **Standard**	eShop	eShop	eShop
33A 34 1160	Jaws set, 3 pieces **diamond coated**	–	(eShop)	–
Length	mm	26.5	29	30

≤20µm | G 6.3 15000 min^{-1} | ≤50 bar

Garant Key-operated drill chucks with straight shank

- For clockwise and anticlockwise rotation.
- Slim design.
- Targeted delivery of coolant.

Advantage:
- Very flexible applications due to the plain shank.
- Optimum holding torques at the tool.

Supplied with: Torx chuck key with T-handle.



34 1265

Type	31B 34 1265 Drill chuck with straight shank	Clamping range mm	External ∅ mm	Drill head length open mm	Drill head length closed mm	Overall length mm	Shaft length mm
25	eShop	1 – 16	50	81.9	92	137.9	56
32	eShop	1 – 16	50	81.9	92	141.9	60

Self-tightening drill chucks – standard version

With drill chuck taper DIN 238

34 1425 – Simple, lightweight design.
34 1455 – **With clamping force protection (SKS)** for impact drills. For clockwise and anticlockwise rotation.

Application: For fitting to arbors No. 342300 - 342887 or directly on to the machine spindle.
34 1425 – Mainly for portable drills.
34 1400/1421 – For use on bench drills.



Drill chuck taper



34 1400



34 1425

Type	39R 34 1400 RÖHM Supra	32W 34 1425 HOLEX	39R 34 1455 RÖHM Supra with SKS	Clamping range mm	External ∅ 34 1400 mm	External ∅ 34 1425 mm	External ∅ 34 1455 mm	Drill head length closed 34 1400 mm	Drill head length closed 34 1425 mm	Drill head length closed 34 1455 mm	Drill chuck taper	largest drill chuck taper ∅ mm
	Self-tightening drill chuck											
6	eShop	–	–	0 – 6.5	32	–	–	65.6	–	–	B 10	10.094
8	eShop	–	–	0 – 8	35.8	–	–	73.4	–	–	B 12	12.065
10/12	eShop	eShop	eShop	0 – 10	40.2	34.3	40.2	86.1	79.4	75.7	B 12	12.065
10/16	eShop	eShop	–	0 – 10	40.2	43	–	89.1	92	–	B 16	15.733
13/12	eShop	eShop	eShop	1 – 13	42.5	42.5	42.5	90	97	90	B 12	12.065
13/16	eShop	eShop	eShop	1 – 13	46	42.5	42.8	101.5	101.6	89.3	B 16	15.733
16/16	eShop	eShop	–	3 – 16	51	50.5	–	107	106.7	–	B 16	15.733
16/18	eShop	eShop	–	3 – 16	51	50.5	–	107	110.9	–	B 18	17.431

Type	39Z 34 1421 LLAMBRICH Keyless drill chuck	Clamping range mm	External ∅ mm	Drill head length closed mm	Drill chuck taper	largest drill chuck taper ∅ mm
6	eShop	0 – 8	37	78	B 10	10.094
8	eShop	0 – 8	37	78	B 12	12.065
10/12	eShop	0 – 10	40	86	B 12	12.065
10/16	eShop	0 – 10	40	86	B 16	15.733
13/12	eShop	1 – 13	47	103	B 12	12.065
13/16	eShop	1 – 13	47	103	B 16	15.733
16/16	eShop	3 – 16	52	105	B 16	15.733
16/18	eShop	3 – 16	52	105	B 18	17.431



34 1421

With internal thread

Size 10-3/8; 10-1/2; 13-1/2 – **With clamping force protection** for impact drills.

Application: For use on bench drills.
For fitting to electric drilling machines.



Internal thread



34 1610



34 1615

Type	39R 34 1610 ROHM	32W 34 1615 HOLEX	Clamping range		External ∅		Drill head length open		Drill head length closed		Adapter
	Self-tightening drill chuck										
	Supra		34 1610 mm	34 1615 mm	34 1610 mm	34 1615 mm	34 1610 mm	34 1615 mm	34 1610 mm	34 1615 mm	in
10-3/8	eShop	eShop	0.5 – 10	0.5 – 10	40	39	66	71	73.7	83	3/8-24
10-1/2	–	eShop	–	0.5 – 10	–	39	–	71	–	83	1/2-20
13-3/8	eShop	eShop	1 – 13	2 – 13	40.2	43	76.3	79	83.6	90	3/8-24
13-1/2	eShop	eShop	1 – 13	2 – 13	42.8	43	76	79	83.3	90	1/2-20
16-5/8	eShop	–	3 – 16	–	46	–	87.5	–	97.5	–	5/8-16

ALBRECHT Präzisions Spannfutter Chuck removal tool for drill chucks

Application: Special tool for the removal of drill chucks from tapered arbors.





Type	33A 34 1140	suitable for drill chuck taper	Length	Width	Thickness
	Chuck removal tool for drill chucks		mm	mm	mm
1	eShop	B 6	120	20	10
2	eShop	B 10; B 12	170	30	10
3	eShop	B 16; B 18	210	40	12

Keyless drill chucks

- **Keyless drill chuck** with self-tightening locking mechanism. No additional locking required (not even for impact drilling).
- Very ergonomic, user-friendly, hexagon flats for wrench assistance.
- Good concentricity.
- **Through hole version for right-hand and left-hand operation** (thread M5 or M6).

34 2204 – Single-piece drill chuck; the drill chuck can be opened with one hand when the spindle of the drilling machine is stopped. Extremely short design.

34 2200–2205 – Equipped with start inhibit.

34 2200/2205 Size 13-3/8; 13-1/2 – **Chamfers made of carbide** for wear reduction.

34 2207/2208 – Chamfers made of carbide for wear reduction.



34 2200



34 2205



34 2204



34 2208

Type	39R 34 2200	39R 34 2204	39R 34 2205	Clamping range	External ∅		Drill head length open		Drill head length closed		Adapter	maximum machine power	
	ROHM												
	Drill chuck with keyless locking mechanism Extra RV												
	Plastic version	Metal version	Metal version		34 2200 34 2205	34 2204	34 2200 34 2205	34 2204	34 2200 34 2205	34 2204		34 2200	34 2204 34 2205
				mm	mm	mm	mm	mm	mm	mm	in	W	W
10-3/8	eShop	–	–	1 – 10	42.7	–	55	–	60.9	–	3/8-24	550	–
10-1/2	eShop	–	–	1 – 10	42.7	–	55	–	60.9	–	1/2-20	1000	–
13-3/8	eShop	–	–	1.5 – 13	42.7	–	64.5	–	72.4	–	3/8-24	1000	–
13-1/2	eShop	eShop	eShop	1.5 – 13	42.7	42.4	64.5	51	72.4	60.9	1/2-20	1000	1100
13-9/16	–	eShop	–	1.5 – 13	–	42.4	–	51	–	60.9	9/16-20	–	1100

Type	32W 34 2207 HOLEX	32W 34 2208 HOLEX	Clamping range	External ∅	Drill head length open	Drill head length closed	Adapter	maximum machine power
	Drill chuck with keyless locking							
	Metal version							
			mm	mm	mm	mm	in	W
13-3/8	eShop	–	1.5 – 13	43.1	63	74	3/8-24	1100
13-1/2	–	eShop	1.5 – 13	42	64.5	71.2	1/2-20	1100

Self-tightening drill chuck for hand power drills

- Automatic tightening whilst drilling, proportional to the cutting force (maintains the clamping force even under tough conditions!).
- Sturdy design (functional components of metal).
- **With retaining ring.**
- With clamping force protection(clamping and locking using only one hand!).

Application:
- For heavy-duty cordless and mains power drills.
- Cordless impact power drills up to 36 Volt.
- Reverse torque up to 50 Nm.

Note:
- **No through holes** – Drill chucks thus have to be secured tightly to the spindle.
- **General purpose** – with retaining ring for use on machines with / without spindle stops.



Type	39R 34 1710	Clamping range	External ∅	Drill head length open	Drill head length closed	Adapter
	Self-tightening drill chuck					
	Supra-SK 13E	mm	mm	mm	mm	in
13-1/2	eShop	1.5 – 13	42.9	72	79.3	1/2-20

Gear rim drill chuck with key

Application: For universal drilling on portable electric drills, **hammer drills** and pillar drills.

With drill chuck taper DIN 238

For clockwise and anticlockwise rotation.
With drill chuck taper DIN 238 for fitting to arbors No. 342300 - 342850 or directly on to the machine spindle.

34 2215 – Jaws are hardened.
34 2220 – Key guide not hardened.



Drill chuck taper



34 2215



34 2220

Type	39R 34 2215	32W 34 2220	Clamping range		External ∅		Drill head length closed		Drill chuck taper	largest drill chuck taper ∅	suitable gear rim socket
	Gear rim chuck										
	Prima		34 2215 mm	34 2220 mm	34 2215 mm	34 2220 mm	34 2215 mm	34 2220 mm		mm	
6/10	eShop	–	0.5 – 6.5	–	29.5	–	52.5	–	B 10	10.094	S1
8	eShop	–	0.5 – 8	–	29.5	–	57.5	–	B 12	12.065	S2
10/12	eShop	eShop	0.8 – 10	0.8 – 10	34.5	33.5	60.5	61.4	B 12	12.065	S2
10/16	eShop	eShop	1 – 10	1 – 10	42.8	42.4	77	77	B 16	15.733	S2
13	eShop	eShop	1.5 – 13	1.5 – 13	42.8	42.4	77	77	B 16	15.733	S2
16/16	eShop	eShop	3 – 16	3 – 16	50	50	86.5	86.5	B 16	15.733	S3
16/18	eShop	eShop	1 – 16	3 – 16	56.5	50	98	98	B 18	17.78	S3

With internal thread

Jaws are hardened.
For clockwise rotation.
Size 10-3/8–13-1/2 – **Chuck secured with a screw** (left-hand thread), therefore suitable for clockwise and anticlockwise rotation.



Internal thread



34 2225

Type	39R 34 2225	Clamping range	External ∅	Drill head length closed	Adapter	suitable gear rim socket
	Gear rim chuck					
	Prima	mm	mm	mm	in	
8-3/8	eShop	0.5 – 8	29.5	53	3/8-24	S1
10-3/8	eShop	0.8 – 10	34.5	61	3/8-24	S2
10-1/2	eShop	0.8 – 10	34.5	61	1/2-20	S2
13-1/2	eShop	1.5 – 13	42.4	74	1/2-20	S2
13-3/8	eShop	1.5 – 13	42.8	74	3/8-24	S2
16-5/8	(eShop)	1.5 – 16	56.5	100.5	5/8-16	S3

HOLEX Accessories for drill chucks

Replacement key


34 2245

Type	32W 34 2245 Chuck key for gear rim chuck	Pin ∅ mm
S1	eShop	4
S2	eShop	6
S3	eShop	8

Adapter for drill chuck with internal thread 1/2 inch/ 20 tpi

Adapter with SDS-Plus shank to 1/2 inch / 20 tpi.



32X 34 2150	Adapter with shank SDS-Plus to 1/2 inch 20 tpi	eShop

ALBRECHT Präzisions Spannfutter Micro drill adapters

Precision operation due to ball-bearing retaining ring. Automatic return to initial position by spring retraction.

Suitable for: No. 341000 size 15.

Application: For holes up to ∅ 1.5mm. To produce very small holes by manual feed, even on large machines.


34 1200



Type	33A 34 1200 Micro drill adapter	Shank type	Drill stroke mm	Overall length mm	Taper size
13	eShop	13 mm ∅	20	91	B 6
MK1	eShop	MK 1	20	107	B 6

Morse taper drill chuck arbors

With MT shank and tang.

34 2500 – Precise economy version.

34 2600 – The **high precision version** offers maximum concentricity and is recommended for self-tightening high-performance drill chucks No. 341000.

Application: For mounting drill chucks on drills, lathes, jig borers etc.


34 2500

MT / drill chuck taper	32X 34 2500 HOLEX Drill chuck arbor with MT shank	33A 34 2600 MT drill chuck arbor, precision version	Drill chuck taper DIN 238	Taper ∅ D mm
0/6	–	eShop	B 6	6.35
0/10	–	eShop	B 10	10.094
1/10	eShop	eShop	B 10	10.094
1/12	eShop	eShop	B 12	12.065
1/16	eShop	eShop	B 16	15.733
1/18	eShop	eShop	B 18	17.78
2/10	eShop	eShop	B 10	10.094
2/12	eShop	eShop	B 12	12.065
2/16	eShop	eShop	B 16	15.733
2/18	eShop	eShop	B 18	17.78
2/22	eShop	eShop	B 22	21.793

MT / drill chuck taper	32X 34 2500 HOLEX Drill chuck arbor with MT shank	33A 34 2600 MT drill chuck arbor, precision version	Drill chuck taper DIN 238	Taper ∅ D mm
3/16	eShop	eShop	B 16	15.733
3/18	eShop	eShop	B 18	17.78
3/22	eShop	eShop	B 22	21.793
3/24	–	eShop	B 24	23.825
4/16	eShop	eShop	B 16	15.733
4/18	eShop	eShop	B 18	17.78
4/22	–	eShop	B 22	21.793
4/24	–	eShop	B 24	23.825
5/18	–	eShop	B 18	17.78
5/22	–	eShop	B 22	21.793

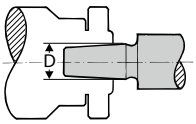
HOLEX Drill chuck arbors

Through hardened and ground. High long-term concentricity because swarf cannot be pressed into the hardened surface and no notches can occur from minor impacts.

Standard: Drill chuck taper **DIN 238.**



34 2300



Drill chuck arbors with straight shank

High precision version with plain shank.

Application: For mounting drill chucks on to milling machines, automatic system etc. The plain shank can be clamped in a **collet or in a milling chuck**.

Shank ∅ / drill chuck taper	32X 34 2300 Straight shank drill chuck arbor	Drill chuck taper DIN 238	Taper ∅ D mm	Plain shank length mm
6/6	eShop	B 6	6.35	35
8/10	eShop	B 10	10.094	35
10/10	eShop	B 10	10.094	40

Shank ∅ / drill chuck taper	32X 34 2300 Straight shank drill chuck arbor	Drill chuck taper DIN 238	Taper ∅ D mm	Plain shank length mm
10/12	eShop	B 12	12.065	40
16/16	eShop	B 16	15.733	50

Drill chuck arbors with MT shank and internal locking thread

High precision version with MT shank and internal locking thread.

Application: For mounting drill chucks on milling machines with Morse tapers.



34 2700

MT / drill chuck taper	32X 34 2700 Morse taper arbor with locking thread	Drill chuck taper DIN 238	Taper ∅ D mm	Internal pull thread
2/12	eShop	B 12	12.065	M10
2/16	eShop	B 16	15.733	M10
3/16	eShop	B 16	15.733	M12

Drill chuck arbors with steep taper shank and locking thread

High precision version with DIN taper shank and locking thread.

34 2887 – **Steep taper to DIN 69871 A, Part 1** with tool changer flange and thread for pull stud.

Application: For mounting drill chucks on milling machines with DIN 2080 steep tapers.

Size 40/16 – With internal locking thread M16 **and snap ring groove** for **automatic clamping** (e.g. Maho, Deckel, Mikron etc., also suitable for all standard machines **with manual clamping).**



34 2886_40/16
Size 40/16 with snap ring groove



34 2887_50/16

SK / drill chuck taper	32A 34 2886	32A 34 2887 Steep taper (SK) drill chuck arbor	Drill chuck taper DIN 238	Taper ∅ D mm	Internal pull thread	Colour code for suitable shank
40/16	eShop	eShop	B 16	15.733	M16	
50/16	–	eShop	B 16	15.733	M24	

HOLEX Morse taper reducing sleeves

Through hardened, internal and external tapers ground.

Standard: **DIN 2185**



34 3000

MT external / internal		1/0	2/1	3/1	3/2	4/1	4/2	4/3	5/1	5/2	5/3	5/4	6/3	6/4	6/5
32X 34 3000	MT reducing sleeve	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length	mm	80	92	99	112	124	124	140	156	156	156	171	218	218	218

HOLEX Long Morse taper sleeves

External taper ground.

34 3510 – **Extension sleeve** (with identical external and internal taper).

34 3520 – **Extended reducing sleeve** (internal taper smaller than external taper).

34 3530 – **Expansion sleeve** (internal taper larger than external taper).

Standard: Similar to **DIN 2187.**



34 3510

MT external / internal	32X 34 3510 MT extension sleeve	32X 34 3520 MT extended reducing sleeve	32X 34 3530 MT expansion sleeve	Overall length mm
2/1	–	eShop	–	160
3/1	–	eShop	–	175
3/2	–	eShop	–	194
4/1	–	eShop	–	200
4/2	–	eShop	–	215
4/3	–	eShop	–	240
5/3	–	eShop	–	268
5/4	–	eShop	–	300
1/1	eShop	–	–	145

MT external / internal	32X 34 3510 MT extension sleeve	32X 34 3520 MT extended reducing sleeve	32X 34 3530 MT expansion sleeve	Overall length mm
2/2	eShop	–	–	175
3/3	eShop	–	–	215
4/4	eShop	–	–	265
5/5	eShop	–	–	335
1/2	–	–	eShop	160
2/3	–	–	eShop	196
3/4	–	–	eShop	240
4/5	–	–	eShop	300

Colour code: SK 40 SK 50

Drill drifts for Morse taper tools with tang

Standard: **DIN 317**
Application: For Morse taper tools to DIN 228 with tang.

Type		0	1	3	4	5
35A **34 3800**	Drill drift	eShop	eShop	eShop	eShop	eShop
for MT		0	1; 2	3	4	5; 6
Overall length	mm	90	140	190	225	265

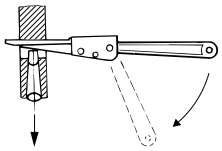


Semi-automatic drill drift

- One-handed operation without impact tools (avoids damage to spindle).
- Tools are released by a wedge effect.

Application: For Morse taper tools to DIN 228 with tang.





Type	35A **34 3850** Semi-automatic drill drift	for MT	Overall length mm
1-3	eShop	1 – 3	317
4-6	eShop ■	4 – 6	380

Taper cleaners and cylindrical cleaners

- Wide spacing for collecting swarf and dirt.
- Fleece is resistant to oil and emulsions.

Advantage:
34 3700/3705/3720/3730 – **Plastic version** non-warping, for high precision use. Fleece strips with additional grooves.

Application: For cleaning internal tapers / external tapers / internal bores on machine spindles, sleeves, and tool arbors (e.g. shrink-fit chucks / hydraulic chucks).

Note:
34 3700 – HSK sizes are compatible with HSK-E and HSK-F. For example: HSK-E 50 = size HSK50; HSK-F = always one size smaller, for example HSK-F63 is size HSK50.

for mounting type	37E **34 3700** Garant Taper cleaner **Plastic**	37E **34 3705** Garant External cleaner **Plastic**	37E **34 3710** HOLEX Taper cleaner **Wood**
MK1	eShop	–	eShop
MK2	eShop	–	eShop
MK3	eShop	–	eShop
MK4	eShop	–	eShop
MK5	eShop	–	eShop
SK30	eShop	–	eShop
SK40	eShop	–	eShop
SK45	eShop	–	–
SK50	eShop	–	eShop
HSK32	eShop	–	–
HSK40	eShop	eShop	–
HSK50	eShop	eShop	–
HSK63	eShop	eShop	–
HSK80	eShop	eShop	–
HSK100	eShop	eShop	–

Pin ∅ mm	37E **34 3720** Garant Cylindrical cleaner **Plastic**
6	eShop
8	eShop
10	eShop
12	eShop
14	eShop
16	eShop
18	eShop
20	eShop
25	eShop
32	eShop

for arbor type	37E **34 3730** Garant Taper cleaner for ER, **Plastic**
ER11	eShop
ER16	eShop
ER32	eShop



34 3705



34 3700



_SK40



_HSK100



34 3720_25
For parallel bores



34 3720_16–32
For parallel bores



34 3730
For ER collet chucks

Morse taper clamping sleeve

Through hardened, bore and external taper ground.

Standard: **DIN 6328**

Cutting dataa: For fitting into adjustable adapters angle heads, quick-change tapping collets, and multi-spindle machines where the spindles are close together.

Application: For mounting parallel shank taps and reamers with square drive.

Note: Not suitable for milling work!



Tool with parallel shank and square.



34 5000

Morse taper clamping sleeve



MT/∅	37E 34 5000 Morse taper clamping sleeve for taps	for shank ∅ mm	for shank □ mm
1/3,5	eShop	3.5	2.7
1/4	eShop	4	3
1/4,5	eShop	4.5	3.4
1/5	eShop	5	3.8
1/5,5	eShop	5.5	4.3
1/6	eShop	6	4.9
1/7	eShop	7	5.5
1/8	eShop	8	6.2
2/5,5	eShop	5.5	4.3
2/6	eShop	6	4.9
2/7	eShop	7	5.5
2/8	eShop	8	6.2
2/9	eShop	9	7
2/10	eShop	10	8
2/11	eShop	11	9

MT/∅	37E 34 5000 Morse taper clamping sleeve for taps	for shank ∅ mm	for shank □ mm
2/12	eShop	12	9
3/8	eShop	8	6.2
3/9	eShop	9	7
3/10	eShop	10	8
3/11	eShop	11	9
3/12	eShop	12	9
3/14	eShop	14	11
3/16	eShop	16	12
4/12	eShop	12	9
4/14	eShop	14	11
4/16	eShop	16	12
4/18	eShop	18	14.5
4/20	eShop	20	16
4/22	eShop	22	18
4/25	eShop	25	20

HOLEX Slitting saw arbors

Precisely tempered, ground on the external and internal ∅, shank to DIN 1835 B. Concentricity 0.01 mm. **For side lock arbor with bore ∅ (d_3) 20 or 25 mm.**

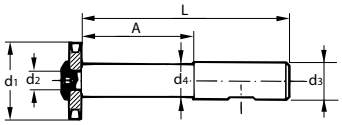
Application: For holding slitting saws No. 175000 – 179820 with ∅ (d_1) from 20 – 100 mm and saw blade thicknesses from 0.2 – 6 mm.

Supplied with: Arbor, clamping screw and intermediate ring.





34 5510



for saw blade ∅ d_1 mm		20	25	32	40	50	63	80	100
32X 34 5510	Slitting saw arbor	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
A	mm	40	50	55	60	78	78	92	92
Length L	mm	90	100	105	110	136	136	150	150
∅ d_2	mm	5	8	8	10	13	16	22	22
∅ d_3	mm	20	20	20	20	25	25	25	25
∅ d_4	mm	10	13	16	19.5	24.5	24.5	34	39.5

Set of slitting saw arbors

Supplied with: No. 345510 size 20 – 63, including a wooden case.



34 5555

32X 34 5555	Set of slitting saw arbors	eShop

Spare parts for slitting saw arbors



34 5561



34 5566

for saw blade ∅ d_1 mm		20	25	32	40	50	63	80	100
32X 34 5561	Spare washer for slitting saw arbor	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32X 34 5566	Spare screw for slitting saw arbor	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

Garant SHRINK-FIT AND COOLING UNIT

- Unique design.
- Modular.
- Easy to use.
- Everything in its right place.

Ergonomic handle

High-power coil
- Shrink range ∅ 3 – 32 mm (carbide + HSS)
- Roller spring supported coil guide
- QTH = QuickToolHolder (integrated tool tray)

Shrink-fit tool length
up to 500 mm

Basic tool holders
No. 35 4225 – 35 4227

Including air cooling
at the shrink-fit chuck position



Intuitive new touch control

Modular design
- Shrink-fit station including air cooling No. 35 4210_SU1
- Cooling unit including cooling air supply No. 35 4215_CU1

Perforated panel
for using GARANT Easyfix systems No. 96 3001 – 96 3058.

Contact cooling
- Positively driven
- Contour-dependent

Storage for the cooling inserts

Tool storage

Stainless steel surface

Storage for screening plates
∅ 3 – 32 mm (no. 35 4240)

Garant Shrink-fit and cooling unit

Shrink-fit unit set SU1 / CU1

Shrink-fit unit with integral cooling at the shrink-fit chuck position.
Maximum shrink-fit tool length 500 mm.
Storage for screening plates.

Application:
- **For contour-dependent cooling.**
- For shrinking shanks of carbide and HSS in and out.
- Shrink range 3 – 32 mm.

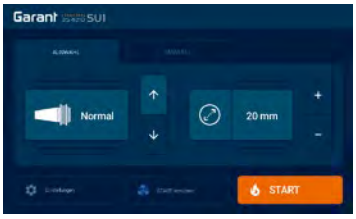
Supplied with:
- 4 screening plates ∅ 3 – 32 mm No. 354240.
- Clamping ring.
- 1 pair heat-resistant gloves.

Optional extras:
- Suitable base cabinet No. 354291.
- Spare screening plates No. 354240.
- Basic tool mountings No. 354225 – 354227.
- Cooling adaptor for air cooling No. 354235 – 354236.
- **Cooling unit No. 354215 CU1.**

Type		SU1
31E 35 4210	Shrink-fit unit	eShop
Width	mm	700
Height	mm	986
Depth	mm	533
Power supply		3-AC 400 V/50 Hz + N + PE 230 V/50 – 60 Hz
Power	kW	11
Weight	kg	45



35 4210



Very easy to use, including by selecting pre-parametrised shrink processes.

Cooling unit CU1 with active cooler

- Storage for cooling inserts.
- Stand-alone variant.
- 2 × positively driven contact cooler (no damage to the tool).

Application:
- **For contour-dependent cooling.**

Supplied with:
- Includes active cooler.
- 5 cooling inserts ∅ 6 – 32 mm No. 354260.

Optional extras:
- Suitable sub-frame No. 354290.
- Cooling inserts No. 354260 – No. 354279 in the spare parts list.

Note: 1.4 litres ethylene glycol (such as Glysantin G48) are required for operation of the active cooler.

Type		CU1
31E 35 4215	Cooling unit	eShop
Width	mm	430
Height	mm	902
Depth	mm	533
Weight	kg	39
Active cooler width	mm	413
Active cooler height	mm	415
Active cooler depth	mm	283
Active cooler power	kW	0.47
Active cooler weight	kg	22
Active cooler power supply		230 V / 50 – 60 Hz



35 4215

Accessories for GARANT shrink-fit unit SU1 / cooling unit CU1

Screening plates

Suitable for: Shrink-fit unit No. 354210 SU1.

Note: For slim shrink-fit chuck screening plate No. 354241.



35 4240_12-20



35 4240_3-5

for clamping ∅	mm	3-5	6-12	12-20	20-32
31E 35 4240	Garant Screening plate for coil **SU1**	eShop	eShop	eShop	eShop
for clamping ∅	mm	3 – 5	6 – 12	12 – 20	20 – 32

Basic tool mountings

Suitable for: Shrink-fit unit No. 354210 SU1 and cooling unit No. 354215 CU1.



35 4225



for SK taper shank		30	40	50
31E 35 4225	Garant Basic tool mounting **for SK**	eShop	eShop	eShop

for HSK taper shank		32	40	50	63	100
31E 35 4226	Garant Basic tool mounting **for HSK**	eShop	eShop	eShop	eShop	eShop

4.5° cooling adapter for air cooling

- Precise enclosure of the clamping profile of the tool.
- Quick cooling of the heated shrink-fit chuck.

For shrink-fit chucks with engagement lengths up to 120 mm.

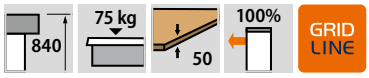
Note: For mounting on tool mounting No. 354225 – 354227. For shrink-fit chucks 120 – 200 mm on request.



35 4235

for clamping ∅	mm	3-5,9	6-9	9,1-12	12,1-16	16,1-22	22,1-32
31E 35 4235	Garant Cooling adapter short **4.5°**	eShop	eShop	eShop	eShop	(eShop)	(eShop)

Base cabinet for SU1 and CU1



- Body with 3 drawers and one cupboard in RAL 7035 light grey and drawers RAL 7016 anthracite grey. (Storage space for the active cooler of the CU1 cooling unit).
- Body of welded sheet steel, with bench top of Beolin, edges veneered with 3 mm thick graphite.

Note: No complaints will be accepted for changes in colour due to exposure to sun and light.



35 4291

Width	mm	1500
31E 35 4291	Garant GRIDLINE Base cabinet for shrink-fit unit	eShop
Height	mm	840
Width	mm	1500
Depth	mm	700

Shrink-fit unit

- Fully automatic shrink-fitting: Perfectly clamped tools in seconds without the need for manual work.
- Maximum safety: No overheating or damage to the shrink-fit holders thanks to intelligent technology.
- Easy to use: Intuitive control using a graphical user interface (GUI) that enables fast, accurate working.
- Future-proof technology: Thanks to the USB port and optional RFID extension, you are ideally equipped for Industry 4.0.
- Durable and reliable: An investment that pays off through sustainable equipment management and service packages for air- and water-cooled models.
- Clamping range for carbide: Ø 3 mm – 32 mm / HSS Ø 6 – 32 mm / optionally up to Ø 50 mm with quick-change spool.
- Fully automatic cooling and subsequent drying of the shrink-fit chucks.
- Cool down shrink-fit chucks in seconds with the "Cool Down" technology without touching the hot part.
- Improved blow-off function for optimum drying of the shrink-fit chucks.
- Ergonomic working height of 1300 mm.

Application: For machine interface SK40; SK50; HSK-A63 and HSK-A100. Automatic shrink-fit unit with liquid cooling and drying.

Supplied with: 4 screening plates Ø 3 – 32 mm. 1 pair safety gloves. 1 litre coolant concentrate.

Note: Tool mountings available on request.



35 4300

Type		WK
35B 35 4300	Shrink-fit unit ISG-3410	–
Width	mm	800
Height	mm	560
Depth	mm	1720
Power supply		400V / 16A / 50Hz
Power	kW	11
Compressed air	bar	4
Tank capacity	l	50
Cooling time	s	20
Weight	kg	128

ThermoGrip® shrink-fit unit

- Easily enter shrink parameters by scanning barcodes.
- Energy-saving induction technology for a long tool life.
- Precise centering of the tool.
- Only a small amount of space required and suitable for mobile use.
- Very high holding force and lasting strength, even in oily environments.
- ThermoGrip® shrink-fit units have been synonymous with innovative premium shrinking equipment for over 20 years.
- Clamping range Ø 3 – 32 mm for all shrink-fit chucks T, TSF, TB (HSS Ø 6 - 16 mm / carbide Ø 3 - 32 mm).
- Integrated air cooling (cooling adapter available as an option).
- Maximum tool length for HSK-A63 450 mm.
- Ideal for workbenches.

Supplied with:
- 1 barcode scanner
- Magnetic strip set
- Shrink-fit chuck catalogue
- Safety gloves
- Screening plates
- Operating instructions

Optional extras: Screening plates No. 354241, tool mounting No. 354225 – 354227.



35 4405

Type		ISG1200
35B 35 4405	Shrink-fit unit	(eShop)
Length	mm	410
Width	mm	315
Height	mm	767
Power supply		400V / 16A / 50Hz
Power	kW	6.5
Cooling time	s	300
Weight	kg	25

HOLEX Length setting gauge (manual pre-setting)

Tools are set to length from 20 - 125 mm and are held in the jaws by a clamping spring - no force needs to be applied.

Suitable for: All popular parallel tools from ∅ 3 - 20 mm.

Advantage: Pre-setting of tool free lengths up to 125 mm, saves time due to ease of operation, tools do not "drop through" e.g. for shrink-fit arbors, high stability, high degree of safety.

Application: Tools can be pre-set to 0.5 mm accuracy, suitable for all tool arbors (such as shrink-fit arbors, ER collets, Weldon arbors etc.).



		125
32Z 35 8400	Length setting gauge	eShop

Garant Data clip for tool arbors

- Flexible plastic with locking stop.
- Area provided for an adhesive label (size 25×54 mm).

Suitable for: **Type SK**– DIN 69871, JIS B 6339 (MAS-BT), ANSI.
Type HSK – DIN 69893, form A, B, E, F, T.

Advantage:
- For insertion into the toolchanger groove.
- After presetting the tools, the labels are printed off with the measured dimensions and stuck on to the data clip.

Application:
- No need for tedious handwriting and rubbing off the sizes.
- Clean and tidy (get rid of the paper chaos!)



35 9140



NEW

for ∅ tool collar mm	63	63-OR	63-GY	63-RD	100	100-OR	100-GY	
31T 35 9140 Data clip for tool arbors	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
Colour	blue	orange	grey	red	blue	orange	grey	
suitable for colour code								

HOLEX Data clip for VDI tool arbors

Flexible plastic with locking stop.
Area provided for an adhesive label. (Size 25 × 54 mm).



35 9142



for VDI	30B	30R	40B	40R	
32B 35 9142 Data clip for VDI tool arbors	eShop	eShop	eShop	eShop	10
Colour	black	red	black	red	
suitable for colour code					

Colour code: SK 40 / VDI 40 | TS 63 | SK 40 | TS 63 | SK 50 | TS 100 | SK 50 | VDI 30

Pre-setting device UNO

- **Large multi-touch screen** with intuitive and simple Microvision interface.
- Calibration device on the SK50 tool mounting.
- Simple storage for 3 adapters with SK50 inserts.
- Quick adjustment of both axes by release-by-touch **(X/Z)**.
- Fine adjustment of both axes (X / Z) using rotary wheel.
- Spindle with 4×90° and spindle brake.
- Camera with 32x magnification.

The device operates in conjunction with the optional Hoffmann Group Connected software solutions for use in production environments.

Application: For measuring and pre-setting tools at the machine in production or when planning work.

Supplied with: Thermal label printer with labels, simple modular subframe cabinet, measurement software in all major foreign languages, **commissioning and training included (1/2 day).**

Optional extras: The Haimer pre-setting devices are compatible with the GARANT reducers No. 354771; 354773; 354775; 354777 and 354779. Haimer reducers are available on request.

Commissioning and one-day training included



35 5020_UPCAM

Type		UP	UPCAM	UAF	UAFCAM	UAD	UADCAM
34H 35 5020	UNO pre-setting device	–	–	–	–	–	–
Base toolholder		SK50 ultra precision spindle					
Quick adjustment		pneumatic					
Measuring range X	mm	400					
Measuring range Z	mm	400					
Snap gauge X	mm	100					
Width base	mm	1294					
Overall height	mm	1735					
Overall width	mm	2264					
Depth	mm	590					
Weight	kg	300					
Spindle load	kg	30					
Second camera in the lens carrier		no	yes	no	yes	no	yes
Display size	in	22	22	24	24	24	24

PRE-SETTING DEVICE UNO IN DETAIL

Technical data

- Repetition accuracy of +/- 2µm and concentricity 2µm.
- **Edgefinder** laser for finding the tool cutting edge quickly.
- Post processor for data transmission to the machine and editor for adapting the machine interface to the pre-setting device.
- Compatible with Hoffmann Group Connected Manufacturing. Windows 10 operating system.



Second camera in the lens carrier (355020 UPCAM, UAFCAM, UADCAM)

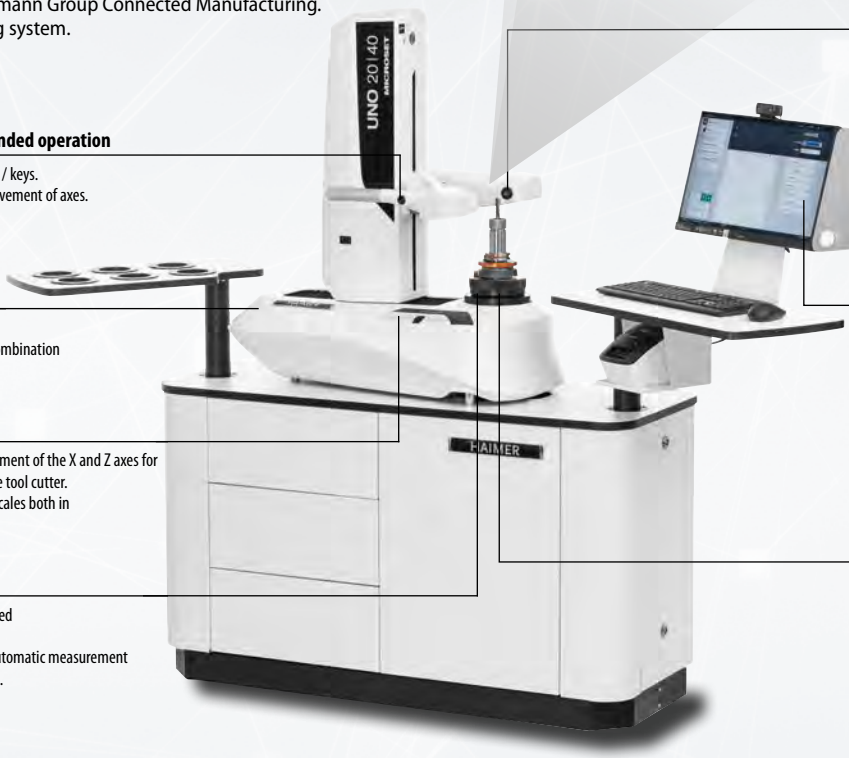
- For measuring the turning centre height of turning tools.
- Adjustable LED incident light illumination.

Digital camera

- Camera with 22-times magnification.
- Adjustable incident light for checking the cutting edge.

„Release-by-Touch" one-handed operation

- Easy to operate without buttons / keys.
- Intelligent sensor control for movement of axes.



Robust design

- Sturdy durable cast iron design.
- Thermally optimised material combination for better repetition accuracy.

Intuitive operation on up to 24" large touch screen

- High-performance processor with image processing system, Microvision.
- Integrated USB and LAN interfaces.
- External camera for taking photos of tools.
- Unlimited storage of zero points, tools, and tool lists.
- With all common measuring functions.

Manual fine adjustment

- µm-precision infinite fine adjustment of the X and Z axes for high-precision positioning of the tool cutter.
- High-quality Heidenhain glass scales both in X and Z axis.

SK50 ultra precision spindle, manual

- Vacuum clamping: pneumatic retraction of arbors with ISO taper size 50.
- Pneumatic spindle indexing at 4 × 90° and 3 × 120°.
- Spindle brake, pneumatic.
- Automatically operated spindle with auto-focus and automatic drive version.

Driven axes

- 355020 UAF, UAFCAM – motorised driven spindle (C-axis)
- 355020 UAD, UADCAM – fully automatic measurement with the driven axes X-, Z- and C.

UNO RANGE

Unique high-tech features in entry-level class.

As well as precision, speed and reliability, the UNO range impresses with numerous features. The timeless design and improved ergonomics set new standards. High-quality components, e.g. from Festo/SMC, Bosch, Heidenhain, IDS are used. Optionally, the UNO range offers you key benefits for top-level tool measurement in the expansion levels autofocus and automatic drive.

UNO premium (355020 UP, UPCAM) – the right solution for virtually all users. The highest standard for manual tool pre-setting. Operator-independent results, easy to use with the option of digital data transmission.

UNO autofocus (355020 UAF, UAFCAM) – the right device for demanding measurement tasks. Benefit from semi-automatic device handling for many tool measurements in a single plane.

UNO automatic drive (355020 UAD, UADCAM) – thanks to the fully automatic tool measuring, the high-end variant offers absolute operator independence and can be used with virtually no user knowledge. This promises maximum quality and time savings, even for complex tools on several planes.



Further UNO models available on request from the Hoffmann Group.



autofocus

- Automatic focussing of the cutting edge.
- Motorised spindles.
- With convenient modular cabinet and 24-inch, 10-point touch display as standard.



automatic drive

- For fully automatic tool pre-setting and measurement independent of the operator (CNC-controlled, 3 axes).
- With convenient modular cabinet and 24-inch touch display as standard.



(optional) ISS spindle

- ISS-U universal ultra precision spindle with integrated clamping system.
- Without loss of measurement path.
- Automatic adaptor recognition.
- Radial run-out ≤ 2 µm and high adaptor interchange accuracy.

VIO RANGE

Top comfort and functionality.

Optimise process reliability in your production thanks to the use of fully automatic measuring procedures. The holistic device concept enables integration into all production workflows, including existing ones. Maximum stability and precision. The FEM-optimised and thermostable cast iron design of the VIO linear range permits precise measurement results, even in the long term. Furthermore, highly dynamic linear drives with no wear characteristics ensure precise long-term quality. The parallel drive and guidance system ensures optimum distribution of forces and guarantees a measurement repetition accuracy of ±2 µm.

Highlights

- Low distorsion under maximum permissible load due to high rigidity
- FEM-optimised and thermostable cast iron design
- Maximum tool weight 160 kg
- Maximum tool length and diameter 1000 mm
- Quick, silent and highly accurate positioning thanks to unique linear drive (optional)
- Data exchange optionally via HQR Connect and HRFID Connect
- Fully automatic measurement cycles for very high operating comfort



VIO range available on request from the Hoffmann Group.



1. Second camera for measuring the centre of rotation (optional)





2 + 3. Fully automatic axle drive thanks to state-of-the-art linear technology

Pre-setting device VG1 – simple, quick, precise

- 15 inch touch screen, intuitive and simple operation via symbols.
- Calibration facility incorporated into the base mounting.
- Digital camera with 24 times magnification.
- Quick adjustment of both axes (X / Z) separately or together.
- Fine adjustment of both axes (X / Z).
- Spindle with 4×90° indexing and spindle brake.
- Radial and axial run-out error of the spindle: max. 2 µm.

Size VG1 – The device operates in conjunction with the optional Hoffmann Group Connected software solutions for use in production environments.

Advantage:

Size VG1 – By purchasing this device, you are gaining a compatible component for digitally networked production. Increased productivity can be achieved in conjunction with the respective modular software.

Application: For measuring and pre-setting tools at the machine or manufacturing cell.

Supplied with: Calibration device on the tool mounting, keyboard, storage plates, cutting edge cleaner, and measurement software in the major foreign languages.

Optional extras:
- Sub-frame cupboard No. 354767.
- Reducers No. 354771; 354773; 354775; 354777; 354779.
- Label printer No. 085505 size LW550.
- Labels No. 085565.
- Cover No. 354789 size 1.

New user interface for the software



35 4760

Type		VG1
31E 35 4760 Garant Pre-setting device		(eShop)
Base toolholder		SK50
Quick adjustment		electromagnetic
Measurement process		Image processing 15 inch touch screen
Measurement control		PC measurement electronics
Measuring range X	mm	400
Measuring range Z	mm	500
Width base	mm	860
Overall width	mm	1500
Depth	mm	590
Height	mm	1060
Weight	kg	150
Spindle load	kg	100

Garant

THE VG1 – THE CORE OF YOUR DIGITAL TOOL MANAGEMENT "CONNECTED MANUFACTURING".

Very easy integration with your digital processes. This means you are ideally placed to meet the highest demands of today and in the future, and your tool preparation will become even more efficient.

Hoffmann Group "Connected Manufacturing" shows quickly and clearly which tools are available, which ones must be mounted and where tools are located.
Tool information can be shown and transferred quickly through scanning.



35

Accessories for VG1

35 4767 – Body of welded sheet steel, with bench top of Beolin, edges veneered with 3 mm thick graphite. Incorporating the GARANT locking system

Function:

35 4783 – For exact measurement / checking of the rotational centre of turning tools. Scale value of the dial indicator 0.01 mm, measuring range 3 mm.

Colour:

35 4767 – Body light grey RAL 7035, drawers anthracite grey RAL 7016.

Note:

35 4767 – No complaints will be accepted for changes in colour due to exposure to sun and light.
Size 50/30 – Also suitable for BT30 arbors.
Size 50/40 – Also suitable for BT40 arbors.
Size 50/H32 – Also suitable for HSK-A/C/E32 and HSK-F40 arbors.
Size 50/H40 – Also suitable for HSK-A/C/E40 and HSK-F50 arbors.
Size 50/H50 – Also suitable for HSK-A/C/E50 and HSK-F63 arbors.
Size 50/H63 – Also suitable for HSK-A/C/E63 and HSK-F80 arbors.
35 4783 – Mounted on the camera arm by means of screw fixing. Dial indicator.
35 4771–4779 – Further SK50 adapters on request:
- VX3 – EWS article number: 19.SK50VX3
- VX4 – EWS article number: 19.SK50VX4
- V5 – EWS article number: 19.SK50V5



35 4767

Width		mm	1500
31E 35 4767	Garant GRIDLINE Base cabinet for pre-setting device		eShop
Height		mm	840
Width		mm	1500
Depth		mm	700

SK basic tool mounting / reducer SK		50/30	50/40
31E 35 4771	Garant Reducer **SK50 / SK**	eShop	eShop

SK basic tool mounting / reducer VDI		50/V16	50/V20	50/V25	50/V30	50/V40	50/V50
31E 35 4773	Garant Reducer **SK50 / VDI**	eShop	eShop	eShop	eShop	eShop	eShop

SK basic tool mounting / reducer HSK		50/H32	50/H40	50/H50	50/H63	50/H100
31E 35 4775	Garant Reducer **SK50 / HSK**	eShop	eShop	eShop	eShop	eShop

SK basic tool mounting / reducer PSC		50/C40	50/C50	50/C63	50/C80
31E 35 4777	Garant Reducer **SK50 / PSC**	eShop	eShop	eShop	eShop

SK tool mounting / HSK reducer		50/H63DI	50/H100DI
31E 35 4779	Garant Reducer with retraction **SK/HSK**	eShop	eShop
maximum torque	Nm	8	15
Chuck key		Torx® TX25	

		VG1
38D 35 4783	Rotational centre measurement unit	eShop

31E 35 4788	Garant Cutting edge cleaner	eShop


35 4771_50/40


35 4773_50/V25


35 4775_50/H63


All reducers include an integral calibration edge.


35 4777_50/C63


35 4779_50/H63DI


Reducer including protective ring.


35 4783




35 4788

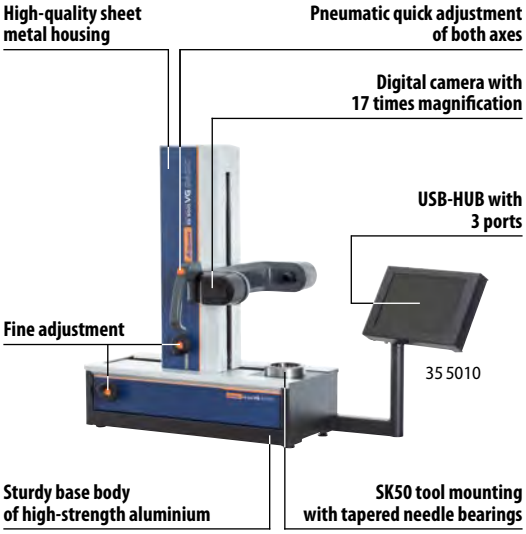
Garant Pre-setting device VG Basic

- 10 inch touch screen, with Windows 10 operating system.
- Focus on intuitive and extremely easy operation.
- Fine adjustment of both axes (X/ Z).
- Precise SK 50 needle-bearing taper.
- Compressed air connection at least 5 bar.
- Digital camera with 17 times magnification.
- Radial and axial run-out error of the spindle: max. 5 µm.

Application: For measuring and pre-setting tools at the machine or production island.

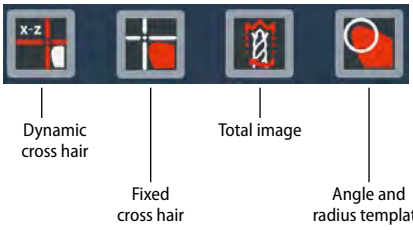
Supplied with: SK 50 needle-bearing taper, measurement software in all major foreign languages and 3 metres of coiled compressed air hose with 1/4 inch coupling connector.

Optional extras:
- Base cabinet No. 354767.
- Reducers No. 354771; 354773; 354775; 354777; 354779.
- Label printer No. 085505 size LW550.
- Labels No. 085565.
- Calibration mandrel No. 355105 size 90 (if using SK 50 tools).
- Spindle clamping No. 355102 size 1.
- Cutting edge cleaner No. 354788.
- Cover No. 354789 size 1.



Type		VGBASIC
31E 35 5010	Pre-setting device	eShop
Base toolholder		SK 50
Quick adjustment		pneumatic
Measurement process		Image processing 10 inch touch screen
Measurement control		PC measurement electronics
Measuring accuracy	mm	0.01
Measuring range X	mm	400
Measuring range Z	mm	400
Width base	mm	580
Overall width	mm	975
Depth	mm	260
Height	mm	710
Weight	kg	40
Spindle load	kg	50
Power supply		100-230 V / 50-60 Hz

Measuring functions



Accessories for VG Basic

Suitable for: VG Basic pre-setting device No. 355010.

Application:

35 5102 – For braking the SK 50 basic spindle.

Note:

35 5105 – The calibration mandrel is required when SK 50 tools are being used, because the spindle lacks its own integral calibration edge.


35 5102

Type		1
31E 35 5102	Spindle brake	eShop


35 5105

Length	mm	90
31E 35 5105	Calibration mandrel SK 50	eShop
∅ D	mm	30

HOLEX Tool length pre-setting

Suitable for:

Size 40; 63 – HOLEX digital depth gauge No. 418742 300.

Size 50; 100 – Digital depth gauge No. L40510 size 1214 (bridge length 150 mm, measurement range 300 mm).

Advantage:
- Easy handling.
- Small footprint.
- Attractively-priced entry-level variants.

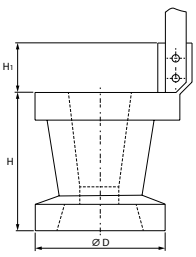
Application: Set the tool lengths directly at the machine.

Supplied with: Mounting block for depth gauge.

Note: All standard depth gauges can be used.

Size 50; 100 – A bridge length of 150 mm is absolutely necessary.


35 5050_40





for taper size		40	50	63	100
32B 35 5050	Tool length pre-setting device	eShop	eShop	eShop	eShop
Base toolholder		SK 40	SK 50	HSK 63	HSK 100
∅ D	mm	96	118	96	117
Height H	mm	100	138	100	140
Height H_1	mm	37			

Tool fitting aid

- Aluminium housing.
- Interchangeable toolholders.

Suitable for: **Type SK** – for DIN 69871, DIN 2080, JIS B6339, and ANSI.
35 8500 – Toolholders No. 358550 – 358625.
35 8660 – Toolholders No. 358665 – 358668.

Feature: All adapters with a clamping screw.
35 8500 – Indexable toolholders 8×45°.
35 8660 – Indexable toolholders 4×90°.

Advantage: **Clamping without damaging the taper**.





35 8500





35 8660

38D 35 8500	PWB	Base unit **Tool Boy**	eShop
32B 35 8660	HOLEX	Tool fitting aid base unit	eShop



for arbor size	32B 35 8665 HOLEX Toolholder for tool fitting aid SK	38D 35 8550 PWB Toolholder for Tool Boy base unit SK	32B 35 8666 HOLEX Toolholder for tool fitting aid HSK-A	38D 35 8570 PWB Toolholder for Tool Boy base unit HSK-A	32B 35 8667 HOLEX Toolholder for tool fitting aid VDI	38D 35 8620 PWB Toolholder for Tool Boy base unit VDI	32B 35 8668 HOLEX Toolholder for tool fitting aid PSC	38D 35 8625 PWB Toolholder for Tool Boy base unit PSC
20	–	–	–	–	eShop	(eShop)	–	–
25	–	–	–	–	eShop	–	–	–
30	eShop	eShop	–	–	eShop	eShop	–	–
32	–	–	eShop	–	–	–	–	–
40	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
50	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	eShop
63	–	–	eShop	eShop	–	–	eShop	eShop
80	–	–	eShop	(eShop)	–	–	–	(eShop)
100	–	–	eShop	eShop	–	–	–	–

Assembly boy

- Fibre-reinforced polyamide for high stability.
- For horizontal and vertical tool mounting.
- Very easy to operate.
- **10 years warranty against breakage and cracking.**
- **With 4 retainer magnets** in the horizontal socket **(security!)**

Suitable for: **ISO taper arbor SK40.**

Advantage: No risk of damage to expensive tools.

Application: For assembly at the workbench.
For efficient setting up and stripping down of cutting tools and pull studs on tool arbors.



35 8690

for arbor size			40
38D 35 8690	Assembly boy	SK	eShop
Length		mm	120
Width		mm	150
Height		mm	120
Weight		kg	0.55
suitable for arbor			SK 40

HOLEX Fitting aid

- Robust metal frame.
- **One mounting taper for mounting tools.**
- **One mounting taper for attaching the pull stud**.
- Fixing the mountings by fixed or pivoting Tee-nuts.

Suitable for:
Size 30 – Type **BT 30**.
Size 40 – Type **BT 40** and **SK 40**.

Advantage: No risk of damage to expensive tools.

Application: For assembly at the workbench.



35 8685_40

for arbor size			30	40
32B 35 8685	Fitting aid		eShop	eShop
Length		mm	200	253
Width		mm	120	140
Height		mm	148	167





Garant Tool fitting fixture

Modular system consisting of base rails, flexible tool modules for locking on the base rails and a height adjustment/height gauge system.
All components made from high-quality anodised aluminium.

Advantage:
- Clean, tidy workstation – all assembly jigs in one place.
- Modular – base rail can be extended at any time through direct attachment.
- Flexible – two different tool modules (fixed or pivotable).
- Quick and easy handling – locking lever on the tool modules, moving of the setting device on the base rail.
- GARANT easyFix hole pattern on the rear of the base rail – attachment of storage facilities directly on the mounting device.
- 100% solid and secure attachment of the arbor – does not wobble, protects the mounting taper.

Application:
- Assembly/disassembly of all accessory parts of an arbor.
- Adopting/copying existing tool lengths.
- Measurement of the tool length.
- Small parts storage via GARANT easyFix.

Supplied with: 1 pc. GARANT easyFix wall mounting No. 955825 2, mounting bracket with cover for attaching the base rail, e.g. to a workbench.

Optional extras: Tool module No. 358575 and 358580, height adjustment No. 358585.

Note: The tool mounting device does not replace tool pre-setting.




Application example

Type			200	400	600
31P 35 8565	Base rail for tool fitting fixture		eShop	eShop	eShop
Length		mm	200	400	600
Width		mm		40	
Height		mm		160	

Accessories

Locking of the tool arbors with quick-action clamping.

35 8580 – With securing against the arbor falling out.

Suitable for: Base rail No. 358565.

for arbor size			30	40	50	63	80	100
31P 35 8575	Tool module for tool fitting fixture **rigid**		eShop	eShop	eShop	eShop	eShop	eShop
31P 35 8580	Tool module for tool fitting fixture **can be tilted**		eShop	eShop	eShop	eShop	eShop	eShop
Length		mm	130	130	130	130	145	145
Width		mm	80	80	80	80	120	120
Suitable for:			HSK 32; PSC 32; VDI 30	HSK 40; PSC 40; VDI 40	SK 30; BT 30; HSK 50; PSC 50; VDI 50	SK 40; BT 40; HSK 63; PSC 63	HSK 80; PSC 80	SK 50; BT 50; HSK 100


35 8575


35 8580

Including locking for secure fixing to the base rail.
Maximum A-dimension incl. tool = 300 mm.

Size A – The lever dial indicator transfers the height of the tool to be exchanged, including the measurement scale.

Size M – In combination with a depth gauge (e.g. No. 418742 300), measurement of the tool length possible.

Suitable for: Base rail No. 358565.

Note: Caliper is not included in the scope of supply.

Type		A	M
31P 35 8585	Height adjustment for tool fitting fixture	eShop	eShop


_A _M

HOLEX Tool fitting aid

- Aluminium housing.
- 45° and 90° indexable.
- Clamping the tools using a clamping lever.

Suitable for:

35 8696 – **Type SK** – for DIN 69871, DIN 2080, JIS B6339, and ANSI.

35 8697 – **Type HSK** – for DIN 69893-1.

Application: For assembly at the workbench.



for arbor size			40	50	63	100
32B 35 8696	Fitting aid	SK	eShop	eShop	–	–
32B 35 8697		HSK-A	–	–	eShop	eShop



35 8696_40

HOLEX Fitting aid

- Anodised aluminium.
- SK: Slot nut steel C15 ground and case-hardened.
- HSK: Drive web over the drive slots to act as a stop.

Application: For **fitting and removing cutting tools and pull studs** in a single clamping.
Contact face single-sided 15°.



35 8680_40

for arbor size			30	40	50	63	100
32B 35 8680	Fitting aid	SK, HSK	eShop	eShop	eShop	eShop	eShop
Length		mm	60	80	120	–	–
Width		mm	60	80	100	–	–
Height		mm	46	60	100	66	84
suitable for arbor			SK 30	SK 40	SK 50	HSK 63	HSK 100
Diameter		mm	–	–	–	126	167



35 8680_63

REGO-FIX TORCO-BLOCK tool assembly measuring system

- Sturdy but lightweight body made from aluminium with **integrated torque measurement**.
  Display either as actually achieved torque or as a visualisation of the recommended tightening torque for a specific collet chuck type/clamping nut type, collet size or pull stud.
- For use with toolholders that have to be screwed to a specific torque, especially for **collet chucks**.

Suitable for: Tool arbors type **SK** (ISO 7388-1), **BT** (ISO 7388-2), **HSK** (ISO 12164-1), **PSC** (ISO 26623-1).

Advantage:
- Use of torque drive tools no longer necessary, commercially available assembly tools can be used.
- **Always apply the right** torque on the tool – do not over-tighten, but still ensure a secure grip.

Application: Unique, convenient and reliable tool assembly aid with integral torque display.
Works for all **pliers-based set-ups**.
Adapters available for all popular spindle interfaces.

Supplied with: Incl. indicator ring set No. 358647.

Optional extras: Adaptor No. 358646, indicator rings No. 358647.

Note: Order adaptor No. 358646 separately.



35 8645



35 8645

Type			TORQUE
30W 35 8645	Tool assembly measuring system **TORCO-BLOCK**		(eShop)
Length		mm	270
Width		mm	170
Height		mm	130

Adaptor for arbors

Gentle aluminium body, fixing and clamping of the arbor with clamping lever or integral T-nuts.

Suitable for: Tool assembly measuring system No. 358645.

Advantage: Quick and easy fixing using clamping lever for HSK, PSC and BT arbors.
SK arbors are secured by means of the drive T-nuts.

Application: For holding and clamping various arbors of varying sizes in TORCO-BLOCK.
The interface adaptor can be changed within seconds using a hexagon L-wrench.

Note: Further adapters on request.



35 8646_40



35 8646_60

Type			30	40	50	63	100
30W 35 8646	Tool adaptor **for TORCO-BLOCK**		(eShop)	eShop	(eShop)	eShop	(eShop)
suitable for arbor			SK 30	SK 40	SK 50	HSK 63; PSC 63; BT 40	HSK 100; BT 50

Spare indicator rings

Indicator rings made from anodised aluminium, labelled with the corresponding information:
- Tightening range for the respective collet size (for the respective tool ∅).
- Tightening range for the respective pull stud.
- Torque display when a specific value is specified.

Suitable for: Tool assembly measuring system No. 358645.

Application: The indicator rings are positioned by a pin on the dial indicator.
Tighten the clamping nut until the display needle reaches the position marked on the scale ring for the respective shank diameter.

Supplied with: Incl. 5 rings for standard ER collet chucks, 3 rings for precision collet chucks, 1 ring for ball-bearing clamping nuts, 1 ring for general torque indication.



35 8647

Number of indicator rings		10
30W 35 8647	Indicator ring set, 10 pieces **for TORCO-BLOCK**	(eShop)

FAHRION® Assembly jig with rollers

Suitable for: For all popular tool arbors such as SK (DIN 69871), HSK (forms A, B, C, D, E, F), polygon shanks, MAS/BT (JIS B 6339), and CAT (ANSI B5.50).

Application: For easy and reliable clamping of tool arbors **at the collar** using rollers to mount and remove cutting tools – friction lock is self-clamping and ideal for HSK forms E and F, and also polygon shank arbors.



35 8695

Collar ∅	mm	25	32	40	50	63	97	100
33F 35 8695	Assembly jig with rollers	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop
suitable for arbor		HSK 25	HSK 32; C3	HSK 40; C4	SK 30; HSK 50; C5	SK 40; HSK 63; C6; MAS/BT 40; CAT 40	SK 50	HSK 100; CAT 50; MAS/BT 50

Garant Assembly set-up station

The assembly station can be fitted to the workbench by means of two screws.
Clamping studs, e.g. No. 363190, can be used to position the clamping device or jig with pitch 52/96 or 80 on the assembly station, with locking and unlocking by means of the side bridge.
Set-up times are optimised with high process reliability when clamping workpieces or changing clamping jaws.

- Locking and unlocking without tools.
- **Reduction in set-up times.**
- **Ensuring safety at work.**
- **Patent pending.**

Suitable for:

Size 52/96 – Clamping device with pitch 52/96 and 80, e.g. Xtric No. 363000 and No. 363300.

Size 80 – Clamping device with pitch of 80 and ZeroClamp clamping studs size 90, e.g. ZeroClamp No. 360134.

Application: For mounting and removing workpieces in the clamping device and for changing or turning the clamping jaws.





35 8595_52/96



35 8595_80

for pitch		52/96	80
310 35 8595	Assembly set-up station	eShop	eShop
Length	mm	125	
Width	mm	125	
Height	mm	25	

INSIGHT KB Clear View Disk

With Insight KB, you can visually monitor the process in the machine room at all times.
The machine becomes easier to operate and the entire work process becomes much more efficient and safer, and the scrap costs are reduced.

- Beading effect due to a special coating.
- Low installation height of 0.3 mm.
- No screws required for installation, easy to apply thanks to a special adhesive layer.
- Includes installation kit.

Advantage:

- The position on the machine's protective screen can be freely selected.
- Minimal installation work required.
- Can be used flexibly, also suitable for curved screens.
- Easy to replace.
- No screws required for installation, easy to apply thanks to a special adhesive layer.
- Production can start immediately after it has been installed.
- Beading effect due to a special coating.
- Made in Germany.

Supplied with: 1 disk, 1 squeegee, 1 cloth.

Size SET – 3 disks (No. 358932 310), 1 squeegee, 1 cloth.

Note: The Clear View Disk is not intended for use in explosive atmospheres (ATEX). Dry machining and very sharp/hot chips, e.g. during high feed rate milling, can damage the surface and reduce its effectiveness.



35 8982



Type		200	310	SET	400
341 35 8982	Disk	eShop	eShop	eShop	eShop
Diameter	mm	200	310	310	400

PocketSense

Load cell for reliable, cordless checking of the clamping force.

Advantage:
- Compressive force shown directly on display and on end devices.
- Energy efficient thanks to standby mode and battery life of up to six months in two-shift mode.
- Compact design.
- Aluminium alloy housing.

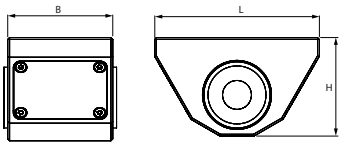
Application: Perfect for regular inspection of vices.
Suitable for all vices with a minimum clamping width of 61 mm and compressive forces of 2.5 to 70 kN.

Supplied with:
- Includes case for storage.
- 2 pc. battery 1/2 AA (LS14250, 3.6 V).
- 1 pc. Torx wrench T10.
- 1 pc. Quick Start Guide.

Note: The two measuring faces of the load cell must be in full contact with the vice. Minimum jaw height approx. 38 mm.



35 8777





Maximum clamping force		70
34A 35 8777	PocketSense	–
Length	mm	92
Height	mm	55
Width	mm	56
Weight	kg	0.65

Hoffmann Group Connected Tools

The Hoffmann Group and Allmatic present Bluetooth-capable clamping devices as well as an innovative, optional app for fast data transmission to a mobile device. Free of charge for iOS and Android.



35 8777
36 1303
36 1270_125CONNECT

1. Clamping force is initiated.
2. Clamping force is displayed in real time in the HCT app.
3. External clamping force monitoring during machining.

All products compatible with the HCT app are indicated by this pictogram.

Length setting gauge

For use on milling and drilling machines and lathes.
On all magnetic surfaces such as toolholders, lathe chucks, vices and measurement jigs.

Material: Anodised aluminium.

Advantage:
- Quick, stepless adjustment (thanks to scaling and knurled screw)
- Can be used without tools – for easy handling.
- Magnetic base – for super-fast mounting and sturdiness
- No unnecessary disassembly of things like toolholders in order to replace a tool.
- Compact helper in inaccessible places.

Application: For setting tool lengths or as an end stop for the workpiece length.


Application examples





35 8989_135
35 8989_65

Type		65	135
31E 35 8989	Length setting gauge	eShop	eShop
Overall length	mm	70	140
Adjustment range	mm	25 – 65	55 – 135
Cross beam overhang	mm	33	

Garant Position and run-out check device

- Compact design.
- Precision dial comparators can be exactly adjusted using the adjustment screw.
- Precision dial comparators are suitable for vertical or horizontal use.
- Cylindrical attachment in various diameters, or quick fixing of the inspection device using a magnet.

Advantage:
- Efficient measurement of position and run-out in a short time.
- No laborious fiddling with stands and dial indicators.
- Achieve greater process reliability by regular checking.
- Easy handling.
- Fewer machine stoppages and longer tool lives.

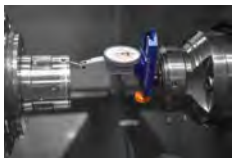
Application: For checking the axes, run-out measurement, determination of positions (such as toolholder, workpiece).

Supplied with: Supplied with case with foam, test device, precision dial comparator, attachment magnet, cylindrical attachment mount, mirror for reading the measured value, hexagon key L-wrench.



35 8980







Example for turning:
- *Axis calibration (such as the position of the headstock or tailstock)*
- *Calibration of the revolver position or fitted toolholders*
- *Determining radial run-out / tumbling of driven tools*

Example for milling:
- *Checking radial run-out: Component central, tool, etc.*

Adjustment travel		mm	30
31E 35 8980	Position and run-out check device		eShop

HOLEX Zero setter

Special hardened steel.

Size 50M – With magnet.

Function:
- Level the spring-loaded probe face with the reference face of the body (e.g. using a straight edge) and set the dial indicator to –0.25.
- Place the zero setting device on the workpiece and feed the tool down on to spring-loaded probe face until the dial indicator reads 0. The tool is now positioned exactly 50 mm (± 0.01 mm) above the workpiece to be machined (dimension for input into machine controls).

Application: For setting tools (e.g. end mills) to zero and for determining the reference point of the machine spindle.

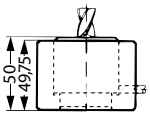
Supplied with: Wooden case, dial indicator, measurement report and instruction manual.

Note: For spare dial gauge No. 359086 3/40 see the spare parts list.



35 9085





35 9085

Type			50	50M
32E 35 9085	Zero setter		eShop	eShop
Dial indicator display		mm	0.01	
Height of body – reference face		mm	49.75	
Height of the spring-loaded probe face when the dial indicator reads 0		mm	50	
Body ∅		mm	65	
∅ spring-mounted contact face		mm	47	

HOLEX Fine zero setter

- Anodised aluminium.
- Sturdy base plate of hardened steel (5 mm thick).

35 9093 Size 100M – With magnetic function to prevent slipping.

Application: **For setting micro drills and micro mills etc.**

Supplied with:

35 9093 – Wooden case and measurement certificate.

Note:

35 9087 – For spare dial indicators No. 432500 size 5/40 and 359094 see the spare parts list.

35 9093 – For spare dial gauges No. 359089 and 359094 see the spare parts list.



35 9087



35 9093

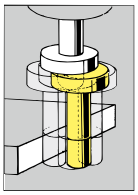
Type			100	100M
32E 35 9087	Fine zero setter		eShop	–
32E 35 9093			eShop	eShop
Body ∅ (35 9093)		mm	54	
Length (35 9087)		mm	48	–
Width (35 9087)		mm	25	–
Height		mm	100	

Edge finder (straight shank)

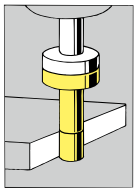
The contact point has a flexible connection to the body via a spring, with an **alignment accuracy of 0.01 mm.**
All parts fully hardened and ground.

Size 10/4 – With stepped contact point 10 and 4 mm ∅.
35 9005 – Non-magnetic.

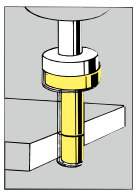
Application: For alignment of component reference surfaces or edges.
Spindle speed approx. 600 rpm.



1. Start up – edge finder runs eccentric.



2. Edge finder touches the workpiece and runs true.



3. Edge finder jerks aside = reference point.



Size 6 and 10

Size 10/4 with stepped contact point.

Contact point ∅		mm	6	10	10/4
38D 35 9000	Edge finder		eShop	eShop	eShop
38D 35 9005	Edge finder TN		–	eShop	eShop
Tool shank ∅		mm	6	10	10
Overall length		mm	48	84	90

Spare springs for edge finder No. 359000

Suitable for: Edge finder No. 359000 and 359005.

∅×Overall length		mm	2,6×25	4,6×40	
38D 35 9010	Spare spring for edge finder		eShop	eShop	10
Suitable for edge finder No. 359000			6	10 and 10/4	

Edge finder with indicator light

The spring-mounted spherical tip protects the unit from damage if contact is too violent.
Functional parts hardened and ground.

35 9078 – Contact accuracy ± 0.005 mm.
35 9070/9075 – Contact accuracy ± 0.01 mm.

Function: When **the spherical tip contacts** a **metallic component,** batteries cause the lamp to light = Detection of the reference point.

Application:
- **Alignment** of component reference surfaces or edges.
- **Determination of bore centres** to the machine spindle.

35 9075/9078 – When making contact in the Z axis, the reference length has to be determined using the pre-setter and taken into account.

Supplied with: Supplied with special battery No. 081560 A23.



35 9070 / **2D** 35 9075 / **3D** 35 9078 / **3D**

Tool shank ∅		mm	16	20
38D 35 9070	2D edge finder with indicator light		eShop	eShop
38D 35 9075	3D edge finder with indicator light **short**		eShop	eShop ■
38D 35 9078	3D edge finder with indicator light **long**		–	eShop
Spherical point ∅		mm	10	
Overall length (35 9070)		mm	94	
Overall length (35 9075)		mm	118	
Overall length (35 9078)		mm	–	167

HOLEX Optical zero setter

Special hardened steel.

Function:
- Approach the contact face with the tool upright. When the LED lights up, the reference dimension 60 mm (±0.01) has been reached. A safety spring range of approx. 2 mm is provided for overdrive.
- Size **60M** is magnetic for horizontal use.

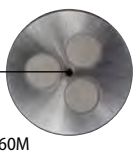
Application: For zeroing tools and for determining the machine spindle reference point.

Supplied with: With test certificate and instruction manual.
Special battery No. 081560 size 357.

Note: For use only on electrically conductive workpieces. Not waterproof.



Centre bore
optimum for turned parts.



_60M

Type			60	60M
32B 35 9081	Optical zero setter		eShop	eShop
Version			Standard	magnetic
a		mm	60	
b		mm	31	
c		mm	18	

Precision centre finders

The dial indicator remains in the required position during the working process.

- With fixed cylindrical clamping shank ∅ 16 mm.

35 9610 – ■ With adjustable slides for a large working range.

Accuracy: **0.005 mm centring or working accuracy.**

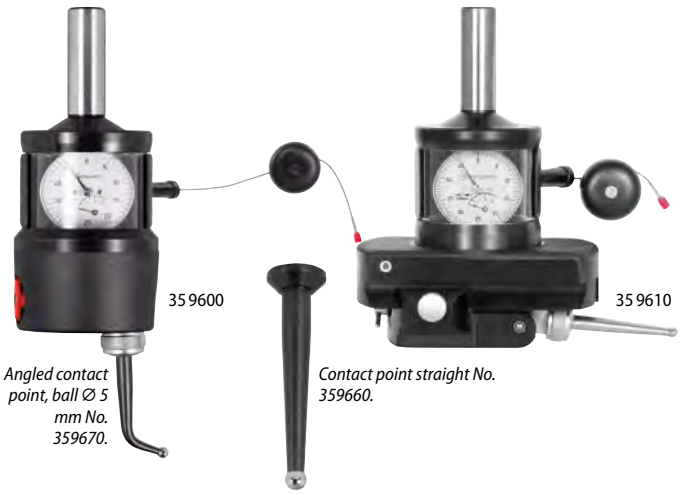
Application:
- For **horizontal and vertical** use.
- Alignment of bores, shafts, plane surfaces, reference edges and grooves centrally to the working spindle.
- Checking the concentricity of working spindles.

Supplied with:

35 9600 – **C OS –** Contact point with ball ∅ 5 mm No. 359660 and curved contact point with ball ∅ 5 mm for external ∅.

35 9610 – **C III –** Contact point with ball ∅ 5 mm No. 359660 (also applicable for external ∅).

Optional extras: Contact points, see No. 359650 – 359670.



Angled contact point, ball ∅ 5 mm No. 359670.

Contact point straight No. 359660.

Dial indicator reading		mm	0,005
38D 35 9600	Centre finder **C OS with clamping shank ∅ 16 mm**		eShop
38D 35 9610	Centre finder **C III with clamping shank ∅ 16 mm**		eShop
Length without shank and probe (35 9600)		mm	92
Length without shank and probe (35 9610)		mm	102
Body ∅ (35 9600)		mm	60
maximum slide ∅ (35 9610)		mm	116
maximum speed of spindle		min^{-1}	50 – 100
Measuring range of the dial indicator		mm	2.5
Probe pressure		N	1

	Can be fitted with (including special accessories):	C OS centre finder		C III centre finder	
		Range mm ∅	Depth mm	Range mm ∅	Depth mm
Internal ∅	Contact point 5 mm ∅	6–125	55	6–200	55
	Contact point 1.6 mm ∅	2–125	55	2–220	55
	Right-angle contact point	–	–	20–220	55
	Extension	–	–	2–400	150
Outer ∅	Contact point	0–125	20	0–150	55
	Right-angle contact point	–	–	0–220	55
	Extension	–	–	0–300	150
Flat surface	Flat surface contact point	–	–	0–90	28
	Contact point	120–160	–	90–280	40
	Right-angle contact point	–	–	90–280	40
	Extension	–	–	280–480	–

Optional extras — Probe

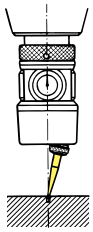
Suitable for: Centre finder No. 359600 and 359610.

35 9650 – Only for centre finder No. 359610.

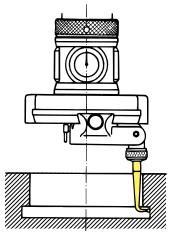
Supplied with:

35 9650 – **With contact point, ball ∅ 1.6 mm and angled contact point, ball ∅ 2.5 mm. Flat face contact point** for aligning faces up to 90 mm ∅. **Extension** for enlarging the working range and for inaccessible places.

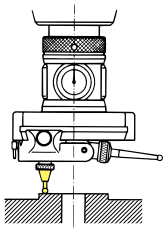
Accessories from the 4-part set No. 35 9650.



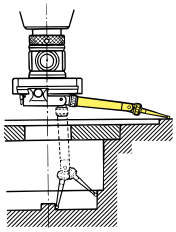
Contact point Ball ∅ 1.6 mm.



Right-angle contact point, ball ∅ 2.5 mm.



On request: Flat contact point.



On request: Extension.

38D 35 9650	Probe / extension set	eShop
38D 35 9655	Contact point, ball ∅ 1.6 mm	eShop
38D 35 9660	Spare contact point, straight ∅ 5 mm	eShop
38D 35 9665	Angled contact point ∅ 2.5 mm	eShop
38D 35 9670	Angled contact point ∅ 5 mm	eShop



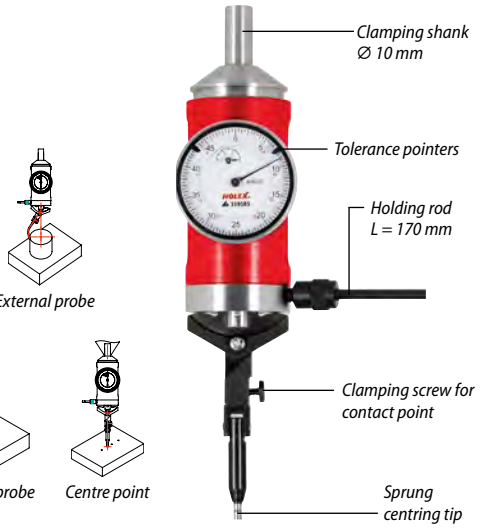
Contact point straight No. 35 9660.

Centre finder – with non-rotating dial

Sturdy metal casing suitable for workshop use with dial indicator ∅ 42 mm (scale graduation 0.005 mm). Holding rod can be fitted on the left or right. Centre finder can be used vertically and horizontally. Overall height without contact point 140 mm. Recommended speed approx. 50 – 100 rpm. Working range up to 300 mm. Centring accuracy 0.02 mm.

Application: Determining the centres of bores and shafts.

Supplied with: Centre finder including retaining bar, retaining magnet with connecting cord, 3 internal contact points, 3 curved external probes and 1 sprung centring tip (centre contact point).



External probe

Internal probe

Centre point

32B 35 9585	Centre finder with non-rotating dial		eShop
Working range ∅ internal		mm	3.5 – 300
Working range ∅ external		mm	0 – 300
Length without shank and probe		mm	118
maximum speed of spindle		min^{-1}	50 – 100
Measuring range of the dial indicator		mm	3

Garant Contact point calibration aid

- Very easy calibration of the 3D contact point.
- Completer calibration process in X, Y and Z in just a few minutes.
- Protection against collisions and spindle damage by the spring pin.
- Very easily fixed to the to the worktable by means of a magnetic stand.
- Highly accurate and consistent calibration results.
- The carbon casing ensures shock-proof characteristics, high-quality design and temperature resistance.

Advantage:
- The spring pin avoids spindle damage when the unit is blocked out.
- Easy handling and enormous saving of time.
- This functions for all manufacturers.
- Calibration in a single operation and without additional equipment such as setting rings and gauge blocks.

Application: For calibrating the 3D contact point.

Supplied with: Supplied in a case with foam, calibration aid with magnetic stand, nut spinner for removing the spring pin, T-wrench for stopping or unlocking the spring.







Procedure:
- *Move the spindle nose or calibrated tool to the sprung pin and lock it with the side clamping screw.*
- *Use a contact point to probe the position of the pin.*
- *Unscrew the pin and perform diameter calibration within the integral setting ring dia. 25 mm.*



35 8975



Calibration diameter		mm	25
31E 35 8975	Contact point calibration aid		eShop
Height		mm	178

IP 67

Garant Digital 3D edge finder

- High accuracy and linearity. Suitable for measuring components, and capable of measuring over the entire working range.
- Independent of machine controls.
- **Very easy to read due to combined display:** Digital display gives exact measured value.
- **LED indicates the status of the probing process: green= 0.000 (green LED flashes dynamically when approaching the zero point, becomes static upon reaching it), red= overrun.**
- Convenient and simple concentricity adjustment.
- Large working range in all directions (x, y, z : 6 mm).
- Compact metal body
- Predetermined breaking point
- Dust-tight and waterproof (IP67)
- Reading changeover function 0.005/0.001

Application: Precision measuring device for milling and spark erosion machines. For determining component zero-points, measurement of lengths, bore centres and reference edges. Determining tool lengths for lathes, setting up turning tools on the rotational centre (taper contact point).

Supplied with: Supplied with battery CR2 and contact point 359505 size 4

Note: suitable contact points No. 359505.



			16
31T 35 9501	3D edge finder, digital, with contact point (∅ 4 mm)		eShop
Shank ∅		mm	16
Scale divisions		mm	0.005/0.001
Measuring accuracy		mm	< 0.01
Displacement travel x, y, z respectively		mm	6
Body length		mm	55.5
Body depth		mm	39
Body width		mm	67
free length contact point		mm	40
Overall length (body and contact point)		mm	130
Adjustment travel		mm	± 0.4
Weight		kg	0.42
Spare contact point			359505 4



IP 67

Analogue 3D edge finder

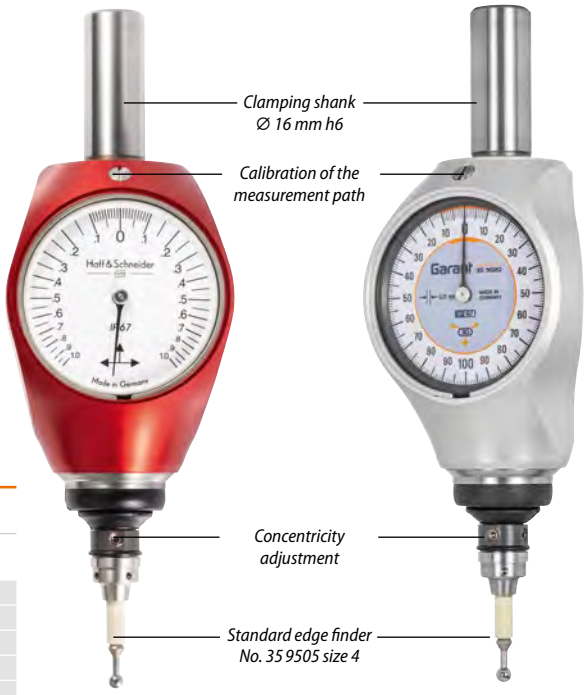
- Linear scale.
- Suitable for measuring.
- Precise operation.
- Compact design avoids collisions when finding edges.
- **Dust-tight and watertight = IP67**.
- Convenient and exact concentricity adjustment.
- One scale for both radial and axial run-out.

Application: Precision measuring device for milling and spark erosion machines. For determining component zero-points, measurement of lengths, bore centres and reference edges.

Supplied with: With contact point No. 359505 size 4.

Optional extras: Contact point No. 359505 size 6.

Note: Digital 3D edge finder No. 359500.
Suitable contact points No. 359505 and spare glass No. 359510.



35 9550 35 9520

31T 35 9520	Garant	3D edge finder, analogue, with contact point (Ø 4 mm)	eShop
36T 35 9550	Haff & Schneider		eShop
Shank Ø		mm	16
Reading accuracy		mm	0.01
Measuring accuracy		mm	0.01
Displacement travel x, y, z respectively		mm	7
free length contact point		mm	40
Overall length (body and contact point)		mm	134
Display Ø		mm	50
Spare contact point			359505 4
Spare glass			359510

Garant Accessories for 3D edge finder

Size T – The special shape of the spherical point permits turning tools in the lathe to be accurately measured in X, Y and Z.

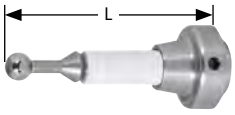
Suitable for:

Size 4 – Analogue and digital 3D edge finders No. 359520; 359500; 359550; 359450 size 4.

Size 6 – Analogue 3D edge finder No. 359520; 359550.

Size T – Analogue and digital 3D edge finders No. 359500; 359520; 359450 size 4.

Application: The contact point is screwed into the 3D edge finder when changing.



35 9505_4



35 9505_6

Contact point for 3D edge finder





35 9505_T

Spherical point Ø D		mm	4	6	T
31T 35 9505	Contact point for 3D edge finder		eShop	eShop	eShop
Spherical point Ø		mm	4	6	–
Spherical point Ø		mm	–	–	4
Overall length L		mm	31	56.5	32

NOGA Articulated holders

- Steplessly adjustable mechanical central clamping of all joints.
- Shank length = 40 mm for direct clamping.

35 9682 – ■ Holder for dial indicators with shank Ø 6 or 8 mm or dovetail.

35 9680/9685 – ■ Holder for dial indicators with shank Ø 8 mm or dovetail.

Supplied with:

35 9685 – No. 359680 including HOLEX dial indicator No. 436341 size 0.4/40.



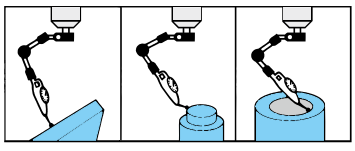
35 9680



35 9685

▶ C5 ◀ Cal

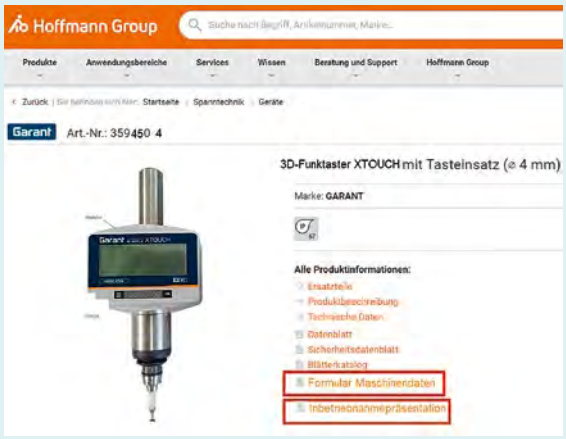
Radius of action		mm	120	170
38D 35 9680	Articulated holder		eShop	–
38D 35 9682			–	eShop
34F 35 9685	Articulated holder with lever dial indicator HOLEX		eShop	–



Garant Cycle-controlled and radio-transmitted tool and workpiece measuring

We need you to submit your machine tool data to us so that we can supply you with NC cycles that match your machine tools or controllers.
Proceed as follows:

Step 1:
Download the "Machine data" form in the eShop after inputting article number 35 9400_1 or 35 9400_4.



Step 2:
Fill in the downloaded form.



Step 3:
Send the completed form to **xconnect@hoffmann-group.com**.



Step 4:
We will send you the cycles configured for your machine and controller.



Step 5:
See the operating instructions for how to proceed!

XCONNECT, XTOUCH and XCONTORL only possible in combination with the following controllers:

- SIEMENS 840D sl from software status 2.6
- SIEMENS 828D from software status 4.3
- HEIDENHAIN ITNC 620/640

Garant XCONNECT data memory stick

Suitable for: Tool breakage monitoring XCONTROL No. 359400 1 and 3D radio probe XTOUCH No. 359450 4.

Advantage:
- Quick commissioning without hardware changeover and service engineer use.
- No need to interfere with the machine tool operating system!

Application: For transferring the values measured with XTOUCH and XCONTROL to the machine control.

Note: Signals from both items XCONTROL No. 359400 1 and XTOUCH No. 359450 4 can be received using **1 pc.** XCONNECT stick. **The necessary machine information must be submitted to us using the form. We will then provide you with the NC cycles configured for your machine.**



35 9455

Type		1
310 35 9455	XCONNECT data memory stick	(eShop)

IP 67

Garant XTOUCH digital radio 3D edge finder

- **Possibility to transfer the measured values in combination with GARANT Xconnect No. 359455 1.**
- **Suitable only for Siemens and Heidenhain controllers. The machine requires a functioning USB port on the control panel.**
- High accuracy and linearity. For **fully automatic** determination of component zero-points, measurement of lengths, bore centres, reference edges and axial alignment.
- Convenient and simple concentricity adjustment.
- Large working range in all directions (x, y, z = 7 mm).
- Compact metal body.
- **Dust-tight and watertight = IP67.**
- Predetermined breaking point.
- Simple menu navigation.
- Quick commissioning without hardware changeover and service engineer use.
- No need to interfere with the machine tool operating system!
- Minimisation of rejects.

Application: Automatic transmission of the measured values into the machine control by GARANT Xconnect No. 359455 1.
For fully automatic determination of component zero-points, measurement of lengths, bore centres, reference edges and axial alignment. Manual operation without wireless transmission (without XCONNECT) is also possible.

Supplied with: Supplied with battery CR2 and contact point No. 359505 size 4.

Optional extras: XCONNECT data memory stick No. 359455 1.

Note:	Suitable contact point No. 359505 4. The item is permanently installed on a machine and can only be used on another machine through another cycle request.



Spherical point ∅		mm	4
310 **35 9450**	Radio 3D edge finder, digital, with contact point (∅ 4 mm) **XTOUCH**		(eShop)
Shank ∅		mm	16
Scale divisions		mm	0.005
Measuring accuracy		mm	< 0.01
Displacement travel x, y, z respectively		mm	7
Body length		mm	82
Body depth		mm	39
Body width		mm	67
free length contact point		mm	40
Overall length (body and contact point)		mm	134
Adjustment travel		mm	±0.4
Weight		kg	0.52
Spare contact point			359505 4

IP 67

Garant XCONTROL tool breakage monitoring and length measurement

XCONTROL – tactile tool contact point for **tool breakage monitoring** and **tool length measurement**.
Measurement accuracy +/- 0.01 mm and repetition accuracy +/- 0.005 mm.

- **Suitable only for Siemens and Heidenhain controllers.**
- The machine requires a functioning USB port on the control panel.
- For use only in conjunction with the XCONNECT No. 359455 1.
- **Dust-tight and watertight = IP67.**
- Quick commissioning without hardware changeover and service engineer use.
- No need to interfere with the machine tool operating system!
- Drills from ∅ 0.3 mm can be measured or tested.

Application: For tool breakage and process monitoring in an automated machine tool or for multi-machine operation.
For tool length measurement and automatic transmission of data to a machine tool.
Automatic transmission of the measured values into the machine control by GARANT Xconnect No. 359455 1.

Supplied with: Supplied with battery CR2.

Optional extras: XCONNECT data memory stick No. 359455 1, clamping claw No. 363081 80.

Note:	The item is permanently installed on a machine and can only be used on another machine through another cycle request.



Type			1
310 **35 9400**	Tool breakage monitoring **XCONTROL**		(eShop)
∅ spring-mounted contact face		mm	29
Length		mm	71.5
Width		mm	53
Height		mm	105

HSC | DIN 69871 | JIS B6339 | DIN 69893

air turbine spindles

High-speed spindles

Air-powered high-speed spindle, constant speed under load 25,000 – 65,000 rpm. depending on the version. Power up to 1kW.

Application: High-speed spindles allow higher cutting speeds and feed rates. They allow above all the use of tools with small diameters (6 mm).

Supplied with: High-speed spindle, collet, collet clamping nut, wrench, sealing plug, air filter, connection hose.

Optional extras: Tool-change turret for automatic tool-change. Required only for **external** air supply - available on request.

Note: Use clean dry compressed air at approx. 6.2 bar.
Further spindles available on request: all commonly-used shank versions, different performance classes and speeds.

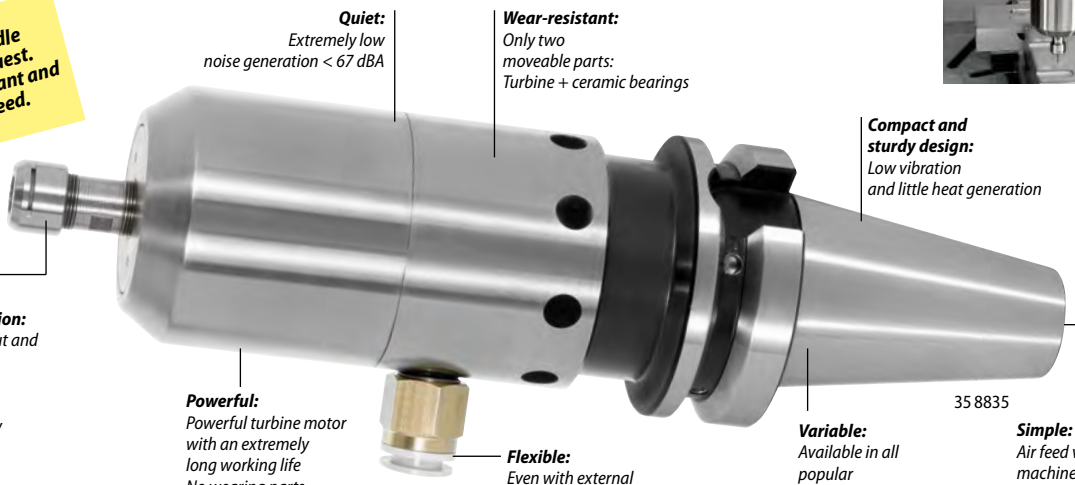


35 8825
Device for automatic tool changing on request.



35 8865

High-speed spindle available on request. With through-coolant and adjustable speed.



Quiet: *Extremely low noise generation < 67 dBA*

Wear-resistant: *Only two moveable parts: Turbine + ceramic bearings*

Compact and sturdy design: *Low vibration and little heat generation*

High precision: *Clamping nut and high-quality ER 11 collet Very high concentricity < 5 µm*

Powerful: *Powerful turbine motor with an extremely long working life No wearing parts such as gearbox, brushes etc.*

Flexible: *Even with external air intake*

35 8835

Variable: *Available in all popular shank versions*

Simple: *Air feed via the machine spindle. Operating pressure 6.2 bar*

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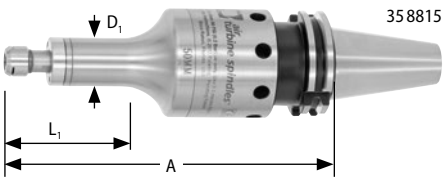
- **Higher machining speed** *with smaller tools.*
- **Continuous use** *due to integral air cooling. No standstill times.*
- **Environmentally friendly.** *Patented airflow regulation minimises air consumption.*
- **Protects the machine.** *Rotation is generated by high-speed spindle – the machine spindle remains stationary.*
- **Longer working life** *of the tools.*
- **Very good surface quality of the workpieces.** *Less rework required.*

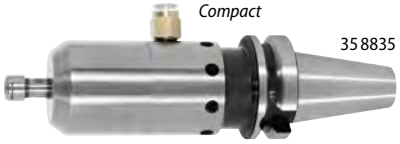
Speed		min⁻¹	40000	50000
33l 35 8805	High-speed spindle type 625 **compact**	SK 40	–	eShop
33l 35 8815	High-speed spindle type 625S **compact, slim**	SK 40	(eShop)	(eShop)
33l 35 8825	High-speed spindle type 660 **heavy-duty**	SK 40	–	(eShop)
33l 35 8835	High-speed spindle type 625 **compact**	BT 40	–	eShop
33l 35 8865		HSK-A 63	(eShop)	eShop
33l 35 8875	High-speed spindle type 625S **compact, slim**	HSK-A 63	(eShop)	(eShop)
33l 35 8885	High-speed spindle type 660 **heavy-duty**	HSK-A 63	–	(eShop)
Type (35 8805, 35 8835, 35 8865)			625	
Type (35 8815, 35 8875)			625S	625S
Type (35 8825, 35 8885)			–	660
∅ D (35 8805, 35 8815, 35 8835, 35 8865, 35 8875)		mm	57.15	
∅ D (35 8825, 35 8885)		mm	–	81.79
∅ D_1 (35 8815, 35 8875)		mm	25	25
L (35 8805, 35 8825, 35 8835, 35 8865, 35 8885)		mm	22	
L (35 8815, 35 8875)		mm	25	25
L_1 (35 8815, 35 8875)		mm	55	55
A (35 8805)		mm	163	
A (35 8815)		mm	169	169
A (35 8825)		mm	–	180
A (35 8835)		mm	–	173
A (35 8865)		mm	154	
A (35 8875)		mm	177	177
A (35 8885)		mm	–	197

Compact, slim



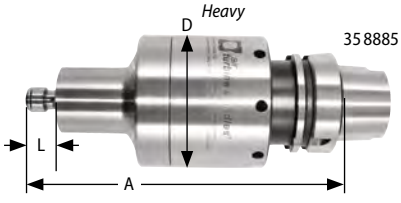
35 8815

Compact



35 8835

Heavy

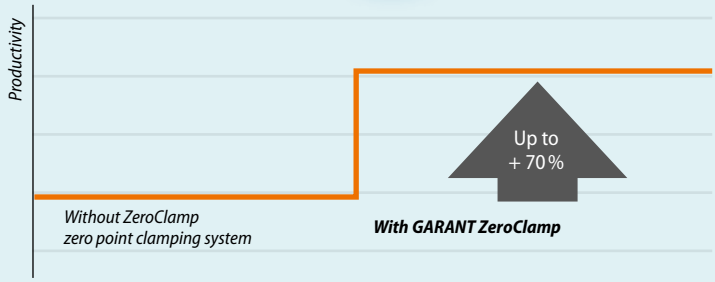


35 8885

Garant ZeroClamp zero point clamping system

More than 10 years of GARANT ZeroClamp – choose the right system!

Increased productivity



Cost saving

Time saving



An overview of the critical advantages:

Thermal symmetry

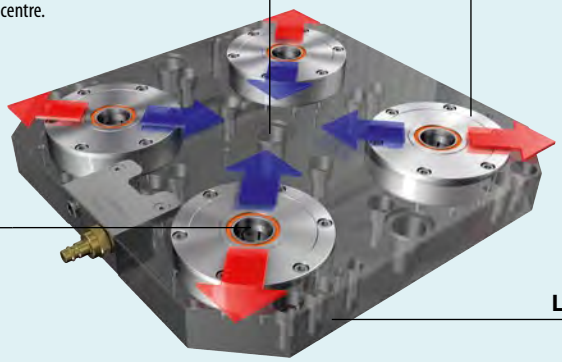
Absolute zero point
Compensation for thermal expansion is always towards the centre.

Compensates pitch errors
up to ± 0.05 mm per pot:
Fixed zero point in the centre of the table.

Precise

Precision taper
On insertion, the resiliently sprung taper of the socket expands and ensures a flat face contact seating.

HSK principle
Functions like an HSK tool taper.
Free of radial run-out and axial flat face contact seating, with repetition accuracy < 2.5 µm.





Simply brilliant

Only 1 stud type
no zero, floating or free studs.

Powerful
12.5 kN to 40 kN.

Compressed air connection
Only 5.5 bar required to release the clamping studs.

Low-maintenance

Sealed system
no hydraulic oil and unaffected by chips.

See our current supplementary brochure for further information.

One base – one type of stud – very great flexibility

The zero point clamping system for a wide range of applications.

From standard applications through to automation with just a single type of stud

- Good process reliability.
- No tilting if not level.

- User–friendly even for heavy and asymmetrical components.



Garant ZeroClamp, standard clamping system

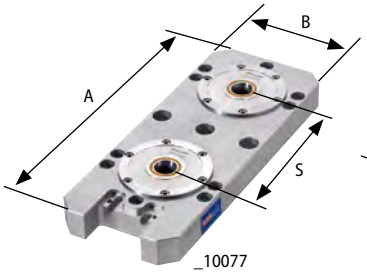
All bores for T-slot pitches of **63, 100, 125 mm.**
Centre bore ∅ 25 H7 to receive a centring set.

Material: **Base plate** of high-tensile aluminium, surface treated.
All components of the clamping pot of stainless or corrosion-resistant steel.

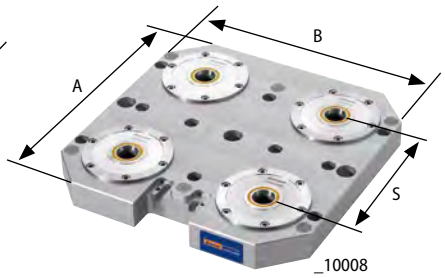
Application: For vertical/horizontal machines.

Optional extras: Clamping stud No. 360025,
Connection block No. 360017 size 12808 / 12805.

Note:	Base plates with clamping pot dia. 138 mm are also available with self-locking clamping pots on request.



_10077



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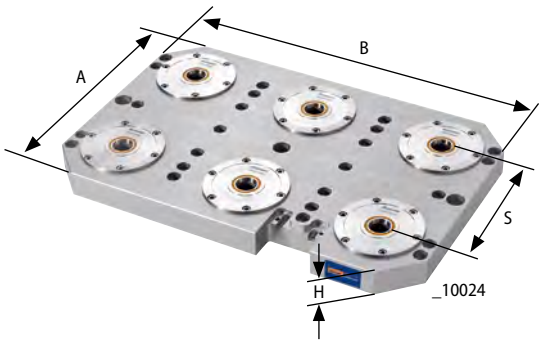

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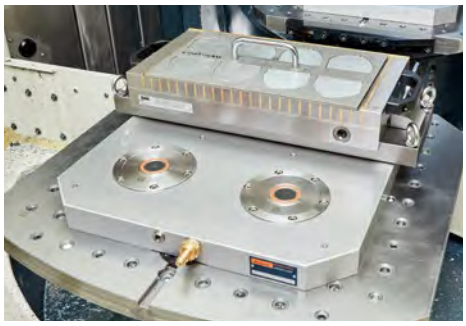




Type		10077	10008	10024	11058
310 36 0012	ZeroClamp base plate	(eShop)	(eShop)	(eShop)	(eShop)
Clamping pot ∅	mm	120			
Number of clamping pots		2	4	6	8
B	mm	166	366	566	766
A	mm	416	366	366	366
H	mm	44			
Pitch S	mm	200			

Type		21782	21521	25438
310 36 0012	ZeroClamp base plate	(eShop)	(eShop)	(eShop)
Clamping pot ∅	mm	138		
Number of clamping pots		2	4	6
B	mm	196	396	596
A	mm	446	396	396
H	mm	54		
Pitch S	mm	200		

Garant Cover plates for base plates

The cover plates are made of 1 mm stainless steel 1.4301 for covering the base units.
(Surface protection + cover for location holes.)


_11356


_11355


_11396

Type		11356	11355	11354	11396
310 36 0013	ZeroClamp cover plate for base plate	(eShop)	(eShop)	(eShop)	(eShop)
Suitable for base plate No. 360012		Size 10077	Size 10008	Size 10024	Size 11058

Type		21872	24311	25449
310 36 0013	ZeroClamp cover plate for base plate	(eShop)	(eShop)	(eShop)
Suitable for base plate No. 360012		Size 21782	Size 21521	Size 25438

Garant ZeroClamp, adapted clamping system for 3/5-axis machines (according to machine type)

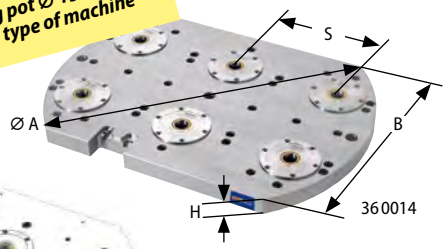
Centre bore ∅ 25 H7 to take the centring set.

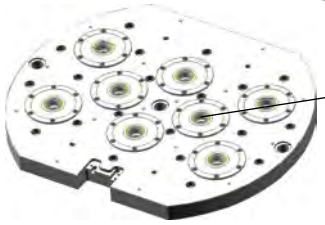
Material: **Base plate** of high-tensile aluminium, surface treated. All components of the clamping pot of stainless or corrosion-resistant steel.

Optional extras: Clamping stud No. 360025, connection blocks No. 360017 size 12808 and size 12805.

Note: Depending on the machine type, the arrangement may differ from that in the illustration.

Individual solutions and special sizes, even for clamping pot ∅ 138 mm, available for any type of machine





Base with cross pitch for higher support torque and other clamping applications (centre)

Type		14014	10089	10477	29612	29598
310 36 0014	ZeroClamp base plate (depending on the machine type / machine table)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
suitable for machine type		MAZAK VARIAX 500	DMG DMU 50	Mazak Variax 630	Hermle C 32	DMG DMU 60eV0
Clamping pot ∅	mm	120				
Number of clamping pots		4	6	6	8	8
∅ A	mm	500	630	630	650	630
B	mm	400	500	500	540	500
H	mm	44				
Pitch S	mm	200				

Garant Cover plates for base plates (based on machine type)

The cover plates are made of 1 mm stainless steel 1.4301 for covering the base units. (Surface protection + cover for location holes.)



360021_11648

Type		11648	29610
310 36 0021	ZeroClamp cover plate for base plate	(eShop)	(eShop)
Suitable for base plate No. 360014		Size 10089; 10477	Size 29612

Garant ZeroClamp extension bases / adapters

1-pot extension bases

Clamping pot ∅ **120 mm**, indexed.

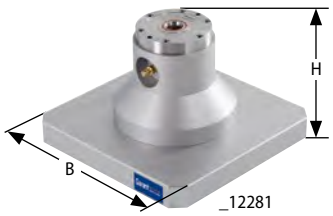
Suitable for: For base plates with pitch 200.

Supplied with: Including coupling plug and clamping stud No. 360025 size 18M16.

Optional extras: Quick-release coupling No. 360019 size 10241 and size 1003.



_12810



_12281

Type		19619	12809	12810	12281
310 36 0030	ZeroClamp extension base with 1 clamping point	(eShop)	(eShop)	(eShop)	(eShop)
B	mm	198	198	198	330
H	mm	120	150	200	200
Number of clamping studs		2	2	2	4
Connection thread	in	1/8	1/8	1/4	1/4

2-pot extension bases

With 2 clamping pots.

Suitable for: For base plates with pitch 200.

Supplied with: Including coupling plug and clamping stud No. 360025 size 18M16.

Optional extras: Quick-release coupling No. 360019 size 10241 and size 10003.

Note: Consoles with clamping pot dia. 138 mm are also available with self-locking clamping pots on request!



_12732



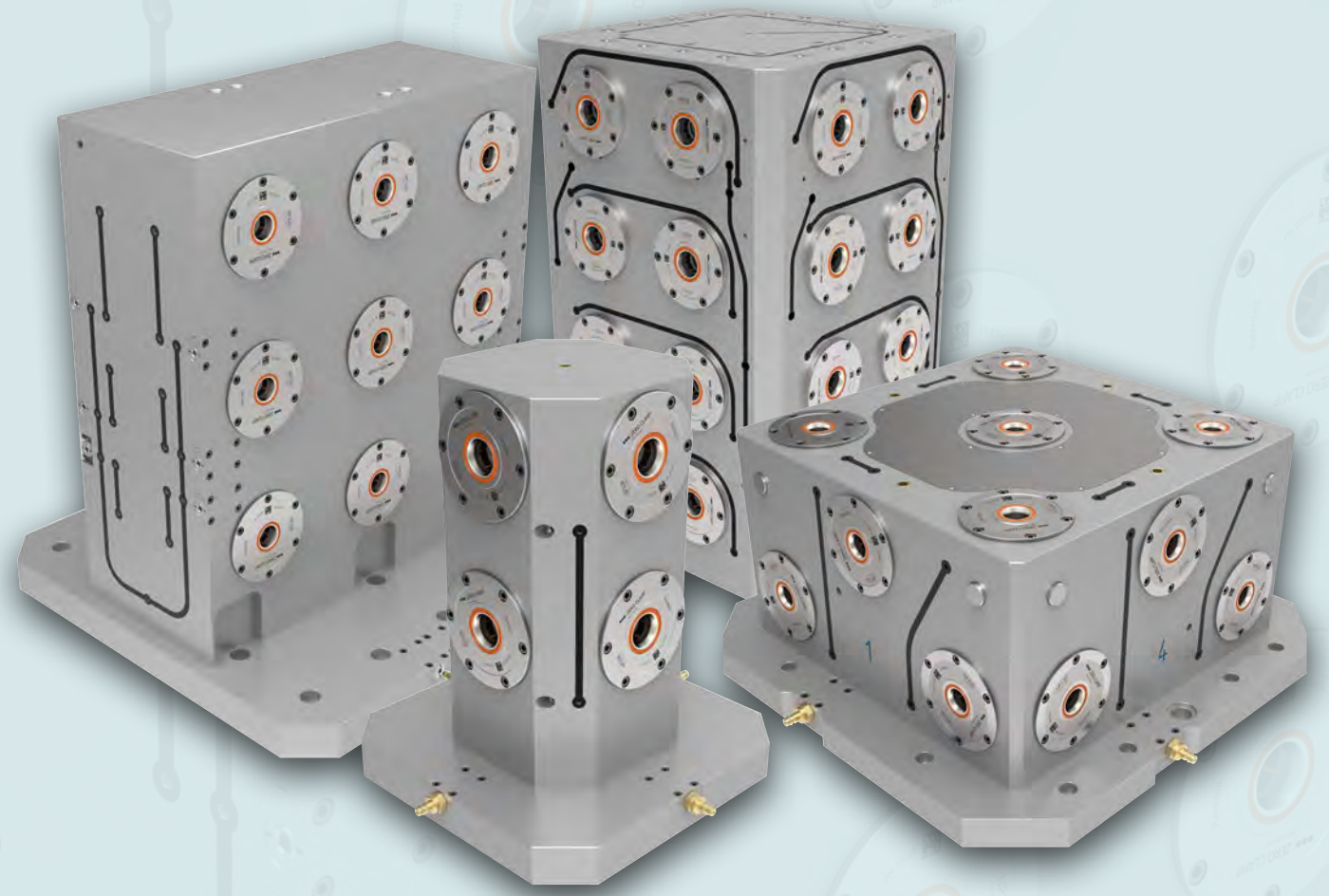
_12736

Type		12813	12814	12815	12816	12732	12735	12126	14523	25067	21033
310 36 0031	ZeroClamp extension base with 200 pitch	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Clamping pot ∅	mm	120	120	120	120	120	120	120	120	138	138
H	mm	70	100	120	160	200	160	150	150	120	200
Number of clamping studs		2	2	2	2	2	4	2	4	2	2

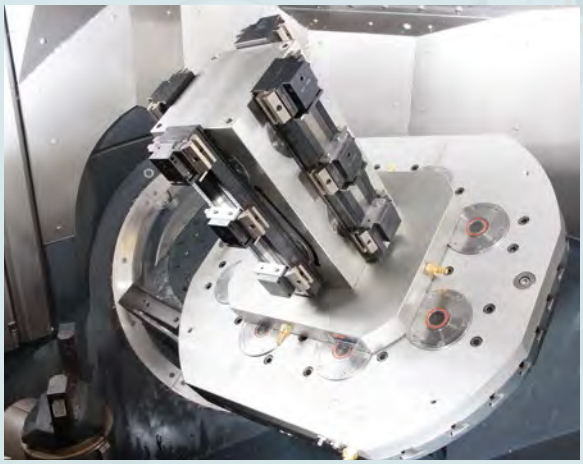
Garant Clamping pillars with zero-point clamping system

Design your own clamping pillar to suit your requirements!

The clamping pillars of the zero-point clamping system are flexible in their dimensions and can be adjusted up to a height of approx. 900 mm. They offer individual adjustment options for clamping pot diameter, pitch and pot spacing to meet specific requirements.









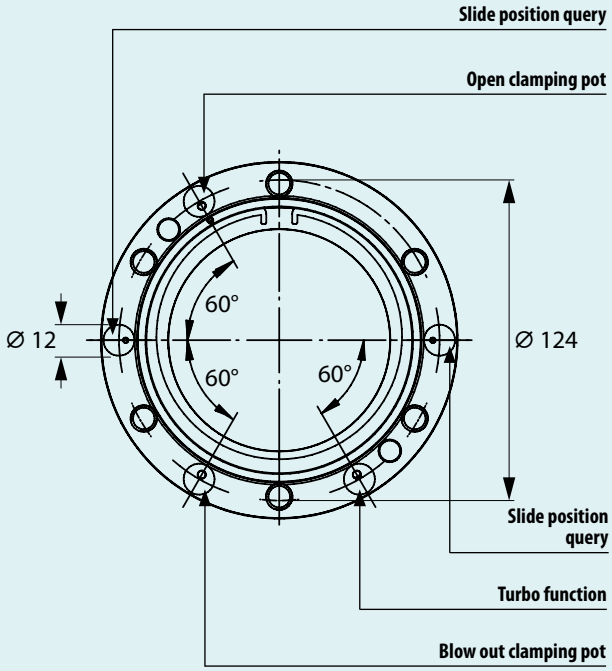
- Freely selectable dimensions of the clamping pillar (max. height approx. 900 mm), the clamping pot diameter, the pitch and distances of the pots.
- Separate air connections available on each side.
- Clamping pots can be controlled individually or in groups.
- Indexed pots for clamping with only one pot.
- Ideally suited for clamping multi-point clamping rails, 5-axis clamps, NC clamps and centring vices.
- Ideal for machining on a horizontal milling machine.
- Can be clamped directly on the machine table or on a zero point clamping system.
- Can be controlled via the rotary feed through in the machine table.

Garant ZeroClamp zero-point clamping pot – self-locking

When your requirements become more demanding.

Operating principle:
A piston recessed in the slide area and equipped with drivers arranged at an angle of 15° which engage in the slides.
Piston stroke motion moves the clamping slides radially, locking the clamping stud by applying the spring force of the 14 locking springs.





Tried-and-tested benefits:
- Compatible with existing installations.
- Repetition accuracy <2.5 µm.
- Zero play thanks to HSK principle.
- Thermal symmetry due to pre-loaded clamping cones.
  These always compensate for pitch inaccuracies towards the zero point.
- Only one type of clamping stud is required, which simplifies logistics.

Advantages over standard clamping pots:
- 30% greater force/stroke volume.
  Clamping slides motion is linear and does not need to be divided into rapid stroke and clamping stroke.
- Blow-out function, turbo function and jaw position query as standard.
- No free studs or sword stud required, but still works the classic way with these types of studs

Garant Self-locking clamping pot

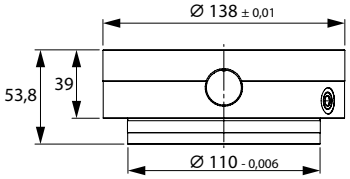
- **6 bar** compressed air connection required to unlock.
- Radial compensation 0.1 mm.
- Maximum pin retraction 1 mm.
- Repetition accuracy < 2.5 µm.
- All components made of stainless or corrosion-resistant steel.

Application: For individual incorporation in the clamping system. For retrofitting on existing base plates for greater holding force.

Optional extras: Clamping stud No. 360025 size 16M8, 16M10, 18M12, 18M16 and 25M10.



Type		Z120L	Z138L
310 36 0045	ZeroClamp clamping pot **self-locking**	eShop	eShop
Holding force M10	kN	35	
Holding force M12	kN	50	
Holding force M16	kN	–	70
Draw-in force	kN	5	8
Draw-in force with turbo	kN	20	25
Clamping pot Ø d	mm	120	138
Indexing hole available		no	
Radial compensation	mm	0.1	
Repetition accuracy	µm	< 2.5	

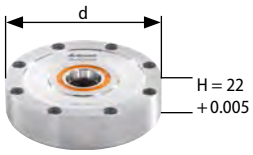


Garant ZeroClamp zero-point clamping system – Accessories

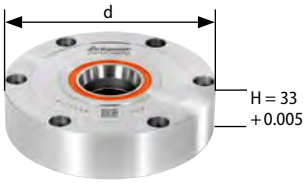
Clamping pots

All components made of stainless or corrosion-resistant steel.

Application: For individual incorporation in the clamping system.







Type		11886/90	12987/90I	10012	10148	138	138I
310 36 0040	ZeroClamp clamping pot	eShop	eShop	eShop	eShop	eShop	eShop
Holding force	kN	12.5	12.5	25	25	40	40
Clamping pot ∅ d	mm	90	90	120	120	138	138
Indexing hole available		no	yes	no	yes	no	yes

Closure stud

36 0029 – Circular cover with seal covers the complete clamping pot including the closure stud.

Application: To protect unused clamping points against dirt and swarf.





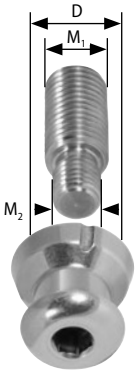
Clamping pot ∅	mm	90C	120C	138C	90	120	138
310 36 0029	Closure stud	eShop	eShop	eShop	–	–	–
310 36 0035	ZeroClamp original closure stud	–	–	–	eShop	eShop	eShop

Clamping studs

With internal thread including a suitable threaded pin.

Type		12M10/90	14M12/90	16M8	16M10	18M12	12M10	18M16	25M10
310 36 0025	ZeroClamp clamping stud with internal thread	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D	mm	12	14	16	16	18	12	18	25
Tolerance external ∅		k6	k6	k6	k6	k6	k6	k6	h6
M_1		M10	M12	M8	M10	M12	M10	M16	M10
M_2		M8	M8	M8	M10	M12	M10	M12	M12
suitable for clamping pot ∅	mm	90	90	120	120	120	120	120	120

Type		12M10/138	18M12/138	25M10/138	25M16/138	18M16/138
310 36 0025	ZeroClamp clamping stud with internal thread	eShop	eShop	eShop	eShop	eShop
∅ D	mm	12	18	25	25	18
Tolerance external ∅		k6	k6	h6	k6	k6
M_1		M10	M12	M10	M16	M16
M_2		M10	M12	M16	M16	M12
suitable for clamping pot ∅	mm			138		



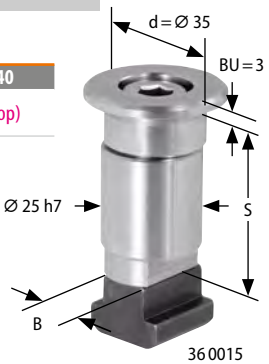
36 0025

Alignment sets

Application: For parallel alignment in the T-slots.

Slot width B / Clamping thickness S	mm	12/40	14/40	14/50	16/40	18/40	22/40
310 36 0015	ZeroClamp alignment set	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)



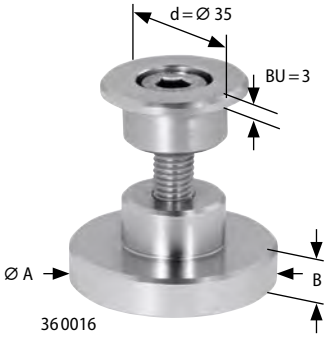


36 0015

Centring set

Application: For centralised alignment in the centre bore.
For basic units with 40 - 50 mm thickness.

Centring ∅ A / Centring height B	mm	30/10	32/10	50/10	50/20
310 36 0016	ZeroClamp centring set	(eShop)	(eShop)	(eShop)	(eShop)



36 0016

Connection blocks

Size 12808 – With 2 connection threads G 1/4 inch for the connection of release and blow-out air hoses.
Size 12805 – With one connection thread G 1/4 inch for connecting the compressed air. The connection block has a manual valve for releasing, clamping, and also blowing out.



Type		12808	12805
310 36 0017	ZeroClamp connection block	(eShop)	(eShop)

Quick-release coupling nipple



310 36 0018	ZeroClamp quick-release coupling nipple	eShop
Connection thread	in	1/4

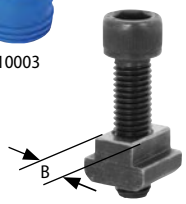
Quick-release couplings



Type		10241	10003
310 36 0019	ZeroClamp quick-release coupling	eShop	eShop
Connection thread	in	1/8	1/4

T–nut with clamping screw

Socket-head screw with hexagon socket to DIN912, strength class 12.9.



Slot width B / clamping thickness S	mm	12/40	14/40	16/40	18/40	12/50	14/50	18/50
310 36 0024	T–nut with clamping screw	eShop	eShop	eShop	eShop	eShop	eShop	eShop
M		M10	M12	M14	M16	M10	M12	M16
Clamping screw length	mm	45	45	50	50	55	55	60

Clamping pot starter kit

All components made of stainless or corrosion-resistant steel.

Application: For individual incorporation in the clamping system.

Supplied with: Each with 4 clamping pots.
10 × adapters for the air line.
1.5 m air line.
1 × quick-release coupling No. 360019 size 10003.
1 × male coupling (suitable for quick-release coupling).

Note: Supplied with drawings and installation instructions for configuring your own clamping system. 2-component epoxy resin may be used to fill in the milled slots.

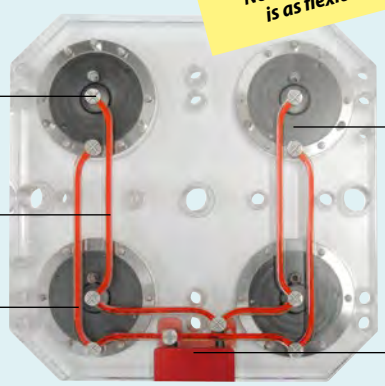


Type		10012-SET	10148-SET	138-SET	138I-SET
310 36 0040	ZeroClamp clamping pot	(eShop)	(eShop)	(eShop)	(eShop)
Clamping pot No. 360040		10012	10148	138	138I
Clamping pot ∅ d	mm	120	120	138	138
Indexing hole available		no	yes	no	yes

Unique advantages:

- Individual fitting
- Adaptation to special requirements
- Virtually limitless applications
- User-selected variable pitch
- Cost-effective solution
- Especially versatile for jig and tool making



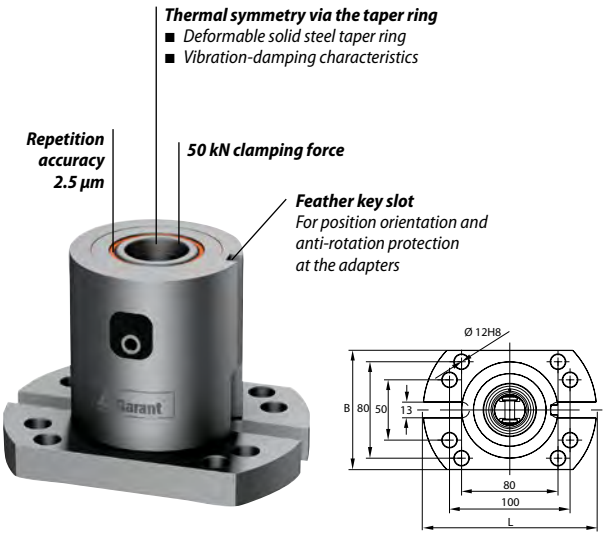


Garant Flexible clamps

- Steel base body with integral solid steel taper.
- Mechanical clamping mechanism.
- Tightening the lateral clamping bolt axially draws the component in with the respective clamping stud via 2 clamping wedges, and clamps it.
- Can be secured using steplessly adjustable clamps, T-nuts or zero point clamping system using clamping studs No. 360066.
- Pre-drilled for the zero point clamping system.

Application: Simple and exact positioning on the machine table. Clamping of complex components, e.g. For mould making.

Optional extras: Clamping stud No. 360025 for size 120, torque wrench No. 656050 size 60, height element No. 360068.



Flexible clamp, fixed

Type		1	2
310 36 0060	Flexible clamp, fixed	(eShop)	(eShop)
∅ D	mm	80	
Length L	mm	144	
B	mm	99	
H	mm	100	125
Torque	Nm	10	



Flexible clamp, variable

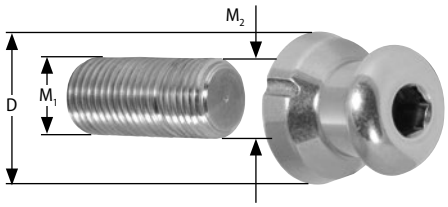
Height adjustment with 3 mm pitch per revolution. Maximum travel 25 mm.

Application: For compensating deformed components.

Type		1	2
310 36 0064	Flexible clamp, variable	(eShop)	(eShop)
∅ D	mm	80	
Length L	mm	144	
B	mm	99	
Torque	Nm	10	
Clamping height	mm	125 – 150	150 – 175

Garant Clamping studs for flexible clamp

Type		18M12	18M12/138
310 36 0066	ZeroClamp clamping stud	eShop	eShop
∅ D	mm	18	
Tolerance external ∅		K6	
M_1		M12	
M_2		M12	
suitable for clamping pot ∅	mm	120	138



Garant Height element

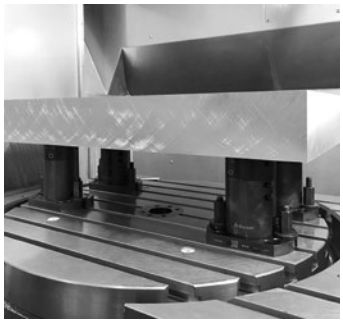
Suitable for: Flexible clamps No. 360060 and 360064.

Application: For extending the flexible clamp. Up to 5 height elements adaptable one over another.

Supplied with: Anti-rotation protection and clamping stud No. 360131 18M12/120.

Optional extras: Clamping stud No. 360025 for size 120. Torque wrench No. 656050 size 60.

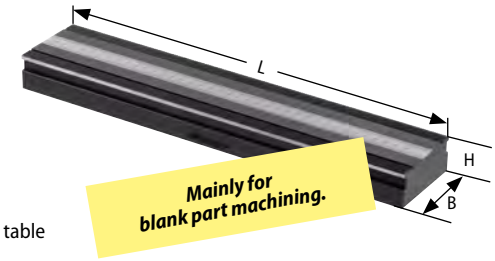




Type		1
310 36 0068	Height element	(eShop)
∅ D	mm	80
H	mm	50
Torque	mm	10

Garant Multi-point clamping rails 80 mm - accessories

- All functional faces precision ground, pairing accuracy 0.03 mm.
- Base rail and jaws case hardened.
- Compact modular design, **high clamping force up to 20 kN,** maximum tightening torque 25 Nm.
- Attachment hole pattern for **GARANT ZeroClamp zero point clamping system** (200 mm pitch) as standard, can be mounted on clamping plates or grid plates, or using table clamps.
- Ruler inset into the top face permits repeatable positioning of the clamp attachments in the serrations of the clamping rail.
- Easily clamped using a torque wrench.

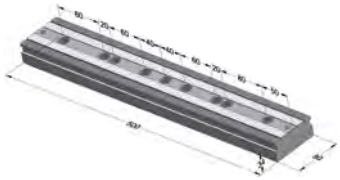


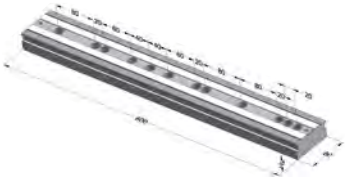
Application:
- **5-face machining on multi-axis machining centres.**
- As a cost-effective clamping solution for use with the GARANT ZeroClamp zero-point clamping system or with pallet and automated systems, or directly on to the machine table or clamping towers.

Optional extras: Clamping jaw variants, magnetic strip, workpiece backstops see No. 360084 to 360096. Torque wrench No. 656050 size 60, clamping stud No. 360025 size 12M10, clamping claw No. 360127


_260


_400


_500


_600

Beam length	mm	260	400	500	600
310 36 0080	Multi-point clamping rail 80	eShop	eShop	eShop	eShop
L	mm	260	400	500	600
B	mm	80			
H	mm	35			

Clamping jaws

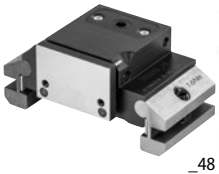
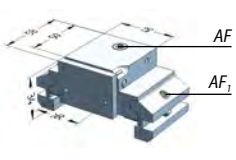
Suitable for: Clamping rail No. 360080.

Note: For use with clamping rails from revision 3 onwards (see illustration). Attachment bar on multi-point clamping rails must not be wider than 5 mm.



_48

Jaw width	mm	48	80
310 36 0084	Pull-down jaw	eShop	eShop
Clamping force	kN	5; 10; 15; 20	
Torque	Nm	6; 12; 17.5; 25	
max. stroke	mm	3	
T-bolt AF	mm		
Shank screw AF_1	mm	4	

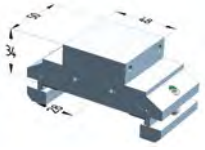



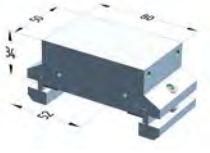
_48



_80

Jaw width	mm	48	80
310 36 0085	Parallel clamping jaw	eShop	eShop
Clamping force	kN	5; 10; 15; 20	
Torque	Nm	5; 10; 15; 20	
max. stroke	mm	3	3.5
T-bolt AF	mm		
Shank screw AF_1	mm	4	



_48



_80

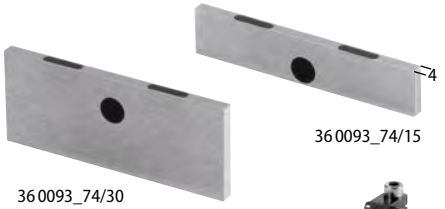
Jaw width	mm	48	80
310 36 0086	Fixed jaw	eShop	eShop

Accessories for clamping jaws

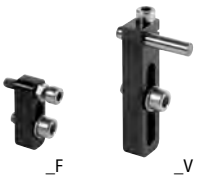
Suitable for: Parallel jaw No. 360085 and fixed jaw No. 360086.
Size 48NF – No. 360084 size 48, 360086 size 48
Size 80; 80ST – No. 360084; 360085; 360086.
Application: For clamping individual workpiece contours.



Jaw width	310	36 0092
mm		Gripper front jaw
48NF		(eShop)
80		eShop
80ST		eShop



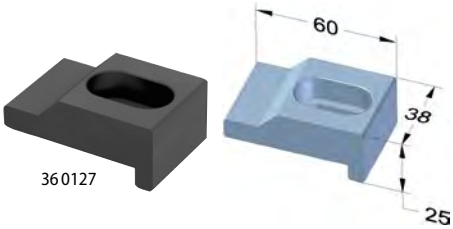
Jaw width / jaw height	310	36 0093
mm		Magnetic strip
74/10		eShop
74/15		eShop
74/20		eShop
74/25		eShop
74/30		eShop



Version	310	36 0094	Version
		Component backstop	
F		eShop	fixed
V		eShop	adjustable

Accessories for clamping rails 80 mm and 120 mm

Suitable for: Clamping rail No. 360080 and No. 360110.
Application: For conventional fastening to the machine table.



310	36 0127	Clamping claw set **6 pieces**	eShop

Garant Multi-point clamping rails 120 mm - accessories

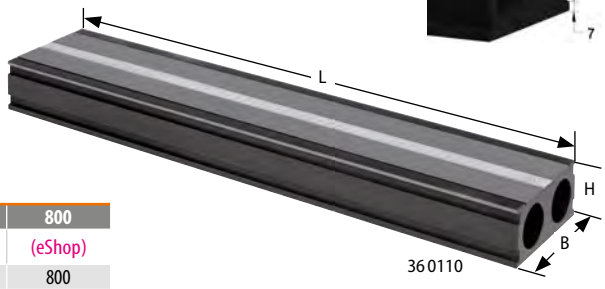
- All functional faces precision ground, pairing accuracy 0.03 mm.
- Base rail and jaws case hardened.
- Compact modular design, **high clamping force up to 40 kN,** maximum tightening torque 50 Nm.
- Attachment hole pattern for **GARANT ZeroClamp zero point clamping system** (200 mm pitch) as standard, can be mounted on clamping plates or matrix tables, or using table clamps.
- Ruler inset into the top face permits repeatable positioning of the clamp attachments in the serrations of the clamping rail.
- Variable pitches can be achieved using cross connectors.
- Conventional and grip clamping available.
- Clamping range can be extended individually.
- Easily clamped using a torque wrench.

Application:
- **5-face machining on multi-axis machining centres.**
- As a cost-effective clamping solution for use with the GARANT ZeroClamp zero-point clamping system or with pallet and automated systems, or directly on to the machine table or clamping towers.

Optional extras: Clamping jaw variants, magnetic strip, workpiece backstop see No. 360112 to 360129. Torque wrench No. 656050 size 60, clamping stud No. 360025 size 18M16, clamp No. 360127.

Mainly for blank part machining!

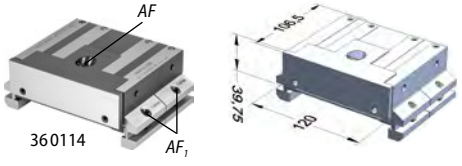




Beam length		mm	300	600	800
310	36 0110	Multi-point clamping rail 120	eShop	eShop	(eShop)
L		mm	300	600	800
B		mm		120	
H		mm		60	

Clamping jaws

Note:
36 0114/0115 – Torque and clamping force are standard values and are only indicative reference points (material-dependent).



Jaw width		mm	120
310	36 0114	Pull-down jaw	eShop
Clamping force		kN	10; 20; 30
Torque		Nm	17; 30; 50
max. stroke		mm	4
T-bolt AF		mm	8
Shank screw AF_1		mm	4

Jaw width		mm	120
310 36 0115	Parallel clamping jaw		eShop
Clamping force		kN	10; 20; 30; 40
Torque		Nm	10; 20; 30; 40
max. stroke		mm	4
T-bolt AF		mm	
Shank screw AF_1		mm	4


360115



Jaw width		mm	120
310 36 0116	Fixed jaw		eShop


360116



Accessories for clamping jaws

Suitable for: Base jaw No. 360119.

Type		GLATT-HM	GRIPP-3,8
310 36 0118	Gripp insert	eShop	eShop
Height	mm	5.5	3.8
Version		Smooth	Gripp
Quantity		1	


_GLATT-HM


_GRIPP-3.8

Suitable for:
Size P – Only on fixed jaw No. 360116.
Size F – Jaws No. 360115 and 360016.
Application: Conventional clamping or clamping with gripp inserts.
Supplied with: 2 gripp inserts No. 360118 GRIPP-3.8.


360119_P




360119_F



Type		P	F
310 36 0119	Base jaw	eShop	eShop
Function		pivoting	fixed

Jaw width / jaw height		mm	120/10	120/20	120/30	120/38
310 36 0128	Magnetic strip 6 mm thick		eShop	eShop	eShop	eShop


360128 _120/20


360128 _120/38

Garant 3-way extension base for centring vice

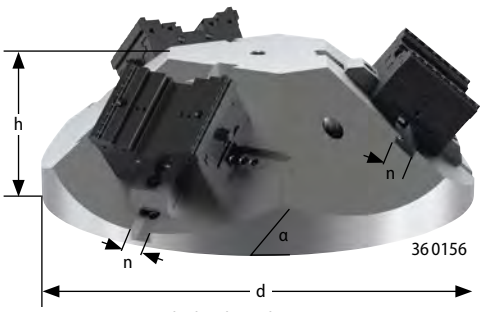
Clamping of the centring vice on the three-way extension base via clamping claws.
Double slot per clamping side, meaning the centring vices can be turned by 90°.
Secured via GARANT ZeroClamp zero point clamping system (holes 18M16) or via T-nuts directly on to the machine table.

Suitable for: Centring vice No. 360133.
Material: High-tensile aluminium, hard anodised.
Supplied with: Including 6 T-nuts for alignment

Note: Use clamping set No. 363102 size 80 to install the GARANT Xtric No. 363000 size 50 or size 80.

Also available as 4-way extension base on request.

for type		80/120
310 36 0156	3-way extension base for centring vice	(eShop)
Ø d	mm	400
h	mm	140
n H7	mm	20
Angle α	degrees	45

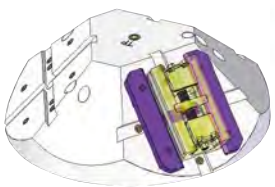


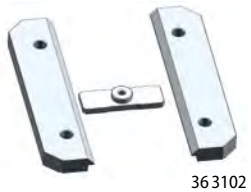
360156

Supplied without the centring vice.

Accessories

Suitable for: GARANT Xtric No. 363000 size 50 or size 80.
Application: For fixing the Xtric to the three-way extension base No. 360156.




363102

Type		80
310 36 3102	Alignment and clamping strip set, Xtric	(eShop)

Garant Centring vice and accessories

Centring vice for flexible applications.

- Absolute operational reliability thanks to enclosure.
- High repetition accuracy 0.02 mm.
- Variable central alignment ± 0.02 mm.
- Functional faces hardened.
- Sturdy design of tool steel, surface protection by brief exposure nitriding.

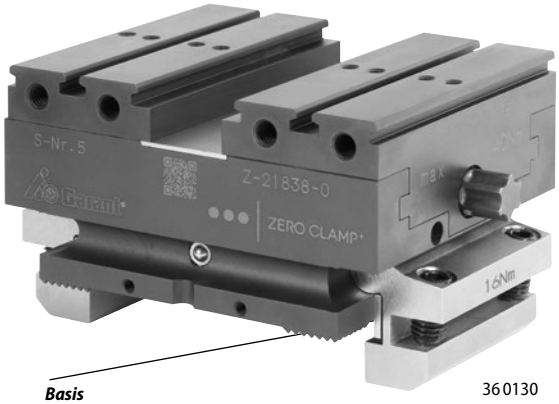
Suitable for:

36 0130 – Multi-point clamping rails No. 360080 and 360110.
36 0133 – Directly on the machine table, exchange pallet or 3-way extension base No. 360156.
36 0134 – Automation extension base No. 360164.

Application: Ideal for 5-face machining, perfect for clamping blank parts.

Supplied with: Supplied with socket No. 642700 size E12.
36 0133 – 2 table clamps.
36 0134 – Supplied with 4 clamping studs size 90.

Optional extras: Types of jaws No. 360135– 360151.



360130

Basis
suitable for multi-point clamping rail 80 mm or 120 mm.

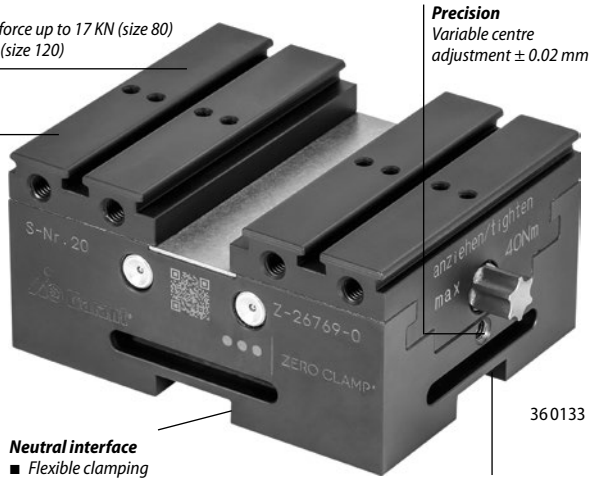


Quick change
with just a few simple movements, can be turned through 90°.

Powerful
Clamping force up to 17 KN (size 80) or 25.5 kN (size 120)

Form fit *of the jaws on the base body*

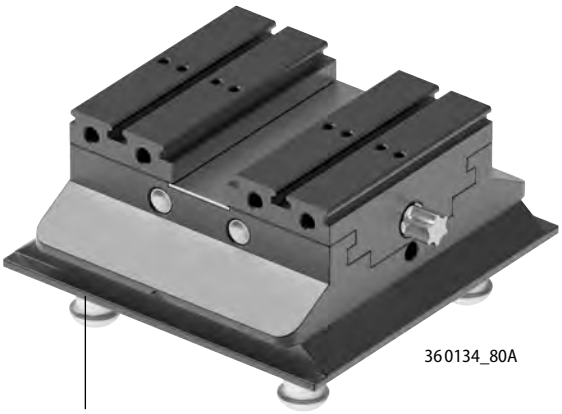
Precision
Variable centre adjustment ± 0.02 mm



360133

Neutral interface
- *Flexible clamping on the machine table*
- *Extension bases or pallets*
- *Grid plates*

Precise location slots
Quick placement on the table or grid plate.



360134_80A

Basis
with 4 clamping studs size 90 with pitch 80 mm.

Jaw width A	mm	80	120	80A	120A
310 36 0130	Centring vice	eShop	eShop	–	–
310 36 0133	Centring vice, neutral	eShop	eShop	–	–
310 36 0134	Centring vice, automation	–	–	eShop	eShop
Clamping force up to maximum	kN	17	25.5	17	25.5
Torque	Nm	40	60	40	60
Weight	kg	2.5	5.1	3.5	5.3
Stroke	mm	22	25	22	25
A	mm	80	120	80	120
Length	mm	110	130	120	130
Width	mm	80	120	120	120
Height	mm	50.2	50.2	50	50

Automation vice in combination with an automation extension base

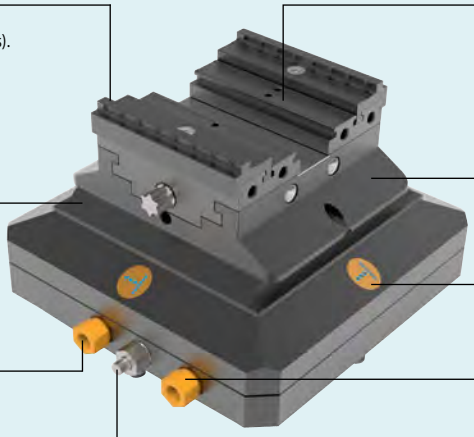
For use in automation.

Range of jaws
- Identical to previous centring vices No. 36 0130 and 36 0133.
- Clamping of blank parts (Gripp top jaws) and finished parts (carbide top jaws).

Clamping studs
- Clamping is achieved using 4 clamping studs.
- Draw-in force of 12.5 kN per stud.
- The same principal of operation as for the clamping pots.
- Absolute zero point is maintained thanks to thermal symmetry.

Opening

Bleeding



Automation vice 36 0134 in combination with extension base 36 0164.

Proven technology
- Enclosed spindle - no need for cleaning.
- High clamping accuracy.
- Clamping force up to 17 kN (size 80) or 25.5 kN (size 120).

Basis
- Integral M8 tapped holes ∅ 12H7 and 80 mm pitch.

Attachment hole
- Supplied with cover cap.

Monitoring the back pressure
- This is done using the Zerobot gripper, by rotary feed-through of the machine or manually.
- Back pressure can be checked.

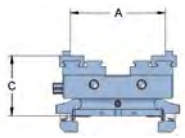
Garant Top jaws for centring vices

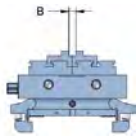
Suitable for: Centring vice No. 360130 – 360134.

360140 80/120 – Clamping height = 4 mm.
360135/0136/0141 – Clamping height = 4 mm.
360140 Size 80L; 120L – Pre-impression of the serrated contour necessary.
Material: Tool steel with brief exposure nitriding.
Supplied with: Fastening screw.


360135/0136

for type		80	120
310 360135	Pair of carbide top jaws	eShop	eShop
310 360136		eShop	eShop
Jaw width b	mm	80	120
Clamping range B - A (360135)	mm	7 – 88	7 – 107
Clamping range B - A (360136)	mm	88 – 108	106 – 132
C (360135)	mm	55	57
C (360136)	mm	58	60
suitable for colour code			





for type		80	80L	120	120L
310 360140	Pair of gripp top jaws	eShop	eShop	eShop	eShop
310 360141		eShop	–	eShop	–
Jaw width b	mm	80	80	120	120
Clamping range B - A (360140)	mm	6 – 87	6 – 87	6 – 107	6 – 107
Clamping range B - A (360141)	mm	87 – 107	–	107 – 132	–
C (360140)	mm	55	74.18	57.18	74.18
C (360141)	mm	58	–	60	–
suitable for colour code					

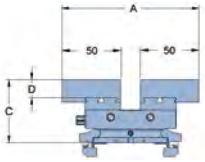

360140/0141

Material: Tool steel with brief exposure nitriding.
Application: For individual manufacturing of shaped jaws.
Supplied with: Fastening screw.



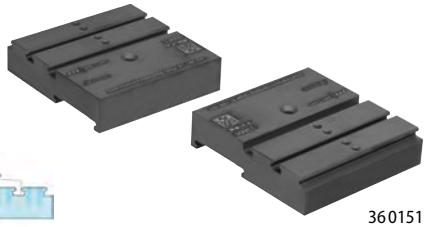

360145

for type		80	120
310 360145	Pair of soft top jaws	eShop	eShop
Jaw width b	mm	80	120
Clamping range B - A	mm	100 – 123	125 – 153
C	mm	50	
D	mm	20	25
suitable for colour code			

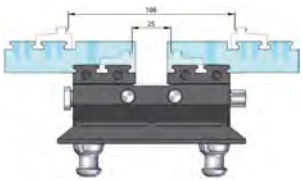




Application: For increasing the clamping range, in combination with the top jaws No. 360135 - 360141.


360151

for type		80	120
310 360151	Pair of jaw adapters	eShop	eShop
b	mm	80	120
Clamping range	mm	87 – 168	107 – 208
suitable for colour code			



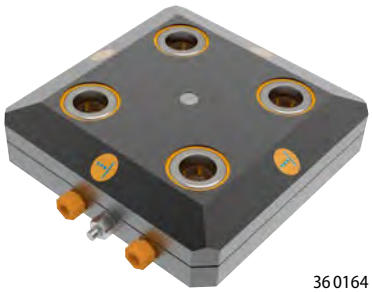
Colour code: ZC 80 PCV 100 ZC120

Garant Extension base for automation vice – pitch 80 mm

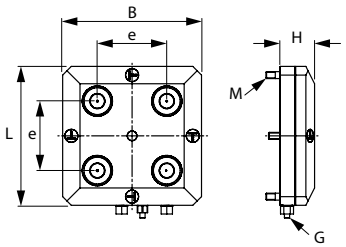
50 kN holding force from 4 sets of clamping pot components size 90, pitch 80 mm.
The same principle of operation as the GARANT ZeroClamp clamping pots.
Meaning there is thermal symmetry towards the centre. Manual or automatic clamping and release possible.
Clamp using spring pressure, release using compressed air (6 bar).

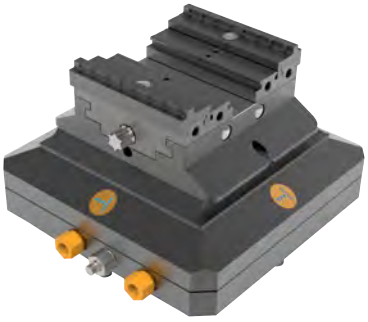
Suitable for: Centring vice no. 360134, height element no. 360166.

Application: For all vices and pallets with ZeroClamp clamping stud size 90.



360164





Application example

Type		XP80Z
310 360164	Automation extension base	eShop
Length L	mm	160
Width B	mm	160
Height H	mm	40
e	mm	80
Thread M		M8
Thread G	in	1/4
Number of location holes for clamping studs		4

Garant Accessories for automation extension base

High-tensile aluminium, black anodised.
Gripper groove on side 8×6 mm including central locating hole for automated applications.

Suitable for: Extension base no. 360164.
Size 136 – Centring vice No. 363000 size 50 and size 80 and No. 363300 size 75.

Application:
Size 136 – For adapting a clamping device with a pitch of **52 mm** to a pitch of **80 mm.**
Size 180 – Unrestricted surface on an **80 mm** pitch for individual processing or for use as a pallet.

Supplied with:
Size 136 – 4 × fastening screw,
4 × grub screw M8,
2 × locator bushing,
4 × clamping stud No. 360025 12M10/90.
Size 180 – 4 × clamping stud No. 360025 12M10/90.
Size 180 – 4× grub screw M8.

Note:
Size 136 – Compatible with all brands of clamping device with pitch 52 mm.



360171_132



360171_180

Adapter plate for automation extension base XP80Z

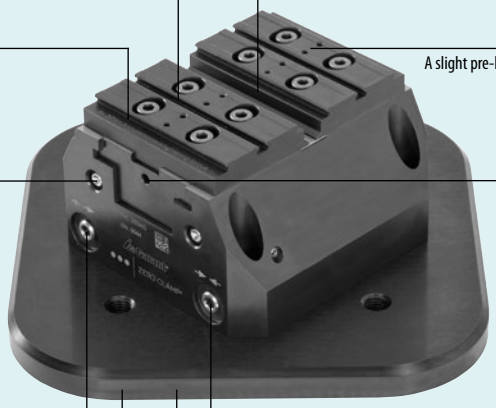


Indexing holes for clamping pot 120 or 138.

Length	mm	136	180
310 360171	Adapter plate for automation extension base XP80Z	eShop	eShop
L	mm	136	180
B	mm	120	
H	mm	29	

The pneumatic centring vice – powerful and universal

Active adjustable clamping element best suited for automated production. Can also be operated manually!



Precision dovetail slides

Clamping stroke up to 8.5 mm

Clamping force
Steplessly adjustable up to 22.5 kN.
(Arithmetical sum = 45 kN)

Safety
A slight pre-load (approx. 60 kg) is maintained even if the compressed air supply fails.
This ensures secure positioning of the workpiece.

Grease nipples

Adjustable stroke
5 mm per side.

Air supply for clamping
Manual operation with air pressure gun possible.
Maximum 9 bar.

Air supply for opening

Base plate
For 4 clamping studs (18k6 M16) cross pitch 200 mm.
With additional Schunk interface.

Air delivery
Air delivery in automatic mode via the 4-channel clamping pot.

Garant Pneumatic centring vice

- Adjustable stroke + 5 mm per end.
- Clamping force steplessly adjustable up to 22.5 kN. Arithmetical sum = 45 kN.
- Even if the compressed air supply fails, the centring vice maintains a slight (approx. 60 kg) pre-load, to ensure secure positioning of the workpiece, such as when a shuttle table is being used.

36 0180/0181 Size 100/4; 160/4 – With base plate, for higher support torque and maximum stability.

Advantage:

36 0181 –
- Incl. pressure reservoir with double-acting non-return valves.
- **Continuous monitoring** of clamping and release pressure and of battery state **via WiFi**.
- No rotary union necessary.
- Clamping and release by compressed air via robot.
- Connection block no. 360191 for horizontal or vertical compressed-air transfer available.

Application: For centralised clamping of components. Suitable for **automated operation** with 4-channel clamping pots, even with side connections.

Optional extras:

36 0181 – Connection block no. 360191.

Size 100; 100/4 – Range of jaws no. 360135 - 360151 size 80.
Size 160; 160/4 – Range of jaws no. 360183 - 360187.

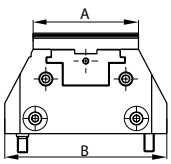


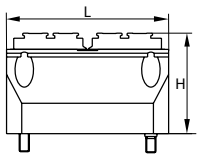
36 0180_160

Please order top jaws separately

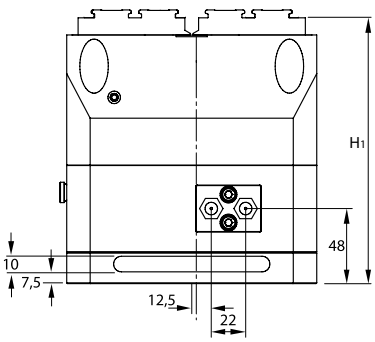


36 0181_160





Type		100	100/4	160	160/4
310 36 0180	Centring vice, pneumatic	eShop	eShop	eShop	eShop
310 36 0181	Centring vice, pneumatic **IOT**	eShop	eShop	eShop	eShop
Clamping force up to maximum	kN	10	10	22.5	22.5
Maximum compressed air supply	bar	9			
Weight (36 0180)	kg	4.8	14.8	12.2	22.2
Weight (36 0181)	kg	11.6	21.6	19	29
Jaw width A	mm	80	80	104	104
L	mm	100	100	160	160
B	mm	100	100	160	160
H	mm	95	95	99.2	99.2
Clamping range	mm	6	6	8.5	8.5
H_1 (36 0181)	mm	171	191	175	175
Dimension across diagonals	mm	–	200	–	200
suitable for colour code					



Colour code: PCV 100 PCV 160

Garant Accessories for pneumatic centring vices

Connection blocks

Suitable for: Centring vice IOT No. 360181.
Application: For horizontal or vertical compressed air delivery. The air delivery is covered by a flap made from elastomer which is opened by the robot while pressure is being filled.
Optional extras: Connector No. 360167 1.


_V

Type		V
310 36 0191	Connection block for IOT centring vice	eShop
Air delivery		vertical

Gripp jaws

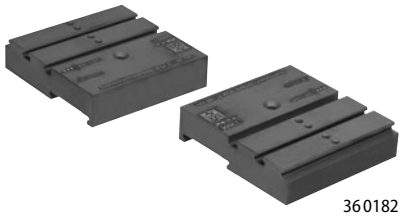
Hardened, for clamping blanks. Gripp jaws can also be used as reversible jaws.
Clamping step with a height of 4 mm.
36 0184 – The jaws cover four clamping ranges.
Suitable for: Centring vice no. 360180 and no. 360181 size 160 each.
Supplied with: Fastening screws.

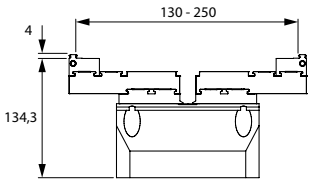


Type			1	2	3	4	5	6	Jaw width A mm
310 36 0183	Pair of gripp jaws	H = 40	eShop	eShop	eShop	eShop	eShop	eShop	80
310 36 0184		H = 15	eShop	eShop	eShop	–	–	–	120
S1		mm	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60	60 – 70	
S2		mm	120 – 130	110 – 120	100 – 110	90 – 100	80 – 90	70 – 80	
S3 (36 0184)		mm	60 – 70	50 – 60	40 – 50	–	–	–	
S4 (36 0184)		mm	70 – 80	80 – 90	90 – 100	–	–	–	
suitable for colour code						■			

Jaw adapter

Suitable for: Centring vice no. 360180 and no. 360181 size 160 each.
Application: For increasing the clamping range, in combination with the top jaws No. 360183 – 360184.


360182

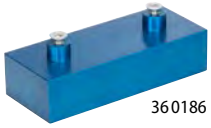


for type		160
310 36 0182	Jaw adapter	eShop
Jaw width A	mm	104
Clamping range	mm	130 – 250
suitable for colour code		■

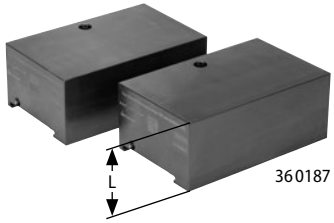
Soft top jaws

36 0185 – For mounting soft top jaws No. 360186
36 0186/0187 – For manufacturing shaped jaws.
Suitable for: Centring vice no. 360180 and no. 360181 size 160 each.
Supplied with: Fastening screws.


360185


360186

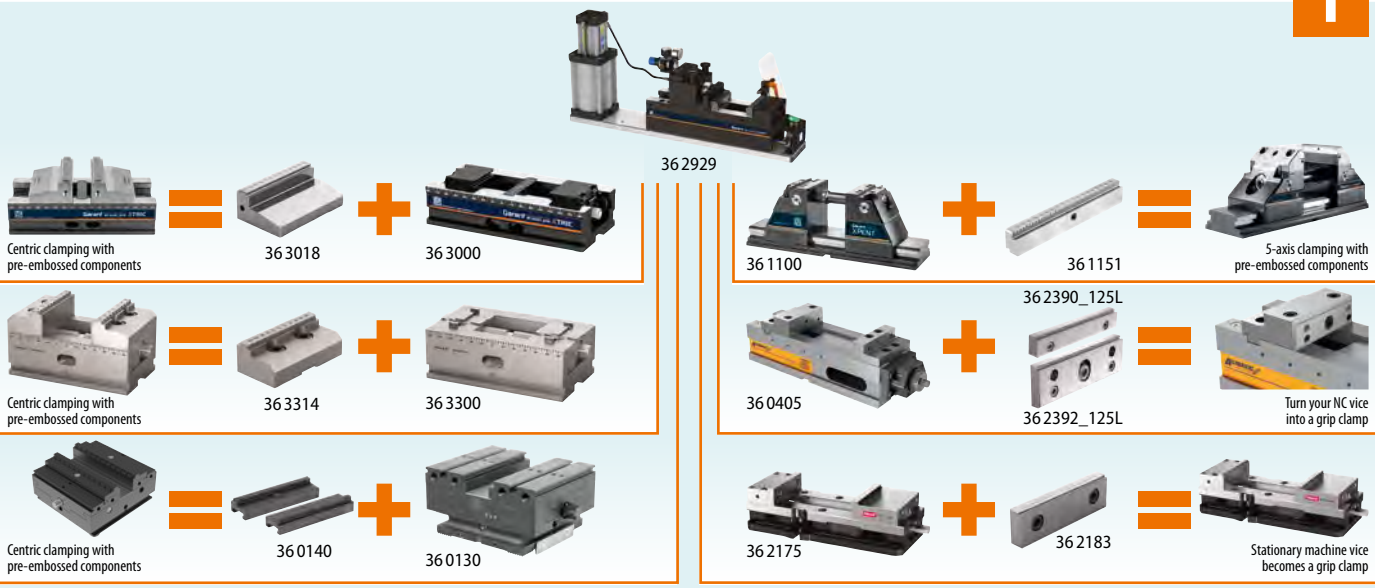
Type		148	148A	148S	168	H mm
310 36 0185	Pair of base jaws	eShop	–	–	–	15
310 36 0186	Soft top jaw 1/2	–	eShop	eShop	–	29
310 36 0187	Pair of soft top jaws	eShop	–	–	eShop	44
Jaw width A	mm	120				
l	mm	64	–	–	74	
Version		Steel	Aluminium	Steel	Steel	
suitable for colour code				■		



360187

Colour code: ■ PCV 160

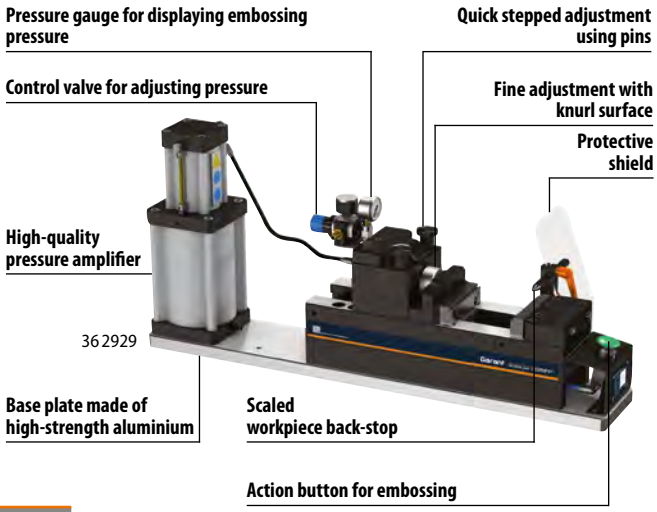
Incredibly varied clamping options for pre-embossed components



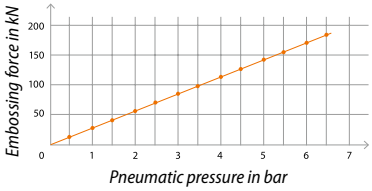
Garant XGRIPP embossing station

- Embossing materials up to 45 HRC (tensile strength 1450 N/mm²) possible.
- Max. Embossing force 180kN (18 t), linear embossing force progression.
- Adjustment of the pneumatic embossing pressure between 0.5 and 6.5 bar.
- Quick adjustment at 30 mm intervals.
- Fine adjustment by knurled screw.
- Everything mounted on a base plate – conforms to CE, can be used safely and in a compact manner as a single unit.
- The operating button is directly on the embossing station and thus there are no pneumatic hoses outside the station.

Advantage: Positive clamping in gripper jaws even at low clamping force
Application: For pre-embossing especially hard or unstable components.
Supplied with: Base plate, pressure converter, embossing station, protection plate, stamping jaws, workpiece backstop, support strip.
Optional extras: Centre marking No. 362934 size 1, checking set for stamping jaw wear No. 362936 size 1.



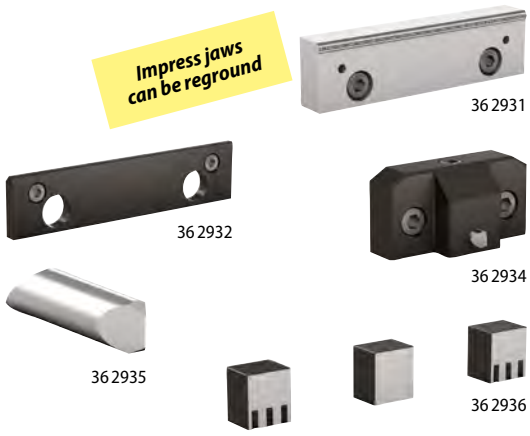
max. embossing width		mm	230
310 36 2929	Embossing station **XGRIPP**		eShop
maximum embossing force		kN	180
Embossing stroke		mm	4
Length		mm	890
Width		mm	150
Height		mm	409
Weight		kg	78



Accessories for XGRIPP embossing station

36 2931/2932/2935 – Spare part – easily exchanged if worn.
Suitable for: Embossing station XGRIPP No. 362929 size 230.
Application:
36 2934 – Visual aid for ensuring a central position of the component in the vice.
36 2936 – For checking wear of the stamping jaws No. 362931.
Supplied with:
36 2934 – Incl. marking bolt No. 362935.
Optional extras:
36 2931 – Checking set No. 362936.

Type			1
310 36 2931	Impress jaw **XGRIPP**		eShop
Type			1
310 36 2932	Support strip **XGRIPP**		eShop
Type			1
310 36 2934	Centre marking **XGRIPP**		eShop
Type			1
310 36 2935	Marking bolt **XGRIPP**		eShop
Type			1
310 36 2936	Checking set for stamping jaw wear **XGRIPP**		eShop



GARANT XTURN: ALWAYS PUTTING IN A GOOD TURN.

For **economical multi-side processing** on a 3-axis machine: The GARANT Xturn helps you upgrade your existing machine. Additional axes provide new machining options and greater production capacity to your existing stock of machine tools.

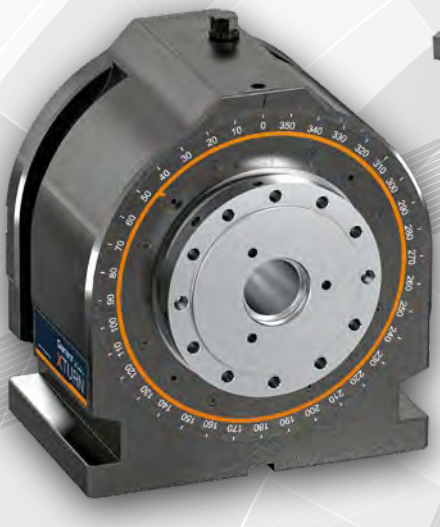
For further information and options, ask your technical adviser!



GARANT Xturn with GARANT ZeroClamp clamping pot.



GARANT Xturn with rocker and 4 GARANT Xtrics.





GARANT Xturn with clamping cube, elevation set and 8 GARANT Xtrics with centre jaw.



GARANT Xturn with cross beam, elevation set and 8 GARANT Xtrics.



GARANT Xturn with clamping cube, integral ZeroClamp clamping pot, elevation set and 6 GARANT Xtrics.



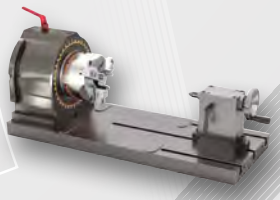
GARANT Xturn with three-jaw chucks and opposite tailstock.

Functional principle of machine indexing:



When the indexing tool is changed and is retracted to the intended indexing points, the interlocking is released and the Xturn can be indexed in 1° increments. When the indexing tool has been brought out into the indexing position, the Xturn locks itself automatically, and the machine can immediately recommence processing.

Operating principle of manual indexing:



By actuating the ring spanner, the interlocking is released and the Xturn can be indexed manually in 1° increments. When the ring spanner is released, the Xturn locks again and work can continue

The most important features:

- Can be used on any machine.
- Spacing 360 × 1.
- Indexing accuracy +/– 10 seconds.
- Repeatability +/– 4 seconds.
- Manual or CNC-controlled indexing is possible using an indexing tool in the machine spindle.
- Can be used upright or horizontally.

The benefits to you:

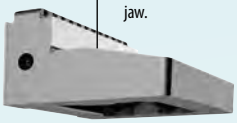
- Increase in machine running times due to multiple clamping.
- Allows quick machine loading and unloading.
- A wide variety of tools in one base device.

Garant Centric clamping to perfection for your automation

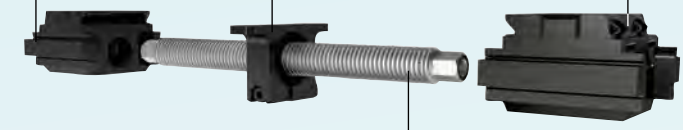
Top jaws with optimised contour design
- Optional coating for process reliability in machining.
- Hardened and underside precision milled.
- Very good repetition accuracy < 0.01 mm.

100 % centred
- Centring adjustment for perfect centring.

Various different top jaws
- Finished parts are clamped using pairs of parallels.
- Raw materials and finished parts are clamped using the same jaw.



Spindle nut with or without pivot function
- The size code P stands for pivoting jaw.
- The pivot function nut permits pivoting by ± 2°.
- Use of the pivot function nut offers increased security for components such as sawn parts.
- Greater precision when using rigid version.



Clamping jaw quick-change system
- Clamping jaw quick-change in seconds without tools by clicking onto the dovetailed slide.



Different base lengths
- Choose the right length for every machine.

Clamping edge
- Perfect for clamping claws.



Chromium-plated spindle
- Linear clamping force development
  - XTRIC50: 40 Nm generate 16 kN clamping force
  - XTRIC80: 85 Nm generate 25 kN clamping force
  - XTRIC125: 132 Nm generate 32 kN clamping force
- Internal clamping available by switching the spindle nuts.

Laser-engraved graduations
- For pre-positioning the clamping jaws.

Interface for automated applications
- Freely usable interface.
- Also serves as a cleaning opening.
- Also serves as an **endutec** interface
- Size 50H suitable for Häberle automation systems.
- Size 50XSE suitable for Erowa ITS50.
- With 363085 148P adaptable to Erowa ITS148.



Longitudinal slots
- Quick and easy alignment on the machine tool table.

Centring adjustment with pin wrench



Special underside
- Hole pattern suitable for the "LANG" positioning system. (Grid scale XTRIC 50 and 80: 52 mm; XTRIC125: 96 mm)
- Can be clamped to the GARANT ZeroClamp using the adapter.

The clamping jaw quick-change system: for more clamping options

Garant XTRIC		50XS (XSE)	50H	50S (SP)	80XS (XSP)	80S (SP)	80M (MP)	80SMT	125XS (XSP)	125S (SP)	125M (MP)	125L (LP)	125XL (XLP)
Standard		0 – 22	0 – 36	0 – 51	0 – 42	0 – 76	0 – 126	0 – 101	0 – 60	0 – 94	0 – 144	0 – 194	0 – 244
Reversed		49 – 65	49 – 79	49 – 94	74 – 110	74 – 144	74 – 194	74 – 169	92 – 146	92 – 180	92 – 230	92 – 280	92 – 330
Offset jaws		20 – 36	20 – 50	20 – 65	29 – 65	29 – 99	29 – 149	29 – 124	35 – 89	35 – 123	35 – 173	35 – 232	35 – 273
Offset jaws, reversed		35 – 51	35 – 65	35 – 80	51 – 87	51 – 121	51 – 171	51 – 146	63 – 117	63 – 151	63 – 201	63 – 251	63 – 301
Centre jaw, standard*		–	–	–	–	6 – 29.5	6 – 54.5	6 – 42	–	6 – 37	6 – 62	6 – 87	6 – 112
Centre jaw, reversed*		–	–	–	–	40 – 63.5	40 – 88.5	40 – 76	–	49 – 80	49 – 105	49 – 130	49 – 155
Centre jaw, offset jaws*		–	–	–	–	17.5 – 41	17.5 – 66	17.5 – 53.5	–	20.5 – 51.5	20.5 – 76.5	20.5 – 101.5	20.5 – 126.5
Centre jaw, offset jaws, reversed*		–	–	–	–	28.5 – 52	28.5 – 77	28.5 – 64.5	–	34.5 – 55.5	34.5 – 90.5	34.5 – 115.5	34.5 – 140.5
1 pc. standard, 1 pc. reversed**		27.5 – 43.5	27.5 – 57.5	27.5 – 72.5	35 – 101	35 – 135	35 – 185	35 – 160	49 – 103	49 – 137	49 – 187	49 – 237	49 – 287
1 pc. offset jaw, 1 pc. offset jaw, reversed**		27.5 – 43.5	27.5 – 57.5	27.5 – 72.5	40 – 76	40 – 110	40 – 160	40 – 135	49.5 – 103.5	49.5 – 137.5	49.5 – 187.5	49.5 – 237.5	49.5 – 287.5

* for each clamping point ** no longer a centring vice

Garant XTRIC centring vice

- Very good accessibility and perfectly symmetrical.
- Fully hardened and precision milled on the underside.
- Clamps raw materials and finished parts with the least possible backstroke of the jaws / component.
- Supplied with holes for LONG positioning system, **can be adapted to GARANT ZeroClamp and Erowa ITS148 (size 50 and 80) using an intermediate plate.**
- Jaws can be changed without using tools. The clamping range can be changed by reversing the jaws.
- Interface for automated applications.

Suitable for: Top jaws No. 363010 – 363045.

Application: Perfect for 5-face machining. Centred clamping.

Supplied with: Base rail, spindle, spindle nuts, **spindle cover No. 363083**.

Optional extras: Hexagon screwdriver No. 627424 size 5, pin spanner No. 628600 size 2, torque wrench No. 656050, socket No. 642229, stepless adjustable clamps No. 363081 80 and 361165 CS1, GARANT clamping stud No. 363190, adapter plates No. 363079, 363080, 363085. Height extension base No. 363090 (in conjunction with No. 363079). Assembly station No. 358595 52/96.

Note:

Size 50XSE – **Including adaptation suitable for Erowa ITS50.**

Size 50H – **Particularly suitable for HÄBERLE automation systems.**

Size 50XS; 50S; 50SP; 80XS; 80XSP; 80S; 80SP; 80M; 80MP; 125XS; 125XSP; 125S; 125SP; 125M; 125MP; 125L; 125XL; 50XSE; 50H –
Suitable top jaws No. 363010 – 363045 are not included in the scope of supply.
Clamping situation S2 arises by reversing the jaws.
Use offset top jaws to overcome the clamping gaps with types XS and XSP and H.

See our additional brochure "The GARANT X-Team" for detailed information.



36 3000_50H



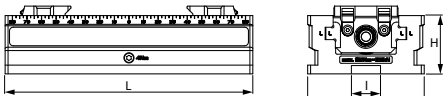
36 3000_80S



36 3000_50XSE



Large capacity range S1 – S2 with the same Xtric and the respective accessories.





Type	310 36 3000 Centring vice basic device Xtric	Clamping force up to maximum kN	Weight kg	L mm	B mm	H mm	S1 mm	S2 mm	l mm	Swing angle degrees	maximum torque Nm	Width across flats mm	Pitch underside mm	Colour code for suitable accessories
50XSE	eShop	16	2.215	96	50; 80	35	0 – 22	49 – 65	20	–	40	7; 3	52	
50XS	eShop	16	1.5	96	50; 80	35	0 – 22	49 – 65	20	–	40	7; 3	52	
50H	eShop	16	1.5	110	50; 80	35	0 – 36	49 – 79	–	–	40	7; 3	52	
50S	eShop	16	1.8	125	50; 80	35	0 – 51	49 – 94	20	–	40	7; 3	52	
50SP	eShop	16	1.8	125	50; 80	35	0 – 51	49 – 94	20	±3	40	7; 3	52	
80XS	eShop	25	2.7	136	80	40	0 – 42	74 – 110	20	–	85	10; 5	52	
80XSP	eShop	25	2.7	136	80	40	0 – 42	74 – 110	20	±2	85	10; 5	52	
80S	eShop	25	3.2	170	80	40	0 – 76	74 – 144	20	–	85	10; 5	52	
80SP	eShop	25	3.2	170	80	40	0 – 76	74 – 144	20	±2	85	10; 5	52	
80M	eShop	25	4	220	80	40	0 – 126	74 – 194	20	–	85	10; 5	52	
80MP	eShop	25	4	220	80	40	0 – 126	74 – 194	20	±2	85	10; 5	52	
125XS	eShop	32	7.8	186	125	54	0 – 60	92 – 146	20	–	132	13; 5	96	
125XSP	eShop	32	7.8	186	125	54	0 – 60	92 – 146	20	±2	132	13; 5	96	
125S	eShop	32	9	220	125	54	0 – 94	92 – 180	20	–	132	13; 5	96	
125SP	eShop	32	9	220	125	54	0 – 94	92 – 180	20	±2	132	13; 5	96	
125M	eShop	32	10.6	270	125	54	0 – 144	92 – 230	20	–	132	13; 5	96	
125MP	eShop	32	10.6	270	125	54	0 – 144	92 – 230	20	±2	132	13; 5	96	
125L	eShop	32	11.8	320	125	54	0 – 194	92 – 280	20	–	132	13; 5	2×96 / 200	
125XL	eShop	32	13.4	370	125	54	0 – 244	92 – 330	20	–	132	13; 5	2×96 / 200	

Colour code: Xtric 80 Xtric 80 Xtric 125

Garant Xtric automation centring vice

- Very good accessibility and perfectly symmetrical.
- Fully hardened and precision milled on the underside.
- Clamps raw materials and finished parts with the least possible backstroke of the jaws / component.
- Central alignment delivers perfectly centred clamping.
- The clamping range can be changed by reversing the jaws.

Suitable for: Top jaws No. 363010 – 363045.

Application: Perfect for 5-face machining. Centred clamping.

Supplied with:

Size 80SMT – Base body, spindle nuts and four clamping studs.

Size 80SA; 80SPA – Base body, spindle, spindle nuts.

Size 125XSA; 125XSPA – Base body, spindle, spindle nuts and four clamping studs suitable for automation extension base No. 360164 XP80Z.

Optional extras:

Size 125XSA – Torque wrench No. 656050, socket No. 642229 13, assembly station No. 358595 80.

Size 80SA; 80SPA; 80SMT; 125XSPA – Torque wrench No. 656050, socket No. 642229 13, assembly station No. 358595 52/96 or No. 358595 80.

Size 80SA; 80SPA – Clamping stud No. 363190 52.

Note:

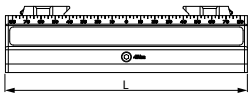
Size 80SMT – Spindles must be ordered separately, see No. 363008 80/195; 363084 80SM.

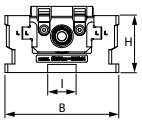
Size 80SA; 80SPA – Suitable for the GARANT TurnTable automation system in combination with / for automation extension base No. 360164 XP80Z. Suitable top jaws No. 363010 – 363045 are not included in the scope of supply. Clamping situation S2 arises by reversing the jaws.

Size 80SMT–125XSPA – Suitable for the GARANT TurnTable automation system in combination with / for automation extension base No. 360164 XP80Z. Suitable top jaws No. 363010 – 363045 are not included in the scope of supply. Clamping situation S2 arises by reversing the jaws.



36 3000_125XSPA



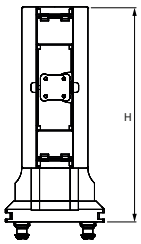


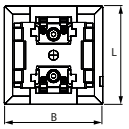


36 3000_80SA



36 3000_80SMT





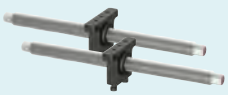
Type		80SA	80SPA	80SMT	125XSA	125XSPA
310 36 3000	Centring vice basic device **Xtric**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Weight	kg	3.1	3.1	9.49	10.6	10.6
L	mm	170	170	120	186	186
B	mm	75	75	120	120	120
H	mm	40	40	260	54	54
Reference dimension	mm	52	52	80	80	80
maximum torque	Nm	85	85	85	132	132
Width across flats	mm	10; 5	10; 5	10; 5	13; 5	13; 5
maximum clamping force	kN	25	25	25	32	32
Colour code						

Garant Choose between single and double clamping


36 3000_80SMT


2× 36 3084_80SM


1× 36 3084_80SM / 1× 36 3008_80/195


2× 36 3008_80/195


Single clamping on both sides


Single and double clamping


Double clamping on both sides

Colour code: Xtric 80 Xtric 125

Garant Xtric accessories

Combination top jaws — piece

36 3019 – Jaws with narrow web for improved accessibility, caution:
Size 50: Max. 35 Nm = 14 kN;
size 80: Max. 54.4 Nm = 16 kN;
size 125: Max. 82.5 Nm = 20 kN.

36 3036 – Jaws for using Gripp inserts 361163 and without clamping step
(individual adjustment of the step height using parallels, Gripp inserts must be ordered separately).

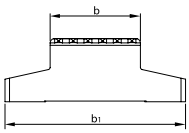
36 3037 – Smooth jaws without step.

36 3010/3014/3018/3022/3026/3030 – Combination jaws with grip serrations and a smooth clamping face.

36 3012/3016 – Jaws with a smooth step.

36 3014/3016/3022 – With coating on the smooth clamping face for optimum retaining force.

36 3018–3022/3030 – Pre-impression of the serrated contour necessary.



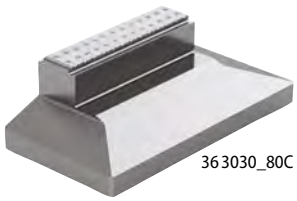


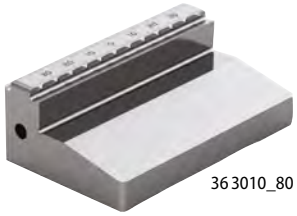
36 3010

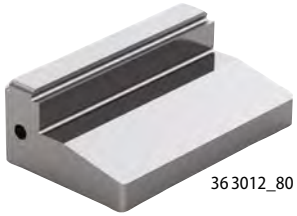


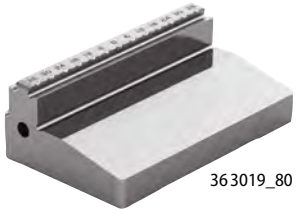
36 3018

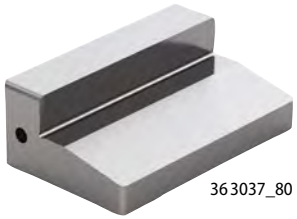
for type		25C	50	40C	80	80C	125
310 36 3010	Standard top jaw	–	eShop	–	eShop	–	eShop
310 36 3012	Top jaw, smooth	eShop	eShop	eShop	eShop	eShop	eShop
310 36 3014	Standard top jaw, coated	–	–	–	eShop	–	eShop
310 36 3016	Top jaw, smooth coated	–	–	–	eShop	–	eShop
310 36 3018	Top jaw system, LANG	–	eShop	–	eShop	–	eShop
310 36 3019	Top jaw LANGwith narrow web	–	eShop	–	eShop	–	eShop
310 36 3022	Top jaw system, LANG, coated	–	–	–	eShop	–	eShop
310 36 3026	Standard top jaw, width-reduced	eShop	–	eShop	–	eShop	–
310 36 3030	Top jaw system, LANG, width-reduced	eShop	–	eShop	–	eShop	–
310 36 3036	Top jaw with insert seat	–	eShop	–	eShop	–	eShop
310 36 3037	Top jaw without step	–	eShop	–	eShop	–	eShop
b	mm	25	–	40	–	80	–
b_1	mm	50	50	80	80	125	125
h	mm	24	24	28	28	38	38
h_1 (36 3010, 36 3012, 36 3014, 36 3016, 36 3018, 36 3019, 36 3022, 36 3026, 36 3030)	mm	3					
h_2 (36 3010, 36 3012, 36 3014, 36 3016, 36 3018, 36 3019, 36 3022, 36 3026, 36 3030)	mm	11	11	13	13	18	18
h_2 (36 3036, 36 3037)	mm	–	8	–	10	–	15
l	mm	40	40	50	50	66	66
l_1	mm	3					
Weight	kg	0.18	0.22	0.35	0.45	1.2	1.35
suitable for colour code							


36 3030_80C


36 3010_80


36 3012_80


36 3019_80


36 3037_80


36 3036_80

Combination top jaws for cylindrical workpieces

Suitable for:

36 3038 Size 80 – No. 363039

Size 125 – No. 361238 – 361250 and 361160.

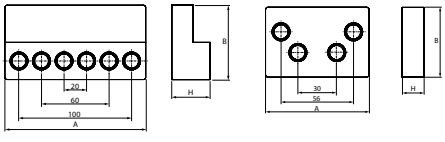
Application: For realising customised contours and for machining sensitive components.


36 3038_80



36 3038 _125

for type		80	125
310 36 3038	Gripp top jaw	eShop	eShop
b	mm	80	125
h	mm	17	34
l	mm	54	66
Weight	kg	0.43	1.37
Thread		M12×1	M14×1.5
suitable for colour code			



Type		mm	1
310 36 3039	Gripp clamping insert, round		eShop
Thread M			M12×1


36 3039

Colour code: Xtric 50 Xtric 80 Xtric 125

Soft top jaws — piece

Application: For realising customised contours and for machining sensitive components.

Note: Dovetail slide available for quick change of jaws. Version S of steel and A of aluminium.
Sawn raw material, only machined on underside.
Article 363034 80A may be clamped only to max. 12.5 Nm (12.5 Nm = 0.5 t).
Article 363034 120A may be clamped only to max. 34 Nm (34 Nm = 1 t).
Article 363034 160A may be clamped only to max. 82.5 Nm (82.5 Nm = 2 t).



36 3034_120A

Type	310 36 3034 Soft top jaw	Material	b mm	h mm	l mm	suitable for colour code
80S	eShop	1.7227	80	24	40	
80A	eShop	EN AW-7075	80	24	40	
120S	eShop	1.7227	120	28	50	
120A	eShop	EN AW-7075	120	28	50	
160S	eShop	1.7227	160	38	66	
160A	eShop	EN AW-7075	160	38	66	

Pairs of parallels, magnetic for clamping finished parts

Note: Sizes 15C, 20C, 22C, 30C and 32C were modified to suit the contour of the reduced-thickness jaws.



36 3076_20



Back face



36 3076_32C

Height mm		5	7	10	12	15	20	20C	22	22C	25	30	30C	32	32C
310 36 3075	Pair of parallels magnetic	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–
310 36 3076		–	–	eShop	eShop	–	eShop	–	–	–	eShop	eShop	eShop	eShop	eShop
Length (36 3075) mm		80	80	80	–	80	80	80	80	80	–	–	–	–	–
Length (36 3076) mm		–	–	125	125	–	125	–	–	–	125	125	125	125	125
Width mm		2.5													
suitable for colour code (36 3075)					–						–	–	–	–	–
suitable for colour code (36 3076)		–	–			–		–	–	–					

Double clamping spindle bearing

- Permits the clamping of two components.
- 4 mm length compensation of the spindle for clamping workpieces of different sizes.
- Straightforward assembly and removal.

Suitable for: Separately obtainable centre jaws No. 363040, 363042, 363044.
Supplied with: Spindle bearing, spindle with length compensation.
Optional extras: Hexagon screwdriver No. 627424 size 3 and size 5.

Note: Not for use with size 50 or Xtric types XS and XSP!



36 3008



Clamping situation with 36 3008, 36 3040 and 36 3041 reversed.

NEW

Type	80/170	80/195	80/220	125/220	125/270	125/320	125/370
310 36 3008 Spindle bearing, complete	eShop	(eShop)	eShop	eShop	eShop	eShop	eShop
Width across flats mm	5; 10	5; 10	5; 10	5; 13	5; 13	5; 13	5; 13
suitable for type	80S; 80SP	80S; 80SP	80M; 80MP	125S; 125SP	125M; 125MP	125L	125XL
suitable for colour code							

Colour code: Xtric 50 Xtric 80 Xtric 125

Centre jaws — piece

36 3040 – With grip serrations in a 3 mm step and a smooth clamping face.
36 3042 – Pre-impression of the serrated contour necessary.
With 3 mm grip step and smooth clamping face.
36 3044 – With smooth 3 mm grip step and smooth clamping face.

Suitable for: Spindle bearing, complete No. 363008.

Note: Not for use with size 50 or Xtric types XS and XSP!


36 3040_80


36 3044_125

Type		80	125
310 36 3040	Standard centre jaw	eShop	eShop
310 36 3042	Centre jaw, LANG system	–	eShop
310 36 3044	Smooth centre jaw	eShop	eShop
b	mm	80	125
h	mm	28	38
l	mm	23	26
suitable for colour code			

Top jaws, offset — piece

36 3041 – With grip serrations in a 3 mm step and a smooth clamping face.
36 3043 – Pre-impression of the serrated contour necessary.
With 3 mm grip step and smooth clamping face.
36 3045 – With smooth 3 mm grip step and smooth clamping face.

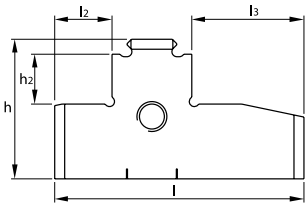
Application: To avoid clamping gaps. See clamping capacity overview.


36 3041_80


Clamping situation with 363041


36 3045_125

Type		50	80	125
310 36 3041	Standard top jaw, offset	eShop	eShop	eShop
310 36 3043	Top jaw, offset, LANG system	eShop	eShop	eShop
310 36 3045	Top jaw, offset, smooth	eShop	eShop	eShop
b	mm	50	80	125
h	mm	24	28	38
h_2	mm	8	10	15
l	mm	40	50	66
l_2	mm	7	11.5	14.5
l_3	mm	14.5	22.5	28.5
suitable for colour code				



Replacement spindles for the centring vice basic device

Suitable for: XTRIC No. 363000
Supplied with: Spindle bearing, spindle.


36 3084

Type		50XS	50S	80XS	80S	80SM (NEW)	80M	125XS	125S	125M	125L (NEW)	125XL (NEW)
310 36 3084	Spare spindle for XTRIC	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
suitable for colour code												

Colour code: Xtric 80 Xtric 125 Xtric 80

Spindle cover

Note: The sets each comprise variously sized modules and have been tailored to match the length of the respective vice size.



Application example



36 3083 80XS

Type		50XS	50S	80XS	80S	80M	125XS	125S	125M	125L	125XL
310 36 3083	Spindle cover set	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
suitable for colour code											
Content: Number of 3 mm modules		8	8	–	–	–	–	–	–	–	–
Number of 5 mm modules		8	8	6	8	12	–	–	–	–	–
Number of 8 mm modules		–	–	6	8	12	–	–	–	–	–
Number of 6 mm modules		–	–	–	–	–	6	8	12	16	20
Number of 10 mm modules		–	–	–	–	–	6	8	12	16	20

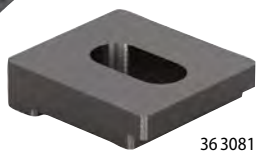
Clamping claw

Suitable for:

36 1165 – Xtric 125
36 3081 – Xtric 50 and 80, No. 359400 1 and No. 363300.



36 1165

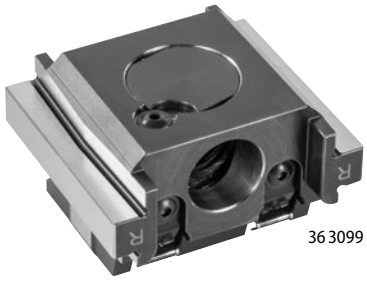


36 3081

Type	310 36 1165 Clamping claw	310 36 3081 Clamping claw	B mm	H mm	L mm	suitable for colour code
CS0	eShop	–	50	16	56	
CS1	eShop	–	50	20	56	
80	–	eShop	40	12	45	

Spindle nuts

36 3097 – For converting a pivoted Xtric into a rigid Xtric.
36 3098 – When using a centre jaw in order that the left-hand side is pivoted.
36 3099 – For converting a rigid Xtric into a pivoted Xtric.

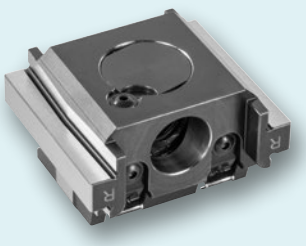


36 3099

Type		50	80	125
310 36 3097	Rigid right-hand spindle nut	eShop	eShop	eShop
310 36 3098	Spindle nut with left-hand pivot function	–	eShop	eShop
310 36 3099	Spindle nut with right-hand pivot function	eShop	eShop	eShop
suitable for colour code				

Garant Rigid left spindle nut

The rigid left spindle nut for our **GARANT Xtric No. 36 3000** is available on request, as the spindle nuts are matched to our basic unit.



Colour code: Xtric 80 | Xtric 80 | Xtric 125 | Xpent0 | Xpent1-2

Garant Automation extension bases

36 3185 – Operation via roller bearing eccentric lever and 2-stage clamping wedge. Quick and easy change by moving an eccentric lever.

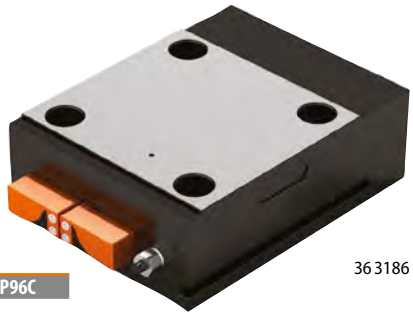
36 3186 – Manual or automatic clamping and releasing can be performed. Clamping by spring pressure – can be released with compressed air (6 bar).

Suitable for: Centring vice No. 363000, 363300 and height extension base No. 363188.

Application: For all vices and pallets with pitch 52 mm or 96 mm.



36 3185



36 3186

Type		XM52C	XM96C	XP52C	XP96C
310 36 3185	Automation extension base **mechanical**	eShop	(eShop)	–	–
310 36 3186	Automation extension base **pneumatic**	–	–	eShop	eShop
Length	mm	197.5	197.5	176	176
Width	mm	134			
Height	mm	47	47	60	60
Connection thread	in	–	–	1/4	1/4

Clamping studs for pitch 52 and 96

Suitable for: Centring vice No. 363000, 363300, automation extension base No. 363185 and No. 363186.

Note: Compatible with all brands of clamping device with pitch 52 mm and 96 mm.



for pitch	mm	52	96
310 36 3190	Clamping studs	eShop	eShop
∅ D	mm	12n6	16n6
Thread M		M8	M10

Adapter plates for centring vice for zero-point clamping systems

Adapter plate with recessed handles for pitch 200 mm

For fastening any clamping devices with pitch 52 mm and 96 mm, for adapting to zero point clamping systems. Supplied with 2 ZeroClamp holes 18M12, 200 mm pitch. Anodised aluminium.

Size 325/3 – 2 x 96 mm grid for holding two centring clamps with a pitch of 96 mm or 3 x 52 mm grid for holding three centring clamps with a pitch of 52 mm. In addition to the two ZeroClamp 200-mm pitch holes in the bottom, there are two further 141.42-mm pitch holes.

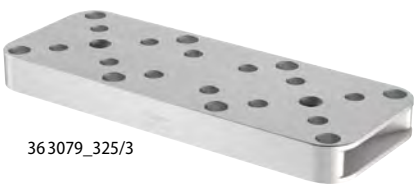
Suitable for: Centring vice No. 363000, 363300 and height extension base 363090.

Supplied with: Centring bushings and fastening screws for Xtric size 50/80 and 125, caps for locator holes in Xtric size 125 when using Xtric size 50 or 80.





36 3079_325



36 3079_325/3

Length	mm	325	325/3
310 36 3079	Garant Adapter plate	eShop	eShop
Width	mm	125	
Height	mm	30	

Adapter plate for indexed clamping pots

Application: For adapting a centric clamping device to indexed clamping pots.

Note: For securing all clamping devices with pitch 52 mm and 96 mm, for adapting to an indexed clamping pot. Not suitable for Xtric No. 363000 125L and XL!



Underside Xtric



36 3080_125/120

ZS type / for clamping pot ∅	mm	80/120	80/138	125/120	125/138
310 36 3080 Garant Adapter plate for centring vice		eShop	eShop	eShop	eShop
Mounting hole		18M12			
suitable for colour code					

Adapter plate for Erowa ITS148

Stainless steel. Centring integrated in the plate. Includes screws, centring sleeves and blanking plugs.
Chucking spigot F/M Production ER-010742 included.

Application: Can be used on all EROWA PowerChuck P and ProductionChuck 210 Combi.
For attaching clamping devices/centring vices with 52 mm pitch.
For adapting the centring vices 363000 size 50/80 and 363300 size 75 to the Erowa zero point clamping system ITS148P.



36 3085

Type	148P
30N 36 3085 EROWA ITS148P adapter plate	eShop
suitable for colour code	

Height extension bases for centring vice with pitch 52/96 mm

Application: For raising the centring vices No. 363000 and 363300 on 5-axis machines. The base element is **always** the adapter plate No. 363079, onto which the height extension base with centring vice is mounted.

Supplied with: Centring bushings, 4 short fastening screws for mounting the centring vices on one height extension base and 4 long fastening screws for mounting the centring vices on two height extension bases.

Note: Two height extension bases can be used on top of each other so that the height can be increased by 100 mm!

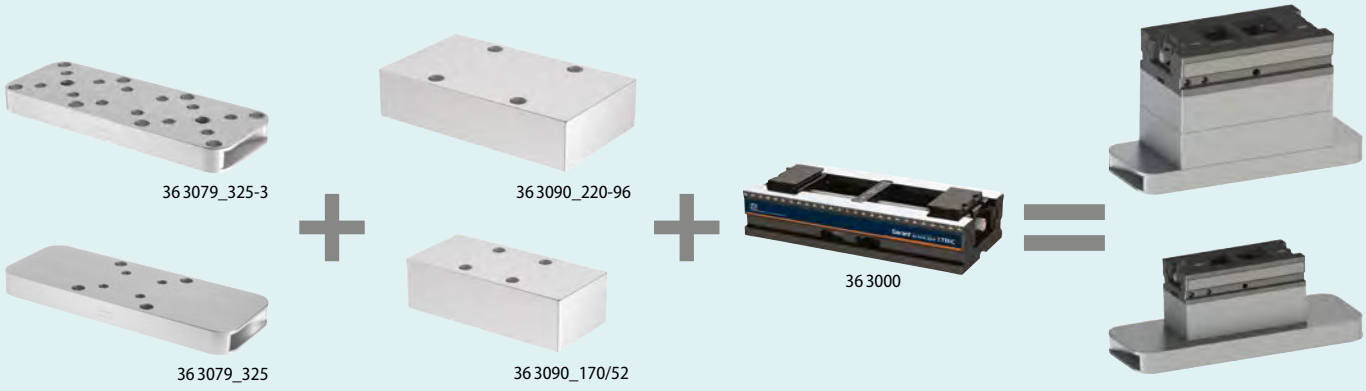


36 3090_170/52

Length/pitch		170/52	220/96
310 36 3090 Garant Height extension base for centring vice		eShop	eShop
Width	mm	80	125
Height	mm	50	
suitable for colour code			

Garant Modular height extension base system

For pitch 52 or 96 mm.



Colour code: Xtric 50 | Xtric 80 | HOLEX ZS 75 | Xtric 125 | HOLEX ZS 120

HOLEX Centring vice

- Very good accessibility and perfectly symmetrical.
- Fully plasma-nitrided and precision milled on the underside.
- Clamps raw materials and finished parts with the least possible backstroke of the jaws / component.
- The clamping range can be changed by reversing the jaws.

Size 75; 120 –
- With interface for automated applications.
- Including holes for LANG positioning system, **can be adapted to GARANT ZeroClamp and Erowa ITS148 (only No. 363300 75) via intermediate plate.**

Suitable for: Top jaws No. 363310 – 363324.

Application: Perfect for 5-face machining. Centred clamping.

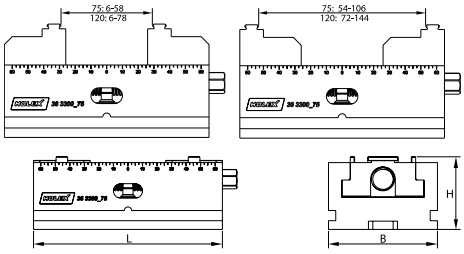
Supplied with: Base body, spindle, spindle nuts.

Optional extras: Torque wrench No. 656050, socket No. 642229 12 (for size 75), No. 642229 13 (for size 120) clamping claws No. 363081 80 and 361165 CS1, GARANT clamping stud No. 363190, adapter plates No. 363079, 363080, 363085 height extension base No. 363090 (in combination with No. 363079) assembly station No. 358595 52/96.

Note:
Size 75; 120 – Suitable top jaws No. 363310 – 363324 are not included in the scope of supply. Clamping situation S2 arises by reversing the jaws.



36 3300

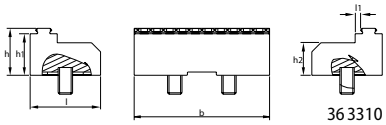


Width	mm	75	120	
30N 36 3300	Centring vice	eShop	eShop	5
Weight	kg	2.8	9.5	
L	mm	130	180	
B	mm	75	125	
H	mm	46	65	
Reference dimension	mm	52	96	
maximum tightening torque	Nm	75	100	
maximum clamping force	kN	22	28	
Colour code				



Top jaws for centring vices — piece

36 3310 – Combination jaw with grip serrations and a smooth clamping face.
36 3312 – Jaws with a smooth step.
36 3314 – Pre-impression of the serrated contour necessary due to LANG system gripper teeth.
36 3324 – Soft jaws for realising customised contours and for machining sensitive components.



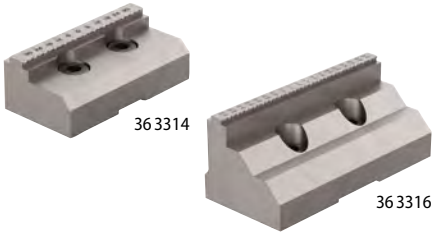
36 3310



36 3310

36 3312

Jaw width b		mm	75	120	
30N 36 3310	Standard top jaw		eShop	eShop	10
30N 36 3312	Top jaw, smooth		eShop	eShop	10
30N 36 3314	Top jaw system, LANG		eShop	eShop	10
30N 36 3316			eShop	eShop	10
h (36 3310, 36 3312, 36 3314)		mm	26	33	
h (36 3316)		mm	40	49	
h_1 (36 3310, 36 3312, 36 3314)		mm	23	30	
h_1 (36 3316)		mm	37	46	
h_2		mm	18	25	
l		mm	39	54	
l_1		mm	3		
Weight		kg	0.4	1.3	
suitable for colour code					



36 3314

36 3316

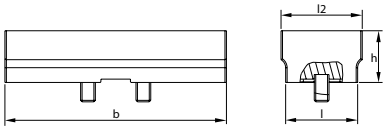
Jaw width b			120A	120S	160A	160S	
30N 36 3324	Top jaw soft		eShop	eShop	eShop	eShop	10
h		mm	28	28	35	35	
l		mm	39	39	54	54	
l_2		mm	44	44	60	60	
Weight		kg	0.4	1.1	0.9	2.4	
Material			Aluminium	Steel	Aluminium	Steel	
suitable for colour code							



36 3324_120A



36 3324_120S



Colour code: HOLEX ZS 75 HOLEX ZS 120

HOLEX Automation centring vice

- Very good accessibility and perfectly symmetrical.
- Fully plasma-nitrided and precision milled on the underside.
- Clamps raw materials and finished parts with the least possible backstroke of the jaws / component.
- The clamping range can be changed by reversing the jaws.
  - Size 120A – **Supplied with GARANT ZeroClamp adaptation with 80 mm pitch.**
  - Size 120A – Includes 4 ZeroClamp clamping studs.

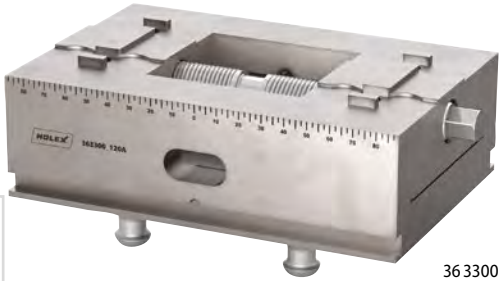
Suitable for: Top jaws No. 363310 – 363324.

Application: Perfect for 5-face machining. Centred clamping.

Supplied with: Base body, spindle, spindle nuts and four clamping studs suitable for automation extension base No. 360164 XP80Z.

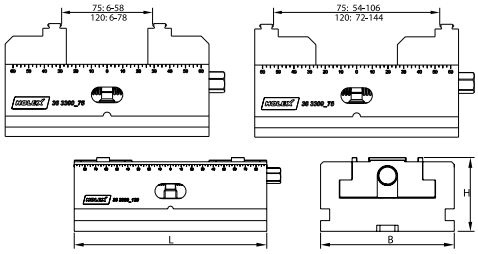
Optional extras: Torque wrench No. 656050, hexagon socket No. 642229 13, assembly station No. 358595 80.

Note: Suitable for the GARANT Turntable automation system in combination with / for automation extension base No. 360164 XP80Z. Suitable top jaws No. 363310 – 363324 are not included in the scope of supply. Clamping situation S2 arises by reversing the jaws.



36 3300

Width	mm	120A
3ON 36 3300	Centring vice	eShop
Weight	kg	7.6
L	mm	180
B	mm	120
H	mm	59
Reference dimension	mm	80
maximum tightening torque	Nm	100
maximum clamping force	kN	28
Colour code		

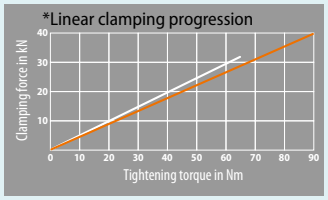


Colour code: HOLEX ZS 120

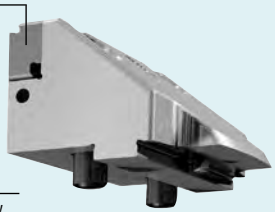
Garant The Xpent family – a unique programme in perfection

Top jaws with optimised contour design
- Coating for process reliability in machining.
- Hardened and ground.
- Very good repetition accuracy < 0.01 mm.





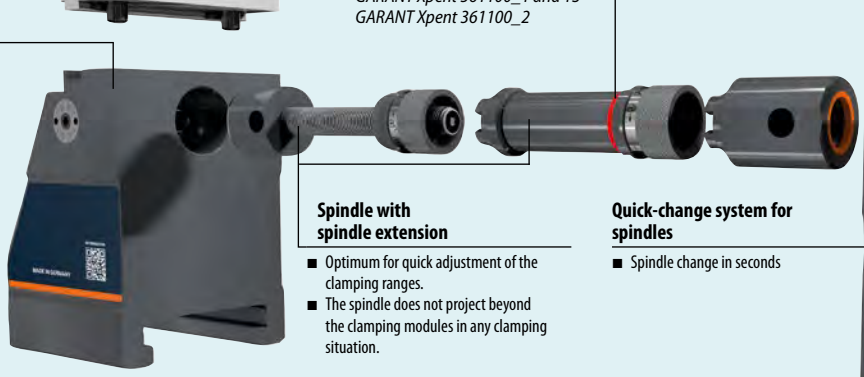
Front jaws
- Large variety
- 2 clamping steps on each jaw



Red security ring

For visual detection of incorrect assembly.

Clamping modules
- Lower risk of collisions due to reduced interference contours.
- Symmetrical
- Convex shape
- Both clamping modules can be moved



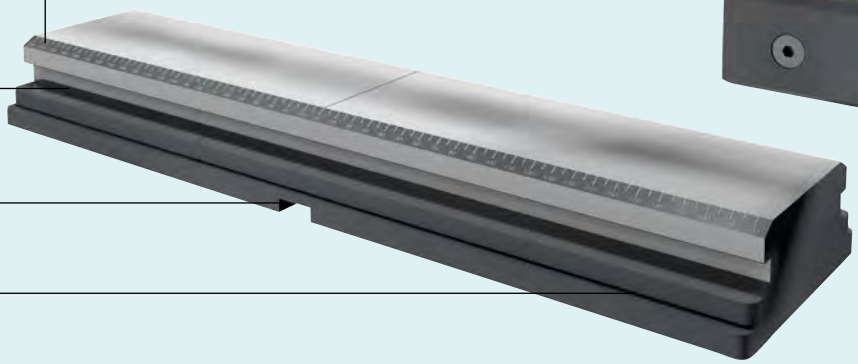
Spindle with spindle extension
- Optimum for quick adjustment of the clamping ranges.
- The spindle does not project beyond the clamping modules in any clamping situation.

Quick-change system for spindles
- Spindle change in seconds



Scaling
- For pre-positioning the clamping modules.

High precision guide
- The clamping modules do not tilt when moved.



Transverse slots
- For aligning to the machine table.

Clamping lip
- For steplessly adjustable clamps.

Garant The Xpent – Master in the ecosystem



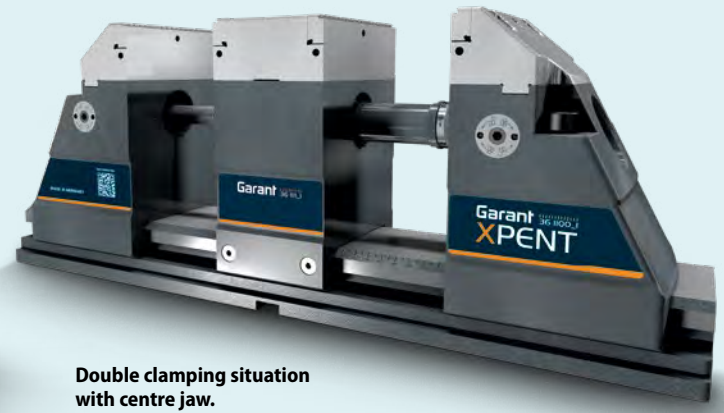
Standard clamping situation.



Clamping precise to the µ when pulled down (finished part machining).



Maximum clamping range due to reversed clamping modules.



Double clamping situation with centre jaw.









Clamping range overview Xpent sizes 1, 1S and 2

Base rail No. 36 1115		Size 450		Size 550		Size 650		Size 850		Size 1050	
		Standard	Reversed	Standard	Reversed	Standard	Reversed	Standard	Reversed	Standard	Reversed
Spindle	mm	6 – 108		6 – 108		6 – 108		6 – 108		6 – 108	
+ extension No. 36 1120											
Size 100	mm	104 – 208	186 – 290	104 – 208	186 – 290	104 – 208	186 – 290	104 – 208	186 – 290	104 – 208	186 – 290
Size 200	mm	–	286 – 386	204 – 308	286 – 390	204 – 308	286 – 390	204 – 308	286 – 390	204 – 308	286 – 390
Size 100 and 200	mm	–	–	–	386 – 486	304 – 408	386 – 490	304 – 408	386 – 490	304 – 408	386 – 490
Size 400	mm	–	–	–	–	–	486 – 586	404 – 508	486 – 590	404 – 508	486 – 590
Size 100 and 400	mm	–	–	–	–	–	–	504 – 608	586 – 690	504 – 608	586 – 690
Sizes 200 and 400	mm	–	–	–	–	–	–	–	686 – 786	604 – 708	686 – 790
Size 100; 200 and 400	mm	–	–	–	–	–	–	–	–	704 – 808	786 – 890
Sizes 400 and 400	mm	–	–	–	–	–	–	–	–	–	886 – 986

Clamping range overview Xpent size 0

Base rail No. 361115		Size 360		Size 440		Size 520	
		Standard	Reversed	Standard	Reversed	Standard	Reversed
Spindle	mm	6 – 88	–	6 – 88	–	6 – 88	–
+ extension No. 36 1120							
Size 80	mm	84 – 168	159 – 243	84 – 168	159 – 243	84 – 168	159 – 243
Size 160	mm	–	239 – 301	164 – 248	239 – 323	164 – 248	239 – 323
Size 80 and 160	mm	–	–	–	319 – 381	244 – 328	319 – 381
Size 160 and 160	mm	–	–	–	–	–	399 – 461

Garant XPENT 5-axis vice sets

- Very good accessibility and perfectly symmetrical.
- Flexible modular clamping system.
- All functional faces hardened and ground.
- Clamping force up to 40 kN at 90 Nm torque.
- Both clamping modules can be positioned individually on the base rail.
- Variable clamping and adjustment range.
- Repetition accuracy < 0.01 mm.
- **Including holes 18M16 for zero point clamping system pitch 200mm.**

Application: Perfect for true 5-face machining.
In conjunction with various jaws it can be used for conventional, smooth-faced clamping and clamping of unfinished parts.

Supplied with: Base rail, spindle, spindle extension, crank / hexagon screwdriver (for type 1S), fixed clamping module, mobile clamping module.

Optional extras: Clamping modules No. 361105 – 361110, centre jaw No. 361111, base rails No. 361115, spindle No. 361119, spindle extensions No. 361120, stepless adjustable clamps No. 361165, torque wrench No. 656050 size 120, screwdriver bit No. 643329, workpiece back-stop No. 360094, top jaws No. 361123 – 361138.

Note: **Not supplied with matching top jaws No. 361123 – 361137 and front jaws No. 361140 – 361151. Clamping situation S4 requires a further spindle extension No. 361120. To ensure perfect tool lubrication, we recommend the use of multi-purpose grease No. 083592 PLUS.**

Welcome to the 5th dimension!
For further information see:
https://hog.tools/x-team



_0

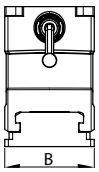


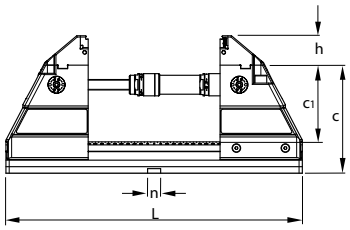
_1



Large capacity range S1–S4 with the same Xpent + the respective accessories programme.

Type		0	1S	1	2
310 36 1100	5-axis vice **Xpent**	eShop	eShop	eShop	eShop
S1	mm	6 – 88	6 – 108	6 – 108	6 – 108
S2	mm	84 – 168	104 – 208	104 – 208	104 – 208
S3	mm	159 – 243	186 – 290	186 – 290	186 – 290
S4	mm	239 – 301	286 – 386	286 – 386	286 – 386
L	mm	362	454	454	454
c	mm	125	125.5	165.5	195.5
c_1	mm	85	77.5	117.5	147.5
B	mm	100	125	125	125
n H7	mm	20			
h	mm	40	45	45	45
Clamping force up to maximum	kN	32	40	40	40
maximum torque	Nm	65	90	90	90
Weight	kg	19	34	36	41
Width across flats	mm	5; 8	5; 10	5; 10	5; 10
Spindle extension size		80	100	100	100
Colour code for suitable accessories					





Garant XPENT modular system – individually configure your 5-axis vice.

The 5-axis vice has a modular design. The key components are the clamping modules No. 361105 – 361110, base rails No. 361115, spindle No. 361119, spindle extensions No. 361120 and the top jaws No. 361123 – 361137.

Clamping modules — piece

All functional faces hardened and ground.

Suitable for: Base rails No. 361115, spindle No. 361119 and top jaws No. 361123 – 361138.

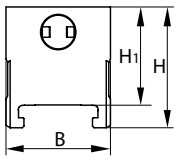
Note: You will need a 5 AF screwdriver bit for spindle locking.
36 1105 – You will need a hexagon screwdriver bit (type 0 = 8 AF, type 1, 1S+2 = 10 AF) for the attachment screws.

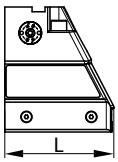

36 1110_1



36 1105_1

for type		0	1S	1	2
310 36 1105	Fixed clamping module	eShop	eShop	eShop	eShop
310 36 1110	Mobile clamping module	eShop	eShop	eShop	eShop
L	mm	100	126	126	126
B	mm	100	125	125	125
H	mm	108	104.5	144.5	174.5
H_1	mm	85	77.5	117.5	147.5
Weight	kg	4.5	8	9	11
suitable for colour code					



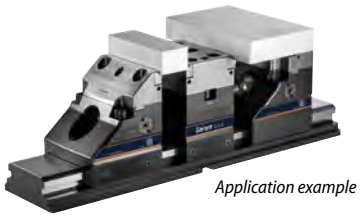


Colour code: Xpent0 Xpent1-2

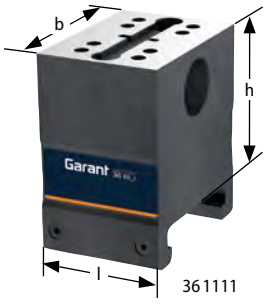
Centre jaw — piece

Application: For multiple clamping. Components of different lengths can also be clamped.

For a detailed overview of capacities, see the current X-Team supplementary brochure.


Application example





for type		0	1S	1	2
310 36 1111	Centre jaw	eShop	eShop	eShop	eShop
b	mm	100	125	125	125
h	mm	85	77.5	117.5	147.5
l	mm	80	90	90	90
suitable for colour code		■	■	■	■

Base rails — piece

Fully hardened and ground. Laser engraved scale for prepositioning the clamping claws. Side groove for steplessly adjustable clamps and transverse slots for alignment on the machine table.

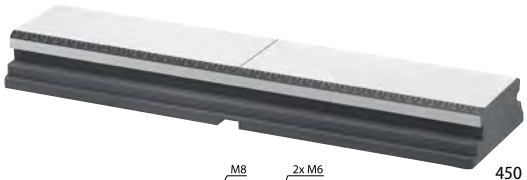
Size 450; 550 – GARANT ZeroClamp bores drilled as standard. Pitch 200 mm.

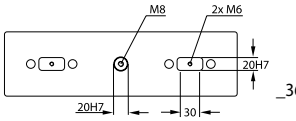
Suitable for: Clamping modules No. 361105 – 361110.

Size 360H – Round table ∅ 320 mm. Attachment via stepless adjustable clamps and T-slot.

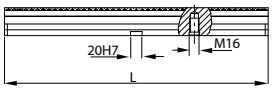
Optional extras: Clamping claws No. 361165, adapter plate for GARANT ZeroClamp No. 361170, clamping studs No. 360025 size 18M16 and size 18M16/138.

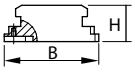
Note: GARANT ZeroClamp holes available on request from size 650.
See No. 375365 for suitable T-nuts.


_450



_360H





Type		360	360H	440	520	450	550	650	850	1050
310 36 1115	Base rail	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	362	362	442	522	454	554	654	854	1054
B	mm	100	100	100	100	125	125	125	125	125
H	mm	40	40	40	40	48	48	48	48	48
Weight	kg	8.5	8.5	10.5	12.5	17	21	25	32	40
Number of ZC holes		2	–	5	3	5	3	on request	on request	on request
suitable for colour code		■	■	■	■	■	■	■	■	■

Spindles — piece

Trapezoidal spindle for optimal force transfer.

Suitable for: Clamping modules No. 361105 – 361110.

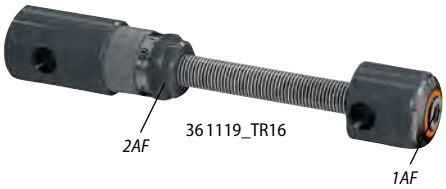
Application: TR14 and TR16 **for external clamping**, TR14I and TR16I **for internal clamping**.

Optional extras: Spindle extensions No. 361120, torque wrench No. 656050 120.

Size TR14 – Hexagon screwdriver bit No. 643329 8.

Size TR16 – Hexagon screwdriver bit No. 643329 10.

Note: Spare parts for spindles No. 361176, 361177 and 361178.



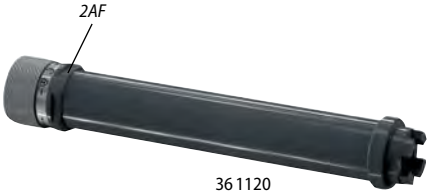
36 1119_TR16


36 1119_TR14I

Type		TR14	TR14I	TR16	TR16I
310 36 1119	Spindle	eShop	eShop	eShop	eShop
∅ D	mm	34	34	40	40
AF_1		8	10	10	13
AF_2		27	27	30	30
L	mm	201.1	201.1	229.6	229.6
suitable for colour code		■	■	■	■

Spindle extensions — piece

Suitable for: Spindle No. 361119.



36 1120

Type		40	80	160	50	100	200	400
310 36 1120	Spindle extension	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ D	mm	30	30	30	34	34	34	34
AF_2		27	27	27	30	30	30	30
L	mm	50.4	90.4	170.4	61.9	111.9	211.9	411.9
suitable for colour code		■	■	■	■	■	■	■

Colour code: ■ Xpent0 ■ Xpent1-2

Garant Top jaws

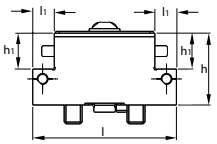
Top jaws for the centre jaw — piece

Suitable for: No. 361111.
Application:
Size 100; 125 – For mounting front jaws No. 361140 – 361151.
Size 100G – For fitting the Gripp inserts No. 361160 7; 361238 – 361250.
Size 125G – For mounting gripp inserts No. 361160.
Supplied with: Fastening screws. Including cover plate.

for type	310 36 1135 Top jaw for centre jaw	b mm	h mm	h_1 mm	l mm	l_1 mm	suitable for colour code
100	eShop	100	40	20	80	12	
125	eShop	125	45	20	90	12	
100G	eShop	100	40	–	80	–	
125G	eShop	125	45	–	90	–	


36 1135_125


36 1135_100G

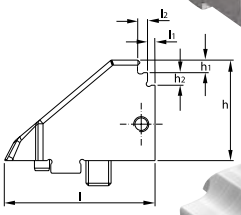


Top jaws Gripp single-piece 5 mm — piece

Clamping step with a height of 5 mm and 3 mm contact area.
Suitable for: 5-axis vice set No. 361100 and clamping module No. 361105 – 361110.
Application: Ideal for rough machining.
Supplied with: Fastening screws.
Note: Type GS with gripp step and smooth clamping step

for type	310 36 1123 Top jaw Gripp, single piece	b mm	h mm	h_1 mm	h_2 mm	l mm	l_1 mm	l_2 mm	suitable for colour code
100GS	eShop	100	40	5	5	60	3	3	
100/32	eShop	100	40	3	3	60	3	3	
125GS	eShop	125	45	5	5	68.5	3	3	
125/32	eShop	125	45	3	3	68.5	3	3	


36 1123_100GS

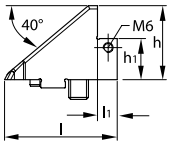



36 1123_100/32

Top jaws — piece

Coated, hardened and ground.
Size 63C; 80C; 100C – Comfort version, width-reduced variant.
Suitable for: 5-axis vice set No. 361100 and clamping module No. 361105 – 361110.
Application: For mounting front jaws No. 361140 – 361149.
Supplied with: Fastening screws.

For type	310 36 1124	310 36 1125 Standard top jaw	b mm	h 36 1124 mm	h 36 1125 mm	h_1 36 1124 mm	h_1 36 1125 mm	l 36 1124 mm	l 36 1125 mm	l_1 mm	suitable for colour code 36 1124	suitable for colour code 36 1125
63C	eShop	–	63	40	–	20	–	60	–	12		–
80C	eShop	eShop	80	40	45	20	25	60	68.5	12		
125	–	eShop	125	–	45	–	25	–	68.5	12	–	
100	eShop	–	100	40	–	20	–	60	–	12		–
100C	–	eShop	100	–	45	–	25	–	68.5	12	–	




36 1125_80C

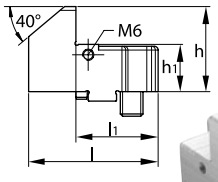

36 1125_125

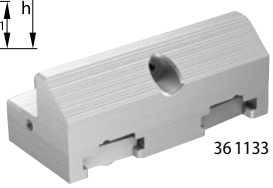
Top jaws for reversed clamping modules — piece

Coated, hardened and ground.
Suitable for: 5-axis vice set No. 361100 and clamping module No. 361105 – 361110.
Application: For mounting front jaws No. 361140 – 361150.
Supplied with: Fastening screws.
Note:
36 1126 – Essential for clamping modules which have been reversed 180°.
36 1133 – Mounting recommendation on a **fixed clamping module**. Matching counter jaw No. 361126.

for type	310 36 1126	310 36 1133 Top jaw for reversed clamping modules	b mm	h mm	h_1 mm	l mm	l_1 36 1126 mm	Swing angle 36 1133 degrees	suitable for colour code
	rigid	Pivoted							
100	eShop	eShop	100	40	20	60	43.5	15	
125	eShop	eShop	125	45	25	68.5	43.5	15	


36 1126



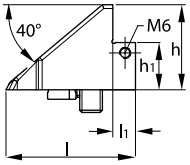

36 1133

Top jaws — piece

Coated, hardened and ground.
Suitable for: 5-axis vice set No. 361100 and clamping module No. 361105 – 361110.
Application: For mounting front jaws No. 361140 – 361149.
Supplied with: Fastening screws.
Note: Mounting recommendation on **fixed clamping module.**
Matching counter jaw No. 361125.

for type	310 36 1127 Top jaw pivoting	b mm	h mm	h_1 mm	l mm	l_1 mm	Swing angle degrees	suitable for colour code
100	eShop	100	40	20	60	12	15	
125	eShop	125	45	25	68.5	12	15	


36 1127



Colour code: Xpent0 Xpent1-2

Gripp top jaws — piece

Suitable for: 5-axis vice set No. 361100 and clamping module No. 361105 – 361110.

Application:

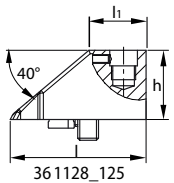
Size 100; 125; 160 – For mounting grip inserts No. 361160 7 and 361238 – 361250.
For compensation of non-parallel clamping faces. Gripp inserts can be screwed into a variety of hole patterns, for secure clamping of various geometries.

Size 100SG; 125SG – To take Gripp inserts No. 361163. Number of inserts size 100 = 5 and size 125 = 6.
Suitable screws No. 361164 and Gripp inserts must be ordered separately.

Supplied with: Fastening screws.

Note:
36 1129 – Mounting recommendation on **fixed clamping module.**
Matching counter jaw No. 361128.


36 1128_160



36 1128_125


36 1129_160

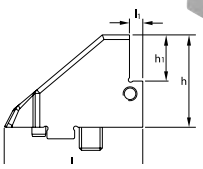

36 1128_125


36 1129_125


36 1128_100SG


36 1128_125SG

for type	310 36 1128	310 36 1129	b	h	h_1	l	l_1	Swing angle 36 1129	suitable for colour code
	Gripp top jaw								
	rigid	pivoting	mm	mm	mm	mm	mm	degrees	
100	eShop	eShop	100	35	35	70	33	30	
100SG	eShop	–	100	40	20	60	5.75	–	
125	eShop	eShop	125	40	40	78.5	40	30	
125SG	eShop	–	125	45	20	68.5	5.75	–	
160	eShop	eShop	160	40	40	78.5	40	30	



36 1128_100SG

Gripp inserts for SG top jaws

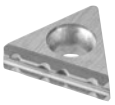
Suitable for: 5-axis vice set No. 361100 and clamping module No. 361105 – 361110.
Gripp top jaws No. 361128 100SG and No. 361128 125SG.

Application: For clamping workpieces that require high stability.

Optional extras: Replacement screw No. 361164.

Note: For milling cutters for the clamping seats see the spare parts list.
Size PI – Protective insert for an insert seat.






Type		S	HS	A	PI
335 36 1163	Gripp inserts set, pack of 10	eShop	eShop	eShop	eShop
Suitable for: Material		Steel up to 980N/mm²	hardened steel HRC 50-54	Aluminium	-

Soft top jaws — piece

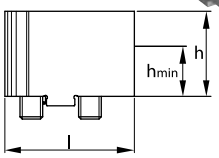
Suitable for: 5-axis vice set No. 361100 and clamping module No. 361105 – 361110.

Application: For realising customised contours and for machining sensitive components.

Supplied with: Fastening screws.


36 1130

for type	310 36 1130	b	h	h_{min}	l	suitable for colour code
	Soft top jaw	mm	mm	mm	mm	
100	eShop	100	40	25.5	60	
80	eShop	80	45	26.5	68.5	
125	eShop	125	45	26.5	68.5	



Top jaws for parallels, 2.5 mm — piece

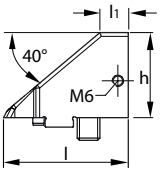
Suitable for: 5-axis vice set No. 361100 and clamping module No. 361105 – 361110.

Application: Jaw is set back by 2.5 mm. Ideal in combination with parallels No. 366740.

Supplied with: Fastening screws.


36 1131

for type	310 36 1131	310 36 1134	b	h	l	l_1	suitable for colour code
	Top jaw for parallels						
		coated	mm	mm	mm	mm	
100	eShop	eShop	100	40	57.5	15	
125	eShop	eShop	125	45	66	15	



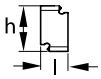
Further gripp inserts can be found on page 1196



Colour code: Xpent0 Xpent1-2

Garant Front jaws

Suitable for: Top jaws No. 361124 - 361127, No. 361133 and No. 361135.
Stepped jaws No 361295 - 361296.



Dual front jaws — piece

3 mm contact face.

36 1140 – 2 clamping steps with a height of 3 mm.
36 1141 – 2 clamping steps with a height of 5 mm.
36 1144 – 3 mm contact face.
36 1151 – Pre-impression of the serrated contour necessary.
36 1142–1144 – First clamping step with a height of 3 mm. Second clamping step with a height of 5 mm.

Advantage:
36 1140/1141/1142/1143/1144/1150/1151 –
Turning the jaw provides a second clamping step.

36 1140
36 1141
36 1142
36 1143
36 1144
36 1145
36 1150
36 1151

for type		63	100	80	125
310 36 1140	Gripp 3/3 front jaw	eShop	eShop	eShop	eShop
310 36 1141	Gripp 5/5 front jaw	–	eShop	–	eShop
310 36 1142	Gripp 3/5 front jaw	eShop	eShop	eShop	eShop
310 36 1143	Smooth front jaw 3/5	eShop	eShop	eShop	eShop
310 36 1144	Smooth front jaw 3/5 **coated**	eShop	eShop	eShop	eShop
310 36 1145	Combination front jaw gripp/smooth 3/3	eShop	eShop	eShop	eShop
310 36 1150	Gripp 3/5 front jaw **for soft materials**	eShop	eShop	eShop	eShop
310 36 1151	Gripp front jaw **LANG system**	eShop	eShop	eShop	eShop
b	mm	63	100	80	125
h	mm	20			
l	mm	12			
suitable for colour code		■	■ ■	■ ■	■

Soft front jaw — piece

Application: For realising customised contours and for machining sensitive components.

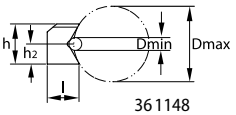
for type		63	100	80	125
310 36 1146	Soft 12/20 front jaw	eShop	eShop	eShop	eShop
310 36 1147	Soft 20/20 front jaw	eShop	eShop	eShop	eShop
b	mm	63	100	80	125
h	mm	20			
l (36 1146)	mm	12			
l (36 1147)	mm	20			
suitable for colour code		■	■ ■	■ ■	■

36 1146
36 1147

Vee front jaw — piece

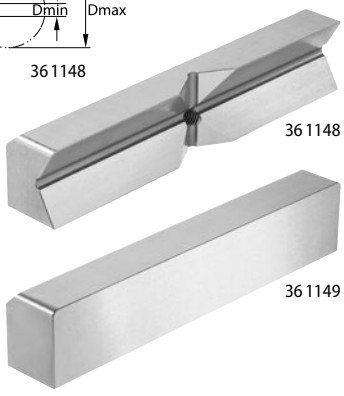
Suitable for:

36 1149 – Vee front jaw No. 361148.



36 1148

for type		63	100	80	125
310 36 1148	Vee front jaw	eShop	eShop	eShop	eShop
310 36 1149	Smooth front jaw for Vee jaw	eShop	eShop	eShop	eShop
b	mm	63	100	80	125
h	mm	25			
l (36 1148)	mm	19.8			
l (36 1149)	mm	20			
D_{min} (36 1148)	mm	8			
D_{max} (36 1148)	mm	47			
suitable for colour code		■	■ ■	■ ■	■



36 1148
36 1149

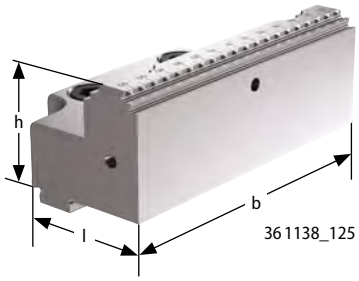
Colour code: ■ Xpent0 ■ Xpent1-2

Garant Universal top jaw

Clamping steps with a height of 3 mm and 3 mm contact area. With gripp step and smooth clamping step. Hardened and ground. Fastening screws.

Suitable for: Xpent No. 361100 size 1-2
Material: Hardened steel.
Application: To quickly extend the capacity of the Xpent No. 361100 size 1-2

Note: If this jaw is used, the clamping range can be extended by 108 mm without needing to rotate the pillars. When using a rotated Universal top jaw No. 361138, the fixed jaw of the Xpent No. 361100 can only be released using plug-in head No. 361139.



36 1138_125

for jaw width b		mm	125
310 36 1138	Universal top jaw for Xpent		eShop
h		mm	45
l		mm	68
suitable for colour code			


Application illustration

Plug-in head

Suitable for: To release the fixed jaw of the Xpent No. 361100 when using the rotated Universal top jaw No. 361138.

Note: Use torque wrench with plug-in shank 14×18 such as No. 656055 120.


36 1139

Type			10
310 36 1139	Open jaw plug-in head		eShop
Plug-in shank		mm	14×18
Length L		mm	59


Application illustration

Garant Overview of capacities for Universal top jaw 361138 125

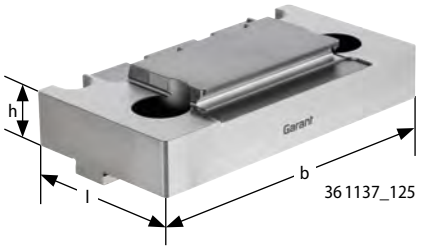
Base rail No. 36 1115		Size 450		Size 550		Size 650		Size 850		Size 1050	
		Standard	Jaw Reversed	Standard	Jaw Reversed	Standard	Jaw Reversed	Standard	Jaw Reversed	Standard	Jaw Reversed
Spindle	mm	6 – 108	114 – 216	6 – 108	114 – 216	6 – 108	114 – 216	6 – 108	114 – 216	6 – 108	114 – 216
+ extension No. 36 1120											
Size 100	mm	104 – 208	212 – 316	104 – 208	212 – 316	104 – 208	212 – 316	104 – 208	212 – 316	104 – 208	–
Size 200	mm	–	–	204 – 308	312 – 416	204 – 308	312 – 416	204 – 308	312 – 416	204 – 308	312 – 416
Size 100 and 200	mm	–	–	–	–	304 – 408	412 – 516	304 – 408	412 – 516	304 – 408	412 – 516
Size 400	mm	–	–	–	–	–	–	404 – 508	512 – 616	404 – 508	512 – 616
Size 100 and 400	mm	–	–	–	–	–	–	504 – 608	612 – 716	504 – 608	612 – 716
Sizes 200 and 400	mm	–	–	–	–	–	–	–	–	604 – 708	712 – 816
Size 100; 200 and 400	mm	–	–	–	–	–	–	–	–	704 – 808	812 – 916
Sizes 400 and 400	mm	–	–	–	–	–	–	–	–	–	–

Garant Quick-change adaptor plate for XPENT

Hardened and ground. Fastening screws.

Suitable for: XTRIC top jaws No. 363010 – 363045 in size 125.
Material: Hardened steel
Application: For use of **XTRIC top jaws size 125** on the XPENT size 1S, 1 and 2.

Note: Clamping width cannot be increased by rotating the clamping pillars in combination with the adaptor plate.
Important: Max. 72 Nm = 32 kN.



36 1137_125

for jaw width b		mm	125
310 36 1137	Quick-change adaptor plate for XPENT		eShop
h		mm	20.5
l		mm	66
suitable for colour code			


Application illustration

Colour code: Xpent1-2

Garant Pull-down system

Extremely accurate finishing of the sixth side in the 5-axis clamp due to pull-down on both sides.



How the pull-down works:
After the clamping force has been introduced, the workpiece is clamped in parallel onto the base rail via the shims using the movable wedge elements.
Physical riding up of the jaws is therefore corrected.

Garant Accessories

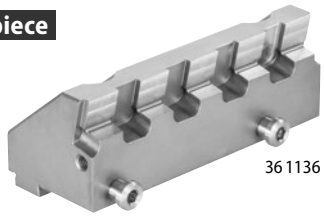
Top jaws for pull-down system — piece

Hardened and ground

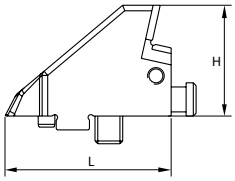
Application: Pull-down system in conjunction with shims No. 361161 and pull-down inserts No. 361162.
Optimum for machining the 6th face, because the workpiece is pulled down on to the base rail by the pull-down insert and shim.
Shims of 5, 10 and 15 mm available







36 1136



for type	310 36 1136 Pull-down top jaw	b mm	h mm	l mm	Number of slots for inserts	suitable for colour code
100	eShop	100	40	60	4	
125	eShop	125	45	68.5	5	

Shims for pull-down system — piece

Material: Steel, induction hardened and hard milled. Material thickness 5mm, with magnets on the rear face

Note: Shims are inserted into the pull-down jaw without being screwed into the front jaw screws.



36 1161



Type/shim height (W/H)		100/110	100/120	125/107,5	125/112,5	125/117,5
310 36 1161	Shim for pull-down system	eShop	eShop	eShop	eShop	eShop
Clamping height	mm	15	5	15	10	5
suitable for colour code						
Xpent size		0	0	1S	1S	1S

Type/shim height (W/H)		125/147,5	125/152,5	125/157,5	125/177,5	125/182,5	125/187,5
310 36 1161	Shim for pull-down system	eShop	eShop	eShop	eShop	eShop	eShop
Clamping height	mm	15	10	5	15	10	5
suitable for colour code							
Xpent size		1	1	1	2	2	2

Pull-down insert — piece

Size 1 – **Hardened and coated.**
Size 0; 2 – **Hardened.**

Suitable for: Pull-down top jaw No. 361136.

Note: Pull-down inserts are held on to the pull-down jaws 361136 by magnets.



36 1162_1



36 1162 _0



36 1162_2

Type		0	1	2
310 36 1162	Pull-down insert	eShop	eShop	eShop
Version		smooth, uncoated	smooth, coated	gripp

Colour code: Xpent0 Xpent1-2

Closure stud and sealing cap

Suitable for:

36 1174 – Sealing pin for top jaws (10 pieces) and Tee-bolts No. 361135, 361126, 361133, 361130.

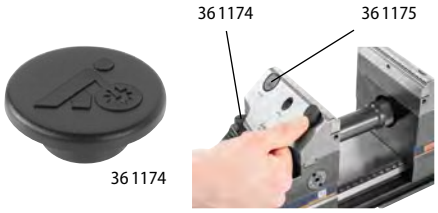
36 1175 – Sealing cap for top jaws (4 pieces) No. 361123-361125, 361127-361129, 361131, 361134, 361136; 361138.

Material: Plastic

Application: To protect the screws and screw heads against chips and cooling lubricants, and provide increased worker protection when cleaning.

Note:

36 1174 – Can also be used for screw head with 8 AF and 10 AF for GARANT and Allmatic standard jaws.



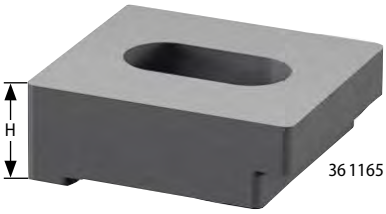


36 1175

AF		8	10
310 36 1174	Closure stud set, pack of 10	eShop	eShop
310 36 1175	Sealing cap, pack of 4	eShop	eShop
suitable for colour code			

Clamping claw — piece

Suitable for: Xtric 125



Type		CS0	CS1
310 36 1165	Clamping claw	eShop	eShop
B	mm	50	
H	mm	16	20
L	mm	56	
suitable for colour code			

Spare crank — piece

Suitable for: 5-axis vice set No. 361100 and spindle No. 361119.

Note: For Xpent type 1S, please use No. 627451.



Type		8	10
310 36 1168	Crank	eShop	eShop
AF		8	10
L	mm	172	
suitable for colour code			

Adapter plate — piece

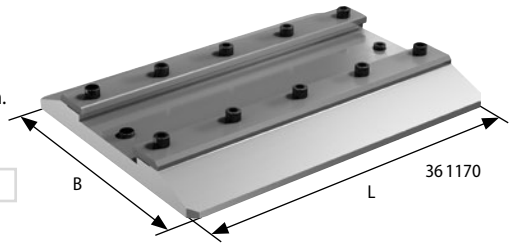
Suitable for: 5-axis vice set No. 361100 and base rails No. 361115.

Application: For optimally fastening the 5-axis vice to a zero point clamping system with pitch 200 mm.

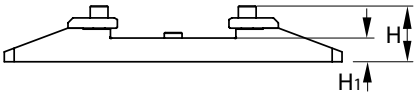
Supplied with: Includes clamping strip with socket-head screws

Optional extras: Clamping stud No. 360025 size 18M16 and size 18M16/138.

Note: Further sizes available on request.



for type	310 36 1170 Adapter plate	L mm	B mm	H mm	Height H_1 mm	Weight kg	Number of ZC holes	suitable for colour code
360	(eShop)	362	342	54.4	26	28	4	
440	(eShop)	442	342	54.4	26	34	10	
450	(eShop)	454	342	56.4	24	34.5	10	
550	(eShop)	554	342	56.4	24	42.5	6	



Colour code: Xpent0 Xpent1-2 Xtric 125

TeleCentric 5-axis centring vice

- Optimum for use on 5-axis machining centres.
- Conventional clamping and gripper clamping can be performed.
- Telescopic spindles and obstructive contours remain unchanged.
- Simple centre-reference programming with no displacement of the zero point.
- Accessibility of the workpiece irrespective of the clamping span.
- Symmetrical design = workpiece remains central and parallel - the dimensions of the material are distributed symmetrically.
- Thanks to the quick-release fastening, pairs of jaws can be changed within 10 seconds.
- Constant clamping force thanks to the low-maintenance telescopic spindle.
- Supplied as standard with 25H6 M10 mounting holes for zero-point clamping system with 200 mm pitch.
- Integral scaled ring for fine adjustment of the centre position.
- Clamping force 30 kN at 45 Nm linear.

Supplied with: Hand crank, Quick Start Guide.

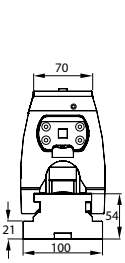
Optional extras: Torque wrench No. 656050 size 120, hexagon screwdriver bit No. 643330 size 14, top jaws No. 361258 – 361264, clamp No. 360750 size 125/160, alignment and fixing set No. 360530, clamping stud No. 360025 size 25M10 or 25M10/138.

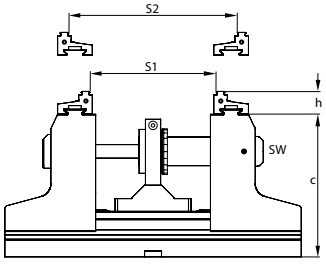
Size 125 – Top jaws No. 361258 125 and 361260 125, additional optional accessories on request.

Size 100; 70 – Top jaws No. 361258– 361260, clamps No. 360750 size 125/160, alignment and fixing set No. 360530, clamping stud No. 360025 size 25M10 or 25M/138.



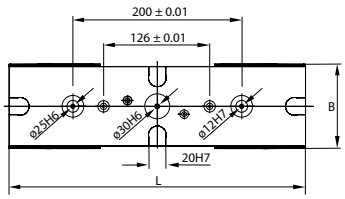
36 1255





NEW

Type		125	100	70
34A 36 1255	5-axis vice **TeleCentric**	(eShop)	(eShop)	(eShop)
S1	mm	44 – 165	12 – 166	9 – 85
S2	mm	106 – 227	62 – 199	66 – 135
L	mm	398	351	286
c	mm	178.9	168.9	168.9
B	mm	125	94	94
n H7	mm		20	
h	mm		27.1	
Clamping force up to maximum	kN	40	30	30
maximum torque	Nm	60	45	45
Weight	kg	35	24.5	17.5
Width across flats	mm		14	
Colour code for suitable accessories		–		



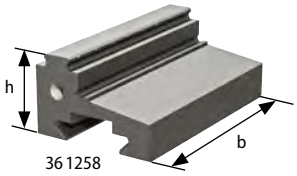
Top jaws

36 1258 – 3 mm contact surface, 4 mm clamping height.

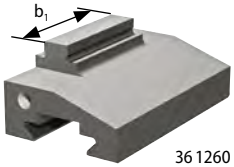
36 1260 – 3.5 mm contact surface, 5 mm clamping height.

Suitable for: TeleCentric 5-axis vice No. 361255

36 1258 Size 125 – No. 361255 125.



36 1258



36 1260

Type	34A 36 1258	34A 36 1260	b	b_1	h_1	suitable for colour code
	Top jaw					
	gripp	**smooth**	mm	mm	mm	
38	eShop	(eShop)	70	38	27.1	
70	eShop	(eShop)	70	70	27.1	
100	(eShop)	(eShop)	70	100	27.1	
125	(eShop)	(eShop)	125	125	27.1	–

Colour code: TeleCentric

TeleSense 5-axis vice

- Optimum for use on 5-axis machining centres.
- Constant clamping force thanks to the low-maintenance telescopic spindle. Interference contours remain unchanged.
- Jaws can be changed without using tools thanks to quick release fastener.
- Supplied as standard with 25H6 M10 mounting holes for zero-point clamping system with 200 mm reference module.
- Clamping force 40 kN at 50 Nm linear.
- Maximum flexibility: **Universal quick-change jaw No. 361275** for a wide variety of applications; thus reducing set-up time and requiring less force. **Compatible with the mobile jaws of Centro Gripp, T-Rex, NC8 and TITAN 2 via jaw adapter No. 361285.**
- It is possible to measure the clamping force with all compatible jaws thanks to the integral measuring unit (size 125CONNECT) in the spindle. Transmission range up to 20 m. Quick and easy change of the battery. Operating temperature between 10 °C and 40 °C. QR code on the nameplate for quick access to technical information, accessories, spare parts and service.

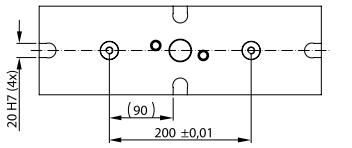
Size 125CONNECT – ■ Conventional clamping and gripping clamping with **intelligent clamping force monitoring**.
■ Monitoring of the clamping force during clamping and machining by means of an integrated electronic measuring system. Display directly on a robust and splash-proof display and via wireless transmission to the end device (via Bluetooth® (BLE)).

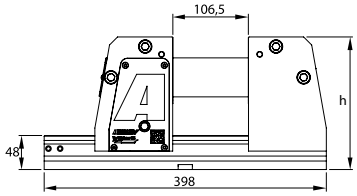
Supplied with: Hand crank, Torx T10 key, Quick Start Guide.

Optional extras: Torque wrench No. 656050 size 120, hexagon bit socket No. 643229 size 10, top jaws No. 361275 – 361285, clamping claw No. 361289, clamping stud No. 360025 size 25M10 or 25M10/138; jaw adapter No. 361285, Gripp strip No. 361280, spindle extension No. 361287. Further accessories available on request.



36 1270_125CONNECT





Type		125COMPACT	125	125CONNECT
34H 36 1270	5-axis vice **TeleSense**	(eShop)	eShop	eShop
h	mm	165	187	187
maximum clamping range	mm		199	
Clamping force up to maximum	kN		40	
maximum torque	Nm		50	
Weight	kg	35.5	38.5	39

Universal quick-change jaw

- Jaw made of hardened steel.
- Clamping of blanks and pre-machined parts (parallel, round and unshaped) – also with Gripp and pull-down clamping.

Suitable for: TeleSense No. 361270.

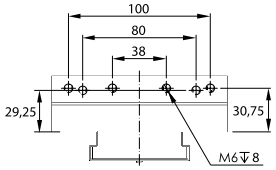
Feature:
- Can be used as a stepped jaw, shape jaw (turned for round parts) and with a pre-screwed Gripp strip for clamping workpieces.
- Can be used with all Gripp inserts of the Titan 2 series (except for Gripp inserts round h5.5).

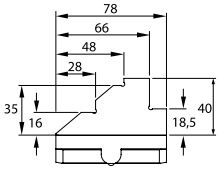
Optional extras: Gripp strip No. 361280.

Note: Can be used with all Gripp inserts of the Titan 2 series (except for Gripp inserts round h5.5).



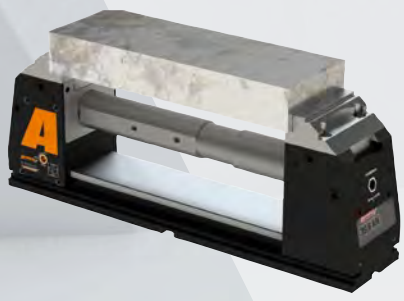
36 1275

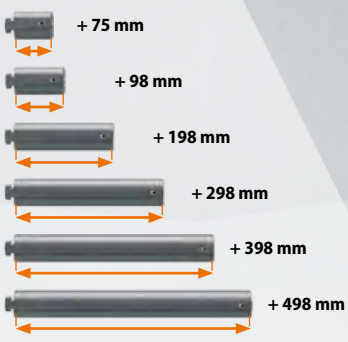




Jaw width b		mm	125
34H 36 1275	Universal quick-change jaw		eShop
Jaw width b		mm	125

TeleSense modular system





Thanks to the modular design, the TeleSense can be easily and flexibly extended up to a capacity of 672 mm!
Available as sets and standalone accessories.

Length of lower part (mm)	Max. capacity with 36 1275
498	297 (+75)
598	397 (+75)
2x398	672

Gripp strip

Gripp strip reversible for mounting on the universal quick-change jaw.
For clamping blanks close to the edge, stage 4 mm. Gripp strip with fine and coarse serrations.
Gripp inserts suitable for materials up to approx. 1000 N/mm² strength.

Suitable for: Universal quick-change jaw No. 361275.

Type		1
34H 36 1280	Gripp strip **reversible**	eShop


36 1280

Jaw adapters

Jaw adapter for use of the wide range of accessories.
Quick-change system for mounting the adapter on the jaw carrier.

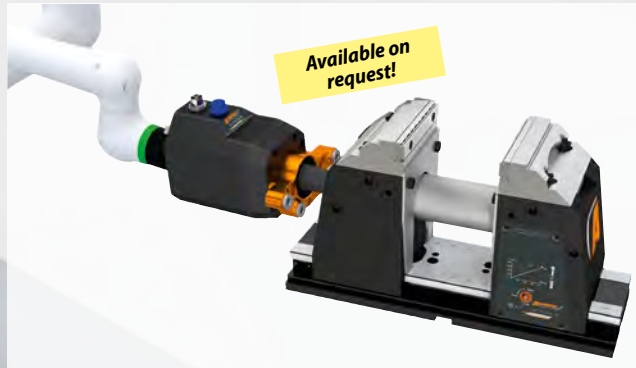
Size 1 – **Mobile jaws** of the CentroGripp/T-Rex range compatible.
Size 2 – **Mobile jaws** of the NC8 125/Titan 2 125 series compatible.

Type		1	2
34H 36 1285	Jaw adapters	eShop	eShop
suitable mobile jaws		Centro Gripp; T-Rex	NC8; Titan 2; GARANT


36 1285_1

36 1285_2

ALLMATIC CLAMPING SOLUTIONS OF THE FUTURE.



RoboBuddy

- Automate mechanical vices.
- No costly retrofits of the machine table.
- Fast commissioning.
  (Industrial data and robot interfaces)
- Used for NC8/Titan2
  and CentroLite series.
- Save the settings
  of up to 256 clamps.

AccuClamp

- Electro-mechanical, battery-powered automation system for machine vices.
- Can be connected to NC controller via OPC UA.
- Can be retrofitted to ALLMATIC vices of type LC/TC/NC8 125 mechanically.
- Runtime of 16 hours and charging time of 1 hour.



Configure your clamping tower!

Clamping towers at a glance

- 57 standard variants.
- Clamp 2 to 8 workpieces.
- For blanks and pre-processed workpieces.

Step 1: Determine the workpiece.
Step 2: Planned set-up of clamping tower.
Step 3: Determine the base plate.

The result

- Fully planned clamping tower for your specific needs.
- 2D drawing and CAD file.
- Direct link to quotation creation.

You can find the clamping tower configurator here
https://hog.tools/towerconfig



36

Workpiece backstop 3-dimensional

- Stepless and quick adjustment.
- M8 mounting for T-nuts or direct mounting.

36 0432 Size 300 – Double stop.
Size 150; 300 – ■ Optional maximum extension 30 mm.

Material: Anodised aluminium.
Application: For use on milling and drilling machines.
Optional extras: T-nuts with M8 thread, see No. 370520 size 12 – 18.


36 0432_150



36 0435

Type			125	150	300
31H 36 0432	Garant	Workpiece backstop 3-dimensional	–	eShop	eShop
32E 36 0435	HOLEX		eShop	–	–
Usable height N		mm	195	145 – 175	285 – 315
Overall height		mm	220	210 – 240	350 – 380
S axial spacing A		mm	125	80 – 110	80 – 110
suitable for colour code					

HOLEX Workpiece backstop

- Stepless and quick adjustment.
- The stop can be fitted and removed quickly.
- Up to 5 times higher clamping force than with standard magnets due to Samarium-Cobalt core.
  Size 3 – Can be used without tools.
  Size 4 – Tool-free fixing of the set stop length.

Material: Anodised aluminium.
Size 4 – Stainless steel knurled screw and threaded rod.
Application: On all magnetic surfaces such as vices, measuring devices, drilling machines, and lathes etc.
Size 4 – Magnetic jack on the guide track of the clamping device for processing thin-walled materials.


36 0495_3


36 0495_4



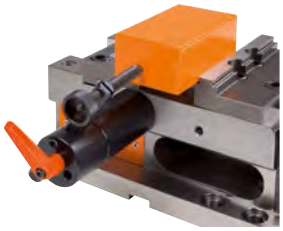


Type			3	4
32E 36 0495	Workpiece backstop, magnetic		eShop	eShop
Usable height N		mm	–	25 – 38
Threaded rod		mm	–	M6x60

ALLMATIC Allmatic workpiece backstop

Suitable for: All Allmatic and GARANT NC vices.


36 0555


can be swung away

34A 36 0555	Workpiece backstop	eShop
suitable for colour code		

Suitable for: All basic types and all vices with M8 thread.
Application: Can be positioned with high repeat accuracy; can be pivoted out of the way.


36 2650

34A 36 2650	Workpiece backstop	eShop
suitable for colour code		

Colour code: TC, HiPo, LC, LC-GARANT, Duo, Duo Plus, T-Rex, Titan, Titan2/TitanSense, Basic, HD-Allmatic, Centro Gripp, LCV125G, NC8, HOLEX NC

NC8 NC high pressure vice

Compact size: Optimum ratio between clamping range and overall length. The clamping force can be pre-set **without using tools**: **in 11 steps:** Jaw width 90 mm, **in 4 steps:** Jaw width 125 / 160 / 200 mm. Particularly rigid base body of GJS-60, **top and bottom faces ground; pairing accuracy 0.02 mm.**

Feature:
Fully enclosed low-maintenance nitrided spindle!

- Increased service reliability.
- Optimised swarf protection.
- Minimised cleaning requirement.

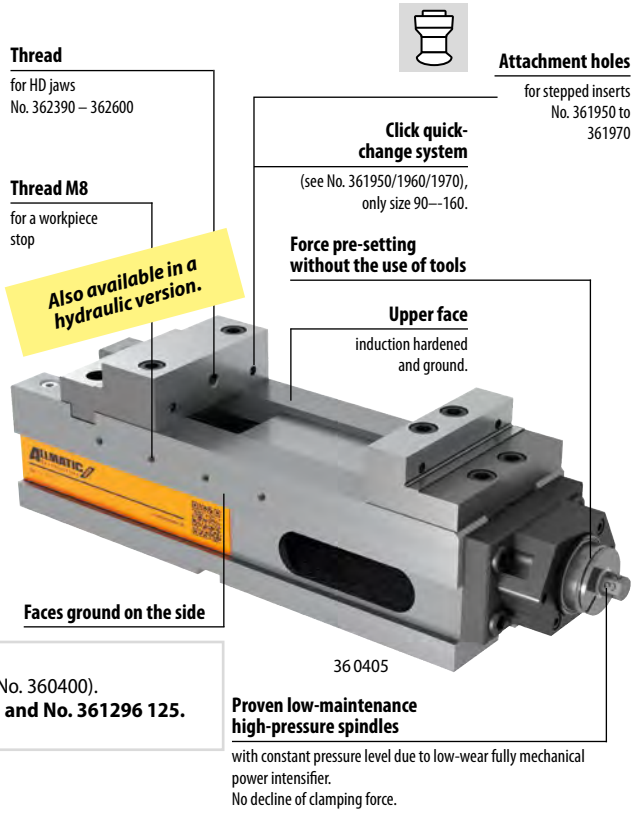
Size 90–125MX – **With 25H6 M10 holes at 200 mm pitch for zero-point clamping system.**
Size 200 – Base body same as size 160.
Size H200 – Heavy Duty for very heavy machining.

Application: Can be used horizontally or laterally, **since the side faces are ground to an accuracy of -0.05 mm.**

Supplied with: 2 stepped jaws (= standard!), 1 crank handle, 4 table clamps.

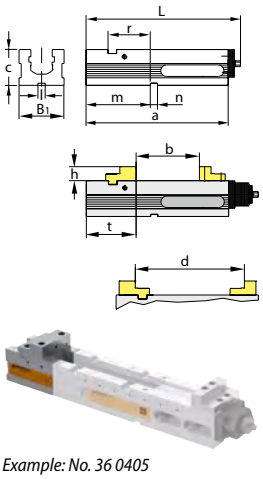
Optional extras:
Size 90–125LX – ■ Clamping stud No. 360025 - 25 M10.
Size 125M–125LX – ■ Adapter plates for quick jaw change Xtric No. 361293;361294 size 125.
■ Adapter plates No. 361297; 361298 size 125.
Size 125MX; 125LX – ■ Front jaws No. 361140 – 361151.

Note:
■ Dimensions/jaws interface NC 8 identical to the Allmatic TC / LC.
■ NC 8 (No. 360405) supersedes the products LC (No. 360500) and TC (No. 360400).
■ **Sizes 125 MX and 125 LX are supplied with jaws No. 361295 125 and No. 361296 125.**
Size 90; H200 – ■ **No end face holes for extensions included!**



36 0405

Type		90	125M	125MX	125L	125LX	160	200	H200
34A 36 0405	NC8 NC high pressure vice	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)
Clamping force up to maximum	kN	28	40	40	40	40	60	60	80
Weight	kg	15	35	35	43	43	56	60	85
L	mm	339	483	483	615	615	615	615	615
a	mm	283	398	398	530	530	530	530	530
B_1 –0.05	mm	90	126	126	126	126	164	164	202
b	mm	0 – 126	0 – 182	0 – 182	0 – 314	0 – 314	0 – 246	0 – 246	0 – 246
c –0.02	mm	80	100	100	100	100	115	115	140
d	mm	91 – 217	131 – 313	131 – 313	87 – 445	87 – 445	189 – 435	189 – 435	189 – 435
h	mm	34	39.5	39.5	39.5	39.5	49.8	60	60
l H7	mm	20							
m	mm	112	180	180	278	278	234	234	234
n H7	mm	20							
r ±0.015	mm	73	118	118	216	216	164	164	164
t	mm	97	144	144	144	144	164	164	164
Colour code for suitable accessories		■	■	■	■	■	■	■	■

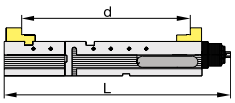


Example: No. 36 0405 with 36 0420

Extensions

Suitable for: NC 8 and Titan.
Supplied with: 2 table clamps and connecting screws.

for type		125	160
34A 36 0420	Vice base extension	eShop	eShop
d	mm	492	677
L	mm	659	857
suitable for colour code		■ ■ ■	■ ■




36 0420

Accessories

Supplied with: 4 screws, plain washers, 4 T-nuts, 2 tenons.

Table T-slot size	mm	12	14	16	18	22
34A 36 0530	Alignment and fixing set	eShop	eShop	eShop	eShop	(eShop)


36 0530

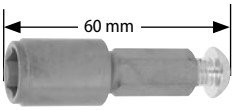
for type		90	125-200	125/200
34A 36 0406	Angled gear drive	(eShop)	eShop	–
34A 36 0800	Spare crank	–	–	eShop
suitable for colour code		■	■	■ ■ ■ ■ ■


36 0406


36 0800

Application: For bolting on to the hand crank where access is difficult.

34A 36 0850	Hand crank extension	eShop



36 0850

Colour code: ■ NC8 ■ TC ■ Titan ■ HiPo ■ LC ■ LC-GARANT

Garant HiPo clamp NC high-pressure vice



- **Pairing accuracy 0.02 mm.**
- Alignment dimensions compatible with other manufacturers.
- Universal design accepts wide variety of jaw systems.
- Slides induction hardened.
- Fully enclosed spindle (minimises cleaning requirement).
- Tapped holes on each side for workpiece backstop.
- Including holes 18M16 for zero point clamping system pitch 200mm.
- **All faces apart from the end face ground:** Can be used horizontally or laterally.
- Angled gear drive can be attached.
- Fully enclosed and nitrided spindle.
- Tapped hole for workpiece backstop.

Supplied with:

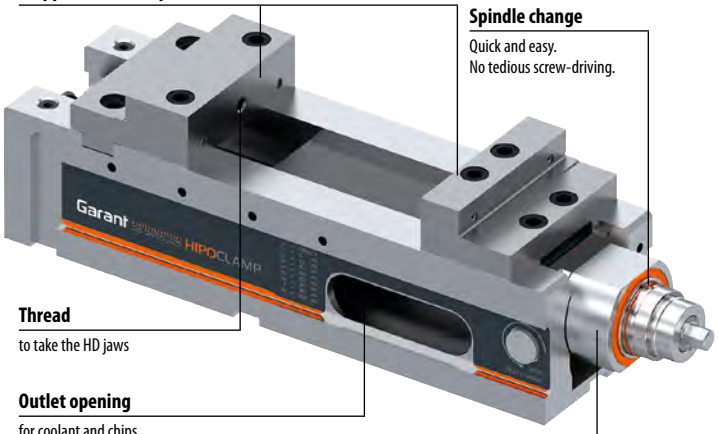
Size 125 – Including stepped jaws No. 361400 and 361420, 4 stepless adjustable clamps and hand crank.

Size 125X – Including stepped jaws 361295 125 and 361296 125, 4 stepless adjustable clamps and hand crank.

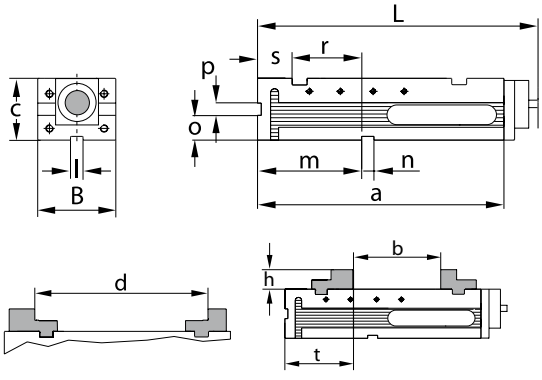
Optional extras:
- Accepts popular makes of jaws size 125, e.g. No. 361400 – 361660, No. 362390 – 362600, No. 361295, No. 361296.
- For tenon and Tee-nut set see No. 360530.
- For workpiece backstop, hand crank see No. 360555; 360800.
- Clamping stud No. 360025.
- Angle drive No. 360457.

Size 125; 125X –
- Adapter plate for quick jaw change Xtric No. 361293; 361294 size 125.
- Adapter plates No. 361297; 361298 size 125.

Note:
- Suitable base body extension is available on request.
- Size 125X is supplied with jaws 361295 125 and 361296 125. Can be used with Xpent front jaws.



Type		125	125X
31F 36 0455	NC high-pressure vice HiPo Clamp **with power intensifier**	eShop	eShop
Clamping force up to maximum	kN	40	
Weight	kg	35	
L	mm	512	
a	mm	424	
B	mm	125	
b	mm	0 – 182	
c –0.02	mm	100	
d	mm	131 – 313	
h	mm	39.5	
l H7	mm	20	
m ±0.02	mm	180	
n H7	mm	20	
o –0.02	mm	40	
p H7	mm	20	
r ±0.015	mm	118	
s – 0.02	mm	62	
t	mm	144	
Colour code for suitable accessories			



Angled gear drive

Application: For fitting on to end of spindle where access is difficult.



36 0457

Type		125
31F 36 0457	Angled gear drive	eShop
suitable for colour code		

Colour code: HiPo

NC high pressure vice – version LC

- Compact size; optimum ratio between jaw span and overall length. **Clamping force can be checked visually by the 4 ring marks.** Maximum clamping pressure reproducible using integral fixed stop.
- Particularly rigid base body made of spheroidal graphite iron, top and bottom faces; pairing accuracy 0.02 mm.
- **Supplied with 25H6 M10 holes for zero point clamping systems, pitch 200 mm.**

Feature:

- **Click quick-change system** for parallel inserts / jaws. Short set-up times and high flexibility.
- Fully enclosed and nitrided spindle (increased operational reliability, optimised swarf protection, minimised cleaning requirement).

Application: Universal clamping system for machining centres.

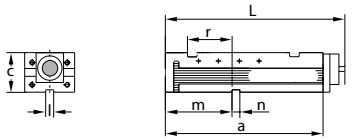
Supplied with: 2 stepped jaws, 1 crank handle, 4 steplessly adjustable clamps, and 1 hexagon L-wrench.

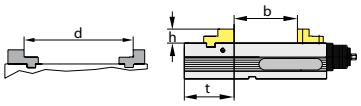
Optional extras:

- For tenon and Tee nut set see No. 360530.
- See No. 360555; 352650 and 360800 for spare component backstop / spare crank handle.
- See No. 360850 for hand crank extension.
- See also No. 361380 – 361770 and 362390 – 362600 for other jaws.
- For spare stepped jaws see No. 361400; 361420 and 361295; 361296.
- Clamping stud No. 360025.
- Adapter plates for jaw quick-change system Xtrix No. 361293 and 361294 size 125.
- Adapter plates No. 361297 and 361298 size 125.

Note:

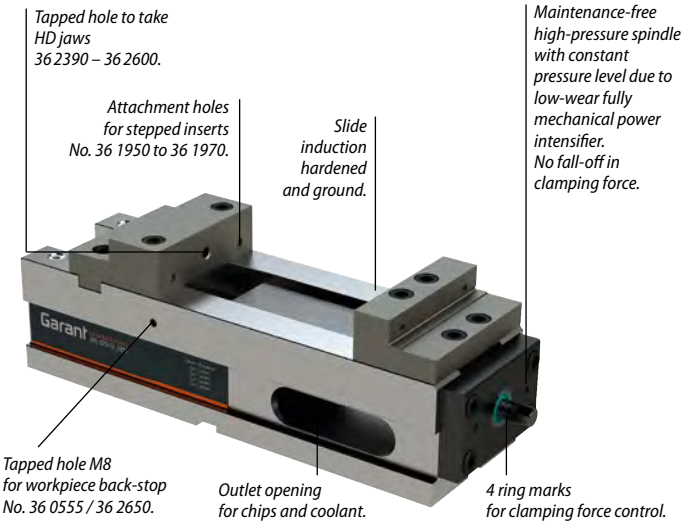
- Click system parallel inserts for drilling close to the edge and clamping flat components see No. 361950; 361960; 361970.
- For stepped jaws see No. 361400; 361420; 361295; 361296.







Type		125
31F 36 0510	Garant NC high pressure vice version LC	eShop
Clamping force up to maximum	kN	40
Weight	kg	34
L	mm	446
a	mm	398
b	mm	0 – 182
c –0.02	mm	100
d	mm	131 – 313
h	mm	39.5
l H7	mm	20
m	mm	180
n H7	mm	20
r ±0.015	mm	118
t	mm	144
Colour code for suitable accessories		



Vee jaws

Application: Clamping round parts, 16 – 74 mm vertically, 12 – 40 mm horizontally.



36 0540

for type		125
31F 36 0540	Vee jaws pair **Steel hardened**	eShop
b	mm	125.6
h	mm	39.8
l	mm	15
suitable for colour code		

Angled gear drive

Application: For fitting on to end of spindle where access is difficult.



36 0580

for type		125
34A 36 0580	Angled gear drive	eShop
suitable for colour code		

Colour code: LC-GARANT, TC, LC, Titan, Basic, Titan2/TitanSense, LCV125G, NC8

HOLEX NC high pressure vice

Small size – optimum ratio of clamping range to overall length.
Stepless adjustment – 100% clamping force at 360°.
Particularly rigid body made of GJS-60, **ground on top and bottom faces.**
Pairing accuracy 0.02 mm.

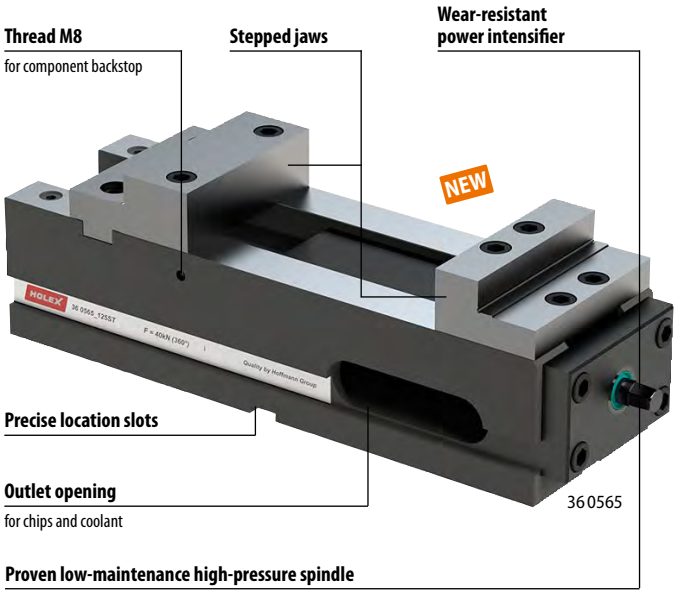
Feature:
- **Fully enclosed low-maintenance nitrided spindle**.
- Increased service reliability.
- Optimised swarf protection.
- Minimised cleaning requirement.

Application: For horizontal use. Versatile clamping unit for machining centres.

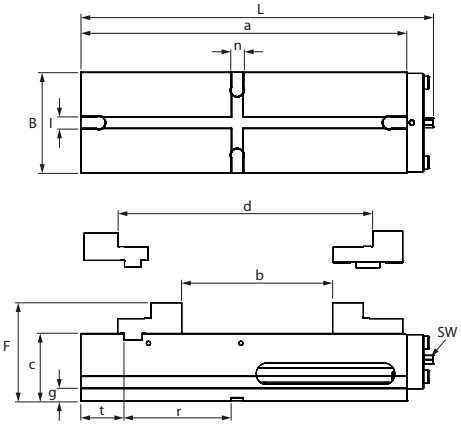
Supplied with: Including 2 pcs. stepped jaws and 1 pc. hand crank.

Optional extras: Stepless adjustable clamps No. 360579.
Alignment and fixing set No. 360530.
Popular makes of jaws such as No. 361400– 361660, No. 361295– 361298.
Workpiece backstop and crank No. 360555 and 360800.
Jaws quick-change system No. 361293 125 and 361294 125.

Note: Alignment dimensions not compatible with those of other manufacturers.



Type		125ST	160ST
32P 36 0565	NC high-pressure vice	eShop	eShop
Clamping force up to maximum	kN	40	60
Weight	kg	33	66
L	mm	441	573
a	mm	398.5	530
B	mm	126	164
b	mm	0 – 182	0 – 245
c –0.02	mm	95	110
F	mm	134.5	159.8
d	mm	131 – 313	190 – 435
g	mm	21	
l H8	mm	20	
n H7	mm	20	
r	mm	128	174
t	mm	62.5	70
Colour code for suitable accessories		■	■
AF	mm	14	

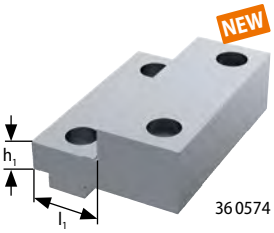


Stepped jaws

Suitable for: NC high pressure vice No. 360565.
Material: Hardened, nitrided, both sides smooth.
Supplied with: Incl. fastening screws.

Type		125	160
32P 36 0573	Stepped jaws **movable**	eShop	eShop
32P 36 0574	Stepped jaws **fixed**	eShop	eShop
b	mm	124.4	160.4
h	mm	39.5	49.8
h_1	mm	20	25
l (36 0573)	mm	70	114
l (36 0574)	mm	92	104
l_1	mm	40	64
suitable for colour code		■	■

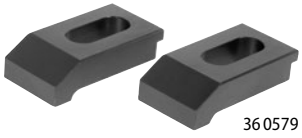




Clamping claws

Suitable for: NC high pressure vice No. 360565.

for jaw width	mm	125/160
32P 36 0579	Set of clamps **2 pieces**	eShop
suitable for colour code		■



Colour code: ■ HOLEX NC

NC high-pressure vice – Duo 2-component vice

Particularly rigid body made of spheroidal graphite iron, ground on top and bottom faces. **Pairing accuracy 0.02 mm.**

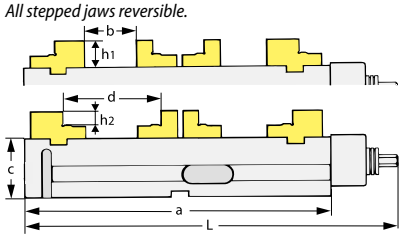
Function: Insert first piece at **clamping position I** and turn the crank until movable jaw touches the component, then insert second part at **clamping position II** and continue to turn the crank all the way to the stop.

Application:
- **For horizontal use**.
- Clamping of **2 identical parts,** dimensional differences (± 3 mm).

Supplied with: Includes 4 stepped jaws, 1 crank handle, 4 steplessly adjustable clamps and Quick-Start Guide.

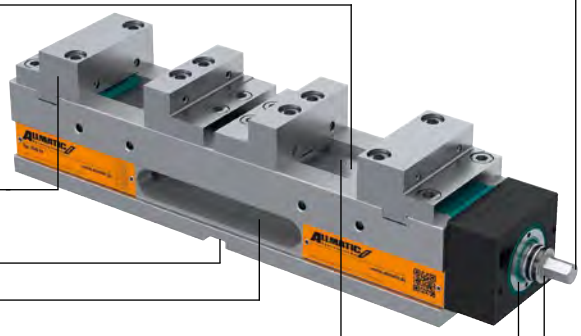
Note:
- **Overall length L remains unchanged** (reduced risk of collisions).
- **Accessories see No. 360530; 361400; 361440; 361600 – 361970.**
- **Always clamp 2 workpieces!**
- Size 90 – **With 25H6 M10 holes at 200 mm pitch for zero-point clamping systems.**

All stepped jaws reversible.



Clamping using crank.
High clamping forces achieved with low physical effort. Required clamping force can be pre-selected.

Clamping positions I and II, induction hardened.



Click quick-change system
(see No. 36 1950 / 1960 / 1970).

Precision tenon slot (milled).

Outlet opening
for chips and coolant.

Spindle chamber
with profile wiper and spindle seal.

Well-proven maintenance-free high-pressure spindle
with constant pressure level due to low-wear mechanical power intensifier. No reduction in clamping force.

Threads
for angled gear drive (angle drive on request)

Type			90	125
34A 36 0600	NC high pressure vice **Duo**		eShop	eShop
Clamping force up to maximum		kN	28	40
Weight		kg	24	49
L		mm	482	640
a		mm	400	530
b		mm	0 – 64	0 – 89
c –0.02		mm	80	100
d		mm	56 – 120	82 – 171
h_1		mm	34	40
h_2		mm	18	20
Tenon slots		mm	20H7	
Colour code for suitable accessories				

NC high-pressure vice – Duo Plus 2-component vice

Rigid base body made of GGG60, slides induction hardened and ground.

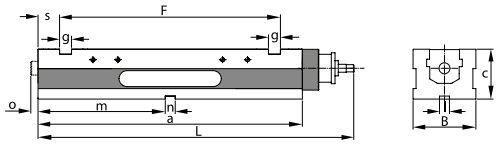
Function: Place and secure the first and second component to the mobile jaws. If the crank is turned past the engagement point, the clutch disengages. The pressure spindle activates the mechanical power intensifier.

Application:
- For **horizontal** use.
- **Capable of clamping 2 different workpieces** or clamping 2 identical parts. Dimensional differences ± 2.5 mm (workpiece 1 to workpiece 2).
- **Conventional and gripper clamping using carrier jaws or a combination of the two.**

Supplied with: 4 pcs. stepless adjustable clamps, Quick Start Guide.

Optional extras: Clamping jaws No. 361400 – 361440, 361600, 361660.
Parallel inserts No. 361950, 361960, 361970.
Gripp set No. 361345.
Torque wrench No. 656050 size 60.

Note:
- **Overall length L remains unchanged** (reduced risk of collisions).
- **Accessories see No. 360530; 361400; 361440; 361600 – 361970.**
- **Always clamp 2 workpieces!**





Precise location slots
Precise longitudinal and transverse location slots in the base for optimum alignment on the machine table.

Outlet opening
for chips and coolant.



Tapped hole in the side
for a workpiece back-stop.

Clamping capacity can be adjusted
by changing the spindle position.

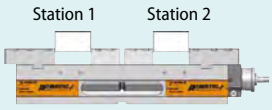
Fully enclosed maintenance-free high-pressure spindle,
minimal cleaning requirement.

Type			125
34A 36 0605	NC high pressure vice **Duo Plus**		eShop
Clamping force up to maximum		kN	40
Torque		Nm	40
Weight		kg	40
L		mm	633
a		mm	530
B		mm	126
c		mm	100
F		mm	443
g		mm	24
l		mm	20
m		mm	255.2
n		mm	20
o		mm	0 – 15
s		mm	43.2
Colour code for suitable accessories			

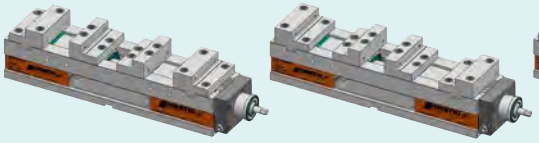
Colour code: Duo Duo Plus

GALLERY Duo Plus / Centro Gripp

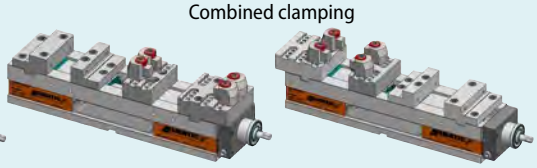
Duo Plus (clamping range can be adjusted up to 25 mm).



Stepped jaws

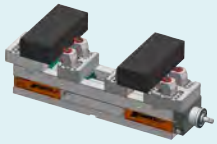


Combined clamping

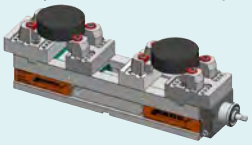


	Station 1	Station 2	Station 1	Station 2	Station 1	Station 2	Station 1	Station 2
Capacities	0 – 89 mm	0 – 89 mm	43 – 172 mm	43 – 172 mm	0 – 89 mm	10 – 200 mm	10 – 200 mm	0 – 89 mm
Clamping range with spindle adjustment	0 – 64 mm	50 – 114 mm	43 – 147 mm	93 – 197 mm	0 – 64 mm	60 – 225 mm	10 – 175 mm	93 – 197 mm

Carrier jaws with rectangular workpiece



Carrier jaws with round workpiece

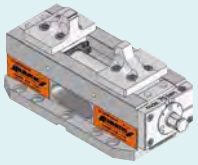


	Station 1	Station 2	Station 1	Station 2
Capacities	10 – 202 mm	10 – 202 mm	Ø 60 – 220 mm	Ø 60 – 220 mm
Clamping range with spindle adjustment	10 – 175 mm	60 – 225 mm	Ø 60 – 190 mm	Ø 80 – 240 mm

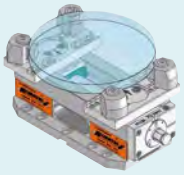
Centro Gripp



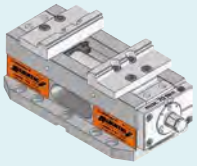
0 – 138 mm



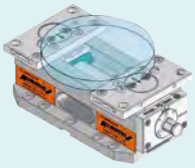
19 – 172 mm



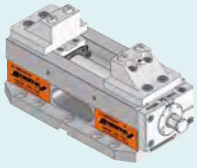
○ 100 – 230 mm
▭ 0 – 195 mm



9 – 256 mm



○ 80 – 250 mm
▭ 25 – 247 mm



○ 55 – 110 mm
▭ 22 – 286 mm

NC high-pressure vice Centro Gripp – 5-face blank component machining

Guide track induction hardened, top and bottom faces ground.
With 25H6 M10 holes for zero point clamping system, pitch 200 mm.
Feature: Enclosed spindle, high swarf protection, minimal cleaning requirement.

Function:
- Spindle with integral power intensifier.
- Clamping with adjustable torque wrench (18 – max. 70 Nm).
- Clamping centre adjustable.
- Repetition accuracy ± 1/100 mm for angular workpieces.

Application: In conjunction with various jaws it can be used for conventional clamping, clamping of smooth-faced workpieces, and grip clamping.

Supplied with: Hexagon socket 20AF-1/2 inch, 6 screws, 2 ring spanners 20AF.

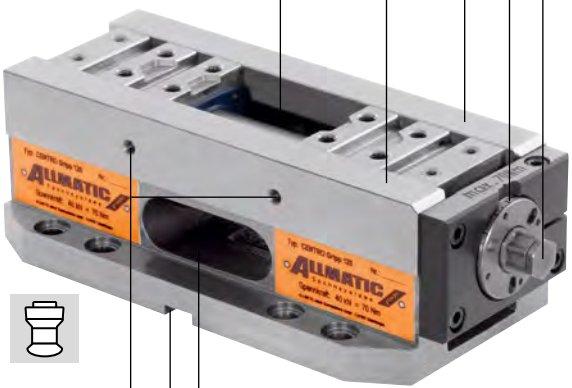
Optional extras:
- Gripper inserts No. 361238 – 361250 and No. 361160.
- Torque wrench No. 656050 size 120.
- Extension base No. 361230 size 125.
- Stepped jaws No. 361215.
- Carrier jaw, pivoting, No. 361207 size 125.
- Carrier jaw Uni-Gripp set, pivoting, No. 361209 size 125.
- Jaw No. 361222 size 125 and No. 361227 size 125.
- Universal gripper set No. 361345 size 125.
- Pull-down jaws No. 361229 size 125.
- Prismatic jaw No. 361185 size 125.
- Jaw blank No. 361186 size 125.
- Gripper jaw No. 361218.
- Pair of parallel inserts No. 361223 size 125.
- Clamping studs No. 360025 size 25M10 and size 25M10/138.

Clamping with a torque wrench
(maximum 70 Nm).

Setting ring with scale for centre position.

Slides induction hardened, top and bottom faces ground.

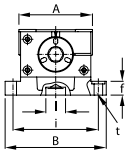
Low-maintenance, enclosed high-pressure spindle.

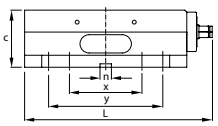


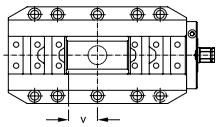
Outlet openings for chips and coolant.

Alignment tenon slot and centre hole.

Tapped hole for workpiece backstop.







Type	34A 36 1180 NC high pressure vice Centro Gripp	Clamping force up to maximum	Torque	Weight	A	B	c	f	i	l H8	L	n H7	Ø t	Travel distance v	x	y	Colour code for suitable accessories
		kN	Nm	kg	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
125	eShop	40	70	19.5	112	154	100	21	129; 130	30	329	20	13	46	127	200	

Colour code: Centro Gripp

Vee jaws / jaw blank for Centro Gripp

Suitable for: Centro Gripp No. 361180.

Vee jaws — piece

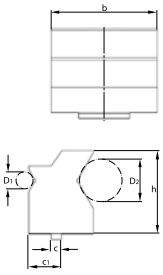
Vee angle 120° – axis height 53 mm on both sides. The jaws open sufficiently to allow the workpiece to be removed upwards - even at maximum ∅.

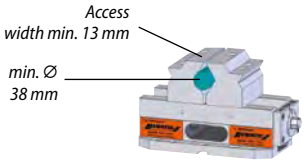
Material: Steel hardened and ground.

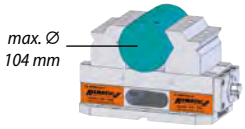
Application: For clamping cylindrical components.

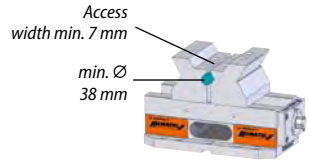
for type	34A	36 1185	b	c	c_1	h	D_1	D_2	suitable for colour code
		Vee jaw for Centro Gripp	mm	mm	mm	mm	mm	mm	
125		eShop	124.4	12	39	81	17 – 42	38 – 104	


36 1185









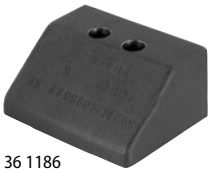


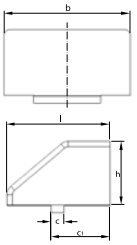
Jaw blank — piece

Material: GGG40 – can be hardened.

Supplied with: Fastening screws.

for type	34A	36 1186	b	c	c_1	h	l	for type	suitable for colour code
		Jaw blank for Centro Gripp	mm	mm	mm	mm	mm		
125		eShop	124	12	54	58	94.5	125	


36 1186



NC high-pressure vice – T-Rex, 5-face blank component machining

Top and bottom faces ground. **With 25H6 M10 holes at 200 mm pitch for zero-point clamping systems.**

Suitable for: Fixed carrier jaws No. 361206; 361208.
Mobile carrier jaws No. 361207; 361209.

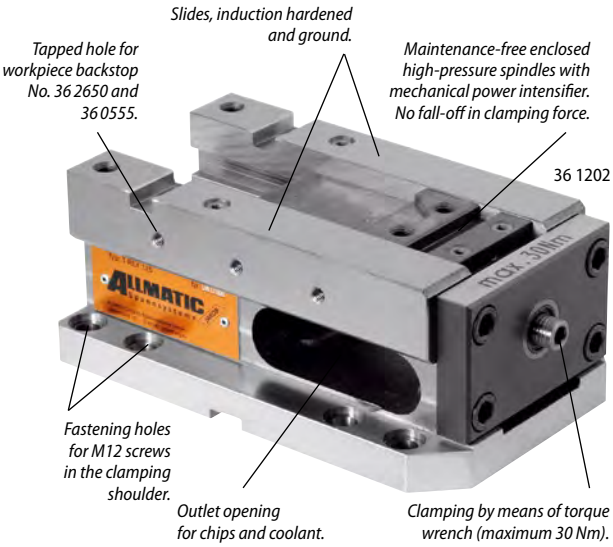
Function: **Clamping using adjustable torque wrench (maximum 30 Nm)**, requiring only minimal lost clearance around the component(in connection with jaws / gripper inserts). **Using special high pressure spindle and mechanical power intensifier.**

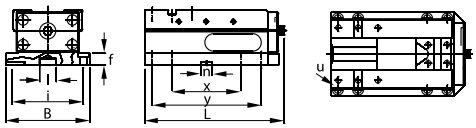
Feature: Sturdy, compact base body (GGG 60) with large capacity. Fully enclosed and nitrided spindle (increased operational reliability, optimised swarf protection, minimised cleaning requirement).

Application: Quick and secure clamping of **flame-cut and saw-cut blanks** by penetration of **hardened and replaceable Gripp inserts** into the workpiece. Suitable for all materials with a strength of up to approximately 1000N/mm² (exception: hardened materials).

Supplied with: 4 securing bolts, hexagon screwdriver bit 3/8 inch. Additional 3 hexagon L-wrenches (5 / 8 / 10 AF).

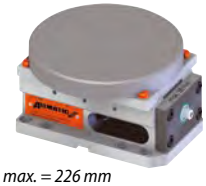
Optional extras:
- For extension base see No. 361230 size 125.
- For gripper inserts see No. 361238 - 361250; 361260
- For stepped jaws see No. 361210; 361215.
- For fixed carrier jaw see No. 361206 size 125.
- For pivoting carrier jaws see No. 361207 size 125.
- For universal gripper set carrier jaw see No. 361208 size 125.
- For movable pivoting universal gripper set carrier jaws see No. 361209 size 125.
- For universal gripper set see No. 361345 size 125.
- For pull-down jaws see No. 361228; 361229 size 125.
- Torque wrench No. 656050 size 60
- For gripper jaws see No. 361217; 361218.
- For stepped jaws see No. 361223 size 125.
- Clamping stud No. 360025, 25M10 or 25M10/138.
- Alignment and fixing set No. 360530.



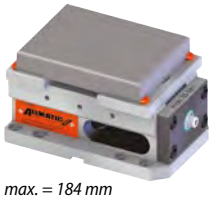


Application examples:


Clamping range min. = 65 mm


max. = 226 mm


min. = 26 mm


max. = 184 mm

Type	34A	36 1202	Clamping force up to maximum	Torque	Weight	L	B	f	i	l H8	n H7	u	x	y	Colour code for suitable accessories
		NC high pressure vice T-Rex	kN	Nm	kg	mm	mm	mm	mm	mm	mm	mm	mm	mm	
125		eShop	40	30	18	256	154	21	130	30	20	13	127	200	

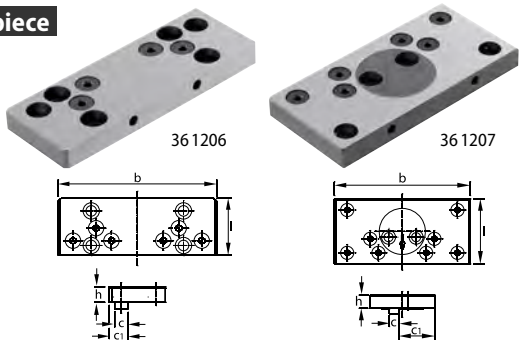
Colour code: Centro Gripp T-Rex

Carrier jaws / stepped jaws / clamping jaws / gripp jaws for T-Rex / Centro Gripp

Carrier jaws for bolt-on gripp inserts

piece

Application: Carrier jaws for standard gripp inserts No. 361238; 361240; 361245; 361250 (not suitable for universal gripp set No. 361345 size 125 and No. 361350 size 125). Mobile pivoted jaws compensate non-parallel clamping faces. Gripp inserts can be screwed into a variety of hole patterns, for secure clamping of various geometries.

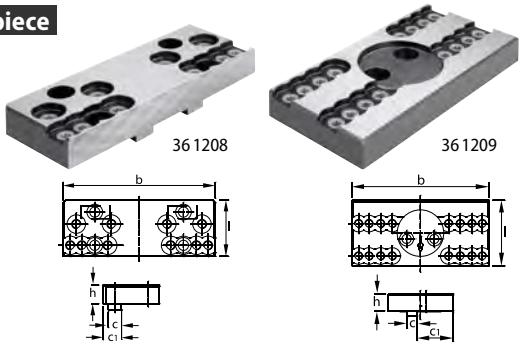


for type		125	b mm	c mm	c_1 mm	h mm	l mm	Clamping range maximum round mm	Clamping range minimum round mm	Clamping range maximum square mm	Clamping range minimum square mm	suitable for colour code
34A 36 1206	Carrier jaw for gripp inserts, for T-Rex **fixed**	eShop	165	14	20	16	59	190	80	185	26	
34A 36 1207	Carrier jaw for gripp inserts, for T-Rex / Centro Gripp **pivoting**	eShop	165	12	43.5	16	79	226 / 250	80 / 80	185 / 247	26 / 27	

Carrier jaws for use with universal gripp set

piece

Application: Carrier jaws for holding the universal Gripp set No. 361345 size 125. Mobile pivoted jaws compensate non-parallel clamping faces. Gripp inserts can be screwed into a variety of hole patterns, for secure clamping of various geometries.



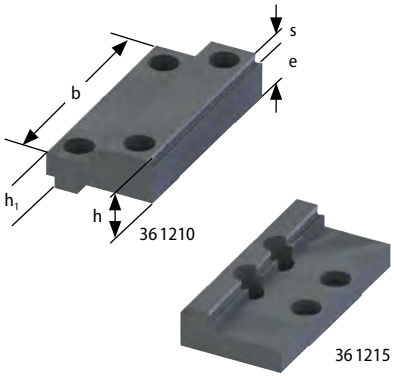
for type		125	b mm	c mm	c_1 mm	h mm	l mm	Clamping range maximum round mm	Clamping range minimum round mm	Clamping range maximum square mm	Clamping range minimum square mm	suitable for colour code
34A 36 1208	Carrier jaw, Uni-Gripp set, for T-Rex **fixed**	eShop	165	14	20	20	61	160	100	152	0	
34A 36 1209	Carrier jaw Uni-Gripp set, for T-Rex / Centro Gripp **pivoting**	eShop	165	12	35.5	20	79	160 / 230	100 / 100	152 / 195	0 / 0	

Stepped jaws

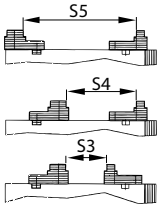
piece

Material: Hardened steel, **coated clamping faces** for high friction values, **increased gripping power by a factor of at least 1.5** (typical hardness 80 HRC).

Application: For clamping parallel pre-machined components.



for type			125
34A 36 1210	Stepped jaw coated, for T-Rex **fixed**		eShop
34A 36 1215	Stepped jaw coated , for T-Rex / Centro Gripp **movable**		eShop
b		mm	124.4
h		mm	26
h_1		mm	14
s		mm	5
e		mm	21
S3 (36 1210)		mm	9 – 67
S3 (36 1215)		mm	9 – 67 / 9 – 162
S4 (36 1210)		mm	48 - 114
S4 (36 1215)		mm	48 – 114 / –
S5 (36 1210)		mm	100 - 183
S5 (36 1215)		mm	100 – 183 / 102 – 256
suitable for colour code (36 1210)			
suitable for colour code (36 1215)			

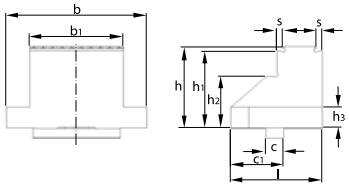


Colour code: T-Rex Centro Gripp

Gripp jaws — piece

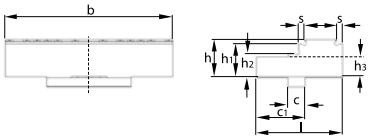
Rigid anti-vibration design for parts clamped upright.
Additional clamping area, ground both sides.

Application: For rectangular workpieces (saw-cut blanks) // ≤ 0.5 mm




36 1218_64


36 1217_64



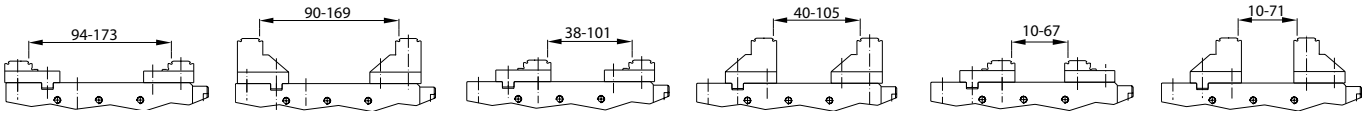

36 1218_125


36 1217_125

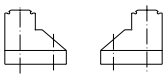
for type	34A 36 1217	34A 36 1218	b	b_1	c	c_1	h	h_1	h_2	h_3	l	s	suitable for colour code	
	Gripp jaw, for T-REX	Gripp jaw, for T-Rex / Centro Gripp											36 1217	36 1218
	fixed	**movable**	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
64	eShop	eShop	96	64	12	22	55	52	35	14	62.5	4		
125	eShop	eShop	118	–	14	34	26	23	16	14	60.6	4		

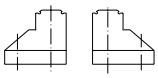
ALLMATIC Spannsysteme — Parallels / clamping jaws for T-Rex / Centro Gripp

T-Rex clamping capacities in mm with gripp jaws

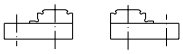


Centro Gripp clamping capacities in mm with gripp jaws


front slot: approx. 78 – approx. 161
rear slot: approx. 146 – approx. 229

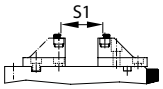

front slot: approx. 10 – approx. 93
rear slot: approx. 78 – approx. 161

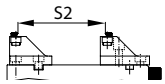

front slot: approx. 78 – approx. 161
rear slot: approx. 146 – approx. 229

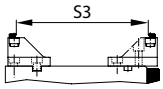

front slot: approx. 10 – approx. 93
rear slot: approx. 78 – approx. 161

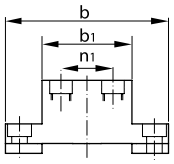
Reduced width jaws 64 mm — piece

Application: For clamping small to medium workpieces.
Blanks can be clamped using 2 adjustable gripp inserts.
Smooth clamping faces for clamping pre-machined workpieces.



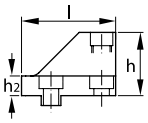







36 1220

for type	34A 36 1220	b	b_1	h	h_2	l	n_1	S1	S2	S3	suitable for colour code
	Jaw 64 mm, for T-Rex										
	fixed	mm	mm	mm	mm	mm	mm	mm	mm	mm	
125	eShop	116	64	45	14	67	37	21 – 68	66 – 138	131 – 209	




36 1222

for type	34A 36 1222	b	b_1	h	h_2	l	n_1	S1	S2	S3	suitable for colour code
	Jaw 64 mm, for T-Rex / for Centro Gripp										
	movable	mm	mm	mm	mm	mm	mm	mm	mm	mm	
125	eShop	96	64	45	14	79	37	21 – 68 / 22 – 144	66 – 138 / –	131 – 209 / 137 – 286	

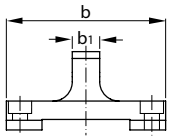
Colour code: T-Rex Centro Gripp

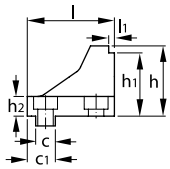
Reduced width jaws 20 mm — piece

Application: Clamping faces coated for high friction values, increased gripping power by a factor of at least 2
(typical hardness 80 HRC).



36 1227





for type	34A 36 1227 Jaw 20 mm, for T-Rex / for Centro Gripp movable	b mm	b1 mm	c mm	c1 mm	h mm	h1 mm	h2 mm	l mm	l1 mm	S1 mm	suitable for colour code
125	eShop	96	20	12	39	50	45	14	62	4	9 – 75 / 19 – 172	

ALLMATIC Screw-in gripp inserts / gripp set

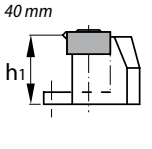
Universal gripp set

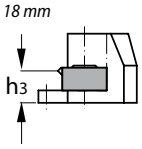
Suitable for: Allmatic jaws 361206 – 361354.

Application: The universal gripp set offers a wide range of possibilities for the clamping of blanks.
It consists of a base unit with position adaptation, mounting unit and gripp insert, and is bolted to the carrier jaw with an M10 bolt.
The customer can modify the mounting unit to set the points of the gripp unit in nearly any position relative to the workpiece, allowing the gripp height and also the mounting height of the workpiece to be varied.



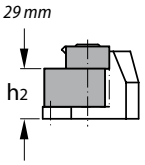
36 1345

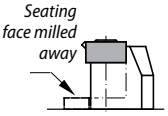












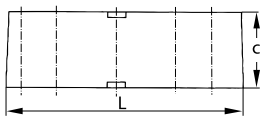


for type	125
34A 36 1345 Universal gripp set (case with 4 units)	eShop

ALLMATIC T-Rex extension bases for increasing the NC vice height

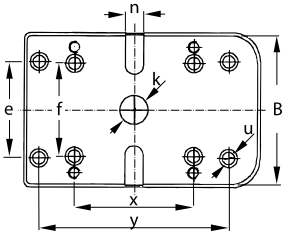
Suitable for:
Size 125 – T-Rex No. 361202 / Centro Gripp No. 361180.
Size 125XL – No. 360405; 360465; 360510; 361290 and No. 361302 in size 125M.

Supplied with:
Size 125 – Extension base with 1 locating pin, 2 t-slot nuts and 4 bolts.
Size 125XL – Extension base with 1 locating pin, 2 tenons, 8 duo table clamps, and 4 bolts.





36 1230_125





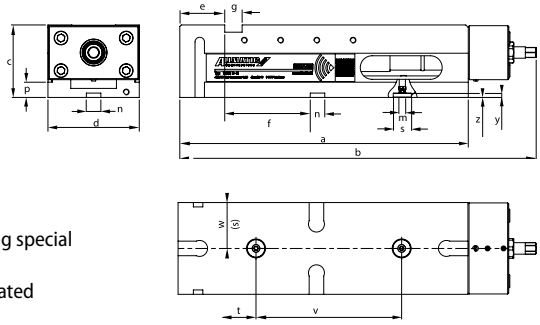
36 1230_125XL

for type	34A 36 1230 Extension base	L mm	B mm	c –0.02 mm	e mm	f mm	k H7 mm	n H7 mm	u mm	x mm	y mm	suitable for colour code
125	eShop	250	154	85	100	96	30	20	13	125.5	200	
125XL	eShop	400	126	100	–	–	30	20	–	–	–	

Colour code: T-Rex, Centro Gripp, Titan2/TitanSense, TC, HiPo, LC, LC-GARANT, Titan, LCV125G, NC8

Modular NC high-pressure vice TitanSense

- Clamps for modular clamping system with **intelligent clamping force monitoring.**
- Monitoring of the clamping force during clamping and during machining by means of **an integrated electronic measuring system.** Display directly on a robust and splash-proof display and via wireless transmission to the end device (via Bluetooth® (BLE)).
- Enclosed spindle with power intensifier (IP65).
- Process-safe clamping with high repeatability.
- Can be used horizontally and vertically, making it ideal for 3 and 4-axis machines.
- Clamping of raw and pre-machined parts (parallel, round and shapeless) also with Gripp and pull-down clamping for materials up to approx. 1400 N/mm² strength.
- Slides induction hardened. Side, top and bottom faces ground.



361303_125M

Function: **Clamping exclusively with adjustable torque wrench (maximum 30 Nm).** Using special high pressure spindle and mechanical power intensifier.

Feature: The clamping force can be measured with all compatible jaws, thanks to the integrated measuring unit in the spindle.
Transmission range up to 20 m. Easy and fast replacement of standard batteries (LS14250; 1/2AA) with long battery life. Operating temperature between 10°C and 40°C. QR code for quick access to technical information, accessories, spare parts and service on the rating plate.
Increased force travel for secure clamping of blanks in combination with a pull-down function.
Jaws secured with M12 socket head screws.
8 mm lost clearance when pulled down, 3 mm for Gripp.
Clamping can be achieved close to the neutral line. Clamping jaws from the Allmatic/GARANT NC clamping range are compatible (see special accessories).
Outlet for chips and coolant. Precise location slots.
Tapped holes for component backstop and for extension.
Maximum clamping force 40 kN.

Size 125M – With 25H6 M10 holes at 200 mm pitch for zero-point clamping system.

Size 125M; 160 – Can be installed vertically.



361303_125M

Advantage: Precise and powerful multi-function high-pressure vice.
- Reliable clamping of blank parts, thanks to the extra long stroke of the high-pressure spindle.
- Precision machined finished parts, base body machined all round.

Application: **For conventional clamping, grip clamping and pull-down clamping.** Clamping of **flame-cut and saw-cut blanks** by **hardened replaceable Gripp elements** piercing into the workpiece. Suitable for all materials up to tensile strength of 1000 N/mm. Can be used horizontally or laterally.

Supplied with: Bi-hex socket 14 AF, 4 pcs. stepless adjustable clamps.

Optional extras:
- Jaws No. 361331 – 361970.
- Torque wrench No. 656050 size 60.
- Adapter plate for quick jaw change Xtric No. 361293; 361294 size 125.
- Adapter plates No. 361297; 361298 size 125.

Size 125M – ■ Clamping stud No. 360025.



361303_125L

Note:

Size 125L – Extension and facility for bolting a second vice on to the end face available on request.

Size 160 – Clamp capacity extension available using base body No. 360420 size 160.

Size 125M; 125L – Clamp capacity extension available using base body No. 360420 size 125.



361303_160

Type		125M	125L	160
34A 36 1303	NC high-pressure vice TitanSense	eShop	eShop	eShop
Weight	kg	35	40	52
L	mm	492	624	624
a	mm	398	530	530
B	mm	126	126	164
c	mm	100	100	115
f	mm		21	
g	mm	24	24	30
l	mm		20	
m	mm	180	278	234
n	mm		20	
p	mm	–	176	–
r	mm	118	216	164
Colour code for suitable accessories				

Colour code: Titan2/TitanSense

Modular NC high pressure vice Titan 2

Slides induction hardened. Side, top and bottom faces ground.

Feature:

Clamps for the modular clamping system.

Increased force travel for secure clamping of blanks in combination with a pull-down function.

Jaws secured with M12 socket head screws.

8 mm lost clearance when pulled down, 3 mm for Gripp.

Clamping can be achieved close to the neutral line.

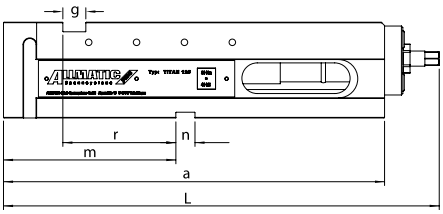
Jaws are compatible with earlier models.

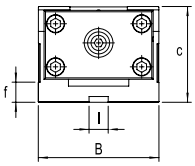
Outlet for chips and coolant. Precise location slots.

Tapped holes for component backstop and for extension.

Maximum clamping force 40 kN.

Size 125K; 125M – With 25H6 M10 holes at 200 mm pitch for zero-point clamping system.





Function: **Clamping exclusively with adjustable torque wrench(maximum 30 Nm).**
Using special high pressure spindle and mechanical power intensifier.

Feature:

Size 125K– 160M – Can be installed vertically.

Advantage: Precise and powerful multi-function high-pressure vice.

- Reliable clamping of blank parts, thanks to the extra long stroke of the high-pressure spindle.
- Precision machined finished parts, base body machined all round.

Application: **For conventional clamping, grip clamping and pull-down clamping.** Clamping of **flame-cut and saw-cut blanks** by **hardened replaceable gripper elements piercing** into the workpiece. Suitable for all materials up to tensile strength of 1000 N/mm². Can be used horizontally or laterally.

Supplied with: Includes bi-hex socket 14 AF, 4 stepless adjustable clamps.

Optional extras:

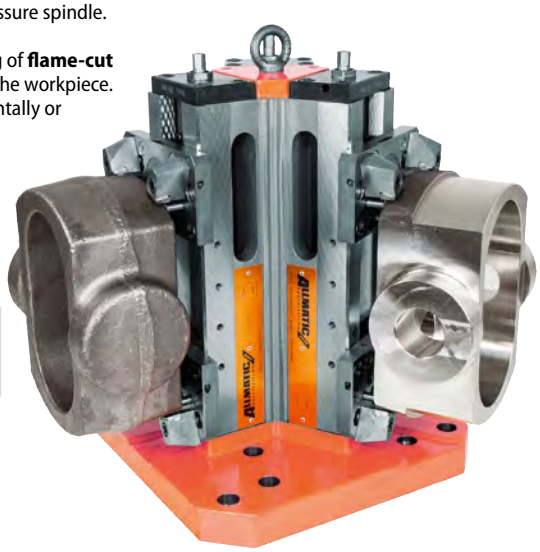
- Jaws No. 361331 – 361970.
- Torque wrench No. 656050 size 60.
- Adapter plate for quick jaw change Xtric No. 361293 and 361294 size 125.
- Adapter plates No. 361297 and 361298 size 125

Size 125K; 125M – Clamping stud No. 360025.

Note:

Size 160M – Clamp capacity extension available using base body No. 360420 size 160.

Size 125K–125L – Clamp capacity extension available using base body No. 360420 size 125.



Here is an example of clamping a casting using a carrier jaw with pull-down grip elements.



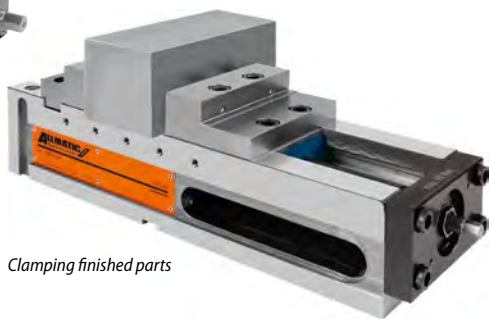
36 1302_125K



36 1302_125M



36 1302_125L



Clamping finished parts

Type		125K	125M	125L	160M
34A 36 1302	NC high pressure vice TITAN 2	eShop	eShop	eShop	eShop
Weight	kg	22	30	38	68
L	mm	318	455	587	587
a	mm	280	398	530	530
B	mm	126	126	126	164
c	mm	100	100	100	115
f	mm	21			
g	mm	24	24	24	30
l	mm	20			
m	mm	139	180	–	234
n	mm	20			
p	mm	–	–	176	–
r	mm	77	118	216	164
Colour code for suitable accessories					

Colour code: Titan2/TitanSense

Garant

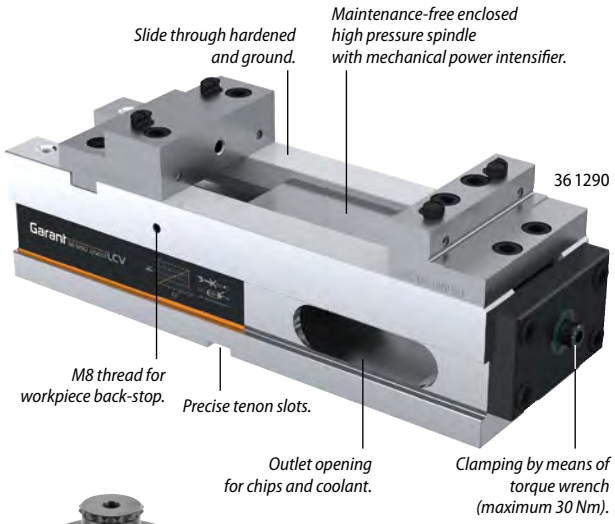
Modular NC high-pressure vice LCV 125 G for conventional and gripp clamping

Top and bottom faces ground. **With 25H6 M10 holes at 200 mm pitch for zero-point clamping system.**

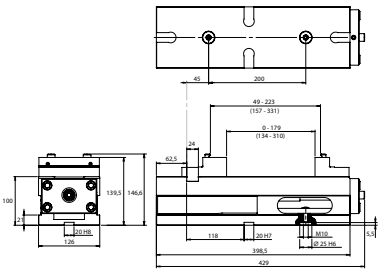
Application: Due to the 2.5 mm power stroke of the spindle, suitable for conventional clamping using stepped jaws and Gripp jaws.

Supplied with: Including stepped jaws (No. 361400 125; 361348 125), 4 pcs. gripper inserts (No. 361160 7); 4 pcs. gripper inserts (No. 361240 1) and clamping claws (No. 360750 125/160).

Optional extras: Jaws (see No. 361331–361970), torque wrench No. 656050 size 60, clamping stud No. 360025.




36 1160



Jaw width A			Clamping force up to maximum	Torque	maximum clamping range	Weight	Colour code for suitable accessories
	31H	**36 1290**					
		Modular NC high-pressure vice LCV 125 G					
mm			kN	Nm	mm	kg	
125GST		eShop	40	30	331	33	

Accessories for modular NC high pressure vice Titan 2

Suitable for: Allmatic jaws No. 361206 – 361354. GARANT Xpent top jaws No. 361128 and 361129. GARANT Xtric top jaw 363038 125.

Application: Serrated gripp insert, e.g. to clamp blanks.
Smooth clamping insert with coating, e.g. for clamping pre-machined components.
Serrated gripp insert, round, for drilling near to edges and for additional clearance under the workpiece.

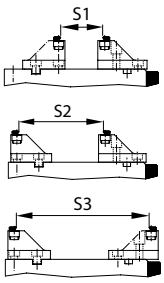
36 1160 – For workpieces with a large radius or chamfer between 3 and 8 mm.
Size 7 – For workpieces with a large radius or chamfer between 3 and 8 mm.
36 1242 – For highly tempered materials and flame-cut blanks.

Optional extras:
36 1238–1245 – Screw-in aid No. 361251 size 1.

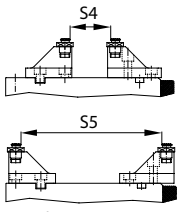

36 1238 36 1240


36 1241 36 1242


36 1245 36 1250



Smooth / corrugated gripp insert



Round gripp insert

Type			1
34A **36 1238**		Gripp insert with 2 spikes, height 3.7 – 5.2 mm	eShop
34A **36 1240**		Gripp insert with 2 spikes, height 5.2 – 6.7 mm	eShop
34A **36 1239**		Gripp insert with 2 spikes, height 8.2 – 9.7 mm	eShop
34A **36 1241**	ALLMATIC	Gripp insert with 4 spikes height 3.7 - 5.2 mm	eShop
34A **36 1242**		Gripp insert carbide height 7.1 - 8.6 mm	eShop
34A **36 1245**		Clamping insert with coating, height 5.2 – 6.7 mm **smooth**	eShop
34A **36 1250**		Gripp insert height 5.5 mm **round**	eShop

Type			7
34A **36 1160**	Garant	Gripp insert	eShop
Version			round
Height		mm	8


36 1160_7

Screw-in aid for gripp inserts

Suitable for: Gripp inserts No. 361238, 361239, 361240, 361241, 361242, 361245 and No. 361160 size 1-5.

Application: For easier screwing in of Gripp inserts without using an additional tool.

Type		1
34A **36 1251**	Screw-in aid for gripp inserts	eShop




36 1251

Colour code: LCV125G

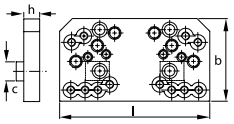
ALLMATIC Modular Gripp jaws system

Carrier jaw, fixed — piece

Suitable for: Titan 2 No. 361302.

Application: The carrier jaw allows mounting of wedges and various different gripp inserts. Wedges, gripp inserts and gripp sets can be screwed into a variety of hole patterns for secure clamping of various workpiece geometries.

Note: Wedge mountings + accessories No. 361341 – 361352, gripp inserts No. 361238 – 361250.





36 1331

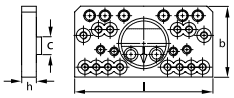
for type		125	b mm	c mm	h mm	l mm	suitable for colour code
34A 36 1331	Carrier jaw **fixed**	eShop	104	24	20	189	

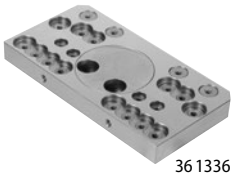
Carrier jaw, movable pivoting — piece

Suitable for: Titan 2 No. 361302.

Application: Movable pivoting carrier jaw for compensation of non-parallel clamping faces, required for clamping unequal workpieces.

Note: Wedge mountings + accessories No. 361341 – 361352, gripp inserts No. 361238 – 361250.





36 1336

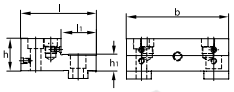
for type		125	b mm	c mm	h mm	l mm	suitable for colour code
34A 36 1336	Carrier jaw **movable pivoting**	eShop	97	24	20	189	

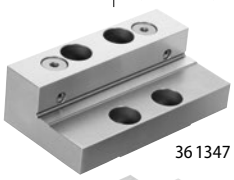
Stepped jaws for gripp inserts

Suitable for: Titan 2 No. 361302.

Application: For clamping blanks and finished parts (using screw-in gripp inserts).

Note: Blanks can be clamped only if they are parallel workpieces. Gripp inserts No. 361238 – 361250.





36 1347

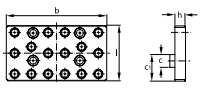


36 1348

for type		125	160
34A 36 1347	Stepped jaw for gripp inserts **movable**	eShop	(eShop)
34A 36 1348	Stepped jaw for gripp inserts **fixed**	eShop	(eShop)
b	mm	124.4	160.4
h	mm	39.5	49.8
h_1	mm	20	25
l (36 1347)	mm	70	114
l (36 1348)	mm	92	104
l_1 (36 1347)	mm	40	64
l_1 (36 1348)	mm	43	44
suitable for colour code			

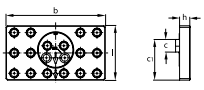
Carrier jaws

Suitable for: Bench vice No. 361290; 361302.





36 1333





36 1338

Type		125	b mm	c mm	c_1 mm	h mm	l mm	Clamping range maximum round mm	Clamping range minimum round mm	Clamping range maximum square mm	Clamping range minimum square mm	suitable for colour code
34A 36 1333	Carrier jaw **fixed**	eShop	189	24	26	20	104	330	50	489	25	
34A 36 1338	Pivoting carrier jaw **movable**	eShop	189	24	53.5	20	103.5	330	50	489	25	

Colour code: Titan2/TitanSense — LCV125G — Titan

Garant Jaws for gripp inserts

Suitable for: No. 361290 125G, 361302, jaws No. 361400 125, 361420, 361450 160.
Application: For grip clamping with pull-down function thanks to special tooth geometry on the insert.
Supplied with: Screws No. 361164.
Size 125 – Set of parallels 123.9 × 3.8 × 36.5 mm.
Size 160 – Set of parallels 158.5 × 3.8 × 47 mm.
Optional extras: Gripper inserts No. 361163.


36 1376_125


36 1376_160

Jaw width		mm	125	160
310 36 1376	Jaws for Gripp inserts		eShop	eShop
B		mm	39.5	49.8
Number of insert seats		pcs.	9	11
suitable for colour code				

Allmatic Modular NC high-pressure vice Titan 2 accessories

Pull-down set

Suitable for: Carrier jaws No. 361331; 361336.
Material: Hardened steel.
Supplied with:
Size 1 – 1 storage case with foam,
4 low wedges,
4 screws M10×30 mm,
4 wedge elements 4-pointed,
4 wedge elements Microgripp,
4 clamping pins h = 23 mm,
4 clamping pins h = 34 mm,
1 hexagon L-wrench.
Size 2 – 1 storage case with foam,
4 tall wedges,
4 screws M10×45 mm,
4 wedge elements 4-pointed,
4 wedge elements Microgripp,
4 clamping pins h = 34 mm,
4 clamping pins h = 48 mm,
1 hexagon L-wrench.




36 1346_1


36 1346_2

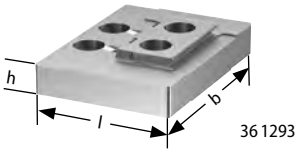
36 1346



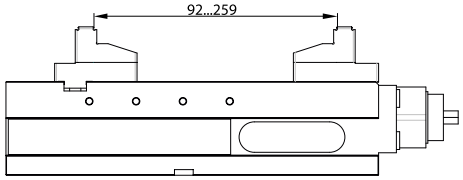
for type		1	2
34A 36 1346	Pull-down set case	(eShop)	(eShop)
Version		low	high
suitable for colour code			

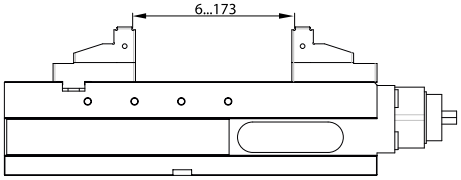
Garant Adapter plates for XTRIC top jaws size 125

Hardened and ground. Fastening screws.
Suitable for: Top jaws No. 363010 125 to 363037 125.
Material: Hardened steel.
Advantage: Existing NC vices from GARANT or Allmatic can be used with XTRIC top jaws.
Application: For mounting XTRIC top jaw size 125.



36 1293





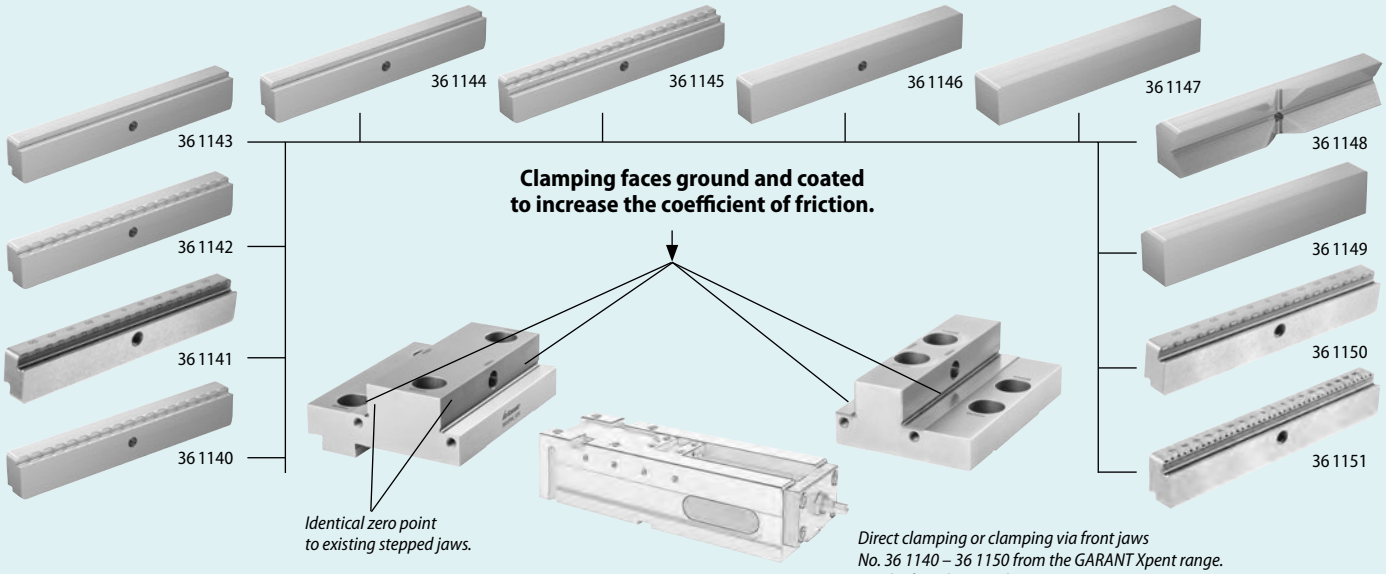


for jaw width b		mm	125
310 36 1293	Adapter plate for XTRIC top jaw **movable**		eShop
310 36 1294	Adapter plate for XTRIC top jaw **fixed**		eShop
h		mm	20.5
l (36 1293)		mm	91
l (36 1294)		mm	88
suitable for colour code			

Colour code: LCV125G, Titan2/TitanSense, Titan, Duo, Duo Plus, HiPo, HOLEX NC, LC, LC-GARANT, NC8, TC

Garant Stepped jaws for GARANT and Allmatic NC vices

When selecting front jaws to be combined, ensure compatibility with the spindle fitted to the NC vice. Smooth front jaws can be combined with a standard high-pressure spindle and with a gripp spindle. Gripp front jaws on the other hand can be combined only with a gripp spindle.



Garant Stepped jaws

Coated, hardened and ground. Fastening screws.

Suitable for: No. 360400 125, 360465 125, 360500 125, 360510 125, 360565 125, 360605 125, 361302 125, 361290 125G together with Allmatic Titan 1 and Allmatic SC125.

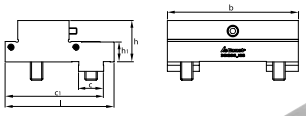
Material: Hardened steel.

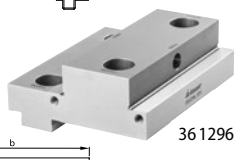
Application: To take front jaws No. 361140-361151.

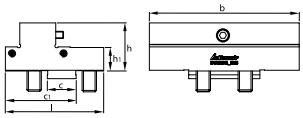
Note: The front jaws are attached using an M6 bolt.

Also available as a set with Allmatic NC8 (No. 36 0405_125MX and _125LX).


36 1295




36 1296



for jaw width		mm	125
310 36 1295	Stepped jaw, mobile		eShop
310 36 1296	Stepped jaw, fixed		eShop
b		mm	125
c		mm	24
c_1 (36 1295)		mm	59
c_1 (36 1296)		mm	94
h		mm	39.5
h_1		mm	19
l (36 1295)		mm	82
l (36 1296)		mm	104
suitable for colour code			

Garant Adapter plates for XPENT top jaws

Hardened and ground. Fastening screws.

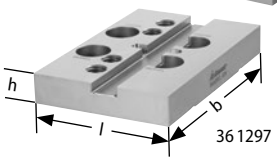
Suitable for: Top jaws No. 361123 to 361134.

Material: Hardened steel

Advantage: Existing NC vices from GARANT or Allmatic can be used with XPENT top jaws and front jaws.

Application: To take the XPENT top jaw.

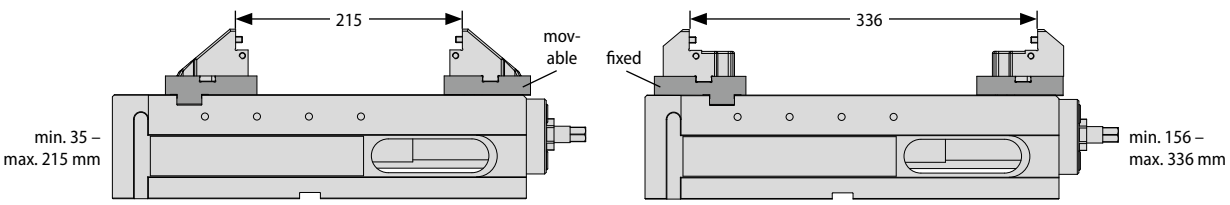

36 1298



36 1297



for jaw width b		mm	125
310 36 1297	Adapter plate for XPENT top jaw **movable**		eShop
310 36 1298	Adapter plate for XPENT top jaw **fixed**		eShop
h		mm	18
l (36 1297)		mm	83
l (36 1298)		mm	88
suitable for colour code			



Colour code: Duo, Duo Plus, HiPo, HOLEX NC, LC, LC-GARANT, LCV125G, NC8, TC, Titan, Titan2/TitanSense

ALLMATIC Spannsysteme Clamping jaws for NC high pressure vice

Universal stepped jaws — piece

Sizes 90, 125, and 160 with **Click quick-change system,** for No. 361440 only in sizes 90 and 125.
Application: Accepts parallel inserts on high side or stepped side (No. 361950; 361960; 361970).

When using No. 36 1450, < 17 mm components can also be clamped.

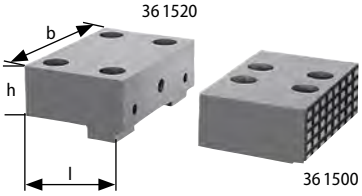


for type		90	125	160	200
34A 36 1400	Stepped jaw **movable**	eShop	eShop	–	–
34A 36 1450		–	–	eShop	(eShop)
34A 36 1420	Stepped jaw **fixed**	eShop	eShop	eShop	(eShop)
34A 36 1440		–	eShop	–	–
b	mm	89.5	124.4	160	200.4
h	mm	34	39.5	50	60
h_1	mm	16	20	25	25
l (36 1400, 36 1450)	mm	56	70	114	115
l (36 1420)	mm	67	92	104	104
l (36 1440)	mm	64	87	–	–
l_1 (36 1400, 36 1450)	mm	31	40	64	65
l_1 (36 1420)	mm	32	43	54	54
l_1 (36 1440)	mm	25	42	–	–
suitable for colour code (36 1400, 36 1450)					
suitable for colour code (36 1420)					
suitable for colour code (36 1440)				–	–

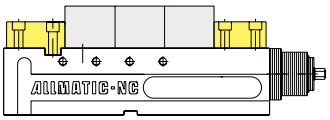
Hard base jaws – one side with serrations, Click system — piece

Suitable for: NC8, Garant-NC, Titan.
Material: Hardened steel, ground surfaces.
Application:
- For fitting all high pressure jaws No. 362390 to 362600.
- For fitting parallel inserts No. 361950; 361960; 361970.

Supplied with: Fastening screws.



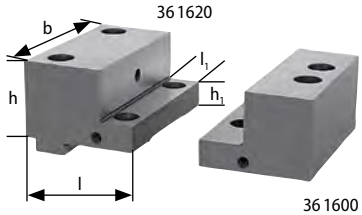
for type		90	125	160
34A 36 1500	Base jaw **movable**	(eShop)	eShop	–
34A 36 1520	Base jaw **fixed**	–	eShop	(eShop)
b	mm	89.5	124.4	160.4
h	mm	34	39.5	49.8
l (36 1500)	mm	60	76	–
l (36 1520)	mm	–	88	104
for type		90	125	160
suitable for colour code				



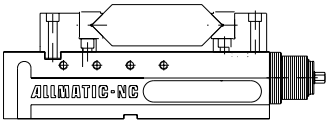
Adapter jaws – high side hardened — piece

Suitable for: NC8, Garant-NC, Titan.
Material: Hardened steel, ground surfaces.
Application:
- For fitting existing or self-manufactured jaws.
- For fitting all high pressure jaws No. 362390 to 362600.

Supplied with: Fastening screws.



for type		125	160
34A 36 1600	Adapter jaw **movable**	eShop	–
34A 36 1620	Adapter jaw **fixed**	eShop	(eShop)
b	mm	126	164
h	mm	58	73
h_1	mm	20	24
l (36 1600)	mm	80	–
l (36 1620)	mm	85	100
l_1	mm	32	34
suitable for colour code (36 1600)			–
suitable for colour code (36 1620)			

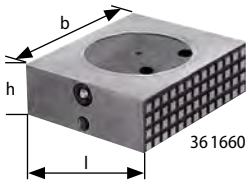


Colour code: TC, NC8, HiPo, HOLEX NC, LC, Duo Plus, LC-GARANT, LCV125G, Titan, Titan2/TitanSense, Duo

Pivot jaws – One side with serrations — piece

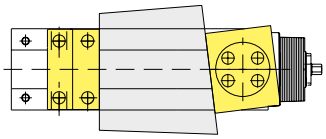
Suitable for: NC8, Garant-NC, Titan.
Material: Hardened steel, ground surfaces.
Application:
- For clamping non-parallel workpieces.
- For fitting parallel inserts No. 361950; 361960; 361970.

Supplied with: Fastening screws.



36 1660

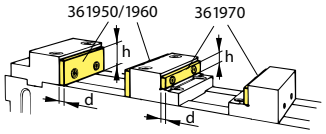
for type		125
34A 36 1660	Pivot jaw **movable**	eShop
for type		125
b	mm	124.4
h	mm	39.5
l	mm	84
suitable for colour code		



Parallel inserts — pair

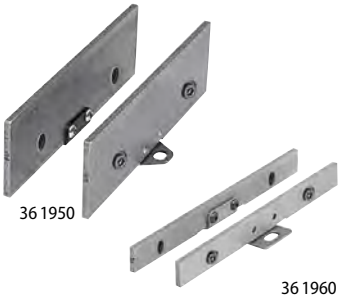
Suitable for:
36 1970 – For screw-fixing to the stepped face of No. 361400; 361420; 361440.
36 1950/1960 – For screw-fixing or clicking to the high side of No. 361400; 361420; 361440; 361450; 361500; 361520; 361660.
Material: Hardened steel.
Application: For clamping flat components and for drilling close to edges.

On request, the parallel inserts are available in different heights.



Reversible stepped jaws (included in price for No. 36 0400 / 0500 / 0600 / 0900).

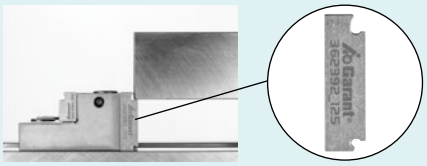
for type		90	125	160
34A 36 1950	Pair of parallel inserts Click system, hardened steel	–	eShop	–
34A 36 1960		(eShop)	eShop	(eShop)
34A 36 1970	Pair of parallel inserts (stepped face)	–	eShop	–
l	mm		3	
h (36 1950)	mm	–	35	–
h (36 1960)	mm	16	20	25
h (36 1970)	mm	–	15	–
suitable for colour code				



Garant Use of Gripp front jaws for standard stepped jaws

Two clamping steps of 3 mm and 5 mm


36 2392



Blanking plug 36 1171

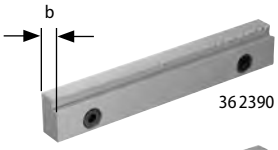

36 2390

Garant Gripp front jaws

High precision when clamping. The additional jaws greatly extend the application range of your vice.
Optimised tooth profile for high retention forces.
36 2392 Size 125; 160 – Reversible jaw with 2 clamping steps.
One clamping step of 3 mm height and one clamping step of 5 mm height.

Note:
Size 125L; 160L – Pre-impression of the serrated contour necessary (LANG system).

for jaw width	mm	125	160	125L	160L
31S 36 2390	Gripp front jaw	eShop	eShop	eShop	eShop
31S 36 2392		eShop	eShop	eShop	eShop
b	mm	12			
h (36 2390)	mm	20	25	20	25
h (36 2392)	mm	40	50	40	50
suitable for colour code					



36 2390



36 2392

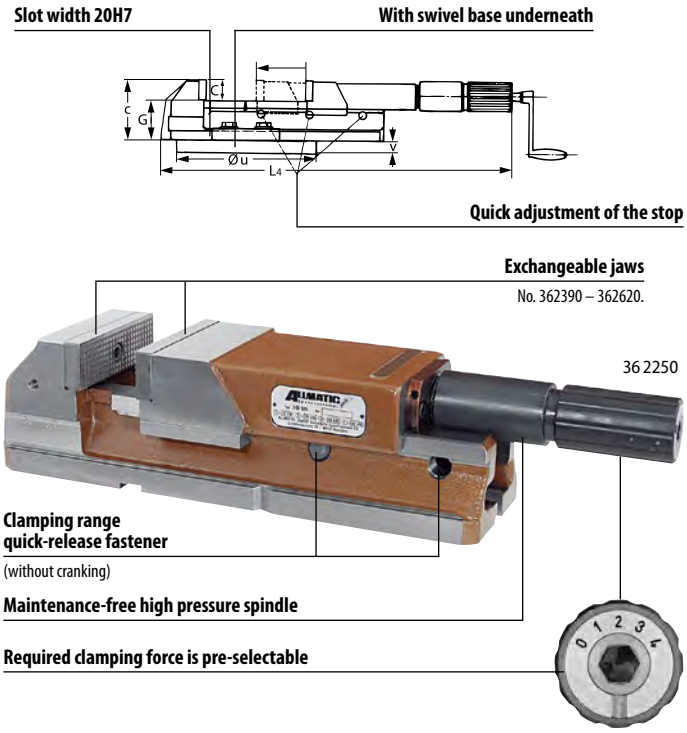
Colour code: TC, HiPo, LC, LC-GARANT, Titan, Titan2/TitanSense, Duo Plus, LCV125G, NC8, HOLEX NC, Duo, Basic, HD-Allmatic, HD-GARANT, HD-Spanner

High pressure machine vices

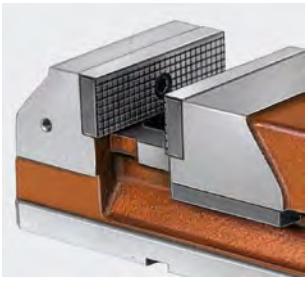
- Base body with **longitudinal and transverse tenon slots** enables **fast and exact alignment** of the vice in longitudinal and transverse directions.
- High quality spheroidal cast iron, hardened, ground workpiece mounting face and ground guides.
- Maintenance-free high pressure spindle with constant pressure level due to low-wear fully mechanical power intensifier.
- Required clamping force pre-selectable: No high pressure at 0 setting. Continuous tests have shown that the power intensifier can withstand 1 million working strokes without harm.
- **No fall-off in clamping force. Fast alignment** with 2 loose tenons in the precisely manufactured slot in the **vice base.**
- Interchangeable jaws, hardened and ground(with serrated faces).
- Height tolerance – 0.03 mm.

Application:
- For **vibration-free, absolutely reliable clamping at maximum cutting and feed rate forces.**
- Consistent support height allows efficient working with several vices alongside each other.
- **Clamping using crank.** High clamping forces can be achieved with low physical effort due to maximum 2 spindle rotations.

Supplied with: 4 table clamps, 1 pair serrated jaws, crank handle.

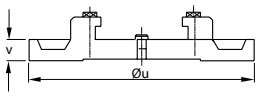


Jaw width	34A 36 2250	Clamping range b I	Clamping range b II	Clamping force	Weight	c	C	G –0.05	L_4	Colour code for suitable accessories
	High-pressure vice without swivel base									
mm		mm	mm	kN	kg	mm	mm	mm	mm	
100	eShop	0 – 82	78 – 162	30	18	87	32	53.5	419 – 581	
125	eShop	0 – 102	98 – 202	40	30	120	40	78	507 – 709	
160	eShop	0 – 152	147 – 302	60	60	137	50	85	613 – 915	


36 2250

Swivel base for high-pressure machine vices

- Swivel base with longitudinal tenon slot for **quick and exact alignment** of the vice.
- 360 graduations (4×90°) clearly marked on the scale of the swivel base.
- 4 clamping slots for easy attachment to the machine table.



for jaw width	34A 36 2260	Ø u	v	Weight
	Swivel base			
mm		mm	mm	kg
100	eShop	260	26	6
125	eShop	320	30	12

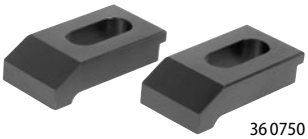

36 2260

Accessories for machine vices

Suitable for: **GARANT** NC No. 360510; 360465; 362010; 361290.
Allmatic No. 360405; 360600; 360605; 361180; 361255; 361202; 361301; 361302; 361304; 362250 and old version NC with No. 360000.

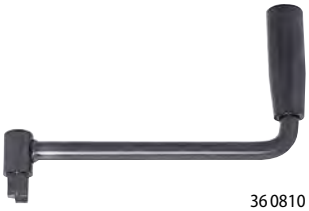
Spare clamps

for jaw width	mm	100	125/160
34A 36 0750	Clamp set **2 pieces**	eShop	eShop
suitable for colour code			


36 0750

Spare crank

for jaw width	mm	100	125/160
34A 36 0810	Crank	eShop	eShop
suitable for colour code			


36 0810

Colour code: HD-Allmatic, TC, HiPo, LC, LC-GARANT, HD-GARANT, Duo, T-Rex, Titan, Titan2/TitanSense, TeleCentric, LCV125G, NC8

Garant High-pressure machine vice

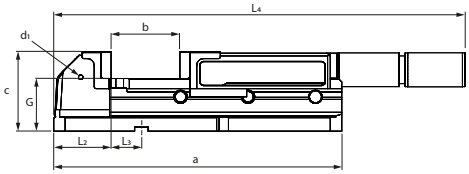
- The base body with longitudinal and transverse slot ensures the vice is aligned quickly and precisely in both directions.
- The maintenance-free high-pressure spindle ensures a constant pressure level thanks to a wear-resistant, fully mechanical power intensifier.
- High-quality spheroidal cast iron with hardened, ground workpiece mounting face and precision-ground guides.
- The desired clamping pressure can be preselected – without high pressure in position 0.
- No loss of clamping force.
- Interchangeable jaws, hardened and ground.
- Height tolerance ± 0.03 mm.
- Fast alignment with two loose tenons in the precisely manufactured vice slot.



36 2240

Application:
- For vibration-free and absolutely reliable clamping with the highest possible cutting and feed rate forces.
- The uniform support height allows efficient working with several vices at the same time.
- The clamping action is performed using a crank. High clamping forces are achieved with minimal force in a maximum of two spindle revolutions.

Supplied with: 4 table clamps, 1 pair smooth jaws, crank handle.



Jaw width	310 36 2240	Clamping range b I	Clamping range b II	Clamping force	Weight	c	d_1	a	L_2	L_3	L_4	G +0.02	Colour code for suitable accessories
	High-pressure vice												
mm		mm	mm	kN	kg	mm		mm	mm	mm	mm	mm	
125	eShop	0 – 102	98 – 202	40	30	118	M8	427	85	45	508 – 710	78	

HOLEX High pressure machine vices

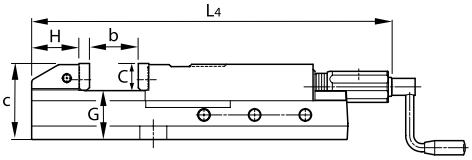
- Base body and movable upper sliding blocks made of spheroidal graphite iron GGG 60, slides hardened and ground.
- Hydro-mechanical power intensifier with precise clamping force pre-selection.
- Maintenance-free and fully enclosed high-pressure spindle.
- As standard with hardened and ground smooth clamping jaws.
- Base plate with **longitudinal and cross slots** provides for **quick and precise alignment** of the vice in longitudinal and transverse directions.


36 2075

Application: For vibration-free, reliable clamping under high cutting and feed rate forces. Quick clamping by hand crank.

Supplied with: 1 pair grooved jaws (rear face smooth), hand crank.

Optional extras: Replacement jaws No. 362076; 362077; 362079, swivel base No. 362073.

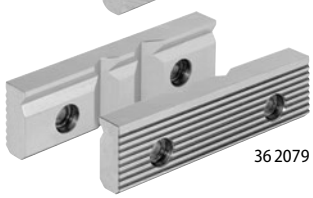


Jaw width	32E 36 2075	Clamping range b I	Clamping range b II	Clamping range b III	Clamping force	Weight	c	H	C	L_4	G ±0.02	Colour code for suitable accessories
	High-pressure vice without swivel base											
mm		mm	mm	mm	kN	kg	mm	mm	mm	mm	mm	
113	eShop	0 – 56	52 – 113	109 – 170	30	24	97	55	31.6	413 – 583	65.5	
135	eShop	0 – 72	69 – 147	144 – 220	40	39	112	70	39.6	461 – 679	72.5	
160	eShop	0 – 104	102 – 207	205 – 310	50	60	133	80	49.6	507 – 817	83.5	

Clamping jaws

Suitable for: High pressure machine vice No. 362075.


36 2076


36 2079

for jaw width	mm	113	135	160
32E 36 2076	Jaw with longitudinal grooves, other face smooth	eShop	eShop	eShop
32E 36 2079	Jaw with Vees, other face with longitudinal grooves	eShop	eShop	eShop
suitable for colour code				

Colour code: HD-GARANT High press. vices

Stationary machine vice

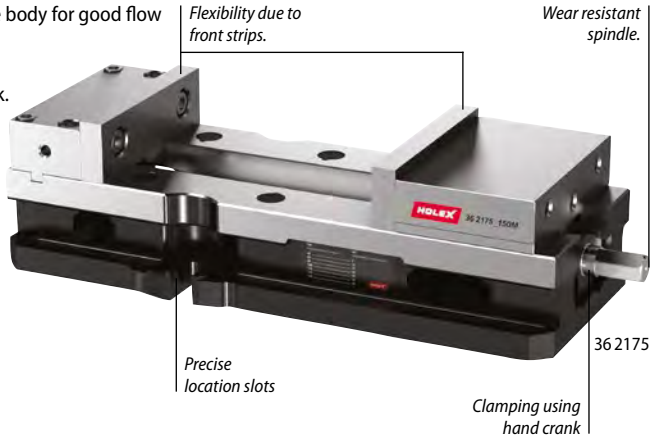
Sturdy base body of cast iron, slides and base area hardened. Cleaning holes in the base body for good flow of chips. Less component lift-off thanks to special transfer of force in the mobile jaw.

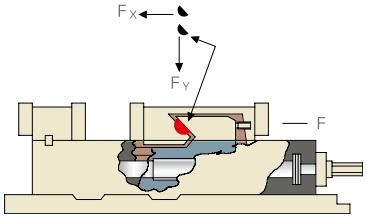
Application: Versatile clamping unit for machining centres.

Supplied with: Incl. 2 pcs. top jaws, 2 pcs. front jaws No. 362181 and 1 pc. hand crank.

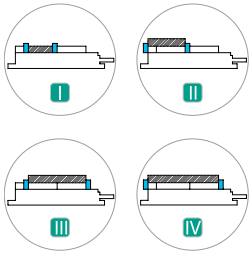
Optional extras: Front jaws No. 362177 – 362183, crank No. 362190, spare-parts set No. 362199. Mounted with Tee bolts No. 375300 and aligned with tenons No. 375365.

Note:
Alignment dimensions not compatible with those of other manufacturers.
Size 150M – Metric version – screws and threads in metric version, drive hexagon = 19 mm AF.
Size 150I – Inch version – screws and threads in imperial version, drive hexagon = 3/4 inch AF.

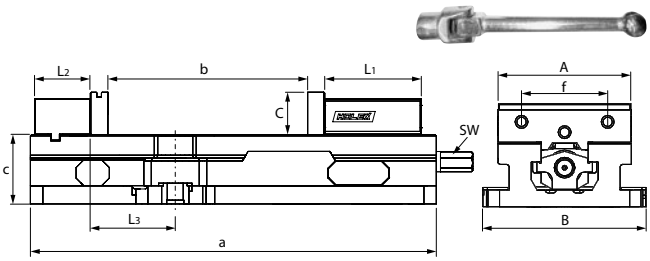




Representation of the force transfer in the mobile jaw.



Attachment options for front strips



Type	32P 36 2175 Stationary machine vice	b	Clamping force	c +/- 0.012	C	A	a	B	L_1	L_2	L_3	f	AF		Colour code for suitable accessories
		mm	kN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	in	
150M	eShop	0 – 232	36	73	44.5	151	427	186	101.6	58.7	90.5	98.4	19	–	
150I	eShop ■	0 – 232	36	73	44.5	151	427	186	101.6	58.7	90.5	98.4	–	3/4	

Front jaws

Suitable for: Stationary machine vice No. 362175.

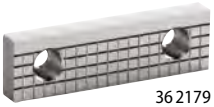
Material:
Size 150S – Steel
Size 150A – Aluminium

Note:
36 2183 – Pre-impression of the serrated contour necessary (**LANG** system).

Type		150	150S	150A
32P 36 2177	Front jaw **with step 4.5×5 mm**	eShop ■	–	–
32P 36 2178	Front jaw **soft**	–	eShop ■	eShop ■
32P 36 2179	Front jaw **serrated**	eShop ■	–	–
32P 36 2180	Front jaw **Vee block**	eShop ■	–	–
32P 36 2181	Front jaw **Standard**	eShop ■	–	–
32P 36 2182	Front jaw **with groove**	eShop ■	–	–
32P 36 2183	Front jaw **LANG system**	eShop	–	–
suitable for colour code				


36 2177


36 2178


36 2179


36 2180


36 2181


36 2182


36 2183

Crank handles

Size 2 – Quick crank.

Suitable for: Stationary machine vice No. 362175.

Type		1	2
32P 36 2190	Crank handle for machine vice	eShop ■	eShop ■
suitable for colour code			


36 2190

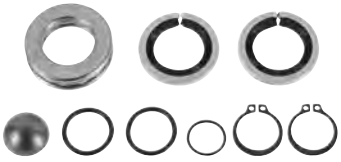

36 2190_2

Spare-parts set

Suitable for: Stationary machine vice No. 362175.

Supplied with: 2 pcs. scraper, 2 pcs. C-rings, 3 pcs. O-rings, 1 pc. hemisphere, 1 pc. ball bearing.

Type		9
32P 36 2199	Spare-parts set **9 pieces**	eShop ■
suitable for colour code		


36 2199

Colour code: NC-HOLEX

Accessories for machine vices

Suitable for: **GARANT** NC No. 360510; 360465; 361290.
HOLEX No. 362010.
ALLMATIC No. 362250 – 362300 and also with base jaw No. 361500 – 361520 suitable for version NC8. Adaptor jaws No. 361600, 361620 also suitable for all NC versions.

Application: The additional jaws extend the application range greatly. Hydraulic compensation jaws for multiple clamping of round material or for clamping components with surface deviations on request.

Note: Please order attachment screws separately - No. 362621 M10×23.

for jaw width	mm	100	125	160
34A 36 2400	Pair of clamping jaws with serrated faces	eShop	eShop	eShop
suitable for colour code				


36 2400

for jaw width	mm	100	125	160
34A 36 2420	Pair of clamping jaws, smooth	eShop	eShop	eShop
suitable for colour code				


36 2420

for jaw width	mm	125
34A 36 2460	Pair of pull-down roller jaws	eShop
suitable for colour code		


36 2460

for jaw width	mm	125	160
34A 36 2500	Pair of Vee jaws	eShop	eShop
suitable for colour code			


36 2500

for jaw width	mm	100	125	160
34A 36 2560	Pair of clamping jaws with stepped upper edge	(eShop)	eShop	eShop
suitable for colour code				


36 2560

Garant Jaws with positioning pins (pneumatically operated)

- Hardened steel, Tenifer gas nitrided (tolerance ± 0.01 mm).
- Simple to fit on the vice.
- Pins pushed in mechanically.
- Compressed air operation via valves on both sides.
- The fixed and movable jaws are identical.
- Requires a 5.5 bar compressed air supply

Suitable for:

36 2622 Size 125 – **GRESSEL** Gripos GPS125, Gripos GPS125-VS, Gripos 2, Grepos-5S/5X-S, Grefors, S2 Duogrip, C2, Ecopos.
WNT NCG 125, DSG4 125, HDG2 125, H5G 125, ZSG4 125, ESG4 125.

Size 160 – **GRESSEL** Gripos GPS160, Gripos GPS160-VS, Gripos 2, Grepos-5S/5X-S, Grefors, S2 Duogrip, C2, Ecopos.
WNT NCG 160, HDG2 160, ZSG4 160, ESG4 160.

36 2624 Size 125 – **ALLMATIC** NC8 125, HD 125, TC, TITAN2 125.
BULL pneumatic 125, mechanical 125.
KESEL ARNO125, CNC125, NCA125.
RÖHM RKE125, RKE-L125, RKE-U125, RKG-L125, RKE-LV125.

Size 160 – **ALLMATIC** NC8 160, HD 160, TC, TITAN2 160.
BULL pneumatic 160, mechanical 160.
KESEL ARNO160, CNC160, NCA160.
RÖHM RKE160, RKE-L160, RKE-U160, RKG-L160, RKE-LV160.

36 2627 – **GARANT** NC No. 360510; 360465; 361290.
HOLEX No. 362010.
Allmatic No. 360405; 360600; 360605; 361180; 361202; 361302; 361304; 362250; 362350 and with clamping jaws No. 361400 – 361620.

Application: Quick changeover for different machining operations.
- Quick and fully repeatable positioning accuracy.
- Eliminates tedious fitting of jaw inserts.

Supplied with:

36 2627 – 1 fastening screw.





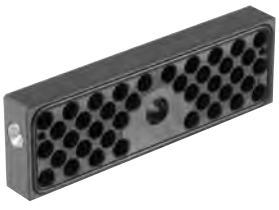
Actuation from both sides with a compressed air gun replaces the previous procedure of using the push-out pin with its obstructive contour.

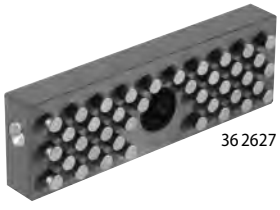


Positioning pins pushed in manually.



Individual contours can be clamped.




36 2627

for jaw width	mm	125	160
31S 36 2622	Jaw with positioning pins	eShop	eShop
31S 36 2624		eShop	eShop
31S 36 2627		eShop	eShop
suitable for colour code (36 2627)			

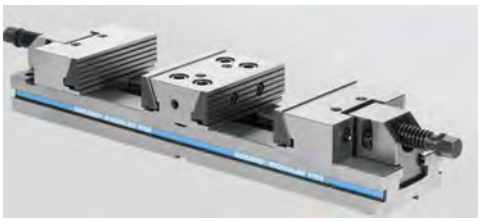
Colour code: HD-Allmatic, TC, HiPo, LC, LC-GARANT, HD-GARANT, Basic, LCV125G, NC8, Titan2/TitanSense

Modular vices

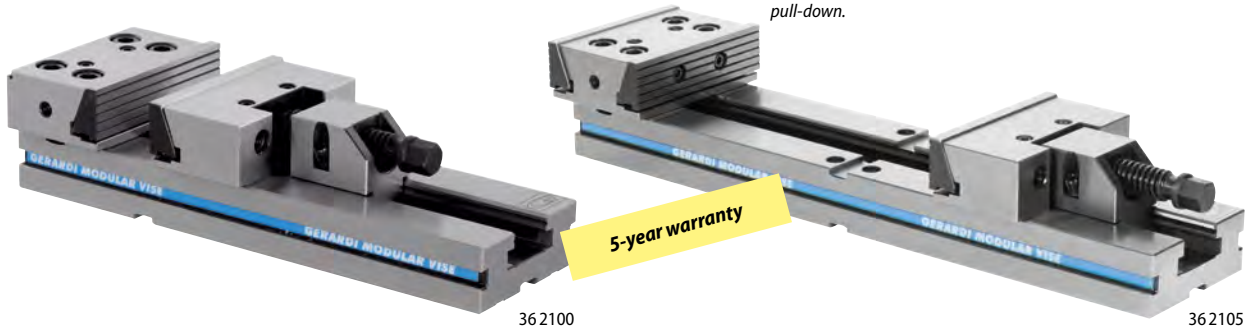
- Simple mechanical actuation (up to 3.5 t).
- Easy adjustment of jaw opening.
- Machine vice with pull-down jaws.
- Case-hardened HRC 60.
- Parallelism 0.02 mm.

Supplied with: Supplied with pull-down jaws, 1 workpiece backstop, 2 T-nuts No. 362160 size 16/16, 1 clamping wrench, 1 cross-bar wrench.

Note:
36 2105 – See No. 362160 for other T-nuts.

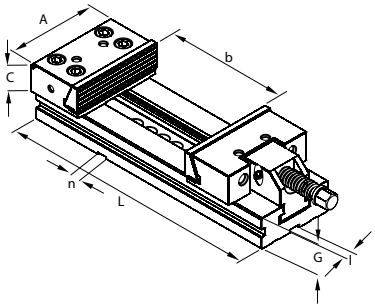


By means of simple modification and addition of a movable jaw, the long modular vice can be used to clamp two components, each with pull-down.



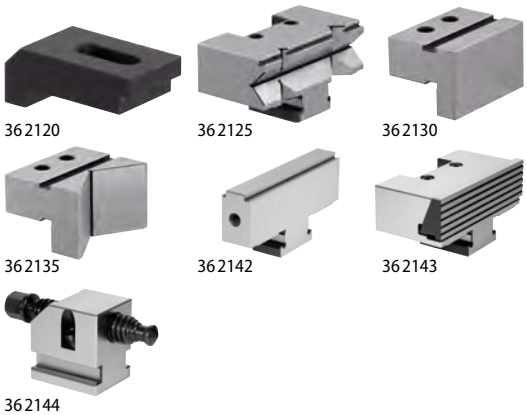
36 2100 36 2105

Jaw width A	mm	125	150/2	150/3	200/3	200/4
35G 36 2100	Modular vice	eShop	eShop	eShop	eShop	eShop
35G 36 2105	Modular vice long	eShop	eShop	eShop	–	–
Weight (36 2100)	kg	17	35.5	40	69	74
Weight (36 2105)	kg	18.3	32	35	–	–
L (36 2100)	mm	345	420	520	595	695
L (36 2105)	mm	520	580	680	–	–
b (36 2100)	mm	150	200	300	300	400
b (36 2105)	mm	320	360	460	–	–
Base body height G	mm	40	50	50	70	70
C	mm	40	50	50	65	65
Longitudinal tenon slot l	mm			16		
Transverse tenon slot n	mm			16		
maximum clamping force at 60 Nm	kN	25	–	–	–	–
maximum clamping force at 80 Nm	kN	–	30	30	–	–
maximum clamping force at 120 Nm	kN	–	–	–	40	40
Colour code for suitable accessories						



Jaws

for jaw width	mm	125	150	200
35G 36 2120	Pair of clamps	eShop	eShop	eShop
35G 36 2125	Prismatic jaw (piece)	eShop	eShop	–
35G 36 2130	Square top jaw (piece)	–	eShop	–
35G 36 2135	Prismatic top jaw (piece)	–	eShop	–
35G 36 2142	Centre jaw (piece)	–	eShop	–
35G 36 2143	Movable jaw (piece)	eShop	eShop	–
35G 36 2144	Complete clamping element (piece)	eShop	eShop	–
suitable for colour code (36 2125, 36 2130, 36 2135, 36 2142, 36 2143, 36 2144)				–



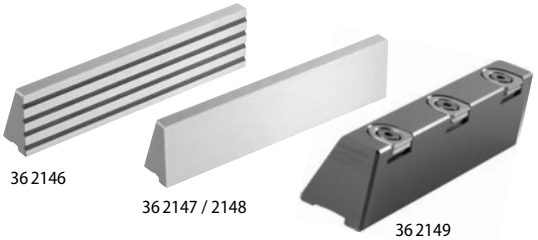
Front jaws

Supplied with:

36 2149 Size 125 – 1 pc. magnetic parallel and 3 pcs. Gripp inserts No. 362151 size U.
Size 150 – 1 pc. magnetic parallel and 5 pcs. Gripp inserts No. 362151 size U.
Size 200 – 1 pc. magnetic parallel and 7 pcs. Gripp inserts No. 362151 size U.

Note: **Front jaws not suitable for use as fixed jaw of the vice 362105!**

for jaw width	mm	125	150	200
35G 36 2146	Longitudinally serrated front jaw (piece)	eShop	eShop	(eShop)
35G 36 2147	Smooth front jaw, hard (piece)	(eShop)	eShop	(eShop)
35G 36 2148	Smooth front jaw, soft (piece)	(eShop)	eShop	–
35G 36 2149	Front jaw with grip inserts	(eShop)	eShop	(eShop)
suitable for colour code (36 2146, 36 2147, 36 2148)				

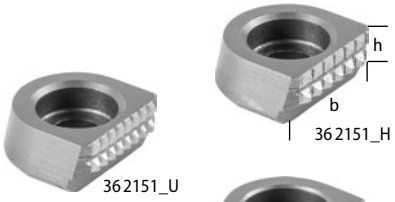


Colour code: Gerardi 125 Gerardi 150 Gerardi 200 Modular HOLEX 125 Modular HOLEX 150

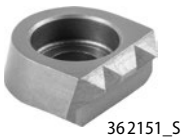
Gripp inserts

Suitable for: Front jaw with grip inserts No. 362149.

Application: U – For standard material.
H – For very hard materials.
S – For soft materials.



362151_U


362151_S

Type		U	H	S
35G 36 2151	Gripp inserts	eShop	eShop	eShop
h	mm		7	
b	mm		14.5	

Modular elements

- Machine vice with pull-down jaws.
- Simple mechanical actuation (up to 3.5 t).
- Easy adjustment of jaw opening.
- Case-hardened HRC 60.

Supplied with: 2 pieces T-nuts No. 362160 size 16/16.

Note: For other T-nuts see No. 362160.



362145



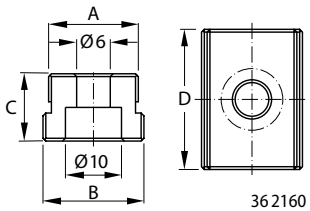
362150

for jaw width	mm	125	150
35G 36 2145	Modular element movable (piece)	eShop	eShop
35G 36 2150	Modular element fixed (piece)	eShop	eShop
suitable for colour code			

T-nuts

Accuracy: Dimension B = fit h6.

T-slot dimension B / keyway	mm	12/16	14/16	16/16	18/16	20/16
35G 36 2160	Pair of T-nuts	eShop	eShop	eShop	eShop	eShop
A	mm			16		
B	mm	12	14	16	18	20
C	mm	10	10	10	10	12
D	mm			25		
suitable for colour code						



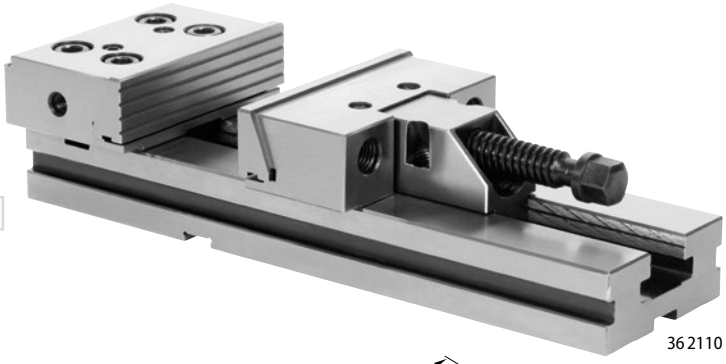
362160

HOLEX Modular vices

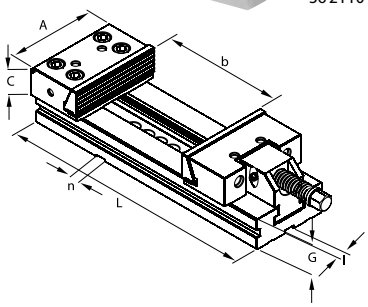
- Machine vice with pull-down jaws.
- Simple mechanical actuation (up to 3.5 t).
- Easy adjustment of jaw opening.
- Case-hardened HRC 60.
- Parallelism 0.02 mm.

Supplied with: Component backstop, 2 T-nuts similar to No. 362160 size 18/16, 1 clamping wrench, 1 L-wrench for hexagon socket screws, 4 clamping claws.

Note: See No. 362160 for other T-nuts.


362110

Jaw width A	mm	125	150/2	150/3	200/3	200/4
32P 36 2110	Modular vice	eShop	eShop	eShop	eShop	eShop
Weight	kg	18.5	34	37.5	69	74
L	mm	345	420	520	595	695
b	mm	150	200	300	300	400
Base body height G	mm	40	50	50	70	70
C	mm	40	50	50	65	65
Longitudinal tenon slot l	mm			16		
Transverse tenon slot n	mm			16		
Colour code for suitable accessories						



Jaws

for jaw width	mm	125	150
32P 36 2127	Prismatic jaw (piece)	eShop	eShop
32P 36 2132	Square top jaw (piece)	eShop	eShop
suitable for colour code			


36 2127


36 2132

Colour code: Gerardi 125 | Gerardi 150 | Gerardi 200 | Modular HOLEX 125 | Modular HOLEX 150

Precision grinding and inspection vices

Ground Vee grooves.
All-steel, through hardened and **precision ground all round** for 4-face machining.

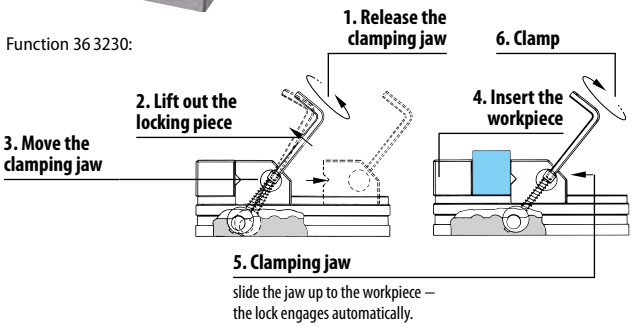
36 3240 – **With quick adjustment (no spindle).**
36 3250 – **With threaded spindle.**
With horizontal Vee groove.

Accuracy: Within **0.005 mm** / 100 mm.
Application: For **machining and inspection true to gauge.**
Supplied with: Sturdy **case.**



Jaw width A		mm	70	120
32K 36 3240	Grinding and inspection vice **with quick adjustment**		eShop	eShop
32K 36 3250	Grinding and inspection vice **with threaded spindle**		eShop	eShop
maximum clamping range b		mm	80	140
Jaw height C		mm	30	40
Overall length a		mm	160	255
Overall width B		mm	70	120
Base body height G		mm	32	55
Weight		kg	3	13.9

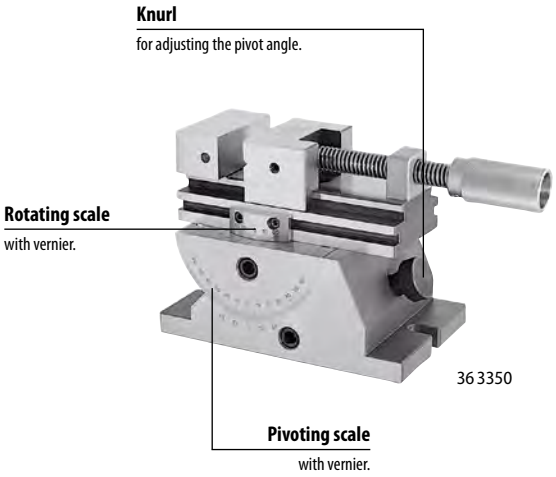
Function 36 3230:



SPREITZER Universal grinding and inspection vice

- Tool steel, through hardened, precision ground.
- Adjustment in **2 axes,** rotating and pivoting.
- Scale reading via vernier: 3'.

Accuracy: Within **0.003 mm** / 100 mm.
Application: For **machining** and **inspection of surfaces and angular surfaces up to 46°, true to gauge.**



Jaw width A		mm	70
38F 36 3350	Universal grinding and inspection vice		eShop
maximum clamping range b		mm	80
Jaw height C		mm	30
Overall length a		mm	180
Overall width B		mm	110
Overall height c		mm	137
Pivot range			2×60°
Weight		kg	12

SPREITZER Precision grinding and inspection vices

- Hardened steel; **precision ground all round.**

Working on 4 different faces (front, rear, and side faces).

36 3550 – With horizontal **ground Vee profile.**
36 3600 – Magnetisable chromium steel – **stainless**
(for working with coolants and lubricants which aggressively cause rusting).
36 3650 – Movable jaw can be slid to the component by hand and clamped.
On release, the movable jaw automatically backs away from the component.

Accuracy: Within **0.003 mm** / 100 mm (system accuracy).
Function: **Pull-down system** – The movable jaw is pulled down by the resulting clamping force; no lifting of the component or vibration during machining.
Application: For **machining and inspection true to gauge.**
36 3600 – **Also suitable for spark eroding.**
Supplied with:
36 3550/3600 – Operating crank handle.





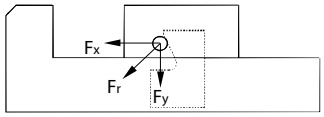


Illustration: Pull-down system

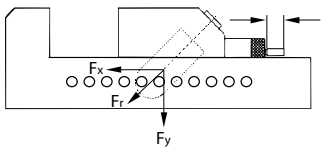


Illustration: Pull-down system – stroke indication.

Jaw width A		mm	45	65	100	125
38F 36 3550	Grinding and inspection vice **with spindle**		eShop	eShop	eShop	eShop
38F 36 3600	Grinding and inspection vice **with spindle, stainless**		–	–	eShop	–
38F 36 3650	Grinding and inspection vice **without spindle**		–	eShop	eShop	eShop
maximum clamping range b (36 3550, 36 3600)		mm	65	100	140	160
maximum clamping range b (36 3650)		mm	85	130	160	180
Jaw height C		mm	20	37	40	43
Overall length a (36 3550, 36 3600)		mm	150	220	270	300
Overall length a (36 3650)		mm	160	230	270	310
Overall width B		mm	45	65	100	125
Weight		kg	1.3	4.3	9.5	14.5

HOLEX Quick-release vices

- Quick adjustment of the movable jaws.
- **Jaws through hardened and ground.**
- **Time-consuming cranking not necessary.**
- **Precise clamping due to long flat guide.**
- **Clamping of component with just one hand.**
- One jaw with horizontal and vertical prismatic profiles for round material, one jaw smooth.
- Both jaws are stepped at the top to clamp flat parts.
- With two side support faces.
- Positive locking.

Accuracy: Within **0.03 mm.**
Material: Body and movable jaw made of sturdy special cast iron.
Application: **For quick clamping of components on drilling machines and measuring machines.**



36 5023

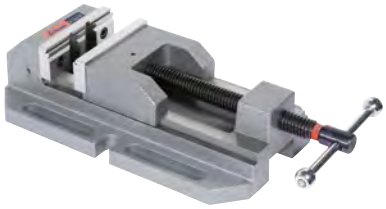
Jaw width A	mm	110	135
32P **36 5023**	Quick-release vice for one-hand use	eShop	eShop
Clamping range b	mm	130	160
Jaw height C	mm	32	40
Base body length a	mm	280	365
Base body width B	mm	112	138
Overall height c	mm	82	80.5
maximum overall length L_4	mm	510	587
Weight	kg	9.5	13.5
Colour code for suitable accessories			

Garant Manual vices for drilling machines

- **Sturdy design with strong spindle.**
- **Jaws through hardened and ground.**
- **Precise clamping due to long flat guide.**
- One jaw with horizontal and vertical prismatic profiles for round material, one jaw smooth.
- Both jaws are stepped at the top to clamp flat parts.

36 5038 –
- Patent-pending **integrated eccentric quick clamping** for a secure grip on the drilling machine table.
- The **quick clamping** in the area of the grooves makes it possible to process the clamped workpiece flexibly and efficiently at any desired position on the **entire** drilling machine table without re-clamping.

Accuracy: Within **0.10 mm.**
Material: Body and movable jaw made of special cast iron.
Application: For clamping components on drilling machines.
Supplied with:
36 5038 – Clamp wrench and three Tee-nuts in sizes 12;14 and 16 mm.



36 5035



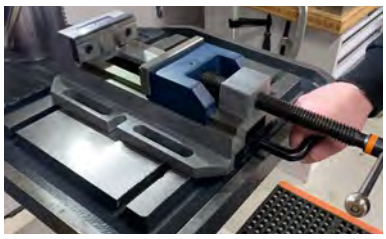
36 5038



Eccentric quick clamping on the underside of the vice.



Open and lock the clamping using the supplied clamp wrench.



Easily and securely clamped for machining.

Jaw width A	mm	60	80	100	120	150
31S **36 5035**	Manual vice for drilling machines	eShop	eShop	eShop	eShop	eShop
31S **36 5038**	Manual vice for drilling machines, with eccentric quick clamping	–	–	eShop	eShop	–
Clamping range b	mm	79	120	143	173	209
Jaw height C	mm	25	28	32	40	40
Base body length a	mm	169	238	286	340	400
Base body width B	mm	115	140	174	193	226
Overall height c (36 5035)	mm	55	65	82	90	90
Overall height c (36 5038)	mm	–	–	92	107	–
Clamping slot spacing	mm	90	110	141	160	189
Clamping slot width	mm	13	13	17	17	19
maximum overall length L_4	mm	271	280	474	556	652
Weight (36 5035)	kg	3.2	5.7	11.7	18	23.8
Weight (36 5038)	kg	–	–	12.5	20	–
Colour code for suitable accessories						

Colour code: BM vice, blue BM vice, grey

HOLEX Manual vice for drilling machines

- **Sturdy and handy design.**
- **Jaws through hardened and ground.**
- **Consistent overall length** (the spindle retracts into the handle)
- Universal fastening capability due to long holes.
- Movable jaw with guides at the sides.
- Fixed jaw with three vertical prismatic and one horizontal prismatic section.

Accuracy: Within **0.20 mm.**
Material: **Cast iron body.**
Application: For clamping components on drilling machines.



Jaw width A	mm	80	100	120
32D 36 5045	Manual vice for drilling machines	eShop	eShop	eShop
Clamping range b	mm	65	87	110
Jaw height C	mm		30	
Base body length a	mm	233	288	343
Overall height c	mm	64	64	66
Weight	kg	4	4.8	6.5

HOLEX 3-sided manual vice for drilling machines

- **Can be used horizontally, vertically or laterally.**
- **Sturdy and handy design.**
- **Jaws through hardened and ground.**
- **Uniform total length.** (spindle retracts into handle!)
- Universal fastening capability due to long holes.
- Movable jaw with guides at the sides.
- Fixed jaw with three vertical prismatic and one horizontal prismatic section.
- With detachable crank.

Accuracy: Within **0.20 mm**.
Material: **Cast iron body.**
Application: For clamping components on drilling machines.



Jaw width A	mm	80	100	120
32D 36 5055	Manual vice for drilling machines	eShop	eShop	eShop
Clamping range b	mm	77	101	128
Jaw height C	mm	30	30	39
Base body length a	mm	158	191	225
Overall height c	mm	64	64	67
Weight	kg	4	4.8	6.5







Garant Magnetic jack

- For use as an additional support point to avoid vibration of the workpiece.
- Ideal in combination with vices.
- Simple and accurate positioning for vertical and horizontal clamping.
- With knurled surface for manual adjustment of height and width across flats, for more positive support.
- Captive support elements.
- Point support available in any position.

Suitable for: All vices, can be used as a support in all clamping situations.
Material: Spring steel
Application: For avoiding vibration, especially when clamping thin workpieces.





Type		15
310 36 6745	Magnetic jack	eShop
H	mm	27 – 40
Diameter	mm	20

Garant Sets of magnetic parallels

Accuracy: Height tolerance ± 0.01 mm; width tolerance ± 0.02 mm.
Hardness: 50-55 HRC.
Advantage:
- Flexible use thanks to integral rod magnet on the underside.
- Reduction in set-up time.



Length		mm	90	125	160
31Z 36 6320	Set of parallels, underside magnetic, narrow		eShop	eShop	eShop
Number of strips		pair	5		
Width		mm	5		
Height		mm	15; 23; 28; 30; 32	20; 30; 35; 37; 39	25; 37; 42; 45; 47

Sets of parallels – 5 pairs — magnetic

Accuracy: Height tolerance ± 0.01 mm; width tolerance ± 0.02 mm.
Hardness: 60 HRC.
Reduces the clamping time by up to 10 %.

Note: Available also in lengths 50, 70, 100 and 150 mm.



Length		mm	90	125	160	200
31Z 36 6740	Set of parallels **magnetic**		eShop	eShop	eShop	eShop
Number of strips		pair	5			
Width		mm	2.5			
Height		mm	15; 22; 25; 30; 32	15; 30; 35; 37; 39	22; 30; 37; 42; 47	25; 40; 47; 52; 57
Length		mm	90	125	160	200

Sets of parallels

Parallel blocks in various thicknesses – upright

Precision ground as pairs.

36 6702 – GARANT – **precision version.** Pairing tolerance ≤ 0.004 mm, width / height tolerance ≤ 0.007 mm, extremely precise flatness and rectangularity. Parallels stored in special plastic stand. Hardness: 60 HRC.

36 6704 – HOLEX – standard version. Height and pairing tolerance 0.01 mm. Stored in a wooden box (as shown on the illustration). Hardness: 60 HRC.

Application: In high precision work for parallel mounting of components in machine vices or jigs.

Note: Sizes 125 – 200: In 1 mm increments, except 9 mm, all other dimensions achievable. See the spare parts list for spare holders.


36 6702_125/150/200

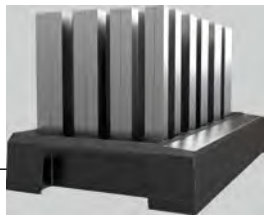
Precision version

with display of sizes
for quick location of parallels.


36 6704


36 6702_100

Robust non-tipping box
with grip recesses.


36 6702

Length		mm	100	125	150	200
31Z 36 6702 Garant 32D 36 6704 HOLEX	Set of parallels		eShop eShop	eShop eShop	eShop eShop	eShop –
Number of strips		pair	20	24	24	24
Length		mm	100	125	150	200
Content:			2×5; 2×10; 2×15; 2×20; 3×6; 3×11; 3×16; 3×21; 4×7; 4×12; 4×17; 4×22; 5×8; 5×13; 5×18; 5×23; 6×9; 6×14; 6×19; 6×24	8×11; 8×16; 8×21; 8×26; 8×31; 8×36; 10×13; 10×18; 10×23; 10×28; 10×33; 10×38; 12×15; 12×20; 12×25; 12×30; 12×35; 12×40; 14×17; 14×22; 14×27; 14×32; 14×37; 14×42	8×11; 8×16; 8×21; 8×26; 8×31; 8×36; 10×13; 10×18; 10×23; 10×28; 10×33; 10×38; 12×15; 12×20; 12×25; 12×30; 12×35; 12×40; 14×17; 14×22; 14×27; 14×32; 14×37; 14×42	8×11; 8×16; 8×21; 8×26; 8×31; 8×36; 10×13; 10×18; 10×23; 10×28; 10×33; 10×38; 12×15; 12×20; 12×25; 12×30; 12×35; 12×40; 14×17; 14×22; 14×27; 14×32; 14×37; 14×42

HOLEX Sets of parallels

Accuracy: Plan parallelism height tolerance ± 0.01 mm; **hardness:** 57 HRC. Insert the clamping clips into the clamp blocks and click them on to the vice.

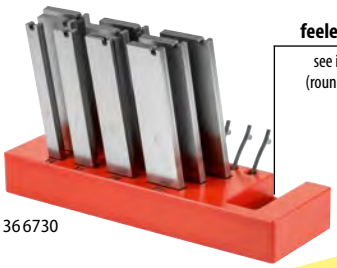
Suitable for: All GARANT, Allmatic NC high pressure vices with tenon width (dimension A) 39 mm ± 0.1 mm.

Advantage: The clamp blocks remain in position during machining and after the high pressure vice has been opened.

Supplied with: Supplied with plastic stand, 10 pairs of inserts, 4 clamping clips

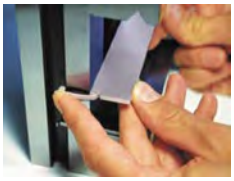
Optional extras: Spare clamping levers No. 366731 in the spare parts list.

Note: Check dimension A on the high pressure vice!

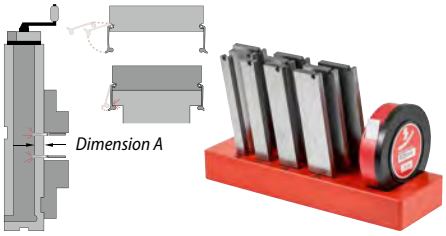


Storage for feeler gauge stock
see illustration below (round or rectangular).

366730



further sizes on request



Type		125
38F 36 6730	Set of parallels **with clamping clip**	eShop
Number of strips	pair	10
Width	mm	3
Height	mm	10; 15; 20; 25; 28; 30; 33; 35; 36; 37
Length	mm	125
suitable for colour code		

HOLEX Sets of parallels, flat

Ground in pairs, hardness 60 HRC.
Accuracy: height tolerance ± 0.01 mm; width tolerance ± 0.02 mm.

Application: In high precision work for parallel mounting of components in machine vices or jigs.

Set of parallels – 14 pairs, flat / 150×10 mm

32D 36 6750	Set of parallels	eShop
Number of strips	pair	14
Width	mm	10
Height	mm	14; 16; 18; 20; 22; 24; 26; 28; 30; 32; 35; 40; 45; 50
Length	mm	150



366750

Set of parallels – 9 pairs, flat / 160×4 mm

32D 36 6751	Set of parallels	eShop
Number of strips	pair	9
Width	mm	4
Height	mm	10; 14; 18; 22; 26; 30; 34; 38; 42
Length	mm	160



366751

Set of parallels – 8 pairs, flat / 160×8 mm

32D 36 6752	Set of parallels	eShop
Number of strips	pair	8
Width	mm	8
Height	mm	12; 17; 22; 25; 28; 32; 36; 38
Length	mm	160



366753

Set of parallels – 8 pairs, flat / 200×8 mm

32D 36 6753	Set of parallels	eShop
Number of strips	pair	8
Width	mm	8
Height	mm	17; 22; 26; 28; 32; 36; 38; 42
Length	mm	200



366752

Colour code: TC LC LC-GARANT Titan Titan 2 Duo Duo Plus LCV125G

Individual pairs of parallels

Hardness: 60 HRC. **Precision ground as pairs.**

36 6706–6726 – GARANT – precision version.
Accuracy: Height and pairing tolerance **± 0.007 mm.**

36 6741–6746 – GARANT – height tolerance 0.01 mm.

36 6755–6770 – HOLEX – height tolerance 0.01 mm.

Suitable for:

36 6755 – Set of parallels 366750.

36 6760 – Set of parallels 366751.

36 6765 – Set of parallels 366752.

36 6770 – Set of parallels 366753.

36 6706–6726 – Set of parallels 366702; 366704.

36 6741–6746 – Set of parallels 366740.

Application: In high precision work for parallel mounting of components in machine vices or jigs.



36 6706



36 6741

Width×height mm	31Z 36 6706 Garant Single pair of parallels for 366702 / 6704 size 100
2×5	eShop
2×10	eShop
2×15	eShop
2×20	eShop
3×6	eShop
3×11	eShop
3×16	eShop
3×21	eShop
4×7	eShop
4×12	eShop
4×17	eShop
4×22	eShop
5×8	eShop
5×13	eShop
5×18	eShop
5×23	eShop
6×9	eShop
6×14	eShop
6×19	eShop
6×24	eShop

Width×height mm	31Z 36 6711	31Z 36 6716 Garant	31Z 36 6726
	Single pair of parallels for		
	366702 / 6704 size 125	366702 / 6704 size 150	366702 size 200
8×11	eShop	eShop	eShop
8×16	eShop	eShop	eShop
8×21	eShop	eShop	eShop
8×26	eShop	eShop	eShop
8×31	eShop	eShop	eShop
8×36	eShop	eShop	eShop
10×13	eShop	eShop	eShop
10×18	eShop	eShop	eShop
10×23	eShop	eShop	eShop
10×28	eShop	eShop	eShop
10×33	eShop	eShop	eShop
10×38	eShop	eShop	eShop
12×15	eShop	eShop	eShop
12×20	eShop	eShop	eShop
12×25	eShop	eShop	eShop
12×30	eShop	eShop	eShop
12×35	eShop	eShop	eShop
12×40	eShop	eShop	eShop
14×17	eShop	eShop	eShop
14×22	eShop	eShop	eShop
14×27	eShop	eShop	eShop
14×32	eShop	eShop	eShop
14×37	eShop	eShop	eShop
14×42	eShop	eShop	eShop

Height mm	31Z 36 6741	31Z 36 6742	31Z 36 6744	31Z 36 6746 Garant
	Single pair of magnetic parallels for			
	366740 size 90×2.5	366740 size 125×2.5	366740 size 160×2.5	366740 size 200×2.5
15	eShop	eShop	–	–
22	eShop	–	eShop	–
25	eShop	–	–	eShop
30	eShop	eShop	eShop	–
32	eShop	–	–	–
35	–	eShop	–	–
37	–	eShop	eShop	–
39	–	eShop	–	–
40	–	–	–	eShop
42	–	–	eShop	–
47	–	–	eShop	eShop
52	–	–	–	eShop
57	–	–	–	eShop

Width mm	32D 36 6755	32D 36 6760	32D 36 6765	32D 36 6770 HOLEX
	Single pair of parallels for			
	366750 size 150×10	366751 size 160×4	366752 size 160×8	366753 size 200×8
10	–	eShop	–	–
12	–	–	eShop	–
14	eShop	eShop	–	–
16	eShop	–	–	–
17	–	–	eShop	eShop
18	eShop	eShop	–	–
20	eShop	–	–	–
22	eShop	eShop	eShop	eShop
24	eShop	–	–	–
25	–	–	eShop	–
26	eShop	eShop	–	eShop
28	eShop	–	eShop	eShop
30	eShop	eShop	–	–
32	eShop	–	eShop	eShop
34	–	eShop	–	–
35	eShop	–	–	–
36	–	–	eShop	eShop
38	–	eShop	eShop	eShop
40	eShop	–	–	–
42	–	eShop	–	eShop
45	eShop	–	–	–
50	eShop	–	–	–

Garant Clamping system for contour and form clamping

System consisting of base plate and clamping/sacrificial plate. Base plate is mounted on the zero point clamping system at 200 mm pitch, or directly on to the machine table. The clamping/sacrificial plate is mounted on the base plate and the negative of the component contour is introduced individually. Alternatively, simple clamping elements from Mite-Bite, AMF, KIPP, Halder and similar can be mounted on the clamping/sacrificial plate for component clamping.



36 8010_180

Baseplate

Anodised aluminium.

Size 180 – Pitch 200 mm.
Size 360 – Pitch 200 mm and cross pitch 200 mm.

Suitable for: Zero point clamping systems with 200 mm pitch or 200 mm cross pitch (for size 360).

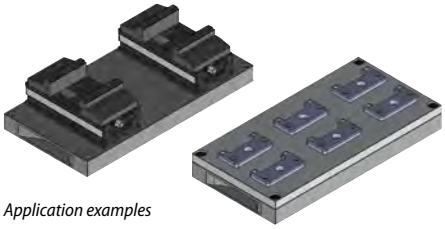
Supplied with:

Size 180 – 4 fitted screws M8, 4 blanking screws.
Size 360 – 8 fitted screws M8, 8 blanking screws.

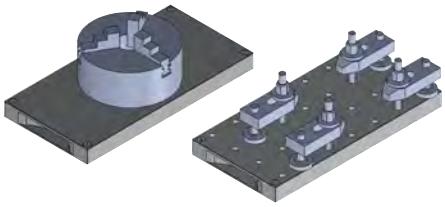
Optional extras: Clamping stud No. 360025 18M12.



36 8010_360



Application examples



Length		mm	180	360
310 36 8010	Baseplate		eShop	eShop
Width		mm	360	
Height		mm	30	

Clamping / sacrificial plate

Face-milled aluminium plate of EN AW-5083 - Aluminium (3.3547).

Suitable for: Base plate No. 368010.

Optional extras: Clamping elements from Mitee-Bite, AMF, Kipp, Halder and similar.



36 8015_180

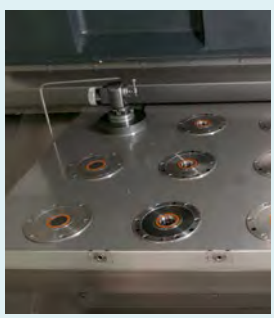


36 8015_360

Length		mm	180	360
310 36 8015	Clamping/sacrificial plate		eShop	eShop
Width		mm	360	
Height		mm	15	

Garant The clamping system in use!



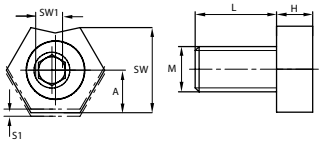

Garant Multi-eccentric clamp

- Hexagon steel washer with eccentric steel screw.
- Clamping of workpieces of any shape.
- **6 different geometries at the clamping faces:** 1. Vee with 150° opening angle 2. Longitudinally grooved 3. Smooth step 4. Serrated 5. Smooth 6. Smooth coated.
- Requires less space, so few interference contours.

Application: Suitable for clamping blanks and finished parts

exclusive world first







Thread M	310 37 0001 Eccentric clamp	Hexagon washer AF	Internal hexagon AF_1	Eccentric travel S_1	Dimension A	Washer height H	L	Clamping force	maximum tightening torque
		mm	mm	mm	mm	mm	mm	kN	Nm
M10	eShop	25	7	1.6	12.7	10	9	9	28

MITEE-BITE PRODUCTS INC. Clamping systems for jig inserts

Eccentric clamps

- Requires only small space, so few interference contours.
- Clamping of workpieces of any shape.

37 0005 – Hexagon brass washer with eccentric steel screw.
37 0008 – Clamping washer of case-hardened steel with eccentric steel screw.

Supplied with: 1 pc. steel screw,
1 pc. clamping washer.

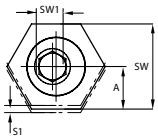
Note: A hexagon L-wrench size 7 is required for clamp M 10!

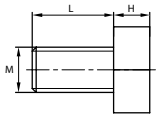


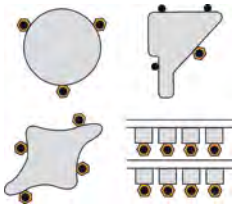
37 0008_M12

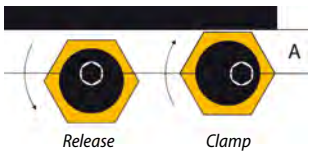


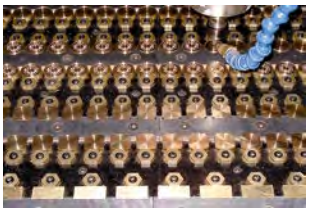
37 0005_M12











Thread M	37M 37 0005 Eccentric fixture clamp	37M 37 0008 Eccentric fixture clamp with knife edge		Hexagon washer AF	Claw plate ∅ D_1	Internal hexagon AF_1	Eccentric travel S_1	Dimension A	Washer height H		L	Clamping force	maximum tightening torque
				37 0005	37 0008				37 0005	37 0008			
				mm	mm	mm	mm	mm	mm	mm	mm	kN	Nm
M6	eShop	–	1	16	–	4	1.3	7.8	4.8	–	12	3.4	8.5
M8	eShop	–	1	20	–	5	1	10.2	4.8	–	16	3.6	11.3
M10	eShop	eShop	1	20	20.6	7	1.6	10.2	6.4	9.6	20	9	28
M12	eShop	eShop	1	25	25.4	8	2	12.7	9.5	9.6	25	18	88
M16	eShop	eShop	1	30	30.1	12	2.5	15	12.7	12.7	27	27	88

Eccentric clamps for T-slots

- Small footprint, so few interference contours.
- For clamping workpieces of any shape.
- Hexagon brass washer with eccentric steel screw.
- Attachment in the T-slot using a locking clamping screw.

Application: Particularly suitable for clamping flat components.

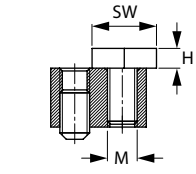
Supplied with: 1 pc. steel screw,
1 pc. clamping washer.

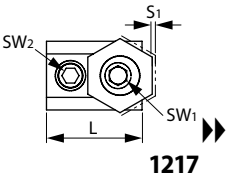




37 0009_12

T-slot nominal size	37M 37 0009 Eccentric clamp		Hexagon washer AF	Internal hexagon AF_1	AF_2	Eccentric travel S_1	Washer height H	Length L	Clamping force	maximum tightening torque	maximum tightening torque, locking screw
mm			mm	mm	mm	mm	mm	mm	kN	Nm	Nm
8	eShop	1	16	4	3	1	4.8	23.2	3.4	8.5	7.7
10	eShop	1	16	4	3	1	4.8	23.2	3.4	8.5	7.7
12	eShop	1	21	5	4	1	4.8	27.9	3.6	11.3	17
14	eShop	1	21	7	5	1.6	6.4	30.5	9	28	35
18	eShop	1	25	8	6	2	9.5	34.7	18	61	55
22	eShop	1	30	12	6	2.5	12.7	44.3	27	135	55

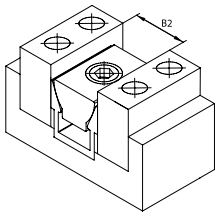


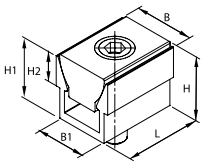


Double wedge clamp

- Aluminium profile with steel wedge including screws.
- Space-saving multiple clamping.

Application: Particularly suitable for clamping round and flat parts.







37 0010_M6



Thread M	37M 37 0010 Double wedge clamp		L	B	H	B_1	H_1	B_2	H_2	Maximum spreading tension	suitable for hex socket -AF	maximum tightening torque	Clamping force
			mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm	kN
M4	eShop	1	15.9	12.3	14.5	10.4	12.7	12.7	5.6	13.2	3	3.4	2.2
M6	eShop	1	23.8	18.6	19	16.1	19.05	19	9.5	20.3	5	14.3	6.7
M8	eShop	1	31.7	24.8	25.9	20.8	25.4	25.4	12.7	26.9	6	14.5	8.9
M12	eShop	1	47.6	37.3	38.6	30.8	38.1	38.1	19	39.9	10	38.4	15.6

Positive engagement double wedge clamp

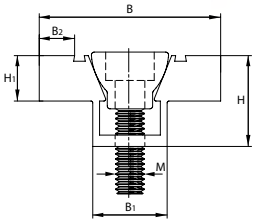
- Aluminium profile with steel wedge including screws.
- Extra-wide jaws, to allow the workpiece contour to be milled in.

Advantage:
- Positive engagement of workpieces, thus secure clamping.
- Clamping of 2 workpieces at the same time.

Note: The locking plate is required for machining the double wedge clamp.



37 0011

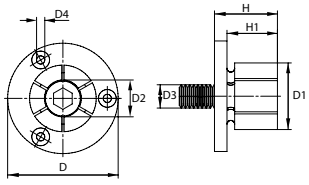


Thread M	37M 37 0011 Positive engagement double wedge clamp	L	B	H	B_1	H_1	B_2	maximum tightening torque	Clamping force
		mm	mm	mm	mm	mm	mm	Nm	kN
M6	eShop	23.9	38.1	19.1	16.05	9.4	6.6	14.3	6.68
M8	eShop	31.8	50.8	25.4	20.83	12.7	9.9	14.5	8.9
M12	eShop	47.5	76.2	38.1	30.86	19.1	15.7	38.4	15.58

Clamping mandrel for through hole

- Base body of structural steel including steel screw.
- 5-face machining possible.
- Very high repetition accuracy.
- Easy machining of the base body **at the desired clamping Ø.**

Application: For clamping workpieces in an existing bore.





D_1	37M 37 0015 Clamping mandrel for through hole	Ø D	D_2 smallest clamping Ø	Ø D_3	Ø D_4	H	H_1	Clamping force	maximum tightening torque	max. clamping travel
mm		mm	mm			mm	mm	kN	Nm	mm
7,4	eShop	20	4.1	M 2	M 2/13.7	10.7	7.6	1.1	0.7	0.13
12,4	eShop	29.72	7.2	M 4	M 3/21	21.8	16	4.2	5	0.25
14,2	eShop	31,5	12.2	M 6	M 3/23.1	24.9	19	8.5	17	0.33
20	eShop	37.5	13.5	M 8	M 3/29	24.9	19	11.1	34	0.38
27	eShop	50	18	M 10	M 4/39.4	28.6	22.2	20	60	0.38
35,3	eShop	56	23	M 12	M 4/45.5	31.8	25.4	26.3	150	0.38
42	eShop	69.5	29.3	M 16	M 5/55.9	39.6	31.8	44.5	280	0.38
51,5	eShop	75.5	29.3	M 16	M 5/63.9	39.6	31.8	44.5	280	0.38
77,7	eShop	107.5	29.3	M 16	M 6/92.5	45.5	37.6	44.5	280	0.38
103	eShop	132.9	29.3	M 16	M 6/118	45.5	37.6	44.5	280	0.38





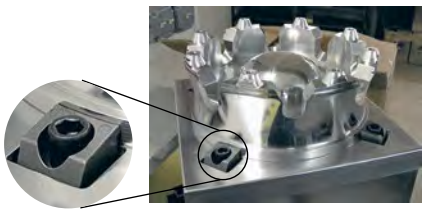
Pitbull clamps

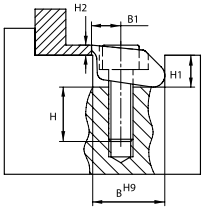
- Clamp with socket-head screw to DIN912, with oil-tight O-ring.
- Secure and precise clamping.
- Compact size, so few interference contours.

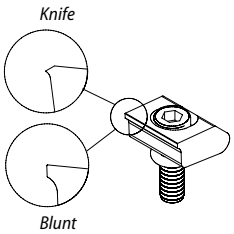
37 0025 – **Knife edge** for blanks.
37 0030 – **Blunt edge** for general tasks.

Application: Ideal for multiple clamping.


37 0025_M6








37 0030_M6

Thread M	37M 37 0025 knife edge	37M 37 0030 blunt edge		B_{H9}	H	B_1	H_1	H_2	Clamping width	Clamping travel	maximum tightening torque	Clamping force	Material
	Pitbull clamp			mm	mm	mm	mm	mm	mm	mm	Nm	kN	
M2,5	eShop	eShop	1	9.5	6.6	3.8	3.6	1.9	9.5	0.15	1.8	2.8	Steel
M4	eShop	eShop	1	12.7	9.9	5.1	4.8	2.6	12.7	0.4	5.6	6.6	Steel
M6	eShop	eShop	1	19.05	14.48	7.6	7.2	3.8	19.1	0.6	22.5	16	Steel
M10	eShop	eShop	1	25.4	18.03	10.2	11.4	6.3	25.4	1.7	40	26	Steel

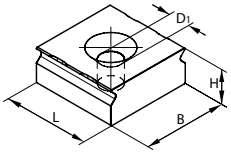
Clamping claws

- The contour of the claw generates a slight pull-down force.
- The low clamping height saves material.
- Higher cutting values due to positive clamping.

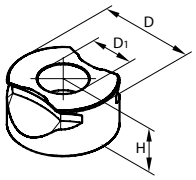
Application: Ideal for multiple clamping.

37 0034 – For use as a stop in jigs in conjunction with Pitbull clamps No. 370025; 370030 or eccentric clamps No. 370001; 370005; 370008.

Supplied with: 1 clamping claw with screw.




37 0034




37 0035

Type	37M 37 0034 Ultra clamping claw, rectangular	37M 37 0035 Versa clamping claw, round		Screw to standard	∅ D	L	B	H	∅ D_1	recommended clamping height
					mm	mm	mm	mm		mm
1	eShop	–	1	M5×12	–	19.05	12.7	6.35	for M5	1.5 – 1.9
2	eShop	–	1	M5×12	–	19.05	19.05	7.92	for M5	1.5 – 3
3	eShop	–	1	M5×12	–	19.05	25.4	7.92	for M5	1.5 – 3
4	(eShop)	–	1	M8×16	–	25.4	25.4	12.7	for M8	1.5 – 5.6
5	–	eShop	1	M5×10	19.05	–	–	9.53	for M5	1.5 – 3

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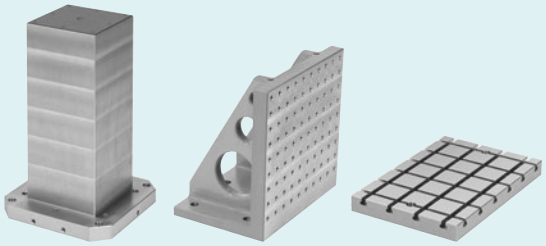
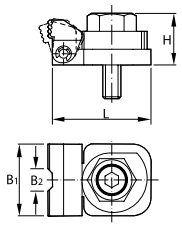


Side clamp with cam

Material: Housing made of tempered steel, gunmetal finished.

Advantage:
- Compact design.
- Quick and easy clamping of components with pull-down.

Application: For lateral clamping of narrow and wide workpieces. Clamping force is introduced by eccentric adjustment with an additional pull-down effect.





37 0051

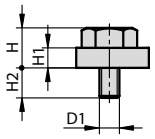
Thread		M8	M10	M12
37K 37 0051	Side clamp with cam	eShop	eShop	eShop
Length L	mm	44	54	62
Height H	mm	23	29	35
B_1	mm	32	40	46
B_2	mm	10	12	14
Clamping range	mm	4	5	5.5
Clamping force	kN	3.5	5.5	7
maximum tightening torque	Nm	45	55	60

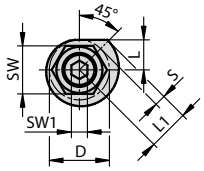
Clamping cams

Material: Heat treatable steel, burnished

Advantage:
- Compact design.
- Quick and easy clamping of components.

Application: For lateral clamping of narrow and wide workpieces.
The workpiece is clamped by tightening the fixture clamp with a spanner.

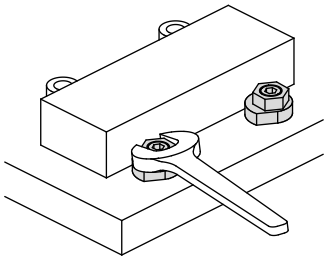






37 0052

Threads		M8	M10	M12
37K 37 0052	Clamping cam	eShop	eShop	eShop
∅ D	mm	24	30	34
Length L	mm	12	15	17
L_1	mm	16.4	20.5	23.2
Height H	mm	16	20	24
Height H_1	mm	8	10	12
Height H_2	mm	12	15	18
Width across flats AF	mm	19	24	27
AF_1	mm	6	8	10
Clamping force	kN	5.2	8	9.3
Stroke S	mm	4.4	5.5	6.2
maximum tightening torque	Nm	50	75	90



Application example

Centring clamps

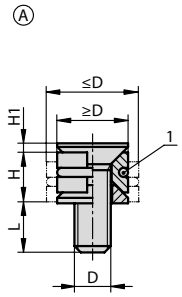
37 0053 – Form A with countersunk screw.
37 0054 – Form B with cylinder head screw.

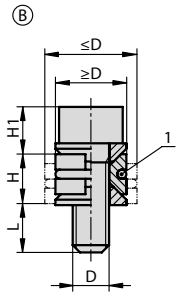
Material: Heat treatable steel, burnished Hardened (33-39 HRC).

Advantage:
- Pull-down effect.
- Quick and easy clamping of components.

Application: For centring and clamping a workpiece in the hole.
High clamping forces are achieved by the wedge surfaces.

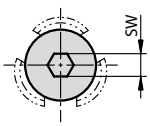
Note: During the clamping process, the clamping force acts on specific points of the hole wall.

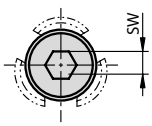






37 0054





Thread × length	37K 37 0053 NEW Centring clamp Form A	37K 37 0054 NEW Centring clamp Form B	D_{min}	D_{max}	H	H_1		L		Width across flats AF		maximum clamping force	
						37 0053	37 0054	37 0053	37 0054	37 0053	37 0054	37 0053	37 0054
			mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kN
M4×12	eShop	eShop	8	10.3	5.5	0.9	5.1	7.3	7.1	2.5	3	0.9	1.5
M5×15	eShop	eShop	10	12.3	6.4	1.1	6.2	9.1	9	3	4	1.5	2.5
M6×18	eShop	eShop	12	16.3	8.6	1.3	7.9	11.2	10.6	4	5	2.1	5
M8×25	eShop	eShop	16	22	11.5	1.6	10.4	16.2	15.4	5	6	4	9

Self-aligning pads

- Body made of heat treatable steel, phosphated.
- Sphere locked to prevent twisting.
  37 0057 – Sphere of carbide.

37 0055/0056/0058/0059/0065/0066 – Sphere of ball-bearing steel.

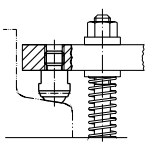
37 0060/0061/0062/0063/0068/0069 – Resets to the home position independently.

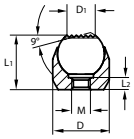
Application: Serve as stop, contact and pressure piece in jig and fixture making.

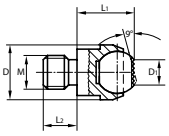
Note:

37 0069 – Can be combined with clamping hooks No. 370073 and 370074.

37 0055–0068 – Can be combined with swing clamps No. 370085 – 370086 or clamping hooks No. 370073 and 370074.









37 0055
flat



37 0056
serrated



37 0057
corrugated, carbide

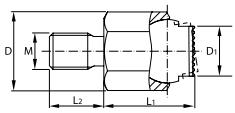


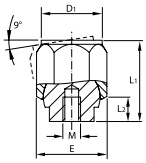
37 0058
flat



37 0059
serrated

Thread M		M3	M4	M5	M8	M10	M12	M16	M20
37K 37 0055	Self-aligning pad **flat, external thread**	–	–	–	eShop	eShop	eShop	eShop	eShop
37K 37 0056	Self-aligning pad **serrated, external thread**	–	–	–	eShop	eShop	eShop	eShop	eShop
37K 37 0057		–	–	–	eShop	eShop	eShop	–	–
37K 37 0058	Self-aligning pad **flat, internal thread**	eShop	–	eShop	–	–	–	–	–
37K 37 0059	Self-aligning pad **serrated, internal thread**	eShop	eShop	eShop	–	–	–	–	–
Ø D	mm	12	18	28	13	20	20	30	50
Ø D_1	mm	7.2	10.5	20	7.2	10.5	10.5	20	34.5
L_1	mm	11	17	25	13	18	18	27	35
L_2	mm	3.5	4.4	6.3	8	10	12	16	20
maximum loading (static)	kN	10	25	90	10	25	25	90	165







37 0060
flat



37 0061
serrated

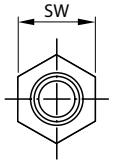


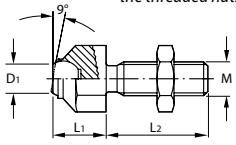
37 0062
flat



37 0063
serrated

Thread M		M3	M4	M5	M6	M8	M10	M12	M16
37K 37 0060	Self-aligning pad **flat, external thread, sself-righting**	–	–	–	eShop	eShop	eShop	eShop	eShop
37K 37 0061	Self-aligning pad **serrated, external thread, self-righting**	–	–	–	eShop	eShop	eShop	eShop	eShop
37K 37 0062	Self-aligning pad **flat, external thread, self-righting**	eShop	eShop	eShop	eShop	eShop	–	–	–
37K 37 0063	Self-aligning pad **serrated, external thread, self-righting**	eShop	eShop	eShop	eShop	eShop	–	–	–
Ø D (37 0060, 37 0061)	mm	–	–	–	7	9.5	14	20	22
Ø D (37 0062, 37 0063)	mm	9	12	18	26	30	–	–	–
H_1	mm	–	–	–	13	18	25	36	40
H_2	mm	–	–	–	9	12	15	18	24
L_1	mm	13	18	25	36	40	–	–	–
L_2	mm	5	6	8	10	12	–	–	–
maximum loading (static) (37 0060, 37 0061)	kN	–	–	–	8	16	32	64	90
maximum loading (static) (37 0062, 37 0063)	kN	8	16	32	64	90	–	–	–





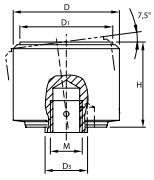
Height adjustment via the threaded nuts.



37 0065
flat



37 0066
serrated





37 0068



37 0069

Thread M		M8	M10	M12	M16	M20
37K 37 0065	Adjustable self-aligning pad **flat, external thread**	eShop	eShop	eShop	eShop	eShop
37K 37 0066	Adjustable self-aligning pad **serrated, external thread**	eShop	eShop	eShop	eShop	eShop
AF	mm	13	17	17	24	30
Ø D_1	mm	5.8	8.6	8.6	10.5	20
L_1	mm	11.6	15.7	15.7	20.7	27.3
L_2	mm	25	30	35	40	50
maximum loading (static)	kN	8	8	15	25	90

Thread M		M5	M6	M8	M10	M12
37K 37 0068	Self-aligning pad **flat, external thread, self-righting**	eShop	eShop	eShop	eShop	eShop
37K 37 0069	Self-aligning pad **serrated, external thread, self-righting**	eShop	eShop	eShop	eShop	eShop
Ø D	mm	18	22	28	34	40
Ø D_1	mm	15	18	23	29	35
H	mm	14	16.5	21.5	27	32
Ø D_3	mm	7	8	11	13	16
maximum loading (static)	kN	30	50	90	140	220

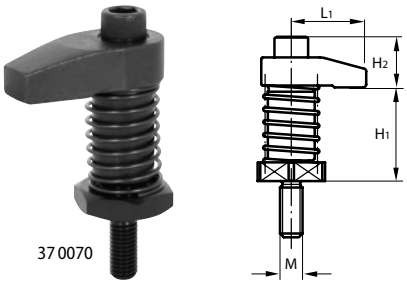
Clamping hook with collar

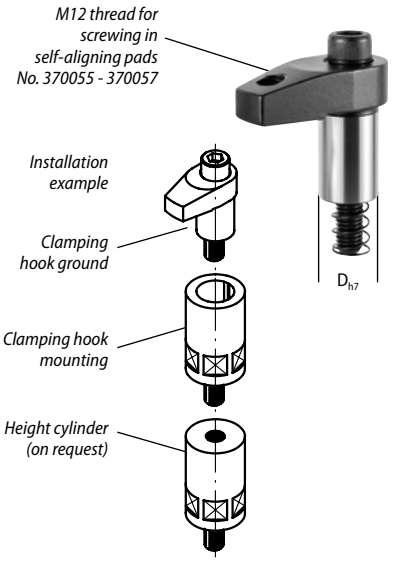
37 0075 – Screw head recessed in the clamping hook.
37 0076 – Screw head resting on clamping hook when mounting.
37 0070/0075 – With countersunk screw.

Application: For space-saving clamping of workpieces.

37 0070/0071/37 0072 – Screwed directly into a grid hole, no countersinking required.
For space-saving clamping of workpieces.
37 0073/0074 – For higher clamping forces and greater stability.
37 0075/0076 – For installation in individual clamping devices.

Optional extras:
37 0075/0076 – Springs and socket-head screws on request



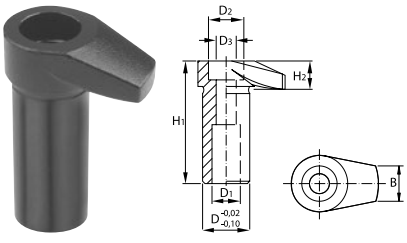


Type		1	2	3	4	5	6
37K 37 0070	Clamping hook with collar **M8**	eShop	eShop	eShop	eShop	eShop	eShop
H_1	mm	35 – 45	35 – 45	35 – 45	45 – 55	45 – 55	45 – 55
H_2	mm	14					
L_1	mm	20	25	30	20	25	30
$F_{max.}$	kN	7.9	7.3	6.7	7.9	7.3	6.7
maximum torque	Nm	20					

Type		1	2	3	4	5	6	7	8	9
37K 37 0071	Clamping hook with collar **M12**	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
37K 37 0073	Clamping hook ground **M12**	–	–	–	–	–	–	eShop	eShop	eShop
H_1	mm	50 – 65	50 – 65	50 – 65	65 – 80	65 – 80	65 – 80	39	39	39
H_2	mm	27	29	29	27	29	29	27	29	29
L_1	mm	40	50	60	40	50	60	40	50	60
$F_{max.}$	kN	13.5	12.6	11.7	13.5	12.6	11.7	22.6	18.5	15.2
maximum torque	Nm	45	45	45	45	45	45	58.8	49	45.1
∅ D_{h7}	mm	–	–	–	–	–	–	25	25	25

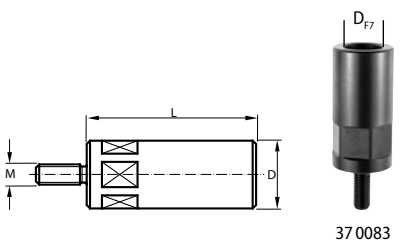
Type		1	2	3	4	5	6	8	9
37K 37 0072	Clamping hook with collar **M16**	eShop	eShop	eShop	eShop	eShop	eShop	–	–
37K 37 0074	Clamping hook ground **M16**	–	–	–	–	–	–	eShop	eShop
H_1	mm	50 – 65	50 – 65	50 – 65	65 – 80	65 – 80	65 – 80	75	75
H_2	mm	36							
L_1	mm	40	50	60	40	50	60	50	60
$F_{max.}$	kN	13.4	12.4	12	13.4	12.4	12	38	33
maximum torque	Nm	60	60	60	60	60	60	147	127.4
∅ D_{h7}	mm	–	–	–	–	–	–	32	32

Type		1	2	3	4
37K 37 0075	Clamping hook, cylindrical	eShop	eShop	eShop	eShop
37K 37 0076		eShop	eShop	eShop	eShop
H_1	mm	42	52	66	83
H_2	mm	10	12	16	20
B	mm	11	15	17	20
∅ D	mm	16	20	25	32
∅ D_1	mm	10	12	14	17
∅ D_2	mm	11	15	18	20
∅ D_3	mm	6.5	8.5	10.5	12.5
$F_{max.}$	kN	4.8	8.8	13.9	20.2



Height cylinder for clamping hooks

Application: For guiding and lifting **ground** clamping hooks.

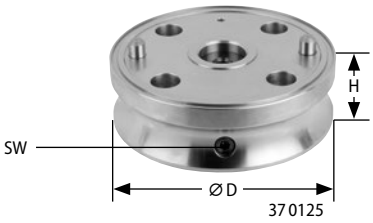


Length L	mm	80	100	M	∅ D mm	∅ D_{F7} mm	maximum torque Nm
37K 37 0083	Clamping hook mounting	eShop	eShop	M12	40	25	49
37K 37 0084		eShop	eShop	M16	50	32	78.4

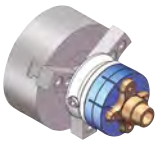
Mechanical collet

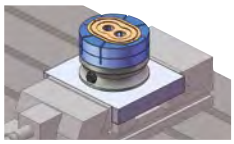
Material: Heat treatable steel, nickel plated

Application:
- To accept collets for **internal clamping and external clamping**.
- Collets are positioned on the arbor with 2 cylindrical dowels, and thereby secured against twisting.



External Ø D		mm	65	90	120	160
37K 37 0125	Adapter for mechanical collet		(eShop)	(eShop)	(eShop)	(eShop)
Height H		mm	35	40	45	50
Width across flats AF		mm	8	8	10	10



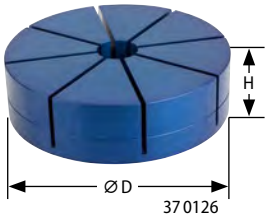


Collets

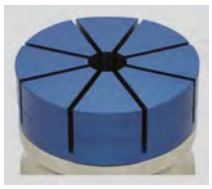
- For clamping workpieces with complex contours for 5-face machining.
- Minimum clamping depth of 2 mm.
- Clamping stroke 0.3 mm.

Material: High-tensile aluminium.

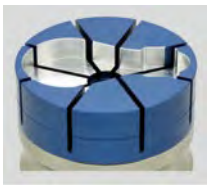
Supplied with: Clamping ring for machining.



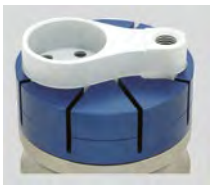
External Ø D		mm	65	90	120	160
37K 37 0126	Collet mechanical **External clamping**		(eShop)	(eShop)	(eShop)	(eShop)
Height H		mm	25	35	40	45
Maximum machining depth T		mm	10	15	20	25



1. Prepare collet



2. Machine collet

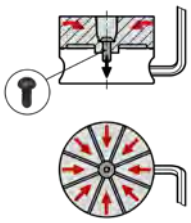


3. Insert the workpiece



4. Tighten the clamping cylinder

When tightening the clamping cylinder, the collet is pulled downwards (pull-down). At the same time, the 8 collet segments move into the middle and the workpiece is clamped.



Wedge clamps

Material: Double wedge and clamping segments heat-treatable steel, hardened, black.

Application:
- Wedge surfaces produce high clamping forces.
- Wedge clamps can be used in tapped holes or T-slots.
- When the clamping screw is screwed in, the clamping segments press against the workpieces.
- A slot in the double wedge allows for movement and tolerance adjustment. Movement distance: M8 = ± 0.5 mm; M10 and M12 = ± 1.0 mm; M16 = ± 1.5 mm.
- Wedge clamps are suitable for multiple clamping.
- 37 0031/0032 – Machining allowance enables adjustments to match the contour.

Note:
37 0031/0032 – The machining allowance per jaw is 3 mm for the M8X25 version and 5 mm for the M10X25, M12X40 and M16X60 versions.

Optimised design with internal spring



37 0026

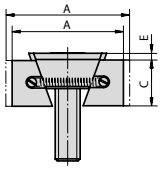


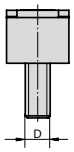
37 0029

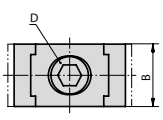


37 0032

Thread M x length L		mm	M8×25	M10×25	M12×40	M16×60
37K 37 0026	Wedge clamp, narrow version **smooth**		eShop	eShop	–	eShop
37K 37 0027	Wedge clamp, narrow version **serrated**		eShop	eShop	eShop	–
37K 37 0029	Wedge clamp, wide version **serrated**		–	–	eShop	–
37K 37 0031	Wedge clamp with machining allowance on both sides **narrow**		eShop	eShop	eShop	–
37K 37 0032	Wedge clamp with machining allowance on both sides **wide**		eShop	–	eShop	–
A minimum (37 0026, 37 0027, 37 0029)		mm	30.5	32	44	55
A minimum (37 0031, 37 0032)		mm	36.5	42	54	–
A maximum (37 0026, 37 0027, 37 0029)		mm	33.5	37	49.5	62
A maximum (37 0031, 37 0032)		mm	39.5	47	59.5	–
B (37 0026, 37 0027, 37 0031)		mm	24	28	30	40
B (37 0029, 37 0032)		mm	30	–	48	–
Height C		mm	15	19	22	29
Height E		mm	2	3.5	3.5	4
maximum clamping force (37 0026, 37 0027, 37 0029)		kN	15	20	30	50
maximum clamping force (37 0031, 37 0032)		kN	11	15	23	–



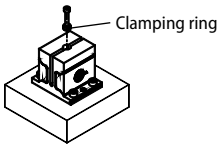




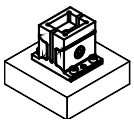
Machinable jaws

- 2 workpieces can be clamped.
- Maximum clamping stroke 0.5 mm.

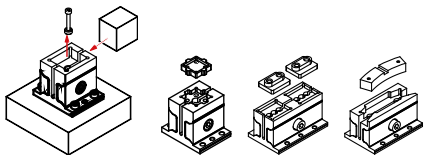
Material: Clamping wedges of heat treatable steel.
Supplied with: Including clamping for machining.



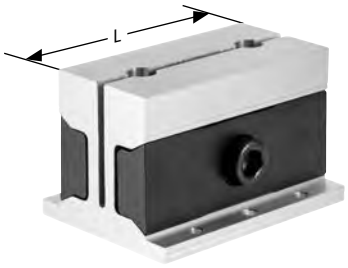
1. Insert the clamping ring:
Tighten the clamping screw



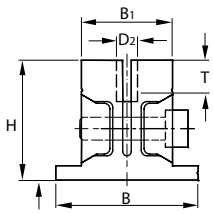
2. Machine the jaws:



3. Clamping the workpiece:
Release the clamping screw and remove the clamping ring using the socket-head screw. Insert the workpiece into the contour and tighten the clamping screw.



L × B1	mm	40×32	80×32	50×50	100×50
37K 37 0089	Machinable jaws	eShop	eShop	eShop	eShop
B	mm	50	50	72	72
∅ D_2	mm	7.4	7.7	11.4	11.4
H	mm	42	42	63	63
Maximum machining depth T	mm	10	10	15	15
Clamping force	kN	2.5	2.5	5.5	5.5
maximum torque	Nm	7.5	14	26	46

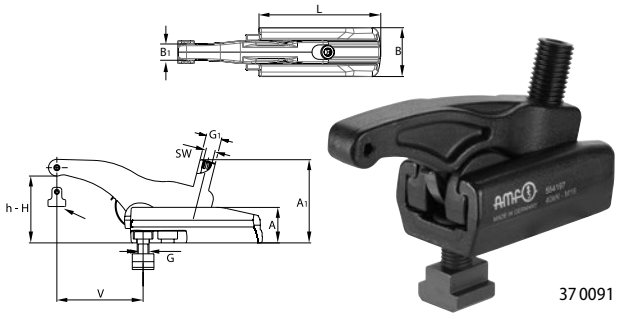


Power clamp, adjustable

- Clamping force 30 or 49 kN with tightening torque of approx. 100 Nm.
- Forged clamping element of alloy heat-treatable steel, black galvanised.
- **Steplessly adjustable height and length.**
- **Low installed height.**

Supplied with:
- Base element **and carrier.**
- T-nut DIN 508 with T-bolt strength class 12.9.

Optional extras:
Size 5; 1; 2 – Pressure pieces No. 370095.
Size 6; 3 – Pressure pieces No. 370096.
37 0091 Size 4 – Pressure pieces No. 370097.



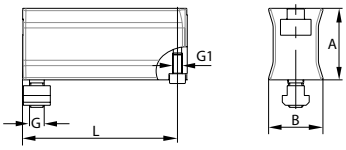
37 0091

Type	35A 37 0091	35A 37 0092	T-slot width	Fastening screw G	Clamping height h-H	Clamping force	A	A_1	B	B_1	L	V	AF	G_1
	Power clamp adjustable													
	long	short	mm		mm	kN	mm	mm	mm	mm	mm	mm	mm	
1	eShop	–	14	M12	6 – 68	30	36	85	54	18	135	20 – 110	8	M16
2	eShop	–	18	M16	6 – 68	30	36	85	54	18	135	24 – 113	8	M16
3	eShop	–	18	M16	6 – 80	43	42	105	60	20	155	16 – 134	10	M20
4	(eShop)	–	22	M20	7 – 88	49	52	125	75	25	175	19 – 165	12	M24
5	–	(eShop)	14	M12	6 – 50	32	36	78	54	18	95	12 – 82	8	M16
6	–	(eShop)	18	M16	6 – 50	40	42	92	60	20	110	15 – 95	10	M20

Spacer element for power clamps, movable

- Forged intermediate element of alloy heat-treatable steel, black galvanised.
- Other clamping heights can be achieved by using multiple height elements.

Supplied with: Including fastening set and socket-head screw.



for type	35A 37 0093	T-slot width	Fastening screw G	A	B	L	G_1
	Spacer element						
	long	mm		mm	mm	mm	
1/2	(eShop)	14	M12	60	44.5	135	M8
3	(eShop)	18	M16	70	47.5	155	M8
4	(eShop)	22	M20	80	58	175	M10


37 0093

Pressure pads for power clamps

Supplied with: Supplied with dowel pin.

Type	DG	DR	L mm	B mm	H mm	Suitable for:
35A 37 0095 Pressure pad, stainless steel	eShop	eShop	25	18	19.5	Type 1 / 2 / 5
Version	smooth	serrated				


37 0095_DG


37 0095_DR

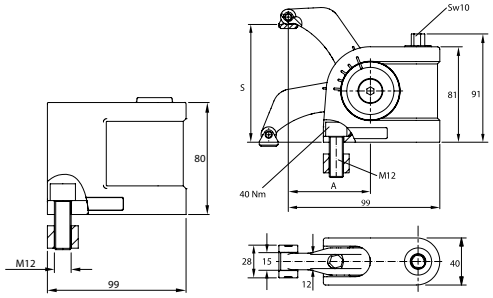
Garant Compact clamp

Material: Body and pressure arm of heat treatable steel.

Advantage:
- Compact design, dirt-repellent and chip-repellent.
- Height scale permits quick pre-setting of the clamping height.
- Captive pressure piece. Pressure piece adapters are attached by a magnetic insert.
- Easy assembly using the clamping arm.

Supplied with: Compact clamp, T-nut for width 14 mm and screw M12.

Optional extras: Pressure piece set No. 370148.





37 0143_67

Reach A		mm	47	67
31K 37 0143	Compact clamp		eShop	eShop
Clamping height S		mm	0 – 90	0 – 100
Length L		mm	95	
Width B		mm	40	
Height H		mm	81	
maximum clamping force		kN	16	12
maximum torque		Nm	105	

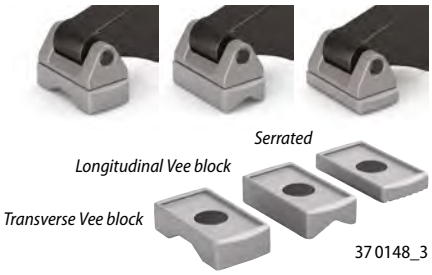


37 0146_80

Accessories for compact clamps

Suitable for: GARANT compact clamp No. 370143.

Height H		mm	80
31K 37 0146	Riser block for compact clamps		eShop
Length L		mm	95
Height H		mm	80
Width B		mm	41



37 0148_3

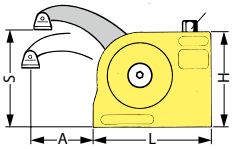
Type		3	B mm
31K 37 0148	Pressure piece set, 3 pieces	eShop	31.5

KOPAL Compact clamp

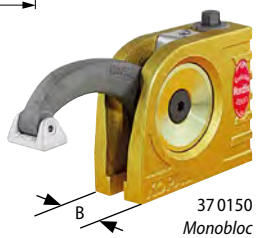
Note: Special screws No. 370450 – 370470 not included.

Compact clamp for vertical pressure

Reach A		mm	34	62	54	100
39K 37 0150	Compact clamp **Monobloc**		eShop	eShop	–	–
39K 37 0170	Compact clamp **Piccolo**		–	–	eShop	eShop
Clamping height S		mm	0 – 80	-8 – 102	-15 – 58	-40 – 90
Length L		mm	108	108	73	73
Width B		mm	40	40	32	32
Height H		mm	89	89	62.5	62.5
maximum clamping force		kN	16	12	6.5	4.2
maximum torque		Nm	80	80	30	30




Piccolo 37 0170

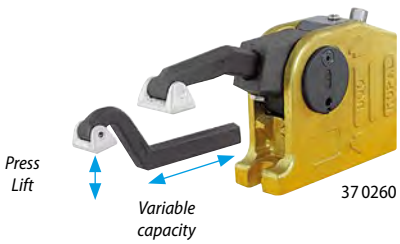


37 0150 Monobloc

Compact clamp for vertical pressure or lifting

- **With 2 different clamping arms** (straight or cranked).
- Lifting possible also by turning the clamping arm.

39K 37 0260	Compact clamp **Duo**		eShop
maximum clamping force with clamping arm position – pushed in		kN	11
maximum clamping force with clamping arm position – pulled out		kN	8
Length L		mm	120
Width B		mm	40
Height H		mm	95
Throat A (cranked clamping arm)		mm	48 – 91
Throat A (straight clamping arm)		mm	46 – 88
Clamping height downwards S (cranked clamping arm)		mm	38 – 129
Clamping height downwards S (straight clamping arm)		mm	0 – 80
Clamping height upwards S (cranked clamping arm)		mm	4 – 94
Clamping height upwards S (straight clamping arm)		mm	52 – 142



37 0260

Chain clamp hook-in block – chain length 1 m





37 0270

39K	37 0270	Chain clamp	eShop
	Length L	mm	108
	Width B	mm	40
	Height H	mm	89
	maximum clamping force	kN	16
	maximum torque	Nm	70

Riser block up to maximum 400 mm clamping height.



37 0300_60



37 0300_75

	Height H	mm	60	75
39K	37 0300	Riser block for compact clamps	eShop	eShop
	Height H	mm	60	75
	suitable for		Piccolo	Monobloc, Duo

Special accessories for compact clamps

37 0380 – Increases the reach by 99 mm (detachable).



37 0350



37 0360

39K	37 0350	Clamping wrench 11 AF for Monobloc, Duo, and chain clamp	eShop
39K	37 0360	Clamping wrench 8 AF for Piccolo	eShop
39K	37 0380	Extension arm for Monobloc, Piccolo, and chain clamp	eShop



37 0380



37 0410

37 0430 – Interchangeable, allowing optimum adaptation to component geometries.



37 0430_1



_2



_3



_4



_5

Type-No.		1	2	3	4	5	
39K	37 0430	Swivel shoe	eShop	eShop	eShop	eShop	eShop

Thread / Length		M8×30	M10×35	M12×35	M10×40	M10×45	M12×36	M14×40	M16×40
39K	37 0450	Special screw for Monobloc, Duo, and chain clamp	–	eShop	–	eShop	eShop	eShop	eShop	eShop
39K	37 0470	Special screw for Piccolo	eShop	eShop	eShop	–	–	–	–	–



37 0450



37 0470

for T-slot nominal size		mm	12	14	16	18	20	22
35A	37 0520	M8	eShop	eShop	eShop	eShop	–	–
35A	37 0530	M10	eShop	eShop	eShop	eShop	–	–
35A	37 0540	M12	–	eShop	eShop	eShop	–	–
35A	37 0550	M14	–	–	eShop	eShop	–	–
35A	37 0560	M16	–	–	–	eShop	eShop	eShop

T-nut



37 0520

Tapered clamps wih adjusting support screw

37 0680 – Clamp painted.
Clamping height steplessly adjustable via screw (without clamping lever).
37 0685 – Quenched and tempered steel, painted, screw strength 8.8.
37 0690 – Hardened, black.

Material:
37 0680 – Quenched and tempered steel, screw strength 8.8 or 10.9 (depending on size).

Application:
37 0685 – To achieve the **lowest clamping height, turn the clamp around.**

Supplied with:
37 0690 – Complete with adjusting screw.
37 0680/0685 – Adjusting screw and T-bolt DIN 787 (No. 375300).

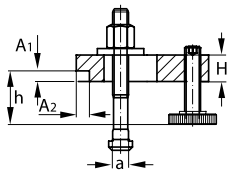
Note:
37 0690 – T-bolt, No. 375301 must be ordered separately.

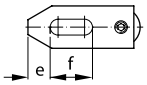

37 0680


37 0685



37 0690



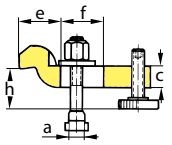


Slot width a		mm	10	12	14	16	18	20	22
35A 37 0680	AMF	Tapered clamp with adjusting support screw	eShop	eShop	eShop	eShop	eShop	–	eShop
35A 37 0685	AMF	Tapered clamp with adjusting support screw **offset**	–	eShop	eShop	eShop	eShop	eShop	eShop
32H 37 0690	HOLEX	Tapered clamp with adjusting support screw	eShop	eShop	eShop	eShop	eShop	–	eShop
Clamping height h (37 0680)		mm	8 – 32	10 – 40	10 – 38	13 – 48	13 – 46	–	16 – 65
Clamping height h (37 0685)		mm	–	10 – 48	10 – 46	13 – 58	13 – 56	16 – 77	16 – 77
Tee bolt DIN 787, No. 375300			Size 101080	Size 1212100	Size 1412100	Size 1616125	Size 1816125	Size 2020160	Size 2220160
Length L (37 0680, 37 0685)		mm	80	100	100	125	125	160	160
Length L (37 0690)		mm	80	110	110	125	125	–	160
Width B (37 0680, 37 0685)		mm	30	40	40	50	50	60	60
Width B (37 0690)		mm	30	38	38	48	48	–	60
Height H (37 0680, 37 0685)		mm	15	20	20	25	25	30	30
Height H (37 0690)		mm	15	19	19	24	24	–	30
A_1 (37 0685)		mm	–	8	8	10	10	12	12
A_2 (37 0685)		mm	–	10	10	12.5	12.5	15	15
e		mm	15	21	21	26	26	30	30
f (37 0680, 37 0685)		mm	30	40	40	45	45	60	60
f (37 0690)		mm	30	45	45	45	45	–	60

Cranked clamps with adjusting support screw

Clamp painted. Clamping height steplessly adjustable via screw (without clamping lever).
Material: Quenched and tempered steel, screw strength 8.8 or 10.9 (depending on size!).
Supplied with: Adjusting screw and T-bolt DIN 787 (No. 375300).

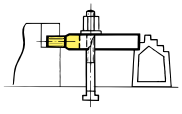

37 0720



Slot width a	35A 37 0720 Cranked clamp with adjusting support screw	Clamping height h	Tee bolt DIN 787, No. 375300	Length L	Width B	Height H	e	f
mm		mm		mm	mm	mm	mm	mm
10	eShop	22 – 46	Size 101080	100	11	15	36	32
12	eShop	28 – 58	Size 1212100	125	14	20	44	40
14	eShop	28 – 56	Size 1412100	125	14	20	44	40
16	eShop	36 – 71	Size 1616125	160	18	25	51.5	50
18	eShop	36 – 69	Size 1816125	160	18	25	51.5	50
22	eShop	43 – 92	Size 2220160	200	22	30	59	70

Forked clamps with pin end

Standard: **DIN 6315 C**
Material: Quenched and tempered steel, painted.



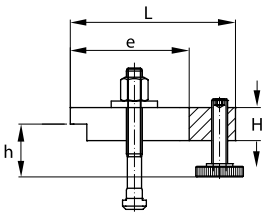

37 0800

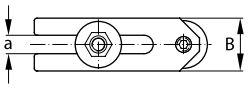
Slot width×overall length	35A 37 0800 Forked clamp with pin end	Width B	Height H	Shoulder ∅	for clamping screws
mm		mm	mm	mm	
11×125	eShop	30	20	16	M10
14×160	eShop	40	25	20	M12; M14
18×200	eShop	50	30	24	M16; M18

Slot width×overall length	35A 37 0800 Forked clamp with pin end	Width B	Height H	Shoulder ∅	for clamping screws
mm		mm	mm	mm	
22×250	eShop	60	40	30	M20; M22
26×250	eShop	70	40	38	M24

Forked clamps offset

Quenched and tempered steel, painted.
Material: Screw strength 8.8.
Application: To achieve the **lowest clamping height, turn the clamp around.**
Supplied with: Adjusting screw and T-bolts DIN 787 (see No. 375300).



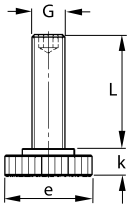


Slot width a	35A 37 0810 Forked clamp offset	Clamping height h	Tee bolt DIN 787, No. 375300	Length L	Width B	Height H	e
mm		mm		mm	mm	mm	mm
10	eShop	8 – 37	Size 101080	100	30	20	70
12	eShop	10 – 48	Size 1212100	125	40	25	90
14	eShop	10 – 45	Size 1412100	125	40	25	90
16	eShop	13 – 58	Size 1616125	160	50	30	110
18	eShop	13 – 56	Size 1816125	160	50	30	110
20	eShop	16 – 77	Size 2020160	200	60	40	135
22	eShop	16 – 75	Size 2220160	200	60	40	135


37 0810

Support screw

Quenched and tempered, strength class 8.8.
Suitable for: All adjustable clamps.



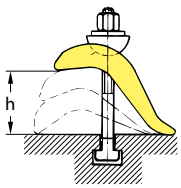
Thread G × Length L	35A 37 0840 Support screw	e	k
		mm	mm
10×39	eShop	30	8
12×49	eShop	36	10
12×94	eShop	36	10
16×55	eShop	42	13

Thread G × Length L	35A 37 0840 Support screw	e	k
		mm	mm
16×90	eShop	42	13
20×69	eShop	50	16
20×109	eShop	50	16
24×137	(eShop)	60	20


37 0840

Steplessly adjustable clamps

The clamp and Tee bolt form a single unit (no loose parts). The shape of the clamp provides for infinitely variable adjustment without additional blocks.
Material: Quenched and tempered steel, galvanised, screw strength 8.8 or 10.9 (depending on size!).
Application: For quick and reliable clamping of various component heights on milling machines.
Supplied with: T-bolt DIN 787 (No. 375300).



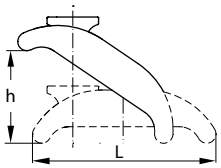

37 0660

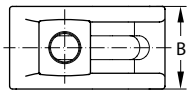
Slot width a	35A 37 0660 Steplessly adjustable clamp	Clamping height h	Tee bolt DIN 787, No. 375300	Length L	Width B
mm		mm		mm	mm
12	eShop	0 – 50	Size 1212125	140	50
14	eShop	0 – 50	Size 1412125	140	50
16	eShop	0 – 75	Size 1616160	140	50
18	eShop	0 – 75	Size 1816160	140	50
22	(eShop)	0 – 85	Size 2220200	175	60

Steplessly adjustable clamps, short

- Steplessly adjustable.
- Quenched and tempered, galvanised and blue passivated.

Supplied with: U-piece, complete with T-bolt DIN 787 (No. 375300).






37 0665

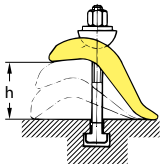
Slot width a	35A 37 0665 Steplessly adjustable clamp, short	Clamping height h	Tee bolt DIN 787, No. 375300	Length L	Width B
mm		mm		mm	mm
12	eShop	0 – 35	Size 1212100	88	38
14	eShop	0 – 35	Size 1412100	88	38
16	eShop	0 – 55	Size 1616160	130	56
18	eShop	0 – 55	Size 1816160	130	56
20	eShop	0 – 65	Size 2020200	144	66

HOLEX Steplessly adjustable clamps

The clamp and Tee bolt form a single unit (no loose parts).
The shape of the clamp provides for stepless adjustment without additional blocks.

Material: Hardened, black, screw strength 8.8.
Application: For quick and reliable clamping of various component heights on milling machines.
Supplied with: Complete with T-bolt (No. 375301).

Slot width a	32H 37 0670	Clamping height h	Length L	Width B
	Steplessly adjustable clamp			
mm		mm	mm	mm
12	eShop	0 – 45	105	44
14	eShop	0 – 45	105	44
16	eShop	0 – 50	140	51
18	eShop	0 – 50	140	51
22	eShop	0 – 70	160	60



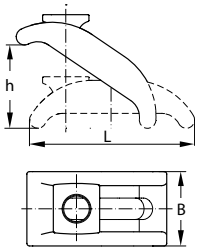


HOLEX Steplessly adjustable clamps, short

- Stepless adjustment.
- Hardened, black.

Supplied with: U-piece, complete with T-bolt (No. 375301).

Slot width a	32H 37 0675	Clamping height h	Length L	Width B
	Steplessly adjustable clamp, short			
mm		mm	mm	mm
14	eShop	0 – 35	118	50
18	eShop	0 – 40	135	60
22	eShop	0 – 50	160	68
28	eShop	0 – 60	160	80



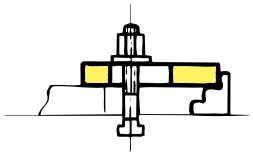


Clamps

Material:
37 1000 – Quenched and tempered steel, painted.
37 1005 – Hardened, black.



37 1000





37 1005

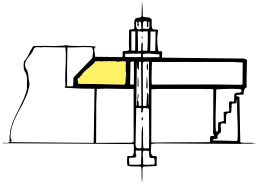
Slot width×overall length		mm	7×50	6,6×50	9×60	11×80	14×100	14×125	18×125	18×160	22×160	22×200	26×200	26×250
35A 37 1000	AMF Clamp	DIN 6314	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
32H 37 1005	HOLEX Clamp		–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Height		mm	10	10	12	15	20	20	25	25	30	30	30	35
Width		mm	20	20	25	30	40	40	50	50	60	60	70	70
for clamping screws			M6	M6	M8	M10	M12; M14	M12; M14	M16; M18	M16; M18	M20; M22	M20; M22	M24	M24

AMF Forked clamps with shoe – DIN 6315 GN

Material: Quenched and tempered steel, painted.

Slot width×overall length	35A 37 1400	Height	Width	for clamping screws
	Forked clamp with shoe			
mm	DIN 6315 GN	mm	mm	
9×100	eShop	15	30	M8
11×125	eShop	20	30	M10
14×160	eShop	25	40	M12; M14
14×200	eShop	25	40	M12; M14
18×200	eShop	30	50	M16; M18
18×250	eShop	30	50	M16; M18
22×250	eShop	40	60	M20; M22
22×315	eShop	40	60	M20; M22
26×250	eShop	40	70	M24
26×315	eShop	40	70	M24
33×315	eShop	50	80	M30
33×400	eShop	50	80	M30

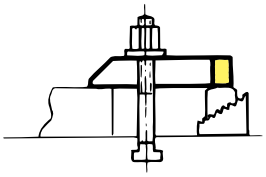


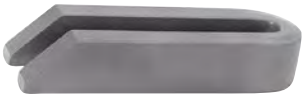


Forked clamp tapered

Material:

37 1600 – Quenched and tempered steel, painted.
37 1605 – Hardened, black.





37 1600

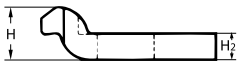


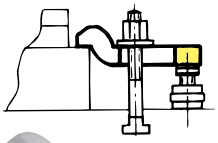
37 1605

Slot width×overall length	35A 37 1600	32H 37 1605	Height		Width		for clamping screws	
	Forked clamp tapered							
mm	DIN 6315 B		37 1600 mm	37 1605 mm	37 1600 mm	37 1605 mm	37 1600	37 1605
7×60	(eShop)	–	12	–	19	–	M6	–
6,6×60	–	eShop	–	12	–	19	–	M6
9×80	eShop	eShop	15	15	25	25	M8	M8
11×100	eShop	eShop	20	24	31	32	M10	M10
14×125	eShop	eShop	25	24	38	40	M12; M14	M12; M14
14×160	eShop	eShop	25	24	38	40	M12; M14	M12; M14
14×200	eShop	eShop	25	24	38	40	M12; M14	M12; M14
18×160	eShop	eShop	30	30	48	48	M16; M18	M16; M18
18×200	eShop	eShop	30	30	48	48	M16; M18	M16; M18
18×250	eShop	eShop	40	38	48	48	M16; M18	M16; M18
22×200	eShop	eShop	40	38	52	52	M20; M22	M20: M22
22×250	eShop	eShop	40	38	62	62	M20; M22	M20: M22
22×315	eShop	eShop	40	38	62	62	M20; M22	M20: M22
25×200	–	eShop	–	38	–	62	–	M24
25×250	–	eShop	–	38	–	62	–	M24
25×315	–	eShop	–	38	–	62	–	M24
26×200	eShop	–	40	–	66	–	M24	–
26×250	eShop	–	40	–	66	–	M24	–
26×315	eShop	–	40	–	66	–	M24	–
33×250	eShop	–	50	–	74	–	M30	–
33×315	eShop	–	50	–	74	–	M30	–
33×400	eShop	–	50	–	74	–	M30	–
40×400	(eShop)	–	60	–	100	–	M36	–
43×600	(eShop)	–	80	–	123	–	M36; M42	–

Clamps, cranked – DIN 6316

Material: Quenched and tempered steel, painted.







Slot width×overall length	35A 37 1800	Height H	Height H_2	Width	for clamping screws
	Clamp, cranked				
mm	DIN 6316	mm	mm	mm	
7×60	eShop	20	10	20	M6
9×80	eShop	24	12	25	M8
11×100	eShop	30	15	30	M10
14×125	eShop	40	20	40	M12; M14
18×125	eShop	50	25	50	M16; M18

Slot width×overall length	35A 37 1800	Height H	Height H_2	Width	for clamping screws
	Clamp, cranked				
mm	DIN 6316	mm	mm	mm	
18×160	eShop	50	25	50	M16; M18
22×160	eShop	60	30	60	M20; M22
22×200	eShop	60	30	60	M20; M22
26×200	eShop	70	35	70	M24
26×250	eShop	70	35	70	M24

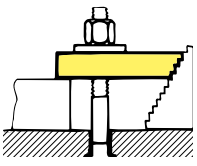
Step clamp

Material:

37 2000 – Quenched and tempered steel.
37 2005 – Hardened, black.

Application:

37 2000 – Only in conjunction with universal step blocks No. 372200.
37 2005 – Only in conjunction with universal step blocks No. 372205.





37 2000



37 2005

Slot width×overall length	35A 37 2000	32H 37 2005	Height		Width		for clamping screws
	Step clamp						
mm	DIN 6314 Z		37 2000 mm	37 2005 mm	37 2000 mm	37 2005 mm	
6,6×50	–	eShop	–	10	–	20	M6
7×50	eShop	–	10	–	20	–	M6
9×60	eShop	eShop	12	12	25	25	M8
11×80	eShop	eShop	15	15	30	30	M10
11×125	–	eShop	–	15	–	30	M10
14×100	eShop	eShop	20	19	40	38	M12; M14
14×150	–	eShop	–	19	–	38	M12; M14
18×125	eShop	eShop	25	24	50	48	M16; M18
18×160	–	eShop	–	24	–	48	M16; M18
22×160	eShop	eShop	30	30	60	60	M20; M22
26×200	eShop	–	30	–	70	–	M24

Universal step blocks

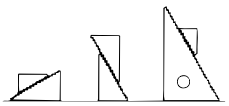
Toothed stepwise. For use in pairs.
Individual blocks can be used in conjunction with clamp No. 372000 or No. 372005.

Material:

37 2200 – Quenched and tempered steel, painted.
37 2205 – Single, black



37 2200





NEW

37 2205

Type		1	2	3
35A 37 2200 AMF	Universal step block single	eShop	eShop	eShop
32H 37 2205 HOLEX		eShop	eShop	eShop
Support height (used in pairs) mm		23 – 51	39 – 108	71 – 208
Height (37 2200) mm		33	66	131
Height (37 2205) mm		30	66	117
Length (37 2200) mm		19	35.5	68
Length (37 2205) mm		18	38	67
Width (37 2200) mm			30	
Width (37 2205) mm		28	31	31

Set of universal step blocks in a wooden case

Toothed stepwise. For use in pairs. Individual blocks can be used in conjunction with clamp No. 372000.
Mounting height 22 to 208 mm.

Material: Quenched and tempered steel, painted.
Supplied with: No. 372200 4 pairs size 1, 4 pairs size 2, 2 pairs size 3, including wooden box.



37 2400

35A 37 2400 AMF	Set of universal step blocks in a solid wooden case	eShop

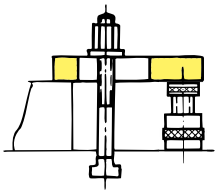
Screw jacks with flat support

Self-locking trapezoidal thread spindle with end stop.

Screw jacks with steel base

37 3500 – Quenched and tempered steel, painted.
Size 200 – Extra heavy version for large workpieces.
37 3505 – Body and spindle hardened, black, thread - trapezoidal.

Note: From size 52 with centring hole ∅ 12 mm for jack pads No. 375000 – 375030.





37 3500
Steel base

highest support height	mm	50	52	65	70	100	140	200	210	300
35A 37 3500 AMF	Screw jack **with steel base**	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop
32H 37 3505 HOLEX	Screw jack	–	eShop	eShop	–	eShop	eShop	–	eShop	eShop
lowest support height (37 3500)	mm	38	42	–	50	70	100	140	140	190
lowest support height (37 3505)	mm	–	38	50	–	70	100	–	140	190
Head ∅ (37 3500)	mm	31	50	–	50	50	68	80	70	80
Head ∅ (37 3505)	mm	–	50	50	–	50	65	–	70	80
Lower part ∅ (37 3500)	mm	31	50	–	50	50	68	100	80	100
Lower part ∅ (37 3505)	mm	–	50	50	–	50	70	–	80	95
for clamp with slot width	mm	6.6 – 14	14 – 22	14 – 22	14 – 22	14 – 22	20 – 40	20 – 40	20 – 40	20 – 40
Load capacity (37 3500)	kN	25	100	–	100	100	120	350	170	350
Load capacity (37 3505)	kN	–	60	60	–	60	100	–	165	350

NEW



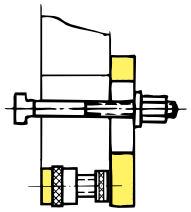
37 3505

Screw jacks with magnetic base

The permanent magnet in the base of the screw jack ensures simple, lasting and precise positioning of the workpiece **on vertical faces.**

Size 88F – Modular version. Height extension up to a maximum of 350 mm, in combination with the spacer ring No. 373555.

Note: With centring hole ∅ 12 mm for jack pads No. 375000 - 375010.



With magnet;permanent and precise positioning for vertical clamping.



37 3550
Magnetic base

highest support height	mm	62	80	88F	110
35A 37 3550 AMF	Screw jack **with magnetic base**	eShop	eShop	eShop	eShop
lowest support height	mm	52	60	75	80
Head ∅	mm	50			
Lower part ∅	mm	50			
for clamp with slot width	mm	14 – 22			
Load capacity	kN	30			

AMF Alu spacer ring

For a subsequent increase in height.

Suitable for: Alu screw jack No. 373550 size 88F.



37 3555

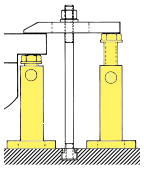
highest support height	mm	12,5	25	50
35A 37 3555	Alu spacer ring	eShop	eShop	eShop
∅ D	mm	50		

Heavy screw jacks with locking screw

- Spindle quenched and tempered steel; body quenched and tempered steel, painted.
- Spindle with trapezoidal thread.

Note: With centring hole ∅ 12 mm for jack pads No. 375000 - 375030.

highest support height		mm	300	460	750	1250
35A 37 4400	Heavy screw jack		eShop	eShop	(eShop)	(eShop)
lowest support height		mm	200	290	430	710
Centre slot spacing		mm	150			
Head size AF		mm	65			
Load capacity		kN	80	60	50	40
Foot length		mm	220			
Foot width		mm	190			
Slot width		mm	26			





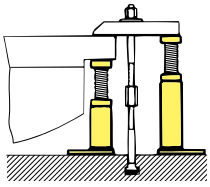
37 4400

Atlas screw jacks with locknut

- Spindle quenched and tempered steel; body grey cast iron.
- Spindle with trapezoidal thread.

Note: With centring hole ∅ 12 mm for jack pads No. 375000 - 375030.

highest support height		mm	140	200	320	550
35A 37 4000	Atlas screw jack		eShop	eShop	eShop	eShop
lowest support height		mm	100	140	200	320
Head size AF		mm	46			
Slot width		mm	18	18	22	22
Load capacity		kN	60	60	40	25



37 4000



Height setting screw jacks

- **For precision alignment** using fine pitch thread M 30×1.5. The fixed slide pad **prevents the component from rotating and moving** during alignment.
- The parallel pins supplied are ∅ 12×50 mm and ∅ 12×80 mm; they can be inserted in the centring hole, increasing the overall height by 30 or 60 mm.
- If centring jack pad No. 375030 is placed under the screw jack, a **support height of up to approx. 1370 mm can be achieved** in combination with other screw jacks.

Note: Flat component support face with centring hole ∅ 12 mm for jack pads No. 375000 – 375030.

highest support height		mm	75	115
35A 37 4480	Height setting screw jack		eShop	eShop
lowest support height		mm	55	75
Head size AF		mm	46	
Lower part ∅		mm	50	
Load capacity		kN	30	



37 4480



Pad 37 5000



37 4480

Wedge blocks (height wedges)

Very rigid design; spheroidal graphite cast iron and hardened steel. **The ground wedge surfaces provide for precision and even height adjustment** with an accuracy better than 0.1mm. Either the knurled screw or a hexagon socket wrench can be used for height adjustment. The double action results in a long stroke and precise vertical movement without lateral displacement.

Application: **Particularly for working with heavy cast or forged parts** on large machine tools after marking-out.

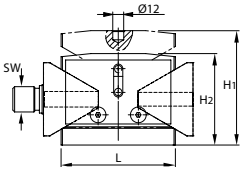
Supplied with: **Interchangeable ball jack pad No. 375000.**

Note: Flat component support face with centring hole ∅ 12 mm for jack pads No. 375000 – 375030.

Ball jack pad



37 4900



Precise alignment (closer than 0.1mm), even under loads of several tons.

highest support height		mm	63	125	190	60	105	155
35A 37 4900	Wedge block "Herkules"		eShop	eShop	(eShop)	–	–	–
32H 37 4905	Wedge block		–	–	–	eShop	eShop	eShop
lowest support height		mm	50	100	170	47	80	135
Height adjustment per spindle rotation		mm	0.86	1.16	2.02	9	1.2	2
Load capacity		kN	40	100	250	28	70	175
Footprint length		mm	63	125	175	63	118	140
Footprint width		mm	63	115	145	54	87	125



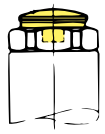
37 4905

Jack pads

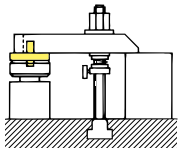
Quenched and tempered steel.

37 5030 – Specially designed as a centring aid for assembling several screw jacks together. Only for screw jack sizes 52, 70 and 100.

Suitable for: **Screw jacks and wedge blocks No. 373500 – 374900.**



Pad



Fixing attachment



37 5000



37 5010



37 5030

35A	**37 5000**	Ball pad	eShop
35A	**37 5010**	Vee-pad	eShop
External ∅ (37 5000)		mm	39
External ∅ (37 5010)		mm	45
30W	**37 5030**	Centring pad for positioning screw jacks	eShop
External ∅		mm	45

HALDER Our partner for clamping elements

The Hoffmann Group supplies the entire range on short notice ex manufacturer's stock.

Order from the Hoffmann Group simply and conveniently using the HALDER item number.



Machine and fixture parts



Groove systems



Standard components for fixture systems



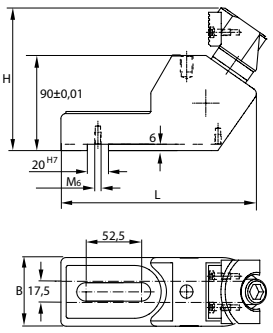
And much more…

HALDER Frame clamp

Clamping elements with replaceable jaws.

Advantage:
- Angled arrangement of the movable jaws creates a pull-down effect.
- Solid construction of vibration-damping spheroidal graphite iron (GGG60).
- Optimum compatibility to the workpiece.
- Few interference contours.

Supplied with: 1 pc. interchangeable jaw (serrated / smooth).





37 0135



37 0136

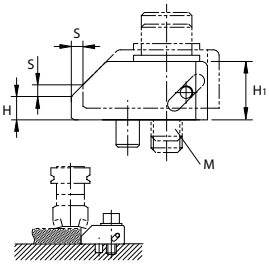
Type			1	2
37K	**37 0135**	Frame clamp	(eShop)	–
37K	**37 0136**	Frame stop	–	(eShop)
Length		mm	185	200
Width		mm	65	
Height		mm	135	132
maximum tightening torque		Nm	50	
Clamping force		kN	20	

Toe clamp

Especially low-height and compact design. Pull-down effect due to oblique guidance wedge.

Material: Quenched and tempered steel.

Application: For lateral clamping of particularly flat components directly on the jig insert.





37 5006

Thread			M8	M12	M16
37K	**37 5006**	Toe clamp	(eShop)	(eShop)	(eShop)
Width B		mm	25	35	40
Clamping range		mm	3	5	6
Height H		mm	25	38	45
Height H_1		mm	15	23	25
Clamping force		kN	7	20	40
maximum tightening torque		Nm	25	90	200

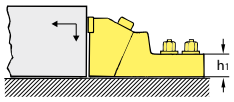
Heavy-duty clamping jaws

Very sturdy, high version with strong pull-down and clamping forces. The angled clamping mechanism ensures that the component is securely clamped down on to the table. The interchangeable jaws are reversible, the smooth side for machined, the serrated side for unmachined components.

Material: Basic body made of malleable cast iron, jaws case-hardened.

Application: **For lateral clamping of high components with high clamping force.**


37 5130



Jaw width	mm	65	75	90
35A 37 5130	Heavy-duty clamping jaw	eShop	eShop	eShop
Maximum height	mm	99	118	145
Minimum height	mm	46	61	89
Slot width	mm	19	26	38
Clamping range	mm	8	11	15
overall length	mm	179	230	265
Width across flats	mm	14	14	17
h_1	mm	38	45	56
for slot width a	mm	12; 14; 16; 18	20; 22; 24; 28; 30	32; 36; 42

Flat clamp – Mini-Bulle

Particularly flat design (see table: height above upper table edge). By grinding down the clamp, an even lower clamping height can be achieved and the depth tolerance of the T-slot can be adjusted. The component is firmly pressed against the table due to the wedge effect of the clamp.

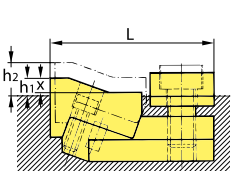
Material: Hardened steel, burnished finish.

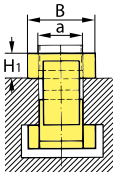
Application: **For lateral clamping of particularly flat components** directly on the machine table.

Supplied with: Hexagon key L-wrench ISO 2936 C.

Note: Only supplied in pairs!


37 5100





Slot width a	mm	12	14	16	18	22
35A 37 5100	Pair of flat clamps Mini-Bulle	eShop	eShop	eShop	eShop	eShop
Length L	mm	52	55	68	71	89
Width B	mm	18	22	25	28	35
Clamping range	mm	1.8	1.8	2.5	2.5	3
Height above upper edge of the table h_1	mm	2.5	1.5	2.5	1.5	4.5
Height above upper edge of the table h_2	mm	13.5	13.5	17	16	21.5
grinding allowance x	mm	5	5	6	6	9
Height H_1	mm	11	11	15	15	20

Low height clamping jaws – Bulle

Flat design, no protruding T-bolts. Clamps at any angle to table slot. When the side screw is tightened, the component is securely clamped down on to the table by the wedge effect.

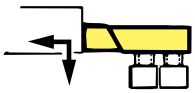
Material: Hardened steel, burnished finish.

Application: **For lateral clamping of flat plates** directly on the machine table.

Supplied with: 2 fastening screws, DIN 912, 10.9, T-nuts, and hexagon key L-wrench ISO 2936 C.

Note: Only supplied in pairs!


37 5110



Slot width a	mm	12	14	16	18	20	22	28
35A 37 5110	Pair of low height clamping jaws Bulle with accessories	eShop	eShop	(eShop)	eShop	eShop	eShop	eShop
Length	mm	80	80	100	100	100	140	140
Width	mm	40	40	50	50	50	78	78
Height	mm	20	20	25	25	25	30	30
for clamping screws		M10	M12	M14	M16	M16	M20	M24

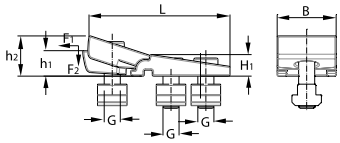
Flat clamps

Low design, position the flat clamp on the workpiece. Then tighten the securing screws for the machine table. The workpiece is clamped by turning the clamping screw.

Material: Hardened steel, burnished finish.

Application: **For lateral clamping of especially thin components,** in order to perform complete machining operations without interference contours. Can be used both horizontally and vertically.


37 5115



Slot width a	mm	14	16	18	20	22	28
35A 37 5115	Flat clamp	eShop	eShop	eShop	eShop	eShop	(eShop)
G		M12	M12	M16	M16	M20	M20
Clamping force F_1	kN	15	15	25	25	36	36
Clamping force F_2	kN	7.5	7.5	12.5	12.5	18	18
h_1	mm	16	16	19	19	22	22
h_2	mm	25	25	30	30	36	36
H_1	mm	16	16	19	19	22	22
Length L	mm	110	110	130	130	152	152
Width B	mm	44	44	56	56	62	62

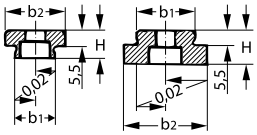
High precision tenons for aligning appliances and tools

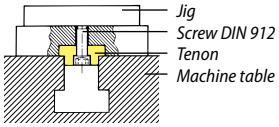
Precision ground all round, resulting in quick alignment times for appliances, vices etc., which are to be aligned parallel to the table slots of machine tools. A dial indicator is thus no longer required.

Material: Steel C 15, case-hardened.



375365





Stepped fixed tenons for screw attachment

Accuracy: **Dimension b = fit h6.**

Application: **These T-nuts are screwed in pairs into the standard 20 mm-wide tenon slots of jigs.** By changing the T-nuts it is possible to work **on several machines with different slot widths** with one jig each.

Note: **Size 20** see No. 375370

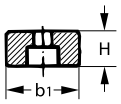
Slot size b_1 of the machine mm	35A 37 5365 Stepped tenon ground	Slot size b_2 of the jig mm	for screws DIN 84, DIN 912	Length mm	Height H mm
10	eShop	20	M6×10	22	10
12	eShop	20	M6×10	22	10
14	eShop	20	M6×16	25	10
16	eShop	20	M6×16	25	10

Slot size b_1 of the machine mm	35A 37 5365 Stepped tenon ground	Slot size b_2 of the jig mm	for screws DIN 84, DIN 912	Length mm	Height H mm
18	eShop	20	M6×16	25	10
22	eShop	20	M6×16	32	12
24	(eShop)	20	M6×16	32	12
28	eShop	20	M6×16	32	12

Flat tenons for screw attachment

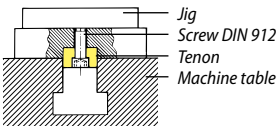
Accuracy: **Dimension b = fit h6.**

Application: Flat tenons are appropriate **when a vice is always used on a machine with the same slot width.**





375370



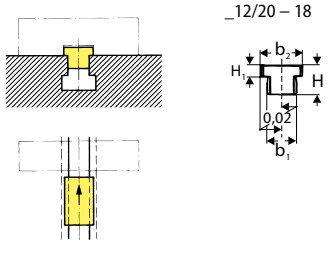
Slot size b_1 of the machine and jig mm	35A 37 5370 Flat tenon ground	for screws DIN 84, DIN 912	Length mm	Height H mm
10	eShop	M4×10	20	8
12	eShop	M5×12	20	8
14	eShop	M6×16	22	10
16	eShop	M6×16	22	10

Slot size b_1 of the machine and jig mm	35A 37 5370 Flat tenon ground	for screws DIN 84, DIN 912	Length mm	Height H mm
18	eShop	M6×16	22	10
20	eShop	M6×16	22	10
22	eShop	M6×16	32	12
24	(eShop)	M6×16	32	12

Loose tenons for adjustment

Standard: **DIN 6323**

Application: These loose tenons are inserted sideways into the slots after rough alignment of the fixture. **When transporting the fixture, there are then no tenons protruding underneath and the table cannot be damaged.** 2 pieces are sufficient per machine, or 4 pieces for a double set-up.





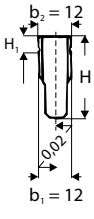
_12/20 – 18

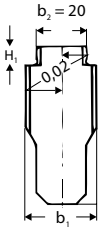


_12/12



_22 – 28





Slot size b_1 of the machine mm	35A 37 5375 Loose tenon ground for adjustment	Slot size b_2 of the jig mm	Height H mm	Height H_1 mm	Length mm
10	(eShop)	12	12	3.6	20
12/12	eShop	12	28.6	5.5	20
12/20	eShop	20	14	5.5	32
14	eShop	20	14	5.5	32
16	eShop	20	14	5.5	32
18	eShop	20	14	5.5	32
22	eShop	20	50.5	7	40
28	eShop	20	61.5	7	40

T-bolts (clamping bolts)

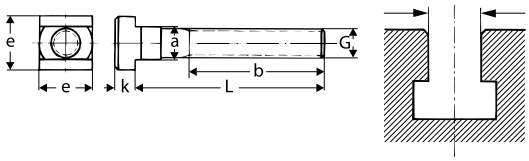
37 5310 – **High-tensile design,** strength class = 12.9.
37 5300/5305/5310 – T-bolt, forged and rolled thread.
37 5300/5305 – **Standard design,** strength class = 10.9 (for M6 – M12) and strength class = 8.8 (for M14 – M24).
37 5301/5306 – T-slot bolt, quenched and tempered, black, strength class 8.8.
Standard: **DIN 787**
Supplied with:
37 5300 – **Complete,** with extra-thick washer No. 375340 and tall nut No. 375385.
37 5301 – Complete, with washer No. 375341
37 5305–5310 – **Single,** without nut and washer.
Optional extras:
37 5301/5306 – Washers, see No. 35341 and tall nuts, see No. 375386.
37 5305/5310 – Washers, see No. 375340 and tall nuts, see No. 375385.

Note: ■ **Reading example** – size 6625 means: T-slot = 6 mm, thread G = M6, length L = 25 mm.


37 5300


37 5305

T-slot nominal size



Type	35A 37 5300 / 35A 37 5305 Tee bolt (10.9. / 8.8.)		32H 37 5301 / 32H 37 5306 Tee bolt (8.8.)		35A 37 5310 Tee bolt (12.9.)	T-slot nominal size	Thread G	Length L	b		a	e	k
									37 5300 37 5305 37 5310	37 5301 37 5306			
	complete	single	complete	single	single	mm		mm	mm	mm	mm	mm	mm
6625	eShop	(eShop)	–	–	–	6	M6	25	15	–	5.7	10	4
8832	eShop	eShop	–	–	–	8	M8	32	22	–	7.7	13	6
8850	eShop	eShop	–	–	–	8	M8	50	35	–	7.7	13	6
8880	eShop	eShop	–	–	–	8	M8	80	50	–	7.7	13	6
101040	eShop	eShop	–	–	eShop	10	M10	40	30	–	9.7	15	6
101063	eShop	eShop	–	–	–	10	M10	63	45	–	9.7	15	6
101080	eShop	eShop	–	–	eShop	10	M10	80	50	–	9.7	15	6
1010100	eShop	eShop	–	–	eShop	10	M10	100	60	–	9.7	15	6
121250	eShop	eShop	eShop	eShop	eShop	12	M12	50	35	30	11.7	18	7
121280	eShop	eShop	eShop	eShop	eShop	12	M12	80	55	55	11.7	18	7
1212100	eShop	eShop	–	–	eShop	12	M12	100	65	–	11.7	18	7
1212125	eShop	eShop	–	–	eShop	12	M12	125	75	–	11.7	18	7
1212160	eShop	eShop	–	–	eShop	12	M12	160	100	–	11.7	18	7
1212200	eShop	(eShop)	–	–	eShop	12	M12	200	120	–	11.7	18	7
141250	eShop	eShop	eShop	eShop	eShop	14	M12	50	35	38	13.7	22	8
141263	–	–	eShop	eShop	–	14	M12	50	–	35	13.7	22	8
141280	eShop	eShop	eShop	eShop	eShop	14	M12	80	55	55	13.7	22	8
1412100	eShop	eShop	–	–	eShop	14	M12	100	65	–	13.7	22	8
1412125	eShop	eShop	eShop	eShop	eShop	14	M12	125	75	80	13.7	22	8
1412160	eShop	eShop	–	–	eShop	14	M12	160	100	–	13.7	22	8
1412200	eShop	eShop	–	–	eShop	14	M12	200	120	–	13.7	22	8
161463	eShop	eShop	–	–	–	16	M14	63	45	–	15.7	25	9
161480	eShop	eShop	–	–	–	16	M14	80	55	–	15.7	25	9
1614100	eShop	eShop	eShop	eShop	–	16	M14	100	65	60	15.7	25	9
1614125	eShop	eShop	–	–	–	16	M14	125	75	–	15.7	25	9
1614160	eShop	eShop	eShop	eShop	–	16	M14	160	100	100	15.7	25	9
1614250	eShop	–	–	–	–	16	M14	250	120	–	15.7	25	9
161663	eShop	eShop	eShop	eShop	eShop	16	M16	63	45	40	15.7	25	9
1616100	eShop	eShop	eShop	eShop	eShop	16	M16	100	65	60	15.7	25	9
1616125	eShop	eShop	–	–	eShop	16	M16	125	85	–	15.7	25	9
1616160	eShop	eShop	eShop	eShop	eShop	16	M16	160	100	100	15.7	25	9
1616250	eShop	eShop	–	–	eShop	16	M16	250	150	–	15.7	25	9
181663	eShop	eShop	–	–	eShop	18	M16	63	45	–	17.7	28	10
1816100	eShop	eShop	eShop	eShop	eShop	18	M16	100	65	60	17.7	28	10
1816125	eShop	eShop	–	–	eShop	18	M16	125	85	–	17.7	28	10
1816130	–	–	eShop	eShop	–	18	M16	160	–	75	17.7	28	10
1816160	eShop	–	eShop	eShop	eShop	18	M16	160	100	100	17.7	28	10
1816250	eShop	eShop	–	–	eShop	18	M16	250	150	–	17.7	28	10
202080	eShop	eShop	–	–	eShop	20	M20	80	55	–	19.7	32	12
2020115	–	–	eShop	eShop	–	20	M20	80	–	70	19.7	32	12
2020125	eShop	eShop	–	–	eShop	20	M20	125	85	–	19.7	32	12
2020150	–	–	eShop	eShop	–	20	M20	125	–	95	19.7	32	12
2020200	eShop	eShop	–	–	eShop	20	M20	200	125	–	19.7	32	12
2020210	–	–	eShop	eShop	–	20	M20	200	–	130	19.7	32	12
2020315	eShop	eShop	–	–	eShop	20	M20	315	190	–	19.7	32	12
222080	eShop	eShop	–	–	eShop	22	M20	80	55	–	21.7	35	14

Type	35A 37 5300	35A 37 5305	32H 37 5301	32H 37 5306	35A 37 5310	T-slot nominal size	Thread G	Length L	b		a	e	k
	AMF		HOLEX		AMF								
	Tee bolt (10.9. / 8.8.)		Tee bolt (8.8.)		Tee bolt (12.9.)				37 5300 37 5305 37 5310	37 5301 37 5306			
	complete	single	complete	single	single	mm		mm	mm	mm	mm	mm	mm
2220110	–	–	eShop	eShop	–	20	M20	110	–	70	21.7	35	14
2220125	eShop	eShop	–	–	eShop	22	M20	125	85	–	21.7	35	14
2220150	–	–	eShop	eShop	–	20	M20	150	–	95	21.7	35	14
2220200	eShop	eShop	–	–	eShop	22	M20	200	125	–	21.7	35	14
2220215	–	–	eShop	eShop	–	22	M20	215	–	125	21.7	35	14
2220315	eShop	eShop	–	–	eShop	22	M20	315	190	–	21.7	35	14
2424125	–	–	eShop	eShop	–	24	M24	125	–	75	23.7	40	16
2424150	–	–	eShop	eShop	–	24	M24	150	–	95	23.7	40	16
2424160	eShop	eShop	–	–	eShop	24	M24	160	110	–	23.7	40	16
2424210	–	–	eShop	eShop	–	24	M24	210	–	130	23.7	40	16
2824100	eShop	eShop	–	–	(eShop)	28	M24	100	70	–	27.7	44	18
2824110	–	–	eShop	eShop	–	28	M24	110	–	65	27.7	44	18
2824150	–	–	eShop	eShop	–	28	M24	150	–	95	27.7	44	18
2824160	eShop	eShop	–	–	eShop	28	M24	160	110	–	27.7	44	18
2824210	–	–	eShop	eShop	–	28	M24	210	–	130	27.7	44	18
2824250	eShop	eShop	eShop	eShop	eShop	28	M24	250	150	170	27.7	44	18
2824400	eShop	eShop	–	–	eShop	28	M24	400	240	–	27.7	44	18
4236250	–	eShop	–	–	–	42	M36	250	175	–	41.6	65	26

T-nuts

Standard:

37 5315/5320 – **DIN 508**

Material:

37 5315 – Quenched and tempered steel, strength 10.

37 5316 – Hardened, black.

37 5320 – Quenched and tempered steel, unhardened (= blank, without thread).

Application:

37 5320 – Blanks for production of T-nuts with non-standard threads.

37 5315/5316 – For combination with studs or bolts.

Note: Full load-bearing capacity only when threaded for the **entire** nut length.



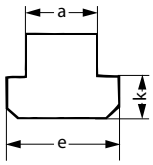
37 5315

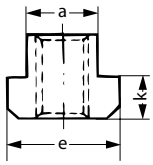


37 5320



37 5316





NEW

T-slot nominal size	35A 37 5315	32H 37 5316	35A 37 5320	Thread	Nut height	Width a	Width e	Height k
	AMF	HOLEX	AMF					
	T-nut			37 5315 37 5316				
mm	with thread	with thread	Blank		mm	mm	mm	mm
6	eShop	–	eShop	M5	8	5.7	10	4
8	eShop	eShop	eShop	M6	10	7.7	13	6
10	eShop	eShop	eShop	M8	12	9.7	15	6
12/M8	–	eShop	–	M8	14	11.7	18	7
12	eShop	eShop	eShop	M10	14	11.7	18	7
14/M8	–	eShop	–	M8	16	13.7	22	8
14/M10	–	eShop	–	M10	16	13.7	22	8
14	eShop	eShop	eShop	M12	16	13.7	22	8
16/M12	–	eShop	–	M12	18	15.7	25	9
16	eShop	eShop	eShop	M14	18	15.7	25	9
18/M10	–	eShop	–	M10	20	17.7	28	10
18/M12	–	eShop	–	M12	20	17.7	28	10
18	eShop	eShop	eShop	M16	20	17.7	28	10
20	eShop	–	eShop	M18	24	19.7	32	12
22/M16	–	eShop	–	M16	28	21.7	35	14
22	eShop	eShop	eShop	M20	28	21.7	35	14
24	eShop	–	eShop	M22	32	23.7	40	16
28/M20	–	eShop	–	M20	36	27.7	44	18
28	eShop	eShop	eShop	M24	36	27.7	44	18
32	eShop	–	–	M27	40	31.6	50	20
36	eShop	–	–	M30	44	35.6	54	22

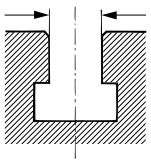
T-nuts, long version

Material:

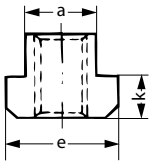
37 5325 – Quenched and tempered steel, strength 10.

37 5326 – Annealed, black.

Application: Particularly suitable for high precision machines, to protect table slots.



T-slot nominal size





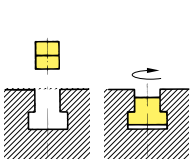
37 5326

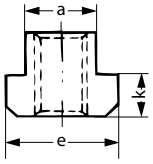
T-slot nominal size / thread	35A 37 5325 AMF	32H 37 5326 HOLEX	Thread	Nut height	Width a	Width e	Height k	Length
mm	T-nut long			mm	mm	mm	mm	mm
8/M6	eShop	eShop	M6	10	7.7	13	6	26
10/M8	eShop	eShop	M8	12	9.7	15	6	30
12/M10	eShop	eShop	M10	14	11.7	18	7	36
14/M12	eShop	eShop	M12	16	13.7	22	8	44
16/M14	eShop	–	M14	18	15.7	25	9	50
18/M16	eShop	eShop	M16	20	17.7	28	10	56
20/M18	(eShop)	–	M18	24	19.7	32	12	64
22/M20	eShop	eShop	M20	28	21.7	35	14	70
28/M24	eShop	eShop	M24	36	27.7	44	18	88

AMF T-nut Rhombus

Material: Quenched and tempered steel.

Application: **For the insertion of the T-nut from above** through the top of the T-slot. (Load capacity lower than No. 375315 due to reduced bearing surface).







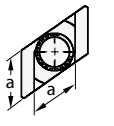
37 5330

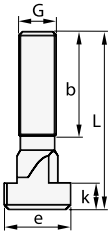
T-slot nominal size / thread	35A 37 5330	Thread	Nut height	Width e	Width a	Height k
mm	Rhombus T-nut		mm	mm	mm	mm
12/M10	eShop	M10	14	18	11.7	7
14/M12	eShop	M12	16	22	13.7	8
16/M14	eShop	M14	18	25	15.7	9
18/M16	eShop	M16	20	28	17.7	10
20/M18	(eShop)	M18	24	32	19.7	12
22/M20	eShop	M20	28	35	21.7	14
28/M24	eShop	M24	36	44	27.7	18
36/M30	eShop	M30	44	54	35.6	22

AMF Rhombus T-bolts

- Forged and milled
- T-slots, rolled thread.
- Hardened to strength class 10.9.

Application: Later insertion of an additional clamping point is made easier on long tables. The T-bolt is inserted into the T-slot from above.







37 5335

T-slot nominal size×length L	35A 37 5335	T-slot nominal size	Thread G	Length L	b	a	e	k
mm	Rhombus T-bolt	mm		mm	mm	mm	mm	mm
14×50	eShop	14	M12	50	35	13.7	22	8
14×80	eShop	14	M12	80	55	13.7	22	8
14×125	eShop	14	M12	125	75	13.7	22	8
18×63	eShop	18	M16	63	45	17.7	28	10
18×100	eShop	18	M16	100	65	17.7	28	10
18×160	eShop	18	M16	160	100	17.7	28	10
22×80	eShop	22	M20	80	55	21.7	35	14
22×125	eShop	22	M20	125	85	21.7	35	14
22×200	eShop	22	M20	200	120	21.7	35	14
28×125	eShop	28	M24	125	85	27.7	44	18
28×250	eShop	28	M24	250	150	27.7	44	18

Washers, extra strong

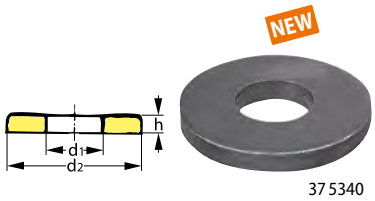
Extra strong, flat-pressed and hardened, edges bevelled.

37 5341 – Hardened, black.

Standard:

37 5340 – **DIN 6340**

Application: Particularly suitable for clamps.
Especially for making jigs and fixtures.



37 5340

for threads		M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M36
35A **37 5340**	Plain washer	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
32H **37 5341**		eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	eShop	–	–	–
Bore ∅ d_1	mm	6.4	8.4	10.5	13	15	17	19	21	23	25	28	31	38
External ∅ d_2	mm	17	23	28	35	40	45	45	50	50	60	68	68	80
Thickness h	mm	3	4	4	5	5	6	6	6	6	8	10	10	10

Spherical seat washers and collared washers

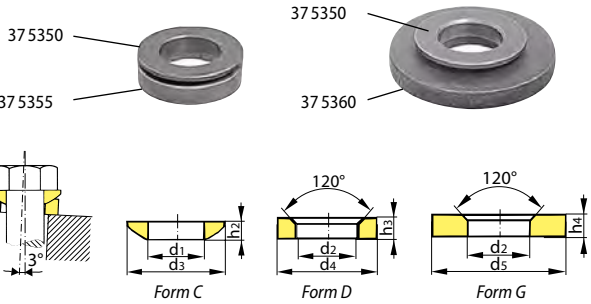
Form C and D case-hardened, form G quenched and tempered.

Standard: **DIN 6319** (form G similar to DIN 6319).

Application: Angular compensation up to 3° when used in sets.

37 5355 – Form D may only be used over holes, so that the washer is in full contact.

37 5360 – Due to its large diameter, form G is suitable even for clamping over the slot of forked clamps.



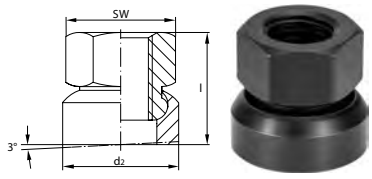
Form C Form D Form G

for threads		M8	M10	M12	M14	M16	M20
35A **37 5350**	Spherical seat washer **Form C**	eShop	eShop	eShop	eShop	eShop	eShop
35A **37 5355**	Collared washer **Form D**	eShop	eShop	eShop	eShop	eShop	eShop
35A **37 5360**	Collared washer **Form G**	eShop	eShop	eShop	eShop	eShop	eShop
Bore ∅ d_1 (37 5350)	mm	8.4	10.5	13	15	17	21
Bore ∅ d_2 (37 5355, 37 5360)	mm	9.6	12	14.2	16.5	19	23.2
External ∅ d_3 (37 5350)	mm	17	21	24	28	30	36
External ∅ d_4 (37 5355)	mm	17	21	24	28	30	36
External ∅ d_5 (37 5360)	mm	24	30	36	40	44	50
Thickness h_2 (37 5350)	mm	3.2	4	4.6	5	5.3	6.3
Thickness h_3 (37 5355)	mm	3.5	4.2	5	5.6	6.2	7.5
Thickness h_4 (37 5360)	mm	5	5	6	6	7	8

HALDER Collar nuts with conical seat

Material: Through-hardened steel, strength 10.

Note: Hexagon nut with enlarged seating area available on request.



Threads	37K **37 5384** Collar nut with conical seat	Overall length mm	AF mm	∅ d_2 mm
M8	eShop	14	13	17
M10	eShop	17.5	16	21
M12	eShop	21.5	18	24
M16	eShop	28	24	30
M20	eShop	35	30	36
M24	(eShop)	42.5	36	44
M30	(eShop)	56	46	55

Nuts for studs and T-bolts

37 5390 Size M14 – Turned and milled.

37 5385/5386 – **High nut** (= 1.5 d high) with one flat face to rest on plain washer No. 375340 and a convex face for positioning in collared washer No. 375355 D or No. 375360 G.

37 5389/5390 – **Collar nut** (=1.5 d high) DIN 6331, forged.

Standard:

37 5385 – **DIN 6330 B**

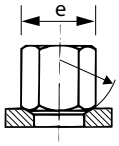
37 5390 – **DIN 6331**

Material:

37 5385/5390 – Quenched and tempered steel, strength 10.



37 5385





37 5390

Thread	35A 37 5385 AMF	NEW 32H 37 5386 HOLEX	32H 37 5389 HOLEX	NEW 35A 37 5390 AMF	Overall length	AF	Distance across corners e		Collar ∅	Collar height
	High nut		Collar nut				37 5385	37 5386 37 5389 37 5390		
					mm	mm	mm	mm	mm	mm
M6	eShop	–	–	–	9	10	11.05	–	–	–
M8	eShop	eShop	eShop	eShop	12	13	14.4	14.38	18	3.5
M10	eShop	eShop	eShop	eShop	15	16	17.77	17.77	22	4
M10/17	–	eShop	–	–	15	17	–	–	22	4
M12	eShop	eShop	eShop	eShop	18	18	20.03	20.03	25	4
M12/19	–	eShop	–	–	18	19	–	–	25	4
M14	eShop	eShop	eShop	eShop	21	21	23.36	23.36	28	4.5
M16	eShop	eShop	eShop	eShop	24	24	26.75	26.75	31	5
M18	eShop	–	–	eShop	27	27	30.14	30.14	34	5
M20	eShop	eShop	eShop	eShop	30	30	33.53	33.53	37	6
M24	eShop	eShop	eShop	eShop	36	36	39.98	39.98	45	6
M30	(eShop)	–	–	eShop	45	46	51.28	51.28	58	8

Two-part threaded nuts TWINNUT

Two-part threaded nut for quick assembly applications.
Tightening capability equal to standard nut of strength class 10.
Nut **with** collar.

Advantage: Quick fitting on to threaded rods that are long, corroded, up to 20° bent or damaged.







Thread		M8	M10	M12	M16	M20
35A 37 5392 AMF	TWINNUT nut	eShop	eShop	eShop	eShop	eShop
Overall height	mm	12	14	16	21	26



37 5392

Extension nut

Double length of tall nut No. 375385 (= 3.0 d tall), both ends flat.

Material:

37 5395 – Quenched and tempered steel, strength 10.

37 5396 – Hardened, black.

Application: For connecting together two studs.



37 5395

Thread	35A 37 5395 AMF	NEW 32H 37 5396 HOLEX	Overall length	AF	Distance across corners e	
	Extension nut				37 5395	37 5396
			mm	mm	mm	mm
M6	eShop	eShop	18	10	11.05	11.05
M8	eShop	eShop	24	13	14.38	14.38
M10	eShop	–	30	16	17.77	–
M10/17	–	eShop	30	17	–	17.77
M12	eShop	eShop	36	18	20.03	20.03
M12/19	–	eShop	36	19	–	20.03
M14	eShop	eShop	42	21	23.36	23.36
M16	eShop	eShop	48	24	26.75	26.75
M18	eShop	eShop	54	27	30.14	30.14
M20	eShop	eShop	60	30	33.53	33.53
M22	eShop	–	66	34	37.72	–
M24	eShop	eShop	72	36	39.89	39.98

Stud bolts (extension bolts)

Rolled thread.

Standard:

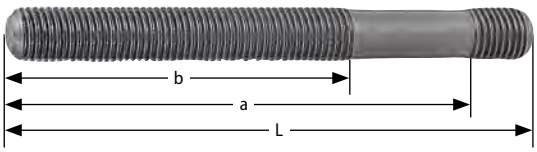
37 5380 – **DIN 6379**

Material:

37 5380 – Heat–treated steel
Strength class:
- M6 – M12 = 10.9
- M14 – M30 = 8.8

37 5381 – Heat-treatable steel
Strength class: 8.8

Application: For individual combination of T-bolts in conjunction with T-nuts and tenons No. 375315 – 375330, nuts No. 375385 – 378395 and plain washers No. 375340 – 375360.



Thread M × length L	35A 37 5380 AMF	NEW 32H 37 5381 HOLEX	Length a		Length b	
	Stud bolt		37 5380 mm	37 5381 mm	37 5380 mm	37 5381 mm
M6×32	eShop	–	23	–	16	–
M6×50	eShop	–	41	–	30	–
M6×80	eShop	–	71	–	50	–
M8×40	eShop	eShop	29	29	20	20
M8×63	eShop	eShop	52	52	40	40
M8×100	eShop	eShop	89	89	63	63
M8×160	eShop	–	149	–	100	–
M10×50	eShop	eShop	37	37	25	23
M10×80	eShop	eShop	67	67	50	50
M10×125	eShop	eShop	112	112	75	75
M10×200	eShop	eShop	187	187	125	125
M12×63	eShop	eShop	48	48	32	32
M12×80	eShop	eShop	65	66	50	45
M12×100	eShop	eShop	85	86	63	63
M12×125	eShop	eShop	110	111	75	75
M12×150	–	eShop	–	136	–	95
M12×200	eShop	eShop	185	186	125	125
M14×63	eShop	eShop	46	46	32	32
M14×80	eShop	–	63	–	50	–
M14×100	eShop	eShop	83	83	63	63
M14×125	eShop	–	108	–	75	–
M14×150	–	eShop	–	133	–	95
M14×160	eShop	–	143	–	100	–
M14×250	eShop	–	233	–	160	–
M16×75	–	eShop	–	56	–	45
M16×80	eShop	–	61	–	50	–
M16×100	–	eShop	–	81	–	63
M16×125	eShop	eShop	106	106	75	75
M16×150	–	eShop	–	131	–	95
M16×160	eShop	–	141	–	100	–

Thread M × length L	35A 37 5380 AMF	NEW 32H 37 5381 HOLEX	Length a		Length b	
	Stud bolt		37 5380 mm	37 5381 mm	37 5380 mm	37 5381 mm
M16×200	–	eShop	–	181	–	125
M16×250	eShop	eShop	231	131	160	160
M16×300	–	eShop	–	281	–	190
M18×80	eShop	–	57	–	50	–
M18×125	eShop	–	102	–	75	–
M18×200	eShop	–	177	–	125	–
M18×315	eShop	–	292	–	180	–
M20×80	eShop	eShop	53	53	32	32
M20×125	eShop	eShop	98	98	70	70
M20×150	–	eShop	–	123	–	95
M20×200	eShop	eShop	173	173	125	125
M20×250	eShop	eShop	223	223	160	160
M20×300	–	eShop	–	273	–	190
M20×315	eShop	–	288	–	200	–
M20×500	eShop	eShop	473	473	315	250
M22×160	eShop	–	129	–	100	–
M22×400	eShop	–	369	–	250	–
M24×100	eShop	–	65	–	45	–
M24×150	–	eShop	–	115	–	95
M24×160	eShop	–	125	–	100	–
M24×200	–	eShop	–	165	–	120
M24×250	eShop	eShop	215	215	160	160
M24×300	–	eShop	–	265	–	190
M24×400	eShop	eShop	365	365	250	250
M24×630	eShop	–	595	–	315	–
M30×200	eShop	–	157	–	125	–
M30×315	eShop	–	272	–	190	–
M30×500	eShop	–	457	–	315	–
M30×700	eShop	–	657	–	400	–

AMF T-bolt set

All parts quenched and tempered.
Strength class 8.8 or 10.
Presented in a sturdy wooden box with hinged lid.



37 5400

T-slot nominal size / thread mm	35A 37 5400 T-bolt set	10/M10 eShop	12/M12 eShop	14/M12 eShop	18/M16 eShop
Supplied with: T-bolts No. 375300 DIN 787		4 pcs./63 mm; 4 pcs./100 mm; 2 pcs./40 mm	4 pcs./80 mm; 4 pcs./125 mm; 2 pcs./50 mm	4 pcs./80 mm; 2 pcs./50 mm	4 pcs./100 mm; 2 pcs./63 mm
Studs No. 375380 DIN 6379		4 pcs./ 50 mm; 4 pcs./80 mm; 4 pcs./ 200 mm	4 pcs./63 mm; 4 pcs./100 mm; 4 pcs./200 mm	4 pcs./63 mm; 4 pcs./100 mm; 4 pcs./125 mm; 4 pcs./200 mm	4 pcs./80 mm; 4 pcs./125 mm; 4 pcs./160 mm
T-nuts No. 375315 DIN 508		–	–	4 pcs.	4 pcs.
tall nuts No. 375385 DIN 6330 B,		4 pcs.			
Extension nuts No. 375395		4 pcs.			
Plain washers No. 375340 DIN 6340		4 pcs.			
Spherical seat washers and collared washers No. 375350; 375360 DIN 6319 C + G		4 pcs.			

AMF Clamping elements basic sets

- All parts made of quenched and tempered steel.
- T-slot bolts quenched and tempered, rolled thread.

Application: Ideal for **toolmaking, manufacturing,** and **training jigs.**

T-slot nominal size / thread mm		14/M12	16/M14	18/M16
35A 37 5410	Basic assortment of clamping elements	eShop	eShop	eShop
Content: Clamps		2 pcs./ 14×100 mm; 2 pcs./ 14×160 mm	2 pcs./ 14×100 mm; 2 pcs./ 14×160 mm	2 pcs./ 18×125 mm; 2 pcs./ 18×200
Clamp blocks		4 pcs. / size 2; 4 pcs. size 3	4 pcs. / size 2; 4 pcs. / size 3	4 pcs. / size 2; 4 pcs. size 3
T-bolts		2 pcs./ M12×14×50 mm; 4 pcs./ M12×14×80 mm; 4 pcs./ M12×14×125 mm	2 pcs./M14×16×63 mm; 4 pcs./M14×16×100 mm; 4 pcs./M14×16×160 mm	2 pcs./M16×18×63 mm; 4 pcs./M16×18×80 mm; 4 pcs./M16×18×160 mm
Studs		2 pcs. size M12×100	2 pcs. size M14×100 mm; 2 pcs. size M14×160 mm	2 pcs. size M16×200 mm; 4 pcs. size M16×125 mm
tall nuts		6 pcs. size M12	6 pcs. size M14	6 pcs. size M16
Washers		6 pcs. size M12	6 pcs. size M14	6 pcs. size M16
Extension nuts		2 pcs. size M12	2 pcs. size M14	4 pcs. size M16



37 5410

T-slot nominal size / thread mm		14/M12
35A 37 5415	Basic assortment of clamping elements	eShop
Content: Clamp		2 pcs. 14×125 mm; 4 pcs. 14×160 mm; 2 pcs. 14×200 mm
Clamp blocks		4 pcs. / size 1; 4 pcs. size 2
T-bolts		4 pcs./M12×14×100 mm; 4 pcs./M12×14×160 mm; 4 pcs./M12×14×200 mm
Screw jacks		2 pcs. size50; 2 pcs. size110; 2 pcs. size140
Nuts		12 pcs. size M12
Washers		12 pcs. size M12



37 5415

HOLEX Clamping sets

Application: Ideal for toolmaking, manufacturing and training jigs.

T-slot nominal size / thread mm		14/M12	18/M16	22/M20
32X 37 5420	T-bolt set	eShop	eShop	eShop
Content: Studs		4 pcs. / M12×80 mm; 4 pcs. / M12×125 mm; 4 pcs. / M12×160 mm	4 pcs. / M16×100 mm; 4 pcs. / M16×125 mm; 4 pcs. / M16×160 mm	4 pcs. / M20×125 mm; 4 pcs. / M20×160 mm; 4 pcs. / M20×200 mm
Nuts for T-slots		8 pcs. size M12×14 mm	8 pcs. size M16×18 mm	8 pcs. size M20×22 mm
Hexagon nuts		8 pcs. size M12	8 pcs. size M16	8 pcs. size M20
Washers		8 pcs. size M12	8 pcs. size M16	8 pcs. size M20
Extension nuts		2 pcs. size M12	2 pcs. size M16	2 pcs. size M20



37 5420

T-slot nominal size / thread mm		14/M12	16/M14	18/M16
32H 37 5450	Set of assorted clamping elements	eShop	eShop	eShop
Content: Clamping heights at 2 clamping points in mm		150	178	178
Clamping heights at 4 clamping points in mm		115	135	150
Step clamp		2 pcs. size 14×100 mm; 2 pcs. size 14×150 mm	2 pcs. size 14×100 mm; 2 pcs. size 14×150 mm	2 pcs. size 18×125 mm; 2 pcs. size 18×160 mm
Screws for T-slots strength class 8.8		4 pcs. M12×14×50 mm; 4 pcs. M12×14×125 mm	4 pcs. M14×16×100 mm; 4 pcs. M14×16×160 mm	4 pcs. M16×18×100 mm; 4 pcs. M16×18×160 mm
Clamping blocks, serrated L×W×H in mm		4 pcs. size 2 (38x31x66); 4 pcs. size 3 (67x31x117)		
Clamping spindle strength class 8.8 in mm		4 pcs. M12×125	4 pcs. M14×100	4 pcs. M16×125
Hexagonal nut (1.5 d tall)		4 × M12	4 × M14	4 × M16
Washer for clamping tools		4 × M12	4 × M14	4 × M16
Extension nut		4 × M12	4 × M14	4 × M16
Weight in kg		8.5	9.3	12.2
External dimensions of box in mm		275×125×65	213×153×109	236×208×95



37 5450

Sets of assorted clamping elements

Consisting of various clamping elements, which are required for quick clamping of tools, jigs or components to T-slot tables. All parts are made of quenched and tempered steel and can be reordered individually.

Supplied with: Combination spanner, anti-seize compound, wooden case



37 5405

T-slot nominal size / thread	mm	10/M10	12/M12	14/M12	18/M16
35A **37 5405**	Assortment of clamping elements	eShop	eShop	eShop	eShop
Clamping height double set up	mm	2 – 230	2 – 270	2 – 270	2 – 270
Clamping height quadruple set up	mm	2 – 140	2 – 160	2 – 160	2 – 160
Supplied with: T-bolts No. 375300 DIN 787		4 pcs./ 63 mm; 4 pcs./ 100 mm; 2 pcs./ 40 mm	4 pcs./ 80 mm; 4 pcs./ 125 mm; 2 pcs./ 50 mm	4 pcs./ 80 mm; 4 pcs./ 125 mm; 2 pcs./ 50 mm	4 pcs./ 100 mm; 4 pcs./ 160 mm; 2 pcs./ 63 mm
Studs No. 375380 DIN 6379		4 pcs./ 80 mm	4 pcs./ 100 mm	4 pcs./ 100 mm	4 pcs./ 125 mm
Step clamp No. 372000 DIN 6314 Z		4 pcs./ 11×80	4 pcs./ 14×100	4 pcs./ 14×100	4 pcs./ 18×125
tall nuts No. 375385 DIN 6330 B		6 pcs.			
Extension nuts No. 375395		4 pcs.			
Universal serrated clamp support block No. 372200		4 pcs./ size 1; 4 pcs./ size 2; 2 pcs./ size 3	4 pcs./ size 2; 4 pcs./ size 3	4 pcs./ size 2; 4 pcs./ size 3	4 pcs./ size 2; 4 pcs./ size 3
Collared washer form G No. 375360 DIN 6319 G		6 pcs.			
Low height clamping jaws No. 375110		4 pcs./ size 12	4 pcs./ size 12	4 pcs./ size 14	4 pcs./ size 18
Spring clamp holder No. 370850		4 pcs./ size 12	4 pcs./ size 12	4 pcs./ size 14	4 pcs./ size 18
T-slot brush No. 375512		–	–	1 pc./ size 1	1 pc./ size 1

Parallel table backstops

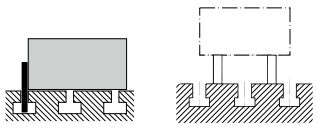
With minus tolerance h7, compatible with machine slots with tolerance H8. Height tolerance IT5.

Material: Hardened steel.

Application:
- **As backstops in machine table slots.**
- **As parallel blocks** in clamping fixtures. For further parallel blocks see No. 366400 - 366750.



37 5500



T-slot nominal size	mm	8	12	14	16	18	22	28
35A **37 5500**	Pair of parallel table backstops	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
Width tolerance h7	mm	-0.015	-0.018	-0.018	-0.018	-0.018	-0.021	-0.021
Length	mm	100	100	100	160	160	160	160
Height	mm	25	40	50	50	63	80	100
Height tolerance as pairs IT5	mm	0.009	0.011	0.011	0.011	0.013	0.013	0.015

Cover strips for T-slots

Aluminium profile strip, **1 m long.**

Application:
- Laborious cleaning of table slots is no longer necessary if empty slots are covered up with cover strips beforehand.
- Cover strips can easily be removed after machining.

Note: Can be cut to the required length using a fine saw blade.



37 5508



37 5510

T-slot nominal size	mm	12	14	16	18	20	22	24	28	36
38F **37 5508**	KOPAL Cover strip for T-slot **with discharge holes**	–	eShop	eShop	eShop	–	eShop	–	–	–
35A **37 5510**	Cover strip for T-slot	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

Our partner for standard parts and clamping elements

The Hoffmann Group supplies the entire range* on short notice ex manufacturer's stock.

Order from the Hoffmann Group simply and conveniently using the AMF item number.

See eShop

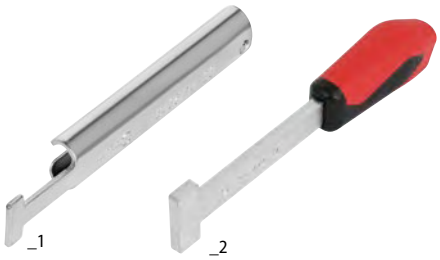


*** Excludes zero point clamping technology**

T-slot scraper

Sturdy steel tool for clearing T-slots.
Size 2; 3 – with 2-component handle

Type		1	2	3
35A 37 5512	T-slot scraper	eShop	eShop	(eShop)
for T-slot	mm	14 – 20	22 – 32	36 – 54



T-slot brush

- Ergonomically shaped shock-resistant handle with guard.
- Nylon bristles.
- Laterally stabilised bristles.
- 2 in 1: Clearing hook and brush head.
- Sturdy T-slot brush made of steel, **14 mm wide.**



Type		1
310 37 5514	T-slot brush	eShop

Stop for T-slots

- Workpiece back-stop for clamping using eccentric bolts in T-slots.
- Sturdy version.
- Quick to fit and remove.







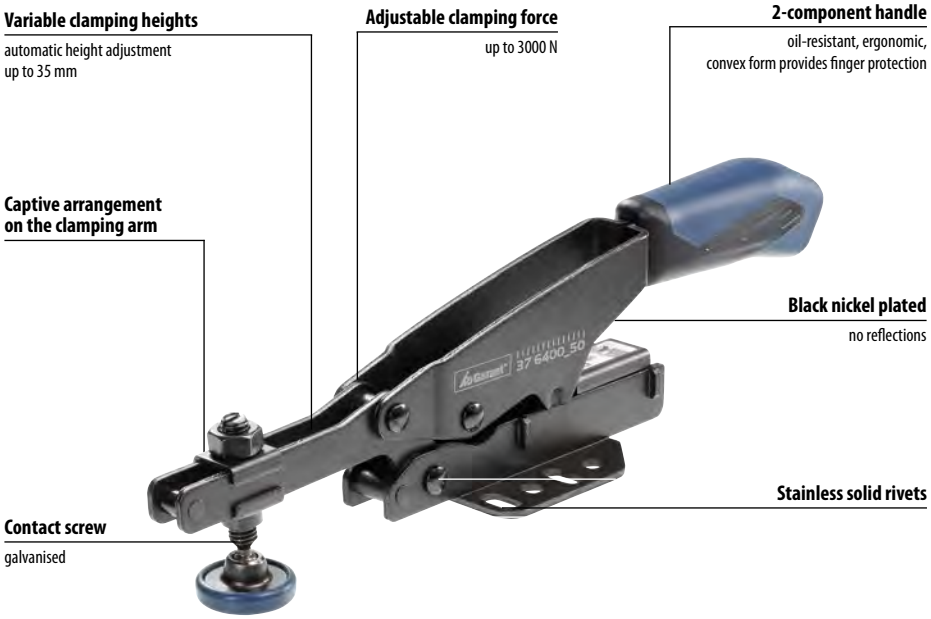
T-slot nominal size	mm	12	14	16	18	22
38F 37 5521	Stops for the T-slot table **(2-piece set)**	eShop	eShop	eShop	eShop	eShop
Width	mm	30	30	40	40	50
Height	mm	34	34	40	40	53

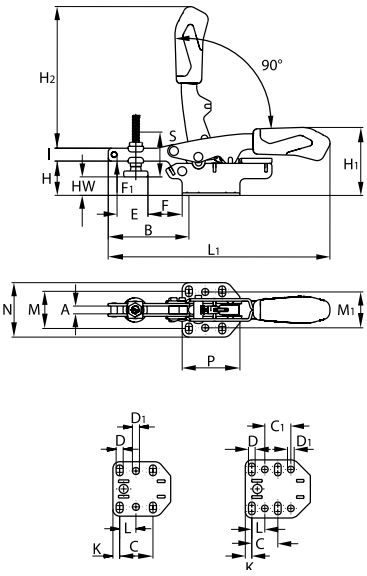
Garant Variable toggle clamps

With horizontal base. Completely black nickel-plated, with solid rivets. Ergonomic 2-component handle. Captive contact screw. Complete with black nickel-plated contact screw.

Advantage: Stepless adjustment function for variations in workpiece heights. Consistently high clamping forces.



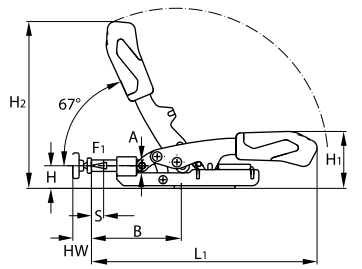






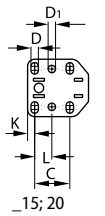


Automatic height adjustment

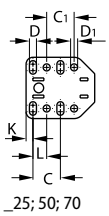


Type		20	50	70	15	25
31M 37 6400	Horizontal toggle clamp, variable	eShop	eShop	eShop	–	–
31M 37 6410	Push-pull toggle clamp, variable	–	–	–	eShop	eShop
Clamping force	N	2000	3000	3000	2000	3000
automatic height adjustment S	mm	20	35	35	8	13
maximum clamping height	mm	35	40	60	25	35
Contact screw	mm	M6×49	M8×50	M8×66	M6×37	M8×50

Size	A	B	C	C1	D	D1	H	H1	H2	HW min	HW max	I	K	L	L1	M	M1	N	P
15	8.5	52 – 69	26	–	5.5	5.5	16.8	58	145	13	25	M6	5.3	12.7	177	26 – 32	28	42.5	45
25	11.8	72 – 98	25.4	25.4	6.5	6.5	23.2	71	207	16	35	M8	6.3	12.7	256	32 – 44	38	57	63.5
20	6.1	63	26	–	5.5	5.5	27	70	121	– 7	11	10	5.3	12.7	184	26 – 32	28	42.5	45
50	8.4	104	25.4	25.4	6.5	6.5	23	72	174	– 8.9	1.5	13	6.3	12.7	261	32 – 44	38	57	63.5
70	8.4	104	25.4	25.4	6.5	6.5	41	90	174	– 6.6	19.7	13	6.3	12.7	261	32 – 44	38	57	63.5



_15; 20



_25; 50; 70

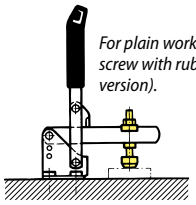
Vertical toggle clamp with adjustable contact screw

37 6510 – With vertical base for fixing to ribs and for welded structures.
37 6520 – With angled base for side attachment.
37 6500–6508 – With horizontal base for fixing to base plates etc.

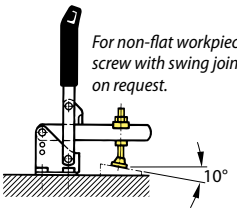
37 6500/6505/6510/6520 –

- Compact design due to new handle.
- Ergonomic 2-component handle, very comfortable to use due to enlarged hand rest.
- Captive contact screw.
- Finger protection thanks to safety clamping mechanism no trap points.

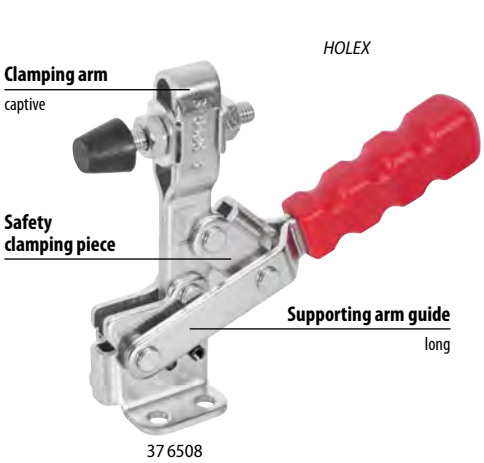
Application: **For quick clamping and releasing of parts in series production** or for installation as part of special clamping jigs. Suitable for clamping during drilling, reaming, grinding, bending, welding, fitting etc.



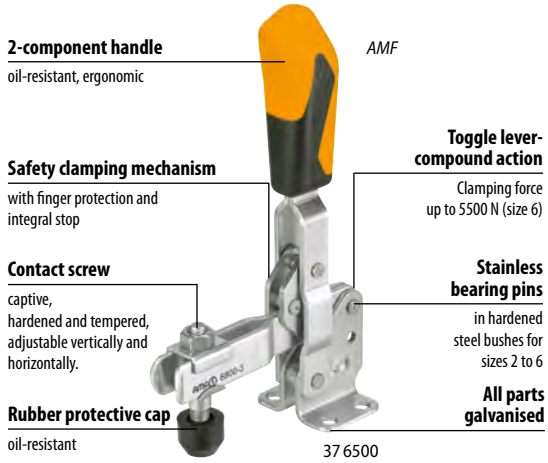
For plain workpieces: Contact screw with rubber cap (standard version).



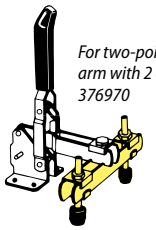
For non-flat workpieces: Contact screw with swing joint available on request.



37 6508



37 6500

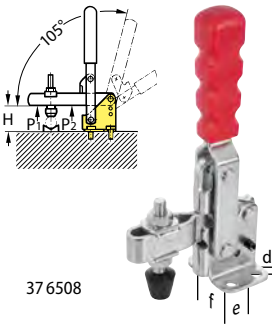


For two-point clamping: Cross arm with 2 contact screws No. 376970

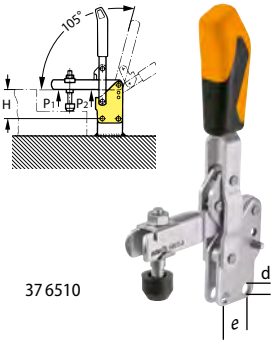


37 6500

Type			0	1	2	3	4	5	6
35A 37 6500	AMF	Vertical toggle clamp **with horizontal base**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
35A 37 6505	AMF	Vertical toggle clamp **with horizontal base, stainless**	–	eShop	eShop	–	–	–	–
32S 37 6508	HOLEX	Vertical toggle clamp **with horizontal base**	–	eShop	eShop	eShop	eShop	–	–
Hole spacing e (37 6500, 37 6505)		mm	8.5-13.5	16	20	20	32	45	50.5
Hole spacing e (37 6508)		mm	–	16	12,5	19	32	–	–
Hole spacing f (37 6500, 37 6505)		mm	23	22.5-26	23-31	32.5	43-46.5	45-50	67.5-72.5
Hole spacing f (37 6508)		mm	–	24	27	31.6	45	–	–
Bore ∅ d (37 6500, 37 6505)		mm	4.5	4.5	5.5	7.5	8.6	8.5	13
Bore ∅ d (37 6508)		mm	–	3	5.2	7.2	8.3	–	–
Clamping height H (37 6500, 37 6505)		mm	18	19	23	33	42.5	55.8	81
Clamping height H (37 6508)		mm	–	19	22.5	32	43	–	–
Clamping force P1 (37 6500, 37 6505)		N	500	600	800	1200	1700	3000	3400
Clamping force P1 (37 6508)		N	–	500	1200	1800	2500	–	–
Clamping force P2 (37 6500, 37 6505)		N	700	1100	1200	2500	3000	5000	5500
Clamping force P2 (37 6508)		N	–	710	1500	2500	3470	–	–
overall height (37 6500, 37 6505)		mm	81	98	140	186	221	281	333
overall height (37 6508)		mm	–	77	140	205	218	–	–
overall length (37 6500, 37 6505)		mm	49	61	78	112	141	195	231
overall length (37 6508)		mm	–	51.5	74.5	90	143	–	–
Contact screw (37 6500, 37 6505)		mm	M4×25	M5×30	M6×35	M8×45	M8×65	M12×80	M12×110
Contact screw (37 6508)		mm	–	M5×30	M6×50	M8×45	M10×89	–	–

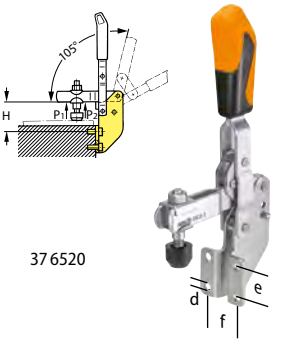


37 6508



37 6510

Type			1	2	3	4	5
35A 37 6510	AMF	Vertical toggle clamp **with vertical base**	eShop	eShop	eShop	eShop	eShop
Hole spacing e		mm	16	20	20	32	45
Bore ∅ d		mm	4.5	5.5	7.5	8.6	8.5
Clamping height H		mm	23.5 – 25	28.5 – 32	41	55.5	66
Clamping force P1		N	600	800	1200	1700	3000
Clamping force P2		N	1100	1200	2500	3000	5000
overall height		mm	109	144.5	200	244	301
overall length		mm	61	78	112	141	195
Contact screw		mm	M5×30	M6×35	M8×45	M8×65	M12×80



37 6520

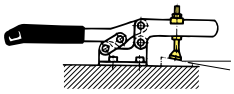
Type			1	2	3	4
35A 37 6520	AMF	Vertical toggle clamp **with angled base for side attachment**	eShop	eShop	eShop	eShop
Hole spacing e		mm	14	20	24	32
Hole spacing f		mm	20	25.5	28.5	32
Bore ∅ d		mm	4.5	6.1	6.5	8.5
Clamping height H		mm	27	35	40	60
Clamping force P1		N	800	1000	1400	2000
Clamping force P2		N	1100	1200	2500	3000
overall height		mm	125	176.5	223	280
overall length		mm	61	77	111	141
Contact screw		mm	M5×30	M6×35	M8×45	M8×65

Horizontal toggle clamp

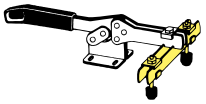
Captive contact screws.

Application: **For quick clamping and releasing of parts in series production** or for installation as part of special clamping jigs. Suitable for clamping during drilling, reaming, grinding, bending, welding, fitting etc.

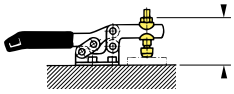
With horizontal base for fixing to base plates etc.
37 6615 – Reinforced version with increased retaining strength
37 6610–6620 – Compact design due to new handle.



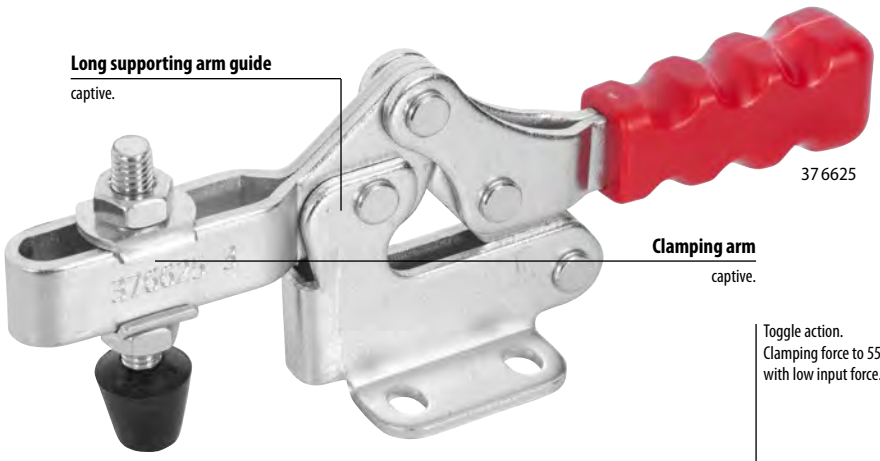
For uneven components:
contact screw with joint, on request.

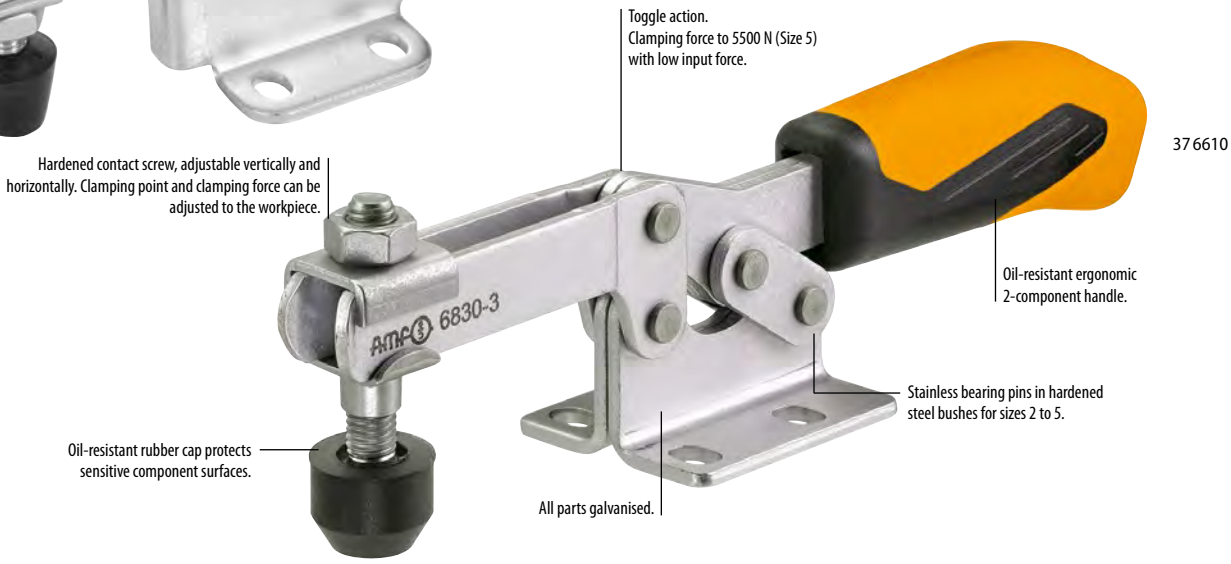


For two-point clamping:
Cross arm with 2 contact screws No. 376970 can be found in our spare parts list.



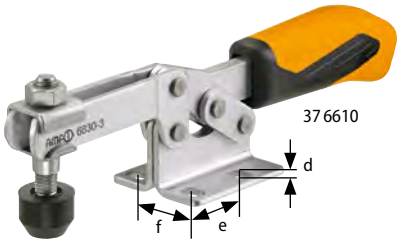
For flat workpieces:
Contact screw with rubber cap (standard version) with low overall height.

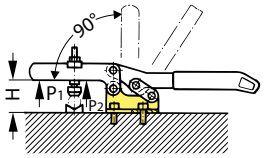




Type			0	1	2	3	4	5
35A **37 6610**		Horizontal toggle clamp **with horizontal base**	eShop	eShop	eShop	eShop	eShop	eShop
35A **37 6615**	AMF	Horizontal toggle clamp **plus, with horizontal base**	–	–	eShop	eShop	eShop	–
35A **37 6620**		Horizontal toggle clamp **with horizontal base, stainless**	eShop	eShop	eShop	eShop	–	–
32S **37 6625**	HOLEX	Horizontal toggle clamp **with horizontal base**	eShop	eShop	eShop	eShop	eShop	–
Hole spacing e (37 6610, 37 6615, 37 6620)		mm	11.5-15.5	13-14.5	26	25.7	41	41.5
Hole spacing e (37 6625)		mm	11.2	13.5	26	26	41.2	–
Hole spacing f (37 6610, 37 6615, 37 6620)		mm	16	18-21.5	19.5-29.5	22-31.8	29-43	41.5
Hole spacing f (37 6625)		mm	16	19.7	25	31.6	43	–
Bore ∅ d (37 6610, 37 6615, 37 6620)		mm	4.6	5.2	5.6	6.5	8.5	8.5
Bore ∅ d (37 6625)		mm	4.3	5.2	5.5	6.6	8.8	–
Clamping height H (37 6610, 37 6620)		mm	14.5	19	24	32	45	46
Clamping height H (37 6615)		mm	–	–	28	33.5	41	–
Clamping height H (37 6625)		mm	8	18	24	33	45	–
Clamping force P1 (37 6610, 37 6620)		N	250	800	1000	1800	2000	3000
Clamping force P1 (37 6615)		N	–	–	1600	2500	3500	–
Clamping force P1 (37 6625)		N	230	460	1200	1650	2500	–
Clamping force P2 (37 6610, 37 6620)		N	400	1100	1200	2500	3000	5000
Clamping force P2 (37 6615)		N	–	–	3000	4000	8000	–
Clamping force P2 (37 6625)		N	380	700	1400	2300	3500	–
overall height (37 6610, 37 6620)		mm	23	30	45	48.5	75	73
overall height (37 6615)		mm	–	–	51	58	77	–
overall height (37 6625)		mm	17	38	54	68.5	90	–
overall length (37 6610, 37 6620)		mm	79	120	162	206	287	321
overall length (37 6615)		mm	–	–	224	242	329	–
overall length (37 6625)		mm	77	105	163	190	273	–
Contact screw (37 6610, 37 6620)		mm	M4×25	M5×30	M6×35	M8×45	M8×65	M8×65
Contact screw (37 6615)		mm	–	–	M6×50	M8×58	M10×76	–
Contact screw (37 6625)		mm	M4×20	M5×30	M6×40	M8×50	M10×90	–



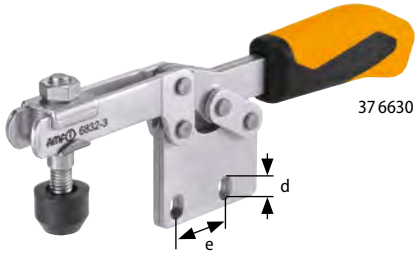




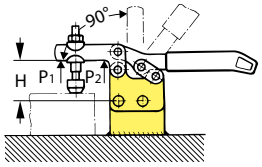
- Compact design due to new handle.
- Ergonomic 2-component handle, very comfortable to use due to enlarged hand rest.

37 6630 – With vertical base for fixing to ribs and for welded structures.

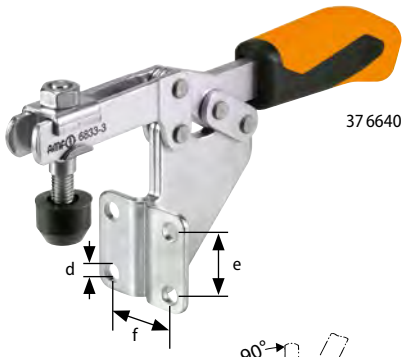
37 6640 – With angled base for side attachment.



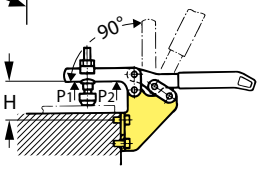
37 6630



Type		0	1	2	3	4
35A 37 6630	Horizontal toggle clamp **with vertical base**	eShop	eShop	eShop	eShop	eShop
Hole spacing e	mm	11.5-15.5	13-14.5	26	25.7	41
Bore ∅ d	mm	4.6	5.2	5.6	6.5	8.5
Clamping height H	mm	20	23.5 – 25.5	29.5 – 34	37.5 – 42.5	52 – 59
Clamping force P1	N	250	800	1000	1800	2000
Clamping force P2	N	400	1100	1200	2500	3000
overall height	mm	33	43	61	65	97
overall length	mm	79	120	164	206	287
Contact screw	mm	M4×25	M5×30	M6×35	M8×45	M8×65



37 6640

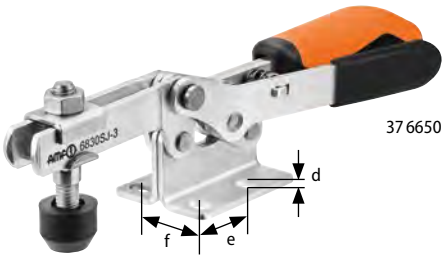


Type		2	3	4
35A 37 6640	Horizontal toggle clamp **with angled base**	eShop	eShop	eShop
Hole spacing e	mm	20	24	32
Hole spacing f	mm	25.5	28.5	32
Bore ∅ d	mm	5.6	6.8	8.5
Clamping height H	mm	48	40	60
Clamping force P1	N	1000	1800	2000
Clamping force P2	N	1200	2500	3000
overall height	mm	94	86.5	133
overall length	mm	162	206	282
Contact screw	mm	M6×35	M8×45	M8×65

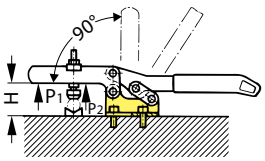
Horizontal toggle clamp with patented safety-locking mechanism

- Rivet made of stainless steel.
- Case-hardened bearing bushes.
- Bearings greased.
- Complete with hardened and galvanised contact screw.
- More compact design due to new handle.
- Ergonomic 2-component handle, very comfortable to use due to enlarged hand rest.
- Captive contact screws.

Application: Particularly suitable for use where vibrations occur and for overhead applications due to patented safety-locking in closed and open state.



37 6650



Type		3	4
35A 37 6650	Horizontal toggle clamp **with safety-locking mechanism**	eShop	eShop
Hole spacing e	mm	25.7	41
Hole spacing f	mm	22-31.8	29-43
Bore ∅ d	mm	6.5	8.5
Clamping height H	mm	32	45
Clamping force P1	N	1800	2000
Clamping force P2	N	2500	3000
overall height	mm	48.5	75
overall length	mm	206	287
Contact screw	mm	M8×45	M8×65

ESD quick clamp

- Handle and protective cap made from electrostatically dissipative material.
- The quick-action clamps are within the ideal resistance range for a "gentle discharge".
- Maximum protection of electrostatically sensitive components.
- Specially developed for work in ESD protected areas (EPA) – according to the standard DIN EN 61340-5-1.

Complete range of ESD clamps on request.



Push-pull toggle clamp short type

Hardened shoulder screws.

37 6700 – ■ Compact design due to new handle.
■ Ergonomic 2-component handle, very comfortable to use due to enlarged hand rest.
37 6725 – ■ Ergonomic handle made of oil-resistant plastic.

Application: ■ Direct fixing to sheet metal fixing points.
■ Connected to jig body with threaded end of arm.

Optional extras:
37 6700 – Angled base No. 376730.
37 6725 – Angled base No. 376735.

Note: ■ Available in stainless steel on request.

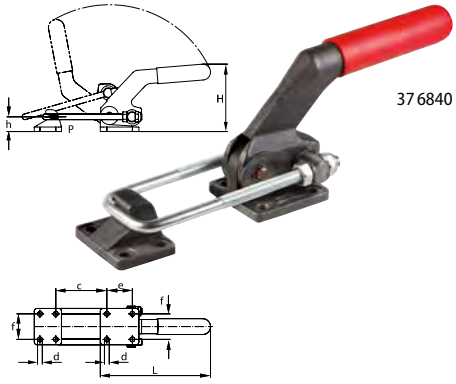

37 6700

37 6725

Type		2	3	5
35A 37 6700	Push-pull toggle clamp **short body**	eShop	eShop	eShop
32S 37 6725		eShop	eShop	–
Clamping range (37 6700)	mm	21.5	40	67
Clamping range (37 6725)	mm	19	38	–
Clamping force P (pressure and traction) (37 6700)	N	1000	2500	4000
Clamping force P (pressure and traction) (37 6725)	N	900	1300	–
Overall height H (37 6700)	mm	73	123	149
Overall height H (37 6725)	mm	74	100	–
Overall length L (37 6700)	mm	161.5	258	364
Overall length L (37 6725)	mm	163	237	–
Contact screw (37 6700)	mm	M6×25	M8×35	M12×50
Contact screw (37 6725)	mm	M6×40	M8×50	–
thread at front of clamp	mm	M16×1.5	M20×1.5	M24×1,5

Hook toggle clamp – heavy-duty version

Base, lever arm, and catch of cast steel, pin of hardened steel. For high retaining force.



37 6840

Type		4	5
35A 37 6840	Hook toggle clamp **heavy-duty**	eShop	(eShop)
Hole spacing e	mm	45	57
Hole spacing f	mm	45	57
Bore ∅ d	mm	8.5	10.5
Adjustment travel of clamping hook c	mm	24 – 90	28 – 93
Clamping height h	mm	26	32
Clamping force P (traction)	N	15000	27000
Overall height H	mm	122	146
Overall length L	mm	198	250

Contact screws with thread

■ Hardened, galvanised, passivated, strength 8.8.
■ Vulcanised, oil-resistant contact head (silicone-free).

Application: To protect delicate components.


37 7050

Type		4×25	5×30	6×25	6×35	8×35	8×45	8×50	8×65	12×50	12×80	12×110
35A 37 7050	Contact screw **with threaded shank**	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	eShop	eShop	eShop	eShop
∅	mm	11	13	16	16	21	21	21	21	31	31	31
Height of contact piece	mm	8	10	12	12	16	16	16	16	24	24	24
Contact screw size	mm	M4×24	M5×28	M6×23	M6×33	M8×32	M8×42	M8×47	M8×62	M12×46	M12×76	M12×106
Overall length	mm	32	38	35	45	48	58	63	78	70	100	130

Protective caps for contact screws

Oil-resistant rubber.

Application: To protect delicate components.

Note: ■ 6/18 = 18 AF **(new standard** = marked 6 on the contact surface).
■ 6/19 = 19 AF **(old standard).**
■ Minimum order quantity each size 10 pieces.


37 7020

Type		0	1	2	3/4	4	6/18	6/19
35A 37 7020	Protective cap	eShop	eShop	eShop	eShop	eShop	eShop	eShop
for screws		M4	M5	M6	M8	M10	M12 / 18 AF	M12 / 19 AF
∅	mm	11	12.5	15	19	22	25	26
Height	mm	8.5	10	12	15	17.5	20	20

Push-pull toggle clamp (push and pull back clamps)

With **compound action.** Opening prevented by self-locking mechanism.

- Rivet made of stainless steel, bearings greased.
- With long push-pull guide.
- Handle can be moved to any angle.

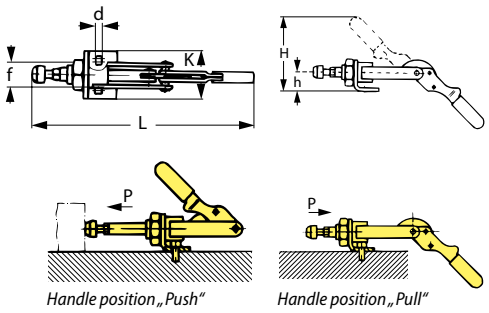
37 6710 –
- With hardened and galvanised contact screw.
- Detachable angled base, permitting fixing to sheet metal walls.

Application: For use in special clamping fixtures for drilling, reaming, grinding, bending, welding, fitting etc.

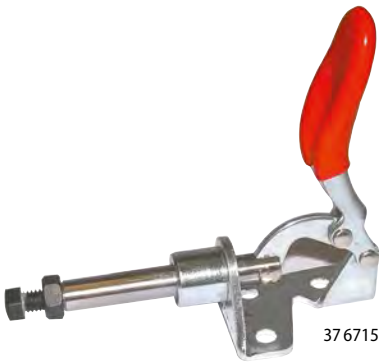
Optional extras:

37 6710 – Angled base No. 376730.

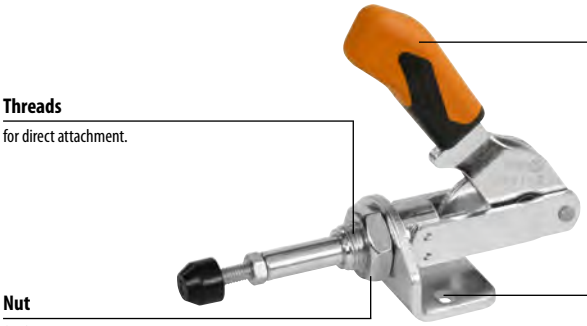
Note: ■ Size 0 and 3 also available in stainless steel!



Handle position „Push" *Handle position „Pull"*



37 6715



37 6710

Type		0	1	2	3	5
35A 37 6710	Push-pull toggle clamp **with angled base**	eShop	eShop	eShop	eShop	eShop
32S 37 6715	Push-pull toggle clamp **with baseplate**	eShop	–	–	–	–
Hole spacing f (37 6710)	mm	16	16 – 19.5	31.8 – 36	29.5 – 42.5	29 – 46
Hole spacing f (37 6715)	mm	15.9	–	–	–	–
Angled base width K (37 6710)	mm	25	30	50	60	65
Angled base width K (37 6715)	mm	27	–	–	–	–
Clamping height b to centre of screw (37 6710)	mm	12	15	20	25	30
Clamping height b to centre of screw (37 6715)	mm	12.7	–	–	–	–
Bore ∅ d (37 6710)	mm	4.5	4.5	5.6	6.5	8.5
Bore ∅ d (37 6715)	mm	4.4	–	–	–	–
Clamping range	mm	16	20	26	32	40
Clamping force P (pressure and traction) (37 6710)	N	800	1000	2000	2500	4500
Clamping force P (pressure and traction) (37 6715)	N	450	–	–	–	–
Overall height H (37 6710)	mm	49.3	60.5	85.5	108	129.5
Overall height H (37 6715)	mm	38	–	–	–	–
Overall length L	mm	140.5	185	244	302.5	379.5
Contact screw	mm	M4×20	M4×20	M6×25	M8×35	M12×50
thread at front of clamp (37 6710)	mm	M10x1	M12×1,5	M16×1.5	M20×1.5	M24×1,5

Heavy-duty push-pull toggle clamps (push and pull back clamps)

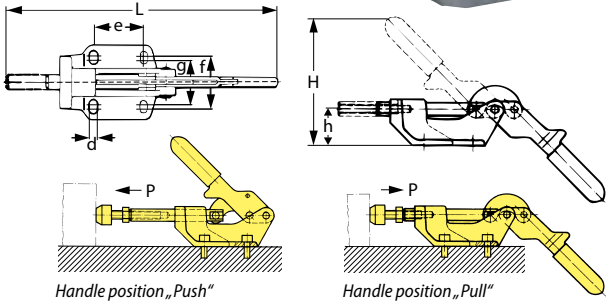
- Very sturdy design, with slide-ram guide.
- Slide-ram and hand lever move together.
- Body of malleable cast iron.
- Lever parts and slide ram made of quenched and tempered steel, galvanised and passivated.
- Hardened contact screw.

Application:
- For quick clamping / releasing in series production.
- As push or pull clamp.
- For incorporation within special jigs and fixtures.
- Suitable for clamping during drilling, reaming, grinding, bending, welding, fitting etc.



37 6720

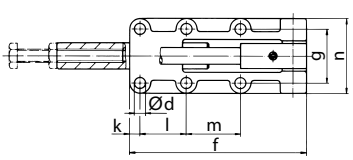
Type		3	5	7
35A 37 6720	Heavy push-pull toggle clamp	eShop	eShop	eShop
Hole spacing g	mm	36	41	57
Hole spacing e	mm	41	41	70
Hole spacing f	mm	44	50	65
Clamping height b to centre of screw	mm	30	38	55
Bore ∅ d	mm	6.5	8.5	11
Clamping range	mm	32	40	50
Clamping force P (pressure and traction)	N	4000	10000	25000
Overall height H	mm	116	137.5	179
Overall length L	mm	309	380	460
Contact screw	mm	M8×35	M12×50	M12×50



Handle position „Push" *Handle position „Pull"*

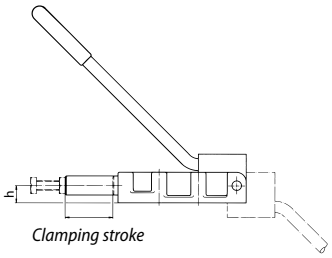
Push-pull toggle clamp – with removable hand lever

- Hardened bolts, maintenance-free sintered bushes.
- For high clamping forces.
- Body of malleable cast iron, burnished.





37 6760



Clamping stroke

Type			4	5	7	8
35A **37 6760**	Push-pull toggle clamp **with hand lever (can be pulled-out)**		eShop	eShop	eShop	eShop
Hole spacing k		mm	25	8	12	14.5
Hole spacing l		mm	36.5	35	45	70
Hole spacing m		mm	–	41	45	70
Hole spacing g		mm	33.4	41	54	60
Base body width n		mm	46	58	78	84
Base body length f		mm	90	135	196	254
Clamping height b to centre of screw		mm	12	18	22	28
Bore ∅ d		mm	5.5	8.5	10.3	10.3
Clamping range		mm	32	50	75	106
Clamping force P (pressure and traction)		N	7000	12000	25000	45000
Overall height H		mm	132	210	285	360
Overall length L		mm	155	250	355	440
Contact screw		mm	M8×35	M10×50	M12×50	M16×80
Weight		kg	0.65	1.65	4.28	7.72

Hook toggle clamp (pull back clamps)

37 6740 – ■ Quick-action clamp with toggle action.
■ Self-locking mechanism prevents inadvertent opening.

Application:

37 6740 – For closing containers.

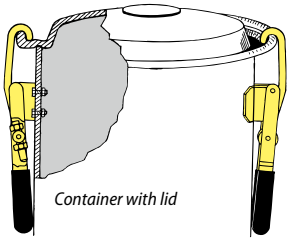


37 6740

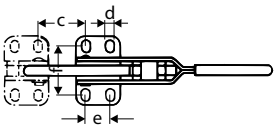
Clamping hook axial adjustment.

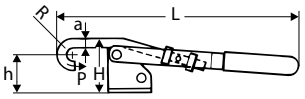


37 6750
Catch



Container with lid





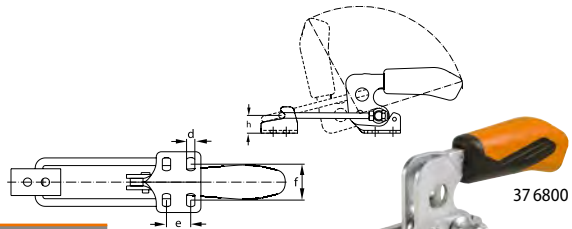
Type			1	3	5
35A **37 6740**	Hook toggle clamp **with clamping hook**		eShop	eShop	eShop
35A **37 6750**	Catch for No. 376740		eShop	eShop	eShop
Hole spacing e		mm	19	19	29
Hole spacing f		mm	25.5 – 30.5	31 – 36	56 – 63.5
Bore ∅ d		mm	4.5	5.6	11.2
Adjustment travel of clamping hook c		mm	35 – 42.5	72.5 – 84	58 – 72
Clamping height h (37 6740)		mm	22.7	22.7	49.1
Clamping force P (traction)		N	2000	3000	5000
Overall height H		mm	34.5	36	69
Overall length L (37 6740)		mm	104.6	200.5	260.5
Radius R (37 6740)		mm	4.5	5.5	8
Thickness a (37 6740)		mm	5.3	7.1	10.75
Overall length L (37 6750)		mm	31	40	55
overall width (37 6750)		mm	40	45	85

Hook toggle clamp (pull back clamp) – horizontal / vertical action

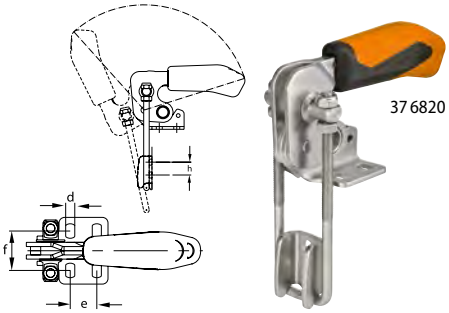
Complete with catch.

- **Quick-action clamp with toggle action.**
- **Self-locking mechanism prevents inadvertent opening.**

Application: For closing containers.



37 6800



37 6820

Type			2	3	4
35A **37 6800**	Hook toggle clamp **horizontal**		eShop	eShop	eShop
35A **37 6820**	Hook toggle clamp **vertical**		eShop	eShop	eShop
Hole spacing e		mm	13	19	32
Hole spacing f		mm	19.5 – 23.5	24.5 – 32	35 – 46
Bore ∅ d		mm	5.2	6.5	8.5
Adjustment travel of clamping hook c (37 6800)		mm	38 – 72	48.5 – 96	59 – 123
Adjustment travel of clamping hook c (37 6820)		mm	5 – 28	6.5 – 36	9 – 47
Clamping height h		mm	12	19	26
Clamping force P (traction)		N	1600	3200	7000
Overall height H		mm	47	70	94.5
Overall length L (37 6800)		mm	125 – 159	169 – 216	209 – 273
Overall length L (37 6820)		mm	91	125	151

Quick-action table clamp

Steplessly variable, fixed or pivoted. Type BS – the clamping action is released by tightening the clamping handle further then pressing the release lever (clamp then releases easily). Type GRS – the spindle is located away from the head, allowing free access to the work area.

Application: For use on machine tables for fast and reliable clamping and releasing when manufacturing individual parts.

Optional extras: Socket-head screw to DIN 912, T-nuts No. 375315; 375320; 375325 to DIN 508.



TYPE BS

TYPE GRS

Type		BS2N	BS3N	BS5N	GRS20-12
37B 37 7065	Quick-action table clamp	eShop	eShop	eShop	eShop
Throat	mm	100	120	140	123-140
Clamping height h	mm	200	200	240	200
maximum clamping force at 50mm clamping height	kN	3.5	5.5	10	7.5
Height H	mm	260	260	320	322
Attachment hole ∅	mm	10.5	13	16.5	16.5

Clamping element for welding table

37 7150 Size 28/160 – Applicable only in conjunction with No. 377165.

37 7152 – Lever handle with locking mechanism for proportionate and vibration-proof clamping.

Advantage:
- Can be incorporated in to the welding table without using tools.
- Wide variety of uses, and steplessly adjustable.
- Convenient, secure, pin-point individual clamping.



37 7150_28/160



37 7151_16/100



37 7151_16/150



37 7150_16/100



37 7152 _16/100

Type		16/100	28/120	28/140	16/150	28/160	28/175
37B 37 7150	Clamping element **2-component handle**	eShop	eShop	eShop	eShop	eShop	eShop
37B 37 7151	Clamping element **Tommy bar**	(eShop)	(eShop)	–	eShop	–	eShop
37B 37 7152	Clamping element **Lever handle**	eShop	(eShop)	(eShop)	eShop	–	eShop
Hole ∅	mm	16	28	28	16	28	28
Version		rigid	rigid	rigid	variable	can be tilted	variable
Clamping height max.	mm	200	300	300	200	–	300
Throat	mm	100	120	140	30–150	0-160	40–175







Garant Lifting magnet LM

- Manually operated magnets for individual use. Compact, robust design with high-performance neodymium permanent magnets.
- Optimum performance even with large air gaps, no stray fields.
- Certified, individually tested break-away force guarantees 3-fold safety for the user (see test certificate).
- Fully encapsulated compact and lightweight lifting magnet with safety-locking mechanism.
- Solid construction with easy action on/off switch.
- Magnet adhesion surface with 2 longitudinal poles.
- Easy-action lever with safety-locking mechanism.
- High-quality workmanship in timeless GARANT design, in conjunction with well-thought-out features to satisfy user requirements and safety requirements.

Description: Lifting magnets are the ideal solution for safe and efficient handling of ferromagnetic materials. Whether in Production departments, warehouses or construction sites – these powerful tools offer maximum performance and easy handling.

Advantage:
- Impressive lifting capacity, up to several kilogrammes depending on the model.
- Equipped with a sturdy magnet system and a safety-locking mechanism that prevents unintentional release.
- No external power required for permanent magnets – ideal for mobile applications.
- Compact design ensures easy operation and storage.

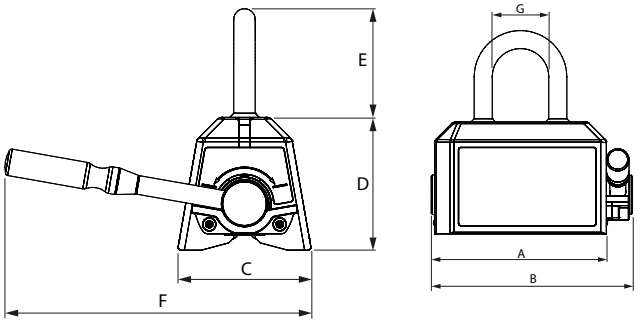
Application:
- Loading and unloading of machine tools
- Safe lifting and transportation of flat and round materials up to 1300 kg.
- For steel or cast iron parts, plates, rods or pipes.
- For use in warehouses, foundries / steelworks, storage of steel, tool-making, and production areas.

Note: Air gap < 0.1 mm for steel material! Switch on the load lifting magnet only on magnetic surfaces! The geometry of the workpiece to be lifted should be chosen to suit the safety concept. Test certificate for break-away forces available on request. Annual testing required by law according to DIN EN 13155. Return form available in the eShop.

High power magnetic technology enables compact sizes with higher holding forces than conventional lifting magnets.



38 2030_325



maximum loading capacity (level)	38 2030 Lifting magnet LM	maximum ∅ round	maximum length flat	maximum width, flat	minimum material wall thickness, flat	minimum material wall thickness, round	A	B	C	D	E	F	G	maximum lifting capacity flat	maximum lifting capacity round	Weight
kg		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	kg	kg
165	eShop	100	2500	500	2	40	95.1	114	60	69	50	166.2	30	165	70	5
325	eShop	200	2500	1000	4	60	154	178	99.3	99	81	228	50	325	160	9.2
650	eShop	270	2500	1500	6	65	248.3	272.3	117.3	100	81	237	50	650	320	26
1300	eShop	300	3300	1500	10	100	309.5	333.5	147.4	121.5	112	323	64	1300	630	56

MaxX lifting magnet

Application: Quick and easy handling and transport of flat and round materials with 3-fold safety.

Note:
Size 125 – With rotating lifting eye.



38 2001_125

maximum loading capacity (level)	38 2001 MaxX lifting magnet	maximum ∅ round	maximum length flat	minimum material wall thickness, flat	minimum material wall thickness, round	maximum lifting capacity flat	maximum lifting capacity round	Weight
kg		mm	mm	mm	mm	kg	kg	kg
125	eShop	300	1000	20	10	125	50	3.5
200	eShop	300	1500	20	10	200	100	4.5
300	eShop	300	1500	20	10	300	150	7.5
600	eShop	400	2000	25	15	600	250	18
1000	eShop	450	3000	40	25	1000	400	36
1500	eShop	500	3000	45	30	1500	600	66
2000	eShop	600	3000	55	35	2000	800	80

Electro permanent magnet clamping plates

- Innovative and patented monoblock design for maximum stiffness and reliability.
- **Quick attachment of the electrical connections.**
- Threaded sockets of high-tensile material in each pole.
- Sturdy due to monoblock design and use of integral pole plates.

Advantage:
- Vibration-free machining protects the tool and the machine.
- Five-axis machining without interference contours.
- Full exploitation of the machine travel.
- Significant reduction in set-up times.
- Unaffected by power failures.
- Quick and precise plane-parallel milling.
- Uniform clamping force over the entire clamping area.
- Low installed height
- Very high holding forces
- Quick and easy positioning of workpieces.

Application: For use in mould-making, tool-making and machine tool building.

Supplied with: Including ST200FA control unit with 5-pole plug, for controlling a magnetic clamping plate.

Optional extras: Pole extension No. 382010.

Note: **Installation package for actuating multiple electro-permanent magnetic clamping plates available on request!**
The power cable is supplied without any connection plug.
Mains connection 400 V / 50 Hz.

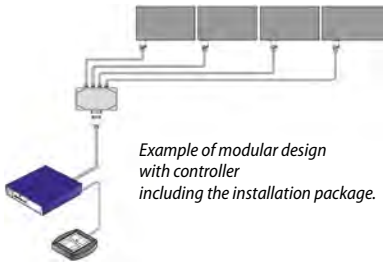


38 2000
UniPower

All sizes including ST200FA controller



38 2000



Example of modular design with controller including the installation package.

Type		406UP	408UP	508UP	610UP
38D **38 2000**	Electro permanent magnet clamping plate **UniPower**	eShop	(eShop)	eShop	eShop
Length	mm	600	790	790	970
Width	mm	400	400	480	560
Height	mm	51			
Number of poles		24	32	40	60
Pole pitch	mm	62			
Weight	kg	90	115	150	192
maximum clamping force	kN	145	193	241	362

Accessories for electro permanent magnet clamping plates

Suitable for: No. 382000

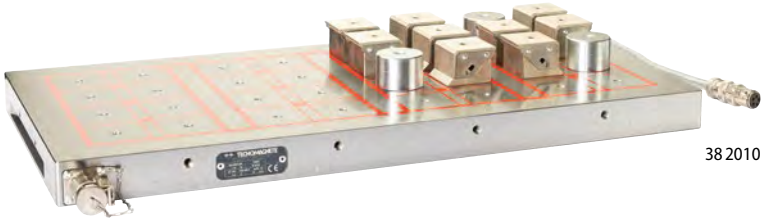
Advantage:
- Quick and reliable clamping of uneven parts.
- Even clamping force over the entire face, without distorting the workpiece.
- Clamping of distorted fabrications in a very short time.
- Holes can be bored through the entire workpiece without damaging the magnetic plate.



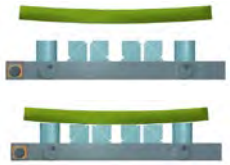
38 2010_PFR



38 2010_PMQ



38 2010



Automatic adaptation to the workpiece.

Type	38D **38 2010** Pole extensions for the UniPower electro permanent magnetic clamping plate		∅ mm	Length mm	Width mm	Height mm	Version
PFR	eShop	1	60	–	–	41	fixed
PMQ	eShop	1	–	60	60	41	movable

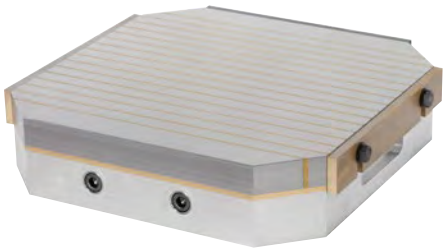
Garant Permanent magnet plate

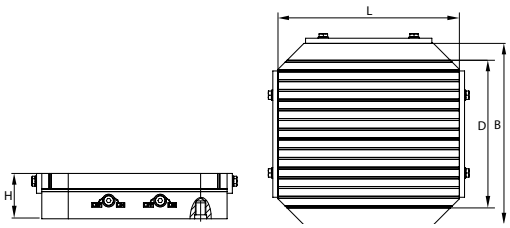
- Alu casing for mounting on top or for incorporation.
- Stop strips on 3 sides.
- 2 switch points.
- Milled-in grip handle.
- 4 ZeroClamp holes provided at 200 pitch.
- Lamellae made of 3 mm brass / 12 mm steel.

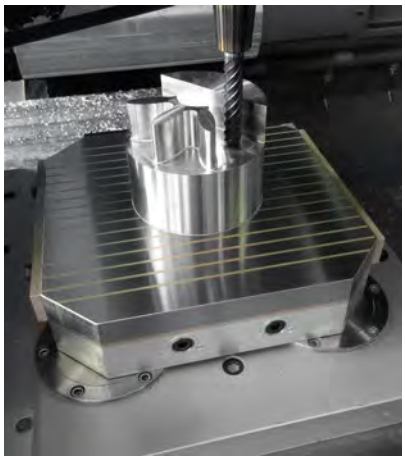
Application: For clamping medium-sized to large workpieces for grinding, milling and spark erosion.

Supplied with: Hexagon socket.

Note: Suitable GARANT ZeroClamp clamping stud 360025 18M16 or 18M16/138.







Length L	mm	280	320
310 38 0040	Permanent magnet, transverse pole pitch	eShop	eShop
Width B	mm	280	320
Height H	mm	68.5	
D	mm	220	258
Magnetic field height	mm	6	
Grinding allowance in pole area	mm	6	
Weight	kg	29	38
Nominal clamping force	N/cm²	130	

SAV Permanent magnetic clamping plate with neodymium magnets

- **Neodymium magnet system for strong clamping force.**
- ON-OFF control by hand-operated lever.
- In the OFF state a weak opposing field **assists removal** of the components.
- With longitudinal and transverse stops.
- Lamellae made of 3 mm brass / 12 mm steel.
- Magnetic field without straying, ensuring no magnetisation of tools.

Application:
- **Suitable for heavy machining** such as roughing.
- For small, medium, and large components even with rough or uneven surfaces.

Primarily for milling!

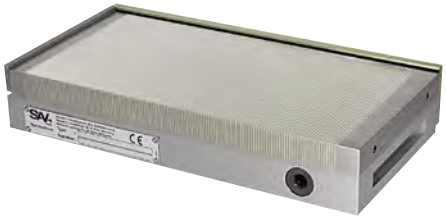


Pole area length	mm	250	350	400	500	600
335 38 0100	Permanent magnetic clamping plate, transverse pole pitch	eShop	eShop	eShop	eShop	(eShop)
Width	mm	150	150	200	200	200
Height	mm	56	56	56	59	59
Height tolerance	mm	+0.5 / -2				
Magnetic field height	mm	12				
Grinding allowance in pole area	mm	5				
Weight	kg	17	24	35	44	52
Nominal clamping force	N/cm²	150				

- **Neodymium magnet system for strong clamping force.**
- Through transverse pole pitch.
- Uniform clamping force over entire width **and side faces of the pole area.**
- Lamellae made of 0.5 mm brass / 1.4 mm steel.

Application:
- For grinding and spark erosion machines.
- **Universal clamping of small and medium-sized components of any thickness.** (Particularly suitable for thin components).
- Consistent clamping force over entire width **and side faces** guaranteed.

Primarily suitable for grinding/erosion applications!



Pole area length	mm	175	255	300	350	450	600
335 38 0500	Permanent magnetic clamping plate, fine transverse pole pitch	eShop	eShop	eShop	eShop	eShop	(eShop)
Width	mm	100	130	150	150	150	200
Height	mm	49	49	51	51	51	51
Height tolerance	mm	+0.5 / -2					
Magnetic field height	mm	6					
Grinding allowance in pole area	mm	8					
Weight	kg	7	14.5	19.7	23	30	52.4
Nominal clamping force	N/cm²	80					

SAV Sine tables with permanent magnetic clamping plate

- **Neodymium magnet system for strong clamping force.**
- With permanent magnetic clamping plate No. 380500.
- Tilting about the longitudinal axis.
- Tilt range 0 – 45°. Angular accuracy ±5 s. Baseplate thickness at 0° = 3 mm. Plane parallelism ±0.005 / 100 mm.
- Pole pitch 0.5 mm brass / 1.4 mm steel.
- Very high precision combined with extremely low height.

Application: For grinding and spark erosion machines.

Supplied with: Wooden box and sine conversion table from degrees / minutes to mm.

Pole area length		mm	175	255	350
335 38 0700	Sine table with permanent magnetic clamping plate		eShop	eShop	eShop
Width		mm	100	130	150
Baseplate width		mm	115	145	165
Footprint length		mm	215	295	390
Height at 0°		mm	77	77	87
Height tolerance		mm		0 / -2	
Magnetic field height		mm		6	
Grinding allowance in pole area		mm		8	
Weight		kg	10	19	35
Nominal clamping force		N/cm²		80	



38 0700

SAV Circular permanent magnetic chucks

Powerful magnetic system with **neodymium** magnets and low magnetic field height. **Continuously adjustable** magnetic force.

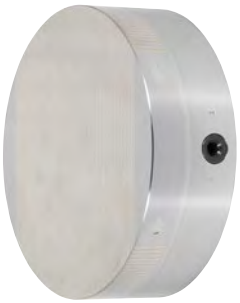
Application: For grinding and turning.

38 0776 – For clamping small and thin to medium workpieces.

38 0777 – For clamping small and thin to large workpieces.

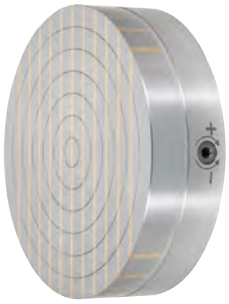
Note: The centre can be bored out to size "J".

Chuck ∅		mm	100	130	150	200	250	300
335 38 0776	Permanent magnetic chuck, with parallel pole pitch		eShop	eShop	eShop	eShop	eShop	eShop
Height		mm	50	50	50	57	57	62
Height tolerance		mm	0 / -1	0 / -1	0 / -1	0 / -1	0 / -1	0 / -1
Pitch circle ∅		mm	85	115	132	154	192	227
Thread ∅			4×M8					
Magnetic field height		mm	8					
Weight		kg	3	5	7	15	20	31
Nominal clamping force		N/cm²	70	100	100	100	100	100
Grinding allowance in pole area		mm	5					
Centre ∅		mm	60	90	110	150	250	250
Centring hole depth		mm	4	4	4	4	4	4
Parallel pole distribution		mm	1.9					
possible to bore out to centre hole "J"		mm	20×14	20×14	24×5	200×5	250×5	300×5



38 0776

Chuck ∅		mm	160	200	250	300	350
335 38 0777	Permanent magnetic chuck, with parallel pole pitch		eShop	eShop	eShop	eShop	(eShop)
Height		mm	57	57	57	62	62
Height tolerance		mm	0 / -1				
Pitch circle ∅		mm	142	180	232	285	334
Thread ∅			4×M8				
Magnetic field height		mm	10				
Weight		kg	8	13	20	31	43
Nominal clamping force		N/cm²	100	100	150	150	150
Grinding allowance in pole area		mm	6				
Centre ∅		mm	125	150	200	250	300
Centring hole depth		mm	4	4	4	4	5
Parallel pole distribution		mm	8+3	8+3	12+3	12+3	12+3
possible to bore out to centre hole "J"		mm	15×6	20×6	25×20	25×20	25×20



38 0777

- **Neodymium magnet system for strong clamping force.**
- Concentric grooves to assist component alignment.
- Centre is magnetically inactive, so that the plate can be bored through.

ON-OFF control by hand-operated lever.

Application:
- For grinding and turning.
- **Particularly suitable for clamping annular components**, due to radial pole distribution.
- **For round and annular workpieces**

Chuck ∅		mm	130	150	200	250	300	350	500
335 38 0810	Permanent magnetic circular chuck, with radial pole pitch		eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)
Height		mm	57	57	57	70	73	73	92
Height tolerance		mm	+0.5 / -2						
∅ non-magnetic core		mm	16	20	28	30	40	40	60
maximum boring-out ∅		mm	20	24	30	50	58	58	58
Pitch circle ∅		mm	100	80 / 120	110 / 180	140 / 220	180 / 260	220 / 300	360 / 440
Thread ∅			4×M6	8×M6	8×M6	8×M6	8×M8	8×M8	8×M8
Weight		kg	5.7	6.5	13	20	30	49	144
Nominal clamping force		N/cm²	100	100	100	135	150	150	150
Centre ∅		mm	50	50	60	80	150	170	200
Centring hole depth		mm	5	5	5	5	6	6	8



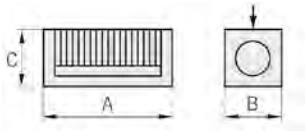
38 0810

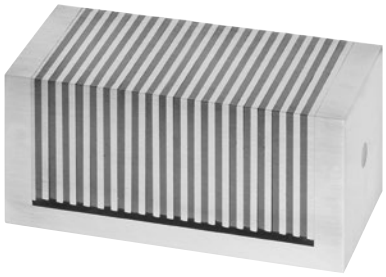
[SAV] Permanent magnet clamping blocks with fine pole pitch

Size MH202; MH202S – Three magnetic clamping faces.
Size MH202S; MH203S – $SmCo_5$ magnets permit extremely high clamping forces for materials that are difficult to machine.
Size MH203; MH203S – Two magnetic clamping faces.

Application: For profiling and machining small workpieces such as punches etc.

Note: Permanent magnet, not switchable.





Type		MH202	MH202S	MH203	MH203S
335 38 0815	Permanent magnet clamping block, with fine pole pitch	eShop	(eShop)	eShop	(eShop)
A mm		100			
B mm		50	50	25	25
C mm		50	50	25	25
Magnetic field height mm		6			
Grinding allowance in pole area mm		14	14	6	6
Pole pitch mm		4			
maximum angular deviation degrees		5			
Weight kg		1.7	1.7	0.5	0.5
Nominal clamping force N/cm²		80	180	80	180

[SAV] Lamellae pole blocks

- Steel-brass connection.
- Longitudinal and transverse pole pitch. Level or Vee profile.
- Lamellae made of 1 mm brass / 3 mm steel, adhesively bonded without tie rods.
- Lamellae pole blocks are themselves non-magnetic.
- Height tolerance ± 0.5 mm.

Application:
- For use only in connection with magnetic clamping plates for machining irregularly-shaped components.
- Pole blocks can be machined to any desired profile.



Improved version – without tie rods

Type		1	2	3	4	5	6	7	8	9	10	11
335 38 0820	Lamellae pole block (single, non-magnetic)	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Length mm		65	72	75	80	80	90	100	100	100	100	120
Width mm		60	45	60	60	80	62	50	50	70	70	80
Height mm		40	22	30	30	50	33	40	40	41	48	50
Version		Vee block	flat	flat	flat	flat	flat	flat	Vee block	flat	flat	flat
Pole alignment		crosswise	crosswise	lengthwise	crosswise	crosswise	lengthwise	lengthwise	lengthwise	crosswise	lengthwise	crosswise
Weight kg		0.8	0.5	0.7	0.7	2.5	0.8	1.7	1	2.1	2.7	3.8

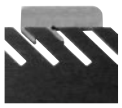
[SAV] Clamping bars

- Of ferro-magnetic metal.
- Long side with spring strip which when the magnet is switched on presses the workpiece to the mounting (pull-down effect).
- Supplied in pairs.

Application: For reliable clamping of **non-magnetic materials** on magnets.

Supplied with: Supplied with workpiece back-stop (apart from size 4).





Workpiece back-stop

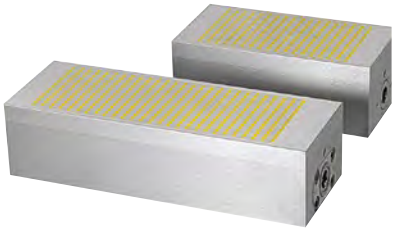


Height B mm		1	1,6	2,8	3,7	4
335 38 0825	Clamping bars	eShop	eShop	eShop	eShop	eShop
A mm		150	150	150	250	100
C mm		40	43	43	52	45
B mm		1	1.6	2.8	3.7	4

[SAV] Neodymium magnetic clamping blocks

- **Extremely high clamping force** due to specially developed process.
- Sturdy all-steel body with an ON-OFF switch on the end face.
- Lamellae made of 2 mm brass / 4 mm steel.

Application:
- **For components which are difficult to clamp, such as Ferrotic, carbide with cobalt.**
- For spark erosion and grinding.



Length mm		140	200
335 38 0870	Neodymium magnetic clamping block	eShop	eShop
Width mm		70	
Height mm		51	
Height tolerance mm		+0.5 / -2	
Magnetic field height mm		4	
Weight kg		3	4.2
Nominal clamping force N/cm²		180	

Garant Power demagnetiser DM1

- Pole plate of laminated silicon sheet metal with low inductive eddy current losses.
- **Power supply 230 V / 50 Hz or 115 V / 60 Hz** (selectable).
- Protection class IP21 (fully enclosed device).
- **Duty cycle 100 %** (continuous operation).

Application:
- Demagnetisation by moving component once or more times in the same direction over the pole plate; the component must always be moved over the entire length of the pole plate.
- For demagnetising components after magnetic clamping.
- Sturdy design (die-cast aluminium body) ensures durable use even when roughly handled.



Type		300
310 38 0862	Demagnetiser	eShop
Pole area length	mm	250
Width of pole area	mm	305
Length of the housing	mm	260
Width of housing	mm	315
Height of the housing	mm	137
max. workpiece width	mm	305
Depth of penetration	mm	75
Power consumption	W	990
Weight	kg	36.5
Demagnetisation efficiency class (DMC)		+++

Garant Tesla meter measuring device for measurement of magnetism

- Light and compact design. Housing protected against dirt.
- Automatic measuring range selection. Display either in Tesla or Gauss.
- Static and dynamic measurements.
- Magnetic pole display N/S. Zero setting.

Application: For measuring residual remanence, magnetic flux density and field distribution on magnetic clamping plates.

Supplied with: Supplied with a leather case and 4 × AA batteries.

Note: If wear occurs, the sensor No. 380866 size 1 can easily be reordered and exchanged.



Type		1
310 38 0865	Tesla meter measuring device for measurement of magnetism	eShop
Measurement range for static fields	mT	0 – 1500
Measurement range for dynamic fields	mT	0 – 750
Measuring accuracy		± 5%
Operating temperature	°C	0 – 40

SAV Manual demagnetiser for general-purpose use

- Lightweight casing for easy handling and 3m cable with plug.
- Power supply 230 V / 50 Hz, protection class IP42, power consumption 220 VA. Automatic shut-down at > 50 °C. **Duty cycle 30%.**

Application: For demagnetising the surfaces of large workpieces. Mobile use.



Type		HD1	HD2
335 38 0863	Manual demagnetiser	eShop	eShop
Size of the active zone	mm	105×75	150×95
Depth of penetration	mm	30	40
Weight	kg	1.9	2.2
AC supply voltage	V	220; 240	
Mains frequency	Hz	50	
Demagnetisation efficiency class (DMC)		+	

SAV Demagnetiser

- Power supply 230 V / 50 Hz, Index of Protection IP 20, power consumption maximum 920 VA.
- **Duty cycle 100%.**

Application: The demagnetisation devices are suitable for use in inspection rooms, workshops, and on production lines. They very effectively demagnetise bearing rings, punches, dies, and other tools.



Pole area length	mm	250	280	400
335 38 0861	Demagnetiser	eShop	eShop	eShop
Pole area length	mm	250	280	400
Width of pole area	mm	150	220	260
Width	mm	180	266	306
Height	mm		87	
Depth of penetration	mm		50	
Power consumption	W		920	
Weight	kg	11	18	24
Demagnetisation efficiency class (DMC)			++	

Garant Vacuum clamping plates, with Venturi nozzle

Aluminium, steel blue anodised. Operating pressure 3.5 – 8 bar. The final vacuum is approx. 80 mbar (92 % vacuum). Integral noise muffler reduces the noise generation. Height tolerance ± 0.5 mm.

38 4900 Size VR1 – Supplied with 2 ZeroClamp holes, 12M10, pitch 200 mm.

Advantage: **Low-cost entry-level system**. Low maintenance costs. Ready for immediate use.
Size VR1; VS1 – Can quickly and easily be converted to **vacuum pump operation**.

Application: For vacuum clamping **without** a vacuum pump.
Size VRV0; VSV0 – For use on **machine vices**. Especially thin components can be clamped flexibly and with little trouble.

Supplied with: Back-stop discs, compressed air hose ∅ 10 mm (1 m), Venturi nozzle (1 pc.).
38 4900 – Sealing cord ∅ 4 mm (10 m).
38 4905 – Rubber adapter mat (1×).
Size VR1; VS1 – Hose adaptor (1×), plug LW 12 (1×), stepless adjustable clamps (2×).

Note: When using Venturi nozzles, we advise against machining using coolant emulsion.



Free rake faces
for clamping between two vice jaws

38 4900_VRV0

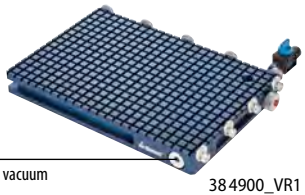
Vacuum system for vices



Venturi nozzle
on the underside for optimum accessibility

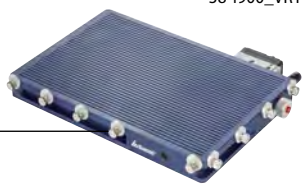
38 4905_VSV0





Pressure valve
indicates when the final vacuum has been reached.

38 4900_VR1



Back-stop discs

38 4905_VS1

Type		VRV0	VR1
31E 38 4900	Grid vacuum plate **Venturi system**	eShop	eShop
Length	mm	200	300
Width	mm	125	200
Height	mm	21	32.5
Intervals	mm	12.5	

Type		VSV0	VS1
31E 38 4905	Slit vacuum plate **Venturi system**	eShop	eShop
Length	mm	200	300
Width	mm	125	200
Height	mm	21	32.5

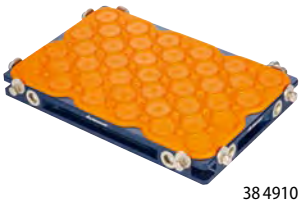
Garant Vac-Mat vacuum clamping plates

High-tensile aluminium, steel blue anodised. Supplied with 2 ZeroClamp holes, 12M10, pitch 200 mm.

Supplied with: Hose adaptor (1×), connector (1×), sealing plugs (7×), stepless adjustable clamps (2×), vacuum hose (1 m), VAC-MAT mats orange (10×).

Optional extras: Vacuum creators No. 385010 – 385025.

modular version



38 4910

Modular Vac-Mat plate

Type		V1
31E 38 4910	VAC-MAT vacuum plate	eShop
Length	mm	300
Width	mm	200
Height	mm	30

WITTE Accessories for vacuum plates

Vac-Mat mats

Reusable, depending on the application.
VAC-MAT mats can be used without restriction up to 40 °C.
Size 4 – Black, only for covering unoccupied vacuum fields.



38 5040_0

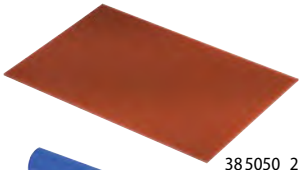


38 5040_1

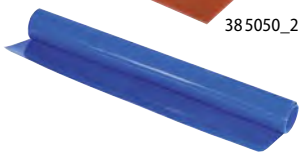
Type		0	1	2	3	4	
38L 38 5040	VAC-MAT mats	eShop	eShop	eShop	eShop	eShop	10
Length	mm	300					
Width	mm	200					
Height	mm	2.5					
Colour		orange	blue	red	green		
Hardness		standard	standard	soft	hard	–	

Rubber adapter mats for slit plates

38 5050 – Size1-4 – medium coefficient of friction, ideal for drilling through holes, unsuitable for face milling.
Size 5 – high coefficient of friction and good plane parallelism of 2-3 hundredths.
38 5051 – Low coefficient of friction, permits face milling, for the best possible plane parallelism.



38 5050_2



38 5050_5



38 5051

Type		2	3	4	5
38L 38 5050	Rubber mat / roll for slit plates	eShop	eShop	eShop	eShop
38L 38 5051	Elastomer rubber mat	eShop	eShop	eShop	–
Length	mm	300	400	600	2000
Width	mm	200	300	400	400
Height	mm	3	3	3	1
Version		Mat	Mat	Mat	Roll

Sealing cord for grid plates

Application:
- The neoprene sealing cord is laid in the suction groove of the grid plate, to limit the clamping area.
- The diameter of the sealing cord depends on the cross-section of the groove.

Other diameters on request.



38 5060

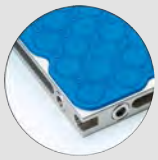
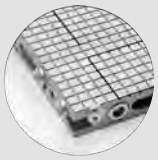
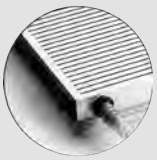
Length×∅ (m×mm)		50×3	50×4
38L 38 5060	Sealing cord for grid plates	eShop	eShop

WITTE Vacuum clamping technology

For vacuum clamping, a vacuum is produced under the workpiece to be clamped so that the workpiece is clamped to the clamping plate by the pressure differential. The surface structure, the size of the workpiece, and the pressure differential are crucial for the clamping force / movement resistance force of the workpiece.

Vacuum clamping technology is suitable for milling, grinding, turning, inspecting, spark eroding, measuring, coating, laser cutting, polishing, drilling, deburring, engraving, and assembly.

Advantages of vacuum clamping:
- Clamping of pressure-sensitive workpieces, therefore no damage or distortion to the component.
- Clamping of very thin sheets or films.
- 5-face machining in a single clamping.
- No vibration during machining.
- Reduced clamping times due to quick clamp / quick release process (< 1 second).
- Non-magnetic materials can be clamped.

Patented Vac-Mat system	Modular pitch vacuum plates	Slit Vacuum plate	Grid plates/slit plates Venturi system
			
A wide spectrum of shapes of workpieces can be clamped. Thin soft re-usable plastic mats with elastic lips on the upper face and fine holes in the centre. High clamping forces, clamping faces with high coefficient of friction. Milling of external and internal contours can be performed, yielding precise and clean burr-free cut edges on the workpiece.	For heavy-duty machining of simple-shaped workpieces with rough surfaces. Sealing cords compensate minor surface irregularities and bulges. High clamping forces, universal application, secure clamping of unmachined workpiece surfaces, since the clamping face has a high coefficient of friction.	Clamping is achieved using rubber adapter mats or covering films. These are placed between the workpiece and the vacuum plate. The mat is perforated to match the outline of the workpiece. The outstanding coefficient of friction offers good resistance to the movement forces that arise during machining.	For clamping full-surface components. Ensure the least possible "leakage air" entering the system Vacuum generation is easily performed using the available compressed air. The integral Venturi system requires an operating pressure of 3.5–6 bar. As compressed air accelerates it creates a suction effect (vacuum) within the nozzle. The final vacuum is a pressure of approx. 80 mbar (92% vacuum). The air consumption is 30 – 42 NL/min. Suction volume is approx. 96 l/min.

The selection criterion for vacuum power units and pumps is the size of the clamping area:

Clamping area	< 0.12 m²	< 0.15 m²	< 0.5 m²	< 1.0 m²	< 2.0 m²	< 3.0 m²
Suction power	5 m³/h	10 m³/h	16 m³/h	21 m³/h	63 m³/h	100 m³/h
Available systems for creating vacuum	Vacuum pump	Vacuum pump	Vacuum pump	Vacuum pump	Vacuum pump	Vacuum pump
		Vacuum power unit	Vacuum power unit	Vacuum power unit	Vacuum power unit	Vacuum power unit
				Water ring pump	Water ring pump	Water ring pump

Witte VAC-MAT

Number of mats	Required suction power
1	3 – 6 m³/h
≥ 8	16 – 21 m³/h
≥ 20	40 – 63 m³/h
≥ 50	100 – 160 m³/h

WITTE Vacuum creator

38 5010 – Vacuum pump **(only for dry machining).**
38 5020 – Vacuum power unit with vacuum storage and integral liquid separator.
38 5025 – ■ Cooling lubricant is fed to the operating medium circuit of the water ring pump.
■ Surplus liquid is returned to the machine tool.
■ No additional liquid separator necessary.

Application: Operation of vacuum clamping plates and systems.
Supplied with: 2 m vacuum hose, 3/2-way manual lever valve with ventilation, vacuum gauge.


38 5010_VP3


38 5020 _VA2


38 5025_WR1

Type		VP1	VP2	VP3	VA1	VA2	VA3	VA4	WR1	WR2	WR3
38L 38 5010	Vacuum pump	(eShop)	(eShop)	(eShop)	–	–	–	–	–	–	–
38L 38 5020	Vacuum power unit	–	–	–	(eShop)	(eShop)	(eShop)	(eShop)	–	–	–
38L 38 5025	Water ring pump	–	–	–	–	–	–	–	(eShop)	(eShop)	(eShop)
Length	mm	172	271	306	–	–	–	–	463	515	515
Width	mm	147	258	226	–	–	–	–	432	572	572
∅	mm	–	–	–	500	500	500	990	–	–	–
Height	mm	143	296	182	630	630	630	1130	602	743	743
Suction power	m^3/h	5	10	16	10	16	21	63	25	48	65
Motor voltage	V	230	230	230	230	230	230	400	400	400	400
Motor power	kW	0.25	0.4	0.55	0.37	0.55	0.75	1.5	0.83	1.2	2.4
Weight	kg	8	18	18	25	31	45	95	45.5	57	72

WITTE Vacuum clamping plates

High-tensile aluminium. Can be extended using connectors as part of a modular system.
38 5030 Size R1–R3/5032 Size V1–V3/5037 Size S2; S3 – **Supplied with ZeroClamp holes, 12M10, pitch 200 mm.**

Application: Vacuum clamping of plastic, glass, metals, non-ferrous metals, graphite, and other materials.
Supplied with: 1 hose adapter, 1 connection piece, 7 sealing plugs, 1 plug LW12, 2 clamping claws, vacuum hose (1 m), stop discs.
38 5030 – 10 m sealing cord (∅ 4 mm).
38 5032 – 10 VAC-MAT mats.
38 5037 – 1 rubber adapter mat.

Note: Vacuum clamping plates can be extended using connectors as part of a modular system.

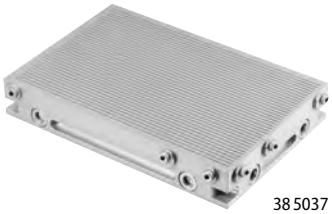
All plates in modular version


38 5030

Type		R1	R2	R3
38L 38 5030	Vacuum plate with grid	(eShop)	(eShop)	(eShop)
Length	mm	300	400	600
Width	mm	200	300	400
Height	mm		32.5	
Intervals	mm		12.5	
Weight	kg	5	10	20


38 5032

Type		V1	V2	V3
38L 38 5032	VAC-MAT vacuum plate	(eShop)	(eShop)	(eShop)
Length	mm	300	400	600
Width	mm	200	300	400
Height	mm		30	
Weight	kg	5	10	20


38 5037

Type		S1	S2	S3
38L 38 5037	Slit vacuum plate, modular	(eShop)	(eShop)	(eShop)
Length	mm	300	400	600
Width	mm	200	300	400
Height	mm		48	
Weight	kg	8	16	30

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The Hoffmann Group is constantly expanding its sustainable product range. The GARANT GreenPlus product range facilitates sustainability in workshops and production – coupled with the highest standards of safety, quality and performance.

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It is already worth it from the first regrind. Overall, you can expect amazing savings of up to 85 %. And all with the original regrind quality, to the original geometry and on the original production machines.
There are no compromises here.
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The Hoffmann Group's sustainable product range

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Machining accessories




Garant
Manuals
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Teaching materials
1265



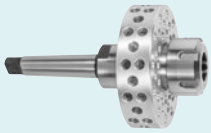


Garant
jokisch
Coordinate cube
TQ screwdriver
System cleaner
1266

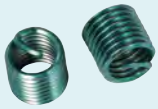





Garant
jokisch
ARIANA
Coolant
Coolant systems
Coolant accessories
1267 – 1272



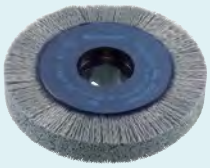

HOLEX
FLOWDRILL
Flow drilling
1273 – 1274




Garant
HELICOIL® Plus made by BÖLLHOFF
Thread reinforcement
Thread repair
1275 – 1276



Garant
HOLEX
AMF
Marking
1277

Garant
Disc brushes
Wheel brushes
1278 – 1279





Garant
HOLEX
SCHUNK
Cleaning in the machine
1280





Garant
HOLEX
Bar holders
Magnetic grippers
1281 – 1283



SIMPLE. RELAXED. PRODUCTION.

By taking measures to boost efficiency, you simply get more out of your production site.

Do you recognise these too?

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- Pressure from competition

Then arrange an appointment with your Hoffmann Group process consultant today.
Working together with you, we will unlock untapped potential in your production site –
giving you more time and money and greater peace of mind!

Handbooks, data calculators

Machining handbook

11 0010 – The **machining handbook** is a comprehensive, **2-part** reference book, **consisting of** Basics **No. 110015** and detailed information for the cutting data **No. 110020**. Here, the ambitious machining professional will find all the important information about materials and their machinability – compact, not favouring any specific manufacturer, and in a clear format.

11 0015 – Theoretical basic principles of machining, individually.

11 0020 – Cutting data tables for Catalogue 50, single.

Note:

11 0015 – The machining theory handbook is also available in the languages Czech, Hungarian and Romanian.
Please contact your Hoffmann representative if you require a copy.



11 0010

Language		DE	EN	DE50	INT50
18A 11 0010	Machining handbook - 2-part	eShop	eShop	–	–
18A 11 0015	Machining handbook - basics part	eShop	eShop	–	–
18A 11 0020	Machining handbook - cutting data part	–	–	eShop	eShop

Reference books

11 0955 – The **Metal workshop tables book** is an indispensable reference source for all metal-working trades. (size DE: German **with** formulary, size EN: English **without** formulary). Mathematical and physical data, materials engineering, construction, manufacturing and control engineering, standard parts, NC programming. DIN A5, more than 400 pages.

11 0956 – Like no. 110955 with formulae and digital activation code for download.

11 0957 – The tutorial **metalworking reference book** is a reference book for education and training in the machine tool trades. The 8 chapters correspond to the elements of the education and training syllabus. Includes digital activation code for download.



11 0955



11 0957



11 0956

Language		DE	EN
18A 11 0955	Engineer's reference book	eShop	eShop
18A 11 0956	Engineer's reference book with digital activation code	eShop	–
18A 11 0957	Fachkunde Metall metalworking reference book with digital activation code	eShop	–

Calculation aids, display units

11 0960 – **Drilling data calculator** (in the German language) as double-sided calculation disc ∅ 130 mm of high quality plastic for determining speeds and feeds in different materials. Gives all individual values (cutting speed, spindle speed, feed rate) together with cycle times.

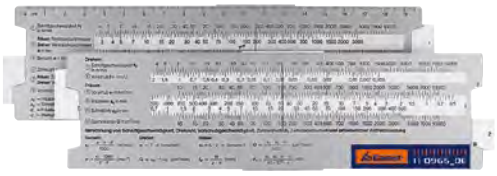
11 0965 – The **speeds and feeds calculator** in German (DE) and English (EN) quickly and easily finds **the correct speeds and feeds for all GARANT milling cutters and lathe tools:** n = 10 – 30,000 rpm.

11 0966 – **The tolerance slide** quickly and easily determines the upper and lower values of the ISO tolerance bands (up to nominal size 180 mm). The base body is printed on both sides and carries a read-off runner. Of high quality plastic. The **legends are printed in several languages** (German, English, French) for international use.

11 0971 – **The Tolerator indicates all tolerance values** according to ISO recommendation R286 – 1962 up to nominal size 500 mm. The legends are printed in **several languages** for international use. The housing protects it from dirt.
Size: 110×60×30 mm.

11 0972 – **The Filetor** indicates the **thread name,** the **range, and** all the respective **defined sizes.**


11 0960


11 0965



11 0966

18A 11 0960	Garant Drilling data calculator with pocket case	eShop

Language		DE	EN
18A 11 0965	Garant Speeds and feeds calculator	eShop	eShop

18A 11 0966	Garant Tolerance slide	eShop
Length	mm	280
Width	mm	90

18A 11 0971	Tolerator (ISO tolerance key)	eShop
18A 11 0972	Filetor (thread indicator)	eShop



110971



11 0972

D 6.3 F 6.3

±10% ±15%

Garant TQ torque screwdriver with T-handle, fixed, automatic triggering

Torque screwdriver with easy-grip 2-component T-handle. The torque is fixed. Toolholder with permanent magnet.

Standard: Tested to DIN EN ISO 6789.

Function: When the torque is reached the screwdriver triggers **with clearly audible and perceptible signal**. The long-travel indication gives the user an unmistakable signal that the set torque has been reached.

Application: In conjunction with **1/4 inch bits** with **C 6.3** or **E 6.3 shank,** e.g. **Torx Plus® bit** No. **674252.** Ideal for precise tightening of indexable inserts to the specified torque.

Note: Supplied **without** bit.



21 1750

set torque Nm	21B 21 1750 Torque screwdriver, fixed setting	Torque measuring accuracy %	Overall length L mm	Blade length mm
0,2	eShop	±15	107	50
0,38	eShop	±15	107	50
0,45	eShop	±15	107	50
0,6	eShop	±15	107	50
0,9	eShop	±15	107	50
1,0	eShop	±15	107	50
1,2	eShop	±15	107	50
1,3	eShop	±15	107	50
1,5	eShop	±15	107	50
1,8	eShop	±15	107	50
2,2	eShop	±10	107	50
2,8	eShop	±10	107	50
3,0	eShop	±10	107	50
3,5	eShop	±10	107	50
3,8	eShop	±10	107	50
4,2	eShop	±10	107	50
5,0	eShop	±10	107	50
5,7	eShop	±10	107	50

System cleaner

Micro-biocide system cleaner with anti-corrosive characteristics for maintenance of circulation systems and production systems. Suitable for all steel alloys, non-ferrous alloys and aluminium alloys.

Attention: Use biocidal products carefully. Before use, always read the label and product information.

Note: **Hazardous substance!** Available only in Germany.



08 4340

Contents	l	10
08J 08 4340	Grotanol FF1N system cleaner	–
Version		Can
Contents	l	10

Cutting compound, cutting oil, cooling lubricant concentrate, and grinding oil

General-purpose lubrication stick solid and cutting compound soft

Cutting compound for spot application. Straightforward application(dip or apply). Adheres to the cutting edge and only becomes liquid in use; very good lubrication properties, very high pressure stability.

08 4120 – Lubrication stick for spot application.
08 4160 – Soft cutting compound.

Application: Multi-purpose compound for **tapping, reaming, milling, broaching, and sawing.** Indispensable when cutting **difficult materials** such as stainless and heat-resistant steels, nickel alloys, titanium, and similar alloys.





08 4120



08 4160_120



08 4160_750

Contents		g	120	750
08J 08 4160	High performance cutting compound, chlorine-free		–	–
08J 08 4120	Universal lubrication stick chlorine-free **300 g**		–	

Cutting oils

08 4205 – Application by brush, spray can, spray bottle or lubrication system.
08 4205–4220 – Cutting oil for the most demanding applications. Recommended for mixing with normal mineral-based cutting oil (but not with water-soluble oils).
08 4210–4225 – Application by brush, spray can, spray bottle or lubrication system.

Application: Multi-purpose for **all machining operations** (turning, milling, drilling, tapping, reaming, broaching and sawing) and also for **forming**. Indispensable when cutting **difficult materials** such as stainless and heat-resistant steels, nickel alloys, titanium, and similar alloys. Ideal for **non-ferrous metals.**

08 4220 – **High viscosity product** based on mineral oil, very well suited for thread tapping, good adherence.
08 4225 – **Strongly clinging cutting oil foam** for spot application to the cutting zone. Contains no sulphur or mineral oils, can be precisely applied, and washed off with water.
08 4205/4210 – **Ideal when minimum lubrication is required,** due to being free of mineral oil.



08 4205_0,25



08 4210_0,5



08 4225_0,4



08 4210_0,3



08 4220_20

Contents		l	0,25	0,3	0,4	0,5	5	20
08J 08 4205	High-performance cutting oil free of mineral oil **UV 80**		–	–	–	–	–	–
08J 08 4210	High-performance cutting oil chlorine-free **Alpha 93**		–	–	–	–	–	–
08J 08 4220	High-performance cutting oil high-viscosity, chlorine-free **DAR 50 Visco**		–	–	–	–	–	–
08J 08 4225	High performance cutting oil foam, chlorine-free		–	–	–	–	–	–
Version			Spray bottle	Spray can	Spray can	Spray bottle	Can	Can

Cooling lubricant and grinding oil concentrate for mixing with water

Cooling lubricant for **demanding applications**, **free of hydrochlorous acid, formaldehyde and boric acid.** High-pressure additives prevent displacement of the lubricating film; it remains on the cutting tool in molecular concentrations even under the most severe loading.

08 4241 – High performance cooling lubricant concentrate, suitable for **internal coolant supply** (ICS) and high-pressure applications.
08 4242 – **High-performance cooling lubricant concentrate HPC VEG** is a boric-acid-free, water-miscible cooling lubricant with excellent long-term stability, an outstanding rinsing effect and low foaming. **Not a hazardous substance!** (Boron-free and amine-free).
08 4243 – **High-performance cooling lubricant concentrate Plus** is a boron-free and amine-free, water-miscible cooling lubricant containing mineral oil and has been specially formulated for heavy-duty machining on aluminium and high-alloy steels. Non-ferrous metals should only be machined after conducting preliminary tests. Emulsions with **high-performance cooling lubricant concentrate Plus** have a long service life, provide excellent corrosion protection and are particularly skin-friendly. **Shelf life: 12 months.**
08 4244 – **High-performance cooling lubricant concentrate and sawing oil WM** is a general-purpose, water-miscible cooling lubricant which is ideally suited to general machining. **Shelf life: 12 months. Not a hazardous substance!**
08 4270 – High performance **grinding concentrate** transparent for a clear view when grinding a wide variety of materials. **Mixing ratio 1: 40** (2.5%).

Advantage: Concentrates **protect against rust**, do not attack paintwork, and are **physiologically harmless**, as well as very **resistant to bacterial contamination**, and kind to the skin.

Application:
08 4242/4244 – Suitable for internal coolant supply (ICS) and high-pressure applications.

Note:
08 4241/4270 – Jokisch slide oils and machine bed oils are available on request.



08 4241_5

08 4241_200

Contents		l	5	20	200	Refractometer value
08J 08 4241	High-performance cooling lubricant concentrate and sawing oil **CBF**		–	–	–	2
08J 08 4242	High-performance cooling lubricant concentrate HPC VEG		–	–	–	1.8
08J 08 4243	High-performance cooling lubricant concentrate Plus		–	–	–	1
08J 08 4244	High-performance cooling lubricant concentrate and sawing oil WM		–	–	–	1.7
08J 08 4270	High-performance grinding oil concentrate		–	–	–	2



08 4242_20

Coolant metal hose system 1/4 and 1/2 inch INOX

08 4410/08 4411 – Flexible coolant hose system made of stainless steel for precise transfer of cooling lubricant and air.
The metal articulated hoses are pre-locked, meaning they reliably hold their position.
Suitable for up to 50 bar pressure.

Type	ISO 08 4410 Metal hose system 1/4 inch	Supplied with:
SET-1	eShop	**Complete cable 135 mm** Comprising: 1 pc. adapter 1/4 inch 5 pcs. base pieces 25mm 1 pc. round nozzle ∅4mm 1 pc. nut size 1
SET-2	eShop	**Complete cable 165 mm** Comprising: 1 pc. adapter 1/4 inch 1x base piece 55 mm 4x base pieces 25 mm 1 pc. round nozzle ∅4mm 1 pc. nut size 1
SET-3	eShop	**Complete cable 195 mm** Comprising: 1 pc. adapter 1/4 inch 1x base piece 85 mm 4x base pieces 25 mm 1 pc. round nozzle ∅4mm 1 pc. nut size 1
SET-4	eShop	**Complete cable 235 mm** Comprising: 1 pc. adapter 1/4 inch 1x base piece 125 mm 4x base pieces 25 mm 1 pc. round nozzle ∅4mm 1 pc. nut size 1

Type	ISO 08 4411 Metal hose system 1/2 inch	Supplied with:
SET-1	eShop	**Complete line 190 mm** Comprising: 1x adapter 1/2 inch 6x base pieces 29.5 mm 1x round nozzle ∅ 6 mm 1x nut size 2
SET-2	eShop	**Complete line 245 mm** Comprising: 1x adapter 1/2 inch 1x base piece 59.5 mm 6x base pieces 29.5 mm 1x round nozzle ∅ 6 mm 1x nut size 2
SET-3	eShop	**Complete line 275 mm** Comprising: 1x adapter 1/2 inch 1x base piece 89.5 mm 6x base pieces 29.5 mm 1x round nozzle ∅ 6 mm 1x nut size 2
SET-4	eShop	**Complete line 315 mm** Comprising: 1x adapter 1/2 inch 1x base piece 129.5 mm 6x base pieces 29.5 mm 1x round nozzle ∅ 6 mm 1x nut size 2


08 4411_SET1


08 4411_SET-2


08 4411_SET-3


08 4411_SET-4

Coolant hose system kits

Content:

Size 1/2 – 6 hose modules
1 pair assembly pliers, plastic
1 Y-piece junctions
1 shut-off valve
1 each flat nozzle 8-hole, 35 mm, 50 mm
1 each round nozzle ∅ 6.4 mm, ∅ 9.5 mm, ∅ 12.7 mm
1 each 3/8 inch and 1/2 inch threaded connection
1 1/2 inch non-return valve
1 case with foam inlay

Size 1/4 – 6 hose modules
1 pair assembly pliers, plastic
1 Y-piece junctions
1 shut-off valve
1 each flat nozzle 16-hole, 27 mm and 32 mm.
1 each round nozzle ∅ 1.6 mm, ∅ 3.2 mm, ∅ 6.4 mm
1 each 1/4 inch and 1/8 inch threaded connection
1 1/4 inch non-return valve
1 case with foam inlay


08 4430

Internal ∅		in	1/2	1/4
ISO 08 4430	Coolant hose system kit including case		eShop	eShop

High pressure nozzles for cooling lubricants

High-pressure nozzle for up to 90 bar High-pressure cooling and pivoting range of 70°, up to 110°.
Housing of high quality plastic granules.

- For space-saving insertion in the existing hose system.
- Nozzle with 360° rotation.
- Various pipe lengths.

Application: **For retrofitting** into the existing system.
Quick cutting when machining at high speeds thanks to high-pressure cooling.



Tube length		mm	1	6	12,5	31
ISO 08 4435	High pressure nozzle **1/8 inch external thread**		eShop	eShop	eShop	eShop
ISO 08 4436	High pressure nozzle **1/4 inch external thread**		eShop	eShop	eShop	eShop
Internal ∅ nozzle		mm	2			

Flexible coolant hose system 1/4 inch and 1/2 inch



Plastic hose system for coolants and air. Operating pressure up to max. 6 bar, with clamps size CLAMP up to 60 bar.

- **Compatible** with almost all popular systems without adaptors.
- **Modular plug-in system,** can be combined individually using the assembly pliers.

08 4400 – ■ Rate of flow: approx. 15 litres/min. (1/4 inch), largest outer ∅ **17 mm.**
08 4420 – ■ Rate of flow: approx. 28 litres/min. (1/2 inch), largest outer ∅ **26 mm.**

Application:

Size CLAMP – For permanent reliable process **fixing** of existing systems **up to 60 bar.**

Note:

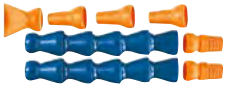
08 4420 – 3/8 inch - version available on request.







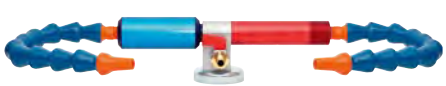
Type	08 4400	Supplied with:
	Hose system 1/4 inch	
SET	eShop	2 hose modules each 16 cm (= 32 cm); 3 round nozzles internal ∅ = 1.6 / 3.2 / 6.4 mm; 1 flat nozzle 27 mm wide; 1 threaded connector 1/8 inch (∅ 9.7 mm); 1 threaded connector 1/4 inch (∅ 13 mm)
MODUL	eShop	2 pipe segments each 16 cm (2×10 individual components = 32 cm)
CLAMP	eShop	11 clamps
RD	eShop	2 each round nozzles with internal ∅: 1.6 / 3.2 / 6.4 mm
FD	eShop	1 each flat nozzle 27 mm and 32 mm wide
FL27	eShop	2 flat nozzles 27 mm wide
Y	eShop	2 Y-piece junctions
H	eShop	1 each shut-off valve with and without internal thread
GA	eShop	2 NPT threaded connectors 1/8 inch (9.7mm); 2 NPT threaded connectors 1/4 inch (13mm)
ZANGE	eShop	Assembly pliers, plastic
RD1,6	eShop	4 round nozzles with internal ∅ 1.6 mm
RD3,2	eShop	4 round nozzles with internal ∅ 3.2 mm
RD6,4	eShop	4 round nozzles with internal ∅ 6.4 mm

Type	08 4420	Supplied with:	
	Hose system 1/2 inch		
SET	eShop	2 hose modules each 15 cm (= 30 cm); 3 round nozzles internal ∅ = 6.4 / 9.5 / 12.7 mm; 1 flat nozzle 35 mm wide; 1 threaded connector 3/8 inch (∅ 16.7 mm); 1 threaded connector 1/2 inch (∅ 20.7 mm)	
MODUL	eShop	2 pipe segments each 15 cm (2×5 individual components = 30 cm)	
CLAMP	eShop	11 clamps	
RD	eShop	2 each round nozzles with internal ∅: 6.4 / 9.5 / 12.7 mm	
FD	eShop	1 each flat nozzles 35 + 63 mm wide	
FL35	eShop	2 flat nozzles 35 mm wide	
YR	eShop	2 Y-piece junctions and 2 reducers from 1/2 inch to 1/4 inch	
H	eShop	1 each shut-off valve with and without internal thread	
GA	eShop	2 NPT threaded connectors 3/8 inch (16.7mm); 2 NPT threaded connectors 1/2 inch (20.7mm)	
ZANGE	eShop	Assembly pliers, plastic	
RD6,4	eShop	4 round nozzles with internal ∅ 6.4 mm	
RD9,5	eShop	4 round nozzles with internal ∅ 9.5 mm	
RD12,7	eShop	4 round nozzles with internal ∅ 12.7 mm	

Cold and hot air gun

For pin-point **heating or cooling** of metal and plastic parts on machine tools by means of compressed air.
Air temperature range from –30 °C to 60 °C.
Compressed air connection 3/8 inch, coolant hose 1/2 inch.

08J	08 4440	Cold and hot air gun	eShop



08 4440

Garant Micro-lubrication system, patented

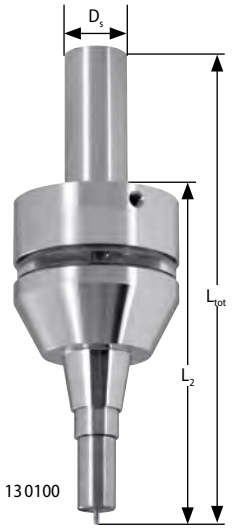
Sturdy stainless steel body with **3-chamber pressure system** for dispensing the lubricant very accurately.

Advantage:
- Very easy to operate.
- No problematic, inaccurate manual lubrication.
- Process reliability and longer tool life.

Application: **Can be used horizontally and vertically in machining centres**. For all thread cutting oils up to 570 mm²/s viscosity (see No. 084210 and 084220). The oil is precisely distributed mechanically and hydraulically on to the tapping hole wall. Because the **micro lubrication system** efficiently uses only very small **quantities of oil,** an impairment of the consistency of the emulsion is prevented. It thus saves the significant expense of changing over to emulsion with a high fat content, which is essential for process reliability when tapping.

Supplied with: Micro lubrication system, main cylinder type S, and one each nozzle type DL and GL filling injector.

Note: ■ For accessories and spare parts see the spare parts list.



Type		S
130100	Micro-lubrication system	eShop
Overall length L_{tot}	mm	150
Length of body with nozzle L_2	mm	100
Shank ∅ D_s (-0.02 / -0.05 mm)	mm	20

Cutting oils – universally suitable for machining

Cutting oils from Jokisch

084210–4220:
Ideal for the
GARANT micro-lubrication system 130100.

084220:
High-viscosity product based on mineral oil, very well suited for thread tapping, good adherence.


084220_20


084210_20

Chlorine-free, no hazardous substance!


084210_0,5

Cooling lubricants in thread production:

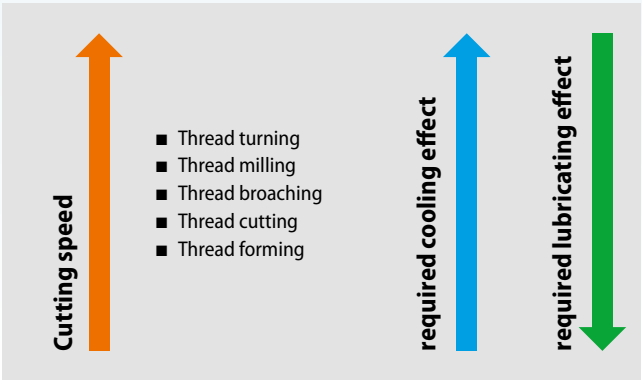
Selection of and recommendation for cooling lubricants:

Cooling lubricants are primarily used for the following:

- **Cooling**
- **Lubricating**
- **Chip evacuation**

weighted according to the machining procedure (see graphic on the right).

Example for thread forming: Due to the low cutting speed, a lower cooling effect but a very high lubricating effect are required. It is also imperative to pay attention to the type of cooling lubricant.



To determine the intended cooling lubricant and the process, the respective specification in the application table under the products is used:

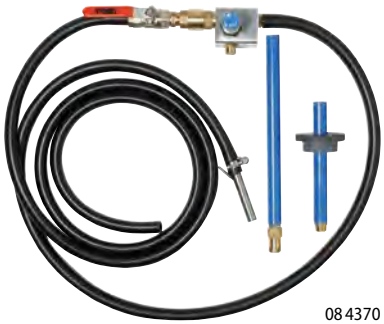
Example and explanation*							
	Oil lubrication		Minimal quantities of lubricant		Compressed air supply	○	Suitable only under restricted conditions
	Emulsion (for taps with at least 8% grease)		Dry machining	●	Suitable		Unsuitable

**In addition, the recommendations in the product description must be observed.*

Can / drum mixer for emulsions

The mixer with the **universal screw fastening set** fits all commercially-available jerrycans and drums.
A needle valve allows the **mixing ratio to be set precisely.**
High repetition accuracy, mixing volume up to 370 l/h,
connections 1/2 inch (water feed and mixer outlet),
3/8 inch (concentrate inlet).
With safety non-return valve.





08 4370

08J 08 4370	Mixer for cooling lubricant emulsion	eShop

Level display and overflow protection

08 4325 – Level display with float and volume scale. For use with conventional 60 ltr and 210 ltr drums. Suitable for cooling lubricant concentrate, emulsions, oils, antifreeze, heating oil and other liquid media.

08 4326 – The overflow protection siren is an important features on any machine that is filled with emulsion or oil. It warns the user acoustically and visually via a light against immanent overflowing. The flexible neck allows the level within the basin to be determined.



08 4325



08 4326

Type		60/210	15
08J 08 4325	Level display	eShop	–
08J 08 4326	Overflow protection	–	eShop

Accessories for the application of cutting oils and cooling lubricant concentrates

Application:

08 4310 – For all measurements to TRGS 611.

Content:

08 4310 – 100 pieces each of nitrite, nitrate, total hardness, pH test strips (made by Merck), empty spray bottles (3 pieces), and measuring jug for taking samples, **thermometer,** technical rules summary TRGS 611.



08 4310

			Measuring range pH value	Measuring range nitrite value g/m³	Measuring range nitrate value g/m³	Measuring range for water hardness
08J 08 4310	Coolant testing case to TRGS 611	eShop	–	–	–	–
08J 08 4311	Spare nitrite test strips **100 pieces**	eShop	–	0 – 25	–	–
08J 08 4312	Spare nitrate test strips **100 pieces**	eShop	–	–	0	–
08J 08 4313	Spare overall hardness test strips **100 pieces**	eShop	–	–	–	0
08J 08 4314	Spare pH test strips **100 pieces**	eShop	7	–	–	–
08J 08 4315	Spare pH-nitrite combination test strips **100 pieces**	eShop	7 – 14	0	–	–



08 4311



08 4312



08 4313



08 4314



08 4315

Refractometer

08 4320 Size ANALOG – Measuring range: 0 to 32 %, adjustable eyepiece, adjustable measuring range.
08 4321 Size DIGITAL – ■ Measurement range: 0 to 50 %, resolution: 0.1% Brix
■ Accuracy: 0.2% Brix, can be calibrated
■ Automatic temperature compensation.

Application: For **quickly** and **precisely** determining the concentration of emulsions.
Suitable only for water-miscible cooling lubricants.

Supplied with:

08 4320 Size ANALOG – **Protective carrying bag, pipette,** and operating instructions.
08 4321 Size DIGITAL – **Supplied with hard shell packaging, pipette,** instruction manual, 1× AAA batteries.

Note:	Refer to the correction factors for the cooling lubricants! Multiply the grinding emulsion by e. g. a factor of 2.1 (size ANALOG, i.e. if 5 % is shown, the true value is 10.5 %)

Display		ANALOG	DIGITAL
08J 08 4320	Portable refractometer	eShop	–
08J 08 4321		–	eShop



08 4320_ANALOG



08 4321_DIGITAL

Cooling lubricant oxygenation pump

Pump for increasing the working life of cooling lubricants.
Strongly recommended by trade associations. Suitable for continuous operation.

Application: For oxygenation of cooling lubricants. Up to 150 litres.
Prevents the oil film from closing on the surface,
thereby suppressing the growth of moulds and bacteria.
Ideal in combination with belt skimmer No. 084360.



08 4364

08J 08 4364	Oxygenation pump		eShop
Body length		mm	153
Body width		mm	75
Body height		mm	82
Power consumption		A	0.38
Operating voltage		V	3 – 12
Air delivery		l/h	180

Accessories for the application of cutting oils and cooling lubricant concentrates

Speed-adjustable belt skimmer in low-hazard 12 V low voltage design (with mains adapter)
for mobile use wherever it is needed.
No tools required for fitting; a permanent magnet clamps it to the body of the machine.

Application: Oil belt skimmers are used to **skim off unwanted oils** and chip grit from cooling lubricants.
This **eliminates bacterial build-up** effectively, increases the **life time** of the coolant
significantly and reduces the resulting **smells and vapours.**


Application example


08 4360

Belt skimmer

08J 08 4360	Belt skimmer with mains adapter and magnetic clamp	eShop



08 4362

maximum magnetic trapping capability	kg	1	2	4
08Q 08 4362	ECLIPSE MAGNETICS Micromag magnetic filter	eShop	eShop	eShop
Manufacturer's designation		MM5	MM10	MM20
External ∅	mm	105	125	135
External height	mm	190	315	605
BSP connection thread	in	1	1	1.1/2
Weight	kg	3.2	5.2	9.5

Maintenance system for cooling lubricants

Advantage:
- Simultaneously removes tramp oils and solids.
- Works independently using the bypass principle, without the need for staff.
- Stops the formation of odours and the risk of infection.
- Longer service life for lubricants and tools.
- Lower disposal costs.



Type		1000
08J 08 4372	Maintenance system	(eShop)

Flow drilling

Description: The polygon contour of the carbide flow drill generates frictional heat which plasticises all types of metal materials. This allows closed apertures to be created in a variety of thicknesses of materials, without chips, in just a few seconds.

Advantage:
- Large savings of time and costs compared to conventional processes (such as drawn-on nuts).
- Generates no chips or swarf; supersedes rivet nuts, weld nuts and press nuts.
- Solid basis for threads with high pull-out forces.
- For all popular material thicknesses and thread sizes (threads to DIN 13).



Flow drilling sets

Supplied with:

08 2710/2715 –
- 1 Special chuck MT2 with cooling ring.
- 1 hook spanner and 1 open-ended spanner.
- 4 ER25 collets in sizes suitable for M4 – M12.
- 1 flow drill in the selected thread size.
- 1 Flowtap fluteless tap in the selected thread size.
- 1 bottle special parting agent for flow drilling, with brass brush (FDKS100; 100 g).
- 1 bottle special thread forming oil, with bristle brush (FTMZ100; 100 ml).
- 1 system case with brief user guide (comprehensive user manual available as PDF download).

Note: Other versions and sets for special applications (such as for thin sheet metal) available on request.
For suitable fluteless taps see items No. 139115 ff.



08 2710



08 2721

for thread M		M4	M5	M6	M8	M10	M12
04D 08 2710	Starter set standard	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
04D 08 2715	Starter set flat	eShop	eShop	eShop	eShop	eShop	(eShop)

for thread M		M5-M8	M6-M10	M5-M12
04D 08 2721	Flow drilling set - standard including fluteless taps	(eShop)	(eShop)	(eShop)
04D 08 2726	Flow drilling set - flat including fluteless taps	eShop	eShop	eShop
Content: 1 each flowdrill and fluteless tap		Size M5; M6; M8	Size M6; M8; M10	Size M5; M6; M8; M10; M12

Flow drill / accessories

08 2730/2735 – Carbide flow drills for production of tapping holes preliminary to thread forming.

Standard – with collar



08 2730

Flat – no collar



08 2735

for thread M		M4	M5	M6	M8	M10	M12
04D 08 2730	Flow drill - standard (with collar)	eShop	eShop	eShop	eShop	eShop	(eShop)
04D 08 2735	Flow drill - flat (no collar)	eShop	eShop	eShop	eShop	eShop	eShop
Tapping hole ∅	mm	3.7	4.5	5.4	7.3	9.2	10.9
Shank ∅	mm	6	6	6	8	10	12
maximum material thickness (08 2730)	mm	2.6	2.7	2.9	3.3	3.7	4
maximum material thickness (08 2735)	mm	4.2	4.6	5	5.9	6.6	7.2
recommended drive power	kW	0.7	0.8	1	1.3	1.5	1.7
recommended speed	min^{-1}	2600	2500	2400	2200	2000	1800

Contents in l or kg		1
04D 08 2741	Parting agent	eShop
04D 08 2742	Thread forming oil	eShop

Flow drill for aluminium

Special flow drill with hard carbon coating for production of **core holes in aluminium** preliminary to thread forming. Coated aluminium profiles can be drilled without separating agent, without the risk of scratching or scorching the paint. The geometry and an extremely smooth surface coating prevent vibration and noise, and material pick-up.

Note: Other versions and sets for special applications (such as for thin sheet metal) available on request. Use fluteless taps without oil grooves.
See items No. 139115 ff for suitable fluteless taps.



08 2745

for thread M		M4	M5	M6	M8	M10
04D 08 2745	Flow drill for aluminium, AluDrill special	(eShop)	(eShop)	eShop	eShop	(eShop)
Tapping hole ∅	mm	3.6	4.3	5.2	7.1	9
Shank ∅	mm	8	10	10	12	14
maximum material thickness	mm	3.5	4	5	5.5	6
recommended drive power	kW	1.5	1.5	1.5	2	2
recommended speed	min^{-1}	4000 – 8000				

HOLEX Flow drilling M-Drill

Very quickly produce core holes in thin-walled materials using frictional heat. Can be used on CNC, NC and pillar drilling machines.

Suitable for: HOLEX ER collets No. 308964.
ER chuck key No. 309680.
HOLEX fluteless tap No. 139130 or No. 139180.



08 0750

Holder M-Drill

Shank		MK2	MK3	ZS20
00N 08 0750	Holder M-Drill	eShop	eShop	eShop
for ER collets			25	

Flow drill M-Drill standard

08 0751 – Flow drill - standard (with collar).
08 0752 – Flow drill - standard (with collar), for use in stainless materials.
08 0753 – Flow drill - flat (no collar).
08 0754 – Flow drill - flat (no collar), for use in stainless materials.

Application:
08 0751/0753 – Suitable for steel, aluminium, copper, brass.
08 0752/0754 – Particularly suitable for stainless steels.


08 0751


08 0753

Threads		M3	M4	M5	M6	M8	M10	M12
00N 08 0751	Flow drill - standard (with collar) Uni	eShop	eShop	eShop	eShop	eShop	eShop	eShop
00N 08 0752	Flow drill - standard (with collar) Inox	–	–	eShop	eShop	eShop	eShop	–
00N 08 0753	Flow drill - flat (no collar) Uni	eShop	eShop	eShop	eShop	eShop	eShop	eShop
00N 08 0754	Flow drill - flat (no collar) Inox	–	–	eShop	eShop	eShop	eShop	–
Tapping hole ∅ (08 0751, 08 0753)	mm	2.7	3.7	4.5	5.3	7.3	9.2	10.9
Tapping hole ∅ (08 0752, 08 0754)	mm	–	–	4.6	5.4	7.4	9.3	–
Shank ∅	mm	6	6	6	8	8	10	12
Material thickness (08 0751, 08 0753)	mm				0.7 – 2.5			
Material thickness (08 0752, 08 0754)	mm	–	–	0.7 – 1	0.7 – 1	0.7 – 1	0.7 – 1	–
recommended drive power	kW	0.7	0.8	1	1.3	1.5	1.7	1.9
recommended speed	min^{-1}	3000	2700	2600	2500	2300	2100	2000

Flow drill M-Drill long

08 0755 – Flow drill - standard (with collar).
08 0756 – Flow drill - standard (with collar), for use in stainless materials.
08 0757 – Flow drill - flat (no collar).
08 0758 – Flow drill - flat (no collar), for use in stainless materials.

Application:
08 0755/0757 – Suitable for steel, aluminium, copper, brass.
08 0756/0758 – Particularly suitable for stainless steels.


Application example


08 0755


08 0757

Threads		M3	M4	M5	M6	M8	M10	M12
00N 08 0755	Flow drill - standard (with collar) long Uni	eShop	eShop	eShop	eShop	eShop	eShop	eShop
00N 08 0756	Flow drill - standard (with collar) long Inox	–	–	eShop	eShop	eShop	eShop	–
00N 08 0757	Flow drill - flat (no collar) long Uni	eShop	eShop	eShop	eShop	eShop	eShop	eShop
00N 08 0758	Flow drill - flat (no collar) long Inox	–	–	eShop	eShop	eShop	eShop	–
Tapping hole ∅ (08 0755, 08 0757)	mm	2.7	3.7	4.5	5.3	7.3	9.2	10.9
Tapping hole ∅ (08 0756, 08 0758)	mm	–	–	4.5	5.4	7.4	9.3	–
Shank ∅	mm	6	6	6	8	8	10	12
Material thickness (08 0755, 08 0757)	mm				0.7 – 4			
Material thickness (08 0756, 08 0758)	mm	–	–	0.7 – 3	0.7 – 3	0.7 – 3	0.7 – 3	–
recommended drive power	kW	0.7	0.8	1	1.3	1.5	1.7	1.9
recommended speed	min^{-1}	3000	2700	2600	2500	2300	2100	2000

Thread repair DIN 8140

High-strength HeliCoil®plus thread inserts for through bolts, of **stainless steel with high wear-resistance, low thread friction** in close tolerances, **high surface quality** as well as **corrosion** and **heat resistance.** The flexible construction allows an even distribution of load and tension forces and thus allows creation of very high quality **permanent** screw connections with **ideal force transfer** for all **working loads** (static, dynamic). Uncomplicated quick insertion, resulting in an internal thread that can be used from both ends.

Application: For economic **repair of damaged** or **worn threads** and as a design element for **thread reinforcement** in materials which have low shear strength (e.g. aluminium, aluminium-magnesium alloys).

Note:
- For suitable plug gauges for thread checking see No. 486000 onwards.
- Self-locking inserts, inserts with other dimensions and UNC/UNF thread inserts are available on request.







Thread repair sets

08 2800 – Complete repair set, for one each metric thread size in a plastic case.
08 2805 – HSS one-pass hand tap for through holes.
08 2807 – HSS machine taps, straight flutes, 4-turn lead chamfer for through holes or blind holes with deep-drilled tapping hole in tolerance class 6H.

Supplied with:

08 2800 –
- 1 HSS hand tap
- 1 insertion spindle.
- 1 plastic case L×W×H 180×165×45 mm (up to size M8) 245×225×50 mm (size M10 and above).
- 20 each (up to size M6) or 10 each (size M8 and above) stainless steel thread inserts for through bolts in each length (1×D / 1.5×D / 2×D).

08 2800 Size M2–M12 – 1 drill.
1 tang breaker.

Note: For TiCN coated HSS-E-PM machine taps see No. 133560 and No. 138210.



08 2800

Thread M (×pitch)	04D 08 2800 Thread repair set DIN 8140	04D 08 2805 Spare hand tap 6H	04D 08 2807 Machine tap 6H	Tapping hole ∅ mm	Number of thread inserts 08 2800
M2	eShop	eShop	–	2.1	60
M2,5	eShop	eShop	–	2.6	60
M3	eShop	eShop	–	3.2	60
M4	eShop	eShop	eShop	4.2	60
M5	eShop	eShop	eShop	5.2	60
M6	eShop	eShop	eShop	6.3	60
M8	eShop	eShop	eShop	8.4	30
M8×1	eShop	eShop	–	8.3	30
M10	eShop	eShop	eShop	10.5	30
M10×1	eShop	eShop	–	10.2	30
M12	eShop	eShop	eShop	12.5	30
M14	eShop	eShop	–	14.5	30
M16	eShop	eShop	–	16.5	30



08 2805



08 2807

Thread repair set

Thread repair set composed of various repair sets for metric ISO threads.

Size M2,5-M6 – **320 pieces:**(20 each inserts 1×D; 1.5×D; 2×D – M2.5; M3; M4; M5; M6)

Size M5-M12 – **230 pieces:**
(20 each inserts 1×D; 1.5×D; 2×D - M5; M6)
(10 each inserts 1×D; 1.5×D; 2×D - M8; M10; M12)

Supplied with: Helicoil®plus thread inserts of various dimensions and lengths, 5 jobber drills, 5 HSS hand taps, 5 insertion spindles, 5 tang breakers, 1 plastic case (L×W×H) 420×340×120 mm.

Note: For TiCN coated HSS-E-PM machine taps see No. 133550 and No. 138200.



08 2820

Contents	04D 08 2820 Thread repair set	Number of inserts thread length 1×D	Number of inserts thread length 1.5×D	Number of inserts thread length 2×D
M2,5-M6	eShop	100	100	100
M5-M12	eShop	70	70	70

Thread inserts

08 2808 – Insertion tool for HeliCoil®plus thread inserts.

08 2810–2818 – Metric thread inserts of stainless steel wire, which resemble springs.
Free-running thread, turn for turn, the drive tag is broken off at the notch (design fracture point) after installation.
Optimised shape with innovative introduction zone that allows the insert to be attached and turned like a screw to insert it.



08 2808

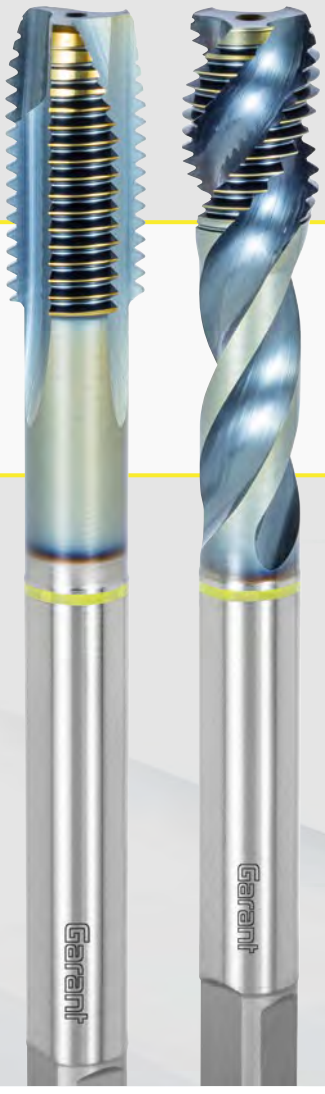


08 2810

Thread type / size			M2	M2,5	M3	M4	M5	M6	M8	M8×1	M10	M10×1	M12	M14	M16
04D 08 2808	Insertion spindle		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
04D 08 2810	Thread insert set, 10 or 20 pieces	1×D	(eShop)	(eShop)	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop
04D 08 2812		1.5×D	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
04D 08 2814		2×D	(eShop)	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	(eShop)	eShop	(eShop)	eShop
Set contents (08 2810, 08 2812, 08 2814)			20	20	20	20	20	20	10	10	10	10	10	10	10

Thread type / size			M3	M4	M5	M6	M8	M10	M12
04D 08 2818	Thread insert set, 100 pieces	1.5×D	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Set contents			100						

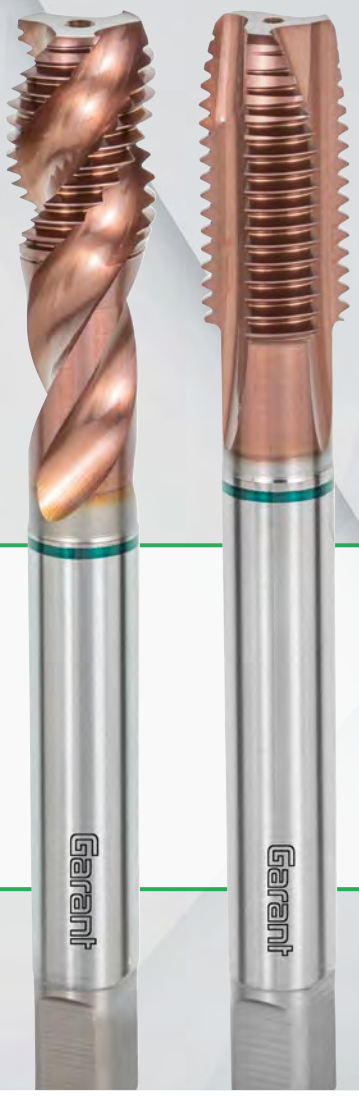
Garant MASTER TAP HIGH-PERFORMANCE TAPS FOR WIRE INSERTS.



Taps can be found in the Hoffmann Group Catalogue 1 Machining and clamping technology.

GARANT Master Tap Alu – the professional.

- Maximum dynamic response.
- Maximum process reliability.
- Maximum performance.



GARANT Master Tap – the all-round talent.

Master Tap taps combine very high process reliability with maximum universality.
Be it steel, stainless steel, aluminium or cast iron – the special geometry ensures optimum chip formation, thus increasing efficiency.

13 3555/8205 – 3560/8210
For production of EG mounting thread according to metric ISO thread DIN 8140 for STI wire thread inserts (Screw Thread Insert)

Marking tool

35 8725 – Body of tool steel with Weldon shank.

35 8740/8752 – Body of aluminium with Weldon shank. Stepless adjustment of the pre-load force. Character depth 0.1 - 0.3 mm.

Advantage:

35 8725 – Cleaning of the workpiece surface by compressed air channels with different approach angles max. 10 bar. Adjustment of the font width by adjusting the contact force, no different needle radii required! High wear resistance of the marking tip due to **rolling ball.** No burr formation.

35 8725/8740/8752 – Surface sealing without weakening or damaging the material. Inscription speed corresponds to the maximum feed rate. High wear resistance, with long working life for the special needles. Suitable for inscriptions on round surfaces. Can be used on the lathe. High process reliability. Needles easily withdrawn, therefore **quick needle change.** Irregularities up to 7 mm in the workpiece surface (depending on profile) can be compensated.

Application:

35 8725/8740/8752 – For marking on a wide variety of materials such as aluminium, titanium, steel, bronze, copper, brass, plastics etc. Smaller needle tips allow inscriptions on harder surfaces up to 57 HRC.

Supplied with:

35 8725 – Supplied with 1x marking tip No. 358729.

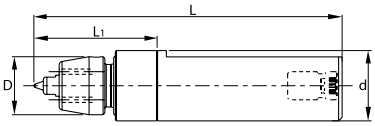
35 8740 – size 12 – including **3 needles** No. 358745 size 0.3 – 0.5 – 0.8.
Size 20 –including **3 needles** No. 358745 size 0.3 – 0.6 – 1.0.

Note:

35 8752 – Order marking needle No. 550468; 550469 **separately**.



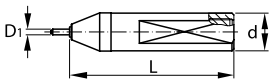
35 8725





Supplied with 3 needles.

35 8740_20



Shank ∅ d	mm	20
31E 35 8725 Garant Marker		eShop
L_1	mm	35.2
L	mm	87.7
∅ D_1	mm	0.5
∅ d	mm	20
∅ D	mm	16.5

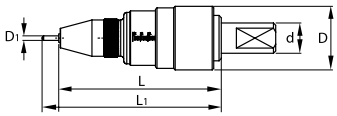
Shank ∅ d	mm	12	20
32B 35 8740 HOLEX Marker		eShop	eShop
L	mm	66	73
∅ D_1	mm	3	
∅ d	mm	12	20

38D 35 8752 AMF Marker L		eShop
L_1	mm	119
L	mm	108
∅ D_1	mm	3
∅ d	mm	20
∅ D	mm	42

Order the needle separately



35 8752



Marking tips



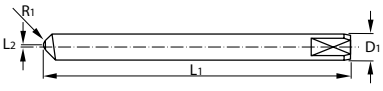
35 8729

Radius	mm	0,5		L_1 mm	L_2 mm	R_1 mm
31Z 35 8729 Garant Marking tip		eShop	1	53.5	0	0.5
suitable for		358725				



35 8745

Radius	mm	0,3	0,5	0,6	0,8	1,0
32B 35 8745 HOLEX Spare needle		eShop	eShop	eShop	eShop	eShop
suitable for		358740				





35 8755

∅ D_1	mm	3	L_1 mm	L_2 mm	R_1 mm
38D 35 8755 AMF Marking needle		(eShop)	53.5	0	0.5
suitable for		358752			

Disc brushes

Disc brushes with **extremely tightly packed abrasive bristles (right to the edge of the brush)** embedded in the plastic pad. The bristles support each other, giving a **highly stable shape**. Very long working life.

Advantage:
- Workpiece post-processing **directly after the machining process.**
- **Reproducible results** due to continuous exposure of the abrasive grit.
- **Process reliability** thanks to high stability and accuracy of the shape.
- Quick and secure **mounting** without further accessories.
- Very high **concentricity**.

Application: On **CNC machining centres** and when used by **robots,** preferably **wet grinding** with cooling lubricant. Machining of flat components: precise **deburring, edge rounding, finish machining** after milling, **surface finishing** e.g. of sealing and mating faces.

Note: Special versions available on request.



Brush Ø	Speed recommended (when wet grinding) (rpm)	Maximum speed (rpm)	Feed rate (mm/min)	Infeed (mm)
Ø 20 mm	1500 – 2500	5000	Material (hard) Geometry (complex) Surface finish (coarse) 800 mm/min ↓ Material (soft) Geometry (simple) Surface finish (fine) 3000 mm/min	0.8 mm (fine) ↓ 2.0 mm (coarse)
Ø 25 mm	1500 – 2500	5000		
Ø 50 mm	1200 – 2400	4500		
Ø 63 mm	1200 – 2400	4500		
Ø 70 mm	1200 – 2400	4500		
Ø 100 mm	1000 – 1700	3500		
Ø 119 mm	1000 – 1700	3000		
Ø 144 mm	900 – 1200	2500		

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
57 5002–57 5018	●	●	○	○	○			○	○	○	●					●	●	○
57 5022–57 5038		●	●	○	○			○		●							●	○

Disc brushes, shank mounting

SiC CER

6 mm shank, solidly cast in place.

57 5002–5005 – Nylon bristles with very high **silicon carbide grit content** for general-purpose use.

57 5022–5026 – Nylon bristles with **ceramic grit content.** More aggressive abrasive effect.



57 5002



57 5008

Grit			80	120	Disc dia. D_2 mm	Length of brush section H_1 mm
57 5002	Disc brush with shank, silicon carbide (SiC)	Ø 20 mm	eShop	eShop	24	25
57 5004		Ø 25 mm	eShop	eShop	29	25
57 5005		Ø 50 mm	eShop	eShop	55	25
57 5022	Disc brush with shank, ceramic grit (CER)	Ø 20 mm	eShop	eShop	24	25
57 5024		Ø 25 mm	eShop	eShop	29	25
57 5026		Ø 50 mm	eShop	eShop	55	25
Shank Ø D_s		mm	6			
Grit designation			coarse	medium		
Bristle thickness		mm	1.2	0.6		

Disc brushes, face mill arbor mounting

With longitudinal groove for clamping on face mill arbors (DIN 6357) and combination face mill adapters (DIN 6358).

57 5006–5018 – Nylon bristles with very high **silicon carbide grit content** for general-purpose use.

57 5006/5008 – Conical brushes for inaccessible places. Greater flexibility.

57 5030–5038 – Nylon bristles with **ceramic grit content.** More aggressive abrasive effect.

SiC



57 5010 – 57 5018

CER



57 5030 – 57 5038

Grit			80	120	180	Disc dia. D_2 mm	Bore Ø d_1 mm	Length of brush section H_1 mm
57 5006	Disc brush, silicon carbide (SiC)	Ø 50 mm	eShop	eShop	–	45	16 with groove	30
57 5008		Ø 63 mm	eShop	eShop	–	58	16 with groove	30
57 5010		Ø 70 mm	eShop	eShop	eShop	76	22 with groove	35
57 5012		Ø 100 mm	eShop	eShop	eShop	106	22 with groove	35
57 5015		Ø 119 mm	eShop	eShop	eShop	125	27 with groove	38
57 5018		Ø 144 mm	eShop	eShop	eShop	150	32 with groove	43
57 5030	Disc brush, ceramic grit (CER)	Ø 70 mm	eShop	eShop	–	76	22 with groove	35
57 5032		Ø 100 mm	eShop	eShop	–	106	22 with groove	35
57 5035		Ø 119 mm	eShop	eShop	–	125	27 with groove	38
57 5038		Ø 144 mm	eShop	eShop	–	150	32 with groove	43
Grit designation			coarse	medium	fine			
Bristle thickness (57 5006, 57 5008)		mm	1.2	0.6	–			
Bristle thickness (57 5010, 57 5012, 57 5015, 57 5018, 57 5030, 57 5032, 57 5035, 57 5038)		mm	1.2	1.1	1			

SiC

Wheel brushes

Round brushes with **extremely tightly packed abrasive bristles (right to the edge of the brush)** embedded in the plastic pad. The bristles support each other, giving a **highly stable shape**.
Very long working life. Nylon bristles with very high **silicon carbide grit content** for general-purpose use.

Advantage:
- Workpiece post-processing **directly after the machining process.**
- **Reproducible results** due to continuous exposure of the abrasive grit.
- **Process reliability** thanks to high stability and accuracy of the shape.
- Quick and secure **mounting** without further accessories.
- Very high **concentricity.**

Application: On **CNC machining centres** and when used by robots, preferably **wet grinding** with cooling lubricant. **For grinding side faces and inner faces:** precise deburring (e.g. threads), edge rounding, delicate work after milling, surface finishing.

Note: Special versions available on request.



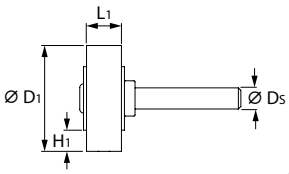
Brush Ø	Speed recommended (when wet grinding) (rpm)	Maximum speed (rpm)	Feed rate (mm/min)	Infeed (mm)
Ø 38 mm	3000 – 4000	8000		
Ø 50 mm	2400 – 3200	7000	Material (hard) Geometry (complex) Surface finish (coarse) 800 mm/min	
Ø 76 mm	2400 – 3200	7000		
Ø 100 mm	1800 – 2500	6000		0.5 mm (fine) – 2.0 mm (coarse)
Ø 125 mm	1800 – 2500	6000	Material (soft) Geometry (simple) Surface finish (fine) 3000 mm/min	
Ø 150 mm	1300 – 1800	4000		

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
57 5050–57 5066	●	●	○	○	○			○	○	○	●					●	●	○

Wheel brushes, shank mounting

6 mm shank, solidly cast in place.

Grit			120	320	Bristle width L_1 mm
51P 57 5050	Wheel brushes with shank, silicon carbide (SiC)	Ø 38 mm	eShop	eShop	10
51P 57 5052		Ø 50 mm	eShop	eShop	13
Grit designation			medium	fine	
Bristle thickness		mm	0.6	0.3	
Shank Ø D_s		mm	6		



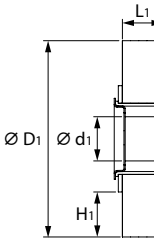


57 5052_320

Wheel brushes, face mill arbor mounting

With longitudinal groove for clamping on face mill arbors (DIN 6357) and combination face mill adapters (DIN 6358).

Grit			80	120	Bristle width L_1 mm	Working length L_3 mm	Bore Ø d_1 mm
51P 57 5060	Wheel brushes, silicon carbide (SiC)	Ø 76 mm	eShop	eShop	18	22	16 with groove
51P 57 5062		Ø 100 mm	eShop	eShop	20	22	22 with groove
51P 57 5064		Ø 125 mm	eShop	eShop	20	22	22 with groove
51P 57 5066		Ø 150 mm	eShop	eShop	25	35	32 with groove
Grit designation			coarse	medium			
Bristle thickness		mm	1.2	0.6			





57 5064_120

Cleaning stick

3 integrated cleaning nozzles for efficient cleaning of the workpiece, clamping device and machine tool.
Can be used with both cooling lubricant and compressed air.
Application recommendation: 60 rpm.

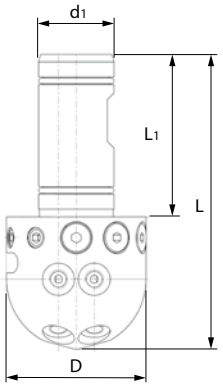


35 8945

Diameter		mm	16
32E 35 8945	HOLEX Cleaning stick for side lock arbor		eShop
∅ D		mm	16
L		mm	85

Cleaning ball - cleaning the machine space and the workpiece

Advantage:
- Attractively priced unit for flexible automation of the machine.
- Quick automatic cleaning for maximum machine utilisation.
- Machine ancillary times reduced to a minimum.
- Increase safety for the machine operator.
- 360° working range.
- For installation in any toolholder with through-coolant capability.





35 8952

Shank ∅ d_1		mm	20
33T 35 8952	Cleaning ball		eShop
Length L		mm	78
L_1		mm	35
∅ D		mm	37
maximum speed		min^{-1}	100
max. coolant pressure		bar	80
Working range		degrees	360

Garant Cleaning propeller - cleaning the machine space and the workpiece

- Robust design.
- Opening and closing the vane by the speed of the spindle.
- **Marked ends to the vanes**, for optimum visibility.
- For installation in any toolholder with through-coolant capability.

Size 160 – The machine must be started at 2000 rpm and slowly increased to 6000 rpm – 12000 rpm.

Size 260 – The machine must be started at 2000 rpm and slowly increased to 5000 rpm – 8000 rpm.

Advantage:
- Efficient cleaning of clamping equipment, workpieces and work tables.
- Removal of accumulated chips and blowing out pockets of water.
- Perfect complement to the automated work process.

Optional extras:

Size 160 – Spare cleaning propeller No. 358951 1K and 4K.
Size 260 – Spare cleaning propeller No. 358951 1 and 4.



35 8950_160



35 8950_260

Blade ∅			160	260
31E 35 8950	Cleaning propeller		eShop	eShop
Shank ∅		mm	20	
Speed range		min^{-1}	6000 – 12000	5000 – 8000

Spare cleaning propeller

Suitable for: Cleaning propeller No. 358950.
Supplied with: Supplied with spring, positioning pin and retainer pin.



35 8951 _4

Type			1	1K	4	4K
31E 35 8951	Spare cleaning propeller		eShop	eShop	eShop	eShop
maximum speed		min^{-1}	8000	12000	8000	12000
Number of vanes		pcs.	1	1	4	4

Spare springs

Suitable for: 358950 260.


35 8953

		4
31E 35 8953	Spare spring set 4 pcs	eShop

Garant Bar holder

- New type of bar holder concept – permits both lateral and frontal gripping.
- It permits automatic use in machine operation and programmed cycles, with hydraulic actuation of the grippers by coolant pressure (3 – 50 bar).
- High-quality components: anodised aluminium base body, wearing components of hardened and ground steel or hard machined steel.
- Unique mechanism with double ball guidance and double piston principle for maximum wear resistance and capability to handle heavy workpieces (traction 26 kg, lifting 16 kg).

Advantage:
- No traces of scratches on the component (even when gripping finished parts).
- Lateral gripping – the gripper can be brought extremely close to the lathe chuck.
- Movement of heavy weights.
- Extremely flexible – various bolt-on adapters allow the gripper to be used on both VDI turrets and also BMT turrets. Jaws interface 1/16 inch × 90°, thus standard top jaws can be used. (BMT only with boring bar holder)
- The pressure and hence the gripping force are configurable to an extent (75 – 100 %).
- Exceptionally low-maintenance.



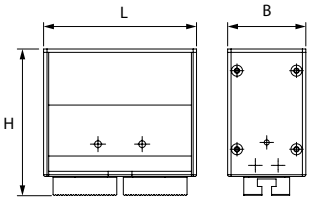
319711

Application: Drawing the bar into the machine, including for machines without a bar loader. Finished components can be automatically removed and handed over from the headstock to the tailstock. Clamping range (with jaws No. 319718) 8 – 65 mm.



Optional extras: Adapters No. 319713; 319714; 319716 and top jaws No. 319718.

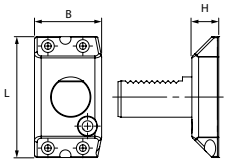
Note: For programming instructions see the operating instructions.



max. workpiece ∅		mm	65
31V 31 9711	Bar holder		eShop
Length		mm	90
Width		mm	46
Height		mm	85.6

Adapter for VDI radial turret

Suitable for: Bar holder No. 319711.



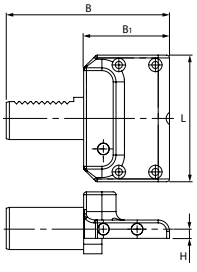


319714

Type			30	40
31V 31 9714	VDI adapter for bar holder		eShop	eShop
Length L		mm	90	
Width B		mm	50	52
Height H		mm	20	

Angled adapter for VDI disc turret

Suitable for: Bar holder No. 319711.



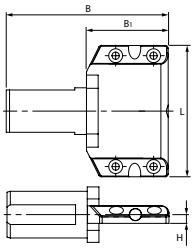


319716

Type			30-A	40-A
31V 31 9716	VDI adapter angled for bar holder		eShop	eShop
Length L		mm	90	
Width B		mm	116	124
B_1		mm	61	
Height H		mm	7	

Angled adapter for shank Ø 32

Suitable for: Bar holder No. 319711.





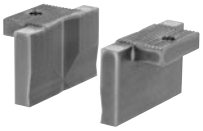
319713

Shank Ø D_1		mm	20	32
31V	31 9713	Bar holder adapter	eShop	eShop
Length L		mm	90	
Width B		mm	61	111
B_1		mm	46	56
Height H		mm	6.5	6

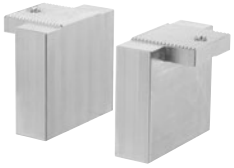
Jaws for bar holder

Suitable for: Bar holder No. 319711.

Note: Standard jaw serration 1/16 inch × 90°.
Size ALU – Soft jaws for in-house machining.

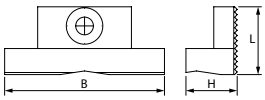


319718_20-45



319718_ALU

Clamping range		mm	8-20	20-45	45-65	ALU
31V	31 9718	Top jaws for bar holder	eShop	eShop	eShop	eShop
Length L		mm	19.5	19.5	22.5	27
Width B		mm	46			
Height H		mm	14.75	14.75	42.75	42.75



HOLEX Bar holder

- Anodised housing of high-tensile aluminium with diamond dust-coated roller bodies.
- Steplessly adjustable from 1 – 70 mm.
- Suitable for round, hexagonal and square material.
- Integral adjustment aid with scales.
- General-purpose cylindrical bar holder.

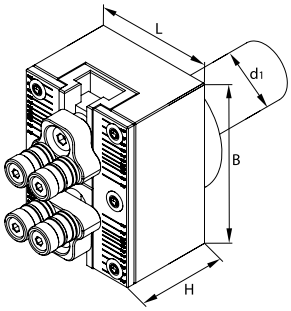
Advantage: For quick adjustment to the material diameter.
Application: Suitable for disc turrets and radial turrets.
Supplied with: Bar gripper with roller bodies, interchangeable jaws and L-wrench for hexagon socket screws for changing the roller bodies and interchangeable jaws.

Note: Suitable VDI adaptor in the spare parts list, see No. 319707 size 20 / 30.



319705





Shank Ø d_1		mm	25
32B	31 9705	Bar holder	eShop
Length		mm	55
Width		mm	75
Height		mm	42

Garant Magnetic gripper

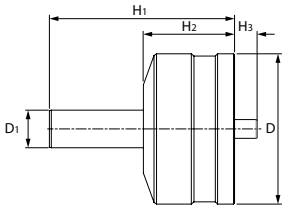
- Optimised and **safe working procedure.**
- **Collision protection** when approaching thanks to **compression spring safety compensation** of 10mm.
- By exchanging the inserts, individual workpiece geometries can be automatically separated, transported and stored.
- Machine running times without long interruptions.
- High efficiency due to optimised utilisation.
- Significantly less contamination by oil mist.
- Permits **unmanned operation**.
- Reduces the risk of injuries.
- Can be used in all commonly-used Weldon arbors.

Application: The tool can lift and release ferro-magnetic workpieces.
Activation of the magnet by coolant (IKZ) or compressed air.
Positive engagement of the machined workpiece by closure with the matching contour of the exchangeable plate, for transport to the desired destination within the machine room.

Supplied with: Supplied with exchangeable plate 358716 with height 20 mm.
Supplied with spring and clamping screw for the Weldon arbor.



35 8711



∅ D		mm	80	120	160
31V 35 8711	Magnetic gripper		(eShop)	(eShop)	(eShop)
∅ D_1		mm		20	
Height H_1		mm	98.5	98.5	108.5
Height H_2		mm	48.5	48.5	58.5
Height H_3		mm		12	
Magnet ∅		mm	10	13	16
Magnet retaining force		kg	4.5	7.5	15
Operation mode			Compressed air; Cooling lubricant	Compressed air; Cooling lubricant	Cooling lubricant

Interchangeable insert for magnetic gripper

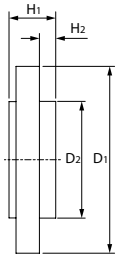
35 8716 – Exchangeable plates in polyamide PA6.
35 8717 – Exchangeable plate in aluminium.

Application: Introduction of the matching contour of the finished workpiece for close-fitting parting off (max. 50 rpm) and transport of the component.
Connection to the magnetic gripper by 4 screws.

Note: The exchangeable plates can also be made in-house.
As well as the introduction of workpiece geometries for machining, additive printing processes can also be used.



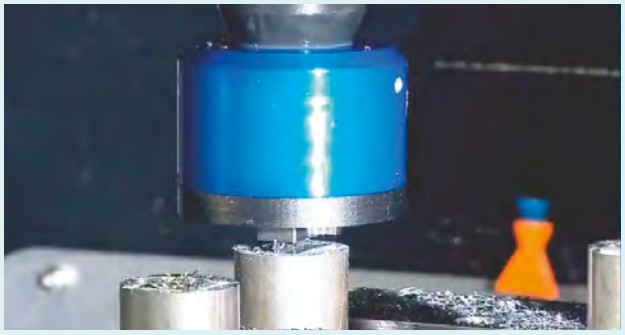
35 8716

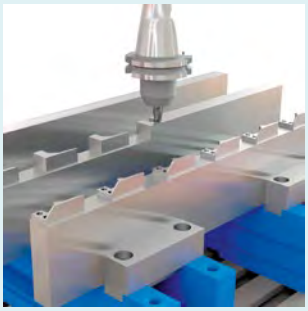


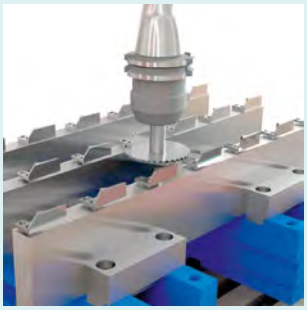
∅ / height		mm	80/20	80/40	120/20	120/40	160/20	160/40
31V 35 8716	Interchangeable insert for magnetic gripper, PA		eShop	eShop	eShop	eShop	eShop	eShop
31V 35 8717	Interchangeable insert for magnetic gripper, aluminium		eShop	eShop	eShop	eShop	eShop	eShop
∅ D_1		mm	80	80	120	120	160	160
∅ D_2		mm	50	50	90	90	130	130
Height H_1		mm	20	40	20	40	20	40
Height H_2		mm	7	27	7	27	7	27

Garant Magnetic gripper – automation for your existing machine

- Lifting and rotating ferromagnetic workpieces.
- The magnet is activated by the headstock by means of coolant or compressed air.
- Can be used in all commonly-used Weldon arbors.
- Individual machining of the interchangeable inserts to suit your workpiece geometries.









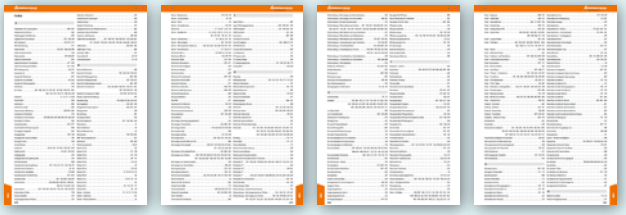




INFORMATION

We will help you to digitalise your manufacturing process. The Hoffmann Group offers you advice and solutions for all aspects of digital manufacturing and Industry 4.0.





Index from A – Z

1286 – 1293



Insert ISO code,
ISO fits (standard shafts and holes)

1294 – 1296

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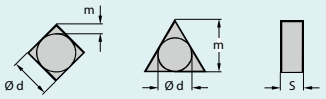
Garant ISO code / factory standard indexable inserts

	Shape
A	Rhomboid 85°
B	Rhomboid 82°
C	Rhombus 80°
D	Rhombus 55°
E	Rhombus 75°
F	Rhombus 50°
G	Rhombus 45°
H	Hexagon 120°
K	Rhomboid 55°
L	Orthogon 90°
M	Rhombus 86°
O	Octogon 135°
P	Pentagon 108°
R	Round
S	Square 90°
T	Triangle 60°
V	Rhombus 35°
W	Trigon 80°
X/Z	Special shape



	Tolerance with radius m mm	Tolerance in circle Ø d mm	Thickness tolerance S mm
A	±0.005	±0.025	±0.025
C	±0.013	±0.025	±0.025
E	±0.025	±0.025	±0.025
F	±0.005	±0.013	±0.025
G	±0.025	±0.025	±0.13
H	±0.013	±0.013	±0.025
J	±0.005	±0.05 up to ±0.15	±0.025
K	±0.013	±0.05 up to ±0.15	±0.025
L	±0.025	±0.05 up to ±0.15	±0.025
M	±0.08 up to ±0.20	±0.05 up to ±0.15	±0.13
N	±0.08 up to ±0.20	±0.0 up to ±0.15	±0.025
P*	±0.04	±0.04	±0.04
U	±0.13 up to ±0.38	±0.08 up to ±0.25	±0.13

Tolerance

* Manufacturer's standard

Inner circle (mm)	A	B	C	D	G	H	K	L	M	O	P	R	S	T	W
3.970			03										03	06		02
4.100	06		S4		S5											
4.600		07														
4.920					06											
5.000												05				03
5.560			05											09		
6.000												06				
6.350	09		06	07					06				06	11	11	04
6.680	10	11														
7.000	13											07				
7.870	12															
7.940			08	09									07	13		05
8.000												08	08			
8.200														14		
9.525	16		09	11			16						09	16	16	06
9.600		17						12								
10.000												10				
10.200	18															
11.000													11			
11.110									11							
12.000												12				07
12.700			12	15						04	12		12	22	22	08
14.290																09
15.875			16	19		08							15	27		10
16.000										06		16				
19.050			19	23									19	33		
20.000												20				
21.000																13
22.225			22	27									22	38		
25.000												25				
25.400			25	31									25	44		
26.194																17
31.750			32	38									31	55		
32.000												32				

Inner circle Ø for insert size

Turning

Milling

C	N	M	G	12	04	08			(N)
A	P	K	T	16	04	08	P	D	F	R

Main clearance angle

A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	further clearance angles

Fastening and chip breaker

	Hole configuration	Chip breaker	Insert type
A	Cylindrical hole	none	
B	Cylindrical hole + Countersink (70 ≈ 90°)	none	
C			
F	-	double-sided	
G	Cylindrical hole	double-sided	
H	Cylindrical hole + Countersink (70 ≈ 90°)	single-sided	
J		double-sided	
M	Cylindrical hole	single-sided	
N	-	none	
Q	Cylindrical hole + Countersink (40 ≈ 60°)	none	
R	-	single-sided	
T	Cylindrical hole + Countersink (40 ≈ 60°)	single-sided	
U		double-sided	
W		none	
X	-	-	Special design

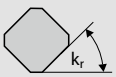
Thickness

	mm
S4	1.16
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
35	3.58
36	3.60
T3	3.97
04	4.76
48	4.84
L5	5.00
M5	5.00
05	5.56
T5	5.90
T6	6.10
06	6.35
67	6.74
T7	7.00
07	7.94
09	9.52
14	14.29
19	19.05

Corner radius

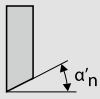
	mm
00	without
01	0.1
02	0.2
03	0.3
04	0.4
05	0.5
06	0.6
08	0.8
10	1.0
12	1.2
15	1.5
16	1.6
20	2.0
24	2.4
25	2.5
28	2.8
30	3.0
31	3.1
32	3.2
40	4.0
50	5.0
60	6.0

Adjustment angle



A	45°
D	60°
E	75°
F	85°
M O	Round
P	90°
Z	special

Standard clearance angle of the wide smooth flat chamfer



C	7°
D	15°
E	20°
F	25°
N	0°
P	11°
T	22°
Z	special

Cutting edge version

F	sharp-edged
E	honed
T	chamfered
S	chamfered and honed

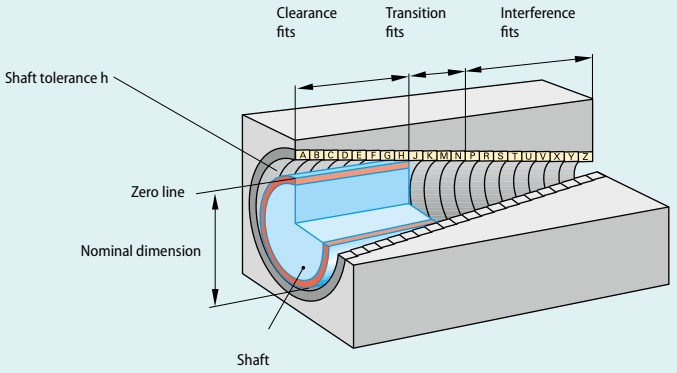
Direction of machining

R	right-hand
L	left-hand
N	neutral

ISO system of standardised fits for shafts

(see DIN ISO 286-2)
Size limits in µm (= 0.001 mm).

In the standardised shaft system, all shafts are given h tolerances. The largest dimension of a shaft is taken as both the zero line and the nominal size. The smallest dimension is smaller than the nominal size by the amount of the tolerance.



Interference fit (press fit)
Transition fit
Clearance fit

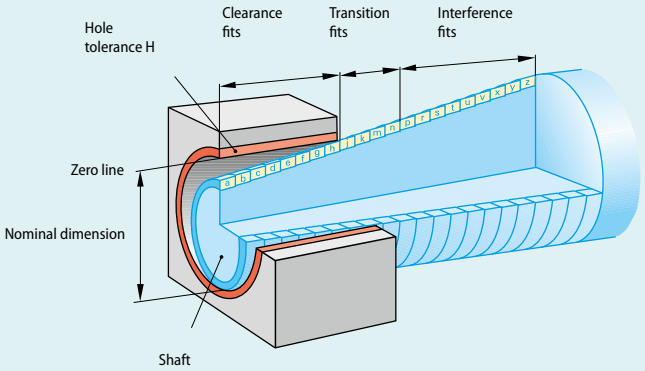
Holes	Preferred fit*)	Nominal dimension over . . . to . . . mm																			
		1	3	6	10	14	18	24	30	40	50	65	80	100	120	140	160	180	200	225	
		3	6	10	14	18	24	30	40	50	65	80	100	120	140	160	180	200	225	250	
Shaft h 5		0	0	0	0		0		0		0		0		0			0			
		-4	-5	-6	-8		-9		-11		-13		-15		-18			-20			
P 6		-6	-9	-12	-15		-18		-21		-26		-30		-36			-41			
		-12	-17	-21	-26		-31		-37		-45		-52		-61			-70			
N 6		-4	-5	-7	-9		-11		-12		-14		-16		-20			-22			
		-10	-13	-16	-20		-24		-28		-33		-38		-45			-51			
M 6		-2	-1	-3	-4		-4		-4		-5		-6		-8			-8			
		-8	-9	-12	-15		-17		-20		-24		-28		-33			-37			
J 6		+2	+5	+5	+6		+8		+10		+13		+16		+18			+22			
		-4	-3	-4	-5		-5		-6		-6		-6		-7			-7			
H 6		+6	+8	+9	+11		+13		+16		+19		+22		+25			+29			
		0	0	0	0		0		0		0		0		0			0			
Shaft h 6		0	0	0	0		0		0		0		0		0			0			
		-6	-8	-9	-11		-13		-16		-19		-22		-25			-29			
S 7		-14	-15	-17	-21		-27		-34		-42	-48	-58	-66	-77	-85	-93	-105	-113	-123	
		-24	-27	-32	-39		-48		-59		-72	-78	-93	-101	-117	-125	-133	-151	-159	-169	
R 7		-10	-11	-13	-16		-20		-25		-30	-32	-38	-41	-48	-50	-53	-60	-63	-67	
		-20	-23	-28	-34		-41		-50		-60	-62	-73	-76	-88	-90	-93	-106	-109	-113	
N 7		-4	-4	-4	-5		-7		-8		-9		-10		-12			-14			
		-14	-16	-19	-23		-28		-33		-39		-45		-52			-60			
M 7		-2	0	0	0		0		0		0		0		0			0			
		-12	-12	-15	-18		-21		-25		-30		-35		-40			-46			
K 7		0	+3	+5	+6		+6		+7		+9		+10		+12			+13			
		-10	-9	-10	-12		-15		-18		-21		-25		-28			-33			
J 7		+4	+6	+8	+10		+12		+14		+18		+22		+26			+30			
		-6	-6	-7	-8		-9		-11		-12		-13		-14			-16			
H 7	●	+10	+12	+15	+18		+21		+25		+30		+35		+40			+46			
		0	0	0	0		0		0		0		0		0			0			
G 7		+12	+16	+20	+24		+28		+34		+40		+47		+54			+61			
		+2	+4	+5	+6		+7		+9		+10		+12		+14			+15			
F 7		+16	+22	+28	+34		+41		+50		+60		+71		+83			+96			
		+6	+10	+13	+16		+20		+25		+30		+36		+43			+50			
Shaft h 9		0	0	0	0		0		0		0		0		0			0			
		-25	-30	-36	-43		-52		-62		-74		-87		-100			-115			
H 8	●	+14	+18	+22	+27		+33		+39		+46		+54		+63			+72			
		0	0	0	0		0		0		0		0		0			0			
H 11		+60	+75	+90	+110		+130		+160		+190		+220		+250			+290			
		0	0	0	0		0		0		0		0		0			0			
F 8	●	+20	+28	+35	+43		+53		+64		+76		+90		+106			+122			
		+6	+10	+13	+16		+20		+25		+30		+36		+43			+50			
E 9	●	+39	+50	+61	+75		+92		+112		+134		+159		+185			+215			
		+14	+20	+25	+32		+40		+50		+60		+72		+85			+100			
D 10	●	+60	+78	+98	+120		+149		+180		+220		+260		+305			+355			
		+20	+30	+40	+50		+65		+80		+100		+120		+145			+170			
C 11	●	+120	+145	+170	+205		+240		+280	+290	+330	+340	+390	+400	+450	+460	+480	+530	+550	+570	
		+60	+70	+80	+95		+110		+110	+130	+140	+150	+170	+180	+200	+210	+230	+240	+260	+280	
Shaft h 11		0	0	0	0		0		0		0		0		0			0			
		-60	-75	-90	-110		-130		-160		-190		-220		-250			-290			
H 11		+60	+75	+90	+110		+130		+160		+190		+220		+250			+290			
		0	0	0	0		0		0		0		0		0			0			
D 11		+80	+105	+130	+160		+195		+240		+290		+340		+395			+460			
		+20	+30	+40	+50		+65		+80		+100		+120		+145			+170			
C 11		+120	+145	+170	+205		+240		+280	+290	+330	+340	+390	+400	+450	+460	+480	+530	+550	+570	
		+60	+70	+80	+95		+110		+120	+130	+140	+150	+170	+180	+200	+210	+230	+240	+260	+280	
A 11		+330	+345	+370	+400		+430		+470	+480	+530	+550	+600	+630	+710	+770	+830	+950	+1030	+1110	
		+270	+270	+280	+290		+300		+310	+320	+340	+360	+380	+410	+460	+520	+580	+660	+740	+820	

*) Preferred fits to DIN 7157, series 1.

ISO system of standardised fits for holes

(see DIN ISO 286-2)
Limit dimensions in µm (= 0.001 mm).

In this system, all holes are produced with a standard H tolerance.
The smallest dimension is taken as both the zero line and the nominal size.
The largest dimension is larger than the zero line by the amount of the tolerance.



Interference fit (press fit)
Transition fit
Clearance fit

Shafts	Preferred fit*)	Nominal dimension over . . . to . . . mm																			
		1 3	3 6	6 10	10 14	14 18	18 24	24 30	30 40	40 50	50 65	65 80	80 100	100 120	120 140	140 160	160 180	180 200	200 225	225 250
Hole H 6		+6 0	+8 0	+9 0	+11 0		+13 0		+16 0		+19 0		+22 0		+25 0			+29 0		
p 5		+10 +6	+17 +12	+21 +15	+26 +18		+31 +22		+37 +26		+45 +32		+52 +37		+61 +43			+70 +50		
n 5		+8 +4	+13 +18	+16 +10	+20 +12		+24 +15		+28 +17		+33 +20		+38 +23		+45 +27			+51 +31		
k 6		+6 0	+9 +1	+10 +1	+12 +1		+15 +2		+18 +2		+21 +2		+25 +3		+28 +3			+33 +4		
j 6		+4 -2	+6 -2	+7 -2	+8 -3		+9 -4		+11 -5		+12 -7		+13 -9		+14 -11			+16 -13		
h 5		0 -4	0 -5	0 -6	0 -8		0 -9		0 -11		0 -13		0 -15		0 -18			0 -20		
Hole H 7		+10 0	+12 0	+15 0	+18 0		+21 0		+25 0		+30 0		+35 0		+40 0			+46 0		
s 6		+20 +14	+27 +19	+32 +23	+39 +28		+48 +35		+59 +43		+72 +53	+78 +59	+93 +71	+101 +79	+117 +92	+125 +100	+133 +108	+151 +122	+159 +130	+169 +140
r 6	●	+16 +10	+23 +15	+28 +19	+34 +23		+41 +28		+50 +34		+60 +41	+62 +43	+73 +51	+76 +54	+88 +63	+90 +65	+93 +68	+106 +77	+109 +80	+113 +84
n 6	●	+10 +4	+16 +8	+19 +10	+23 +12		+28 +15		+33 +17		+39 +20		+45 +23		+52 +27			+60 +31		
m 6		+8 +2	+12 +4	+15 +6	+18 +7		+21 +8		+25 +9		+30 +11		+35 +13		+40 +15			+46 +17		
k 6		+6 0	+9 +1	+10 +1	+12 +1		+15 +2		+18 +2		+21 +2		+25 +3		+28 +3			+33 +4		
j 6		+4 -2	+6 -2	+7 -2	+8 -3		+9 -4		+11 -5		+12 -7		+13 -9		+14 -11			+16 -13		
h 6	●	0 -6	0 -8	0 -9	0 -11		0 -13		0 -16		0 -19		0 -22		0 -25			0 -29		
g 6		-2 -8	-4 -12	-5 -14	-6 -17		-7 -20		-9 -25		-10 -29		-12 -34		-14 -39			-15 -44		
r 7	●	-6 -16	-10 -22	-13 -28	-16 -34		-20 -41		-25 -50		-30 -60		-36 -71		-43 -83			-50 -96		
Hole H 8		+14 0	+18 0	+22 0	+27 0		+33 0		+39 0		+46 0		+54 0		+63 0			+72 0		
x 8	●	+34 +20	+46 +28	+56 +34	+67 +40	+72 +45	+87 +54	+97 +64	+119 +70	+136 +97	+168 +122	+192 +146	+232 +178	+264 +210	+311 +248	+343 +280	+373 +310	+422 +350	+457 +385	+497 +425
u 8	●	+32 +18	+41 +23	+50 +28	+60 +33	+60 +33	+74 +41	+81 +48	+99 +60	+109 +70	+133 +87	+148 +102	+178 +124	+198 +144	+233 +170	+253 +190	+273 +210	+308 +236	+330 +258	+356 +284
h 9	●	0 -25	0 -30	0 -36	0 -43		0 -52		0 -62		0 -74		0 -87		0 -100			0 -115		
f 7	●	-6 -16	-10 -22	-13 -28	-16 -34		-20 -41		-25 -50		-30 -60		-36 -71		-43 -83			-50 -96		
d 9		-20 -45	-30 -60	-40 -76	-50 -93		-65 -117		-80 -142		-100 -174		-120 -207		-145 -245			-170 -285		
Hole H 11		+60 0	+75 0	+90 0	+110 0		+130 0		+160 0		+190 0		+220 0		+250 0			+290 0		
h 9		0 -25	0 -30	0 -36	0 -43		0 -52		0 -62		0 -74		0 -87		0 -100			0 -115		
h 11		0 -60	0 -75	0 -90	0 -110		0 -130		0 -160		0 -190		0 -220		0 -250			0 -290		
d 9		-20 -45	-30 -60	-40 -76	-50 -93		-65 -117		-80 -142		-100 -174		-120 -207		-145 -245			-170 -285		
c 11		-60 -120	-70 -145	-80 -170	-95 -205		-110 -240		-120 -280	-130 -290	-140 -330	-150 -340	-170 -390	-180 -400	-200 -450	-210 -460	-230 -480	-240 -530	-260 -550	-280 -570
a 11		-270 -330	-270 -345	-280 -370	-290 -400		-300 -430		-310 -470	-320 -480	-340 -530	-360 -550	-380 -600	-410 -630	-460 -710	-520 -770	-580 -830	-660 -950	-740 -1030	-820 -1110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Information on deliveries

Electrical equipment (ElectroG)

Old equipment must be disposed of separately to household waste. Any (rechargeable) batteries and lamps (bulbs) that are not fixed in place must be removed and disposed of separately in an environmentally friendly manner. As a retailer, we are legally obligated to take back old equipment free of charge. It can be returned to us when it is not being used any more. It will then be disposed of properly or recycled in line with the legal regulations.

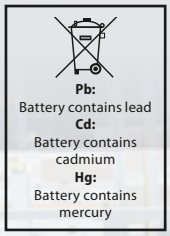
The icon with the bin crossed out indicates that the device must not be disposed of with household waste once it reaches the end of its service life, and instead must be disposed of at an approved collection or disposal point.

The end user themselves is responsible for deleting any personal data that may be on the old equipment intended for disposal.

We are registered with the German electronic waste recycling register "Stiftung **E**lektro-**A**ltgeräte **R**egister" (**EAR**) under registration number DE35368485.

Batteries and rechargeable batteries (BattG)

End users are legally obligated to return old (rechargeable) batteries. (Rechargeable) batteries can be returned to us free of charge after reaching the end of their service life. This ensures that you comply with your legal obligations and help to protect the environment. We will recycle the materials in an environmentally responsible manner. In order to prevent short circuits, mask off any exposed battery poles before returning the products.



The "Collect batteries separately" icon indicates that batteries must be disposed of at special recycling points rather than with general household waste. Batteries containing substances like mercury (Hg), cadmium (Cd) or lead (Pb) are also marked with a chemical identifier.

Like all other batteries, lithium batteries must never be disposed of with general rubbish.

German Packaging Act (VerpackG)

The German Packaging Act (VerpackG) obligates us to participate in a dual system for waste recycling and disposal, which is why we take part in the "Der Grüne Punkt" (The Green Dot) system. We are registered in the LUCID packaging register under number DE3394933750264.

According to the German Packaging Act (VerpackG), we are obligated to take back transport packaging free of charge pursuant to Art. 15 Paragraph 1 Sentence 1. This must be done at the location where it is actually handed over or in its immediate vicinity. If this cannot be done, you are able to send the packaging back to us.

We restrict the volume of packaging to whatever is really necessary and we promote re-usable materials.

Information on express delivery

For some products, we are prevented by law from offering express delivery (by air freight) outside Germany. These products are therefore indicated by a special note in the catalogue. Certain products cannot currently be delivered to some countries.



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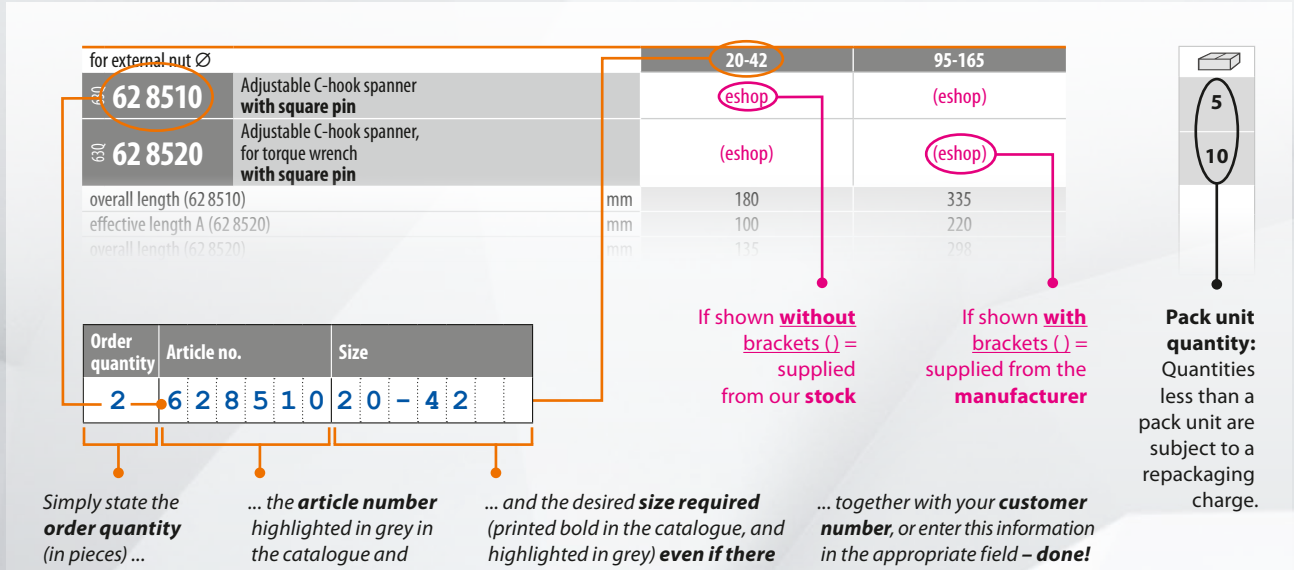

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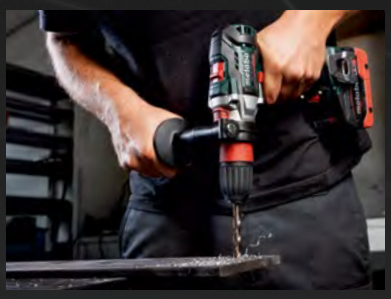



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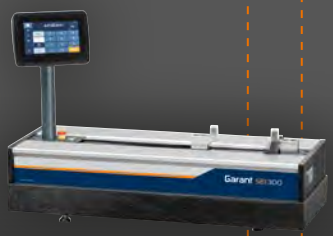

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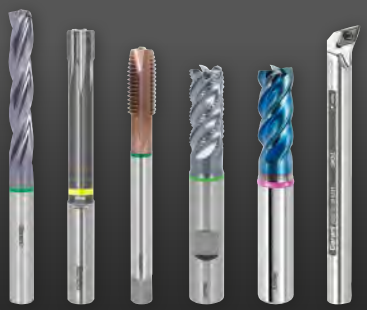

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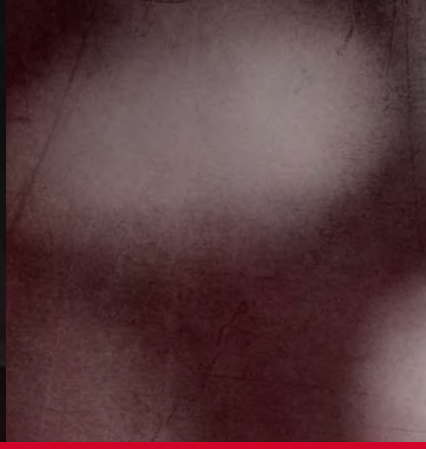

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90
100


1
2
1
2
15
20
25
30
40

WHEN IT COMES TO PURCHASING TOOLS AND EQUIPMENT, WE GIVE YOU PEACE OF MIND.

Your success builds on everything running smoothly in procurement. We ensure this happens with the highest delivery capability and perfect delivery accuracy.



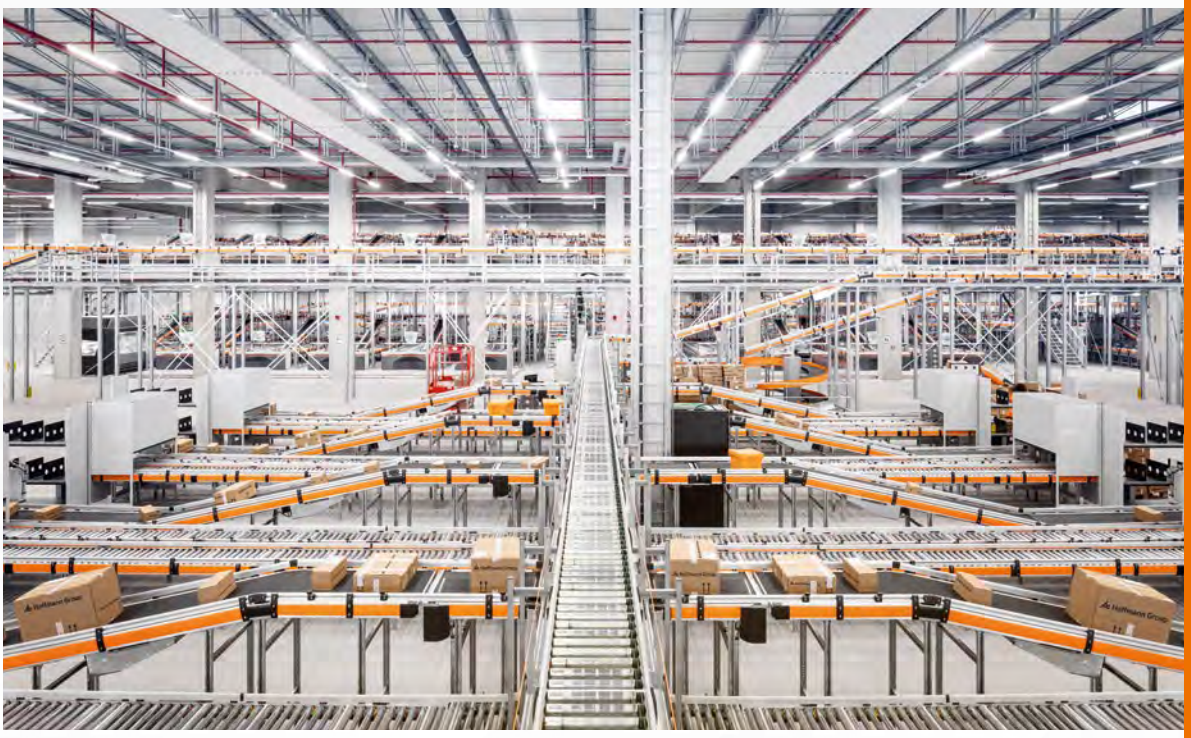
We believe delivery capability is a big deal.

Which is why we are building big, too



To be able to supply you with goods reliably in the future, we have created something big: LogisticCity – the most powerful tooling logistics solution.

LogisticCity is a crucial step towards networked digital logistics which fully exploits the technological opportunities available today. This reliably ensures our outstanding delivery performance for you on a long-term basis, even in times when we have to react constantly to changing market conditions.



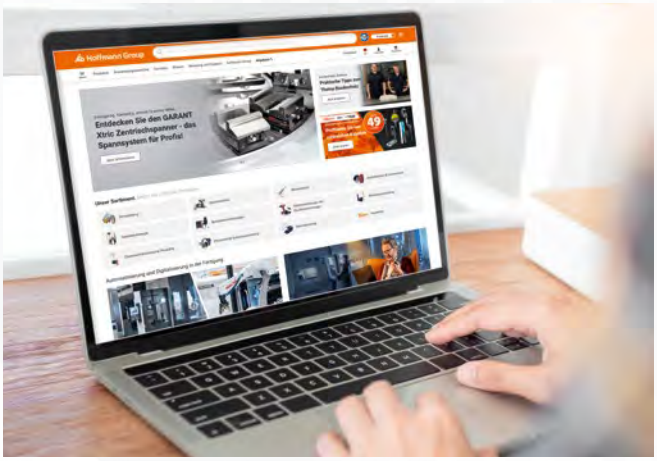
Hoffmann Group LogisticCity:
Taking logistics to the next level

- **100,000 m²** of logistics area, fully automatic warehouse with **500,000** container and **30,000** pallet spaces, **14 kilometres** of conveyor systems, **40,000 packages** a day.
- LogisticCity, **Europe's largest toollogistics centre** in Nuremberg.
- Numerous logistics sites **worldwide**.



SIMPLE, FAST AND RELIABLE PROCUREMENT.

Take advantage of our procurement solutions to optimise your processes. We will be happy to advise you and find tailored solutions perfectly matched to your needs.



Our eShop:
Intuitive, flexible and fast

The simple way to **order online** and **request quotations**.

All functions at a glance.
www.hoffmann-group.com



Electronic catalogues:
Tailor-made content and prices

Our range of **the very latest quality tools** is put together especially for you.

Find out more.



Catalogue browser app:
All products on your smartphone or tablet

Quick browsing and **effective** searching – wherever and whenever you like, even offline.

Download now.

Hand tools and measuring tools for every application.
Within our range of the best quality brands, we guarantee you the right tooling solution.

4



Page 18 – 295
Metrology

5



Page 296 – 461
Grinding and cutting

6



Page 462 – 731
Screwdrivers and storage containers

7



Page 732 – 859
Gripping, cutting and striking tools

8



Page 860 – 937
Hand and assembly tools

9



All workstations and storage products can be found in the separate Workstations and Storage Catalogue

Page 938 – 989
Workstations and storage

0



Page 990 – 1200
Power tools
Compressed-air technology
Technical chemistry
Factory equipment

Index from A – Z
ISO standard shafts and holes, table comparing Vickers / Brinell / Rockwell hardness and tensile strength

TORX screwdriving tools, widths across flats
slot-head blades / cross-head blades
torques

Fax templates, general terms and conditions, addresses – Hoffmann Group partners

From page 1201
Information and index

4 Innovations – Measurement technology

NEW

We use this symbol to tag new items in our catalogue range



Page **45**
GARANT digital workshop calipers HCT IP67



Page **63**
Mitutoyo digital external micrometer QuantuMike



Page **88**
Mahr digital 3-point internal micrometer



Page **88**
Mahr digital 3-point internal quick measuring device



Pages **105 /108**
Mahr digital dial indicators



Page **116**
Mahr digital lever dial indicator



Page **118**
TESA measured value display unit TWT40



Page **128**
GARANT Setting Bench with HCT function



Page **166**
BMI flexible steel rule, does not damage surfaces



Page **177**
GARANT pocket spirit level



Page **180**
GARANT small spirit level with magnet
GARANT electronic spirit level with clinometer



Page **186**
Bosch self-levelling cross-hair laser GLL



Page **202**
Fluke thermal imaging camera



Page **207**
Testo data logger **with Bluetooth®**



Page **243**
Hesse extendable inspection magnifier



Page **256**
Dino-Lite USB hand-held microscope



Pages **263 /264**
Renishaw stylus, ruby spherically ended cylinder and ceramic extensions



Page **281**
Mahr contour measuring station



Page **279**
Mitutoyo surface roughness measuring instrument SJ-220



Page **284**
Mitutoyo hardness testing machine HR-210



Page **292**
GARANT FootSwitch HCT



Page **28**
HOLEX
2D barcode scanner

Measurement technology

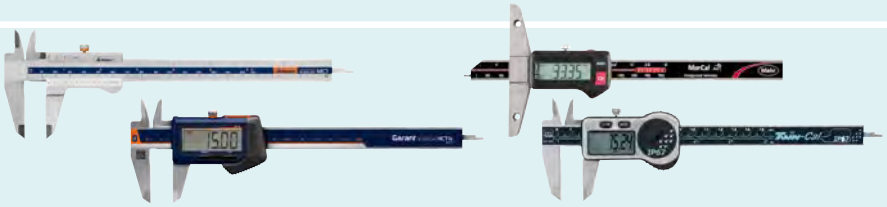
Mitutoyo Mahr TESA
You can obtain the whole catalogue range of these brands from the Hoffmann Group – just ask for it!

4



Information overview
Pictograms
Calibration service

02 19 – 28



Garant Mahr Mitutoyo TESA sylvac
Calipers, Depth gauges, Measuring tool sets

41 29 – 57



Garant Mahr Mitutoyo TESA Bowers Group
Micrometers, Internal micrometers, Universal measuring gauges

42 58 – 90

4



Garant Mahr Mitutoyo TESA Käfer Schwenk GIROD
Comparison scales, Dial indicators, Precision dial comparators, Bore gauges, Fast dial calipers

43 91 – 132



Garant NOGA Hörger & Gässler Mitutoyo TESA Schwenk
Magnetic stands, Bench centres, Scribing and height gauges, Vee blocks

44 133 – 155



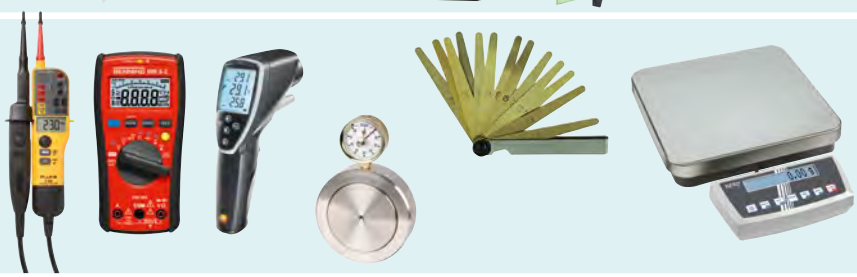
Garant PB Swiss Tools HOLEX
Squares, Protractors, Dividers, Scribers

45 156 – 163



Garant BMI STABILA BOSCH Leica Geosystems
Rulers, Measuring tapes, Spirit levels, Lasers, Stopwatches

46 164 – 188



BENNING FLUKE KERN HASSEROT testo ALLURIS
Rotational speed sensors, Voltage testers, Multimeters, Temperature gauges, Small gauges Force gauges, Scales

47 189 – 222



Garant Mitutoyo ARA KOBA Martin+Tschopp
Gauge blocks, Gauging pins, Gauges

48 223 – 240



Garant Mitutoyo Mahr RENISHAW Visi-n ZEISS
Magnifying glasses, Microscopes, Endoscopes, Projectors, Hardness testers, Surface roughness measuring tools

49 241 – 295

Overview of information / error limits

IP Index of Protection to EN 60529 (IP → Index of Protection)

1. Index

Degree of protection against foreign bodies and dust

IP **4..** Protected against penetration by solid foreign bodies ≥ 1mm.

IP **5..** Protection against harmful dust deposits (dust protected).

IP **6..** Protection against penetration by dust (dust-tight).

2. Index

Degree of protection against water

IP **..0** No protection.

IP **..2** Protection against dripping water at up to 15° angle to the casing.

IP **..4** Protection against sprayed water from all directions.

IP **..5** Protection against jets of water from all directions.

IP **..6** Protection against strong jets of water from all directions.

IP **..7** Protection against intermittent immersion in water.

IP 42

IP 54

IP 67

Error limits to EC Directives 2004/22

Folding rules / steel rules / tape measures												EG I	EG II	EG III
Length	**m**	**1**	**2**	**3**	**4**	**5**	**8**	**10**	**20**	**30**	**50**			
Tolerance EC I	**mm**	± 0.2	± 0.3	± 0.4	± 0.5	± 0.6	± 0.9	± 1.1	± 2.1	± 3.1	± 5.1			
Tolerance EC II	**mm**	± 0.5	± 0.7	± 0.9	± 1.1	± 1.3	± 1.9	± 2.3	± 4.3	± 6.3	± 10.3			
Tolerance EC III	**mm**	± 1	± 1.4	± 1.8	± 2.2	± 2.6	± 3.8	± 4.6	± 8.6	± 12.6	±20.6			

Thickness tolerances according to work standard for feeler gauges or feeler gauge shim strips

Nominal thickness	**mm**	0.000– 0.024	0.025– 0.039	0.040– 0.062	0.063– 0.124	0.125– 0.159	0.160– 0.199	0.200– 0.249	0.250– 0.314	0.315– 0.389	0.400– 0.499	0.500– 0.629	0.630– 0.799	0.800– 0.999	1.000– 1.249
Tolerance T2	**µm**	± 2	± 3	± 4	± 5	± 6	± 7	± 8	± 9	± 11	± 12	± 14	± 17	± 19	± 24
Tolerance T3	**µm**	± 1.5	± 2	± 3	± 4	± 5	± 5	± 6	± 7	± 8	± 9	± 10	± 12	± 13	± 17

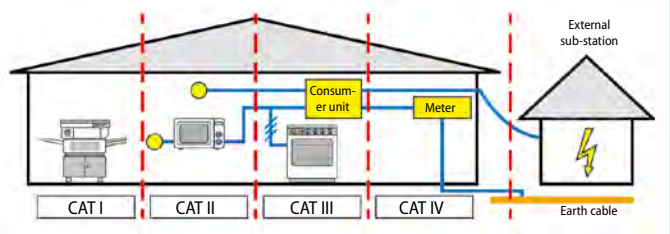
Measurement categories CAT I to CAT IV

CAT I: Applicable to measurements on circuits that are not directly connected to the mains (e.g. especially protected devices).

CAT II: Applicable to measurements on circuits that are directly connected to the low voltage mains (e.g. household devices)

CAT III: Applicable to measurements during installation work in buildings (e.g. consumer units, circuits, sockets, switches).

CAT IV: Applicable to measurements during installation work on the incoming low voltage mains (e.g. meters, main connections, main fuses).

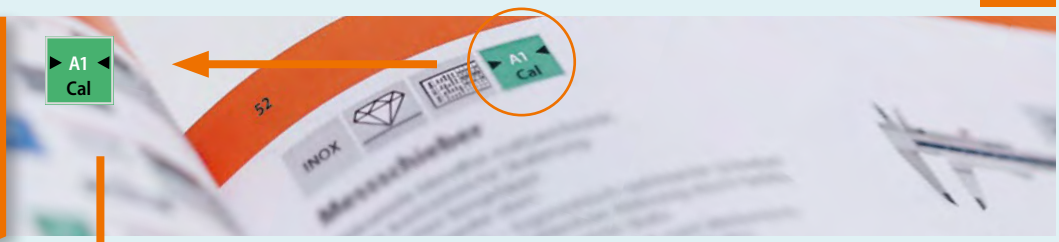


Pictograms

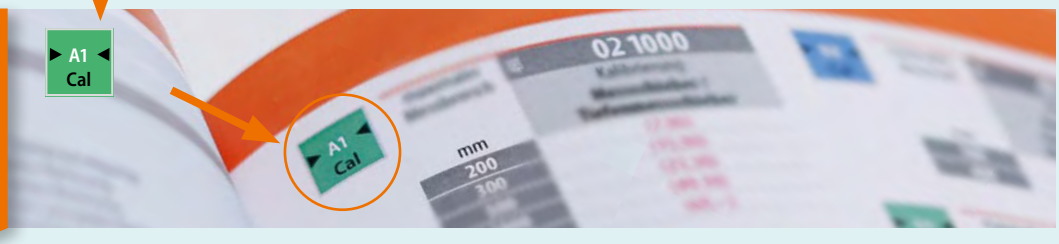
Calibration service	▶ A1 ◀ Cal	▶ A2 ◀ Cal …	▶ B8 ◀ Cal …	Assignment of **new goods calibration** to the individual products and prices.			
Standard	DIN 862	Accuracy and version according to DIN.	Norm	Accuracy and version to manufacturer's standard.	EG II	Accuracy to EC directive.
	ISO 13385	Accuracy and design according to ISO.				
Material	INOX	Stainless steel.		All parts hardened.		
Version	mm / Inch	Switchable mm/inch or mm / inch graduations.	Absolut- System	Measurement system with absolute scale.	Reference Lock	With **Mahr** Reference-Lock system.
		Scope of supply including table of threads.	IP 67	IP Index of protection (Index of Protection).	AOS Absolut	With **Mitutoyo** Advanced Onsite Sensor system.
Barrel	0 90	Micrometer with large barrel, 1/100 graduations. Pitch 1 mm per revolution.			0 45	Micrometer with 1/50 graduations. Pitch 0.5 mm per revolution
Depth gauge	Ø 1,5 mm	Rod type depth gauge with ∅ 1.5 mm.	3,7×1,4	Square depth gauge, with cross-section specification.		Square depth gauge, without cross-section specification.
Data interface	Digimatic	Digimatic interface.	RS232C	RS232C interface.		USB interface.
		Bluetooth interface.	i-wi	With **Mahr** i-wi radio system.	TLC	With **TESA** Link Connector.
	HCT	Compatible with the Hoffmann Group Connected Tools (HCT) app	HCT	Compatible with the HCT Windows app.	HCT	Compatible with the HCT mobile app.
Packaging / scope of supply		Wallet		Sturdy box (wood, plastic or aluminium).		Manufacturer's test certificate, traceable to national standards, included in delivery.

Ordering new items incl. calibration

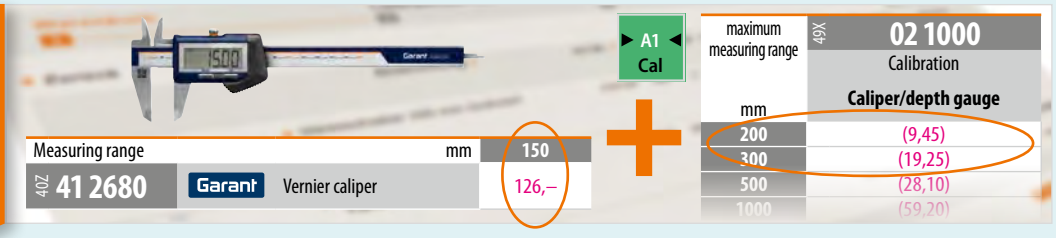
1. Catalogue
Selecting a measuring tool in the Hoffmann Group catalogue



2. Calibration
Selecting the required calibration.



3. Ordering
Ordering measuring tools AND calibration.



4. Laboratory
The latest devices, experienced employees and lean processes ensure perfect calibration of your valuable measuring devices.



5. Dispatch
Your measuring tool is securely packed and sent to you.



A1 Cal	**Green:** Processing time from receipt of order approx. 10 **working days.**
I1 Cal	**Blue:** Processing time from receipt of order approx. 15 **working days.**
i Cal	Prices on request.

The new-product calibrations quoted are performed to the applicable standards/guidelines as factory calibrations (e.g. VDI / VDE / DGQ 2618 onwards).
Accredited (DAkkS) calibrations: Tracing back to national standards guarantees international validity and recognition.
All new-product calibrations are calibrated according to the standard. Other options can also be offered if required.

Please note this information when ordering new items including calibration.

Ordering a measuring tool with additional labelling (if desired):
→ Order service No. 018940 and state the desired identification number.

Calibrated measuring tools are supplied with inspection stickers:
Inspection sticker with calibration date → Date of the calibration that has been carried out.
Inspection sticker with recalibration date → state the desired inspection cycle.

Calibration service

A1 Cal



maximum measuring range	49X 02 1000	49X 02 1010
	Calibration	Accredited calibration (e.g. DAkkS)
mm	Caliper/depth gauge	
200	(eShop)	(eShop)
300	(eShop)	(eShop)
500	(eShop)	(eShop)
1000	(eShop)	(eShop)
2000	(eShop)	–
3000	(eShop)	–

A2 Cal



maximum measuring range	49X 02 1220	49X 02 1230
	Calibration	Accredited calibration (e.g. DAkkS)
mm	Vernier hook depth gauge	
200	(eShop)	(eShop)
300	(eShop)	(eShop)
500	(eShop)	(eShop)
1000	(eShop)	(eShop)

A3 Cal



maximum measuring range	49X 02 1400
	Calibration
mm	Universal caliper
600	(eShop)
2500	(eShop)

B1 Cal



Note: For calibration of an external micrometer including setting dimension, please use calibration B2 No. 022040 or 022050.

maximum measuring range	49X 02 2000	49X 02 2010
	Calibration	Accredited calibration (e.g. DAkkS)
mm	External micrometer without setting dimension	
25	(eShop)	–
100	(eShop)	(eShop)
200	(eShop)	(eShop)
300	(eShop)	–
400	(eShop)	–
500	–	(eShop)

B2 Cal



Note: Calibration of external micrometer including setting dimension.

maximum measuring range	49X 02 2040	49X 02 2050
	Calibration	Accredited calibration (e.g. DAkkS)
mm	External micrometer including setting dimension	
100	(eShop)	(eShop)
200	(eShop)	(eShop)
300	(eShop)	–
400	(eShop)	–
500	–	(eShop)

B3 Cal



maximum measuring range	49X 02 2280	49X 02 2290
	Calibration	Accredited calibration (e.g. DAkkS)
mm	Micrometer head	
25	(eShop)	–
50	–	(eShop)
100	(eShop)	–

B4 Cal



Note: Up to spindle travel 25 mm.

maximum measuring range	49X 02 2360
	Calibration
mm	Internal micrometer
50	(eShop)
75	(eShop)
100	(eShop)

B5 Cal



maximum measuring range	49X 02 2460	49X 02 2470
	Calibration	Accredited calibration (e.g. DAkkS)
mm	Extension for internal micrometer	
100	(eShop)	–
300	(eShop)	(eShop)

B6 Cal



Note:
02 2500 Size 100R/2510 Size 200R – Calibration of 3-point internal micrometer No. 428990 including setting ring.

maximum measuring range	49X 02 2500	49X 02 2510
	Calibration	Accredited calibration (e.g. DAkkS)
mm	3-point internal micrometer with/without setting ring	
20	(eShop)	–
50	(eShop)	–
100	(eShop)	–
200	(eShop)	(eShop)
300	(eShop)	–
100R	(eShop)	–
200R	–	(eShop)

B7 Cal



Type	49X 02 2340
	Calibration
	Pair of Vee and cone anvils
K	(eShop)

B8 Cal



Note: Calibration of thread flanks external micrometer including setting dimension.

maximum nominal size	49X 02 2320
	Calibration
mm	Micrometer for thread flank measurement including setting standard
100	(eShop)
400	(eShop)

B9 Cal



maximum measuring range	49X 02 2100
	Calibration
mm	Indicator micrometer
25	(eShop)
200	(eShop)

Calibration service 2

B13 Cal



maximum nominal size	49X 02 2080	49X 02 2090
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Micrometer standard for external micrometer**	
100	(eShop)	(eShop)

B14 Cal



maximum measuring range	49X 02 2400	49X 02 2410
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**External micrometer with dial comparator**	
25	(eShop)	(eShop)
100	(eShop)	(eShop)
200	(eShop)	(eShop)

C1 Cal



maximum measuring span	49X 02 3000	49X 02 3010
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Dial indicator analogue 0.01 and digital 0.01 / 0.001**	
3	(eShop)	–
10	(eShop)	–
12,5	(eShop)	(eShop)
30	(eShop)	–
50	(eShop)	–
100	(eShop)	(eShop)

C2 Cal



maximum measuring span	49X 02 3020
	Calibration
mm	**Dial indicator analogue 0.001**
5	(eShop)

C3 Cal



Type	49X 02 3180	49X 02 3190
	Calibration	Accredited calibration (e.g. DAkkS)
	Precision dial comparator	
FZ	(eShop)	(eShop)

C4 Cal



maximum measuring range	49X 02 3210	49X 02 3220
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Precision bore gauge (types B + C)**	
60	(eShop)	(eShop)
160	(eShop)	–
800	(eShop)	–

C5 Cal



Type	49X 02 3330	49X 02 3340
	Calibration	Accredited calibration (e.g. DAkkS)
	Lever dial indicator	
ANALOG	(eShop)	(eShop)
DIGITAL	(eShop)	–

C6 Cal



maximum measuring range	49X 02 3420	49X 02 3430
	Calibration	Accredited calibration (e.g. DAkkS)
	Dial thickness gauge	
30	–	(eShop)
200	(eShop)	–

C7 Cal



Type	49X 02 3450	49X 02 3460
	Calibration	Accredited calibration (e.g. DAkkS)
	External / internal quick caliper	
S	(eShop)	(eShop)

C8 Cal



Type	49X 02 3360
	Calibration
	Measurement head
B	(eShop)

D1 Cal



maximum table size	49X 02 4580
	Calibration
mm	**Measuring table**
400×400	(eShop)

E1 Cal



maximum measuring range	49X 02 4630	49X 02 4640
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Height gauge / height scriber**	
300	(eShop)	(eShop)
1000	(eShop)	(eShop)

E2 Cal



maximum measuring range	49X 02 4000	49X 02 4010
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Digital height gauge**	
400	(eShop)	(eShop)
800	(eShop)	(eShop)
1000	(eShop)	(eShop)

F1 Cal



maximum arm length	49X 02 5000	49X 02 5010
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Stock, try, and bevel edge squares**	
100	(eShop)	–
300	(eShop)	–
750	(eShop)	(eShop)

F3 Cal



Type	49X 02 5810
	Calibration
	Protractor
GRAD	(eShop)

F4 Cal



Type	49X 02 5710
	Calibration
	Universal protractor
UNI	(eShop)

F5 Cal



maximum arm length	49X 02 5850
	Calibration
	Centring, angle, and mitre squares
300	(eShop)

Calibration service 3

▶ F6 ◀ Cal



maximum length	02 6000	02 6010
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Straight edge**	
200	(eShop)	–
500	(eShop)	(eShop)

▶ F7 ◀ Cal



maximum length	02 6080	02 6090
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Flat straight edge**	
500	(eShop)	–
750	–	(eShop)
1000	(eShop)	–
2000	(eShop)	–
3000	(eShop)	–

▶ F8 ◀ Cal



maximum length	02 6200
	Calibration
mm	**Steel rule**
500	(eShop)
1000	(eShop)
2000	(eShop)

▶ F10 ◀ Cal



Note: Width ≥ 25 mm and 2 scales.

maximum length	02 6200
	Calibration
mm	**Steel rule**
500/2	(eShop)
1000/2	(eShop)
2000/2	(eShop)
3000/2	(eShop)

▶ G1 ◀ Cal



Note: Size 2/2 – 10/2 width ≥ 25 mm.

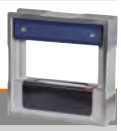
maximum length	02 6240	02 6250
	Calibration	Accredited calibration (e.g. DAkkS)
m	**Tape measure**	
2	(eShop)	–
5	(eShop)	(eShop)
5/2	(eShop)	–
10	(eShop)	–
10/2	(eShop)	–
50	(eShop)	(eShop)

▶ G2 ◀ Cal



maximum length	02 6280
	Calibration
mm	**Circumference tape measure**
1000	(eShop)
3000	(eShop)
6000	(eShop)

▶ H1 ◀ Cal



Accuracy	02 6600
	Calibration
mm/m	**Square frame level**
0,02	(eShop)
0,10	(eShop)

▶ H2 ◀ Cal



Accuracy	02 6620
	Calibration
mm/m	**Engineer's level / electronic clinometer**
0,02	(eShop)
0,10	(eShop)
0,40	(eShop)

▶ I1 ◀ Cal



Note:
02 7160 – Accredited calibration (e.g. DAkkS) up to measuring range 1000 volts.

Type	02 7120	02 7160
	Calibration	Accredited calibration (e.g. DAkkS)
	Voltage tester	
S	(eShop)	(eShop)

▶ I2 ◀ Cal



Type	02 7900	02 7910
	Calibration	Accredited calibration (e.g. DAkkS)
	Tachometer / stroboscope	**Rotational speed sensor**
D	(eShop)	(eShop)

▶ I3 ◀ Cal



Number of decimal places	02 7000	02 7010
	Calibration	Accredited calibration (e.g. DAkkS)
	Digital multimeter	
3	(eShop)	(eShop)

▶ I4 ◀ Cal



Type	02 7050	02 7060
	Calibration	Accredited calibration (e.g. DAkkS)
	Current clamp	
D	(eShop)	(eShop)

▶ I5 ◀ Cal



Type	02 7600
	Calibration
	Infra-red temperature measuring device
A	(eShop)

▶ I6 ◀ Cal



Type	02 7660	02 7670
	Calibration	Accredited calibration (e.g. DAkkS)
	Thermo-hygrometer	
A	(eShop)	(eShop)

▶ I7 ◀ Cal



Type	02 7520	02 7540
	Calibration	Accredited calibration (e.g. DAkkS)
	Temperature sensor with / without display	
A	(eShop)	(eShop)

▶ I8 ◀ Cal



Number of inlets	02 7500	02 7510
	Calibration	Accredited calibration (e.g. DAkkS)
	Temperature display unit	
1	(eShop)	(eShop)

Calibration service 4



I9 Cal

Note: For an accredited calibration (e.g. DAkkS), please use No. 027670.

Type	49X 02 7650
	Calibration
	Temperature measuring device, room temperature
B	(eSHop)



I10 Cal

Type	49X 02 7140
	Calibration
	Test device VDE 0701 / 0702
S	(eSHop)



I11 Cal

Type	49X 02 7150
	Calibration
	Insulation resistance meter
S	(eSHop)



I12 Cal

Type	49X 02 9120
	Calibration
	Noise level meter
S	(eSHop)



K1 Cal

Type	49X 02 7730
	Calibration
	Spring balance
F	(eSHop)



K2 Cal

maximum weighing range	49X 02 7700	49X 02 7710
	Calibration	Accredited calibration (e.g. DAkkS)
kg	**Scales**	
50	(eSHop)	(eSHop)
100	(eSHop)	–
150	(eSHop)	–
180	–	(eSHop)



L2 Cal

Note: Calibration according to option 3 (visual inspection. 2 measurement cycles (5-point measurement)>100 mm: Centre dimension). From 1 mm.

maximum length	49X 02 8060	49X 02 8140	49X 02 8150
	Calibration	Accredited calibration (e.g. DAkkS)	
mm	**Gauge block steel / ceramic**	**Steel gauge block**	**Ceramic gauge block**
100	(eSHop)	(eSHop)	(eSHop)
150	(eSHop)	(eSHop)	–
200	(eSHop)	–	–
400	(eSHop)	–	–



L3 Cal

maximum ∅	49X 02 8920
	Calibration
mm	**Optical flats**
60	(eSHop)



L5 Cal

maximum ∅	49X 02 8240	49X 02 8260
	Calibration	Accredited calibration (e.g. DAkkS)
	Test pin	
20	(eSHop)	(eSHop)



L6 Cal

maximum ∅	49X 02 8300	49X 02 8340
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Plug gauge**	
20	(eSHop)	–
60	(eSHop)	(eSHop)
200	(eSHop)	(eSHop)



L7 Cal

maximum ∅	49X 02 8400	49X 02 8470
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Setting ring**	
50	(eSHop)	(eSHop)
100	(eSHop)	–
200	–	(eSHop)
500	(eSHop)	–



L8 Cal

maximum nominal size	49X 02 8700	49X 02 8710
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**Limit gap gauge**	
50	(eSHop)	–
5-100	–	(eSHop)
160	–	(eSHop)
200	(eSHop)	–



L9 Cal

Type	49X 02 8730
	Calibration
	adjustable snap gauge
RL	(eSHop)



L10 Cal

maximum ∅	49X 02 8550	49X 02 8590
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**"Go" / "No Go" thread plug gauge**	
3	(eSHop)	–
20	(eSHop)	–
60	(eSHop)	–
90	–	(eSHop)



L11 Cal

maximum ∅	49X 02 8500	49X 02 8540
	Calibration	Accredited calibration (e.g. DAkkS)
mm	**"Go" / "No Go" thread plug gauge**	
60	(eSHop)	–
90	–	(eSHop)
100	(eSHop)	–
300	(eSHop)	–

Calibration service 5

L12 Cal



Note:
02 8640 – Accredited calibration only possible **from** ∅ 3 mm.

maximum ∅ mm	49X 02 8600 Calibration	49X 02 8640 Accredited calibration (e.g. DAkkS)
	Thread ring gauge	
3	(eShop)	–
20	(eShop)	–
60	(eShop)	–
100	–	(eShop)

L13 Cal



Type	49X 02 8680 Calibration
	Setting master
E	(eShop)

L14 Cal



maximum ∅ mm	49X 02 8820 Calibration	49X 02 8830 Accredited calibration (e.g. DAkkS)
	"Go" / "No Go" taper thread plug gauge NPT	
90	–	(eShop)
100	(eShop)	–

L15 Cal

Note:
02 8840 – From ∅ 10 mm.



maximum ∅ mm	49X 02 8840 Calibration	49X 02 8850 Accredited calibration (e.g. DAkkS)
	"Go" / "No Go" taper thread ring gauge NPT	
60	(eShop)	–
100	–	(eShop)

L16 Cal



Type	49X 02 8900 Calibration	49X 02 8910 Accredited calibration (e.g. DAkkS)
	Thread measurement wire	
GMD	(eShop)	(eShop)

N1 Cal



Type	49X 02 9100 Calibration
	Stopwatch
U	(eShop)

O1 Cal



Note: Clockwise calibration
02 0020 – Accredited calibration for measuring range 1 – 1000 Nm.

maximum torque Nm	49X 02 0010 Calibration **Torque wrench**	49X 02 0020 Accredited calibration (e.g. DAkkS) **Torque wrench**	49X 02 0200 Calibration **Torque screwdriver**
0,04-20	–	–	(eShop)
400	(eShop)	–	–
1000	(eShop)	(eShop)	–
2000	(eShop)	–	–

O3 Cal



Note: Clockwise / anti-clockwise calibration.
02 0040 – Accredited calibration for measuring range 1 – 1000 Nm.

maximum torque Nm	49X 02 0030 Calibration **Torque wrench, clockwise / anti-clockwise**	49X 02 0040 Accredited calibration (e.g. DAkkS) **Torque wrench, clockwise / anti-clockwise**	49X 02 0260 Calibration **Torque screwdriver, clockwise / anti-clockwise**
0,04-20/2	–	–	(eShop)
400/2	(eShop)	–	–
1000/2	(eShop)	(eShop)	–

O4 Cal



Note:
Size 0,1-1100/2 – Accredited calibration for measuring range 0.1 – 1100 Nm.
02 0120/0130 – Clockwise calibration.
02 0140/0150 – Clockwise / anti-clockwise calibration.

Type	49X 02 0120 Calibration, clockwise	49X 02 0130 Accredited calibration (e.g. DAkkS) clockwise	49X 02 0140 Calibration clockwise / anti-clockwise	49X 02 0150 Accredited calibration (e.g. DAkkS) clockwise / anti-clockwise
	Torque analyser / sensor			
400	(eShop)	–	–	–
1000	(eShop)	–	–	–
0,1-1100	–	(eShop)	–	–
400/2	–	–	(eShop)	–
1000/2	–	–	(eShop)	–
0,1-1100/2	–	–	–	(eShop)

O5 Cal



Note: Only order together with calibration No. 020030.

Type	49X 02 0070 Calibration
	Angle of rotation
W	(eShop)

O6 Cal



Note: **Please provide the setting value.**

Type	49X 02 0080 Adjustment
	Torque wrench without scale
SET	(eShop)

O7 Cal



Note: Including adjustment. **Please provide the setting value.**

maximum torque Nm	49X 02 0090 Calibration and adjustment **Torque wrench without scale**	49X 02 0170 Calibration and adjustment **Torque screwdriver without scale**	49X 02 0190 Accredited calibration (e.g. DAkkS) and adjustment **Torque wrench without scale**
0,04-20	–	(eShop)	–
400	(eShop)	–	–
1000	(eShop)	–	(eShop)
2000	(eShop)	–	–

Calibration service 6



P1 Cal

Type	49X 02 9000	49X 02 9010
	Calibration	Accredited calibration (e.g. DAkkS)
	Shore A+D hardness tester	
H	(eShop)	(eShop)



Q1 Cal

Type	49X 02 9200
	Calibration
	Roughness measuring instrument
R	(eShop)



Q2 Cal

Type	49X 02 9220
	Calibration
	Roughness standard
R	(eShop)



S1 Cal

Set contents	49X 02 0400
	Calibration
	Measuring tool set
2	(eShop)
3	(eShop)
6	(eShop)



S2 Cal

Note: Supplied with micrometer standards for calibration.

Measuring range mm	49X 02 0430	49X 02 0440
	Calibration	Accredited calibration (e.g. DAkkS)
	External micrometer set	
0-50	(eShop)	(eShop)
0-100	(eShop)	(eShop)
0-150	(eShop)	(eShop)
100-200	(eShop)	(eShop)
150-300	(eShop)	(eShop)



S3 Cal

Note: Supplied with micrometer standards for calibration.

Measuring range mm	49X 02 0450
	Calibration
	External micrometers with extensions
0-150	(eShop)
25-150	(eShop)
100-200	(eShop)
150-300	(eShop)
200-300	(eShop)
300-400	(eShop)
400-500	(eShop)
500-600	(eShop)
600-700	(eShop)
700-800	(eShop)
800-900	(eShop)
900-1000	(eShop)



S4 Cal

Measuring range mm	49X 02 0480	49X 02 0490
	Calibration	Accredited calibration (e.g. DAkkS)
	Internal micrometer set	
50-150	(eShop)	(eShop)
50-300	(eShop)	(eShop)
50-500	(eShop)	(eShop)
50-1000	(eShop)	(eShop)
50-1500	(eShop)	–
100-500	(eShop)	(eShop)
100-900	(eShop)	(eShop)



S5 Cal

Note: Calibration according to option 2 (gauge blocks (visual inspection, flatness testing with optical flat. 2 measurement cycles (5-point measurement)>100 mm; centre dimension) and smooth setting rings (diameter determination and determination of the deviation from roundness)).

Set contents	49X 02 0510
	Calibration
	Test set
5	(eShop)



S6 Cal

Note: Supplied with setting rings for calibration.

Measuring range mm	49X 02 0550
	Calibration
	Internal micrometer set
2-3	(eShop)
2-6	(eShop)
3-6	(eShop)
3,5-6,5	(eShop)
6-10	(eShop)
6-12	(eShop)
10-20	(eShop)
12-20	(eShop)
12-25	(eShop)

Measuring range mm	49X 02 0550
	Calibration
	Internal micrometer set
20-50	(eShop)
25-50	(eShop)
40-100	(eShop)
50-75	(eShop)
50-100	(eShop)
75-100	(eShop)
100-150	(eShop)
100-200	(eShop)
150-200	(eShop)



S9 Cal

Measuring range mm	49X 02 0580
	Calibration
	Internal precision bore gauge set
18-150	(eShop)
50-230	(eShop)



S12 Cal

Measuring range mm	49X 02 0650	49X 02 0660
	Calibration	Accredited calibration (e.g. DAkkS)
	"Go" / "No Go" Plug gauge set	
3-12	(eShop)	(eShop)



S13 Cal

Set contents	49X 02 0700	49X 02 0710
	Calibration	Accredited calibration (e.g. DAkkS)
	Thread "Go" / "No Go" plug gauge set	
M3-M12	(eShop)	(eShop)



S14 Cal

Set contents	49X 02 0740	49X 02 0750
	Calibration	Accredited calibration (e.g. DAkkS)
	Thread ring gauge set	
M3-M12	(eShop)	(eShop)

Calibration service 7

▶ S15 ◀ Cal



Measuring range mm	49X 02 0780 Calibration **Depth micrometer set**
0-100	(eShop)
0-150	(eShop)
0-300	(eShop)

▶ S16 ◀ Cal



Type	49X 02 0800 Calibration **Measuring tool set**
SET	(eShop)

▶ S17 ◀ Cal



Note: Size 10 including calibration optical flat.
Calibration according to option 3.

Set contents	49X 02 0850 Calibration **Gauge block set, steel / ceramic**	49X 02 0860 Accredited calibration (e.g. DAkkS) **Gauge block set, steel**	49X 02 0870 Accredited calibration (e.g. DAkkS) **Gauge block set, ceramic**
8	(eShop)	(eShop)	–
10	(eShop)	(eShop)	(eShop)
32	(eShop)	(eShop)	(eShop)
47	(eShop)	(eShop)	(eShop)
87	(eShop)	(eShop)	(eShop)
103	(eShop)	(eShop)	–

▶ S18 ◀ Cal



Note: Calibration according to option 1.

Set contents	49X 02 0880 Calibration **Test pin set**	49X 02 0890 Accredited calibration (e.g. DAkkS) **Test pin set**
41	(eShop)	(eShop)
45	(eShop)	(eShop)
50	(eShop)	(eShop)
81	(eShop)	(eShop)
91	(eShop)	(eShop)
100	(eShop)	(eShop)
101	(eShop)	(eShop)

Note: Laser marking not available for gauge blocks.
Gauging pins from ∅ 3 mm.

Quantity	49X 02 9900 Laser marking of ID numbers/texts
1	(eShop)



Note: Other inspection stickers on request.

Type	49X 41 0006 Inspection sticker ∅ 10 mm **32 pieces**	49X 41 0008 Inspection sticker ∅ 25 mm **15 pieces**
2025	eShop	eShop
2026	eShop	eShop
2027	eShop	eShop
2028	eShop	eShop
2029	eShop	eShop
2030	eShop	eShop

HOLEX 2D barcode scanner

1D and 2D barcode scanner.
Scanner very quickly decodes many types of 1D and 2D barcodes, including QR, Data Matrix, PDF417, UPC/EAN Add on 2 or 5, Code 128, Code32/Code39 etc.
Easy and quick connection via USB interface through plug & play.
No driver necessary. Multiple scanning modes can be programmed.

Size C – Cable connection

Size W – Wireless barcode scanner with built-in memory of more than 2600 codes for scanning without a connection. 2.4 GHz wireless and USB cable connection. Rechargeable battery with large capacity.





Type		C	W
42L 49 8805	Barcode scanner 1D and 2D **cable connection**	eShop	eShop
Length	mm	161	
Width	mm	66	
Height	mm	98	
Cable length	m	1.5	–

Adjustable holder for barcode scanner.
Flexible support arm, easily change the angle and position of your scanner.
Suitable for: 498805

Type		HOLDER
42L 49 8809	Holder for barcode scanner	eShop



49 8809_Holder

Precise as always, easier than ever: The Hoffmann Group Connected Tools.

The state-of-the-art Bluetooth-capable devices from the Hoffmann Group Connected Tools family are easy to use and make life easier in many ways.

Hoffmann Group Connected Tools: Precise, simple, error-free.

- **Greater freedom of movement:** No messy data transmission cables.
- **Very high reliability:** No read errors or transmission errors.
- **Save time thanks to simple documentation:** At the push of a button, the measuring result is transmitted directly to your application (such as Excel or Word) or you export the test report directly via the app as a .csv file to your database.



1. Measurement is performed.
2. Measured data is saved and evaluated in the HCT app.
3. Measured data can be sent as a.csv file.

Data transmission can be performed via **HID** (Human Interface Device) or the **HCT app**!

All tools can also be used without the HCT app!

All products in the HCT family are indicated by this symbol.
More information on the tools on the next few pages.



65 5010



65 5025



42 1575



41 5371

41 2781



41 8685



41 2790



65 4410



49 8998
GARANT Dongle:
Radio receiver for connecting HCT tools to a PC without software.

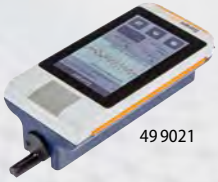


43 4336

43 4008



49 8997
GARANT Footswitch:
Foot switch for non-contact transmission of the measured value.



49 9021

43 9900

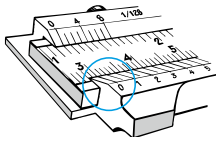
ISO 13385 | S/STL | ▶ A1 ◀ Cal

Vernier calipers

Satin chromium plated anti-glare scales.
Fine, high-contrast scale.
Locking screw at the top.

41 0100 – Ergonomically optimised caliper.
Size 300 – Without depth gauge.
41 0105 – Ergonomically optimised caliper. Better reading due to a colour-contrast scale.
41 0100–0251 – Precision lapped measuring faces.
41 0300 Size 150HM – With **carbide** tipped jaws.
41 0300/2101 – Precision ground measuring faces.
41 0100 Size 150; 200 – Better reading due to a colour-contrast scale.
41 0251/0300 – **Without** inch graduation.

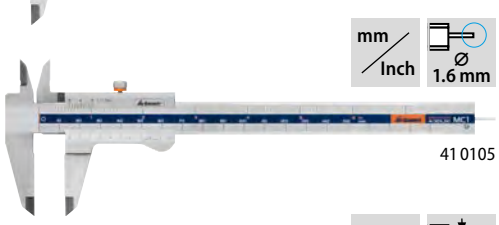
Optional extras: Thread table No. 412180 for caliper back.



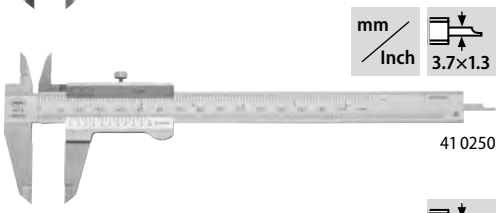
Bevelled vernier.



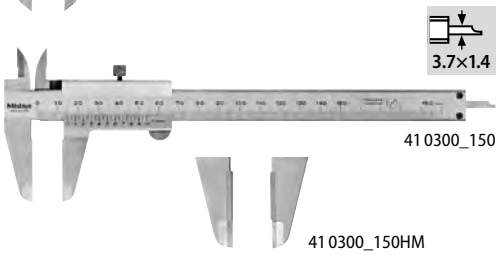
41 0100_150



41 0105



41 0250



41 0300_150

41 0300_150HM



41 2101_150

Measuring range		mm	150	150HM	200	300
40Z 41 0100	Garant Vernier caliper		eShop ■	–	eShop	eShop
40Z 41 0105	Garant Vernier caliper **Vernier 1/50**		eShop	–	eShop	–
43A 41 0250	Mahr Vernier caliper		eShop ■	–	–	–
43A 41 0251	Mahr Vernier caliper **Vernier 1/50**		eShop	–	eShop	eShop
44A 41 0300	Mitutoyo Vernier caliper		eShop	eShop	–	–
44A 41 2101	Mitutoyo Vernier caliper		eShop ■	–	eShop	eShop
Scale divisions (41 0100, 41 0250, 41 0300, 41 2101)		mm	0.05			
Scale divisions (41 0105, 41 0251)		mm	0.02	–	0.02	0.02
Graduation (41 0100, 41 0105, 41 0250, 41 2101)		in	1/128	–	1/128	1/128
Measurement deviation E MPE (41 0100, 41 0250, 41 0300)		mm	± 0.05			
Measurement deviation E MPE (41 0105)		mm	±0.03	–	±0.03	–
Measurement deviation E MPE (41 0251)		mm	± 0.04	–	± 0.04	± 0.04
Measurement deviation E MPE (41 2101)		mm	± 0.05	–	± 0.05	± 0.08
Jaw length		mm	40	40	50	64

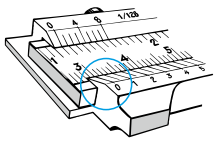
ISO 13385 | S/STL | ▶ A1 ◀ Cal

HOLEX Vernier calipers

Satin chromium plated anti-glare reading parts.
Locking screw at the top.

41 0200 Size 100 – Without inch graduation.
41 0405 – Fine, high-contrast scale.
Precision lapped measuring faces.
For left-handers.

Supplied with: Including thread table No. 412180 for caliper back.



Bevelled vernier.



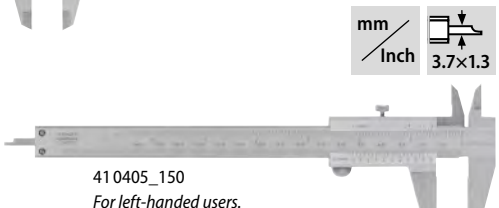
41 0200_100



41 0200_150



41 0205_150



41 0405_150
For left-handed users.

Measuring range		mm	100	150	200	300
41Z 41 0200	Vernier caliper **Vernier 1/20**		eShop	eShop ■	eShop	eShop
41Z 41 0205	Vernier caliper **Vernier 1/50 with rod type depth gauge**		–	eShop	–	–
41Z 41 0405	Vernier caliper **for left-handed use**		–	eShop	–	–
Scale divisions (41 0200, 41 0405)		mm	0.05			
Scale divisions (41 0205)		mm	–	0.02	–	–
Graduation (41 0200, 41 0405)		in	–	1/128	1/128	1/128
Graduation (41 0205)		in	–	1/1000	–	–
Measurement deviation E MPE (41 0200, 41 0405)		mm	±0.05	± 0.05	± 0.05	± 0.08
Measurement deviation E MPE (41 0205)		mm	–	±0.04	–	–
Jaw length		mm	30	40	50	64

ISO 13385 | mm / Inch | 3.7×1.3 | S/STL | ▶ A1 Cal ◀

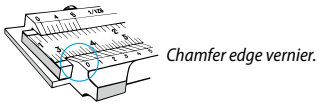
Vernier calipers with thumb-lock

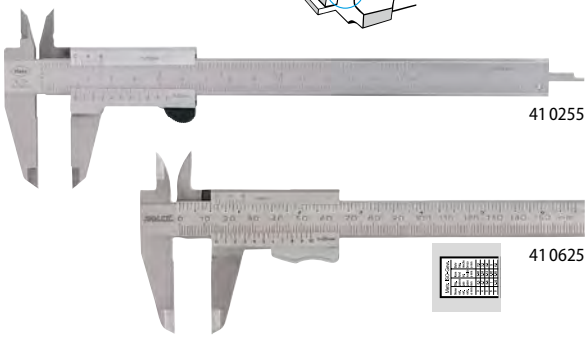
Satin chromium plated anti-glare reading parts. Fine, high-contrast scale.
Precision lapped measuring faces.

Optional extras:

41 0255 – Thread table No. 412180 for caliper back.

Measuring range		mm	150
43A 41 0255	Mahr Vernier caliper **with spring-loaded thumb-lock**		eShop
41Z 41 0625	HOLEX Vernier caliper **with spring-loaded thumb-lock**		eShop ■
Scale divisions		mm	0.05
Graduation		in	1/128
Measurement deviation E MPE (41 0255)		mm	± 0.05
Measurement deviation E MPE (41 0625)		mm	± 0.03
Jaw length		mm	40





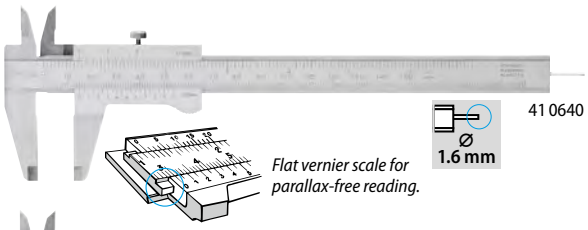
ISO 13385 | mm / Inch | S/STL | ▶ A1 Cal ◀

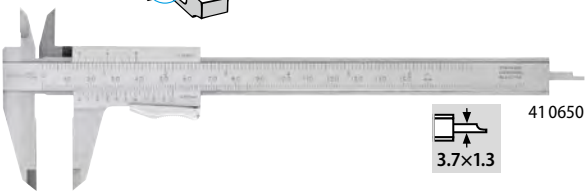
HOLEX Vernier calipers with parallax-free reading

Satin chromium plated anti-glare reading parts. Fine, high-contrast scale, precision lapped measuring faces. Flat vernier scale for **parallax-free reading.**

41 0640 – With locking screw at top and rod type depth gauge.
41 0650 – With thumb lock and sturdy flat depth gauge.

Measuring range		mm	150
41Z 41 0640	Vernier caliper parallax-free **with rod type depth gauge**		eShop
41Z 41 0650	Vernier caliper parallax-free **with spring-loaded thumb-lock**		eShop
Scale divisions		mm	0.05
Graduation		in	1/128
Measurement deviation E MPE		mm	± 0.05
Jaw length		mm	40





ISO 13385 | S/STL | ▶ A1 Cal ◀

Dial calipers

Satin chrome-plated scale. Shock-proof, with protected rack.
Precision dial indicator with rotating dial and locking screw.

Size 150/01 – Readings of 1 mm on the beam, 1/100 mm on the round dial.
41 2405 – With thumb roller.
41 2416 Size 150/02 – Readings of 1 mm on the beam, 2/100 mm on the round dial.
41 2415/2416 – Especially slim depth gauge.

Type		150/01	150/02
44A 41 2405	Mitutoyo Dial caliper	eShop	–
45A 41 2415	TESA Dial caliper	eShop	–
45A 41 2416	TESA Dial caliper	–	eShop
41Z 41 2350	HOLEX Dial caliper	eShop	–
Measuring range	mm	0 – 150	
Reading (round dial)	mm	0.01	0.02
Pointer revolution	mm	1	2
Measurement deviation E MPE (41 2405)	mm	± 0.02	–
Measurement deviation E MPE (41 2415, 41 2416, 41 2350)	mm	± 0.03	
Jaw length	mm	40	









wiha Plastic dial calipers

Very light, non-magnetic, and not electrically conductive. With shock-resistant dial indicator.

Size 150 – Non-metallic plastic with 60 % glass fibre content.
Size 150ESD – Non-metallic plastic with 50 % glass fibre content.

Application:

Size 150ESD – For working in areas with static electricity hazard.

Type		150	150ESD
46P 41 2430	Plastic dial caliper	eShop	eShop
Measuring range	mm	0 – 150	
Reading (round dial)	mm	0.1	
Pointer revolution	mm	10	
Jaw length	mm	40	





ISO 13385 | mm / Inch | RS232C | IP 54 | S/STL | A1 Cal

Garant Digital calipers

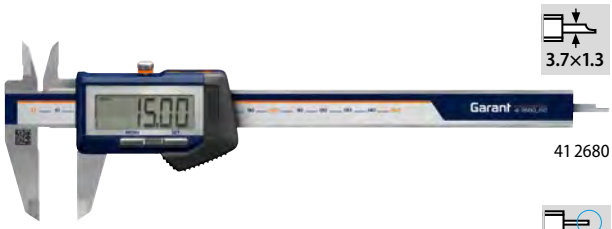
Digital calipers to IP54 with data output. **Easy-to-read, high-contrast LCD display with 11.5 mm character height.** Very long battery running time due to modern energy-efficient measurement system. The system switches automatically into power-saving mode after 20 minutes; moving the caliper reactivates it. There is no loss of the measurement value or zero point. With preset (dimension selection in advance). **Ergonomic housing with easy-grip Haptoprene component.** The measuring faces are precision-lapped.

41 2680 Size 300 – without depth gauge.

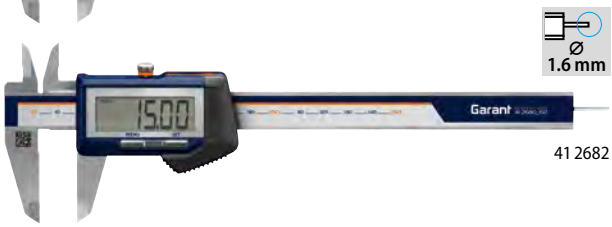
Supplied with: 1 battery No. 081560 size CR2032.

Optional extras: Data cable No. 498948, keyboard interface No. 498963

Spare part: Data output cap No. 412237 size D, battery holder No. 412237 size B.



41 2680



41 2682



Long battery life.

Data output

New modern design.

Ergonomic casing
with easy-grip Haptoprene component.

Large, high-contrast LC display
with 11.5 mm digit height.

Measuring range		mm	150	200	300
41A 41 2680	Digital caliper **IP54 with data output**		eShop ■	eShop	eShop
41A 41 2682	Digital caliper **IP54 with rod type depth gauge and data output**		eShop	–	–
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	± 0.02	± 0.03	± 0.03
Jaw length		mm	40	50	64

ISO 13385 | mm / Inch | Reference Lock | S/STL | A1 Cal

Mahr Digital calipers with large display – MarCal

Easy-to-read, high-contrast LCD display with 11 mm high characters. Modern energy-efficient measuring system, operational life approx. 3 years. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons. Lapped slides, the measuring faces are precision lapped.

41 2716 – With rod type depth gauge.

41 2717 Size 300 – Without depth gauge.

Supplied with: 1 battery No. 081560 size CR2032



41 2716



41 2717

Measuring range		mm	150	200	300
43A 41 2716	Digital caliper **with large display and rod type depth gauge**		eShop	–	–
43A 41 2717	Digital caliper **with large display**		eShop	eShop	eShop
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	± 0.03	± 0.03	±0.04
Jaw length		mm	40	50	64

Garant HCT – Hoffmann Connected Tools

Discover our HCT digital caliper and HCT depth gauge with wireless transmission via Bluetooth®.
Optional HCT app available free of charge for iOS and Android.

Advantages of wireless transmission with Bluetooth®:

- Simple and secure data transmission.
- Freedom of movement.
- Independence of location.
- Mobile working possible with the HCT app.



41 2781_150

ISO 13385 | mm / Inch | RS232C | Digimatic | Reference Lock | S/STL | ▶ A1 ◀ Cal

Mahr Digital calipers – MarCal

Easy-to-read, high-contrast LCD display with 8.5 mm high characters.
Modern energy-efficient measuring system, operational life approx. 3 years.
The REFERENCE measuring system saves and retains the set zero position, even after being switched on again.
The lock function prevents measurement errors arising from accidentally touching the control buttons.
Lapped slides, the measuring faces are precision lapped.
41 2729 Size 300 – Without depth gauge.

Supplied with: 1 battery No. 081560 size CR2032

Optional extras: Data cable No. 498940.



41 2728



41 2729

Measuring range		mm	150	200	300
43A 41 2728	Digital caliper **with rod type depth gauge and data output**		eShop	–	–
43A 41 2729	Digital caliper **with data output**		eShop	eShop	eShop
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	±0.03	± 0.03	± 0.04
Jaw length		mm	40	50	64

ISO 13385 | AOS Absolute | S/STL | ▶ A1 ◀ Cal

Mitutoyo Digital calipers with absolute electronics – AOS

Measured result is displayed in easy-to-read characters (height 9 mm).
The **AOS (Advanced Onsite Sensor)** electromagnetic measurement system offers enhanced protection against water and dust.

- Absolute scale, no zeroing necessary, resulting in faster, more reliable measuring.
- Low power consumption (20,000 hours continuous use), battery charge indicator

41 2639 – With mm / inch selection.
41 2639/2671 – With **thumb roller.**

Supplied with: 1 battery No. 081560 size 357.

Optional extras: Battery compartment cover No. 412239 size B.
41 2642/2671 – Data cables No. 497080 and No. 497100 with data button.



41 2632



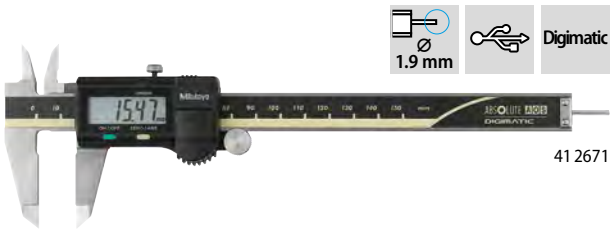
41 2639



41 2637



41 2642



41 2671

Measuring range		mm	150	200	300
44A 41 2632	Digital caliper **with AOS system**		eShop ■	eShop	–
44A 41 2637	Digital caliper **with AOS system and rod type depth gauge**		eShop	–	–
44A 41 2639	Digital caliper **with AOS system and mm / inch selection**		eShop ■	–	–
44A 41 2642	Digital caliper **with AOS system and data output**		eShop	eShop	eShop
44A 41 2671	Digital caliper **with AOS system with rod type depth gauge and data output**		eShop	–	–
Scale divisions		mm	0.01		
Scale divisions (41 2639)		in	0.0005	–	–
Measurement deviation E MPE		mm	± 0.02	±0.02	±0.03
Jaw length		mm	40	50	64

ISO 13385 | mm / Inch | Digimatic | TLC | Absolute System | S/STL | ▶ A1 ◀ Cal

TESA TESA TWIN-CAL digital calipers

Large high-contrast display with 11 mm character height. More than 12,000 operating hours, automatic standby after 10 min and automatic shutdown after 2 h. ABS measurement mode, integral TLC port for data transmission.

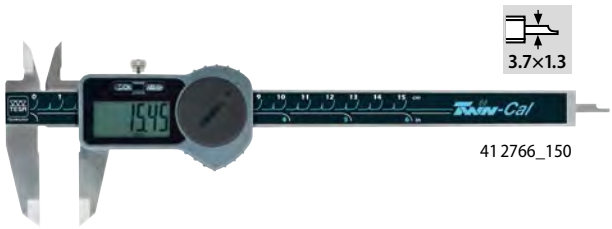
41 2765 – With thumb roller.
41 2766 Size 150 – Without thumb roller.
Size 200; 300 – With thumb roller.

Supplied with: 1 battery No. 081560 CR2032.
Optional extras: Data cable No. 498918, radio No. 498921 size BT.

Note:
Size 150 – Also available as a set with radio No. 498921 size BT on request.



41 2765



41 2766_150

Measuring range		mm	150	200	300
45A 41 2765	TESA TWIN-CAL digital caliper **with rod type depth gauge**		eShop	–	–
45A 41 2766	TESA TWIN-CAL digital caliper		eShop	eShop	eShop
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	±0.03		
Jaw length		mm	40	50	64

ISO 13385 | mm / Inch | S/STL | ▶ A1 ◀ Cal

HOLEX Digital calipers

Large high-contrast digital display. The measuring faces are precision-lapped.

41 2812 – With plastic housing, **for left-handed use.**
41 2821 Size 100 – Incremental measuring system without absolute scale.
Size 150HM – With **carbide measuring faces** on jaws and tips.
41 2805 Size 150/2818 Size 150/2821 Size 150–300 – Digital caliper with **absolute scale**, no zeroing required. Electronics switch off automatically after approx. 5 minutes and switch on again as soon as the tool is moved.

- Very high accuracy due to the glass scale.
- The electronics are decoupled from the casing and incorporated directly in the sliding part. The gauging force is transmitted directly to the measurement jaws. This reduces the liability of the caliper to errors and increases the working life.
- With sturdy metal body.

Supplied with:
41 2805 – Battery No. 081560 size CR1632.
41 2812 Size 150/2821 Size 100 – Battery No. 081560 size LR44.
41 2818 Size 150/2821 Size 150–300 – Supplied with battery No. 081560 size CR2032.

Optional extras:
41 2805 – Keyboard interface No. 498969 size USB.



41 2805



41 2818



41 2821_150



41 2821_100



41 2812

Measuring range		mm	100	150	150HM	200	300
42A 41 2805	Digital caliper **ABS with data output**		–	eShop ■	–	–	–
42A 41 2818	Digital caliper **ABS with rod type depth gauge**		–	eShop ■	–	–	–
42A 41 2821	Digital caliper **ABS**		eShop ■	eShop ■	eShop	eShop ■	eShop ■
42A 41 2812	Digital caliper **for left-hand use**		–	eShop	–	–	–
Scale divisions		mm	0.01				
Scale divisions		in	0.0005				
Measurement deviation E MPE		mm	± 0.02	±0.03	±0.03	± 0.03	±0.04
Jaw length		mm	30	40	40	50	60

ISO 13385 | mm / Inch | 3.7×1.3 | RS232C | S/STL | ▶ A1 ◀ Cal

Garant Digital calipers with accessory set

Digital caliper with comprehensive accessories - **permits measurement of recesses, slots and hole pitches.**

- Easy-to-read, high-contrast LCD display with 11.5 mm character height.
- Very long battery running time due to modern energy-efficient measurement system.
- Ergonomic housing with easy-grip Haptoprene component.

Supplied with: 2 pairs of contact point carriers short and long.
3 pairs of measuring tips with measuring discs
Ø 6 mm, Ø 10 mm, Ø 12.5 mm.
2 pairs of measuring tips with anvil cones Ø 9 mm, 60° and Ø 12 mm, 60°.
1 pair of measuring tips with measuring cylinders Ø 1.5×9 mm.
1× spring system for constant gauging force.
1× hexagon key L-wrench.
1× depth extension base 75 mm.
Supplied in a sturdy plastic box.
1 battery No. 081560 size CR2032.

41 2840 – 1× **IP54** digital caliper with data output No. 412680 size 150.
41 2845 – 1× **IP67** digital caliper with data output No. 412690 size 150.

Spare part: Data output cap No. 412237 size D, battery holder No. 412237 size B.

IP 54



41 2840

IP 67



41 2845



Measuring range		mm	150
41A 41 2840	Digital caliper **IP54 with data output including a set of accessories**		eShop
41A 41 2845	Digital caliper **IP67 with data output including a set of accessories**		eShop
Scale divisions		mm	0.01
Scale divisions		in	0.0005
Measurement deviation E MPE		mm	± 0.02
Jaw length		mm	40

ISO 13385 | mm / Inch | 3.7×1.3 | Absolute System | S/STL | ▶ A1 ◀ Cal

HOLEX Digital calipers ABS with accessory set

Set consisting of a digital caliper and accessories set.

- Digital caliper with **absolute scale,** no zeroing required. Large high-contrast digital display. The measuring faces are precision-lapped. With sturdy metal casing.
- Accessories set for digital caliper **– permits measurement of recesses, slots and pitches between holes.**

Supplied with: 1× accessory set No. 412747 size 3.5 **consisting of:**
2 pairs of contact point carriers short and long.
3 pairs of measuring tips with measuring discs
Ø 6 mm, Ø 10 mm, Ø 12.5 mm.
2 pairs of measuring tips with anvil cones Ø 9 mm, 60° and Ø 12 mm, 60°.
1 pair of measuring tips with measuring cylinders Ø 1.5×9 mm.
1× spring system for constant gauging force.
1× hexagon key L-wrench.
1× depth extension base 75 mm.
Supplied in a sturdy plastic box.
1 battery No. 081560 size CR2032.
1× digital caliper No. 412821 size 150.



41 2815



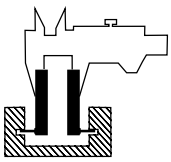
Measuring range		mm	150
42A 41 2815	Digital caliper **ABS + accessories set**		eShop
Scale divisions		mm	0.01
Scale divisions		in	0.0005
Measurement deviation E MPE		mm	±0.03
Jaw length		mm	40

HOLEX Accessory set for digital calipers

Accessories for digital calipers. **For measurement of recesses, grooves, and hole spacings.**

Suitable for:
Size 3,5 – Digital calipers up to 150 mm measurement range or jaw thickness up to 3.5 mm.
Size 4,5 – Digital calipers > 150 mm measurement range or jaw thickness up to 4.5 mm.

Supplied with: 3 pairs of measuring tips with measuring discs Ø 6 mm, Ø 10 mm, Ø 12.5 mm,
2 pairs of measuring tips with anvil cones Ø 9 mm, 60° and Ø 12 mm, 60°,
1 pair of measuring tips with measuring cylinders Ø 1.5×9 mm, 1× hexagon key L-wrench.
Size 3,5 – 2 pairs of contact point carriers long and short,
1 spring system for constant gauging force.
Size 4,5 – 1 pair measuring tip carriers, long.



Application example



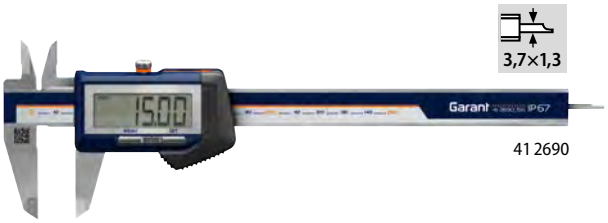
maximum jaw thickness		mm	3,5	4,5
42A 41 2747	Accessory set for digital calipers		eShop	eShop

ISO 13385 | mm / Inch | RS232C | IP 67 | S/STL | ▸ A1 ◂ Cal

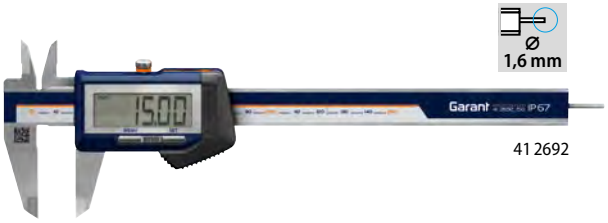
Garant Digital calipers to protection class IP67

Digital calipers to IP67with data output. **Easy-to-read, high-contrast LCD display with 11.5mm character height.**
Very long battery running time due to modern energy-efficient measurement system.
The system switches automatically into power-saving mode after 20 minutes; moving the caliper reactivates it.
There is no loss of the measurement value or zero point.
2-component body with **non-slip Haptoprene surface**.
The calipers are resistant to water, coolant, oil, and dust – even when fitted with a data cable.
The measuring faces are precision-lapped. With preset (dimension selection in advance).
41 2690 Size 300 – without depth gauge

Supplied with: 1 battery No. 081560 size CR2032.
Optional extras: Data cable No. 498948, keyboard interface No. 498963.
Spare part: Data output cap No. 412237 size D, battery holder No. 412237 size B.



41 2690



41 2692

Measuring range		mm	150	200	300
41A 41 2690	Digital caliper **IP67 with data output**		eShop	eShop	eShop
41A 41 2692	Digital caliper **IP67 with rod type depth gauge and data output**		eShop	–	–
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	± 0.02	±0.03	± 0.03
Jaw length		mm	40	50	64

ISO 13385 | IP 67 | Absolute System | S/STL | ▸ A1 ◂ Cal

Mitutoyo Digital calipers with absolute electronics, protection class IP67

Electronic caliper with absolute electronics and large easy-to-read display.
Resistant to water, oil, and dust.
Low energy consumption permits 18000 h continuous use on a single battery (size 300: 5000 h).
The device is turned on automatically when it is moved and switches off automatically when not used for about 20 minutes.

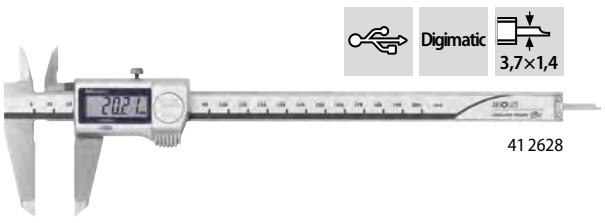
Supplied with: 1 battery No. 081560 size 357.
Optional extras:
41 2628 – Connecting cable (screw-on) No. 497085.



41 2623



41 2624



41 2628

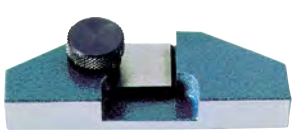
Measuring range		mm	150	200	300
44A 41 2623	Digital caliper **IP67**		eShop	eShop	eShop
44A 41 2624	Digital caliper **IP67 with rod type depth gauge**		eShop	–	–
44A 41 2628	Digital caliper **IP67 with data output**		eShop	eShop	–
Scale divisions		mm	0.01		
Measurement deviation E MPE		mm	± 0.02	± 0.02	± 0.03
Jaw length		mm	40	50	64

Depth base attachments

▸ C8 ◂ Cal

Suitable for:
41 2695 – All analogue and digital calipers sizes 150 and 200, digital HOLEX calipers size 300.
41 2710 – All analogue and digital calipers size 150, digital HOLEX calipers size 200, size 300, all GARANT calipers No. 412680; 412682; 412690; 412692; 418682.

44A 41 2695	Mitutoyo Depth base attachment		eShop
41Z 41 2710	HOLEX		eShop
Bridge width		mm	75
Recess for measuring beam (41 2695)		mm	18.1×5.5
Recess for measuring beam (41 2710)		mm	16.3×3.3


41 2695


41 2710

ISO 13385 | mm / Inch | IP 67 | Reference Lock | S/STL | ▶ A1 Cal ◀

Mahr Digital calipers to protection class IP67

Clearly legible, high-contrast LCD display. Inductive, waterproof measuring system. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons. The measuring faces are precision-lapped.

Size 300 – Without depth gauge.

41 2742 Size 200 – With square depth gauge.

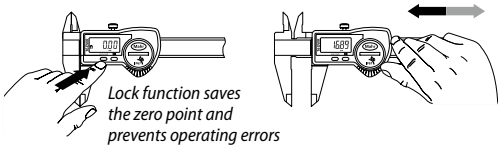
Supplied with: 1 battery No. 081560 size CR2032

Optional extras:

41 2742–2744 – Data cable No. 498940.

Advantages of the reference lock system:

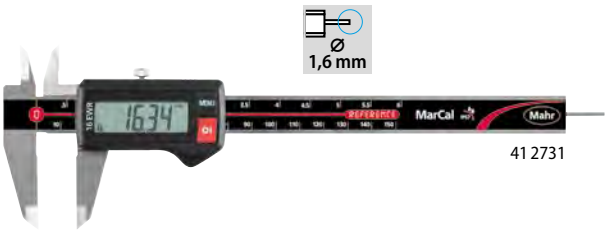
Particularly energy-efficient: up to 3 years battery life.



Lock function saves the zero point and prevents operating errors

Ready to measure as soon as the slide is moved.

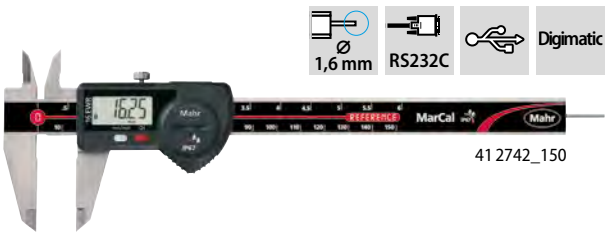
Measuring range		mm	150	200	300
43A 41 2731	Digital caliper **IP67 with rod type depth gauge**		eShop	–	–
43A 41 2733	Digital caliper **IP67**		eShop	eShop	eShop
43A 41 2742	Digital caliper **IP67 with data output**		eShop	eShop	eShop
43A 41 2743	Digital caliper **IP67 with rod type depth gauge, data output and ceramic measuring faces**		eShop	–	–
43A 41 2744	Digital caliper **IP67 with data output**		eShop	–	–
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	±0.03	±0.03	± 0.04
Jaw length		mm	40	50	64



41 2731



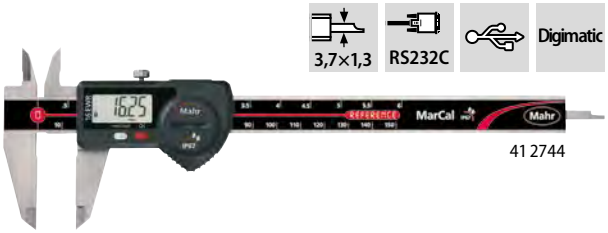
41 2733_150



41 2742_150



41 2743



41 2744

ISO 13385 | mm / Inch | IP 67 | Absolute System | S/STL | ▶ A1 Cal ◀

TESA TESA-CAL IP67 digital calipers

Large high-contrast display with 11 mm character height. More than 12000 hours service life, automatic standby after 10 minutes and automatic shutdown after 2 hours. ABS measuring mode. All-round protection against liquids.

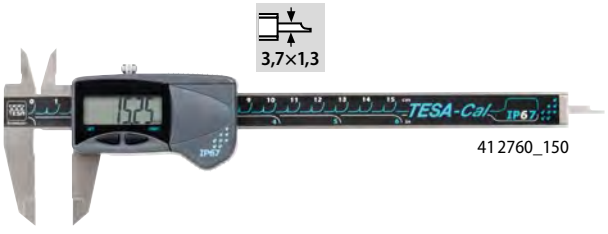
Size 200; 300 – With thumb roller.

Supplied with: 1 battery No. 081560 size CR2032.

Measuring range		mm	150	200	300
45A 41 2759	Digital caliper **TESA-CAL IP67 with rod type depth gauge**		eShop	–	–
45A 41 2760	Digital caliper **TESA-CAL IP67**		eShop	eShop	eShop
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	±0.03		
Jaw length		mm	40	50	64



41 2759



41 2760_150

ISO 13385 | mm / Inch | IP 67 | S/STL | A1 Cal

HOLEX Digital calipers to protection class IP67

Large high-contrast digital display. The measuring faces are precision-lapped. The caliper is resistant to water and dust. After 2 hours without movement, the control system shuts down the caliper automatically. Shock-resistant plastic casing.

Supplied with: Including battery No. 081560 size CR2032.



41 2749_150



41 2751_150

Measuring range		mm	150	200	300
42A 41 2749	Digital caliper **IP67 with rod type depth gauge**		eShop	–	–
42A 41 2751	Digital caliper **IP67**		eShop ■	eShop ■	eShop ■
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	± 0.03	±0.03	± 0.04
Jaw length		mm	40	50	60

41

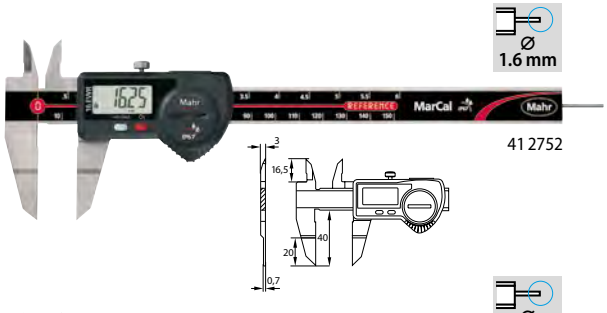
Standard | mm / Inch | RS232C | Digimatic | IP 67 | Reference Lock | S/STL | A1 Cal

Mahr Digital calipers protection class IP67, special versions

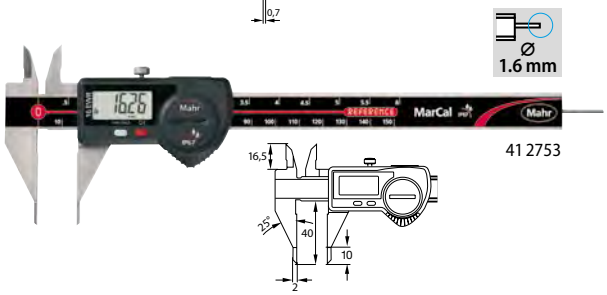
Clearly legible, high-contrast LCD display. Inductive, waterproof measuring system. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons.

Supplied with: 1 battery No. 081560 size CR2032

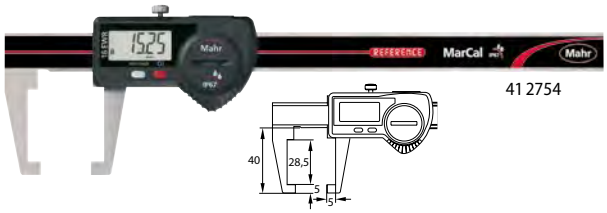
Optional extras: Data cable No. 498940.



41 2752



41 2753



41 2754



41 2755

Measuring range		mm	150
43A 41 2752	Digital external groove caliper **with rod type depth gauge**		eShop
43A 41 2753	Digital caliper **with pointed measurement jaws and rod type depth gauge**		eShop
43A 41 2754	Digital caliper **with inwards-facing measuring jaws**		eShop
43A 41 2755	Digital caliper **with outwards-facing measuring jaws**		eShop
Scale divisions		mm	0.01
Scale divisions		in	0.0005
Error limit		mm	0.03
Jaw length		mm	40

ISO 13385 | mm/Inch | IP 67 | HID | HCT | HCT | S/STL | A1 Cal

HCT

Garant Digital calipers HCT protection class IP67 with Bluetooth®

IP 67 HCT digital caliper with **Bluetooth® 5.0. Easy-to-read, high-contrast LCD display with 11.5mm character height.**
Very long battery running time due to modern energy-efficient measurement system.
The system switches automatically into power-saving mode after 10 minutes; moving the caliper reactivates it.
There is no loss of the measurement value or zero point. 2-component body with **non-slip Haptoprene surface.**
The caliper is resistant to water, coolant, oil, and dust. The measuring faces are precision-lapped.

41 2781 Size 300 – without depth gauge

Supplied with: 1 battery No. 081560 size CR2032.

Spare part: Battery holder No. 412237 size B.

Note: Compatible with the optional HCT (Hoffmann Group Connected Tools) mobile app (available free of charge for Android and iOS) and the HCT Windows app (available for Windows). Can also be used via a Human Interface Device (HID).

Measuring range		mm	150	200	300
41A	41 2781	HCT digital caliper **IP67 with Bluetooth®**	–	–	–
41A	41 2783	HCT digital caliper **IP67 with Bluetooth® and round depth gauge**	–	–	–
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	± 0.02	± 0.03	± 0.03
Jaw length		mm	40	50	64



41 2781_150



41 2783_150

ISO 13385 | mm/Inch | HID | HCT | HCT | S/STL | A1 Cal

HCT

HOLEX Digital calipers HCT with Bluetooth®

Digital caliper with **Bluetooth® 5.0.** Easy-to-read LCD display.
Very long battery running time due to modern energy-efficient measurement system.
Easy-grip surface. Measuring faces are precision lapped.

Supplied with: 1 battery No. 081560 size CR2032.

Note: Compatible with the optional HCT (Hoffmann Group Connected Tools) mobile app (available free of charge for Android and iOS) and the HCT Windows app (available for Windows). Can also be used via a Human Interface Device (HID).

Measuring range		mm	150	200	300
42A	41 2790	HCT digital caliper **With Bluetooth®**	–	–	–
42A	41 2792	HCT digital caliper **with Bluetooth® and rod type depth gauge**	–	–	–
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	± 0.03	±0.03	± 0.04
Jaw length		mm	40	50	60



41 2790_150



41 2792_150

Hoffmann Group Connected Tools (HCT)

The Hoffmann Group presents tools with Bluetooth® capability, together with an innovative optional app for quick and precise documentation and data transmission. Free of charge for iOS and Android.





1. Measurement is performed.
2. Measured data is saved and evaluated in the HCT app.
3. Measured data can be sent as a.csv file.

HCT All products compatible with the HCT app are indicated by this pictogram.

ISO 13385 | mm/Inch | i-wi | IP 67 | Reference Lock | S/STL | A1 Cal

Mahr Digital calipers i-wi protection class IP67

Very large LCD display with 11 mm character height. Integral i-wi wireless data interface. Resistant to dust and moisture. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons. Service life approx. 3 years.

41 2738 Size 300 – Without depth gauge.

Supplied with: 1 battery No. 081560 size CR2032

Optional extras: i-wi radio receiver No. 498912.



41 2736



41 2738

Measuring range		mm	150	200	300
43A 41 2736	Digital caliper **IP67 i-wi with rod type depth gauge**		eShop	–	–
43A 41 2738	Digital caliper **IP67 i-wi**		eShop	eShop	eShop
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	± 0.03	± 0.03	± 0.04
Jaw length		mm	40	50	64
Wireless application			Manufacturer's software		

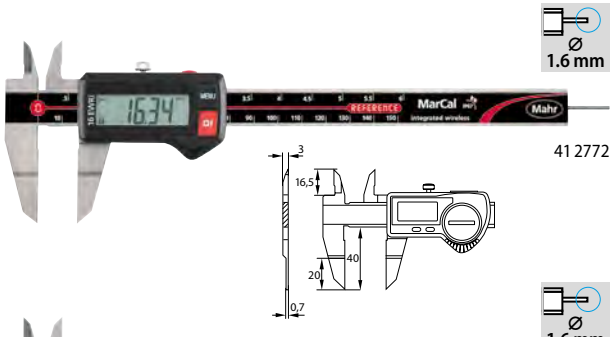
Standard | S/STL | mm/Inch | Reference Lock | i-wi | IP 67 | A1 Cal

Mahr Digital calipers i-wi, protection class IP67, special versions

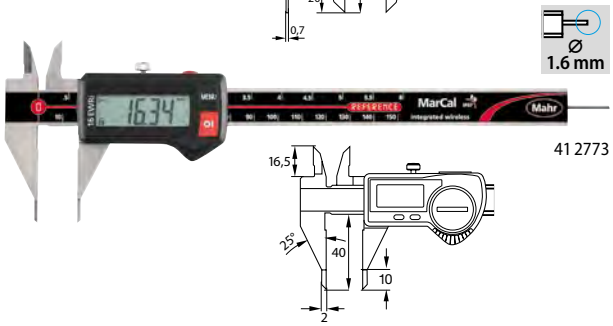
Very large LCD display with 11 mm character height. Integral i-wi wireless data interface. Resistant to dust and moisture. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons. Service life approx. 3 years.

Supplied with: 1 battery No. 081560 size CR2032

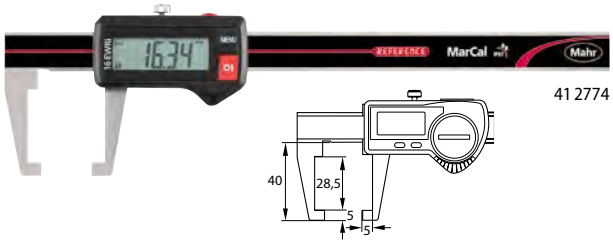
Optional extras: i-wi radio receiver No. 498912.



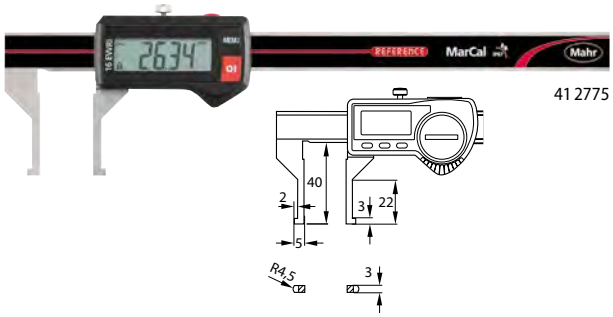
41 2772



41 2773



41 2774



41 2775

Measuring range		mm	150
43A 41 2772	Digital external groove caliper **with rod type depth gauge**		(eShop)
43A 41 2773	Digital caliper **with pointed measurement jaws and rod type depth gauge**		eShop
43A 41 2774	Digital caliper **with inwards-facing measuring jaws**		(eShop)
43A 41 2775	Digital caliper **with outwards-facing measuring jaws**		(eShop)
Scale divisions		mm	0.01
Scale divisions		in	0.0005
Error limit		mm	0.03
Jaw length		mm	40
Wireless application			Manufacturer's software

ISO 13385 | mm / Inch | Digimatic | TLC | IP 67 | Absolute System | S/STL | A1 Cal

TESA TESA TWIN-CAL IP67 digital calipers

Large high-contrast display with 11 mm character height.
More than 12,000 hours service life, automatic standby after 10 minutes and automatic shutdown after 2 hours. ABS measurement mode, integral TLC port for data transmission.
All-round protection against liquids.
Casing with steel protection plate and "Soft Touch" surface.
Size 200; 300 – With thumb roller.

Supplied with: 1 battery No. 081560 size CR2032

Optional extras: Data cable No. 498918, radio No. 498921 size BT.

Note:
Size 150 – Also available as a set with radio No. 498921 size BT on request.



41 2785_150



41 2786_150

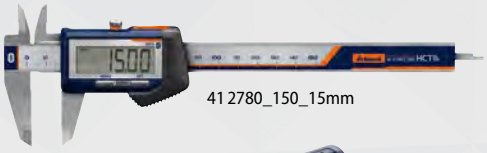
Measuring range		mm	150	200	300
45A 41 2785	Digital caliper **TWIN-CAL IP67 with rod type depth gauge**		eShop	–	–
45A 41 2786	Digital caliper **TWIN-CAL IP67**		eShop	eShop	eShop
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	±0.03		
Jaw length		mm	40	50	64

PRECISE AS ALWAYS, BETTER CONNECTIVITY THAN EVER: THE HCT WINDOWS APP.

With the new HCT Windows app, our **GARANT and HOLEX HCT products** can also be easily connected to PCs and laptops running a Windows operating system. This makes quick documentation and wireless data transmission to CAQ systems easier than ever before.



Garant


41 2780_150_15mm


65 5010


65 4410_350


42 1575_0-25


43 4336_12_5

HOLEX


65 5025_100


41 2790_150


41 8743_150


43 4008_12_5

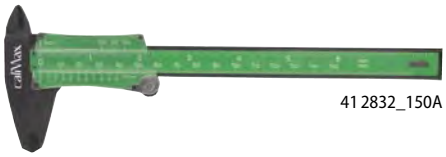
To enable the full functions, only the following are required:
Bluetooth ®dongle No. 49 8999 STICK (licence) and the Windows app software, which can be downloaded via the link **https://hog.tools/win-app-hct**.

Standard | mm / Inch

wiha Plastic caliper

Non-metallic high-tech material with 50 % fibre content.
Measuring range 0 – 150 mm.
Supplied with:
41 2830 – 1 battery No. 081560 size 357.


41 2830_150D


41 2832_150A

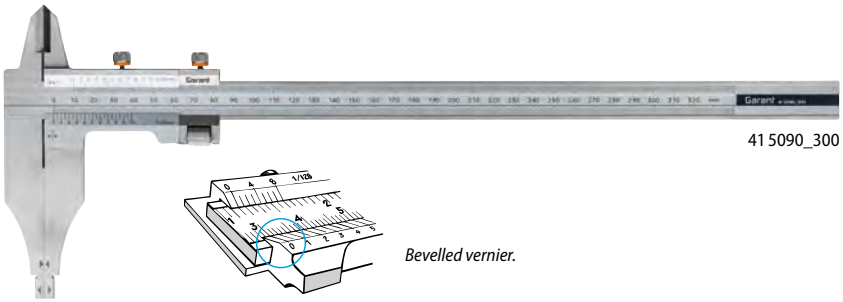
Type		150D	150A
46P 41 2830	Digital plastic caliper digiMax®	eShop	–
46P 41 2832	Analogue plastic vernier caliper CaliMax®	–	eShop
Scale divisions	mm	0.01	0.1
Scale divisions	in	0.0005	0.0156
Error limit	mm	0.05	0.1
Jaw length	mm	40	

41

ISO 13385 | S/STL | ▶ A1 ◀ Cal

Garant Workshop vernier calipers with measuring tips

Chamfered measuring tips for measurements to the root of threads and in narrow grooves. Offset and rounded jaw ends for internal measurements. High-contrast scale for ease of reading both internal and external measured values. Direct reading of internal dimensions by additional scale. With fine adjustment. With locking screw. Size 300 through hardened, from size 500 measuring faces hardened.


41 5090_300

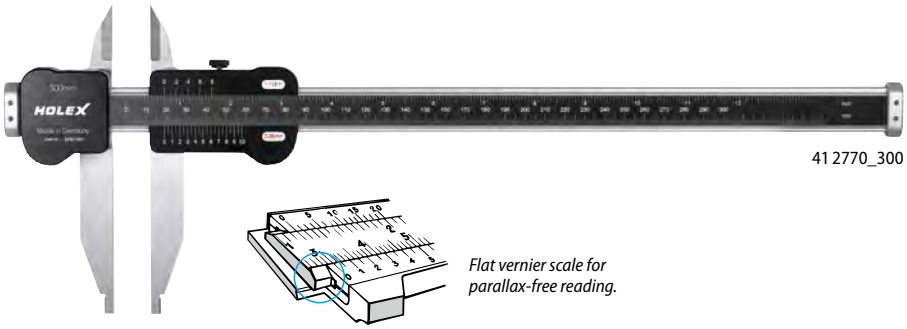
Bevelled vernier.

Measuring range	mm	300	500	750
40Z 41 5090	Workshop vernier caliper **with fine adjustment**	eShop	eShop	eShop
Graduation	mm		1/20	
Measurement deviation E MPE	mm	± 0.05	± 0.07	± 0.10
Jaw length	mm	90	150	150
Internal jaw ∅	mm	10	20	20

Standard | ▶ A1 ◀ Cal

HOLEX Workshop vernier calipers in lightweight design, parallax-free

Workshop vernier caliper in **lightweight design.** **Parallax-free readings** with the highest contrast due to white scaling on black surface. Optimum guidance and sliding characteristics due to internal double Vee guides. Exchangeable measuring jaws made of hardened stainless steel, precision ground.
Optional extras: Measuring jaws of 125 mm, 150 mm.


41 2770_300

Flat vernier scale for parallax-free reading.

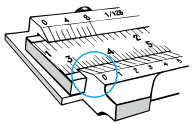
Measuring range	mm	200	300	500	700	900
42A 41 2770	Workshop vernier caliper in lightweight design	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Vernier				1/20		
Error limit	mm	0.05	0.05	0.07	0.09	0.11
Jaw length	mm			90		
Internal jaw ∅	mm			10		
Weight	kg	0.4	0.5	0.6	0.7	0.8

ISO 13385 | S/STL | ▶ A1 ◀ Cal

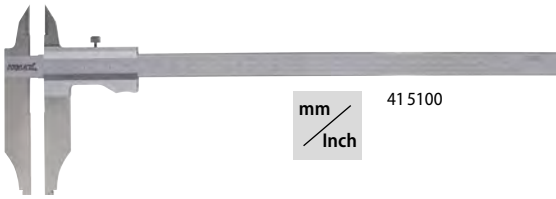
Workshop vernier calipers with measuring tips

Chamfered measuring tips for measurements to the root of threads and in narrow grooves. Offset and rounded jaw ends for internal measurements. High-contrast scale. With locking screw. Up to size 300 through hardened, from size 500 measuring faces hardened.

41 5170 – Flat vernier scale for **parallax-free reading,** direct reading of **the internal dimensions** by means of additional scaling; with fine adjustment.

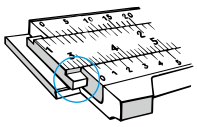


Chamfer edge vernier.



41 5100

mm / Inch



Flat vernier scale for parallax-free reading.



41 5170

Measuring range		mm	200	300	500	750	1000
41Z 41 5100	Workshop vernier caliper **with mm and inch graduations**		eShop	eShop	eShop	eShop	eShop
41Z 41 5120			–	eShop	eShop	–	–
41Z 41 5170	Workshop vernier caliper **with parallax-free reading and fine adjustment**		–	eShop	eShop	–	–
Graduation (41 5100, 41 5170)		mm	1/20				
Graduation (41 5120)		mm	–	1/50	1/50	–	–
Graduation (41 5100, 41 5120)		in	1/128				
Measurement deviation E MPE (41 5100, 41 5170)		mm	± 0.05	± 0.08	± 0.1	± 0.12	± 0.15
Measurement deviation E MPE (41 5120)		mm	–	± 0.04	± 0.05	–	–
Jaw length		mm	60	90	150	150	150
Internal jaw ∅		mm	10	10	20	20	20

ISO 13385 | S/STL | ▶ A1 ◀ Cal

Vernier calipers

Reading parts **anti-glare satin chrome-plated** with sharp contrast, jet black scale. Lapped measuring faces. Offset and rounded jaw ends for internal measurements.



41 5184

Measuring range		mm	200	300
41Z 41 5184	Vernier caliper		eShop	eShop
Scale divisions		mm	0.05	
Graduation		mm	1/20	
Measurement deviation E MPE		mm	± 0.05	± 0.08
Jaw length		mm	60	90
Internal jaw ∅		mm	10	

S/STL | ▶ A1 ◀ Cal

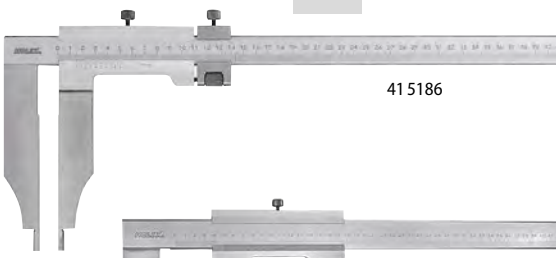
Vernier calipers with long jaws

Vernier satin chrome-plated, anti-glare. Measuring faces hardened and ground.
Long jaws for measuring large components and component ∅.
Offset and rounded jaw ends for internal measurements.

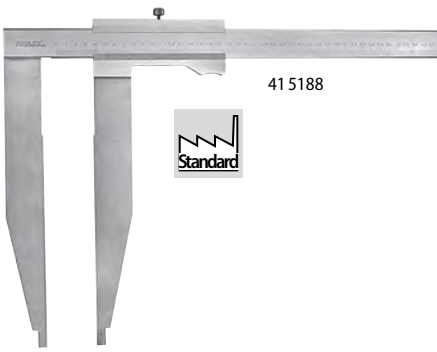
41 5186 – With fine adjustment.

41 5188 – With **extra long jaws,** without fine adjustment.

ISO 13385



41 5186



41 5188

Standard

Measuring range		mm	500	800	1000
41Z 41 5186	Vernier caliper		eShop	eShop	eShop
41Z 41 5188	Vernier caliper with extra long jaws		eShop	eShop	eShop
Scale divisions		mm	0.05		
Graduation		mm	1/20		
Error limit (41 5188)		mm	0.15	0.17	0.2
Measurement deviation E MPE (41 5186)		mm	± 0.1	± 0.12	± 0.15
Jaw length (41 5186)		mm	150	150	200
Jaw length (41 5188)		mm	300		
Internal jaw ∅		mm	20		
Weight		kg	1.9	3.5	3.9

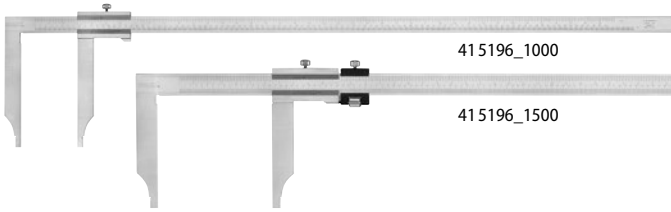
Standard | S/STL | ▶ A1 ◀ Cal

mm / Inch

300–1500

HOLEX Vernier calipers with large measuring ranges

Vernier and reading face non-glare, satin chromium plated.
Measuring faces hardened and ground.
Long jaws for measuring large workpieces and workpiece ∅.
With locking screw. Offset and rounded jaw ends for internal measurements.
Size 1500; 2000 – With fine adjustment.



41 5196_1000

41 5196_1500

Measuring range		mm	300	500	800	1000	1500	2000
42A 41 5196	Vernier caliper		eShop	eShop	eShop	eShop	eShop	(eShop)
Scale divisions		mm	0.05					
Graduation		mm	1/20					
Error limit		mm	0.05	0.07	0.1	0.24	0.36	0.44
Jaw length		mm	90	150	150	200	200	200
Internal jaw ∅		mm	10	20	20	20	30	30
Weight		kg	0.44	1.1	2.1	2.5	5.3	9.3

41

DIN 866 | S/STL | ▶ G2 ◀ Cal

Schwenk Length tape measures CJL for measuring plane parallel distance up to 6 m

Length tape measure CJL-INOX for measuring plane parallel distances. Graduations 1 mm.
Precise, high contrast laser graduations. Reading 0.1mm. Graduation error limits to DIN 866.

Note: For measuring tape for measuring diameter and circumference, see No. 465680; 465682.



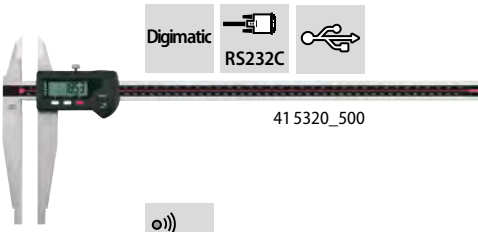
41 5198

Band length		mm	1000	2200	3500	4800	6000
46P 41 5198	Length tape measure CJL-INOX		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Measuring range		mm	60 – 960	900 – 2200	2200 – 3500	3400 – 4800	4700 – 6000
Tape width		mm	16				

Standard | mm / Inch | IP 65 | Reference Lock | S/STL | ▶ A1 ◀ Cal

Mahr Digital workshop calipers MarCal

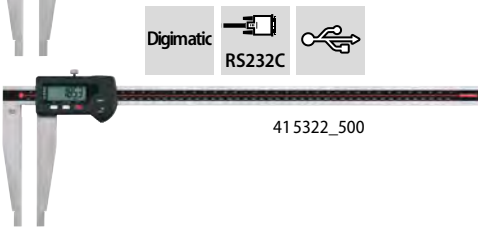
Direct reading from large and clear digital display. Precision lapped measuring faces.
The REFERENCE measuring system saves and retains the set zero position, even after being switched on again.
The lock function prevents measurement errors arising from accidentally touching the control buttons.
Supplied with: 1 battery No. 081560 size CR2032
Optional extras: Data cable No. 498940.
41 5321 – i-wi radio receiver No. 498912



41 5320_500



41 5321_500



41 5322_500

Measuring range		mm	300	500	800	1000
43A 41 5320	Digital caliper MarCal **with measuring tips**		eShop	eShop	eShop	eShop
43A 41 5321	Digital caliper MarCal **i-wi with measuring tips**		(eShop)	(eShop)	(eShop)	(eShop)
43A 41 5322	Digital caliper MarCal **without measuring tips**		eShop	eShop	(eShop)	(eShop)
Scale divisions		mm	0.01			
Scale divisions		in	0.0005			
Error limit		mm	0.03	0.04	0.05	0.06
Jaw length		mm	90	150	150	150
Internal jaw ∅		mm	10	20	20	20

HELIOS-PREISSER

Wooden case for vernier caliper

Wooden case for vernier caliper, with smooth foam inlay.

Note: Further sizes available on request.
Size 1500 – Delivery excluded.



for vernier caliper size		mm	160	200	300	500	800	1500
46P 41 5330	Wooden case		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Internal length		mm	250	315	435	690	1000	1800
Width internal		mm	90	145	175	250	270	380
Internal height		mm	20	20	20	25	25	25

ISO 13385 | mm / Inch | IP 67 | S/STL | ▶ A1 ◀ Cal

Garant Digital workshop calipers protection class IP67

Digital workshop caliper IP67. **Easy-to-read, high-contrast LCD display with 11.5mm character height.**
Very long battery running time due to modern energy-efficient measurement system.
The system switches automatically into power-saving mode after 10 minutes; moving the caliper reactivates it.
There is no loss of the measurement value or zero point.
2-component body with **non-slip Haptoprene surface.**
The measuring faces are precision-lapped.

41 5371/5373 – Compatible with the optional HCT (Hoffmann Group Connected Tools) mobile app (available free of charge for Android and iOS) and the HCT Windows app (available for Windows). Can also be used via a Human Interface Device (HID).

Supplied with:

Size 300 – Supplied with 1 batteries No. 081560 size CR2032.

Spare part:

Size 300 – Battery holder No. 412237 size B.



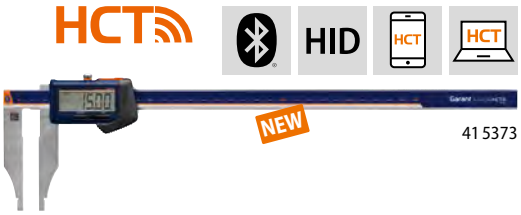
41 5370



41 5371



41 5372



41 5373

Measuring range		mm	300
41A 41 5370	Digital workshop caliper **IP67 with measuring tips**		eShop
41A 41 5371	Digital workshop caliper HCT **IP67 with measuring tips**		–
41A 41 5372	Digital workshop caliper **IP67 without measuring tips**		eShop
41A 41 5373	Digital workshop caliper HCT **IP67 without measuring tips**		–
Scale divisions		mm	0.01
Scale divisions		in	0.0005
Measurement deviation E MPE		mm	± 0.03
Jaw length		mm	100
Internal jaw ∅		mm	10
Wireless application (41 5371, 41 5373)			HID (Human Interface Device); HCT Mobile App; HCT Windows app

ISO 13385 | mm / Inch | S/STL | ▶ A1 ◀ Cal

HOLEX Digital workshop calipers with measuring tips

Direct reading from large and clear digital display. **With sturdy metal housing.**

Supplied with: 1 battery No. 081560 size LR44.

Measuring range		mm	300
42A 41 5611	Digital caliper **with measuring tips**		eShop
Scale divisions		mm	0.01
Scale divisions		in	0.0005
Measurement deviation E MPE		mm	± 0.04
Jaw length		mm	90
Internal jaw ∅		mm	10


41 5611

Absolute System

Digital caliper with **absolute scale**, no zeroing required. Large, sharp-contrast digital display.
Electronics switch off automatically after 5 minutes. Switches on when moved.
The measuring faces are precision-lapped. **With sturdy metal housing.**

Supplied with: 1 battery No. 081560 size CR2032.

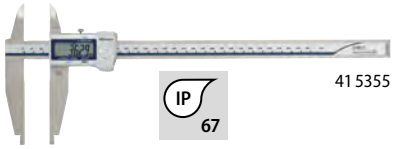
Measuring range		mm	300	500	750
42A 41 5621	Digital caliper **ABS with measuring tips**		eShop	eShop	eShop
Scale divisions		mm	0.01		
Scale divisions		in	0.0005		
Measurement deviation E MPE		mm	± 0.04	± 0.06	± 0.07
Jaw length		mm	90	150	150
Internal jaw ∅		mm	10	20	20


41 5621

ISO 13385 | Digimatic | Absolute System | S/STL | A1 Cal

Mitutoyo Digital workshop calipers with measuring tips


41 5350



41 5355

Measured result is displayed in easy-to-read digits. Jaw thickness 3.5 mm.

Supplied with: 1 battery No. 081560 size 357.

Optional extras:

41 5350 – Data cables No. 497080 and 497100.

41 5355 – Data cable No. 497085.

41

Measuring range		mm	200	300	500	750	1000
44A 41 5350	Digital workshop caliper **with measuring tips**		–	–	eShop	eShop	eShop
44A 41 5355	Digital ABS workshop caliper **IP67 with nib-style/standard jaws**		eShop	eShop	–	–	–
Scale divisions		mm	0.01				
Measurement deviation E MPE		mm	± 0.03	± 0.04	± 0.06	± 0.06	± 0.07
Jaw length		mm	60	90	150	150	150
Internal jaw ∅		mm	10	10	20	20	20

ISO 13385 | mm / Inch | Digimatic | TLC | IP 67 | Absolute System | S/STL | A1 Cal

TESA TWIN-CAL IP67 digital workshop calipers

Large digital display 11 mm, "Soft touch" casing, automatic shut-down (2h), TLC- TWIN interface for data transmission. Operation time: approx. 12000 hours.

Supplied with: 1 battery No. 081560 size CR2032

Optional extras: Data cable No. 498918, radio No. 498921 size BT.


41 5357


41 5358

Measuring range		mm	200	300	500	600	800	1000
45A 41 5357	TWIN CAL digital workshop caliper **IP67 with measuring tips**		eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
45A 41 5358	TWIN CAL digital workshop caliper **IP67 without measuring tips**		eShop	eShop	eShop	(eShop)	eShop	(eShop)
Scale divisions		mm	0.01					
Scale divisions		in	0.0005					
Measurement deviation E MPE		mm	± 0.04	± 0.04	± 0.04	± 0.04	± 0.05	± 0.05
Jaw length		mm	80	80	150	150	150	150
Internal jaw ∅		mm	10	10	20	20	20	20

Standard | mm / Inch | ABS | A1 Cal

HOLEX Digital workshop calipers in lightweight design

Caliper for inside and outside measurements (with preset). Easy-to-read LCD display with extra-large characters. Optimum guidance and sliding characteristics due to **double Vee guides** mounted in plastic. Stainless steel jaws, precision ground. With two movable and **interchangeable jaws**. **Including measuring force limitation.**

Supplied with: Incl. 1 battery No. 081560 size CR2032.

Optional extras: Setting gauge No. 415527 size Set. Jaws with thread M2.5 No. 415526.


41 5525_1000

Measuring range		mm	300	500	800	1000	1500	2000	3000
42A 41 5525	Digital workshop caliper		eShop	eShop	eShop	(eShop)	(eShop)	eShop	(eShop)
Scale divisions		mm	0.01						
Scale divisions		in	0.0005						
Error limit		mm	0.04	0.05	0.06	0.06	0.1	0.13	0.25
Jaw length		mm	90	90	90	90	150	150	150
Internal jaw ∅		mm	10	10	10	10	20	20	20
Weight		kg	0.65	0.75	0.9	1	2.2	2.5	3.2

ISO 13385 | Digimatic | IP 66 | Absolute System | ▶ A1 Cal

Mitutoyo Carbon digital workshop calipers

With drive slide for constant measuring force. Extremely light. Selectable set-point (preset), selection of internal / external measurements (offset).

Supplied with: 1 battery No. 081560 size 357.

Optional extras: Data cable No. 497085.



41 5400

Measuring range	mm	600	1000	1500	2000
44A **41 5400** Carbon digital caliper		eShop	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.01			
Measurement deviation E MPE	mm	± 0.04	± 0.05	± 0.09	± 0.12
Jaw length	mm	100	150	150	150
Internal jaw ∅	mm	20			
Weight	kg	0.67	1.25	1.46	2.56

41

Standard | mm / Inch | RS232C | IP 67 | ▶ A1 Cal

sylvac Ultra Light digital calipers

Extremely light-weight caliper. The measuring beam is of aluminium hollow section, very high stiffness due to four hardened and ground steel rods. Very large LCD display, character height 20mm. External jaws of hardened stainless steel with titanium coating. Measuring force limitation for consistent measuring force (7.5 – 11.5 N). Exchangeable measuring tips for inside measurements. Functions: Preset, Max/Min, Delta, display of the upper and lower tolerance limits.

Supplied with: 1 battery No. 081560 size CR2032, 2 pins for internal measurements on the jaw.

Optional extras: Data cable No. 498948.



41 5542

Measuring range	mm	600	1000	1500	2000	2500	3000
46A **41 5542** Digital caliper **"Ultra Light"**		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.01					
Scale divisions	in	0.0005					
Error limit	mm	0.04	0.05	0.09	0.12	0.15	0.2
Jaw length	mm	175					
Weight	kg	1.5	1.8	2.2	2.5	2.8	3.2

Standard | mm / Inch | Reference Lock | IP 65 | S/STL | ▶ i Cal

RS232C | Digimatic

41 5546

Mahr Digital universal caliper Multimar 25 EWR and i-wi

Interchangeable mixing arms, contact points and contact elements (optional accessories). The digital display can always be read from the user's side. Working area can be extended by rotation. Even distribution for small dimensions, since both jaw holders can be moved along the rail. Stainless hardened slide and rail.

Optional extras: Measuring arms No. 428101, depth stop No. 428111, caliper jaws No. 428141, measuring tips No. 428120; 428130; 428160; 428170.

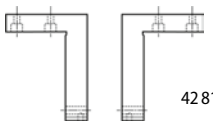
41 5548 – i-wi radio receiver No. 498912.

Spare part:

41 5546 – Battery compartment cover No. 417702.



41 5548_300



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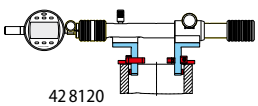

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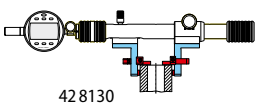

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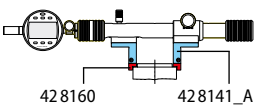
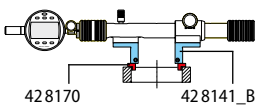
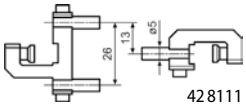


428160 428141_A



428170 428141_B



428111

Measuring range	mm	300	600	1000	1250
43A **41 5546** Digital universal caliper **Multimar 25 EWR**		(eShop)	eShop	(eShop)	(eShop)
43A **41 5548** Digital universal caliper **Multimar i-wi**		(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.01			
Scale divisions	in	0.0005			
Error limit	mm	0.03	0.03	0.04	0.04

Standard | mm / Inch | RS232C | IP 67 | S/STL | ▸ A1 ◂ Cal

Digital universal calipers DIGI ULISSE I/E

Digital universal caliper for a variety of internal and external measurements, with exchangeable measuring tips.

Size 650 – RS232C data output.

Supplied with: Digital caliper including 1 battery No. 081560 size CR2032.

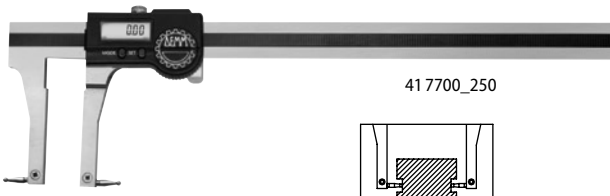
Size 250 – Interchangeable measuring tips with ball ∅ 2.5 mm.

Size 400–650 – Interchangeable measuring tips with ball ∅ 3 mm and clamping sleeve with M2.5 internal thread.

Optional extras: Data cable No. 498948.

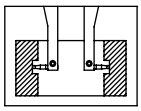
Size 400–650 – All spare and special contact points No. 434900 – 434910 with M2.5 thread can be used.

Spare part: Battery compartment cover No. 417702.



41 7700_250

External measurement



Internal measurement

Measuring range		mm	250	400	500	650
46P 41 7700	Digital universal caliper **DIGI ULISSE I/E**		eShop	eShop	(eShop)	(eShop)
Measuring range outside		mm	0 – 210	0 – 320	0 – 420	0 – 570
Measuring range inside		mm	24 – 250	42 – 400	42 – 500	42 – 650
Scale divisions		mm	0.01			
Error limit		mm	0.03	0.03	0.03	0.04
Jaw length		mm	64	103	103	103
Ball ∅ measuring tips		mm	2.5	3	3	3

Standard | mm / Inch | RS232C | Digimatic | 3.7×1.3 | IP 67 | Reference Lock | S/STL | ▸ A1 ◂ Cal | ▸ C8 ◂ Cal

Digital universal caliper sets

Digital universal caliper for a wide variety of internal and external measurements (recesses, grooves, threads etc.). The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons.

41 5552 – Digital universal caliper with integral i-wi wireless data interface.

Supplied with: Caliper, depth base attachment No. 415556, setting gauge No. 415557, measuring force adjustment device No. 415558, 6 pairs of measuring tips for internal and external measurements, 1 battery No. 081560 size CR2032.

Optional extras:

41 5551 – Data cable No. 498940.

41 5552 – i-wi radio receiver No. 498912



41 5551



41 5556 41 5557 41 5558

Measuring range		mm	200
43A 41 5551	Digital universal caliper set **IP 67**		eShop
43A 41 5552	i-wi digital universal caliper set **IP 67**		(eShop)
Scale divisions		mm	0.01
Error limit		mm	0.03
Jaw length		mm	48

i-wi

41 5552

Standard | mm / Inch | Digimatic | RS232C | IP 67 | S/STL | ▸ A1 ◂ Cal

Digital universal caliper sets

"Pocket Talent" digital universal caliper for a wide variety of internal and external measurements (recesses, grooves, threads etc.). Easy-to-read, high-contrast LCD display with 7.5 mm character height. Including a PRESET function (measured value pre-setting).

Supplied with: Digital caliper, 50 mm setting gauge, 2 pairs of measuring tips for internal and external measurements. 1 battery No. 081560 size CR2032.

Optional extras: All spare and special contact points No. 434900 to 434915 with M2.5 thread. Data cable No. 498940.



41 5555



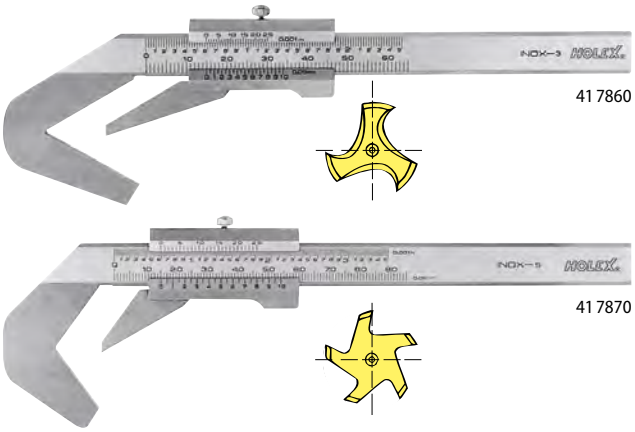
Measuring tips for internal and external measurements, setting master.

Measuring range		mm	200
46P 41 5555	Digital universal caliper set **IP 67**		eShop
Scale divisions		mm	0.01
Scale divisions		in	0.0005
Error limit		mm	0.03
Jaw length		mm	48

Standard | mm / Inch | S/STL | ▶ A1 Cal ◀

HOLEX Vernier calipers for 3- and 5-point measurements

Application: For measuring cutters with 3 or 5 cutting edges.

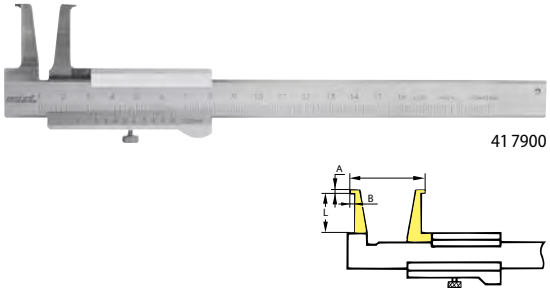


∅×Measuring range		mm	4-40	2-40
41Z 41 7860	Vernier caliper 3-point 60° Vee angle		eShop	–
41Z 41 7870	Vernier caliper 5-point 108° Vee angle		–	eShop
Scale divisions		mm	0.05	
Graduation		mm	1/20	
Graduation		in	1/1000	
Error limit		mm	0.05	

Standard | S/STL | ▶ A1 Cal ◀

HOLEX Groove vernier caliper

Application: For measuring internal groove ∅.



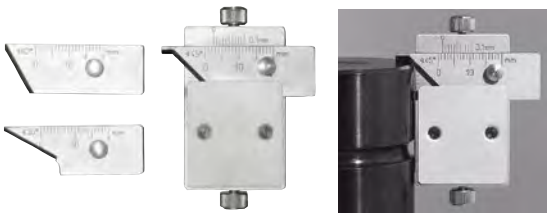
Measuring range		mm	10-160	26-200
41Z 41 7900	Groove vernier caliper		eShop	eShop
Scale divisions		mm	0.05	
Graduation		mm	1/20	
Error limit		mm	0.1	
Jaw length L		mm	25	60
Measuring tip A		mm	1.1	3
Measuring tip B		mm	3	7

Standard | S/STL | ▶ i Cal ◀

HOLEX Chamfer caliper

With interchangeable inspection straight edges for 30°, 45°, and 60° chamfers.

Application: For simple and precise dimensional inspection of chamfers.



41Z 41 7904	Universal chamfer caliper		eShop
Scale divisions		mm	0.1
Error limit		mm	0.1

Standard | S/STL | ▶ A1 Cal ◀

MARUI-KEIKI Radius caliper

Application: For measuring the radius or ∅ of circle segments.



Measuring range radius		mm	R150
46R 41 7905	Radius caliper		eShop
Measuring range diameter		mm	300
Scale divisions		mm	0.1

41

ISO 13385 | S/STL | ▶ A1 ◀ Cal

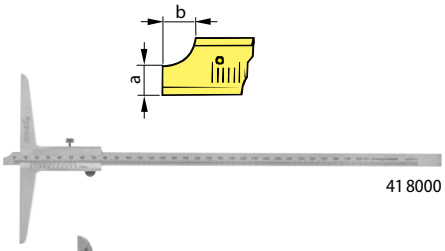
Vernier depth gauge

Measuring beam and vernier with clearly engraved scales. P
recision ground contact faces. Vernier satin chrome-plated.

Size 100 – Measuring beam equipped with a hardened, fine gauging pin at the front (1.0 mm ∅, 8 mm long). **Reversible beam.**

Supplied with: From size 500 in a case.

Measuring range	mm	100	200	300	500	800	1000
41Z 41 8000 Vernier depth gauge		eShop	eShop	eShop	eShop	eShop	eShop
Graduation	mm	1/20					
Vernier length	mm	39					
Measurement deviation E MPE	mm	± 0.05	± 0.05	± 0.08	± 0.1	± 0.12	± 0.15
Measuring tip a	mm	1	5	6	6	10	10
Measuring tip b	mm	8	7	9	9	13	13
Bridge length	mm	50	100	150	150	250	250
Cross-section measuring beam	mm	8×3	8×3	12×4	12×4	20×5	20×5



41 8000



41 8000_100

Needle hole probe 1.0 mm ∅ 8 mm long.



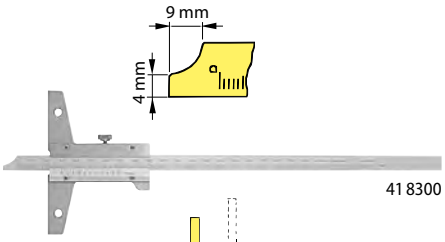
ISO 13385 | S/STL | ▶ A1 ◀ Cal

Vernier depth gauge

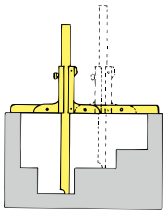
Measuring beam and vernier satin chrome-plated. Vernier adjustable.
High-contrast scale. **Measuring and contact faces precision lapped.**
Wider bridging widths achievable by using extension base(see No. 418744).

Optional extras: Additional extension base No. 418744 (180 – 320 mm).

Measuring range	mm	150	200	300
41Z 41 8300 Vernier depth gauge		eShop ■	eShop	eShop
Graduation	mm		1/20	
Vernier length	mm		39	
Measurement deviation E MPE	mm	± 0.05	± 0.05	± 0.08
Bridge length	mm		100	
Cross-section measuring beam	mm		11×4	



41 8300



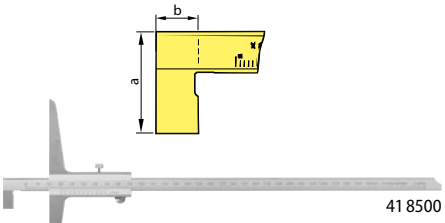
ISO 13385 | S/STL | ▶ A2 ◀ Cal

Vernier hook depth gauge

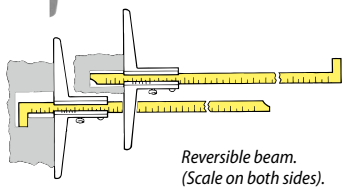
Vernier satin chrome-plated. Measuring beam and vernier with clearly engraved scales.
Offset slim measuring beam with graduations on both sides.
Can also be **used as normal vernier depth gauge** by reversing the measuring beam.
Precision ground contact faces.

Supplied with: Size 500L in a case.

Measuring range	mm	200	300	500L
41Z 41 8500 Vernier hook depth gauge		eShop	eShop	eShop
Graduation	mm		1/20	
Vernier length	mm		39	
Measurement deviation E MPE	mm	± 0.05	± 0.08	± 0.1
Hook size a	mm	20	28	36
Hook size b	mm	5	10	10
Bridge length	mm	100	150	250
Cross-section measuring beam	mm	8×3	12×4	20×5



41 8500



Reversible beam. (Scale on both sides).

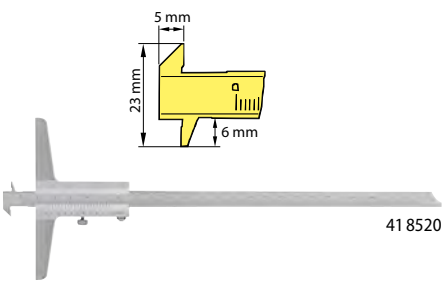
ISO 13385 | S/STL | ▶ A2 ◀ Cal

Vernier double hook depth gauges with offset measuring faces

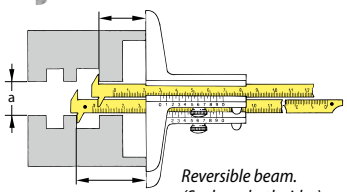
Measuring beam and vernier satin chrome- plated, with cleanly engraved scales.
Precision ground contact faces.

Application: Universal for depth measurements, distances, recesses, and grooves - particularly in bores. Please note dimension "a".

Measuring range	mm	200	300
41Z 41 8520 Vernier double hook depth gauge		eShop	eShop
Graduation	mm	1/20	
Vernier length	mm	39	
Measurement deviation E MPE	mm	± 0.05	± 0.08
Hook size a	mm	23	
Bridge length	mm	100	
Cross-section measuring beam	mm	10×3	



41 8520



Reversible beam. (Scale on both sides).

ISO 13385 | mm / Inch | IP 67 | S/STL | ▶ A1 Cal

Garant Digital depth gauges

Very large high-contrast LCD display with 11.5 mm character height. Very long battery running time due to modern energy-efficient measurement system. The system switches automatically into power-saving mode after 20 minutes; moving the caliper reactivates it. There is no loss of the measurement value or zero point. 2-component body with **non-slip Haptoprene surface.** The measuring faces are precision-lapped. Measuring beam has a slender hardened measuring pin at the front, ∅ 1.5 mm, 5 mm long. With preset (dimension selection in advance).

41 8685 – Version **with Bluetooth®.** Compatible with the optional HCT (Hoffmann Group Connected Tools) mobile app. Available free of charge for Android and iOS. Can also be used via a Human Interface Device (HID).

Supplied with: 1 battery No. 081560 size CR2032.

Optional extras: Extension base 320 mm long No. 418689, measuring tip for caliper jaws No. 418630

41 8682 – Data cable No. 498948, keyboard interface No. 498963.



41 8682_150

Measuring range		mm	150	200	300
41A 41 8682	Digital depth gauge **IP67 with data output**		eShop	eShop	eShop
41A 41 8685	HCT digital depth gauge **IP67 with Bluetooth®**		–	–	–
Reversible reading		mm	0.01		
Reversible reading		in	0.0005		
Measurement deviation E MPE		mm	±0.03		
Bridge length		mm	100		
Cross-section measuring beam		mm	16×3.5		
Wireless application (41 8685)			HID (Human Interface Device); HCT Mobile App; HCT Windows app		



41 8685_150

Mahr Digital depth gauges

ISO 13385 | mm / Inch | IP 67 | Reference Lock | S/STL | ▶ A1 Cal

Modern energy-efficient measurement system. Guide tracks lapped. With preset (dimension selection in advance), e.g. for distance measurements with measuring tip No. 418630. Measuring beam has a slender hardened measuring pin at the front, ∅ 1.5mm, 5mm long.

41 8704 – Easy-to-read, high-contrast LCD display with 8.5 mm high digits.

41 8705 – Very large LCD display with 11 mm character height, i-wi integral wireless data interface resistant to dust and moisture, service life approx. 3 years (approx. 0.5 years if wireless transmission is activated).

Supplied with: 1 battery No. 081560 size CR2032.

Optional extras: Extension base 300 mm long No. 418610, measuring tip for caliper jaws No. 418630

41 8704 – Data cable No. 498940.

41 8705 – Wireless data transmission to i-wi radio receiver No. 498912.



41 8704

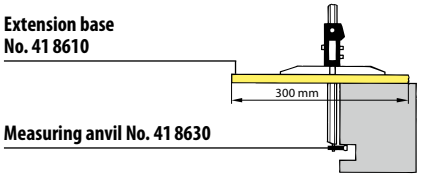


41 8705

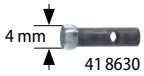
Measuring range		mm	150	200	300	500
43A 41 8704	Digital depth gauge **IP 67 with data output**		eShop	eShop	eShop	eShop
43A 41 8705	Digital depth gauge **IP 67 with wi-fi**		eShop	eShop	eShop	eShop
Reversible reading		mm	0.01			
Reversible reading		in	0.0005			
Measurement deviation E MPE		mm	±0.03	±0.03	±0.04	±0.05
Bridge length		mm	100	100	150	150
Cross-section measuring beam		mm	12×3.5			
Wireless application (41 8705)			Manufacturer's software			

Optional extras

Suitable for: Mahr No. 418704 and 418705.



43A 41 8610	Extension base 300 mm	eShop
43A 41 8630	Measuring anvil for distance measurement ∅ 4 mm	eShop



41 8630

▶ C8 Cal



ISO 13385 | S/STL | ▶ A1 ◀ Cal

Mitutoyo Digital depth gauge with absolute electronics

Measured result is displayed in easy-to-read digits. The measuring faces are precision lapped.

Supplied with: 1 battery No. 081560 size 357.

Optional extras:

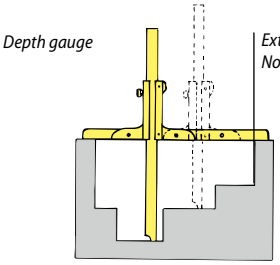
41 8710/8711 – Data cables No. 497080 and 497100.
41 8713 – Data cable No. 497085.
41 8710/8713 – Additional extension base No. 418744.

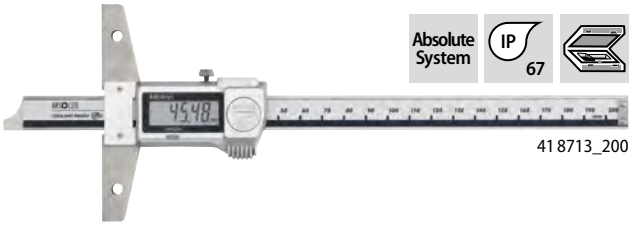


41 8711_300



41 8711_150





41 8713_200

Measuring range		mm	150	200	300	750	1000
44A 41 8710	Digital depth gauge **with data output**		–	–	–	(eShop)	(eShop)
44A 41 8711	Digital depth gauge **AOS with data output**		eShop	eShop	eShop	–	–
44A 41 8713	Digital depth gauge **IP 67 with data output**		eShop	eShop	–	–	–
Scale divisions		mm	0.01				
Measurement deviation E MPE		mm	± 0.02	± 0.02	± 0.03	± 0.06	± 0.07
Bridge length		mm	100	100	100	250	250
Cross-section measuring beam		mm	16×3.5	16×3.5	16×3.5	20×6	20×6

ISO 13385 | mm / Inch | S/STL | ▶ A1 ◀ Cal

HOLEX Digital depth gauges

Measured result is displayed in easy-to-read digits. The measuring faces are precision lapped.

41 8743 – Bluetooth® 5.0. Compatible with the optional HCT (Hoffmann Group Connected Tools) mobile app. Available free of charge for Android and iOS and the HCT Windows app. Can also be used via a Human Interface Device (HID).

Supplied with: 1 battery No. 081560 size CR2032

Optional extras:

41 8742 – Extension base No. 418744.



41 8742_150



41 8743_150

Measuring range		mm	150	300
42A 41 8742	Digital depth gauge		eShop ■	eShop
42A 41 8743	HCT digital depth gauge **With Bluetooth®**		–	–
Reversible reading		mm	0.01	
Reversible reading		in	0.0005	
Measurement deviation E MPE		mm	± 0.03	± 0.04
Bridge length		mm	100	
Cross-section measuring beam		mm	16×4	

Extension bases for depth gauges

Suitable for: HOLEX No. 418300; 418742, Mitutoyo No. 418711; 418713.


41 8744

Bridge length		mm	180	260	320
41Z 41 8744	Single extension base		eShop	eShop	eShop
Number of tapped holes		pcs.	2	5	4

ISO 13385 | mm / Inch | Digimatic | TLC | IP 67 | Absolute System | S/STL | ▶ A1 ◀ Cal

TESA TWIN-CAL IP67 digital depth gauges

Large digital display 11 mm, IP67 protection, "Soft touch" casing, 12,000 hours service life, automatic standby after 10 min. and automatic shutdown after 2 h, TLC-TWIN interface, offset measuring face 4 mm wide.

41 8697 – **With 360° adjustable stop plate** for comprehensive measurement tasks.

Application: General purpose use for depth measurement, holes, offsets, width and spacing measurements.

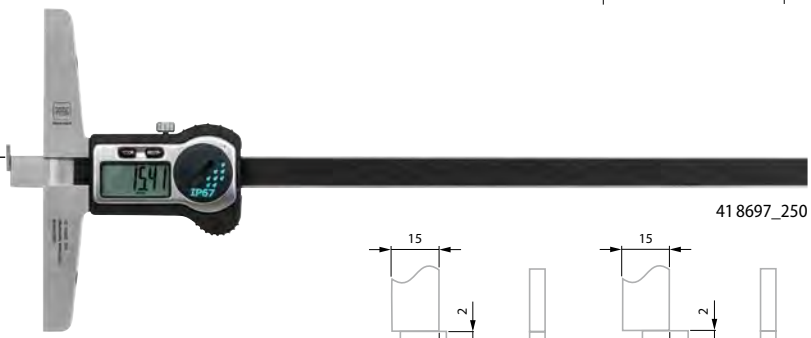
Supplied with: 1 battery No. 081560 size CR2032

Optional extras: Data cable No. 498918, radio No. 498921 size BT.



41 8695_200

Stop plate can be rotated through 360°.



41 8697_250

Measuring range	mm	200	250	300	350	500
45A 41 8695 Digital depth gauge **TWIN CAL IP 67**		eShop	–	eShop	–	(eShop)
45A 41 8697		–	eShop	–	eShop	eShop
Reversible reading	mm	0.01				
Reversible reading	in	0.0005				
Measurement deviation E MPE	mm	± 0.03				
Bridge length	mm	100	100	150	150	150
Cross-section measuring beam	mm	15×4				

Standard | mm / Inch | RS232C | IP 67 | S/STL | ▶ A1 ◀ Cal

Digital depth gauges

Very large high-contrast LCD display. Character height 8 mm. With preset (dimension selection in advance). The caliper is resistant to water, emulsion, oil, and dust.

Function: IP67: Protected against intermittent immersion in water and protected against penetration by dust (dust-tight), also completely protected against touching.

Supplied with: Incl. battery No. 081560 size CR2032.

Optional extras: Data cable No. 498948 size USB2. Measurement head.



41 8746

Measuring range	mm	150	200	300
46P 41 8746 Digital depth gauge **IP 67 with data output**		eShop	eShop	eShop
Scale divisions	mm	0.01		
Scale divisions	in	0.0005		
Error limit	mm	0.02	0.02	0.03
Bridge length	mm	100		
Cross-section measuring beam	mm	12×4		

41

Mahr Digital groove depth gauges MarCal

ISO 13385 | mm / Inch | RS232C | Digimatic | IP 67 | Reference Lock | S/STL

For measuring cut-outs, grooves, recesses, shoulders etc. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons.

Size 200; 300 – Measuring beam with double hook. Both contact faces in a single plane.

41 8759 – Very large LCD display with 11 mm character height. Integral i-wi wireless data interface.

Supplied with: 1 battery No. 081560 size CR2032.

Size 100 – 3 measuring tips (Ø 4 mm, Ø 7.5 mm, and radius 6 mm).

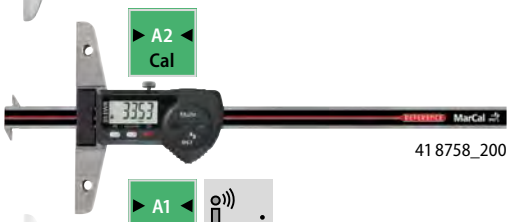
Optional extras: Data cable No. 498940.

Size 100 – Disc measuring anvil No. 418660 size 0.5. Special contact point No. 434900 – 4915 with M2.5 thread.

41 8759 – i-wi radio receiver No. 498912.



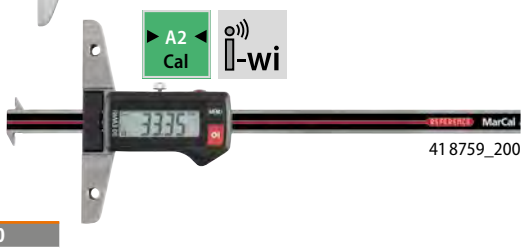
41 8758_100



41 8758_200

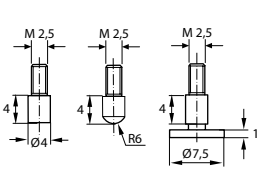


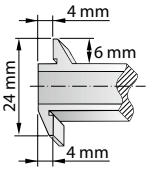
41 8759_100



41 8759_200

Measuring range		mm	100	200	300
43A 41 8758	Digital groove depth gauge **IP 67**		eShop	eShop	eShop
43A 41 8759	Digital groove depth gauge **IP 67, i-wi**		(eShop)	(eShop)	eShop
Reversible reading		mm	0.01		
Reversible reading		in	0.0005		
Measurement deviation E MPE		mm	± 0.03	± 0.03	±0.04
Measuring rod Ø		mm	4	–	–
Wireless application (41 8759)			Manufacturer software		
Bridge length		mm	85	100	150
Cross-section measuring beam		mm	16 × 3	12 × 3.5	12 × 3.5

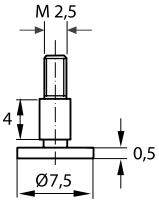




Disc measuring anvil for depth gauge

Suitable for: Depth gauge No. 418758 size 100, No. 418759 size 100.

Pad thickness		mm	0,5	1
43A 41 8660	Disc measuring anvil		eShop	eShop
Backing pad Ø		mm	7.5	





Standard | mm / Inch | A1 Cal

HOLEX Digital groove depth gauge

Aluminium profile with steel reinforcement and anodised surface. Double Vee guides. Exchangeable measuring tips (M2.5).

Application: Measuring cut-outs, grooves, holes and offsets.

Supplied with: Measuring tip with steel ball, disc insert No. 434900 size 11, measurement heads 150 mm and 350 mm, battery No. 081560 size LR44.

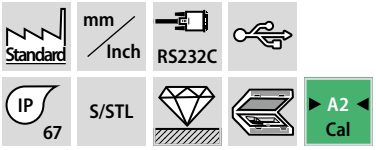
Optional extras: Measurement head No. 418757 size 550, size 750 and size 900.


41 8755


41 8755

Measuring range		mm	100	200	300	500	800	950
42A 41 8755	Digital groove depth gauge		eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
Error limit		mm	0.03	0.03	0.04	0.05	0.06	0.06
Disc anvil Ø		mm	10	10	10	20	20	20
Measuring rod Ø		mm	4	4	4	6	6	6
Cross-section measuring beam		mm	23.5 × 9					

Digital universal depth gauges DIGI RICOR



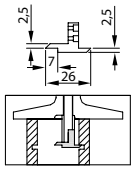
41 8770 – Flexible universal depth gauges with exchangeable measuring tips. For measuring cut-outs, grooves, recesses, shoulders etc. Precision lapped measuring faces.

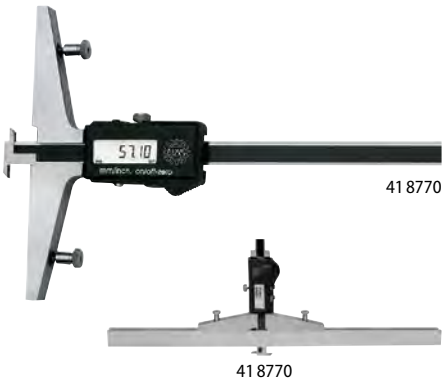
Supplied with:

41 8770 – Depth gauge, double hook measuring tip No. 418772 size A, 1 battery No. 081560 size CR2032.

Optional extras:

41 8770 – Data cable No. 498948.
Measuring tips No. 418772.
Measurement head No. 418774.

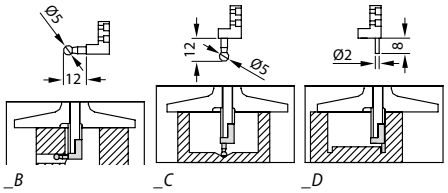




With slid-on measurement head No. 41 8774.

Measuring range	mm	300	400	500	600	800
46P 41 8770 Digital universal depth gauge		eShop	eShop	(eShop)	(eShop)	(eShop)
Reversible reading	mm			0.01		
Reversible reading	in			0.0005		
Error limit	mm	0.03	0.03	0.03	0.03	0.04
Bridge length	mm			150		
Cross-section measuring beam	mm			12×4		

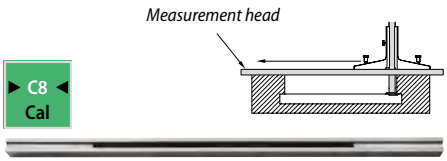




Type		A	B	C	D
46P 41 8772	Measuring tip for depth gauge No. 418770	eShop	eShop	eShop	eShop

The measurement head can be fitted quickly - no other tools required. Two spring-loaded screws allow it to be securely locked.

Bridge length	mm	400	500	600
46P 41 8774	Measurement head for depth gauge No. 418770	eShop	(eShop)	(eShop)
Cross section measurement head	mm		20×13	





Digital universal depth gauge in lightweight design

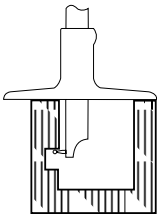
Easy-to-read display. Optimum sliding characteristics are ensured by **double Vee guides.** Measurement head of hard-coated aluminium with two tapped holes at 90° (M2.5) to take the measuring tips.

Supplied with: Contact point No. 434900 size 2, 3 measurement heads No. 418803 size 150, 300 and 450 mm, 1 battery No. 081560 size LR44 and manufacturer's test certificate.

Optional extras: All spare and special contact points No. 434900 - 434915 with M2.5 thread.







Additional side-facing mounting of measuring tips for measuring grooves and spacings.

Measuring range	mm	300	500	800
42A 41 8802 Digital depth gauge		eShop	eShop	(eShop)
Reversible reading	mm		0.01	
Reversible reading	in		0.0005	
Error limit	mm	0.04	0.05	0.06
Cross-section measuring beam	mm		23.5 × 9	



Digital small depth gauges

Digital depth gauge with **absolute scale**, no zeroing required. Very high accuracy due to the glass scale. Electronics switch off automatically after approx. 5 minutes and switch on again as soon as the tool is moved.

Supplied with: 1 battery No. 081560 size CR2032.

Measuring range	mm	50
42A 41 8760 Digital depth gauge		eShop ■
Reversible reading	mm	0.01
Reversible reading	in	0.0005
Error limit	mm	0.02
Needle hole probe length	mm	6
Needle hole probe ∅	mm	1.5
Bridge length	mm	50




▶ S1 ◀
Cal

Garant Measuring tool set, 6 pieces

Supplied with: Supplied in a wooden case.
1 **digital GARANT caliper** No. 412680 size 150 mm.
1 **GARANT external micrometer** No. 420402 size 0 – 25 mm.
1 **GARANT bevel square** No. 450010 size 100×70 mm, accuracy DIN 875/00.
1 **GARANT straight-edge** No. 460095 size 100 mm long.
1 **GARANT steel rule** EG I No. 461770 size 150 mm.
1 **precision spring dividers** No. 457000 size 120 mm long with interchangeable tips.

Number of measuring tools		6
41A 41 9151	Measuring tool set	eShop


41 9151

▶ S1 ◀
Cal

Garant Measuring tool sets, 2 or 6 pieces

Supplied with: Wooden case
Size 2 – 1 **GARANT vernier caliper** No. 410100 size 150 mm.
1 **GARANT external micrometer** No. 420402 size 0–25 mm.
Size 6 – 1 **GARANT vernier caliper** No. 410100 size 150 mm.
1 **GARANT external micrometer** No. 420402 size 0 – 25 mm.
1 **GARANT bevel edge square** No. 450010 size 100×70 mm, accuracy to DIN 875/00.
1 **GARANT straight edge** No. 460095 Size 100 mm long.
1 **GARANT steel rule** EG I No. 461770 size 150 mm.
1 **Precision spring divider** No. 457000 size 120 mm long with interchangeable tips.

Optional extras:
Size 2 – Can be extended to include bevel edge square No. 450010 size 75×50.

Number of measuring tools		2	6
40Z 41 9160	Measuring tool set	eShop	eShop


41 9160_2


41 9160_6

▶ S1 ◀
Cal

Mahr

Measuring tool set, 3 pieces

Supplied with: Wooden case
1 **Mahr digital vernier caliper** No. 412728 size 150 mm.
1 **digital external micrometer** No. 421310 size 0 – 25 mm.
1 **depth base attachment** No. 412710.

Number of measuring tools		3
43A 41 9170	Measuring tool set	eShop


41 9170

▶ S1 ◀
Cal

Mitutoyo

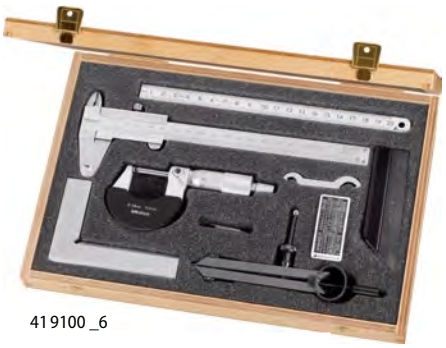
Measuring tool sets, 2 or 6 pieces

Supplied with: Wooden case
Size 2 – 1 **Mitutoyo vernier calipers** No. 410300 size 150 mm.
1 **Mitutoyo external micrometer** No. 420500 size 0 - 25 mm.
Size 6 – 1 **Mitutoyo vernier calipers** No. 410300 size 150 mm.
1 **Mitutoyo external micrometer** No. 420500 size 0 - 25 mm.
1 **Bevel edge square** No. 450010 size 100×70 mm, accuracy to DIN 875/00.
1 **Straight edge** No. 460095 Size 100 mm long.
1 Flexible **steel rule** No. 461800 size 200 mm long.
1 **Precision spring divider** No. 457000 size 120 mm long with interchangeable tips.

Optional extras:
Size 2 – Can be extended to include bevel edge square No. 450010 size 75×50.

Number of measuring tools		2	6
46P 41 9100	Measuring tool set	eShop	eShop


41 9100_2


41 9100 _6

S1 Cal

HOLEX Measuring tool set, 6 pieces

Supplied with: Supplied in a wooden case.
1 **HOLEX caliper** No. 410200 size 150 mm.
1 **HOLEX external micrometer** No. 420200 size 0 – 25 mm.
1 **HOLEX stock square** No. 452590 size 100×70 mm, accuracy DIN 875/2.
1 **HOLEX straight-edge** No. 460100 size 100 mm long.
1 flexible **steel rule** No. 461800 size 200 mm long.
1 **precision spring dividers** No. 457000 size 120 mm long with interchangeable tips.



41 9190

Number of measuring tools		6
41Z 41 9190	Measuring tool set	eShop

0 45

B1 Cal 0-25 | B2 Cal ≥ 25-50

External micrometers 1/100 graduation

Precision lapped, carbide-tipped measuring faces.
Hardened and ground measuring spindle.
Locking by clamping lever.
With ratchet and hand temperature protection.
With clearly engraved, black divisions and numerals.
42 0500 – From size 100-125, enamelled cast frame.

Supplied with:
42 0500/0410/0200 – From size 25-50 including 1 setting standard.
42 0450 – External micrometer without setting dimension.



Measuring range		mm	0-25	25-50	50-75	75-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300
44A 42 0500	Mitutoyo	External micrometer	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 0410	Mahr		eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	–	–	–	–
45A 42 0450	TESA		eShop	eShop	(eShop)	eShop	–	–	–	–	–	–	–	–
42B 42 0200	HOLEX		eShop	eShop	eShop	eShop	–	–	–	–	–	–	–	–
Scale divisions		mm	0.01											
Measurement deviation E MPE (42 0500)		µm	±2	±2	±2	±3	±3	±3	±4	±4	±4	±5	±5	±5
Measurement deviation E MPE (42 0200)		µm	±2	±2	±3	±3	–	–	–	–	–	–	–	–
Error limit (42 0410, 42 0450)		µm	4	4	5	5	6	6	7	7	–	–	–	–
Spindle ∅ (42 0500)		mm	6.35											
Spindle ∅ (42 0410, 42 0450, 42 0200)		mm	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	–	–	–	–
Barrel ∅ (42 0500, 42 0200)		mm	18											
Barrel ∅ (42 0410)		mm	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	–	–	–	–
Barrel ∅ (42 0450)		mm	18.5	18.5	18.5	18.5	–	–	–	–	–	–	–	–

ISO 3611 | 0 90

B1 Cal 0-25 | B2 Cal ≥ 25-50

HOLEX External micrometers 1/100 graduation

Precision lapped, carbide-tipped measuring faces.
Hardened and ground measuring spindle; with locking lever.
With ratchet and hand temperature protection.

Supplied with: From size 25 – 50 supplied with 1 setting standard.



42 0750

Measuring range		mm	0-25	25-50	50-75	75-100
42B 42 0750	External micrometer **1/100 graduations**		eShop	eShop	eShop	eShop
Scale divisions		mm	0.01			
Measurement deviation E MPE		µm	±2	±2	±3	±3
Spindle ∅		mm	8			
Barrel ∅		mm	30			

ISO 3611 | 0 45

External micrometers 1/100 graduation

Precision lapped, carbide-tipped measuring faces.
Hardened and ground measuring spindle. Locking by clamping lever.
With ratchet and hand temperature protection. Barrel non-reflecting chrome-plated.
With clearly engraved, black divisions and numerals.
With combined sensitive ratchet for single-handed operation and stand operation.
Supplied with: From size 25-50 including 1 setting standard.



42 0402



42 0540



42 0430_0–25



▶ B1 ◀ Cal 0–25
▶ B2 ◀ Cal ≥ 25–50

Measuring range		mm	0-25	25-50	50-75	75-100	100-125	125-150
41B 42 0402	Garant	External micrometer	eShop ■	eShop	eShop	eShop	eShop	eShop
44A 42 0540	Mitutoyo		eShop	eShop	–	–	–	–
42B 42 0430	HOLEX		eShop	eShop	eShop	eShop	–	–
Scale divisions		mm	0.01					
Measurement deviation E MPE		µm	±2	±2	±3	±3	±3	±3
Spindle ∅ (42 0402, 42 0430)		mm	6.5					
Spindle ∅ (42 0540)		mm	6.35	6.35	–	–	–	–
Barrel ∅ (42 0402)		mm	19					
Barrel ∅ (42 0540)		mm	18	18	–	–	–	–
Barrel ∅ (42 0430)		mm	20.5	20.5	20.5	20.5	–	–

0 45 | ▶ S2 ◀ Cal

External micrometer sets

42 0250 – External micrometers No. 420200.
42 0404 – External micrometers No. 420402.
42 0415 – External micrometers No. 420410.
42 0432 – External micrometers No. 420430.
42 0800 – External micrometers No. 420500.

ISO 3611


42 0404

Standard


42 0415

ISO 3611


42 0800

ISO 3611


42 0432

ISO 3611


42 0250

Measuring range		mm	0-100	0-150	100-200	150-300
41B 42 0404	Garant	External micrometer set	eShop	eShop	–	–
43A 42 0415	Mahr	External micrometer set Micromar	eShop	–	eShop	–
44A 42 0800	Mitutoyo		eShop	eShop	–	eShop
42B 42 0250	HOLEX	External micrometer set	eShop	–	–	–
42B 42 0432			eShop	–	–	–
Number of micrometers			4	6	4	6
Number of micrometer standards (42 0404, 42 0800, 42 0250, 42 0432)			3	5	–	6
Number of micrometer standards (42 0415)			2	–	2	–

ISO 3611 | 0 45 | B1 Cal

Hartig

External micrometers 1/200 graduation

Very accurate outside micrometer with **precision-lapped, carbide-tipped measuring faces.**
Hardened and ground measuring spindle. Locking by clamping screw.
With sensitive ratchet and hand temperature protection.
With clearly engraved, black divisions and numerals.
Application: Particularly suitable for inspection work due to the direct 5 µm reading.



42 0542_0-25

Measuring range	mm	0-25	25-50	50-75	75-100
46P 42 0542 External micrometer		(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.005			
Measurement deviation E MPE	µm	±0.5	±0.5	±1	±1
Spindle ∅	mm	8			
Barrel ∅	mm	25			

42

ISO 3611 | 0 45 | B1 Cal

Mitutoyo

External micrometers 1/1000 graduation

Precision lapped, carbide-tipped measuring faces.
Hardened and ground measuring spindle. Locking by locking lever.
With ratchet and hand temperature protection. Barrel non-reflecting chromium plated.
Clearly engraved black divisions and numerals.
With combined ratchet for **one-hand operation** and operation in the bracket.
Reading 0.001 mm.



42 0545

Measuring range	mm	0-25
44A 42 0545 External micrometer		eShop
Scale divisions	mm	0.001
Measurement deviation E MPE	µm	±2
Spindle ∅	mm	6.35
Barrel ∅	mm	18

ISO 3611

External micrometers with inch graduations

Precision lapped, carbide-tipped measuring faces.
Hardened and ground measuring spindle. Locking by locking lever.
With ratchet. Precision engraved black divisions and numerals.
42 0600 – Barrel non-reflecting chrome plated.
42 0650 – With hand temperature protection.
Supplied with: From size 1-2 including 1 setting standard.

B1 Cal 0-1 | B2 Cal ≥ 1-2



42 0600_0-1

B1 Cal 0-1 | B2 Cal ≥ 1-2



42 0650_0-1

Measuring range	in	0-1	1-2	2-3	3-4
44A 42 0600 Mitutoyo 42B 42 0650 HOLEX External micrometer **Inch graduations**		(eShop) eShop	(eShop) eShop	– eShop	– eShop
Scale divisions	in	0.0001			
Measurement deviation E MPE	in	±0.0001	±0.0001	±0.00015	±0.00015
Spindle ∅ (42 0600)	mm	6.35	6.35	–	–
Spindle ∅ (42 0650)	mm	6.5			
Barrel ∅	mm	18			

ISO 3611 | 0 90 | B1 Cal

Hartig

Precision external micrometers

Stable spheroidal cast frame, hammer finish with hand temperature protection, friction clutch, and locking device. Precision lapped, carbide-tipped measuring faces.

Advantage: 50 mm spindle travel, ideal for larger measurement ranges.
Direct reading of the 1/100 mm on the large scale barrel.

Supplied with: Without setting standard.



Measuring range	mm	0-50	50-100	100-150	150-200	200-250	250-300
46P 42 0900	Precision external micrometer with 50 mm spindle travel	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.01					
Measurement deviation E MPE	µm	±2	±3	±3	±4	±4	±4
Spindle ∅	mm	8					
Barrel ∅	mm	24					

42

ISO 3611 | B13 Cal

Micrometer setting standards

Setting standard with precision lapped measuring faces. The setting standards are labelled with the actual size. The manufacturer's tolerance is js2. With hand temperature insulation and actual value legend.

Application: For setting external micrometers and for general inspection work.

Note: Adjustment range up to 2000 mm on request.

overall length	mm	25	50	75	100
42B 42 1100	Micrometer setting standard	eShop	eShop	eShop	eShop



42 1100

Note: Adjustment range up to 78 inches on request.

overall length		1	2	3	4
42B 42 1150	Micrometer setting standard	eShop	eShop	eShop	eShop



42 1150

ISO 3611 | 0 90 | S3 Cal

Large external micrometers

Hardened and ground measuring spindle. Precision lapped, carbide-tipped measuring faces.
Locking by locking lever. Large barrel with 1/100 scale and ratchet.
Lightweight external micrometers, hammer finish.



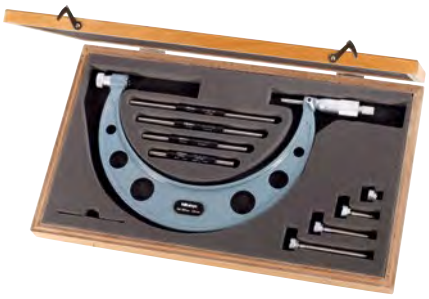
Measuring range	mm	25-150	100-200	150-300	200-300
42B 42 0770	Large external micrometer **1/100 graduations**	eShop	eShop	eShop	eShop
Scale divisions	mm	0.01			
Measurement deviation E MPE	µm	±6	±7	±9	±9
Spindle ∅	mm	8			
Spindle travel	mm	25			
Barrel ∅	mm	25			
Number of measuring tips		5	4	6	4
Number of micrometer standards		5	4	6	4

Standard | 0 45 | S3 Cal

Mitutoyo

Large external micrometers

Hardened and ground measuring spindle and measuring faces; locked by locking lever. With ratchet.
Glare-free satin chrome-plated barrel with 1/50 scale and cleanly engraved black graduations and numerals.
4 easily interchangeable anvils give a measurement range of 100 mm per size.



Measuring range	mm	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900
44A 42 0810	Large external micrometer	eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.01							
Error limit	µm	7	8	10	11	12	14	15	16
Spindle ∅	mm	6.35	6.35	8	8	8	8	8	8
Spindle travel	mm	25							
Barrel ∅	mm	18	18	21	21	21	21	21	21
Weight	kg	1.8	3.4	5.3	6.7	10.4	12.4	14.8	17
Number of measuring tips		4							
Number of micrometer standards		4							

ISO 3611 | 0 90 | ▶ S3 ◀ Cal

Hartig

Large precision external micrometers

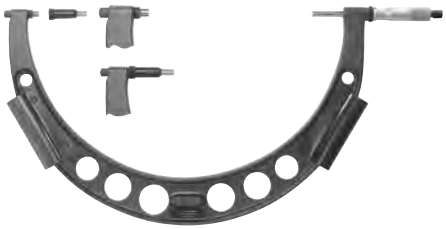
Stable light metal cast frame, hammer finish with hand temperature protection, friction clutch, and locking device. Precision lapped, carbide-tipped measuring faces.
The screw-on rear anvil extension is lapped and carbide-tipped; it doubles the measuring range.
Inner scale sleeve with scales for both measurement ranges.

Size 100-200 – Version with steel hoop.

Advantage: Very large measuring range. After the rear anvil extension has been fitted, the micrometer is immediately ready for use. No additional setting block required. Direct reading of the 1/100 mm on the large scale barrel.

Supplied with: Micrometer with 1 rear anvil extension. Without setting standard.

Note: Versions up to 2000 mm measurement range available on request.



Measuring range		mm	100-200	200-300	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
46P 42 0920	Large precision external micrometer with rear anvil extension		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions		mm	0.01								
Measurement deviation E MPE		µm	±3	±4	±6	±7	±8	±8	±8	±9	±9
Spindle ∅		mm	10								
Spindle travel		mm	50								
Barrel ∅		mm	24								
Weight		kg	1.9	3.8	4.5	5.6	7.2	10	12.5	14.9	18.2

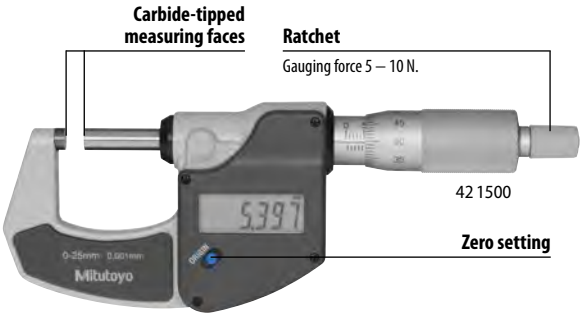
ISO 3611 | ▶ B1 ◀ Cal

Mitutoyo

Digital external micrometer

Digital external micrometer with compact design.
Extra large LCD display (7.5 mm). Carbide-tipped anvils.

Supplied with: 1 battery No. 081560 size 357.



Measuring range		mm	0-25
44A 42 1500	Digital external micrometer		eShop ■
Scale divisions		mm	0.001
Measurement deviation E MPE		µm	±2
Spindle ∅		mm	6.35
Spindle pitch		mm	0.5

ISO 3611 | IP 54

▶ B1 ◀ Cal 0-25 | ▶ B2 ◀ Cal ≥ 25-50

HOLEX

Digital external micrometers

Easy-to-read display. Carbide-tipped measuring faces.

Digital and analogue graduations.
Dust-proof and splash-proof metal casing.

Supplied with: 1 battery No. 081560 size CR2032.
1 plug-in sphere for measuring curved surfaces.

Size 25-50–75-100 – 1 setting standard.



Measuring range		mm	0-25	25-50	50-75	75-100
42B 42 1492	Digital external micrometer		eShop	eShop	eShop	eShop
Scale divisions		mm	0.001			
Measurement deviation E MPE		µm	±2	±2	±3	±3
Spindle ∅		mm	6.5			
Spindle pitch		mm	0.5			

Digital external micrometer set

▶ S2 ◀ Cal

Supplied with: External micrometers No. 421492 with appropriate micrometer standards.



Measuring range		mm	0-100
42B 42 1496	Digital external micrometer set		eShop
Number of micrometers			4
Number of micrometer standards			3

ISO 3611 | mm / Inch | Reference Lock

Mahr

Digital external micrometers Micromar

Innovative external micrometer with **10 mm tall characters** on sharp contrast display. Practical HOLD function for freezing the measured value for reliable, error-free reading. Measuring spindle hardened and ground. Carbide anvils. High performance ratchet with quick operation. Painted steel frame with thermal insulation. Button for changeover between relative and absolute measurement. Zero setting in any position. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons.

42 1318/1325 – A well-arranged **tolerance display with additional warning limits** allows the user to recognise whether the workpiece is within the tolerance limits.

Supplied with: 1 battery No. 081560 size CR2032, 1 setting standard from size 25-50.

Optional extras:

42 1318 – Data cable No. 498941.

42 1325 – i-wi radio receiver No. 498912 STICK.

B1 Cal 0-25



42 1310

IP 65 | B1 Cal 0-25 | B2 Cal ≥ 25-50



42 1315

IP 65 | Digimatic | B1 Cal 0-25 | B2 Cal ≥ 25-50

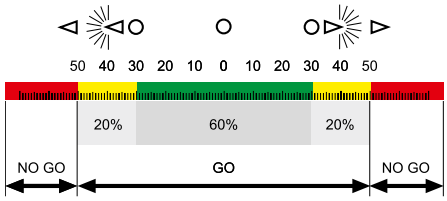


42 1318



42 1315 / 42 1318 / 42 1325

Tolerance display with additional warning limits.



42 1318 / 42 1325

IP 65 | i-wi | B1 Cal 0-25 | B2 Cal ≥ 25-50



42 1325

Measuring range		mm	0-25	25-50	50-75	75-100	100-125	125-150	150-175	175-200
43A 42 1310	Digital external micrometer		eShop	–	–	–	–	–	–	–
43A 42 1315	Digital external micrometer **IP65**		eShop	eShop	eShop	eShop	–	–	–	–
43A 42 1318	Digital external micrometer **IP65 with data output**		eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 1325	Digital external micrometer **IP65 i-wi**		eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions		mm	0.001							
Scale divisions		in	0.00005							
Measurement deviation E MPE		µm	±2	±2	±3	±3	±3	±3	±4	±4
Spindle ∅		mm	6.5							
Spindle pitch		mm	0.5							

Digital external micrometers Micromar

IP 65 | S2 Cal

42 1328 – External micrometer No. 421318.

42 1330 – External micrometer No. 421325.

Supplied with: Setting standards.

Digimatic



42 1328

i-wi



42 1330

Measuring range		mm	0-100
43A 42 1328	Digital external micrometer set **IP65 with data output**		eShop
43A 42 1330	Digital external micrometer set **IP65 i-wi**		eShop
Number of micrometers			4
Number of micrometer standards			3

ISO 3611 | IP 65

B1 Cal 0-25 | B2 Cal ≥ 25-50

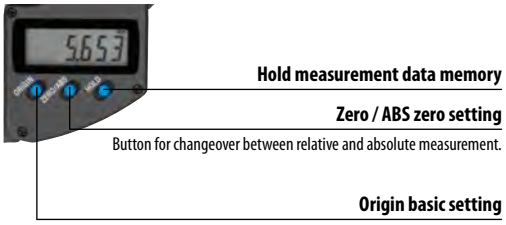
Mitutoyo Digital external micrometers

Very accurate outside micrometers.
Extra-large LCD display (7.5 mm) for quick, error-free reading, keyboard lock.
Carbide-tipped measuring faces. **Shock-proof version.**
Measuring spindle hardened and ground.

42 1527 – With ratchet barrel.

Supplied with: 1 battery No. 081560 size 357,
1 setting standard from size 25 -50.

Optional extras: No. 421525 and 421527. Data cable No. 497445.









Measuring range		mm	0-25	25-50	50-75	75-100	100-125	125-150
44A 42 1515	Digital external micrometer **IP65**		eShop	eShop	eShop	eShop	–	–
44A 42 1525	Digital external micrometer **IP65 with data output**		eShop	eShop	eShop	eShop	(eShop)	(eShop)
44A 42 1527	Digital external micrometer **IP65 with data output and ratchet barrel**		eShop	eShop	–	–	–	–
Scale divisions		mm	0.001					
Measurement deviation E MPE		µm	±1	±1	±2	±2	±2	±2
Spindle ∅		mm	6.35					
Spindle pitch		mm	0.5					

ISO 3611 | Digimatic | IP 65 | S2 Cal

Mitutoyo Digital external micrometer sets

External micrometer No. 421525.

Supplied with: Setting standards and storage box.



Measuring range		mm	0-50	0-100
44A 42 1555	Digital external micrometer set **IP65 with data output**		eShop	eShop
Number of micrometers			2	4
Number of micrometer standards			1	3

ISO 3611 | Digimatic | IP 65

B1 Cal 0-25 | B2 Cal ≥ 25-50

Mitutoyo Digital external micrometers QuantuMike

Very accurate external micrometers. Improved single-handed operation due to smaller housing.
Larger display for better visibility. "Function Lock" prevents accidental readjustment of the zero point.
Combination ratchet (torque limitation in the barrel and in the quick drive) for single-handed or stand operation.
Tolerance assessment and calculation function for greater efficiency.
Safe measurements thanks to warning function if the feed rate speed is too high.
Calibration schedule alert when calibration is due.

Advantage: **Measuring time reduction of up to 40% due to 2 mm spindle pitch.**

Supplied with: 1 battery No. 081560 size CR2032. From size 25-50, 1 setting standard.

Optional extras: Data cable No. 497447.



Measuring range		mm	0-25	25-50	50-75	75-100
44A 42 1573	Digital external micrometer **with data output**		eShop	eShop	(eShop)	(eShop)
Scale divisions		mm	0.001			
Measurement deviation E MPE		µm	±1	±1	±2	±2
Spindle ∅		mm	6.35			
Spindle pitch		mm	2			

ISO 3611 | mm/Inch | IP 67 | HID | HCT

B1 Cal | B13 Cal | HCT

≥ 25 – 50

Garant

Digital outside micrometer HCT protection class IP67 with Bluetooth®

Note: Compatible with the optional HCT (Hoffmann Group Connected Tools) mobile app (available free of charge for Android and iOS) and the HCT Windows app (available for Windows). Can also be used via a Human Interface Device (HID).



42 1575_0-25

Innovative outside micrometer IP67 HCT with Bluetooth® 5.0 and **12 mm digits** on a high-contrast display.
Very long battery running time due to modern energy-efficient measurement system.
Due to the automatic shut-off feature, very long battery runtimes are achieved.
Practical HOLD function for freezing the measured value for reliable, error-free reading.
Measuring spindle hardened and ground. Carbide and chamfered measuring faces.
High performance ratchet with quick operation. Painted steel frame with thermal insulation.
Button for changeover between relative and absolute measurement. Zero setting in any position.

Supplied with: 1 battery No. 081560 size CR 2032.

Size 25-50–75-100 – 1 setting standard.





Measuring range		mm	0-25	25-50	50-75	75-100
41B 42 1575	Digital external micrometer HCT **IP67 and Bluetooth®**		–	–	–	–
Scale divisions		mm	0.001			
Scale divisions		in	0.0005			
Error limit		µm	2	2	3	3
Measurement deviation E MPE		µm	±2	±2	±3	±3
Spindle ∅		mm	6.5			
Spindle pitch		mm	1			
Number of micrometer standards			–	1	1	1
Wireless application			HID (Human Interface Device); HCT Mobile App; HCT Windows app			

Digital outside micrometer set HCT protection class IP67 with Bluetooth®

S2 Cal

Supplied with: External micrometer No. 421575. Setting standards.



42 1577

Measuring range		mm	0-100
41B 42 1577	Digital external micrometer set HCT **IP67 and Bluetooth®**		–
Number of micrometers			4
Number of micrometer standards			3
Wireless application			HID (Human Interface Device); HCT Mobile App; HCT Windows app

Precise as always, better connectivity than ever: the HCT Windows app.

With the new HCT Windows app, our **GARANT and HOLEX HCT products** can also be easily connected to PCs and laptops running a Windows operating system. This makes quick documentation and wireless data transmission to CAQ systems easier than ever before.



Standard | mm / Inch | Digimatic | Absolute System | ▶ B1 ◀ Cal

Mitutoyo MDH digital precision external micrometer

High precision digital external micrometer.
Precision spindle with absolute rotary encoder.
Special ratchet barrel for constant measuring force 7–9 N.
Supplied with: Including thermally insulated cover to minimise the effects of temperature and 1 battery No. 081560 size CR2032.

Measuring range		mm	0-25
44A 42 1608	Digital precision external micrometer		(eShop)
Scale divisions		mm	0.0001
Scale divisions		in	0.000005
Error limit		µm	0.5
Flatness of measuring faces		µm	0.3
Spindle ∅		mm	6.35
Spindle pitch		mm	0.5
Measuring face ∅		mm	3.2



42 1608_0-25

Standard | Digimatic | IP 65 | ▶ S3 ◀ Cal

Mitutoyo Large digital external micrometers

Hardened and ground measuring spindle and measuring faces; locked by locking lever. With ratchet. **6 easily interchangeable measuring anvils give a measuring range of 150 mm per set.**
Accuracy: (4 + L / 75) µm
Supplied with: Measuring spindles, setting standards, 1 battery No. 081560 size 357.
Optional extras: Data cable No. 497445.

Measuring range		mm	0-150	150-300
44A 42 1558	Digital external micrometer **large**		eShop	eShop
Scale divisions		mm	0.001	
Error limit		µm	6	8
Spindle ∅		mm	6.35	
Spindle pitch		mm	0.5	
Spindle travel		mm	25	
Barrel ∅		mm	18	
Weight		kg	0.96	1.88
Number of micrometer standards			5	6


_0-150

ISO 3611 | mm / Inch | IP 65 | Reference Lock | ▶ B1 ◀ Cal

Digimatic

42 1321

Mahr Universal digital external micrometer with interchangeable anvils

External micrometers **with non-rotating** spindle and **interchangeable anvils. Spindle pitch 5 mm per revolution** reduces the approach time. **10 mm tall characters** on high-contrast display. Practical HOLD function for freezing the measured value for reliable, error-free reading. Button for changeover between relative and absolute measurement. Zero setting in any position. A well-arranged tolerance display with additional warning limits allows the user to recognise whether the workpiece is within the tolerance limits.
The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons.

Supplied with: Supplied with 1 battery No. 081560 size CR2032.
6 pairs of interchangeable anvils with:
- Flat measuring faces ∅ 6.5 mm.
- Disc anvils ∅ 11.3 mm.
- Reduced measuring faces ∅ 2 mm.
- Convex measuring faces ∅ 7 mm.
- Blade anvils 0.75×7 mm.
- Cone 60° ∅ 0.5 – 5.5 mm.

Optional extras:
42 1321 – Data cable No. 498941.
42 1323 – i-wi radio receiver No. 498912.

i-wi

42 1323

Measuring range		mm	0-25
43A 42 1321	Digital external micrometer **with interchangeable anvils**		eShop
43A 42 1323	Digital external micrometer **i-wi with interchangeable anvils**		eShop
Scale divisions		mm	0.001
Scale divisions		in	0.00005
Measurement deviation E MPE		µm	±4
Spindle ∅		mm	6.5
Spindle pitch		mm	5



42 1323

ISO 3611 | IP 65 | Reference Lock

Mahr Micromar digital external micrometers with QUICK DRIVE

Innovative external micrometer with **10 mm tall characters** on sharp contrast display. Practical HOLD function for freezing the measured value for reliable, error-free reading. Measuring spindle hardened and ground. Carbide anvils. High performance ratchet with quick operation. Painted steel frame with thermal insulation. Button for changeover between relative and absolute measurement. Zero setting in any position. A well-arranged **tolerance display with additional warning limits** allows the user to recognise whether the workpiece is within the tolerance limits.
The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons.

Description:
- **Spindle pitch 5 mm** per revolution reduces the approach time.
- **Non-rotating spindle** protects the surfaces being measured.

Supplied with: 1 battery No. 081560 size CR2032, 1 setting standard from size 25-50.

Optional extras:
42 1602 – Data cable No. 498941.
42 1605 – i-wi radio receiver No. 498912 STICK.

B1 Cal | B2 Cal | Digimatic

0-25 | ≥ 25-50



42 1602

B1 Cal | B2 Cal | i-wi

0-25 | ≥ 25-50



42 1605

Measuring range		mm	0-25	25-50
43A 42 1602	Digital external micrometer **with sliding spindle, data output**		eShop	(eShop)
43A 42 1605	Digital external micrometer **i-wi with sliding spindle**		(eShop)	(eShop)
Scale divisions		mm	0.001	
Scale divisions		in	0.00005	
Measurement deviation E MPE		µm	±2	
Spindle ∅		mm	6.5	
Spindle pitch		mm	5	

ISO 3611 | Digimatic | IP 65 | Absolute System

Mitutoyo QuickMike digital micrometers

Outside micrometer with the following functions: **On / Off, Origin (basic setting), Zero / Abs** (for zeroing in any position), **Hold / Data** (save measurement value or send data).

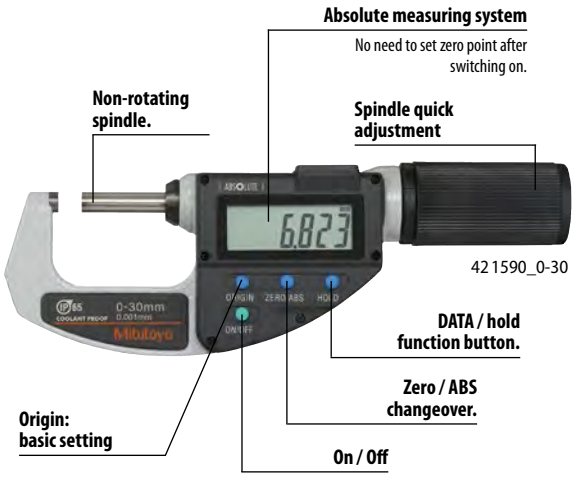
Description:
- Spindle pitch 10 mm per revolution reduces the approach time.
- **Non-rotating spindle** protects the surfaces being measured.
- **Absolute measuring system.** No need to set zero point after switching on. Prevents measurement errors.

Supplied with: 1 battery No. 081560 size 357. 1 micrometer standard from size 25-55.

Optional extras: Data cable No. 497445.

B1 Cal | B2 Cal

0-30 | ≥ 25-55



42 1590_0-30

Measuring range		mm	0-30	25-55	50-80	75-105
44A 42 1590	Digital external micrometer **with data output**		eShop	eShop	(eShop)	(eShop)
Scale divisions		mm	0.001			
Measurement deviation E MPE		µm	±2	±2	±3	±3
Spindle ∅		mm	6.35			
Spindle pitch		mm	10			

HOLEX External micrometer stands

42B 42 1850	External micrometer stand 1.3 kg		eShop
42B 42 1870	External micrometer stand, solid 1.7 kg		eShop
Length (42 1850)		mm	165
Length (42 1870)		mm	120
Width (42 1850)		mm	115
Width (42 1870)		mm	80
Height (42 1850)		mm	115
Height (42 1870)		mm	83


42 1850

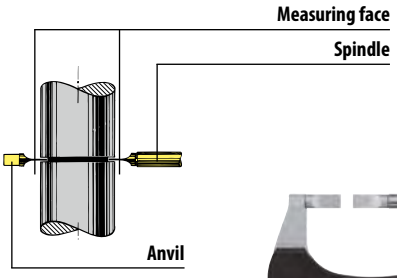

42 1870

ISO 3611 | 0 45

External blade micrometers for narrow grooves

With non-rotating spindle and flat blade anvils. Measuring spindle and anvil of hardened steel, controls and reading parts satin chrome-plated.

Supplied with: From size 25-50 including 1 setting standard.



B1 Cal 0-25 | B2 Cal ≥ 25-50



42 1896_0-25

B1 Cal 0-25 | B2 Cal ≥ 25-50



42 1900_0-25

Measuring range		mm	0-25	25-50	50-75	75-100
44A 42 1896	Mitutoyo External blade micrometer		eShop	eShop	eShop	eShop
42B 42 1900	HOLEX External blade micrometer		eShop	eShop	eShop	eShop
Scale divisions		mm	0.01			
Measurement deviation E MPE (42 1896)		µm	±3	±3	±3	±4
Measurement deviation E MPE (42 1900)		µm	±3	±3	±4	±4
Spindle ∅ (42 1896)		mm	6.35			
Spindle ∅ (42 1900)		mm	8			
Spindle pitch		mm	0.5			
Flat blade anvils width		mm	0.75			
Flat blade anvils length		mm	6.5			

ISO 3611 | 0 90 | B1 Cal

Hartig

External micrometers with disc anvils

Disc anvil of hardened steel in flat version, **without recess**. Hardened and ground measuring spindle. High accuracy. Locking by clamping device. With ratchet and hand temperature protection. With clearly engraved, black divisions and numerals.

Application: For determining the tooth widths of spur and helical gears from module 0.6.



42 2990_0-25

Measuring range		mm	0-25	25-50	50-75	75-100	100-125	125-150
46P 42 2990	External micrometer with disc anvils **∅ 25 mm**		(eShop)	(eShop)	(eShop)	(eShop)	–	–
46P 42 2992	External micrometer with disc anvils **∅ 30 mm**		–	–	–	–	(eShop)	(eShop)
Scale divisions		mm	0.01					
Measurement deviation E MPE		µm	±2					
Spindle ∅		mm	8					
Barrel ∅		mm	24					

ISO 3611 | 0 45

HOLEX

External micrometers with disc anvils

With large-area, hardened disc anvils. Forged and enamelled frame.

42 3000 – Design with rotating spindle.

42 3005 – Design with non-rotating spindle.

Application: For determining the tooth widths of spur and helical gears from module 0.8.

Supplied with: From size 25-50 including 1 setting standard.

B1 Cal 0-25 | B2 Cal ≥ 25-50



42 3000_0-25

B1 Cal 0-25 | B2 Cal ≥ 25-50



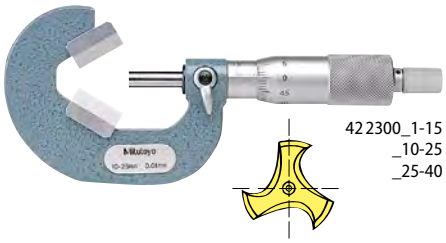
42 3005_0-25

Measuring range		mm	0-25	25-50	50-75	75-100	100-125	125-150
42B 42 3000	External micrometer with disc anvils		eShop	eShop	eShop	eShop	eShop	eShop
42B 42 3005	External micrometer with disc anvils and non-rotating spindle		eShop	eShop	eShop	eShop	–	–
Scale divisions		mm	0.01					
Measurement deviation E MPE		µm	±4	±4	±6	±6	±7	±7
Parallelism of the measuring faces		µm	5	5	5	5	6	6
Spindle ∅		mm	8					
Spindle pitch		mm	0.5					
Disc anvil ∅ (42 3000)		mm	20	20	20	20	30	30
Disc anvil ∅ (42 3005)		mm	19.5	19.5	19.5	19.5	–	–

ISO 3611 | 0 45 | ▶ B8 ◀ Cal

Mitutoyo External micrometers with Vee anvil

With Vee anvil for measuring three or five-flute cutters. Enamelled frame. Spindle pitch correction for Vee angle.
Size 1-15–25-40 – **Triangular** with a Vee angle of 60°.
Size 5-25; 25-45 – **Pentagonal** with a Vee angle of 108°.
Application: For measuring **3 or 5 flute cutters** (end mills, reamers).
Supplied with: Setting standard.



42 2300_1-15
_10-25
_25-40

Measuring range		mm	1-15	10-25	25-40
44A 42 2300	External micrometer **with Vee-anvil**		eShop	eShop	(eShop)
Scale divisions		mm	0.01		
Measurement deviation E MPE		µm	±4	±4	±5
Spindle ∅		mm	6.35		
Barrel ∅		mm	18		
Vee angle		degrees	60 (triangular)		



42 2300_5-25
_25-45

Measuring range		mm	5-25	25-45
44A 42 2300	External micrometer **with Vee-anvil**		(eShop)	(eShop)
Scale divisions		mm	0.01	
Measurement deviation E MPE		µm	±4	±5
Spindle ∅		mm	6.35	
Barrel ∅		mm	18	
Vee angle		degrees	108 (pentagonal)	

ISO 3611 | 0 45 | ▶ B1 ◀ Cal

HOLEX External micrometer for measuring the wall thickness of tubes

With conical anvil for measuring the wall thickness of pipes and other curved parts. Measuring spindle with carbide-tipped anvils, anvil ∅ 8 mm, hardened. With hand temperature insulated frame, locking lever, and high quality ratchet.



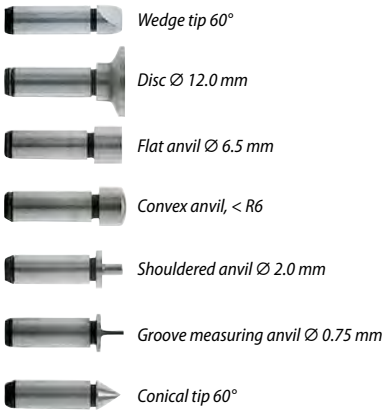
42 3010

Measuring range		mm	0-25
42B 42 3010	External micrometer		eShop
Scale divisions		mm	0.01
Measurement deviation E MPE		µm	±3
Spindle ∅		mm	6.5
Spindle pitch		mm	0.5

ISO 3611 | 0 45 | ▶ B1 ◀ Cal

HOLEX Universal external micrometer with interchangeable anvils

Universal external micrometer with non-rotating spindle. Lapped measuring faces. Socket ∅ 5×15 mm. Steel frame forged and enamelled. Quick-change anvils. Zeroing by clamping slide sleeves.
Supplied with: 7 pairs of interchangeable anvils.



Wedge tip 60°
Disc ∅ 12.0 mm
Flat anvil ∅ 6.5 mm
Convex anvil, < R6
Shouldered anvil ∅ 2.0 mm
Groove measuring anvil ∅ 0.75 mm
Conical tip 60°



42 1750

Measuring range		mm	0-25
42B 42 1750	Universal external micrometer		eShop
Scale divisions		mm	0.01
Measurement deviation E MPE		µm	±2
Spindle ∅		mm	8
Spindle pitch		mm	0.5

ISO 3611 | 0 45 | ▶ i ◀ Cal

Hartig

External thread micrometers

Hardened and ground measuring spindle with bore for the measuring tips. Glare-free satin chrome-plated barrel. With sensitive ratchet (friction lock) and quick drive for rapid adjustment. Heat-insulated frame.

Application: **For practical measurement of flank Ø of external threads.** One pair of anvils (Vee and cone) fits several pitches, providing the flank angle remains unchanged.

Supplied with: From size 25–50 with 1× 60° setting standard; without thread measurement inserts.

Optional extras: Vee and cone anvils No. 421652.

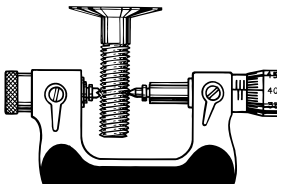
Note: Further measurement ranges available on request.

For Vee and cone anvils see No. 421652.



42 2340_0-25

Measuring range		mm	0-25	25-50	50-75	75-100
46P 42 2340	External thread micrometer **without anvils**		eShop	eShop	eShop	eShop
Scale divisions		mm	0.01			
Measurement deviation E MPE		µm	±3	±3	±4	±4
Spindle Ø		mm	6.5			
Spindle pitch		mm	0.5			
Barrel Ø		mm	20			



▶ L16 ◀ Cal

Martin+Tschopp

Thread measurement wires with holders, measurement wire series as per ZEISS

The thread measurement wires are hardened and precision lapped, the holders are matt chrome-plated. A snap ring in the mounting bore ensures secure easy-twist seating on the measuring spindle.

Application: For determining the flank Ø of external threads using the three-wire method in conjunction with an external micrometer or a length measurement bench.

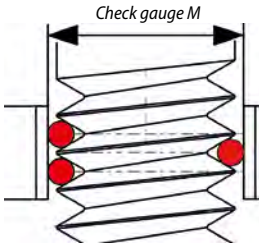
Supplied with: A set consists of a holder with one measurement wire and a holder with two measurement wires, in a plastic box.

Note: **When ordering, please specify the Ø of the measuring spindle** (6.35 mm / 6.5 mm / 6.8 mm / 7.5 mm / 8.0 mm).



42 2490

Check gauge M





For determining the flank dia. of external threads using the three-wire method in conjunction with an external micrometer.

Wire Ø		mm	0,170	0,250	0,290	0,455	0,620	0,725
46P 42 2490	Thread measurement wires set		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Error limit		µm	±1					
for threads			M1 / M1.1 / M1.2 / M1.4	M2 / M2.3	M2.6 / M3	M4 / M5	M6	M8
for thread pitch P			0.25 / 0.30	0.4	0.45 / 0.5	0.7 / 0.75 / 0.8	1	1.25
Check gauge M to DIN 13 sheet 1		mm	1.133 / 1.206 / 1.332 / 1.456	2.145 / 2.444	2.789 / 3.113	4.305 / 5.153	6.346	8.282

Wire Ø		mm	0,895	1,100	1,350	1,650	2,050	2,550
46P 42 2490	Thread measurement wires set		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Error limit		µm	±1					
for threads			M10	M12	M14	M18 / M20 / M22	M24 / M27 / M30 / M33	M36 / M39 / M42 / M45
for thread pitch P			1.5	1.75	2	2.5	3 / 3.5	4/ 4.5
Check gauge M to DIN 13 sheet 1		mm	10.414	12.650	15.021	19.037 / 21.163 / 23.163	25.606 / 28.605 / 30.848 / 33.848	37.591 / 40.590 / 42.853 / 45.832

ISO 3611 | Digimatic

Mitutoyo Digital special external micrometers



Large, high-contrast digital LCD display

Data storage button
for awkward measuring positions.

Zeroing / changing over
in absolute measurement.

Origin:
Basic setting / zeroing.

Clear (7.5 mm high), digital measured value display provides quick readings. Addition reading by vernier. Sintered, precision lapped, carbide tipped anvils, measuring spindle hardened and ground. Locking by clamping screw. Measuring force at the ratchet 5 - 10 N.

Supplied with: From size 25-50 including 1 setting standard. 1 battery No. 081560 size 357.

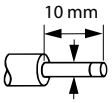
42 1650 – **Without setting standards.**

Optional extras: Data cable No. 497445.

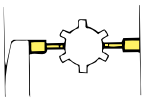
42 1650 – Anvils for thread measurement No. 421652.

42

B1 Cal 0-25 | B2 Cal ≥ 25-50



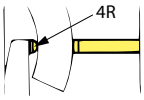
Measuring range	mm	0-25	25-50
44A 42 1610 Digital external micrometer **with offset measuring faces**		eShop	(eShop)
Measurement deviation E MPE	µm	±2	





42 1610 IP 65

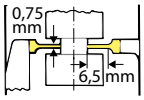
Measuring range	mm	0-25	25-50
44A 42 1630 Digital external micrometer **for curved surfaces**		eShop	(eShop)
Measurement deviation E MPE	µm	±2	





42 1630 IP 65

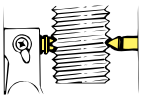
Measuring range	mm	0-25	25-50	50-75
44A 42 1640 Digital external micrometer **for groove measurement**		eShop	(eShop)	(eShop)
Measurement deviation E MPE	µm	±3		





42 1640

Measuring range	mm	0-25	25-50	50-75
44A 42 1650 Digital external micrometer **for thread measurements**		eShop	(eShop)	(eShop)
Pitch error	µm	3		

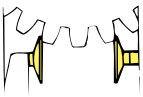




IP 65 | B8 Cal

42 1650 ≥ 25-50

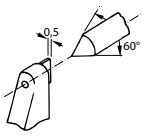
Measuring range	mm	0-25	25-50	50-75	75-100
44A 42 1660 Digital external micrometer **with disc anvils**		eShop	eShop	eShop	(eShop)
Measurement deviation E MPE	µm	±4	±4	±6	±6
Parallelism of the measuring faces	µm	4	4	6	6





42 1660 IP 65

Measuring range	mm	0-20
44A 42 1675 Digital external micrometer **with measuring tip**		eShop
Measurement deviation E MPE	µm	±3





42 1675 IP 65

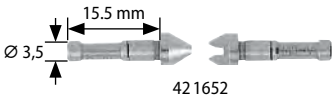
B7 Cal

Mitutoyo Pair of anvils for external thread micrometers

With 60° flank angle for measuring several different pitches with a single pair of anvils (Vee and cone). For metric and UN threads

Suitable for: External thread micrometers No. 421650 and 422340.

Note: Anvils for Whitworth threads on request.



42 1652

Pitch	mm	0,4-0,5	0,6-0,9	1-1,75	2-3	3,5-5	5,5-7
44A 42 1652 Pair of anvils for external thread micrometers		eShop	eShop	eShop	eShop	eShop	eShop

Standard | IP 65 | mm / Inch

Mahr

Digital special external micrometers

Innovative external micrometer with **10 mm tall characters** on sharp contrast display.
Practical HOLD function for freezing the measured value for reliable, error-free reading.
Painted steel frame with thermal insulation. Button for changeover between relative and absolute measurement. Zero setting in any position.
A well-arranged **tolerance display with additional warning limits** allows the user to recognise whether the workpiece is within the tolerance limits.

42 1681/1691 – Measuring spindle and anvil carbide tipped.
42 1685/1695 – Non-rotating spindle. **QUICK DRIVE** with **spindle pitch of 5 mm** per revolution.

Supplied with: 1 battery No. 081560 size CR2032, 1 setting standard from size 25-50.

Optional extras:

42 1681–1687 – Data cable No. 498941.
42 1691–1697 – i-wi radio receiver No. 498912 STICK.

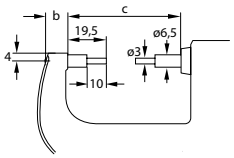
Digimatic | RS232C

42 1681 / 1683 / 1685 / 1687

i-wi

42 1691 / 1693 / 1695 / 1697

Measuring range		mm	0-25	25-50
43A 42 1681	Digital external micrometer **with offset measuring faces**		(eShop)	(eShop)
43A 42 1691	Digital external micrometer **i-wi with offset measuring faces**		(eShop)	(eShop)
Scale divisions		mm	0.001	
Scale divisions		in	0.00005	
Spindle pitch		mm	0.5	
Error limit		µm	4	

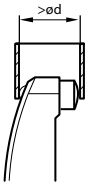


B1 Cal 0-25 | B2 Cal ≥ 25-50



42 1681

Measuring range		mm	0-25	25-50
43A 42 1683	Digital external micrometer **for curved surfaces**		(eShop)	(eShop)
43A 42 1693	Digital external micrometer **i-wi for curved surfaces**		(eShop)	(eShop)
Scale divisions		mm	0.001	
Scale divisions		in	0.00005	
Spindle pitch		mm	0.5	
Error limit		µm	4	

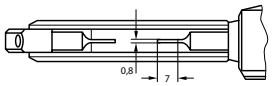


B1 Cal 0-25 | B2 Cal ≥ 25-50



42 1683

Measuring range		mm	0-25	25-50	50-75	75-100
43A 42 1685	Digital external micrometer **for groove measurement**		(eShop)	(eShop)	(eShop)	(eShop)
43A 42 1695	Digital external micrometer **i-wi for groove measurement**		(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions		mm	0.001			
Scale divisions		in	0.00005			
Spindle pitch		mm	5			
Error limit		µm	4	4	5	5

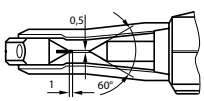


B1 Cal 0-25 | B2 Cal ≥ 25-50



42 1685

Measuring range		mm	0-20
43A 42 1687	Digital external micrometer **with measuring tip**		(eShop)
43A 42 1697	Digital external micrometer **i-wi with measuring tip**		(eShop)
Scale divisions		mm	0.001
Scale divisions		in	0.00005
Spindle pitch		mm	0.5
Error limit		µm	4



B1 Cal 0-20



42 1687

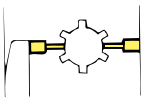
ISO 3611 | mm / Inch | 0 45 | ▶ B1 ◀ Cal

HOLEX Digital special external micrometers

Easy to read digital display with additional analogue reading. Robust metal casing.
42 1721/1727 – Rotating measurement spindle, carbide-tipped measuring faces
42 1725/1729 – Stationary measurement spindle
Supplied with: 1 battery No. 081560 size CR2032.

Measuring range		mm	0-25
42B 42 1721	Digital external micrometer **with offset measuring faces**		eShop
Scale divisions		mm	0.001
Scale divisions		in	0.00005
Measurement deviation E MPE		µm	±2



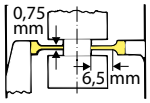




42 1721

IP 54

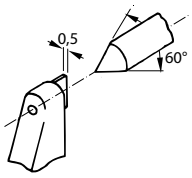
Measuring range		mm	0-25
42B 42 1725	Digital external micrometer **for groove measurement**		eShop
Scale divisions		mm	0.001
Scale divisions		in	0.00005
Measurement deviation E MPE		µm	±3





42 1725

Measuring range		mm	0-25
42B 42 1727	Digital external micrometer **with measuring tip**		eShop
Scale divisions		mm	0.001
Scale divisions		in	0.00005
Measurement deviation E MPE		µm	±3

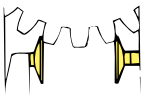




42 1727

IP 54

Measuring range		mm	0-25
42B 42 1729	Digital external micrometer **with disc anvils**		eShop
Scale divisions		mm	0.001
Scale divisions		in	0.00005
Measurement deviation E MPE		µm	±4
Parallelism of the measuring faces		µm	4
Disc anvil ∅		mm	20





42 1729

Steinmeyer Digital snap gauge

For high-precision measurement of components.
Suitable for series testing of turned and milled parts.

Advantages:
- Very high measurement accuracy and repetition accuracy.
- High repetition accuracy due to constant gauging force.
- Reliable measurement due to internal temperature monitoring.
- Can be use flexibly on the machine or in the inspection room.
- Numeric display of the measured values at high resolution (reading: 0.1µm).

Further information can be found in the measurement technology competence brochure.



No. 42 4925 – for checking smaller, delicate components.



No. 42 4935 – for inspection in harsh manufacturing environments.



No. 42 4930 – the large measuring face of 10 mm ensures stable contact with the test piece.



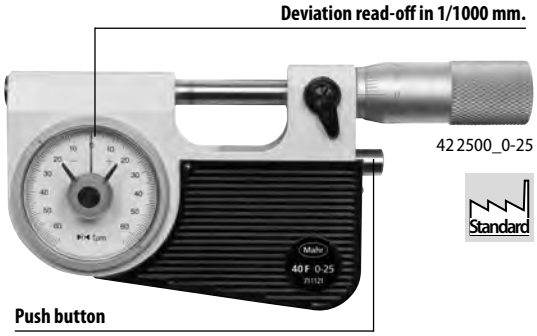
Micrometer with dial comparator

Measuring spindle through-hardened and ground. With fine-lapped **carbide measuring faces.**Spindle and anvil made of stainless steel. One piece frame and spindle guide. Button for retracting the measurement anvil for repetitive measurements. With adjustment screw for zeroing. Tolerance pointers for good/ reject measurements. With hand temperature protection. Lever for spindle clamping.

Accuracy: **Precision dial comparator 1 µm – micrometer measurement deviation E MPE ±2 µm.**

Supplied with:

42 2510 – Adjustment wrench.



42 2500_0-25

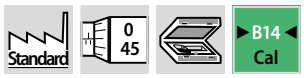
Standard



42 2510_0-25

ISO 3611

Measuring range		mm	0-25	25-50
43A 42 2500	Mahr	Micrometer with dial comparator	eShop	eShop
42B 42 2510	HOLEX		eShop	–
Measuring range dial comparator (42 2500)		mm	±0.065	
Measuring range dial comparator (42 2510)		mm	±0.045	–
Graduation of the micrometer		mm	0.01	
Graduation of the precision dial comparator		mm	0.001	
Clearance depth of micrometer frame (42 2500)		mm	16	30
Clearance depth of micrometer frame (42 2510)		mm	18	–



Mahr

Micrometers with dial comparator

Measuring spindle of stainless steel, hardened and ground. Carbide-tipped measuring faces. Controls and reading parts satin chrome-plated. With hand temperature protection. Constant measuring force. Moveable stop anvil, retractable. Particularly suitable for series manufactured parts.

Accuracy: **Precision dial comparator 1µm – micrometer measurement deviation E MPE ±2 µm.**

Supplied with: Dial comparator Millimess No. 434674 size 50/1.



Measuring range		mm	0-25	25-50	50-100	100-150	150-200
43A 42 4800	Micrometer with dial comparator		eShop	eShop	(eShop)	(eShop)	(eShop)
Measuring range dial comparator		mm	±0.05				
Graduation of the micrometer		mm	0.01				
Graduation of the precision dial comparator		mm	0.001				
Spindle ∅		mm	7.5				
Barrel ∅		mm	18				



Mahr

Precision bench micrometer

Strong steel frame, can be inclined up to 45° against sturdy base. Height-adjustable stop. Measuring spindle of stainless steel, hardened and ground. Carbide-tipped measuring faces. Controls and reading parts satin chrome-plated. With hand temperature protection. Constant measuring force. Moveable stop anvil; lifting with retraction lever. Especially suitable for series manufactured parts and quick inspection.

Accuracy: **Precision dial comparator 1µm – micrometer measurement deviation E MPE ±2 µm.**

Supplied with: Dial comparator Millimess No. 434674 size 50/1.



Measuring range		mm	0-50
43A 42 4805	Precision bench micrometer		eShop
Measuring range dial comparator		mm	±0.05
Graduation of the micrometer		mm	0.005
Graduation of the precision dial comparator		mm	0.001
Spindle ∅		mm	7.5
Barrel ∅		mm	25

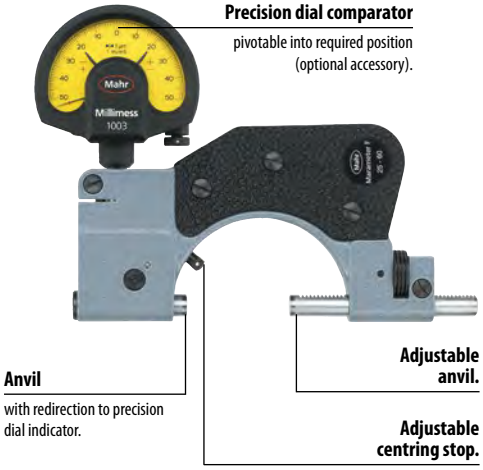
Standard ▸ L9 ◂ Cal

Mahr Indicating snap gauges Marameter

Powerful, forged steel frame with thermal insulation. Anvils made of stainless, hardened steel.
Anvil spring mounted, can be pulled back by a lever to insert the component.
Anvil adjustable over the measuring range by rack and knurled screw. Setting by gauge blocks.
Adjustable centring back-stop for setting component centre.
Constant measuring force ensured by built-in measuring force spring.
Can be used with all dial gauges (not included in the price) with 8 mm clamping shank.
Dial comparators No. 434674 sizes 25/0.5 and 50/1 are preferred.
Out-of-tolerance component values can be read numerically on the dial indicator.

Supplied with: **Without** dial indicator, **with a** wooden box.

Optional extras: Setting dimensions, precision dial comparator No. 434674.
Cast stand, measuring instrument holder type Fk for transmitting the lifting movement in the measurement axis, measuring probes.



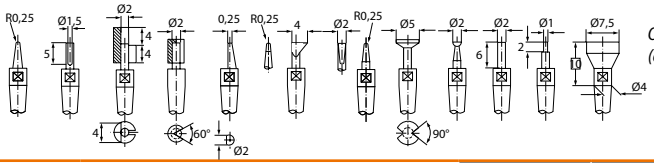
42

With carbide-tipped measuring faces.
For cylindrical parts such as shafts, bolts, and shanks, for measuring thickness and length.

Measuring range		mm	0-25	25-60	50-100
43A 42 4900	Indicating snap gauge		eShop	eShop	eShop
Plane parallelism of measuring faces		µm	1	2	2
Flatness of measuring faces		µm		0.2	
Contact point travel		mm	2	2	2.5
Gauging force		N		7.5	
Measuring face ∅		mm	8	9	10

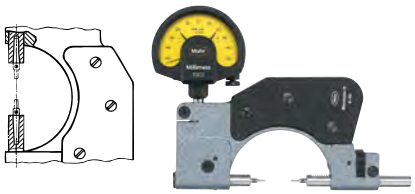

Cast micrometer stand (on request).

Measurement anvil and fixed anvil with precision taper holes for exchangeable tips.
Universal applications to solve all kinds of measurement problems.



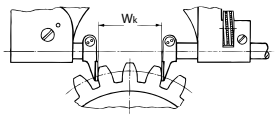
Other measuring tips (on request).

Measuring range		mm	0-30	30-80
43A 42 4904	Indicating snap gauge **without anvils**		(eShop)	(eShop)
Contact point travel		mm	2	2.5
Gauging force		N	7.5	


42 4904

With wide, carbide-tipped jaws. For measuring diameters of narrow shoulders, centring wheels, pockets in shafts, spacing of grooves and tooth pitches WK for determining the tooth widths of spur and helical gears.

Measuring range		mm	0-40	40-80	80-130
43A 42 4906	Indicating snap gauge **with measuring jaws**		eShop	eShop	eShop
Plane parallelism of measuring faces		µm	2	3	3
Contact point travel		mm	2	2.5	2.5
Gauging force		N	7.5	7.5	9
Measurement face		mm	12×12	12×12	15×17
Tooth pitch measurement from module m			0.5	0.5	1




42 4906

Mahr Length measuring bench Precimar SM 60

Small length measurement bench for quick and precise measurements in the production area.
Support table (∅ 60 mm) with stepless height adjustment.
The measuring tool used is protected by the integral coupling. Hardened gauging faces.
Can be used with all dial indicators with 8 mm clamping shank (available on request).

Size SM60-V – Interchangeable measuring probes.

Supplied with: **Without** precision dial comparator or dial indicator.

Size SM60-V – Incl. flat carbide measuring probes ∅ 3.5 mm.

Optional extras: Dial indicator No. 434314 size 25; 434318 size 25; 434320 size 25; 434324 size 25; 434656 size 25; 434655 size 25;
compact length measuring gauge 434707 size 1200;
inductive length measuring probe 434760 size 2004M

Size SM60-V – Measuring probe set No. 424922 size SET;
further measuring probes available on request.



_SM60
_SM60-5

Type			SM60	SM60-5	SM60-V
43A 42 4920	Small length measuring bench **Precimar**		(eShop)	(eShop)	(eShop)
Span of measurement		mm		25	
Plane parallelism of measuring faces		µm		1	
Gauging force		N	1	5	5
Measuring face ∅		mm		6	
Weight		kg		9	



_SM60-V

Standard | L9 Cal

Mahr

Indicating snap gauges Marameter S

Powerful, rigid frame with handle. Anvils made of stainless, hardened steel. **Anvils carbide tipped and chamfered at the front for easier insertion.** For measuring narrow registering edges that protrude beyond the frame. Setting by gauge blocks. Adjustable centring back-stop for setting component centre.
High measuring accuracy. Device weight rests on fixed anvil base during measuring and does not influence the measuring result.
Constant measuring force ensured by built-in measuring force spring. Can be used with all dial gauges (not included in the price) with 8 mm clamping shank. Dial comparator No. 434674 is preferred.
Out-of-tolerance component values can be read numerically on the dial indicator. Lateral frame projection to protect against shocks during measuring and when setting down.

Application: For measuring all kinds of cylindrical parts. As a quick measuring device directly on the machine tool and in production control.

Supplied with: **Without** dial indicator, **with a** wooden box.

Optional extras: Setting dimensions, gauge blocks, gauging discs, precision dial comparator No. 434674.

Note: Measuring range up to 500 mm on request



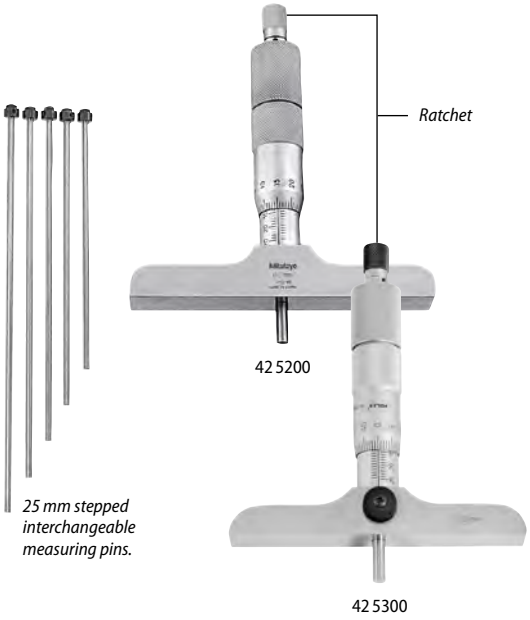
Measuring range	mm	10-30	30-60	60-100	100-150	150-200
43A 42 4910 Indicating snap gauge with handle		(eShop)	(eShop)	(eShop)	eShop	eShop
Plane parallelism of measuring faces	µm			3		
Flatness of measuring faces	µm			0.5		
Gauging force	N	13.5	13.5	13.5	15	15
Measuring face ∅	mm	18	18	22	22	22

DIN 863 | 0 45 | S15 Cal

Depth micrometers

Various measuring depths can be achieved by exchanging the measuring pins with 25 mm increments. Measuring spindle fully hardened and ground. Base of hardened tool steel with lapped measuring anvil. Micrometer satin chrome-plated. Barrel with clearly engraved black scale and numerals. Constant measuring force due to integral ratchet.

Supplied with: Measuring pins.



Measuring range	mm	0-100	0-150	0-300
44A 42 5200 Mitutoyo Depth micrometer		eShop	eShop	(eShop)
42B 42 5300 HOLEX Depth micrometer		eShop	eShop	–
Scale divisions	mm		0.01	
Measuring needle ∅ (42 5200)	mm		4	
Measuring needle ∅ (42 5300)	mm	4.5	4.5	–
Barrel ∅	mm		18	
Bridge length	mm		100	
Number of gauging pins		4	6	12

Standard | Digimatic | S15 Cal

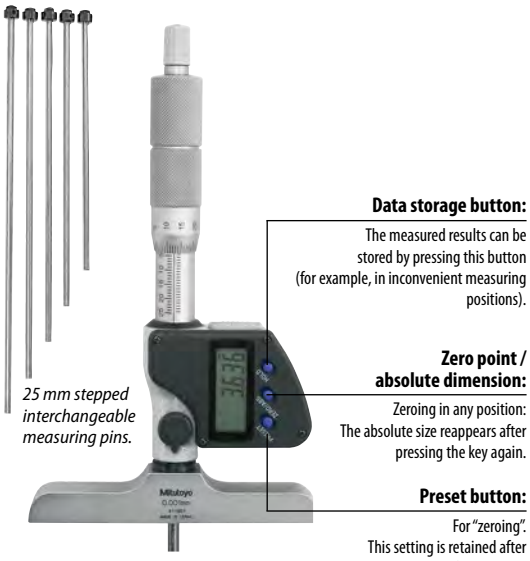
Mitutoyo

Digital depth micrometer

Clear (7.5 mm high), digital measured value display provides quick, error-free readings. Addition reading by vernier.
Various measuring depths can be achieved by exchanging the measuring pins with 25 mm increments. Measuring spindle fully hardened and ground. Base of hardened tool steel with lapped measuring anvil. Micrometer satin chrome-plated. Barrel with clearly engraved black scale and numerals. Constant measuring force due to integral ratchet.

Supplied with: Measuring pins and 1 battery No. 081560 size 357.

Optional extras: Data cable No. 497445.



Measuring range	mm	0-150
44A 42 5400 Digital depth micrometer **with data output**		eShop
Scale divisions	mm	0.001
Measuring needle ∅	mm	4
Bridge length	mm	100
Number of gauging pins		6

Standard | 0 45 | B3 Cal

Micrometer heads

Fully hardened spindle and glare-free satin chrome-plated barrel.

Size 0-6,5 – **Rotating spindle** without carbide contact face, without ratchet, **extra short version, spherical contact face.**

Size 0-13 – **Rotating spindle,** without carbide contact face, without ratchet, **short version.**

Size 0-25 – **Rotating spindle,** with carbide tipped contact face and ratchet.

Size 0-25/F – **Stationary (non-rotating)** spindle with carbide tipped contact face and ratchet. For checking materials with delicate surfaces.

Application: For installation in machines, inspection fixtures, measuring instruments etc. as an adjustable comparator stand stop.

Note:
42 6200 – Special sizes on request.



42 6200_0-6.5
Convex contact face.



42 6200_0-13



42 6200_0-25
with rotating spindle.



42 6200_0-25/F
with non-rotating spindle.

Measuring range (travel)	mm	0-6,5	0-13	0-25	0-25/F
44A 42 6200 Mitutoyo / 42B 42 6250 HOLEX Micrometer head		eShop	eShop	eShop	eShop
		eShop	eShop	eShop	eShop
Scale divisions (42 6200)	mm	0.01			
Scale divisions (42 6250)	mm	0.01	0.01	0.01	0.002
Error limit	mm	0.002	0.002	0.002	0.003
Spindle ∅ (42 6200)	mm	3.5	5	6.35	8
Spindle ∅ (42 6250)	mm	3.5	5	6.5	8
Barrel ∅	mm	9	13	18	18
Radius contact face (42 6200)	mm	3	–	–	–
Radius contact face (42 6250)	mm	2.5	–	–	–
Mounting shank ∅ (42 6200)	mm	6	9.5	10	12
Mounting shank ∅ (42 6250)	mm	6	9.5	12	12
Length of mounting shank (42 6200)	mm	6	9.5	15	10
Length of mounting shank (42 6250)	mm	6	9.5	17	10
Overall length (42 6200)	mm	37	58.5	109	125
Overall length (42 6250)	mm	37	58.5	113	113

Standard | Digimatic | B3 Cal

Mitutoyo Digital micrometer heads

Direct reading from clear digital display. Reliable and error-free measurements - without a vernier. Hardened and ground measuring spindle, locking by clamping screw, ratchet.

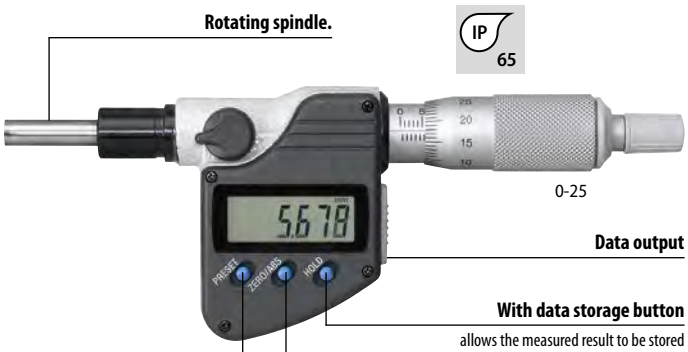
Application: For installation in machines, inspection fixtures, measuring instruments etc. as an adjustable micrometer stop.

Supplied with: 1 battery No. 081560 size 357.

Optional extras:

Size 0-25 – Data cable No. 497445.

Size 0-50 – Data cable No. 497100.





Measuring range (travel)	mm	0-25	0-50
44A 42 6510 Digital micrometer head **with data output**		eShop	eShop
Scale divisions	mm	0.001	
Error limit	mm	0.002	0.003
Spindle ∅	mm	6.35	11
Barrel ∅	mm	18	49
Mounting shank ∅	mm	12	18
Length of mounting shank	mm	16	14
Overall length	mm	170	172

Standard | 0 45 | ▶ B4 ◀ Cal

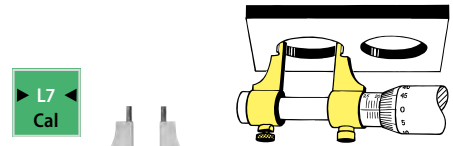
Internal micrometers

Fully hardened, ground and lapped spindle. Offset and rounded jaw ends with carbide tips.
Constant measuring force due to precision ratchet. Barrel with clearly engraved, black graduations.
Satin chrome-plated micrometer. With adjusting screw and locking screw.


42 6805_5–30

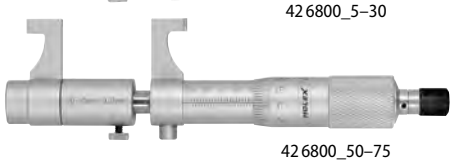
Internal micrometers

Supplied with:
42 6800 – Supplied with setting ring for adjustment.
Optional extras:
42 6805 – Setting ring No. 484030.



42 6800_5–30

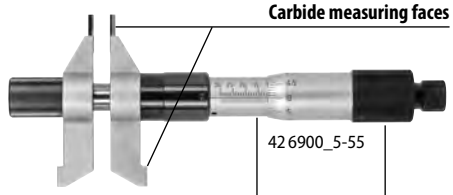
Measuring range		mm	5-30	25-50	50-75	75-100
44A 42 6805	Mitutoyo Internal micrometer		eShop	eShop	(eShop)	(eShop)
42B 42 6800	HOLEX Internal micrometer		eShop	eShop	eShop	eShop
Scale divisions		mm	0.01			
Error limit (42 6805)		µm	5	6	7	8
Error limit (42 6800)		µm	10	12	14	16
Barrel ∅		mm	18			


42 6800_50–75

Double-jawed internal micrometer

Optional extras: Setting ring No. 484030.

Note: Versions up to 600 mm measuring range available on request.



Measuring range		mm	5-55	50-75	75-100
46P 42 6900	Hartig Double-jawed internal micrometer		eShop	(eShop)	(eShop)
Scale divisions		mm	0.01		
Error limit		µm	2.5	3	3
Barrel ∅		mm	21		

Standard | Digimatic | ▶ B4 ◀ Cal

Mitutoyo Digital internal micrometers

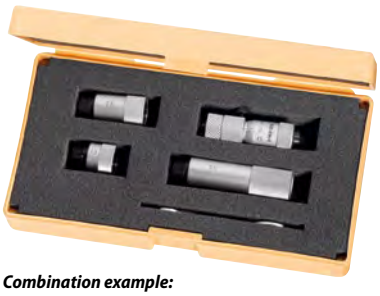


Direct reading from digital display. Fully hardened, ground and lapped spindle.
Carbide tipped jaws, ground and precision lapped. Constant measuring force due to precision ratchet.
With locking screw.
Accuracy: Up to 30 mm: 5 µm / from 30 mm: 6 µm.
Supplied with: 1 battery No. 081560 size 357.
Optional extras: Data cable No. 497445, Setting rings No. 484030.

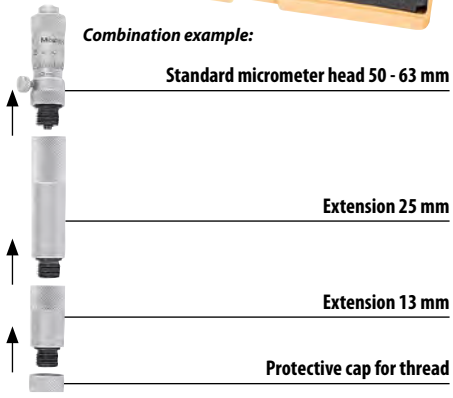
Measuring range		mm	5-30	25-50
44A 42 6850	Digital internal micrometer **with data output**		eShop	(eShop)
Scale divisions		mm	0.001	

Standard | 0 45 | ▶ S4 ◀ Cal

Mitutoyo Internal micrometer sets measuring range 50 -1500 mm



One standard micrometer head 50 – 63 mm and various extensions.
One or more extensions are screwed into the standard micrometer head, depending on the desired measuring range.
Extensions consist of cylindrical gauge blocks.
Accuracy: (3 + number of extensions + L / 50) µm.
Supplied with: Standard micrometer head and extensions.



Measuring range		mm	50-150	50-300	50-500	50-1000	50-1500
44A 42 7500	Internal micrometer set		eShop	eShop	eShop	eShop	eShop
Scale divisions		mm	0.01				
Barrel ∅		mm	15				
Pipe ∅		mm	12.5				
Number of extensions			3	5	6	8	10

Mahr Micromar internal micrometers for large diameters

Standard | 0 45 | ▶ S4 Cal ◀



Measuring range from 100 mm

Lightweight, kink-proof tubular construction. Measuring spindle through hardened and ground. **Measuring faces hardened and hemispherical ground.** One adjustable measuring face. Jaws, control elements, and reading parts satin chrome-plated. **Immediately ready for use without adjustment.**

Accuracy: (4 + L / 100) µm.

Supplied with: Micrometer, extensions No. 427950.



_100-500

Measuring range	mm	100-500	100-900
43A 42 7900	Internal micrometer for large measuring ranges	eShop	eShop
Scale divisions	mm	0.01	
Spindle ∅	mm	7.5	
Barrel ∅	mm	17.5	
Extension	mm	25; 50; 100; 200	25; 50; 100; 200; 400

Extensions for internal micrometers No. 427900

▶ B5 Cal ◀

The extensions consist of cylindrical gauge blocks on spring mountings in the satin chrome-plated outer sleeves. The probe faces are under the same measuring pressure.

Application: **To extend the measuring range to maximum 2500 mm.**



_100

Length	mm	25	50	100	200	400	800
43A 42 7950	Extension for internal micrometer	eShop	eShop	eShop	eShop	eShop	eShop
Length	mm	25	50	100	200	400	800

Garant 2-point quick measuring devices DM1

Solid construction for use directly on turning / milling centres. For checking internal and external diameters, concentricity, grooves, and wall thicknesses, with a **repeatability of 2 µm.**
Can be used with any dial indicator or precision dial indicator with shank ∅ 8 h6 mm and maximum body ∅ 62 mm (supplied without dial indicator).

Advantage: Short measuring and set-up times, robust and easy to maintain.

Supplied with: Measuring device fully assembled;
2 pairs of TiN-coated disc anvils (1× ∅ 8 mm / 1×∅ 13 mm),
3 × key L-wrenches (3, 4 and 5 AF).







_135



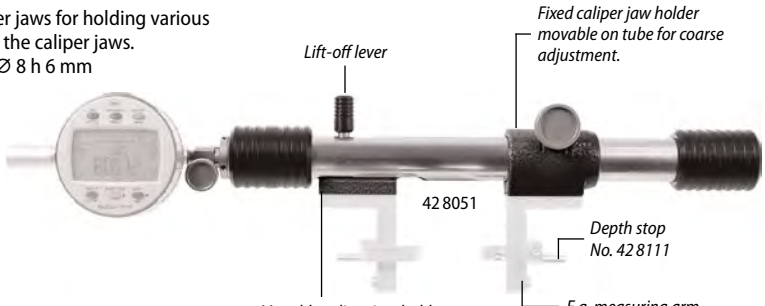
maximum measuring range	mm	75	135
41B 42 8030	2-point quick measuring device DM1	eShop	eShop
Application range internal	mm	18 – 75	18 – 135
Application range external	mm	6 – 70	6 – 130
Gauging force	N	2.6	
Length	mm	142	202
Width	mm	110	167

Mahr Universal measuring instruments Multimar

A3 Cal

Strong tubular structure, ground and hard chrome-plated. Two caliper jaws for holding various measuring tips. Measuring range can be extended by 75 mm by reversing the caliper jaws. Can be used with any dial indicator or precision dial indicator with shank Ø 8 h 6 mm (supplied without dial indicator).

- **High measuring reliability and repetition accuracy thanks to high-precision ball bearing guide.**
- Heat protection handles
- Gauging force direction selectable for external and internal measurement.
- Constant gauging force ensured by built-in gauging force spring.



Measuring range		mm	30-115	110-265	260-615	610-1015
43A 42 8051	Multimar universal measuring instrument		eShop	eShop	eShop	(eShop)
Span of measurement		mm	12			
Application range internal		mm	30 – 115	110 – 265	260 – 615	610 – 1015
Application range external		mm	0 – 85	80 – 235	230 – 585	580 – 985

Accessories for universal measuring instruments

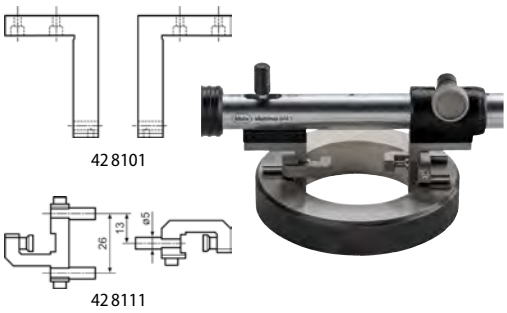
1 pair of ground caliper jaws.

Application: For holding measuring tips No. 428120 and 428130.

Throat		mm	25	35	70	100
43A 42 8101	Pair of measuring arms with bore Ø 3.5 mm		eShop	eShop	(eShop)	eShop

Suitable for: Measuring arms No. 428101.

43A 42 8111	Pair of depth stops for measuring arms	eShop

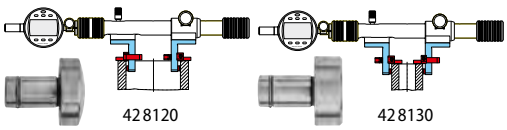


Measuring tips

Suitable for: Measuring arms No. 428101.

Application: For inside and outside measurements.
For mounting bore Ø 3.5 mm, **2 pieces required.**

43A 42 8120	Internal measuring tip spherical Ø 7.5 mm, 1 piece	eShop
43A 42 8130	External measuring tip flat Ø 7.5 mm, 1 piece	eShop



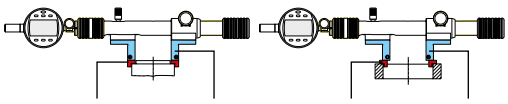
Caliper jaws

1 pair of matching ground caliper jaws.

Size A – For external measurements.
Size B – For internal measurements.

Application: For holding shoulder anvils No. 428160 and 428170.

		A	B
43A 42 8141	Pair of caliper jaws with bore	eShop	eShop



Measuring tips

1 pair of matching ground shoulder anvils
(for mounting bore Ø 5 mm, measuring face length 5 mm).

Suitable for: Caliper jaws No. 428141.

Application: To measure shoulders and narrow steps.

43A 42 8160	Pair of flat shoulder anvils for external measurements	eShop
43A 42 8170	Pair of semi-cylindrical shoulder anvils for internal measurements	eShop



Garant Setting Bench SB 1

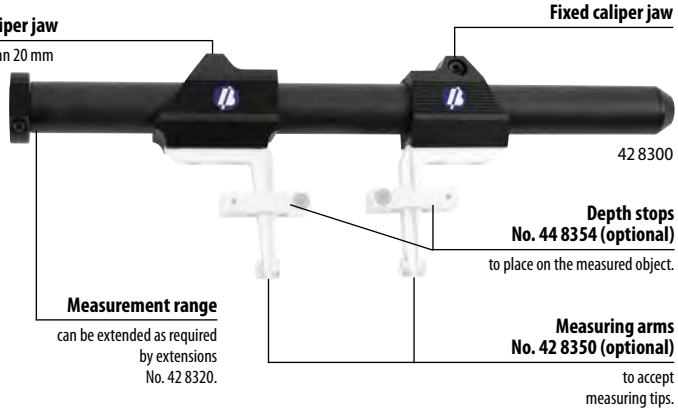
Horizontal setting device with touch screen suitable for the workshop environment
for setting internal and external measurement devices.



Universal measuring gauges

A3 Cal

Lightweight stable tubular construction. Two caliper jaws for holding various measuring tips. Fixed caliper jaw holder (without guide slot) movable on tube for coarse adjustment. Movable caliper jaw holder mounted on play-free low friction bearings in high precision journal to give maximum accuracy. **Constant gauging force ensured by built-in gauging force spring.** For non-contact loading into measurement position, the movable caliper jaw can be retracted. Measurement range can be extended by optional extension as required (max. 3000 mm). Can be used with any dial indicator or precision dial indicator with shank Ø 8 mm h6.



Application: **Universal gauge for comparative measurements.** For external and internal measurements on a high variety of component forms using narrow shoulders. With special accessories for measuring centring wheels, recesses, grooves, dovetails, cones, gear teeth and internal/external threads.

Supplied with: Basic unit, wooden case.

Size SET – Including caliper jaws No. 428350 size 50, 2 × measuring tips No. 428360 size S, 2 × clamping nut No. 428358, 2 pcs. adjustable depth stops No. 428354 size A, digital dial indicator with scale display, reading 0.001 mm, min / max function, protective cap for dial indicator.

Optional extras:

Size 30-250 – Dial indicator or precision dial indicator with measurement range 25 mm.


42 8300

		30-250	SET
46B 42 8300	Universal measuring gauge in a wooden case	–	–
Span of measurement	mm	20	
Application range internal	mm	30 – 255	
Application range external	mm	0 – 220	


42 8320_150


42 8320_500_1000

For extending the measurement range continuously (max. 3000 mm).

Size 500; 1000 – Light, robust extension of **CRP**.

Length	mm	150	500	1000
46B 42 8320	Extension piece for 428300	–	–	–

Measuring arms / depth stops / measuring tips

1 pair of ground measuring arms.

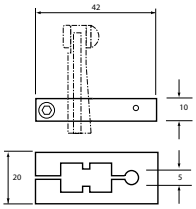
Application: For holding measuring tips No. 428360.


42 8350_50


42 8350_100

Throat	mm	50	75	100
46B 42 8350	Pair of measuring arms	–	–	–

Type		A
46B 42 8354	Pair of depth stops for measuring arms 428350	–




42 8354

42 8360 – **Clamping nut 428358 size K is required.**

Size S – Spherical.

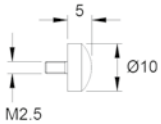
Size P – Flat.

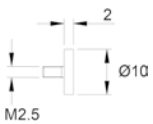
Application:

42 8360 – For inside and outside measurements. Mounting bore Ø 3.5 mm.

Note: 2 pieces required each.





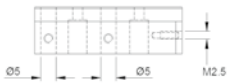


Type		K	S	P
46B 42 8358	Clamping nut for 428360, piece	–	–	–
46B 42 8360	Measuring tip for caliper jaws, piece	–	–	–

Mounting attachments / shoulder anvils

1 pair of matching mounting attachments.

Application: For holding shoulder anvils No. 428160, 428170 and 428380.






42 8370

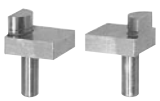
46B 42 8370	Pair of mounting attachments with bore Ø 5 mm	–

Size A – Shoulder anvils for external measuring.

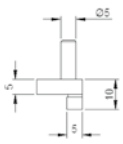
Size I – Semi-cylindrical shoulder anvils for internal measuring.

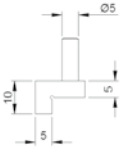
Suitable for: Pair of mounting attachments 428370.

Application: To measure shoulders and narrow steps.


42 8380_I


42 8380_A





Type		I	A
46B 42 8380	Shoulder anvils, pair	–	–

DIN 863

XT internal micrometers for three-point measurement

3-Point **XT inside micrometers**. Measuring spindle hardened and ground. Micrometer barrel with black scale, all reading parts satin chrome-plated. Ratchet for consistent measuring force. All gauges supplied with serial number and test certificate.

Application: Blind holes and through holes, centring edges.

Optional extras: Setting rings No. 484030, extension No. 428510.



_10-12,5



_65-80

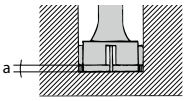
▶ B6 ◀ Cal

Size 2-2,5–16-20 – "Micro" - version with better resolution of 2 µm.

Size 12,5-16–275-300 – For blind hole measurements from size 12.5 – 16. Internal micrometers for maximum precision. Fixed carbide measuring jaws, from size 12.5 with carbide inserts.

Attention:

Size 2-2,5–5-6 – XT internal micrometer for **2-point measurement.**



For blind hole measurements from size 12.5.

42

Measuring range	mm	2-2,5	2,5-3	3-4	4-5	5-6	6-8	8-10	10-12,5
46B 42 8500	XT internal micrometer	–	–	–	–	–	–	–	–
Scale divisions	mm	0.002							
Error limit	mm	0.004							
Dimension a	mm	0	0	0	0	0	1.9	1.9	1.9
Standard measuring depth	mm	9	9	12	18	18	58	58	58

Measuring range	mm	12,5-16	16-20	20-25	25-35	35-50	50-65	65-80	80-100
46B 42 8500	XT internal micrometer	–	–	–	–	–	–	–	–
Scale divisions	mm	0.002	0.002	0.005	0.005	0.005	0.005	0.005	0.005
Error limit	mm	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005
Dimension a	mm	0.5							
Standard measuring depth	mm	62	66	66	80	80	80	80	100

Measuring range	mm	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300
46B 42 8500	XT internal micrometer	–	–	–	–	–	–	–	–
Scale divisions	mm	0.005							
Error limit	mm	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.009
Dimension a	mm	0.5							
Standard measuring depth	mm	115							

XT internal micrometer set

▶ S6 ◀ Cal

Size 2-3–10-20 – "Micro" - version with better resolution of 2 µm.

Supplied with: Internal micrometers No. 428500 and setting rings with UKAS test certificate.

Attention:

Size 2-3; 3-6 – XT internal micrometer set for **2-point measurement.**

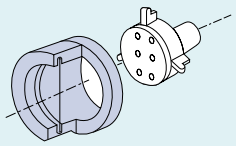


_20-50

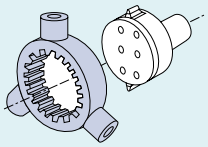
Measuring range	mm	2-3	3-6	6-10	10-20	20-50	50-100	100-150	150-200
46B 42 8550	XT internal micrometer set	–	–	–	–	–	–	–	–
Number of micrometers		2	3	2	3	3	3	2	2
Number of setting rings		1	2	1	2	2	2	1	1
Setting ring ∅	mm	2.5	4 / 5	8	12.5 / 20	20 / 35	65 / 80	125	175

Special micrometer heads for 2- or 3-point measurements on request

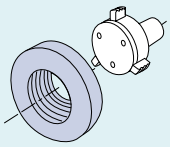
Groove measurement
∅ 3 – 300 mm



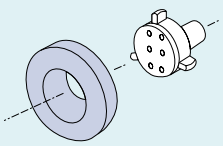
Internal splines
∅ 8 – 300 mm



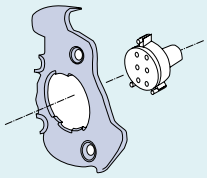
Internal thread
M4 – M300 / UN-12"
(core, flank, and outside ∅)



Measurement with convex measuring tips
∅ 6 – 300 mm
(exact repetition accuracy)



Measurement points at irregular spacings
∅ 16 – 300 mm



DIN 863 | 0 45

TESA Internal micrometer IMICRO

Analogue 3-point internal micrometer for **high-precision measurement** of bores, even **at large depths** (can be extended with up to three extensions). Self-centring and self-aligning. Individual internal micrometer to Abbé's principle **(no first order** tilt error).



42 8800

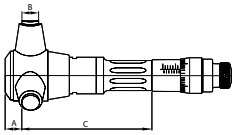
▶ B6 ◀ Cal

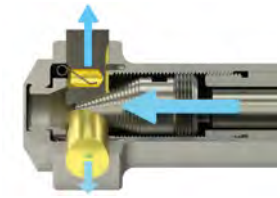
Size 3–10-12 – Anvils of hardened steel (HV30–770).
Size 11-14–90-100 – Anvils titanium nitride (TIN) coated (HV5–2300).
Size 100-125–275-300 – Anvils of titanium carbide (HV5–1300).

Supplied with:
Size 200-225–275-300 – Includes extension 150 mm No. 428802 size 5/150, supplied in a wooden box.

Optional extras: Setting rings No. 484030, extensions No. 428802.

Note: Centring devices for large measurement depths on request.





Measuring range	mm	3,5-4	4-4,5	4,5-5,5	5,5-6,5	6-8	8-10	10-12	11-14	14-17	17-20
45A 42 8800	Internal micrometer IMICRO	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Scale divisions	mm	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.005
Error limit	mm	0.004									
Dimension a	mm	2	2	2	2	2.5	2.5	2.5	3.5	3.5	3.5
Standard measuring depth	mm	20	20	25	25	52	52	52	77	77	77

Measuring range	mm	20-25	25-30	30-35	35-40	40-50	50-60	60-70	70-80	80-90
45A 42 8800	Internal micrometer IMICRO	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Scale divisions	mm	0.005								
Error limit	mm	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005
Dimension a	mm	7	7	7	7	11	11	11	11	11
Standard measuring depth	mm	78	78	78	78	84	84	84	84	84

Measuring range	mm	90-100	100-125	125-150	150-175	175-200	200-225	225-250	250-275	275-300
45A 42 8800	Internal micrometer IMICRO	eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.005	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Error limit	mm	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.008	0.008
Dimension a	mm	11	26	26	26	26	26	26	26	26
Standard measuring depth	mm	84	81	81	81	81	81	81	81	81

TESA internal micrometer sets IMICRO

▶ S6 ◀ Cal

Supplied with: Internal micrometers No. 428800 and setting rings.
Size 6-12 – Extension 100 mm No. 428802.
Size 11-20–100-200 – Extension 150 mm No. 428802.



42 8803_20–40

Measuring range	mm	3,5-6,5	6-12	11-20	20-40	40-100	100-200
45A 42 8803	Internal micrometer set IMICRO	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.001	0.001	0.005	0.005	0.005	0.01
Error limit	mm	0.004	0.004	0.004	0.004	0.004 / 0.005	0.006 / 0.007
Number of micrometers		4	3	3	4	6	4
Setting ring ∅	mm	4 / 5,5	8 / 10	11 / 17	25 / 35	50 / 70 / 90	125 / 175

Standard | 0 45

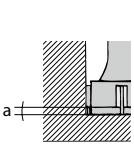
▶ B6 ◀ Cal

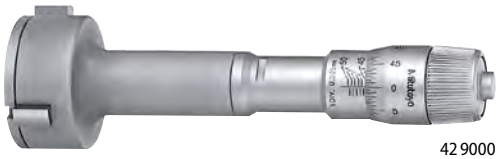
Mitutoyo Internal micrometers Holtest

Stainless, all reading parts glare-free satin chrome-plated. Barrel with jet black scale and ratchet.

42 9000 – For through holes, measuring faces of hardened steel.
42 9005 – Blind hole version. **Measuring faces of hardened steel with titanium coating for long tool life.**

Optional extras: Extensions No. 429010. Setting rings No. 484030.




42 9000


42 9005

Measuring range	mm	6-8	8-10	10-12	12-16	16-20	20-25	25-30	30-40	40-50
44A 42 9000	Internal micrometer Holtest	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
44A 42 9005	Internal micrometer Holtest **for measuring blind holes**	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop
Scale divisions	mm	0.001	0.001	0.001	0.005	0.005	0.005	0.005	0.005	0.005
Error limit	mm	0.004	0.004	0.004	0.004	0.004	0.006	0.006	0.006	0.006
Barrel ∅	mm	17	17	17	23	23	23	23	23	23
Dimension a (42 9000)	mm	2	2	2	2.6	2.6	2.6	2.6	3.4	3.4
Dimension a (42 9005)	mm	–	–	–	0.3	0.3	0.3	0.3	0.3	0.3
Standard measuring depth	mm	57	57	57	80	80	90	90	98	98
Overall length	mm	106	106	106	127	127	140	140	140	140

Measuring range	mm	50-63	62-75	75-88	87-100	100-125	125-150	150-175	175-200
44A 42 9000	Internal micrometer Holtest	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)
44A 42 9005	Internal micrometer Holtest **for measuring blind holes**	eShop	eShop	eShop	eShop	–	–	–	–
Scale divisions	mm	0.005							
Error limit	mm	0.006	0.006	0.006	0.006	0.01	0.01	0.01	0.01
Barrel ∅	mm	23							
Dimension a (42 9000)	mm	3.4	3.4	3.4	3.4	19.6	19.6	19.6	19.6
Dimension a (42 9005)	mm	0.3	0.3	0.3	0.3	–	–	–	–
Standard measuring depth	mm	105	105	105	105	147	147	147	147
Overall length	mm	156	156	156	156	249	249	249	249

Internal micrometer sets

▶ S6 ◀ Cal

42 9050 – For through holes, measuring faces of hardened steel.
42 9055 – Blind hole version. **Measuring faces of hardened steel with titanium coating for long tool life.**

Supplied with:
Size 12-20–100-200 – Setting rings similar to No. 484030, extension 150 mm No. 429010.
42 9050 – Internal micrometers No. 429000.
Size 6-12 – Setting rings similar to No. 484030, extension 100 mm No. 429010.
42 9055 – Internal micrometers No. 429005.



Measuring range	mm	6-12	12-20	20-50	50-100	100-200
44A 42 9050	Internal micrometer set Holtest	eShop	eShop	eShop	eShop	(eShop)
44A 42 9055	Internal micrometer set Holtest **for measuring blind holes**	–	eShop	eShop	eShop	–
Scale divisions	mm	0.001	0.005	0.005	0.005	0.005
Error limit	mm	0.004	0.004	0.006	0.006	0.01
Number of micrometers		3	2	4	4	4
Setting ring ∅	mm	8 / 10	16	25 / 40	62 / 87	125 / 175

TESA Schwenk

Measuring devices for measuring particularly large internal and external dimensions are available on request.

- Three-point internal micrometers up to 1150 mm
- Two-point internal micrometers up to 3250 mm
- External micrometers up to 6000 mm

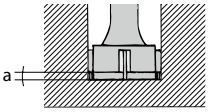




DIN 863 | 0 45

Mahr Internal micrometers Micromar

Satin chrome-plated scales and operating parts. Measuring spindle through hardened and ground. Quick drive with integral clutch. Self-centring micrometer head from 12 mm with carbide measuring jaws. From 12 mm **for measuring down to the bottom of the hole.** From 40 mm the micrometer head is of aluminium, to save weight.



▶ B6 ◀ Cal

Optional extras: Extension No. 428950, Setting rings No. 484030.



42 8900_30–40

Measuring range	mm	6-8	8-10	10-12	12-16	16-20	20-25	25-30	30-40	40-50
43A 42 8900	Internal micrometer Micromar	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Scale divisions	mm	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.005	0.005
Error limit	mm					0.004				
Dimension a	mm	1.5	1.8	1.8	0	0	0	0	0	0
Standard measuring depth	mm	58	58	58	64	64	68	68	76	76

Measuring range	mm	50-60	60-70	70-85	85-100	100-125	125-150	150-175	175-200
43A 42 8900	Internal micrometer Micromar	eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm				0.005				
Error limit	mm	0.005	0.005	0.005	0.005	0.006	0.006	0.007	0.007
Dimension a	mm				0				
Standard measuring depth	mm	79	79	97	97	132	132	132	132

Internal micrometer sets

▶ S6 ◀ Cal

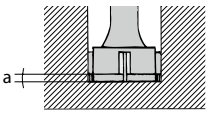
Supplied with: Internal micrometers No. 428900 with appropriate setting rings.


42 8910_20–50

Measuring range	mm	6-12	12-20	20-50	50-100
43A 42 8910	Internal micrometer set	eShop	eShop	eShop	eShop
Scale divisions	mm	0.001	0.001	0.005	0.005
Number of micrometers		3	2	4	4
Number of setting rings		2	1	2	2
Setting ring ∅	mm	8 / 10	16	25 / 40	60 / 85

Standard | 0 45

HOLEX Internal micrometers



▶ B6 ◀ Cal

Satin chrome plated scales and operating parts (from ∅ 12 with carbide jaws). Self-centring micrometer head with 3 measuring jaws (from ∅ 12 with carbide jaws).
Size 50-63–87-100 – Casing varnished.
Supplied with: Setting ring (for adjustment) and extension.
Optional extras: Extension No. 428993, setting rings No. 484030.


42 8990_16–20

Measuring range	mm	6-8	8-10	10-12	12-16	16-20	20-25	25-30	30-40	40-50	50-63	62-75	75-88	87-100
42B 42 8990	Internal micrometer	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Scale divisions	mm	0.001	0.001	0.001	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Error limit	mm	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.007	0.007	0.007	0.007
Dimension a	mm	1.5	1.5	1.5	0.5	0.5	0.5	0.5	0.5	0.5	1	1	1	1
Standard measuring depth	mm	54	54	54	80	80	90	90	97	97	117	117	117	117
Setting ring ∅	mm	6	8	10	16	16	25	25	40	40	62	62	87	87

Internal micrometer sets

▶ S6 ◀ Cal

Satin chrome plated scales and operating parts (from ∅ 12 with carbide jaws). Self-centring micrometer head with 3 measuring jaws (from ∅ 12 with carbide jaws).
Supplied with: Internal micrometers No. 428990, setting rings (for adjustment) and extension.


42 8991_20–50

Measuring range	mm	6-12	12-20	20-50	50-100
42B 42 8991	Internal micrometer set	eShop	eShop	eShop	eShop
Scale divisions	mm	0.001	0.005	0.005	0.005
Error limit	mm	0.004 / 0.005	0.005 / 0.006	0.006	0.007
Number of micrometers		3	2	4	4
Number of setting rings		2	1	2	2
Setting ring ∅	mm	8 / 10	16	25 / 40	62 / 87

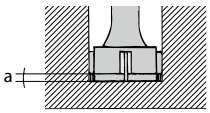
DIN 863 | mm / Inch | RS232C | IP 67 | HID | HCT

Digital XT internal micrometers for three-point measurement

3-point internal micrometer series for blind hole measurement from size 12.5 -16. Fixed carbide measuring jaws, from size 12.5 with carbide inserts. Large, sharp contrast digital display. Measuring spindle through-hardened and ground. Reliable measurement without a vernier. Compatible with the optional HCT (Hoffmann Group Connected Tools) app. Available free of charge for Android and iOS.



42 8602



Function:
- mm / inch selection.
- Setting 4 preset values.
- On / Off data storage button.

Optional extras: Data cable No. 498948.
USB dongle No. 498952.
Setting rings No. 484030.
Extensions No. 428510.

Spare part: Spare measuring heads No. 428605, measuring jaws No. 428745, return springs No. 428746.

▶ B6 ◀ Cal

Supplied with: 1 battery No. 081560 size CR2032.

Measuring range	mm	6-8	8-10	10-12,5	12,5-16	16-20	20-25	25-35	35-50	50-65	65-80	80-100	100-125	125-150
46B 42 8602	Digital XT internal micrometer	–	–	–	–	–	–	–	–	–	–	–	–	–
Selectable display	mm	0.01 / 0.001												
Error limit	mm	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.006	0.006
Dimension a	mm	1.9	1.9	1.9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Standard measuring depth	mm	58	58	58	62	66	66	80	80	80	80	100	115	115

Digital XT internal micrometer sets

HCT

▶ S6 ◀ Cal

Supplied with: Digital internal micrometers No. 428602 and setting rings with UKAS test certificate.
Size 2-6 – Two-point gauge


42 8652

Measuring range	mm	2-6	6-10	10-20	20-50	50-100	100-200
46B 42 8652	Digital XT internal micrometer set	–	–	–	–	–	–
Number of measuring heads		5	2	3	3	3	4
Number of setting rings		3	1	2	2	2	2
Setting ring ∅	mm	2.5 / 4 / 5	8	12.5 / 20	20 / 35	65 / 80	125 / 175

DIN 863 | mm / Inch | RS232C | IP 65 | ▶ i ◀ Cal

2-point bore measuring system MicroGauge set

2-point bore measuring system for high-precision measurement of bores between 0.95 – 10.35 mm. The compact format and low weight (no more than a ball-point pen) facilitates measurement of small precision components. Hard chrome plated spherical measurement contacts. Clear LCD display with switchable resolution down to 0.0005 mm. Data output via RS232 or USB proximity. Dust-tight and proof against jets of water (IP65).



Supplied with: With 1 battery No. 081560 357, setting rings with UKAS calibration certificates.

Optional extras: Data cable No. 498948

Note: Available as individual micrometers or as a set, depth stops available on request. Diatest probes can be connected using an additional adapter.



Measuring range	mm	0,95-1,55	1,5-2,45	2,25-4,25	3,65-6,35	6,15-10,35
46B 42 8670	Internal micrometer MicroGauge	–	–	–	–	–
Measuring range of the micrometer head	mm	0.95–1.15; 1.07–1.25; 1.17–1.35; 1.27–1.45; 1.37–1.55	1.5–1.9; 1.8–2.2; 2.05–2.45	2.25–2.75; 2.5–3; 2.75–3.25; 3–3.5; 3.25–3.75 ; 3.5–4 ; 3.75–4.25	3.65–4.35 ; 4.15–4.85; 4.65–5.35; 5.15–5.85; 5.65–6.35	6.15 – 6.85; 6.65 – 7.35; 7.15 – 7.85; 7.65 – 8.35; 8.15 – 8.85; 8.65 – 9.35; 9.15 – 9.85; 9.65 – 10.35
Selectable display	mm	0.01/0.001/0.0005				
Repeatability	mm	0.001				
Linearity	mm	∅ 1.0 – 1.55: maximum 2% of the measurement travel; at least 0.001/∅ 1.5 – 6.35: maximum 1% of the measurement travel; at least 0.001				
Number of measuring heads		5	3	7	5	8
Number of setting rings		5	3	7	5	8

DIN 863 | mm / Inch | RS232C | Digimatic | IP 54 | Absolute System

TESA Digital internal micrometer IMICRO

Analogue 3-point internal micrometer for **high-precision measurement** of holes, even at large depths. Individual internal micrometer to Abbé's principle (no first order **tilt error**). Self-centring and self-aligning. Simple direct reading on the high-contrast display. Patented **CAPA µ-measuring system.**

Optional extras: Setting rings No. 484030, extensions No. 428802, data cable, radio remote control No. 498921, radio adapter No. 498924.

Note:	Centring devices for large measurement depths on request.



42

▶ B6 ◀ Cal



42 8830

Size 6-8–10-12 – Anvils of hardened steel (HV30–770).
Size 11-14–90-100 – Anvils titanium nitride (TIN) coated (HV5–2300).
Size 100-125–175-200 – Anvils of titanium carbide (HV5–1300).

Measuring range	mm	6-8	8-10	10-12	11-14	14-17	17-20	20-25	25-30	30-35	35-40
45A 42 8830	3-point digital internal micrometer IMICRO	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Scale divisions	mm	0.001									
Error limit	mm	0.004									
Dimension a	mm	2.5	2.5	2.5	3.5	3.5	3.5	7	7	7	7
Standard measuring depth	mm	58	58	58	72	72	72	91	91	91	91

Measuring range	mm	40-50	50-60	60-70	70-80	80-90	90-100	100-125	125-150	150-175	175-200
45A 42 8830	3-point digital internal micrometer IMICRO	eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.001									
Error limit	mm	0.004	0.005	0.005	0.005	0.005	0.005	0.006	0.006	0.007	0.007
Dimension a	mm	11	11	11	11	11	11	26	26	26	26
Standard measuring depth	mm	104	104	104	104	104	104	100	100	100	100

Digital internal micrometer sets IMICRO



42 8841

▶ S6 ◀ Cal

Size 6-12 – Anvils of hardened steel (HV30–770).
Size 11-20–40-100 – Anvils titanium nitride (TIN) coated (HV5–2300).
Supplied with: Digital internal micrometer No. 428830, extension No. 428802, with setting rings.

Measuring range	mm	6-12	11-20	20-40	40-100
45A 42 8841	3-point digital internal micrometer set	(eShop)	(eShop)	(eShop)	(eShop)
Number of measuring heads		3	3	4	6
Number of setting rings		2	2	2	3
Setting ring ∅	mm	8 / 10	11 / 15	25 / 35	50 / 70 / 90

HOFFMANN GROUP CONNECTED TOOLS: PRECISE, SIMPLE, ERROR-FREE.

- **Greater freedom of movement:** No messy data transmission cables.
- **Very high reliability:** No read errors or transmission errors.
- **Time saving thanks to simple documentation:** At the push of a button, the measuring result is transmitted directly to your application (such as Excel or Word) or you export the test report directly via the app as a.csv file to your database.



Garant HOLEX sylvac Mitutoyo Bowers Group TESA

Standard | 0 45 | ▶ B6 ◀ Cal

Mitutoyo Small internal micrometer up to ∅ 6 mm

Stainless, all reading parts glare-free satin chrome-plated. Barrel with jet black scale and ratchet. The micrometer head **(with 2 carbide measuring faces)**is adjusted by **a carbide-tipped** operating pin.

Application: For accurate measurement of bore diameter and roundness.

Optional extras: Setting rings No. 484030.



42 9100

Measuring range	mm	2-2,5	2,5-3	3-4	4-5	5-6
44A 42 9100 Small internal micrometer		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm			0.001		
Error limit	mm			0.002		
Barrel ∅	mm			17		
Measurement depth	mm	12	12	22	22	22
Overall length	mm	105	105	115	115	115

42

DIN 863 | Digimatic | IP 65

Mitutoyo Digital internal micrometers for three-point measurement

Direct reading from clear digital display. Reliable and accurate measuring – without vernier.
"Function Lock" prevents accidental displacement of the zero point.
Low power consumption. With battery charge status and error display.



42 9110

Preset
To set the internal micrometer to the initial value of the measuring range;
programming of up to 2 pre-selected values.

Data storage key
The measured results can be stored by pressing this button
(for example, in inconvenient measuring positions).

Zero point / absolute measurement
Zeroing in any position, e.g. for tolerance measurements.
Absolute zeroing is restored by pressing the button again.

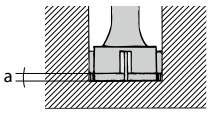
▶ B6 ◀ Cal

Measuring faces and wearing parts of carbide, from size 12 -16 measuring faces of hardened steel with titanium coating for long tool life.

Supplied with: 1 battery No. 081560 size 357.

Optional extras: Data cable No. 497445, extensions No. 429010, setting rings No. 484030.

Note: Available up to a measuring range 300 mm on request.



Measuring range	mm	6-8	8-10	10-12	12-16	16-20	20-25	25-30	30-40	40-50
44A 42 9110 Digital internal micrometer		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Scale divisions	mm					0.001				
Error limit	mm	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003
Dimension a	mm	2	2	2	0.3	0.3	0.3	0.3	0.3	0.3
Standard measuring depth	mm	45	45	45	76	76	88	88	102	102

Measuring range	mm	50-63	62-75	75-88	87-100	100-125	125-150	150-175	175-200
44A 42 9110 Digital internal micrometer		eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm				0.001				
Error limit	mm	0.003	0.003	0.003	0.003	0.005	0.005	0.005	0.005
Dimension a	mm	0.3	0.3	0.3	0.3	12.4	12.4	12.4	12.4
Standard measuring depth	mm	102	102	102	102	151	151	151	151

Digital internal micrometer sets

▶ S6 ◀ Cal

Measuring faces and wearing parts of carbide, from size 12 -25 measuring faces of hardened steel with titanium coating for long tool life.

Supplied with: Digital internal micrometers No. 429110, setting rings.



42 9112

Measuring range	mm	6-12	12-25	25-50	50-75	75-100
44A 42 9112 Digital internal micrometer set		eShop	eShop	eShop	(eShop)	(eShop)
Number of micrometers		3	3	3	2	2
Number of setting rings		2	2	2	1	1
Setting ring ∅	mm	8 / 10	16 / 20	30 / 40	62	87

DIN 863 | mm / Inch | Digimatic | IP 65 | Reference Lock

Mahr

Micromar digital internal micrometers and internal quick measuring devices

▶ B6 ◀ Cal

3-point internal micrometers / internal quick measuring devices with connection thread to easily change the measuring heads. Self-centring micrometer head from 12 mm with carbide measuring jaws. From 40 mm the micrometer head is of aluminium, to save weight. **From 12 mm for measuring down to the bottom of the hole.**

42 8931/8932 – Internal micrometers with high-quality ratchet, fast measurements via spindle pitch of 1.5 mm. Practical measuring functions, e.g. 3 PRESET, tolerance display via symbols, ABS.

42 8932/8934 – Additionally with integral i-wi radio system for easy cordless transmission of measured data to any PC.

42 8933/8934 – Internal quick measuring devices with lever retraction over the entire measuring range. Large rotating (270°) touch display with practical measuring functions, e.g. 3 PRESET, tolerance display via 3 coloured LEDs and symbols in the display, ABS.

Supplied with: 1 battery No. 081560 size CR2032.

Optional extras: Extension No. 428950, data cable No. 498941, setting rings No. 484030, clamping plate for outside micrometer stand No. 428951.

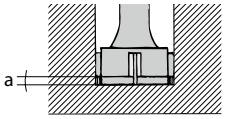
42 8932/8934 – i-wi stick radio receiver No. 498912 size STICK.



42 8931_30-40
428932_30-40



42 8933_40-50
42 8934_40-50



i-wi

42 8932 / 34

Measuring range	mm	6-8	8-10	10-12	12-16	16-20	20-25	25-30	30-40
43A 42 8931	Digital internal micrometer **with data output**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 8932	Digital internal micrometer **with data output and i-wi**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 8933	Digital internal quick measuring device **with data output**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 8934	Digital internal quick measuring device **with data output and i-wi**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.001							
Error limit	mm	0.004							
Dimension a	mm	1.5	1.8	1.8	0.5	0.5	0.5	0.5	0.5
Standard measuring depth	mm	58	58	58	64	64	68	68	76

Measuring range	mm	40-50	50-60	60-70	70-85	85-100	100-125	125-150	150-175	175-200
43A 42 8931	Digital internal micrometer **with data output**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 8932	Digital internal micrometer **with data output and i-wi**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 8933	Digital internal quick measuring device **with data output**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	–	–	–	–
43A 42 8934	Digital internal quick measuring device **with data output and i-wi**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	–	–	–	–
Scale divisions	mm	0.001								
Error limit	mm	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.007	0.007
Dimension a	mm	0.5								
Standard measuring depth	mm	76	79	79	97	97	132	132	132	132

Micromar digital internal micrometer and internal quick measuring device sets

▶ S6 ◀ Cal

Supplied with:

42 8941 – Digital internal micrometers No. 428931 with appropriate setting rings.

42 8942 – Digital internal micrometers No. 428932 with appropriate setting rings.

42 8943 – Digital internal quick measuring devices No. 428933 with appropriate setting rings.

42 8944 – Digital internal quick measuring devices No. 428934 with appropriate setting rings.



42 8941_50-100
42 8942_50-100



42 8943_50-100
42 8944_50-100

Measuring range	mm	6-12	12-20	20-50	50-100
43A 42 8941	Digital internal micrometer set **with data output**	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 8942	Digital internal micrometer set **with data output and i-wi**	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 8943	Digital internal quick measuring device set **with data output**	(eShop)	(eShop)	(eShop)	(eShop)
43A 42 8944	Digital internal quick measuring device set **with data output and i-wi**	(eShop)	(eShop)	(eShop)	(eShop)
Number of measuring heads		3	2	4	4
Number of setting rings		2	1	2	2
Setting ring ∅	mm	8/10	16	25/40	60/85

DIN 863 | mm / Inch | RS232C | IP 67 | HID | HCT | B6 Cal | HCT

Bowers Group Digital XT bore gauges Holematic with Bluetooth®



42 8702

3-point bore gauge Holematic for blind hole measurement from size 12.5–16.
Fixed carbide measuring jaws, from size 12.5–16 with carbide inserts. Large, sharp contrast digital display.
Reliable measurement without a vernier.
Compatible with the optional HCT (Hoffmann Group Connected Tools) app.
Available free of charge for Android and iOS.

Function:
- mm / inch selection.
- Setting 2 preset values.
- On / Off data storage button.

Advantage: Very quick and repeatedly accurate measurement due to pistol grip and constant measuring force.

Optional extras: Data cable No. 498948, USB dongle No. 498952, setting rings No. 484030, extensions No. 428510.

Spare part: Spare measuring heads No. 428605, measuring jaws No. 428745, return springs No. 428746.

Supplied with: Measuring pistol, micrometer head with UKAS test certificate, 1 battery No. 081560 size CR2032.

Measuring range	mm	10-12,5	12,5-16	16-20	20-25	25-35	35-50	50-65	65-80	80-100
46B 42 8702	Holematic digital XT bore gauge **With Bluetooth®**	–	–	–	–	–	–	–	–	–
Scale divisions	mm					0.001				
Error limit	mm	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005
Dimension a	mm	1.9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Standard measuring depth	mm	58	62	66	66	80	80	80	80	85

Digital XT bore gauge sets Holematic with Bluetooth®

S6 Cal | HCT

Supplied with: Digital internal micrometers No. 428702 and setting rings with UKAS test certificate.

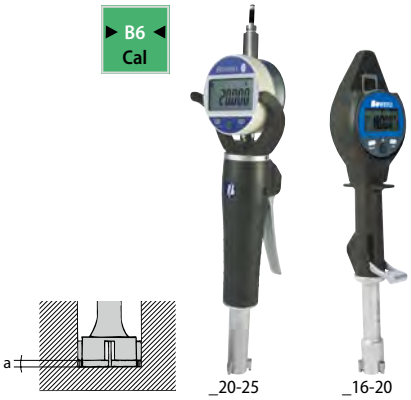

42 8752

Measuring range	mm	6-10	10-20	20-50	50-100	100-200
46B 42 8752	Holematic digital XT bore gauge set **With Bluetooth®**	–	–	–	–	–
Scale divisions	mm			0.001		
Error limit	mm	0.004	0.004	0.004	0.005	0.006/0.007
Number of measuring heads		2	3	3	3	4
Setting ring ∅	mm	8	12.5 / 20	20 / 35	65 / 80	125 / 175

DIN 863 | mm / Inch | RS232C

B6 Cal

Bowers Group Digital XTL bore gauges with Bluetooth®



_20-25 _16-20

3-point XT internal micrometer series for blind hole measurement from size 12.5–16.
Fixed carbide measuring jaws, from size 12.5–16 with carbide inserts. Large, sharp contrast digital display.
Reliable measurement without a vernier. Excellently suitable for measuring vertical holes.

Function:
- mm / inch selection.
- Setting 2 preset values.
- On / Off data storage button.

Supplied with: Measuring lever, micrometer head with UKAS test certificate, 1 battery No. 081560 size CR2032.

Optional extras: Data cable No. 498950 (from size 20), No. 498951 (up to size 20), setting rings No. 484030, extensions No. 428510.

Measurement range	mm	6-8	8-10	10-12,5	12,5-16	16-20	20-25	25-35	35-50	50-65	65-80	80-100
46B 42 8761	Digital XTL bore gauge **With Bluetooth®**	–	–	–	–	–	–	–	–	–	–	–
Scale divisions	mm						0.001					
Error limit	mm	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005
Dimension a	mm	1.9	1.9	1.9	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Standard measuring depth	mm	58	58	58	62	62	66	66	80	80	80	85

Digital XT bore gauge sets with Bluetooth®

S6 Cal

Supplied with: Digital bore gauges No. 428760 and setting rings with UKAS test certificate.


42 8771

Measurement range	mm	6-10	10-20	20-50	50-100
46B 42 8771	Digital XTL bore gauge set **With Bluetooth®**	–	–	–	–
Scale divisions	mm			0.001	
Error limit	mm	0.004	0.004	0.004	0.005
Number of measuring heads		2	3	3	3
Setting ring ∅	mm	8	12.5 / 20	20 / 35	65 / 80

Standard | Digimatic | Absolute System

Mitutoyo Digital bore gauges Boremat

3-point bore gauge Boremat for blind hole measurement. Large LCD display with 11 mm character height for clear and error-free reading. **Display can be rotated 330°**. The measuring probes centre the micrometer automatically in the bore and ensure easy handling. The measuring probes are adjusted without any error by a **carbide cone**.

Function:
- **Data storage button** saves the measurement result (for instance in inaccessible measurement positions).
- **Zero point / absolute size** enables zeroing at any position.
- **Good / Reject display** for easy checking against tolerance values.
- **Quick adjustment** for quick spanning of the distance to be measured.

Advantage: Very quick measurement with high repetition accuracy due to pistol grip and constant measuring force.



_6–8



_12–16

42

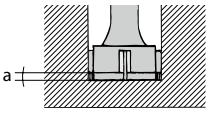
▶ B6 ◀ Cal

Size 6-8–10-12 – Anvils of titanium-coated carbide.
Size 12-16–87-100 – Anvils of titanium-coated hardened steel.

Supplied with: 1 battery No. 081560 size 357.

Optional extras: Digimatic data cable No. 497080, extensions No. 429010, setting rings No. 484030.

Spare part: Spare micrometer head No. 429252.







_20–25



_30–40

Measuring range	mm	6-8	8-10	10-12	12-16	16-20	20-25	25-30	30-40	40-50	50-63	62-75	75-88	87-100
44A 42 9250	Digital three-point bore gauge	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.001												
Error limit	mm	0.005	0.005	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
Dimension a	mm	2	2	2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Standard measuring depth	mm	83	83	83	53	53	59	59	67	67	75	75	75	75

Digital three-point bore gauge sets Boremat

▶ S6 ◀ Cal

Supplied with: Digital bore gauge No. 429250, setting rings.



42 9260

Measuring range	mm	6-12	12-25	25-50	50-100
44A 42 9260	Digital three-point bore gauge set	eShop	eShop	eShop	eShop
Scale divisions	mm	0.001			
Error limit	mm	0.005	0.005 / 0.006	0.006	0.006
Number of measuring heads		3	3	3	4
Number of setting rings		2			
Setting ring ∅	mm	8 / 10	16 / 20	30 / 40	62 / 87

DIN 876

Natural granite surface plate for measuring and inspection

Specially selected natural granite.

- Free from defects, homogeneous structure.
- Resistant to deflection and to warping.
- Absolutely rustproof and resistant to acids, low thermal conductivity.
- Micro-fine surface treatment (diamond lapped). Tolerances tighter than recommended limits.
- Ground outside edges, visually true.
- For static determination of position, contact points (steel ball inserts) are fitted to the underside.
- Harder than hardened steel (Mohs hardness scale 6 – 7), non-magnetic and electrically non-conductive.

Accuracy: Final manufacturing and inspection take place in computer-controlled climatic rooms. The used measuring equipment guarantees the exact connection to national and international calibration laboratories.

43 0200 – **DIN 876/1 – diamond lapped** for workshop and production.
43 0400 – **DIN 876/00 – High precision diamond lapped** for measuring room.
43 0190/0300 – **DIN 876/0 – Precision diamond lapped** for inspection.

Supplied with: **Supplied with test certificate, transport packing.**

43 0190 Size 630×400–2000×1000 – Including steel ball inserts.
43 0190 Size 400×250–400×400 – Including rubber feet.

Note: **On request:** Stainless steel screw inserts, steel T-slot rails (steel T-slot rails not available for No. 430190), accuracy 000, other sizes, intermediate sizes. Delivery excluded.



43 0190



43 0200

With DAkkS calibration certificate if desired


Including steel ball inserts on the underside from size 630×400

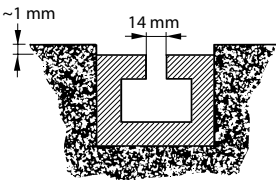
Length×Width			mm	400×250	400×400	630×400	630×630	800×600	1000×630	1200×800	1500×1000	2000×1000
41C 43 0190	Garant	Granite surface plate **Accuracy class 0**		–	eShop	eShop	eShop	–	(eShop)	(eShop)	–	–
46H 43 0200		Granite surface plate **Accuracy class 1**		eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
46H 43 0300	PLANOLITH	Granite surface plate **Accuracy class 0**		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
46H 43 0400		Granite surface plate **Accuracy class 00**		–	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Flatness (43 0190, 43 0300)			mm	0.006	0.006	0.007	0.007	0.007	0.008	0.009	0.01	0.012
Flatness (43 0200)			mm	0.014	0.014	0.016	0.016	0.018	0.02	0.022	0.025	0.03
Flatness (43 0400)			mm	–	0.003	0.003	0.003	0.004	0.004	0.005	0.005	0.006
Thickness			mm	50	50	70	70	120	100	160	190	220
Number of rubber feet				4	4	–	–	–	–	–	–	–
Number of steel ball inserts				–	–	3	3	3	3	5	5	5
Weight			kg	15	25	55	83	173	189	460	855	1320

PLANOLITH Steel T-slot rail

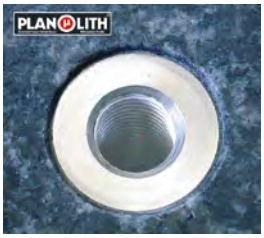
Made of special low-torsion steel, glare-free satin chrome-plated surface, bonded to the granite plate so that it cannot move.

Accuracy: 0.01 mm / 1000 mm, version B. With tenon and T-slot, ground. The nominal dimension 14 mm is only approximate, accessories such as tailstocks etc. need to be ground precisely to the actual slot pitch.

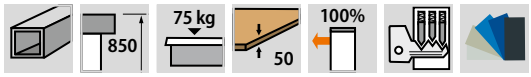
Note: When ordering, please specify the position of the T-slot rail in the surface and take into account the minimum thickness of the granite plate. Prices for intersecting and end face T-slots on request.







for plate length		mm	800	1000	1200	1500	2000
46H 43 1700	Guide and clamping T-slot rail including installation		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Minimum thickness of granite plate		mm	100	140	160	190	220



Garant GRIDLINE GridLine Vario workbench, mobile with granite surface plate, casing 24 G

Mobile measurement workstation with granite surface plate.
Natural granite surface plate for measuring and inspection, accuracy class 0.
Precision diamond lapped for inspection work. Free of flaws; homogeneous structure. Resistant to deflection and to warping. Absolutely rustproof and resistant to acid, low thermal conductivity. **Supplied with M8 tapped hole.**
Worktop of dark Eluplan, 50 mm thick; 2 mm thick plastic surface finish, proof against abrasion and impacts. The coating is anti-static and largely resistant to dilute acids and alkalis. The tough hard surface is particularly suitable for sensitive components. All edges ABS veneered. **Mobile support legs** of square hollow section, each with 2 ball-bearing fixed wheels and castors, Ø 125 mm, with treadless polyurethane tyres. Castors with brakes for the wheels and the castor heads.
Back panels and storage shelves of sheet metal.

43 1315 Size 1500/5 – 24G cabinet casing, 600 mm wide, of sheet metal, can be locked centrally with cylinder lock. 100% full extension drawers with differential runners, single-handed individual drawer release system and 75kg load capacity.

Colour: Body RAL 7035 light grey, drawer fronts RAL 7016 anthracite, powder-coated. Suspension for granite table RAL 7016 anthracite, drawer body RAL 7035 light grey (not configurable).

Supplied with: Supplied with granite table 630 x 400 mm, accuracy class 0, M8 tapped hole. Fully assembled.

43 1315 Size 1500/5 – Supplied with cabinet casing with drawers.

Note:	For accessories see our Workstations and Storage catalogue volume 3.

Granite surface plate, *accuracy class 0, size 630 × 400 mm,* ***supplied with M8 threaded socket.***

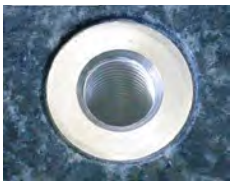
Worktop *dark Eluplan.*



43 1315

Mobile support base *with fixed wheels and castors with parking brake and swivel head locking.*

Cabinet casing with drawers: *100 % full extension for optimum access to the entire area of the drawer. New type of drawer concept for optimum equipment with modular arrangement systems.*



Threaded sockets *of stainless steel.*



Granite surface plate *accuracy class 0. Precision diamond lapped, will not sag.*

Sizes		1500	1500/5
41W 43 1310	Vario workbench with dark grey Eluplan worktop **mobile with granite surface plate**	(eShop)	–
41W 43 1315	Vario workbench with 5 drawers and dark grey Eluplan worktop **mobile with granite surface plate**	–	(eShop)
Height	mm	850	
Worktop length	mm	1500	
Worktop depth	mm	750	
Worktop thickness	mm	50	
Granite table length	mm	630	
Granite table width	mm	400	
Flatness	mm	0.007	
Drawer body height	mm	–	500
Drawer body width	mm	–	600
Drawer body depth	mm	–	650
Drawer usable width	mm	–	500
Drawer usable depth	mm	–	500
Drawer usable width in G		–	20
Drawer usable depth in G		–	20
maximum load capacity, mobile unit	kg	400	
Weight	kg	158	208
Fitted with: Drawer front height in mm (43 1315)		–	50; 75; 75; 100; 125

Garant GridLine – Workstations and storage reloaded

You can find more information and suitable accessories in the Hoffmann Workstations and Storage catalogue.



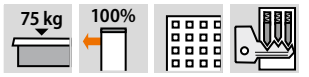


Garant GRIDLINE Support frames / cabinets for granite surface plates

Sturdy welded construction including levelling fittings.
Uneven floors can be compensated using height compensation screws.

43 1010 – **Support frame,** steel sections, paint finish RAL 7035 light grey.
Storage shelf made of bamboo strips glued cross-wise.

43 1060 – **Support cabinet,** casing of sheet steel, with swing door (including storage shelf) and / or drawers depending on size, including GARANT locking system.
Paint finish of the shell RAL7035 light grey, front faces RAL 7016 anthracite.



Note: For vibration-absorbing machine mounts, please order 4 pcs. No. 086002 size 850.


43 1010_630×630


43 1060_1000×630



Application example 43 1060_1200×800

for insert size length×width	mm	630×400	630×630	800×600	1000×630	1200×800	1500×1000	2000×1000
41C 43 1010 Support frame		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
41C 43 1060 Support cabinet		–	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Support cabinet height	mm	710						
Support cabinet width	mm	606	606	606	856	906	1106	1506
Support cabinet depth	mm	400	600	600	600	650	800	800
Height of support cabinet incl. bearing sets	mm	770						
Drawer usable width in G (43 1060)	mm	–	–	–	–	12	20	20
Drawer usable depth in G (43 1060)	mm	–	–	–	–	20	20	20
Drawer usable width (43 1060)	mm	–	–	–	–	300	500	500
Drawer usable depth (43 1060)	mm	–	–	–	–	500	500	500
Load capacity, distributed	kg	500	500	500	1000	1000	2000	2000
Fitted with: Drawer front height (centre) (43 1060)		–	–	–	–	–	–	50; 75; 75; 100; 125 mm
Drawer front height (right) (43 1060)		–	–	–	–	50; 75: 100; 200 mm	50; 75; 75; 100; 125 mm	–
Door usable height (43 1060)		–	345 mm	345 mm	345 mm	425 mm	425 mm	425 mm
Number of shelves (43 1060)		–	1	1	1	1	1	2
Number of cabinet casings with drawers (43 1060)		–	0	0	0	1	1	1

Bench inspection rollers

Made of dense special casting.
Each with 2 rollers mounted on ball bearings, to accept cylindrical components.

46K 43 1705 Pair of bench inspection rollers		(eShop)
∅ range	mm	25 – 150
Tip height	mm	147 (at d = 25)
Width of T-nut h6	mm	14
Weight per pair	kg	15
maximum load capacity	kg	150



PLANOLITH Tailstocks

Of special cast iron with very high wear resistance.
One tailstock with a fixed centre, one tailstock with an axially movable centre.
Adjustment of the centre with a hand lever. With hardened Vee-blocks.

Accuracy: Grade 1, axial precision ± 0.008 mm.

Note: Please note **additional carriage charge**.
Other centre heights on request.



Tip height	mm	150	200
46H 43 1710 Pair of tailstocks grade 1, heavy-duty version		(eShop)	(eShop)
Sleeve holder		MT2	
Vee blocks for shaft ∅	mm	10 – 50	
Width	mm	120	
Length per pair	mm	360	390
Weight per pair	kg	28	33
maximum load capacity	kg	75	

PLANOLITH Natural granite measuring beam

For material, accuracy standards see No. 430400. From 1000 mm length with handles. The two horizontal faces are flat and parallel to each other, finely diamond lapped.

43 1825 – Special **lightweight design** with no loss of accuracy.

Application: For checking straightness and parallelism when marking out.

Supplied with: Transport packaging

Note: Please note **additional carriage charge.** Measuring beam up to 4000 mm on request. Wooden box or flight case available on request at an additional charge.

Length	mm	500	1000	1500
46H 43 1810	Measuring beam, accuracy 00	(eShop)	(eShop)	(eShop)
46H 43 1825	Measuring beam, accuracy 00 **Lightweight design**	–	(eShop)	(eShop)
Parallelism	mm	0.0015	0.002	0.003
Width	mm	45	56	70
Height	mm	90	160	220
Weight (43 1810)	kg	6	26	69
Weight (43 1825)	kg	–	19	34



43 1810



43 1825

PLANOLITH Inspection square 90° of natural granite, triangular form

For material and accuracy standards see No. 430400. From size 600×400 mm with lightening holes which also assist in transportation and handling. The two narrow 90° surfaces of the square are precision diamond lapped to DIN 876/00.

Right angle tolerances to DIN 875.

43 1858 – Special **lightweight design** with no loss of accuracy.

Application: For checking 90° angles in horizontal and vertical planes.

Supplied with: Transport packaging

Note: Please note **additional carriage charge.** Measurement angles up to 2000 mm on request. Wooden box or flight case available on request at an additional charge.

Length×Width	mm	400×250	500×300	600×400	800×500	1000×600
46H 43 1850	90° inspection square, triangular accuracy 00	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
46H 43 1858	90° inspection square, triangular accuracy 00 **Lightweight design**	–	(eShop)	(eShop)	(eShop)	(eShop)
Right angle tolerance	mm	0.003	0.004	0.005	0.006	0.008
Thickness	mm	50	60	70	80	100
Weight (43 1850)	kg	10	17	30	55	94
Weight (43 1858)	kg	–	12	19	41	65



43 1858

43 1850

PLANOLITH 90° frame of natural granite square / rectangular shape

For material, accuracy standards and options see No. 430300; 430400. The four all-round narrow 90° surfaces of the square are precision diamond lapped to DIN 876. Right angle tolerances to DIN 875.

Application: For checking 90° angles in horizontal and vertical planes.

Supplied with: 43 1730 – Transport packaging

Note: Delivery excluded. Granite reference squares in square shape up to 1000 mm on request. Granite reference squares in rectangular shape up to 2000 mm on request. Wooden box or flight case available on request at an additional charge.

Length×Width	mm	300×300	400×400	500×500
46H 43 1860	Master square 90°, square shape accuracy 0	(eShop)	(eShop)	(eShop)
Right angle tolerance	mm	0.004	0.006	0.008
Thickness	mm	50	60	70
Weight	kg	11	24	38



43 1860

Length×Width	mm	350×250	600×400
46H 43 1730	Test frame 90°, rectangular shape accuracy 00	(eShop)	(eShop)
Right angle tolerance	mm	0.002	
Thickness	mm	50	60
Weight	kg	8	20



43 1730

Garant GreenPlus cleaning agent for natural granite

Non-hazardous cleaning agent specially developed for professional cleaning and maintenance of granite measuring and control surface plates. Reliably removes dirt such as oils, greases and dust particles, thus increasing the life cycle and functionality of natural hard stone surface plates.

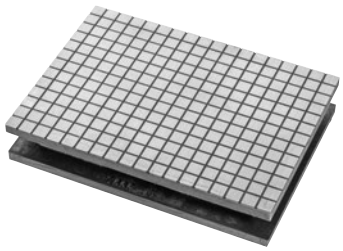
Contents	ml	500
46H 43 1842	GARANT GreenPlus cleaners **Granite Cleaner**	–



DIN 876/1

PLANOLITH Duplex lapping and control surface plate

Of dense, aged special grey cast iron. Lapping and surface plate combined in a single plate. Upper and lower surfaces are ground to the finest finish. The lapping face is slotted in a grid pattern, external surfaces ground. Upper and lower parts of the wooden case (included in the price) are removable. The side, which is not in use, is therefore always protected. Unmachined faces are enamel painted (RAL 7001 grey).



43 1400

46H 43 1400	Duplex lapping and control surface plate in a wooden case		eShop
Length		mm	360
Width		mm	260
Height		mm	65
Weight		kg	22

DIN 876/1

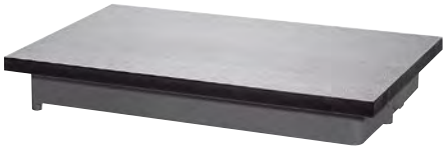
PLANOLITH Scribing and marking out plates

In stable ribbed design, of dense, aged special grey cast iron. **With scraped surface finish.** Unmachined faces are enamel painted (RAL 7001 grey). **With cast-in support points.**

Optional extras: Engineer's blue No. 085388.

Note: Accessories such as handles and set-up elements available on request. Other sizes are available from our manufacturer.

Size 500×400–1000×750 – Freight forwarding delivery.



43 1510

Length×Width		mm	300×300	400×400	500×400	600×500	800×500	1000×750
46H 43 1510	Scribing and marking out plate		eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)
Flatness tolerance		mm	0.013	0.014	0.015	0.016	0.018	0.02
Overall height		mm	60	80	80	80	100	140
Weight		kg	14	24	26	53	87	190

PLANOLITH Support frames for scribing and marking out plates

Sturdy welded structure including levelling fittings at the feet. Maximum working height 900 mm (top face of the marking out plate).

Note: Further sizes available on request. Delivery excluded.



43 1520

for insert size length×width		mm	800×500	1000×750
46H 43 1520	Support frame		(eShop)	(eShop)
Weight		kg	24	28

Standard C1 Cal

Käfer Dial indicator 1/10 mm reading

Dimensions to DIN EN ISO 463, issue June 2006. Sturdy dial indicators with metal housing, clamping shank Ø 8 mm h6, hardened and ground. Outer ring of dial face can be rotated to zero the dial.

Size 30/58 – Linear auxiliary scale for reading the revolutions.

Optional extras: Special contact points No. 434900; 434910; 434915.



_10/58 _30/58

Measuring range / Body Ø		mm	10/58	30/58
46C 43 1896	Dial indicator		eShop	eShop
Graduation		mm	0.1	
Reading per pointer revolution		mm	10	
Measurement variation MPE (measurement range)		µm	50	
Gauging force		N	0.7 – 1.2	0.8 – 1.3

DIN 878 | ▶ C1 ◀ Cal

Dial indicators 1/100 mm reading

Dimensions to DIN EN ISO 463, issue June 2006. Precision dial indicators with metal housing, clamping shank ∅ 8 mm h6, hardened and ground. Outer ring of dial face can be rotated to zero the dial. Central pointer for 1/100 mm reading, small pointer on sub-scale for 1 mm reading.

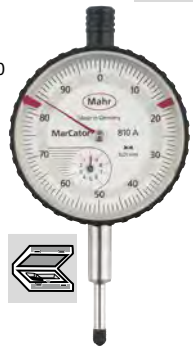
43 1950 – The two pointers are arranged concentrically making them particularly easy to read.

43 1900–1980 – Outer ring with 2 adjustable tolerance pointers.

Optional extras: Special contact points No. 434900; 434910; 434915.


43 1900


43 1950


43 1990_10/58


43 1980_10/58


43 2051_10/58

Measuring range / Body ∅		mm	10/58	10/58B
46C 43 1900	Käfer	Dial indicator	eShop	–
46C 43 1950	Käfer	Dial indicator **with concentric display**	eShop	–
43A 43 1990	Mahr	Dial indicator	eShop	–
44A 43 2051	Mitutoyo	Dial indicator	eShop	eShop
42C 43 1980	HOLEX	Dial indicator	eShop ■	eShop
Graduation		mm	0.01	
Reading per pointer revolution		mm	1	
Measurement variation MPE (measurement range) (43 1900, 43 1950, 43 1990, 43 1980)		µm	15	
Measurement variation MPE (measurement range) (43 2051)		µm	13	
Loop on the back of the dial indicator			–	yes
Gauging force (43 1900, 43 1950, 43 1990)		N	0.7 – 1.4	–
Gauging force (43 2051, 43 1980)		N	0.4 – 1.4	

DIN 878 | ▶ C1 ◀ Cal

Shock-resistant dial indicators 1/100 mm reading

Dimensions to DIN EN ISO 463, issue June 2006. **Shock-resistant** precision dial indicators. Clamping shank ∅ 8 mm h6, hardened and ground. Outer ring of dial face can be rotated to zero the dial. Outer ring with 2 adjustable tolerance pointers. Central pointer for 1/100 mm reading, small pointer on sub-scale for 1 mm reading.

43 2000 – **Shock-resistant by gear rack sleeve. Full metal version** with plastic dial glass.

43 2110 – **Protected against shocks to the gears.** With metal outer ring and metal back.

43 2120 – **Shock-resistant by rack sleeve.** Chrome-plated protective casing with integrated back.

Optional extras: Special contact points No. 434900; 434910; 434915.


43 2110


43 2120

Measuring range / Body ∅		mm	10/58	10/58B
41C 43 2110	Garant	Dial indicator **shock-resistant**	eShop	–
43A 43 2120	Mahr	Dial indicator **shock-resistant**	eShop	–
45A 43 2140	TESA	Precision dial indicator **shock-resistant**	eShop	–
42C 43 2000	HOLEX	Dial indicator **shock-resistant**	eShop ■	eShop
Graduation		mm	0.01	
Reading per pointer revolution		mm	1	
Measurement variation MPE (measurement range)		µm	15	
Loop on the back of the dial indicator			–	yes
Gauging force (43 2110, 43 2120, 43 2000)		N	0.7 – 1.5	
Gauging force (43 2140)		N	0.56 – 0.84	–


43 2140


43 2000

DIN 878 | C1 Cal

Shock-resistant and waterproof dial indicators 1/100 mm reading

Dial indicators with protection **against splashed water, oil and dirt.** Contact point on plunger spindle sealed by rubber bellows, sealed by protective sleeve at the top. Back wall sealed, glass and outer ring tightly screwed. Clamping shank Ø 8 mm h6.
Optional extras: Special contact points No. 434900; 434910; 434915.

Measuring range / Body Ø		mm	10/58	10/61,5
41C 43 2210	Garant	Precision dial indicator **IP67, shock-resistant**	eShop	–
43A 43 2220	Mahr	Precision dial indicator **IP54, shock-resistant**	eShop	–
45A 43 2230	TESA	Precision dial indicator **IP67, shock-resistant**	–	eShop
42C 43 2240	HOLEX	Dial indicator **IP54, shock-resistant**	eShop	–
Graduation		mm	0.01	
Reading per pointer revolution		mm	1	
Measurement variation MPE (measurement range)		µm	15	
Gauging force (43 2210, 43 2230)		N	0.9 – 1.6	1.04 – 1.56
Gauging force (43 2220, 43 2240)		N	0.7 – 1.6	–

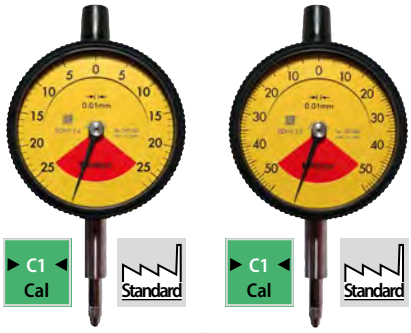


Safety dial indicators 1/100 or 1/1000 mm reading

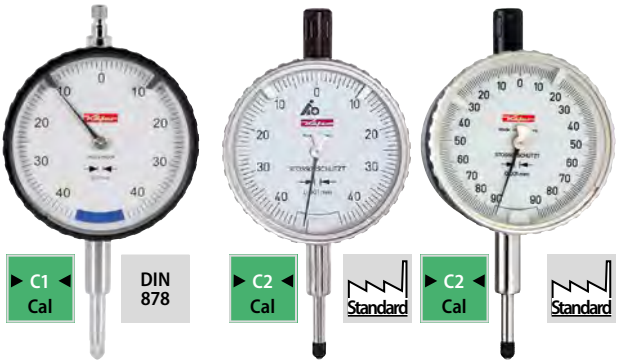
Dimensions to DIN EN ISO 463, issue June 2006. Precision dial indicators, shockproof, safety dial indicators, shockproof, with overrun. Extremely light, robust construction, dustproof. Clamping shank Ø 8 mm h6.

43 2405 – Highest precision due to combined gear and lever mechanism.

Measuring range / Body Ø		mm	1/55	0,5/55
44A 43 2053	Mitutoyo	Safety dial indicator	eShop	eShop
Graduation		mm	0.01	
Measurement variation MPE (measurement range)		µm	7	
Gauging force		N	0.4 – 1.4	
Free stroke		mm	3.5	



Measuring range / Body Ø		mm	0,08/58	0,8/58	0,16/58
46C 43 2405	Käfer	Safety dial indicator	eShop	eShop	(eShop)
Graduation		mm	0.001	0.01	0.001
Measurement variation MPE (measurement range)		µm	2	7	2
Gauging force		N	1.3 – 1.8	0.8 – 1.2	1.3 – 1.8
Free stroke		mm	4.5	7	4.5



Standard | C1 Cal

Large dial indicators 1/100 mm reading, dial Ø 80 or 100 mm

Dimensions to DIN EN ISO 463, issue June 2006. With larger external dial Ø and extra large graduations, **shock-resistant mechanism.** Satin chrome-plated brass housing. With clamping shank Ø 8 mm h6; hardened and ground. Outer ring of dial face can be rotated to zero the dial. Outer ring with 2 adjustable tolerance pointers. Central pointer for 1/100 mm reading, small pointer on sub-scale for 1 mm reading.
Optional extras: Special contact points No. 434900; 434910; 434915.

Measuring range / Body Ø		mm	10/80	10/100
46C 43 2900	Precision large dial indicator **shock-resistant**		eShop	eShop
Graduation		mm	0.01	
Reading per pointer revolution		mm	1	
Measurement variation MPE (measurement range)		µm	17	
Gauging force		N	1 – 1.8	



C1 Cal

Small dial indicators 1/100 mm reading

Precision small dial indicators with strong metal casing, clamping shank Ø 8 mm h6, hardened and ground.
Outer ring of dial face can be rotated to zero the dial.
43 2500 Size 10/40 – Very large measuring spans (10 mm), but very small dimensions (Ø 40 mm).
43 2650 – Oilproof and waterproof, shock-resistant.
43 2500–2550 – Dimensions to DIN EN ISO 463, issue June 2006.
43 2505/2550 – Shock-resistant.
Optional extras: Special contact points No. 434900; 434910; 434915.



43 2500_3/28 43 2500 _10/40



43 2505 _3/40



43 2550_3/40 43 2650_3/40

Measuring range / Body Ø	mm	3/28	3/32	3/40	5/40	10/40
46C 43 2500 (Käfer)	Precision small dial indicator	eShop	eShop	eShop	eShop	eShop
42C 43 2505 (HOLEX)	Precision small dial indicator **shock-resistant**	–	–	eShop	eShop ■	–
46C 43 2550 (Käfer)	Precision small dial indicator **shock-resistant**	–	–	eShop	eShop	–
46C 43 2650 (Käfer)	Precision small dial indicator **IP67 oil-proof and water-proof, shock-resistant**	–	–	eShop	eShop	–
Graduation	mm	0.01				
Reading per pointer revolution (43 2500, 43 2550, 43 2650)	mm	0.5	0.5	0.5	0.5	1
Reading per pointer revolution (43 2505)	mm	–	–	1	1	–
Measurement variation MPE (measurement range)	µm	17	10	10	12	15
Gauging force (43 2500)	N	0.8 – 1.2	0.8 – 1.2	0.8 – 1.2	0.8 – 1.3	0.7 – 1.2
Gauging force (43 2505)	N	–	–	0.9 – 1.3	0.6 – 1	–
Gauging force (43 2550)	N	–	–	1 – 1.4	1 – 1.4	–
Gauging force (43 2650)	N	–	–	1 – 1.7	0.8 – 1.2	–

Standard C1 Cal

Dial indicators with large measuring range 1/100 mm reading

Dimensions to EN ISO 463, issue June 2006 (except size 100/80).
Strong, satin chrome plated brass casing.
Clamping shank Ø 8 mm h6, hardened and ground.
Outer ring of dial face can be rotated to zero the dial.
Central pointer for 1/100 mm reading, small pointer for 1 mm reading.
43 3050 Size 100/80 – Clamping shank Ø 10 mm h6.
Optional extras: Special contact points No. 434900; 434910; 434915.


43 3050_40/58 43 3060_30/58

Measuring range / Body Ø	mm	30/58	40/58	50/58	80/58	100/80
46C 43 3050 (Käfer)	Precision dial indicator **shock-resistant**	eShop	eShop	eShop	eShop	eShop
42C 43 3060 (HOLEX)	Precision dial indicator **shock-resistant**	eShop	–	eShop	–	–
Graduation	mm	0.01				
Reading per pointer revolution	mm	1				
Measurement variation MPE (measurement range)	µm	20	25	25	30	50
Gauging force	N	0.8 – 1.6	0.8 – 1.8	1 – 2	1.7 – 2.8	1.2 – 2.5

Standard ▸ C2 ◂ Cal

Precision dial indicators 1/1000 mm reading

Strong, satin chrome plated brass casing; unbreakable dial glass.
Clamping shank ∅ 8 mm h6, hardened and ground.
High accuracy version.
The most important parts of the mechanism are **jewel-mounted.**
Central pointer **for 1/1000 mm reading.**
Outer ring of dial face can be rotated to zero the dial.
Nearly constant measuring force over the entire measuring range.
43 3090–3410 – Dimensions to DIN EN ISO 463, issue June 2006.
43 3600 – **Shock and splashed water proof precision dial indicator.**
43 3090/3400 – **High-quality shock absorption for particularly long working life.**
Optional extras: Special contact points No. 434900; 434910; 434915.

43 3090
43 3400
43 3410
43 3600


43 3090_1/58


43 3400_1/58


43 3405_1/58

Measuring range / Body ∅		mm	1/40	1/58	3/40	5/40	5/58
41C 43 3090	Garant	Precision dial indicator **shock-resistant**	–	eShop	–	–	–
46C 43 3400	Käfer		eShop	eShop	eShop	eShop	eShop
44A 43 3405	Mitutoyo		–	eShop	–	–	eShop
42C 43 3410	HOLEX		–	eShop	–	–	–
46C 43 3600	Käfer	Precision dial indicator **IP 53, shock-resistant**	eShop	eShop	–	–	–
Graduation		mm	0.001				
Reading per pointer revolution		mm	0.2				
Measurement variation MPE (measurement range)		µm	5	5	7	10	10
Gauging force (43 3090, 43 3400, 43 3410)		N	1 – 1.5	1.5 – 2	1 – 1.5	1 – 1.5	1.5 – 2
Gauging force (43 3405)		N	–	0.9 – 1.5	–	–	0.4 – 1.5
Gauging force (43 3600)		N	1.1 – 1.6	1.3 – 1.8	–	–	–

IP 53


43 3410_1/58


43 3600_1/58

Standard ▸ C2 ◂ Cal

Precision dial indicators Feinika 1/1000 mm reading

Dimensions to DIN EN ISO 463, issue June 2006.
Strong, satin chrome plated brass casing.
Clamping shank ∅ 8 mm h6, hardened and ground.
Robust version.
The most important parts of the mechanism are jewel-mounted.
Central pointer **for 1/1000 mm reading.**
Outer ring of dial face can be rotated to zero the dial.
Virtually constant gauging force over the entire range.
Optional extras: Special contact points No. 434900; 434910; 434915.

Very high accuracy

Measuring range / Body ∅		mm	1/40	1/58
46C 43 3500	Feinika precision dial indicator **shock-resistant**		eShop	eShop
Graduation		mm	0.001	
Reading per pointer revolution		mm	0.1	
Measurement variation MPE (measurement range)		µm	3	
Gauging force		N	0.7 – 1	1.3 – 1.6


43 3500_1/40


43 3500_1/58

Standard | mm / Inch | RS232C | Digimatic | IP 52 | Reference Lock | C1 Cal

Garant Digital dial indicators DI 1 with 1/100 or 1/1000 mm reading

Digital dial indicator with very large (12 mm), high-contrast LCD display. Immediately ready for use when switched on due to reference system. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons.

Function: Display can be zeroed in any position, reversible direction of measurement, buttons can be locked to prevent inadvertent operation, auto-off (selectable). Reactivation by movement or by pressing a key; the reference data is retained at all times.

43 4010 – Preset of any value.

Supplied with: Dial indicator with screw-on protective aluminium cap on the end of the measuring pin, alternatively a lift-off cap can be fitted. 1 battery No. 081560 size CR2032.

Optional extras: Spare and special contact points No. 434900; 434910; 434915, lifting cable No. 434930, data cable No. 498940.

Illustration with lift-off cap.



43 4000

Illustration with protective cap.



43 4010

Measuring range		mm	12,5
41C 43 4000	Digital dial indicator **0.01 mm reading**		eShop ■
41C 43 4010	Digital dial indicator **0.001 mm reading**		eShop
Reversible reading (43 4000)		mm	0.01
Reversible reading (43 4010)		mm	0.001
Reversible reading (43 4000)		in	0.0005
Reversible reading (43 4010)		in	0.00005
Measurement variation E MPE (measurement range) (43 4000)		mm	0.02
Measurement variation E MPE (measurement range) (43 4010)		mm	0.005
Gauging force		N	0.5 – 1
Clamping shank ∅ h6		mm	8
Body ∅		mm	60
Thickness of housing		mm	28

Standard | mm / Inch | RS232C | Digimatic | IP 52 | Reference Lock | C1 Cal

Mahr Digital dial indicators MarCator with 1/100, 5/1000 or 1/1000 mm reading

Digital dial indicator with very large (12 mm), high-contrast LCD display. Immediately ready for use when switched on due to reference system. The REFERENCE measuring system saves and retains the set zero position, even after being switched on again. The lock function prevents measurement errors arising from accidentally touching the control buttons.

Function: Display can be zeroed in any position, preset (measurement value presetting), reversible direction of measurement, auto-off (selectable). Lock function: Key lock to prevent inadvertent operation.

Supplied with: 1 battery No. 081560 size CR2032

Optional extras: Spare and special contact points No. 434900; 434910; 434915. Data cable No. 498940.



43 4020



43 4022



43 4024

Measuring range		mm	12,5
43A 43 4020	Digital dial indicator **0.01 mm reading**		eShop
43A 43 4022	Digital dial indicator **0.005 mm reading**		eShop
43A 43 4024	Digital dial indicator **0.001 mm reading**		eShop
Reversible reading (43 4020)		mm	0.01
Reversible reading (43 4022)		mm	0.005
Reversible reading (43 4024)		mm	0.001
Reversible reading (43 4020)		in	0.0005
Reversible reading (43 4022)		in	0.0001
Reversible reading (43 4024)		in	0.00005
Measurement variation E MPE (measurement range) (43 4020)		mm	0.02
Measurement variation E MPE (measurement range) (43 4022)		mm	0.015
Measurement variation E MPE (measurement range) (43 4024)		mm	0.005
Gauging force		N	0.5 – 1
Clamping shank ∅ h6		mm	8
Body ∅		mm	60
Thickness of housing		mm	28

Standard | Digimatic | IP 42 | Absolute System | C1 Cal

Mitutoyo Digital ABSOLUTE dial indicator 1/100 mm reading

Zero point display in any position, e.g. for tolerance measurements. Selectable direction of measurement.
20,000 h continuous operation with one battery.

Supplied with: 1 battery No. 081560 size 357.

Optional extras: Data cable No. 497080, spare and special contact points No. 434900; 434910; 434915.



43 4062

Measuring range		mm	12,5
44A 43 4062	Absolute dial indicator **0.01 mm reading**		eShop
Measurement variation E MPE (measurement range)		mm	0.02
Gauging force		N	≤ 1.5
Clamping shank ∅ h6		mm	8
Body ∅		mm	59
Thickness of housing		mm	27.5

Standard | Digimatic | IP 42 | Absolute System | C1 Cal

Mitutoyo Digital ABSOLUTE dial indicator 1/100 mm reading

A multifunctional standard dial indicator. Reliable and easy to use.

- Bidirectional communication is possible, e.g. for parameterisation via PC (Digimatic S1 interface).
- With ABSOLUTE system. One-off setting of the start position, which remains the absolute zero point until the battery has to be replaced.
- Easy reading of the values due to a large digital/analogue display.
- Model available with digital digit increments of 0.5 µm.
- Simple calculations and peak value identification are possible.
- Equipped with a warning function for the calibration plan.
- The GO/±NG assessment is performed by adjusting the upper and lower tolerance.
- Alarm for low voltage, setting error, sensor error, display overflow etc.
- Display can be rotated 330°.
- A function lock protects the dial indicator against unauthorised use.

Supplied with: Digital dial indicator including 1 pc. CR2032 battery.

Optional extras: Data cable No. 497081, spare and special contact points No. 434900; 434910; 434915.

Display can be rotated up to 330°.



43 4065

Measuring range		mm	12,5	25
44A 43 4065	Absolute dial indicator **0.01 mm reading**		eShop	eShop
Scale divisions		mm	0.01	
Measurement variation E MPE (measurement range)		mm	0.02	
Gauging force		N	≤0.9	≤1.8
Clamping shank ∅ h6		mm	8	
Clamping shank length		mm	17	19.5
Body ∅		mm	59	
Thickness of housing		mm	38.1	44.2

DIN 878 | mm / Inch | RS232C | C1 Cal

TESA Digital dial indicators DIALTRONIC EASY with 1/100 or 1/1000 mm reading

Digital dial indicator with large LCD display. The dial rotates by 270° for optimal alignment of the measured value display for a variety of applications.

Function: Zero setting/preset, measurement value output, reversible direction of measurement, key lock to prevent inadvertent operation, standby mode.

Supplied with: 1 battery No. 081560 size CR2032.

Optional extras: Spare and special contact points No. 424900; 434910; 434915. Data cable No. 498928.



43 4262



43 4263

Measuring range		mm	12,5
45A 43 4262	Digital dial indicator **0.01 mm reading**		eShop
45A 43 4263	Digital dial indicator **0.001 mm reading**		eShop
Reversible reading (43 4262)		mm	0.01
Reversible reading (43 4263)		mm	0.001
Reversible reading (43 4262)		in	0.0005
Reversible reading (43 4263)		in	0.00005
Measurement variation E MPE (measurement range) (43 4262)		mm	0.01
Measurement variation E MPE (measurement range) (43 4263)		mm	0.004
Gauging force		N	0.65 – 0.90
Clamping shank ∅ h6		mm	8
Body ∅		mm	59.8
Thickness of housing		mm	33

Standard | mm / Inch | C1 Cal

HOLEX Digital dial indicator 1/100 mm reading

Digital dial indicator in compact design with high-contrast digital display.

- Reversible direction of measurement.
- Very narrow casing.

43 4008 – Version with Bluetooth® 5.0. Compatible with the optional HCT (Hoffmann Group Connected Tools) mobile app. Available free of charge for Android and iOS.
Can also be used via a Human Interface Device (HID).
USB-C interface for power supply.

Supplied with: Supplied with an eye on the cover and 1 battery No. 081560 size CR2032.

Optional extras: Spare and special contact points No. 434900; 434910; 434915.



43 4004_12,5



HCT
43 4008_12,5

Measuring range		mm	12,5	25
42C 43 4004	Digital dial indicator **0.01 mm reading**		eShop	eShop
42C 43 4008	Digital dial indicator HCT with Bluetooth® **0.01 mm reading**		–	–
Reversible reading		mm	0.01	
Reversible reading		in	0.0005	
Measurement variation E MPE (measurement range)		mm	0.025	0.035
Gauging force		N	0.8 – 1.4	0.8 – 1.7
Clamping shank - ∅ h7		mm	8	
Body ∅		mm	58	
Thickness of housing		mm	26	

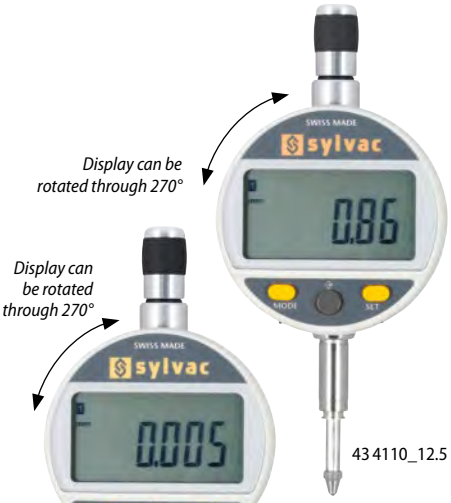
Standard | mm / Inch | RS232C | C1 Cal

sylvac Digital dial indicators 1/100 or 1/1000 mm reading

Sturdy aluminium casing with large display, 11 mm character height.
Power-saving mode and automatic wake-up, **absolute system.**
Zero setting in any position for simple comparative value measurements.
Min/max/delta, tolerance, conversion factor, auto-off. **Preset** any value.
Two reference values can be saved. Button for personalised function selection.
Reversible direction of measurement.

Supplied with: 1 battery No. 081560 size CR2032

Optional extras: Data cable No. 498948, lifting lever No. 434212, spare and special contact points No. 434900; 434910.



43 4110_12.5

43 4210_12,5

Measuring range		mm	12,5	25	50	100
46A 43 4110	Digital dial indicator **0.01 mm reading**		eShop	eShop	eShop	eShop
46A 43 4210	Digital dial indicator **0.001 mm reading**		eShop	eShop	eShop	eShop
Reversible reading (43 4110)		mm	0.01			
Reversible reading (43 4210)		mm	0.001			
Reversible reading (43 4110)		in	0.0005			
Reversible reading (43 4210)		in	0.00005			
Measurement variation E MPE (measurement range) (43 4110)		mm	0.01	0.01	0.02	0.02
Measurement variation E MPE (measurement range) (43 4210)		mm	0.003	0.004	0.005	0.006
Gauging force		N	0.65 – 0.9	0.65 – 1.15	1.4 – 2.9	1.8 – 3.0
Clamping shank ∅ h6		mm	8			
Body ∅		mm	59.5			
Thickness of housing		mm	32.9			

Precise as always, better connectivity than ever: the HCT Windows app.

With the new HCT Windows app, our **GARANT and HOLEX HCT products** can also be easily connected to PCs and laptops running a Windows operating system.



Standard | Digimatic | IP 42 | Absolute System | C1 Cal

Mitutoyo Digital dial indicator 1/100 mm reading

Digital indicator with zero display in any position. Strong metal housing, precision bearing plunger spindle. 20,000 h of continuous operation on a single battery.

Supplied with: 1 battery No. 081560 size 357.

Optional extras: Data cable No. 497080, spare and special contact points No. 434900; 434910; 434915.



43 4090

Measuring range		mm	25
44A 43 4090	Digital dial indicator **0.01 mm reading**		eShop
Measurement variation E MPE (measurement range)		mm	0.02
Gauging force		N	≤ 1.8
Clamping shank ∅ h6		mm	8
Clamping shank length		mm	40
Depth		mm	23
Length		mm	208
Width		mm	38

Standard | mm / Inch | RS232C | C1 Cal

sylvac Small digital dial indicators 1/100 or 1/1000 reading

Very small digital dial indicator (casing ∅ 45 mm) with patented inductive measuring system. Battery life > 3500 h. Comprehensive functionality: ABS and relative mode, PRESET. With additional dovetail slide fitted on the back.

Function: ABS and relative mode, PRESET.

Supplied with: 1 battery No. 081560 size CR2032.

Optional extras: Opto RS232 data cable with USB 9-pin serial connection plugs, and combined external power supply No. 498951.

IP 67



43 4031_12.5IP

IP 54



43 4036_12,5

Measuring range		mm	12,5	12,5IP
46A 43 4031	Small dial indicator **0.01 mm reading**		eShop	eShop
46A 43 4036	Small dial indicator **0.001 mm reading**		eShop	eShop
Measurement variation E MPE (measurement range) (43 4031)		mm	0.02	
Measurement variation E MPE (measurement range) (43 4036)		mm	0.005	
Gauging force		N	0.5 – 0.9	0.6 – 1.3
Clamping shank ∅ h6		mm	8	
Body ∅		mm	45	
Thickness of housing		mm	22	

Standard | mm / Inch | RS232C | IP 54 | C1 Cal

TESA Digital dial indicator DIALTRONIC with 1/1000 mm reading

Digital dial indicator with combined scale and digital display (10 mm character height) and mechanical tolerance marks. Display / button panel can be rotated up to 270°.

Function: Zero setting/preset, measurement value output, reversible direction of measurement, blocking of the measured value, standby mode, determination of the lower and upper tolerances, dynamic measurement min / max / max-min, selection ref 1 or ref 2 (preset and stored tolerance), multiplication factor, button lock against unintentional operation, data output, selection of the resolution (0.01 or 0.001 mm).

43 4275/4276 – With built-in Bluetooth®.

Supplied with: 1 battery No. 081560 size CR2032.

Optional extras: Data cable No. 498928, spare and special contact points No. 434900; 434910.



43 4275



43 4291

Measuring range		mm	12,5	25
45A 43 4275	Digital dial indicator with Bluetooth® **0.001 mm reading**		eShop	–
45A 43 4276			–	eShop
45A 43 4290	Digital dial indicator **0.001 mm reading**		eShop	–
45A 43 4291			–	eShop
Reversible reading		mm	0.001	
Reversible reading		in	0.00005	
Measurement variation E MPE (measurement range)		mm	0.003	0.004
Gauging force		N	0.65 – 0.90	0.65 – 1.15
Clamping shank ∅ h6		mm	8	
Body ∅		mm	59.8	
Thickness of housing		mm	33	

Standard | mm / Inch | IP 54 | C1 Cal

Garant Digital dial indicator 1/100 or 1/1000 mm reading

Digital dial indicator with sturdy aluminium casing and **very large** display with integral three-colour tolerance LEDs. Power-saving mode and automatic wake-up, **absolute system.** Min./max./delta, tolerance, conversion factor, auto-off. Preset any value. Reversible direction of measurement.

43 4336 – Version with **Bluetooth 5.0.** Compatible with the optional **HCT** (Hoffmann Group Connected Tools) mobile app. Available free of charge for Android and iOS. Can also be used via a Human Interface Device (HID).

Supplied with: 1 battery No. 081560 size CR2032.

Optional extras:

43 4336 – Lifting lever No. 434212, spare and special contact points No. 434900; 434910, battery pack No. 404310.

43 4330/4334 – Data cable No. 498948, lifting lever No. 434212, spare and special contact points No. 434900; 434910, battery pack No. 404310.



43 4330_12,5



43 4336_25

Measuring range		mm	12,5	25
41C 43 4330	Digital dial indicator **0.01 mm reading**		–	–
41C 43 4334	Digital dial indicator **0.001 mm reading**		–	–
41C 43 4336	HCT digital dial indicator **0.001 mm reading**		–	–
Reversible reading (43 4330)		mm	0.01	
Reversible reading (43 4334, 43 4336)		mm	0.001	
Reversible reading (43 4330)		in	0.0005	
Reversible reading (43 4334, 43 4336)		in	0.00005	
Measurement variation E MPE (measurement range) (43 4330)		mm	0.01	
Measurement variation E MPE (measurement range) (43 4334, 43 4336)		mm	0.003	0.004
Gauging force		N	0.65 – 0.90	0.65 – 1.15
Clamping shank ∅ h6		mm	8	
Body ∅		mm	59.5	
Thickness of housing		mm	32.9	

Standard | mm / Inch | IP 54 | C1 Cal

Garant Digital dial indicator with 1/1000 mm reading

Digital dial indicator with sturdy aluminium casing and very large display with integral three-colour tolerance LEDs. **With additional analogue display and buttons for quickly setting the tolerance limits.** Min./max./delta, tolerance, conversion factor, auto-off. Preset any value. Reversible direction of measurement. Power-saving mode and automatic wake-up, absolute system.

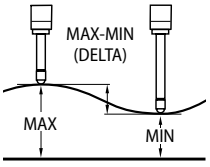
43 4342 – Version with **Bluetooth 5.0.** Compatible with the optional **HCT** (Hoffmann Group Connected Tools) mobile app. Available free of charge for Android and iOS. Can also be used via the Human Interface Device (HID).

Supplied with: Includes 1 battery No. 081560 size CR2032.

Optional extras:

43 4340 – Data cable No. 498948, lifting lever No. 434212, spare and special contact points No. 434900; 434910, battery pack No. 404310.

43 4342 – Lifting lever No. 434212, spare and special contact points No. 434900; 434910, battery pack No. 404310.







43 4340_12,5



43 4342_12,5

Measuring range		mm	12,5	25
41C 43 4340	Digital dial indicator **0.001 mm reading**		–	–
41C 43 4342	HCT digital dial indicator **0.001 mm reading**		–	–
Reversible reading		mm	0.001	
Reversible reading		in	0.00005	
Measurement variation E MPE (measurement range)		mm	0.003	0.004
Gauging force		N	0.65 – 0.90	0.65 – 1.15
Clamping shank ∅ h6		mm	8	
Body ∅		mm	59.5	
Thickness of housing		mm	32.9	

Standard | mm / Inch | Digimatic | Reference Lock | ▶ C1 ◀ Cal

Mahr Digital dial indicators MarCator 1/100 or 0.5/1000 mm reading

Digital dial indicator with **very large** numeric display and integrated tolerance display (with or without measured value display).

43 4311/4315/4317/4319 – Hardened glass front with **wear-free touch control fields,** 3 PRESET values, coloured LED display depending on tolerance mode.

43 4312/4318/4319 – With **integral i-wi** radio system for easy cordless transmission of measured data to any PC.

Supplied with: 1 battery No. 081560 size CR 2450.

Optional extras:

43 4311/4315/4317/4319 – Data cable No. 498941.

43 4312/4318 – Data cable No. 498940.

43 4312/4318/4319 – i-wi radio receiver No. 498912 STICK.

Measuring range		mm	12,5	25	50	100
43A	**43 4311**	Digital dial indicator with touch control **0.01 mm reading**	eShop	eShop	eShop	eShop
43A	**43 4312**	Digital dial indicator i-wi **0.01 mm reading**	eShop	(eShop)	–	–
43A	**43 4315**	Digital dial indicator with touch control **0.0005 mm reading**	eShop	eShop	eShop	eShop
43A	**43 4317**	Digital dial indicator IP64 with touch control **0.0005 mm reading**	eShop	eShop	–	–
43A	**43 4318**	Digital dial indicator i-wi **0.0005 mm reading**	eShop	(eShop)	–	–
43A	**43 4319**	Digital dial indicator with touch control and i-wi **0.0005 mm reading**	(eShop)	(eShop)	(eShop)	(eShop)
Reversible reading (43 4311, 43 4312)		mm	0.01			
Reversible reading (43 4315, 43 4317, 43 4318, 43 4319)		mm	0.0005			
Reversible reading (43 4311, 43 4312)		in	0.0005			
Reversible reading (43 4315, 43 4317, 43 4318, 43 4319)		in	0.00002			
Measurement variation E MPE (measurement range) (43 4311, 43 4312)		mm	0.02			
Measurement variation E MPE (measurement range) (43 4315, 43 4317, 43 4318, 43 4319)		mm	0.004	0.004	0.007	0.008
Gauging force		N	0.65–0.90	0.65–1.15	1.25–2.70	1.60–3.50
Clamping shank ∅ h6		mm	8			
Body ∅ (43 4311, 43 4315, 43 4317, 43 4319)		mm	58.4			
Body ∅ (43 4312, 43 4318)		mm	58	58	–	–
Thickness of housing (43 4311, 43 4315, 43 4317, 43 4319)		mm	35.8			
Thickness of housing (43 4312, 43 4318)		mm	35	35	–	–



i-wi 43 4312 / 18 / 19 | IP 64 43 4317 | IP 42 43 4311 / 12 / 15 /18 / 19

43

Standard | mm / Inch | Digimatic | IP 42 | Reference Lock | ▶ C1 ◀ Cal

Mahr Digital dial indicators MarCator 0.5/1000 mm reading

Digital dial indicator with **very large** numeric display and integrated tolerance display.
Additional analogue scale display with tolerance limits.

43 4306 – **Especially for comparative 2-point internal and external measurement devices** used to determine a reversal point.

43 4304/4306/4325 – Hardened glass front with wear-free touch control fields, 3 PRESET values, coloured LED display depending on tolerance mode.

43 4304/4324/4325 – **Dynamic measurement functions (MAX / MIN / MIN-MAX):** For concentricity and flatness testing or seeking the reversal point.

43 4324/4325 – With **integral i-wi** radio system for easy cordless transmission of measured data to any PC.

Supplied with: 1 battery No. 081560 size CR 2450.

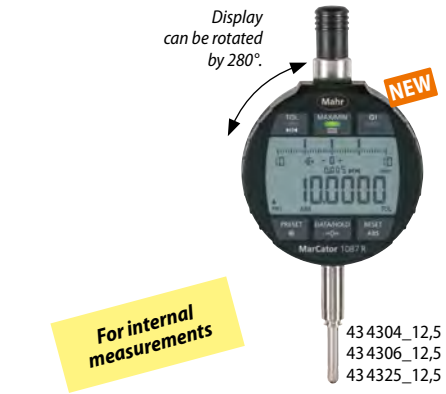
Optional extras:

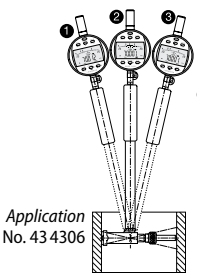
43 4324 – Data cable No. 498940.

43 4304/4306/4325 – Data cable No. 498941.

43 4324/4325 – i-wi radio receiver No. 498912 STICK.

Measuring range		mm	12,5	25	50
43A	**43 4304**	Digital dial indicator with touch control **0.0005 mm reading**	eShop	eShop	–
43A	**43 4306**		eShop	–	–
43A	**43 4324**	Digital dial indicator i-wi **0.0005 mm reading**	eShop	eShop	–
43A	**43 4325**	Digital dial indicator with touch control and i-wi **0.0005 mm reading**	(eShop)	(eShop)	(eShop)
Reversible reading		mm	0.0005		
Reversible reading		in	0.00002		
Measurement variation E MPE (measurement range)		mm	0.004	0.004	0.007
Gauging force		N	0.65 – 0.90	0.65-1.15	1.25 – 2.7
Clamping shank ∅ h6		mm	8		
Body ∅ (43 4304, 43 4306)		mm	58.4	58.4	–
Body ∅ (43 4324)		mm	58	58	–
Body ∅ (43 4325)		mm	–	–	58.4
Thickness of housing (43 4304, 43 4306)		mm	35.8	35.8	–
Thickness of housing (43 4324)		mm	35	35	–
Thickness of housing (43 4325)		mm	–	–	35.8







i-wi 43 4324 / 25

Standard | Digimatic | IP 66 | Absolute System | ▶ C1 ◀ Cal

Mitutoyo Digital dial indicators ID-N / ID-B 1/1000 mm reading

Handy, versatile, and robust digital dial indicator with integral tolerance display (with or without measured value). The slim profile makes them particularly suitable for incorporation in jigs where space is restricted. The display can be turned through 180° to allow reading from both sides. **Short circuiting the Digimatic cable pins 1 and 6 allows one or a series of dial indicators to be set to zero or to a pre-selected value.**

Size 5 – Reading from above.
Size 12,5 – Reading from the front.

Supplied with: 1 battery No. 081560 size 357.
Optional extras: Data cable No. 498428, special contact points No. 434900; 434910; 434915.



Ideal for jigs where space is restricted.

Measuring range	mm	5	12,5
44A 43 4410 Digital absolute dial indicator **IP66**		eShop	eShop
Selectable display	mm	0.01 / 0.001	
Measurement variation E MPE (measurement range)	mm	0.003	
Gauging force	N	2.0	2.5
Clamping shank ∅ h6	mm	8	
Depth	mm	44.3	25
Length	mm	116.5	142
Width	mm	35	

Standard | Digimatic | Absolute System | ▶ C1 ◀ Cal

Mitutoyo Digital dial indicators with 0.5/1000 mm reading

Multifunctional standard dial indicator. Reliable and easy to use.

- Bidirectional communication is possible, e.g. for parameterisation via PC (Digimatic S1 interface).
- With ABSOLUTE system. One-off setting of the start position, which remains the absolute zero point until the battery has to be replaced.
- Simple calculation and peak value identification are possible.
- Equipped with a warning function for the calibration plan.
- The GO/±NG assessment is performed by adjusting the upper and lower tolerance.

Supplied with: 1 battery No. 081560 size 2032.
Optional extras: Data cable No. 497081, special contact points No. 434900; 434910; 434915.

Display rotates 330°



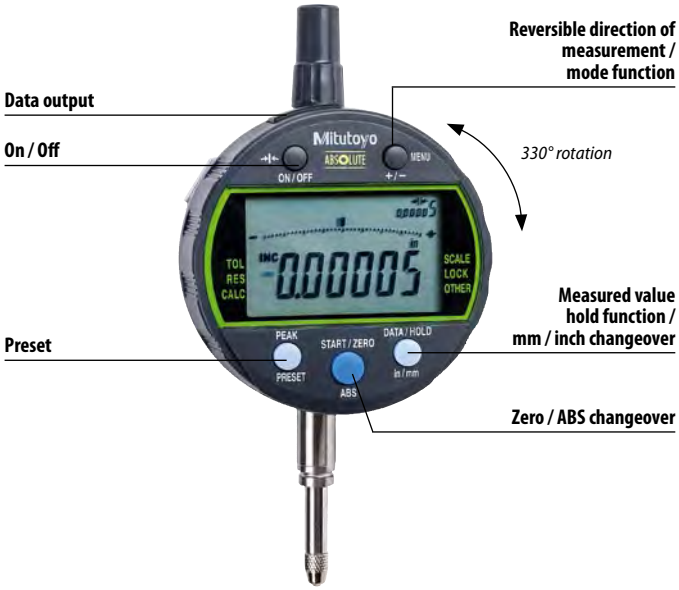
Measuring range	mm	12,5	25	50
44A 43 4461 Digital absolute dial indicator **0.001 mm reading**		eShop	eShop	(eShop)
Selectable display	mm	0.0005		
Measurement variation E MPE (measurement range)	mm	0.003	0.003	0.005
Gauging force	N	≤ 1.5	≤ 1.8	≤ 2.3
Clamping shank ∅ h6	mm	8		
Body ∅	mm	59		
Thickness of housing	mm	38.1	44.2	44.2

Standard | mm / Inch | Digimatic | IP 42 | Absolute System | ▶ C1 ◀ Cal

Mitutoyo Digital dial indicator ID-C 1/1000 reading (with PEAK function)

Multifunction indicator with absolute capacitive scale. Measured values remain stored even after switching off. **With improved PEAK function.** With 50 measurement per second, peak values are detected and measured more reliable and exactly.

Function: ABS / INC, PRESET, zeroing, tolerance analysis. Measured value hold function, MIN / MAX function.
Application: Exact determination of the highest and lowest points of a curved surface.
Supplied with: 2 batteries No. 081560 size CR2032.
Optional extras: Data cable No. 497080, special contact points No. 434900; 434910; 434915.



Measuring range	mm	12,5
44A 43 4540 Digital absolute dial indicator **with PEAK function**		eShop
Selectable display	mm	0.01 / 0,001
Selectable display	in	0.005 / 0.0001 / 0.00005
Measurement variation E MPE (measurement range)	mm	0.003
Measurement variation E MPE (measurement range)	in	0.0001
Gauging force	N	≤ 1.5
Clamping shank ∅ h6	mm	8
Body ∅	mm	61
Thickness of housing	mm	39

Mitutoyo Digital dial indicator ID-C 1/1000 mm reading (with formula calculation function)

Standard | Digimatic | IP 42 | Absolute System | ▶ C1 ◀ Cal

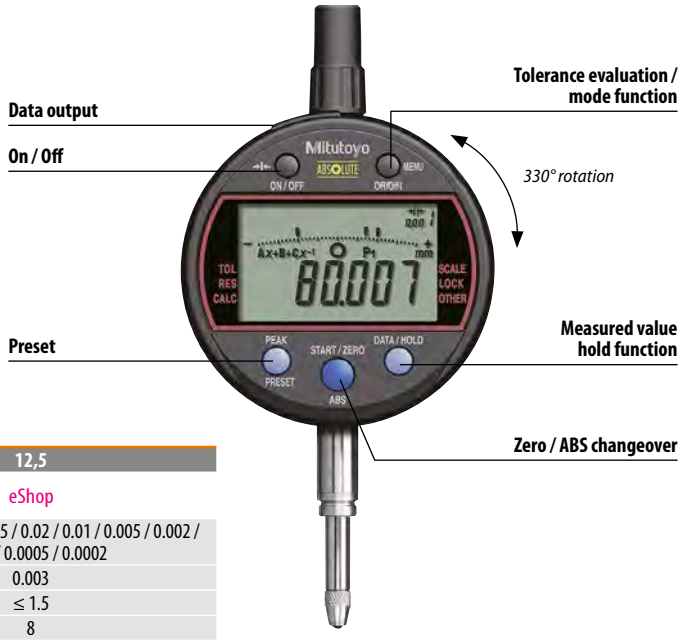
Multifunction indicator with absolute capacitive scale. Entered values remain stored even after switching off. **With formula calculation function.**

Function: ABS / INC, PRESET, zeroing, tolerance analysis. Measured value hold function, MIN / MAX function.

Application: Use with different measurement heads.

Supplied with: 1 battery No. 081560 size CR2032

Optional extras: Data cable No. 497080, special contact points No. 434900; 434910; 434915.



Measuring range		mm	12,5
44A 43 4551	Digital absolute dial indicator **with formula calculation capability**		eShop
Selectable display		mm	1 / 0.5 / 0.2 / 0.1/ 0.05 / 0.02 / 0.01 / 0.005 / 0.002 / 0.001 / 0.0005 / 0.0002
Measurement variation E MPE (measurement range)		mm	0.003
Gauging force		N	≤ 1.5
Clamping shank ∅ h6		mm	8
Body ∅		mm	61
Thickness of housing		mm	39



Ax + B + Cx−1 (x = spindle travel). Freely selectable coefficients can be used.

maximum workpiece ∅		mm	150	200	400
44G 42 5700	Measurement head		(eShop)	(eShop)	(eShop)
for workpiece radius		mm	25 – 70	50 – 100	100 – 200

Standard | Digimatic | IP 30 | ▶ C1 ◀ Cal

Mitutoyo Digital dial indicator ID-F 0.5 µm reading

Large character digital display and additional analogue display. Mains operated, therefore suitable for continuous measurement.
Measuring probe with carbide ball, thread M2.5×0.45.

Advantage:
- Bi-directional Digimatic S1 interface.
- Red/green LCD backlight for visual GO/±NG tolerance evaluation.
- Analogue bar display.
- MAX/MIN-RANGE (Runout value) function with a frequency of 500 scans/s.
- External power supply via AC power supply unit.
- High accuracy.

Supplied with: Supplied with power connection cable No. 497661, AC power supply unit DC 6V / 2A (CEE version Germany).

Optional extras: Data cable No. 497081, special contact points No. 434900; 434910; 434915.



Measuring range		mm	12,5	25	50
44A 43 4622	Digital dial indicator		eShop	eShop	eShop
Selectable display		mm	0.0005 / 0.001 / 0.01		
Measurement variation E MPE (measurement range)		mm	0.0025	0.0025	0.004
Gauging force		N	≤ 1.5	≤ 1.8	≤ 2.3
Clamping shank ∅ h6		mm	8		
Body ∅		mm	59		
Depth		mm	42.9	49.1	49.1
Length		mm	117.8	168.5	247.8

Standard | Digimatic | C1 Cal

Mitutoyo Digital dial indicators ID-H 1/1000 or 0.5/1000 reading



Error-free reading from large character digital display and supplementary analogue display.
Mains operated, therefore suitable for continuous measurements.
Strong housing; precision bearing plunger spindle.

Function:
- Colour changes when out of tolerance.
- MAX / MIN data storage.
- Maximum value memory (no need to search for the turning point).
- Zero point display, e.g. for tolerance measurements.
- Selectable direction of measurement.
- Capable of remote control and data reporting.
- Remote control (special accessory).

Supplied with: Connection cable power supply unit 220V / 9V / 500 mA.
Optional extras: Data cable No. 498430, remote control, Digimatic Presetter.

Measuring range		mm	30	60
44A 43 4651	Digital-analogue dial indicator **0.0005 mm reading**		eShop	eShop
Selectable display		mm	0.001 / 0.0005	
Measurement variation E MPE (measurement range)		mm	0.0015	0.0025
Gauging force		N	≤ 2	≤ 2.5
Clamping shank ∅ h6		mm	8	

Standard | mm / Inch | Digimatic | i-wi | IP 42 | Reference Lock | C1 Cal

Mahr MarCator digital dial indicator 0.1/1000 mm reading



High-precision digital dial indicator with very large numeric display and integrated tolerance display thanks to clear, coloured LEDs and display symbols for classifying the measured values.
Hardened glass front with wear-free touch control fields, display can be rotated 280°.
With bidirectional data output and integral i-wi radio system for easy cordless transmission of measured data to any PC.

43 4661 – **Dynamic measurement functions (MAX / MIN / MAX-MIN):**
- For concentricity and flatness testing or seeking the reversal point.
- Additional scale display, either line indicator or dynamic bar.

Function: PRESET (3 values), tolerance and warning limits (3 tolerances), coloured LED display depending on mode: Good / reject / rework / warning limits, ABS (display can be set to zero without losing the reference to PRESET), factor (multiplier for measuring distance), LOCK function (general button lock in menu), DATA (data transmission) / HOLD (freeze the current measured value).

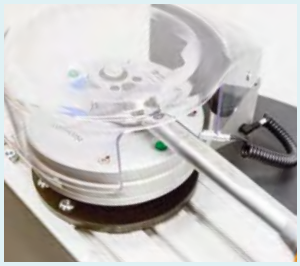
Supplied with: 1 battery No. 081560 size CR2450.
Optional extras: Data cable No. 498941.

Measuring range		mm	12,5	25
43A 43 4660	Digital dial indicator with touch control and i-wi **0.0001 mm reading**		eShop	eShop
43A 43 4661			eShop	eShop
Reversible reading		mm	0.0001	
Reversible reading		in	0.00001	
Measurement variation E MPE (measurement range)		mm	0.0018	0.0024
Gauging force		N	0.65 – 0.90	0.65 – 1.15
Clamping shank ∅ h6		mm	8	
Body ∅		mm	58.4	
Thickness of housing		mm	35.8	

Hoffmann Group calibration service – perfect measurement processes

- Calibration services for the **entire range of productive industries.**
- **Efficient pick-up and delivery service,** international network of calibration laboratories.
- Comprehensive DAkkS accreditation.







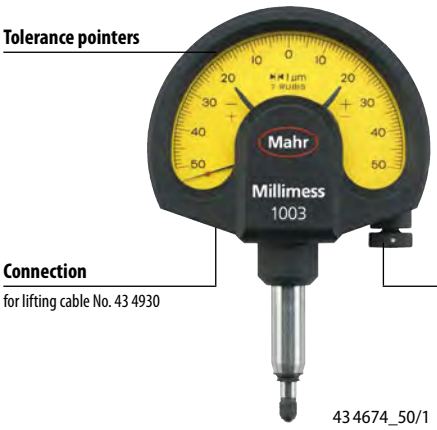

DIN 879 _50/1

Standard _25/0,5 _130/5 _250/10

Mahr

Precision dial comparators Millimess

Sapphire mounted, all-in-one mechanism, particularly robust for use in the manufacturing area.
Low hysteresis due to virtually play-free gauging pins on ball guides.
Resistant to lateral forces.
One-piece housing for maximum stability and accuracy.
Shock resistance due to transmission lever which lifts up in the event of overload
Constant measuring force by straight spring.
Large overrun for convenient insertion of the component. Lifting key or lifting cable (special accessories) can be connected.
Clearly legible scale.
2 Tolerance pointers for presetting the permitted tolerance range.
Application: As a dial bore gauge for series and individual inspections.



43 4674_50/1

Optional extras: Lifting cable No. 434930.

± measuring range / reading	µm	25/0,5	50/1	130/5	250/10
43A 43 4674 Precision dial comparator		eShop	eShop ■	eShop	eShop
Scale divisions	µm	0.5	1	5	10
Gauging force	N	1			
Free stroke	mm	2.8	2.8	2.5	2.5
Clamping shank ∅ h6	mm	8			
Length	mm	95			
Width	mm	63			
Height	mm	20			

Precision dial comparators Large Millimess

Large Millimess mechanical precision dial indicator. Very large dimensions and therefore very easy-to-read dial.

Supplied with: Lifting cable.

Standard



43 4675

± measuring range / reading	µm	120/1
43A 43 4675 Precision dial comparator Large Millimess		eShop
Scale divisions	µm	1
Gauging force	N	3.5
Free stroke	mm	4
Clamping shank ∅ h6	mm	28
Length	mm	212
Width	mm	125
Height	mm	34












Mahr

Digital precision dial comparators Millimess

Digital precision dial comparator with **the very high accuracy** of an inductive measuring system with **a resolution of 0.1 µm.** Large display with sharp contrast and touch control fields with adjustable sensitivity. Power supply from integral batteries/stationary operation using power supply via USB data cable (battery life of up to 1 month). Digital display with tolerance function. Measured value classification display (good/reject/warning limit or rework) due to very clear LED light signals (red/green/yellow). **Display can be rotated through 280°.**

Size 2001W; 2001WI – Additionally with analogue display.
Size 2000WI; 2001WI – Integral i-wi wireless data interface.

Supplied with: USB data and charging cable No. 498941 USB2 and mains adapter for USB.

Optional extras: Data cable Digimatic No. 498941 size D2.
Size 2000WI; 2001WI – i-wi radio receiver No. 498912 STICK.



Type		2000W	2000WI	2001W	2001WI
43A 43 4671 Digital precision dial comparator Millimess		eShop	eShop	eShop	eShop
Measuring range	mm	± 1			
Selectable display	mm	0.0001; 0.0002; 0.0005; 0.001; 0.002; 0.005; 0.01			
Error limit (L = meas. length in mm)	µm	± (0.2 + 0.5 x L)			
Gauging force	N	0.8 – 1			
Static measuring function		yes			
Dynamic measuring function		no	no	yes	yes

Standard | C1 Cal | C8 Cal

Depth gauges with dial indicator

Hardened base with fine lapped contact surface. Dial indicator securely clamped by collet. **Dial indicator with anticlockwise scale measuring depth can be read off directly.** Greater depths can be measured using extension rods of differing lengths(see No. 434920).

Supplied with: Dial indicator No. 434807 size 10 or 30.

Optional extras: Extension for No. 434920.

Measuring range		mm	10	30
42C 43 4805	Depth gauge with analogue dial indicator		eShop	eShop
Graduation		mm	0.01	
Reading per pointer revolution		mm	1	
Measurement variation E MPE (measurement range)		µm	15	20
Probe plunger ∅		mm	4	5
Bridge length		mm	80	
Bridge width		mm	16	
Dial indicator ∅		mm	58	



43 4805

Standard | C1 Cal

Dial indicator with anticlockwise scale

Precision dial indicator with metal housing, clamping shank ∅ 8 mm h6, hardened and ground. With **anticlockwise scale** for use with depth gauge bases and precision bore gauges.

Suitable for: Depth gauges No. 434805

Size 10 – Internal precision bore gauges No. 435190; 435192; 435040; 435050; 435060; 435070; 435010; 435110; 435120; 435154; 435155; 435156; 435157; 435158; 435159 and 435125.

Measuring range		mm	10	30
46C 43 4807	Dial indicator with anticlockwise scale		eShop	eShop
Graduation		mm	0.01	
Reading per pointer revolution		mm	1	
Measurement variation MPE (measurement range)		µm	15	20
Probe plunger ∅		mm	4	5
Dial indicator ∅		mm	58	
Gauging force		N	0.7 – 1.4	0.8 – 1.6



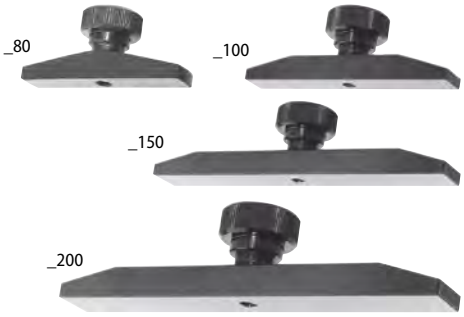
43 4807_30

C8 Cal

Depth base attachments

Flatness tolerance to DIN 874/00. Contact face hardened and ground. To accept dial indicators with shank ∅ 8 h6.

Bridge length		mm	80	100	150	200
42C 43 4815	Base for depth gauge		eShop	eShop	eShop	eShop
Bridge width		mm	16	16	20	20

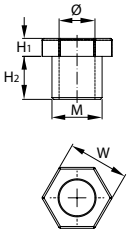


Internal clamping screw set, 5 pieces

Description:
- Internal clamping screw made from stainless steel (1.4301/1.4305).
- Innovative solution for quick and easy securing of cylindrical components (e.g. dial indicators, round bars or pipes).
- Such components can easily be clamped or released by tightening or relaxing the internal clamping screw.
- The overhang length of components clamped in the cylindrical bore of the internal clamping screw can be varied steplessly.

Application:
- Metrology: quick and easy clamping of dial indicators in measuring devices.
- Machine building: means of clamping cylindrical objects.
- Sensor systems: attachment to flat surfaces.

Supplied with: Pack consisting of 5 clamping screws.





_8

Clamping ∅		mm	6	8	10
42C 43 4825	Internal clamping screw set, 5 pieces		eShop	eShop	eShop
Thread M			M10	M12×1.5	M14×1.5
Thread height H_2		mm	10	12	12
Width across flats W		mm	13	15	17
Screw-head hexagon height H_1		mm	5		





Magnetic rear panel for dial indicators

Suitable for:

43 4835 Size 40 – Dial indicators No. 432500 3/40, 5/40, 10/40; No. 432550; No. 433400 1/40, 3/40, 5/40; No. 433500 1/40.

Size 58 – Dial indicators No. 431896; 431900; 431950; 432405; 433050 30/58, 40/58, 50/58, 80/58; 433400 1/58, 5/58; 433500 1/58.

43 4836 Size 58 – Dial indicators No. 432051; 432053; 433405; 434551; 434622; 434651.

for body ∅		mm	40	58
46C 43 4835	Käfer / Mitutoyo	Magnetic rear panel for dial indicators	(eShop)	(eShop)
40W 43 4836			–	(eShop)

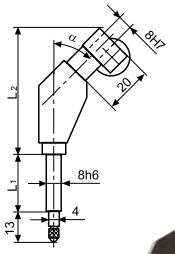

43 4835


43 4836

Mahr Angled bracket for dial indicators

Angled bracket for dial indicators with clamping shank ∅ 8 mm h6.
Connection thread M2.5 for all measuring contact points. **Measuring pin travel = 3 mm.**

Supplied with: Standard contact point with carbide ball (∅ 3 mm).



Clamping length		mm	25	50
43A 43 4917	Angled bracket for dial indicator **45°**		(eShop)	(eShop)
43A 43 4918	Angled bracket for dial indicator **60°**		(eShop)	(eShop)
43A 43 4919	Angled bracket for dial indicator **90°**		(eShop)	(eShop)
L_1		mm	25	50
L_2 (43 4917)		mm	53.7	
L_2 (43 4918)		mm	49.3	
L_2 (43 4919)		mm	34.5	


43 4917_25 43 4918_50 43 4919_25

Käfer Pivoting contact point

Pivoting contact point with carbide ball (∅ 2 mm).
Connection thread on the contact point M1.6.
Connection thread on the dial indicator M2.5.

46C 43 4912	Pivoting contact point	eShop



HOLEX Extensions for contact points

With M 2.5 connection thread, can be used with all measuring contact points and dial indicators. Measuring rod ∅ = 4 mm.



Length L		mm	10	15	20	30	40	50	60	70	80	90	100
42C 43 4920	Extension for contact points		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

HOLEX Lifting cable for dial indicators and precision comparators

Suitable for: Digital dial indicators No. 434000 – 434024 (apart from 434004).
Precision dial comparator No. 434674; 434675.
Lifting travel specific to each type of dial indicator.

Length		mm	140	500
42C 43 4930	Lifting cables		eShop	eShop ■


_140


_500

Lifting lever for dial indicators

43 4934 – Plastic lifting lever for lifting dial indicator measuring spindle ∅ 4.8 mm.
43 4936 – Lifting lever for analogue Mitutoyo dial indicators (No. 432050; 433200).

40W 43 4934	Lifting lever	eShop
40W 43 4936	Lifting lever	eShop


43 4934
Lifting lever

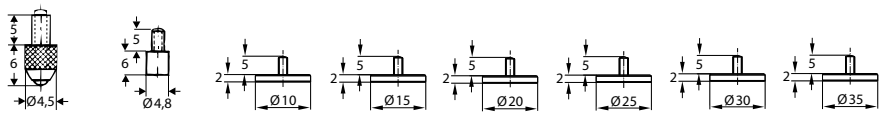

43 4936

HOLEX Spare and special contact points for dial indicators / precision comparators

Spare and special contact points for dial indicators, precision comparators, and calipers. M 2.5 connection thread.
43 4900 Size 2 – Standard contact point for dial indicators and precision comparators.
43 4910 Size 202/0,2; 202/0,8 – With carbide ball.

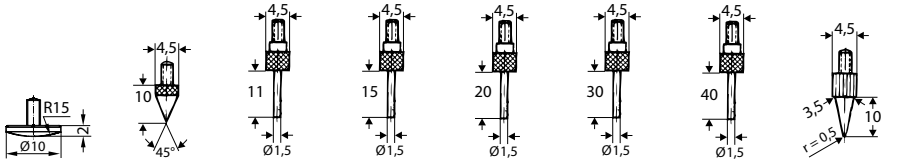
Note: Special contact points to customer's drawing available on request.


43 4900_2



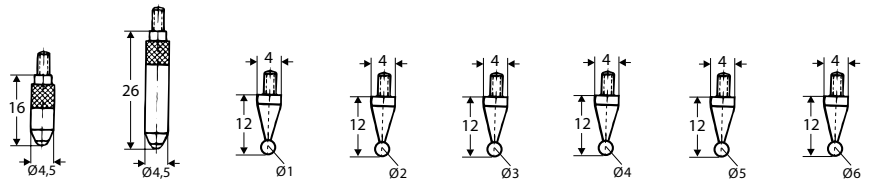
Type		2	10	11	11/15	11/20	11/25	11/30	11/35
42C 43 4900	Steel contact point	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
42C 43 4910	Carbide contact point	eShop	eShop	eShop	–	–	–	–	–
42C 43 4915	Ruby contact point	eShop	–	–	–	–	–	–	–


43 4900_14



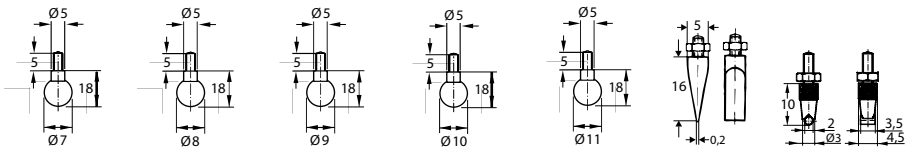
Type		12	13	14	14/15	14/20	14/30	14/40	15
42C 43 4900	Steel contact point	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
42C 43 4910	Carbide contact point	–	–	eShop	–	–	–	–	–


43 4910_18/3



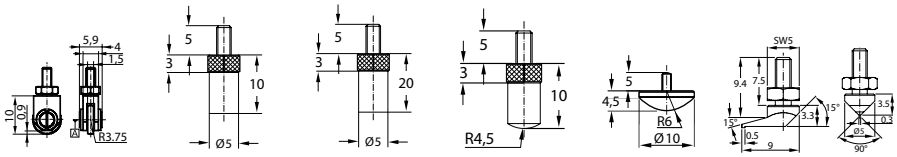
Type		16	17	18/1	18/2	18/3	18/4	18/5	18/6
42C 43 4900	Steel contact point	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
42C 43 4910	Carbide contact point	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop


43 4900_19/7



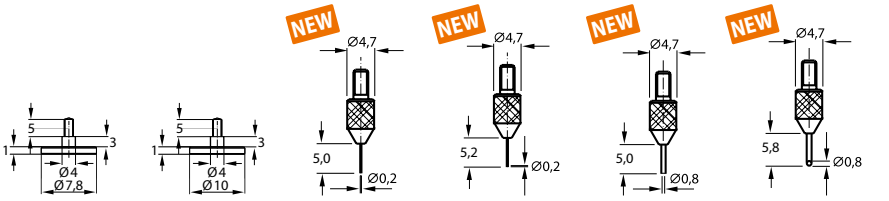
Type		19/7	19/8	19/9	19/10	19/11	20	24
42C 43 4900	Steel contact point	eShop	eShop	eShop	eShop	eShop	eShop	eShop


43 4900_28



Type		28	29/10	29/20	30/10	32	39
42C 43 4900	Steel contact point	eShop	eShop	eShop	eShop	eShop	eShop


43 4900_40/10



Type		40/7,8	40/10	201/0,2	202/0,2	201/0,8	202/0,8
42C 43 4900	Steel contact point	eShop	eShop	–	–	–	–
42C 43 4910	Carbide contact point	–	–	(eShop)	(eShop)	(eShop)	(eShop)

C5 Cal

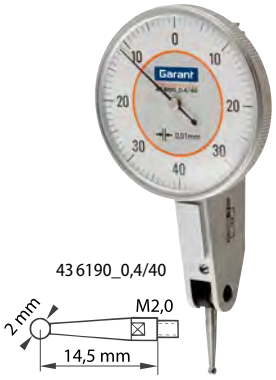
Lever dial indicators

High-precision lever dial indicator with jewel-mounted mechanism, in handy, robust design. Housing and dovetail block are of one piece, which means that mounting is particularly rigid. Corrosion protection due to matt chrome-plated housing.

Application: As an accurate dial bore gauge for testing variations from nominal size, testing concentricity, internal measurements, testing of parallelism, and flatness as well as for aligning components.

Optional extras: Square holder No. 436511, centring holder No. 436512, articulated holder No. 359680.

Spare part: Spare contact point with carbide or ruby ball tip can easily be ordered from www.hoffmann-group.com.





Lever dial indicators

DIN 2270

With 1/100 reading.

43 6206 – With ruby ball.

Supplied with: Clamping spigot ∅ 8 mm.

43 6341 – Additional clamping spigot ∅ 4 mm.

Note: **Additional information DIN 2270: Graduations 0.01** – deviation range 10 µm, total deviation range 13 µm, hysteresis error 3 µm.

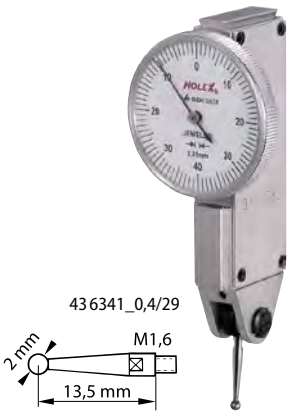




Measuring range per direction / Body ∅			mm	0,4/29	0,4/40	0,8/40
41C	43 6190	Garant	Lever dial indicator contact point length 14.5 mm	–	eShop	–
43A	43 6301	Mahr		eShop	eShop	eShop
44A	43 6261	Mitutoyo	Lever dial indicator contact point length 17.4 mm	–	eShop ■	–
46Q	43 6200	GIROD	Lever dial indicator contact point length 12.5 mm	eShop	eShop	–
45A	43 6205	TESA	Tesastast lever dial indicator contact point length 12.5 mm	eShop	eShop	–
45A	43 6206	TESA	Rubytast lever dial indicator contact point length 12.5 mm **with ruby ball**	eShop	–	–
42C	43 6341	HOLEX	Lever dial indicator contact point length 13.5 mm	eShop	eShop	–
Scale divisions			mm	0.01		
Pivot range (43 6190, 43 6301, 43 6261, 43 6200, 43 6341)			degrees	2×110		
Pivot range (43 6205, 43 6206)			degrees	2×120	2×120	–
Gauging force (43 6190, 43 6301, 43 6200, 43 6205, 43 6206, 43 6341)			N	0.15		
Gauging force (43 6261)			N	–	0.3	–
Clamping shank ∅ h6			mm	8		







Lever dial indicator with sideways movement

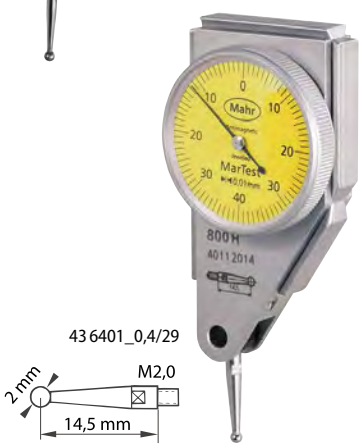
DIN 2270

With 1/100 reading and sideways movement.

Contact point moves in same plane as the dial.

Supplied with: Clamping spigot ∅ 8 mm.

Note: **Additional information DIN 2270: Graduations 0.01** – deviation range 10 µm, total deviation range 13 µm, hysteresis error 3 µm.



Measuring range per direction / Body ∅			mm	0,4/29
43A	43 6401	Mahr	Lever dial indicator contact point length 14.5 mm	eShop
Scale divisions			mm	0.01
Pivot range			degrees	2×110
Gauging force			N	0.25
Clamping shank ∅ h6			mm	8

Lever dial indicators with long contact point

Lever dial indicator with **long contact point. 1/100 reading.**

43 6230 – Large measuring range of 3 mm. The same direction of rotation (clockwise) of the pointer in both directions of measurement.

43 6265 – Housing without dovetails. With changeover lever for changing the direction of measurement. Mounting shank screwed in.

Size 0,5/38 – Contact point length 32.3 mm.

Advantage:

43 6265 – ■ Measuring direction toggle switch to easily change the measuring direction.
■ Precision gears with jewel bearing ensure smooth and precise measurement.

Supplied with: Clamping spigot ∅ 8 mm.

Note:

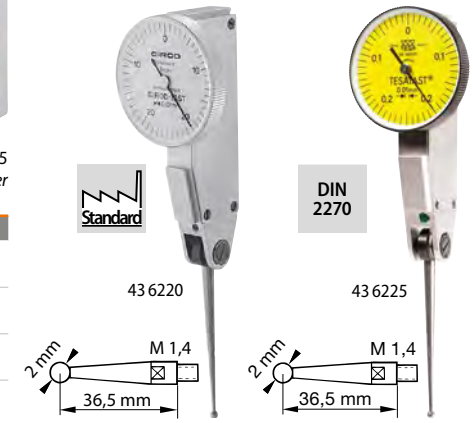
43 6225 – **Additional information DIN 2270: Graduations 0.01** – deviation range 10 µm, total deviation range 13 µm, hysteresis error 3 µm.

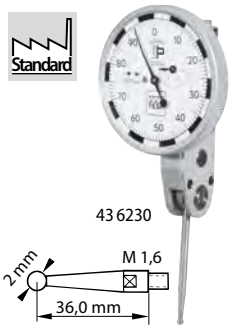
43 6265 – **Additional information DIN 2270: Graduations 0.01** – deviation range 10 µm, total deviation range 14 µm, hysteresis error 4 µm.



43 6265
with changeover lever







Measuring range per direction / Body ∅			mm	0,25/29	0,25/38	0,5/38	3/40
43A	43 6351	Mahr	Lever dial indicator contact point length 41.2 / 32.3 mm	eShop	eShop	eShop	–
44A	43 6265	Mitutoyo	Lever dial indicator, small design	eShop	–	–	–
46Q	43 6220	GIROD	Lever dial indicator contact point length 36.5 mm	eShop	–	–	–
45A	43 6225	TESA	Tesatast lever dial indicator contact point length 36.5 mm	eShop	eShop	–	–
45A	43 6230	TESA	Lever dial indicator P-line contact point length 36 mm	–	–	–	eShop
Scale divisions			mm	0.01			
Variation range f_e			µm	10	10	10	20
Total variation range f_{tot} (43 6351, 43 6220, 43 6225, 43 6230)			µm	13	13	13	26
Total variation range f_{tot} (43 6265)			µm	14	–	–	–
Hysteresis error f_u (43 6351)			µm	5	5	4	–
Hysteresis error f_u (43 6265)			µm	4	–	–	–
Hysteresis error f_u (43 6220, 43 6225, 43 6230)			µm	3	3	–	7
Pivot range (43 6351, 43 6220, 43 6230)			degrees	2×110	2×110	2×110	2×90
Pivot range (43 6265)			degrees	2×95	–	–	–
Pivot range (43 6225)			degrees	2×120	2×120	–	–
Gauging force (43 6351, 43 6220, 43 6230)			N	0.07	0.07	0.07	0.2
Gauging force (43 6265)			N	0.3	–	–	–
Gauging force (43 6225)			N	0.06	0.06	–	–
Clamping shank ∅ h6			mm	8			

Lever dial indicators - vertical version

Lever dial indicator with **horizontal dial.**

43 6271 – **1/100 reading.**

Size 0,4/28 – **1/100 reading.**

Supplied with: Clamping spigot ∅ 8 mm.

Note:

43 6355 – **Additional information DIN 2270: Graduations 0.01** – deviation range 10 µm, total deviation range 13 µm, hysteresis error 3 µm. **Graduations 0.002/0.001** – deviation range 2 µm, total deviation range 4 µm, hysteresis error 2 µm.





Measuring range per direction / Body ∅			mm	0,4/28	0,4/39
43A	43 6355	Mahr	Lever dial indicator with horizontal dial contact point length 14.5 mm	eShop	–
44A	43 6271	Mitutoyo	Lever dial indicator with horizontal dial contact point length 17.4 mm	–	eShop
Scale divisions			mm	0.01	
Variation range f_e			µm	10	8
Total variation range f_{tot}			µm	13	
Hysteresis error f_u			µm	3	
Pivot range			degrees	2×110	2×120
Gauging force			N	0.2	0.3
Clamping shank ∅ h6			mm	8	

Lever dial indicators with dial inclined at 20°

With **dial inclined at 20°.**

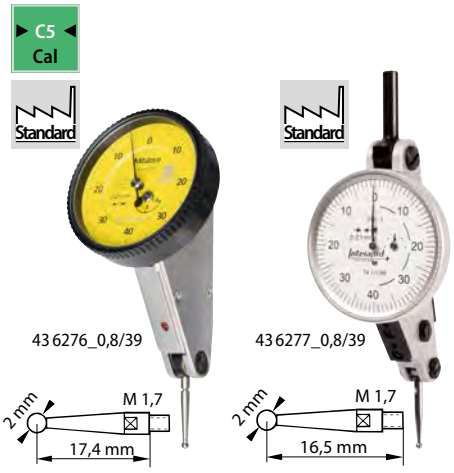
43 6277 – **1/100 reading.**

Supplied with:

43 6276 – Clamping spigot ∅ 8 mm.

43 6277 – Clamping spigot ∅ 4 mm.

Measuring range (reversible) / housing ∅		mm	0,2/39	0,8/39
44A 43 6276	Mitutoyo	Lever dial indicator with inclined dial	eShop	eShop
45A 43 6277	TESA	Interapid lever dial indicator with inclined dial	–	eShop
Scale divisions		mm	0.002	0.01
Variation range f_e		µm	5	16
Total variation range f_{tot} (43 6276)		µm	20	
Total variation range f_{tot} (43 6277)		µm	–	23
Hysteresis error f_u		µm	3	
Pivot range (43 6276)		degrees	2×110	
Pivot range (43 6277)		degrees	–	2×105
Gauging force (43 6276)		N	0.3	
Gauging force (43 6277)		N	–	0.12
Clamping shank ∅ h6 (43 6276)		mm	8	
Clamping shank ∅ h6 (43 6277)		mm	–	4



Lever dial indicators

2/1000 reading.

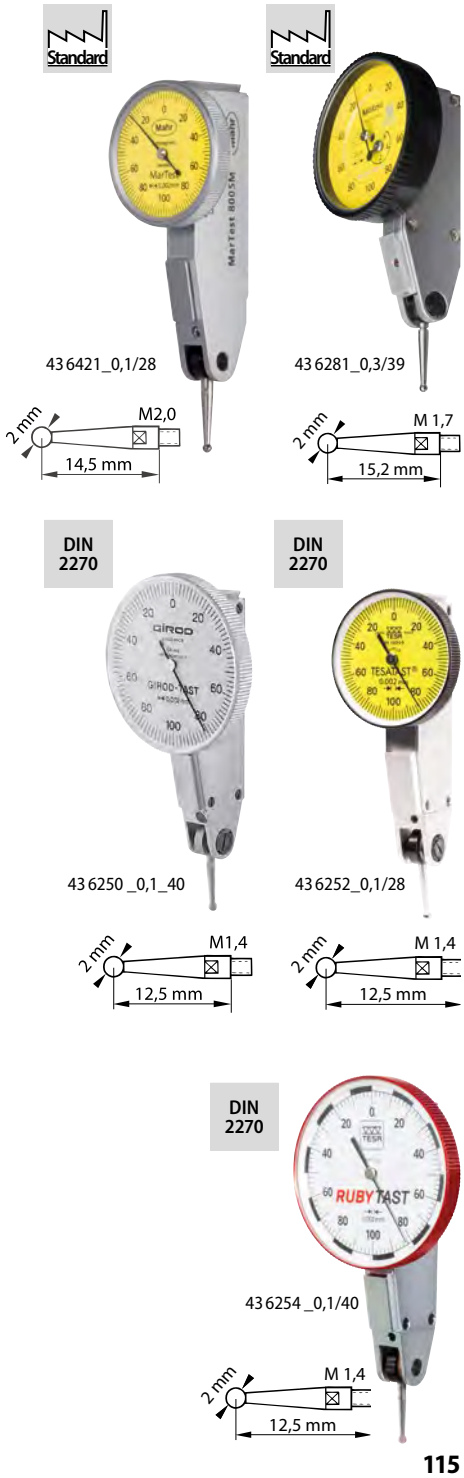
43 6254 – With ruby ball.

Supplied with: Clamping spigot ∅ 8 mm.

Note:

43 6250–6254 – **Additional information DIN 2270: Graduations 0.002/0.001** – deviation range 2 µm, total deviation range 4 µm, hysteresis error 2 µm.

Measuring range per direction / Body ∅		mm	0,1/28	0,1/40	0,2/40	0,3/39	0,4/40
43A 43 6421	Mahr	Lever dial indicator contact point length 14.5 mm	eShop	eShop ■	eShop	–	–
44A 43 6281	Mitutoyo	Lever dial indicator contact point length 15.2 mm	–	eShop ■	–	eShop	–
46Q 43 6250	GIROD	Lever dial indicator contact point length 12.5 mm	–	eShop	–	–	eShop
45A 43 6252		Tesatast lever dial indicator contact point length 12.5 mm	eShop	eShop	–	–	–
45A 43 6254	TESA	Rubytast lever dial indicator contact point length 12.5 mm **with ruby ball**	–	eShop	–	–	–
Scale divisions		mm	0.002				
Variation range f_e (43 6421, 43 6281)		µm	3	3	3	6	–
Variation range f_e (43 6250, 43 6252, 43 6254)		µm	2	2.7	–	–	2
Total variation range f_{tot} (43 6421, 43 6281, 43 6250)		µm	4	4	5	11	4
Total variation range f_{tot} (43 6252, 43 6254)		µm	3.5	3.5	–	–	–
Hysteresis error f_u (43 6421, 43 6281, 43 6250)		µm	2	2	3	3	2
Pivot range (43 6421, 43 6281, 43 6250)		degrees	2×110				
Pivot range (43 6252, 43 6254)		degrees	2×120	2×120	–	–	–
Gauging force (43 6421)		N	0.15	0.2	0.15	–	–
Gauging force (43 6281, 43 6250, 43 6252, 43 6254)		N	0.15	0.15	–	0.4	0.15
Clamping shank ∅ h6		mm	8				



Lever dial indicators

High-precision lever dial indicator in handy, robust design. Housing and dovetail block are of one piece, which means that mounting is particularly rigid. Corrosion protection due to matt chrome-plated housing. **1/1000 reading.**

Application: As an accurate dial bore gauge for testing variations from nominal size, testing concentricity, internal measurements, testing of parallelism, and flatness as well as for aligning components.

Supplied with: Clamping spigot ∅ 8 mm.

Optional extras: Square holder No. 436511, centring holder No. 436512, articulated holder No. 359680.

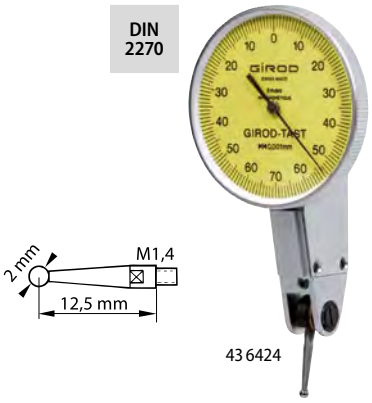
Spare part: Spare contact point with carbide or ruby ball available on request.

Note:
43 6424 – **Additional information DIN 2270: Graduations 0.002/0.001** – deviation range 2 µm, total deviation range 4 µm, hysteresis error 2 µm.



43 6422

DIN 2270



43 6424

Measuring range per direction / Body ∅		mm	0,07/40
43A 43 6422	Mahr Lever dial indicator contact point length 9.1 mm		eShop
46Q 43 6424	GIROD Lever dial indicator contact point length 12.5 mm		eShop
Scale divisions		mm	0.001
Variation range f_e (43 6422)		µm	3
Total variation range f_{tot} (43 6422)		µm	4
Hysteresis error f_u (43 6422)		µm	2
Pivot range		degrees	2×110
Gauging force		N	0.2
Clamping shank ∅ h6		mm	8

Standard | mm / Inch | RS232C | C5 Cal

Mahr Digital lever indicator 1/1000 mm reading

Digital lever indicator with digital and analogue display **1/1000 reading.**
Measurement mode. Normal / MIN / MAX / MAX-MIN. A correction factor can be entered.

Supplied with: 1 battery No. 081560 size CR2032, clamping spigot ∅ 8 mm, contact point key, carbide contact point ∅ 2 mm.

Optional extras: Data cable No. 498951. See No. 436210; 436240 for spare contact points.



43 6506_2,2/45



43 6501_0,9/45

Measuring range (reversible) / housing ∅		mm	0,9/45	2,2/45
43A 43 6501	Digital lever indicator, contact point length 14.5 mm		eShop	–
43A 43 6506	Digital lever indicator, contact point length 41.24 mm		–	eShop
Variation range f_e		µm	5	10
Hysteresis error f_u		µm	3	5
Pivot range		degrees	2×110	
Gauging force		N	0.15	0.06
Clamping shank ∅ h6		mm	8	

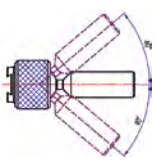
Holder for lever indicator

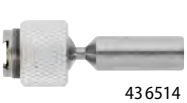
Clamp with dovetail.

Suitable for: Lever indicators with dovetail blocks.


43 6511


43 6512




43 6514


43 6516

Type			11,5×7	8
42C 43 6511	HOLEX	Universal square holding arm with dovetail	eShop	–
42C 43 6512	HOLEX	Centring holder	–	eShop
Shank ∅		mm	–	8
Bore ∅		mm	4; 8	4
Clamping length		mm	70	–
Shank dimension		mm	11.5×7	–

Shank ∅			mm	6	8
42C 43 6514	Käfer	Adjustable holder		–	eShop
42C 43 6516	HOLEX	Adjustable holder		eShop	eShop
Pivot range (43 6514)			degrees	–	±40
Pivot range (43 6516)			degrees	±90	
Clamping length (43 6514)			mm	–	20
Clamping length (43 6516)			mm	70	

mm / Inch | RS232C | Digimatic

Mahr Millimar C1200 compact length measuring gauge

Compact casing with high-resolution, sharp contrast TFT colour display. Connection for 1 inductive probe. Display can be tilted steplessly for the optimum viewing angle The direction of reading can be switched over. Selectable mains and battery operation.

Function:
- Dynamic measurement functions: Max, Min, Max-Min.
- Centring of the display at the centre of the tolerance limits.
- Password protection for the menu

Application: As display for one inductive probe for simple measurement tasks (+ A, – A). Ideal for stationary and portable use in the workshop and manufacturing shop.

Size 1200M – For inductive probes compatible with Mahr.

Size 1200T – For inductive probes compatible with Tesa.

Supplied with: Supplied with plug-in power supply (115 – 230 V, 50 – 60 Hz).

Optional extras: Data cable No. 498938.



43 4707

Type		1200M	1200T
43A 43 4707	Millimar C 1200 compact length measuring gauge	(eShop)	(eShop)
Measuring range	µm	±3 to ±5000	
Adjustable scale	µm	0.2 / 1 / 2 / 10 / 20 / 100 / 200 / 500	
maximum resolution	µm	0.1	
Length	mm	150	
Width	mm	130	
Height	mm	170	
Weight	kg	1	
Compatibility		Mahr	Tesa

mm / Inch | TLC | Digimatic

TESA Portable display unit TWIN-T10

IP 63

Sturdy portable display unit with scale and digital display for inductive measurement probes. Clear and error-free reading thanks to the highly detailed scale display. 5× zoom mode. Very long running time of more than 300 hours. Optimum handling due to ergonomic design and soft touch surface.

Function: Zeroing (offset), +A, -A, memory function, Max, Min, Max-Min, measurement of limit values, data output, ASCII commands. Ideal for stationary and portable use in the workshop and manufacturing shop.

Application: Display unit for TESA inductive measurement probe.

Supplied with: Including 4×batteries No. 081561 size LR6.

Optional extras: Radio No. 498916 transmitter, data cable No. 498918, software No. 498925; 498926.



43 4716

Type		T10
45A 43 4716	Portable length measurement device	eShop
Measuring range	µm	±5 to ±5000
Adjustable scale	µm	0.2 / 1 / 2 / 10 / 20 / 100 / 200
maximum resolution	µm	0.1
Error limit digital display	%	0.1
Length	mm	170
Width	mm	100
Height	mm	38
Weight	kg	0.5



TESA µFinder Set No. 434718 size 31 for parallelism and straightness measurements and for alignment of machines.

µFinder set

Mobile high-precision set for parallelism and straightness measurements, and for alignment of machines in quality control and service.

Supplied with: Supplied with instruction handbook, portable TWIN-T10 display unit No. 434716 size T10, 4× batteries No. 081561 size LR6, small magnetic stand, case.

Size 22 – Including axial contact point No. 434777 size GT22.

Size 31 – Including lever contact point No. 434779 size GT31.


43 4718

Type		22	31
45A 43 4718	Digital length measurement probe set **µFinder GT**	(eShop)	(eShop)
Span of measurement	mm	1	0.3
Gauging force	N	0.63	0.2
Clamping shank ∅ h6	mm	8	

TESA Display unit for precision measurements

Display unit for measured values with easy-to-read 7-inch colour touch screen. Simultaneous display of multiple measurements possible via the ports for inductive contact points or the USB inputs. 4 display modes are available for optimum reading of the results. TESA contact points are recognised automatically.

Size TWT20 – Recording of measurements with 4300 measurements per second. Simultaneous display of 2 values.
Size TWT40 – Optimised recording of measurements with 6500 measurements per second. Simultaneous display of 4 values.

Function:
- Basic formulas (+A, -A, +B, -B and combinations from A and B).
- Dynamic measurements (min., max., max.–min., average, etc.).
- Adjustable tolerances with OK/NOK display.
- Function for classification integrated (8 max.).
- Data output via RS232, USB or Bluetooth®.

Application: Ideal for inspection work in the inspection laboratory and in production.

Supplied with: Incl. mains cable for screwing on to the display, adapters for EU, ZH, UK and US.

Note: Twin T20 nano display unit for visualization of Heidenhain contact point available on request.



43 4725_TWT20



Type		TWT20	TWT40
45A 43 4725	Display unit for precision measurements	(eShop)	(eShop)
Display		7-inch touch screen	
maximum resolution	µm	0.1	
Digital display error limit		± (0.2 % + 0.3 µm)	
Number of USB interfaces		2	4
Number of connections for inductive edge finder		2	4
Length	mm	190	
Width	mm	112	
Height	mm	120	
Weight	kg	1.2	

NEW

MARPOSS Measured value display unit DUO

Compact measured value display unit with 4.3-inch touch screen/colour display and measured value memory function. Connection for 2 inductive contact points (switchable between half-bridge or full-bridge). Device also compatible with Tesa contact points. Up to 4 features can be displayed at the same time. Data export in DFQ or CSV format via the USB interface.

Function:
- Dynamic measured value functions: Max, Min, Max-Min, (Min-Max)/2, average.
- Three-colour bar display and digital measured value display.
- 2 circuit inputs and 2 circuit outputs, potential-free (for instance for measured value uploading, good/reject).
- Scaling is adjusted automatically to suit the tolerance limit.

Application: As display for simple measurement tasks (+A, –A) and calculation based on both results (such as A+B, A–B, 0.5A+B). For use in the workshop and production.

Supplied with: Including USB power adaptor, base.

Optional extras: Optional expansion with plug-in cards on fieldbus interface: Profibus, Profinet or Ethernet/IP.



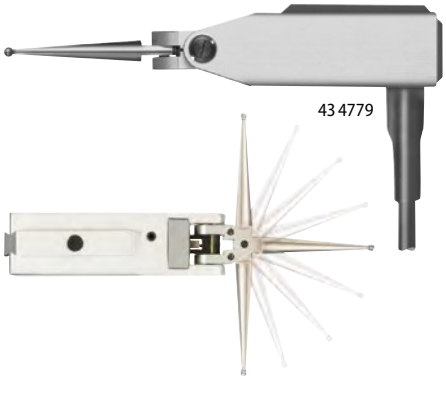
43 4735

Type		DUO
43D 43 4735	DUO measured value display unit	–
Measuring range	µm	± 1 up to ± 10000
maximum resolution	µm	0.01
Length	mm	130
Width	mm	95
Height	mm	50
Weight	kg	1

TESA Inductive lever dial indicator

Adjustable-angle measuring tip for measurements in two directions. Ball-bearing lifting system with mass balancing. Collision-protection by means of two slip clutches. Measuring probe with Ø 2 mm carbide ball – can **pivot through 180°**. Independent change of sensing direction, without change of arithmetic sign. Case with two dovetail bars.

Application: Ideal for measurement of parallelism and straightness, and for alignment of machines.



43 4779

Type		GT31
45A 43 4779	Inductive lever dial indicator	eShop
Measuring range	mm	±0.3
Linearity error limit (L = meas. length in mm)	µm	$0.2 + 50 \times L^2$
Repeatability	µm	0.1
Measuring force at electrical zero	N	0.1

IP 65 | i Cal

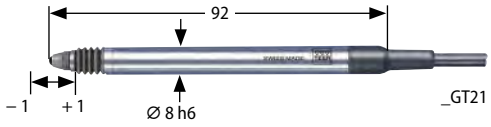
TESA Inductive probes

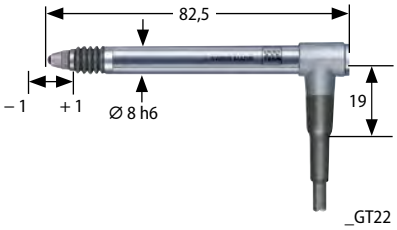
Versatile precision length measuring probes.

- **Precision ball-bearing longitudinal measuring pin.**
- **High precision due to electronic measurement signal amplification.**
- Clamping shank Ø 8 mm, can be clamped on the entire length.
- Due to ball bearings, resistant to fluctuations in temperature and lateral forces.
- Outstanding electro magnetic screening.

The TESA length measurement probe is characterised by excellent repeatability, consistency and a long working life.

Application: Universally applicable for all high precision measurement tasks, particularly in workshop and manufacturing shop areas.





Standard probes

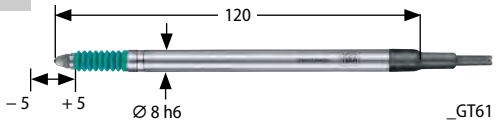
Size GT21M – Compatible with Mahr display units.

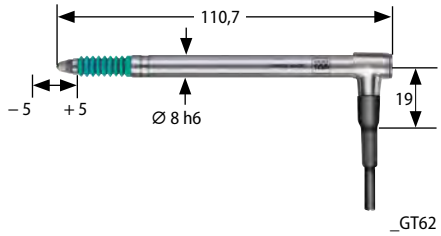
Type		GT21	GT21M	GT22
45A 43 4775	Inductive length measuring probe, axial	eShop	(eShop)	–
45A 43 4776	Inductive length measuring probe, axial **Pack of 10 pcs.**	(eShop)	(eShop)	–
45A 43 4777	Inductive length measuring probe, radial	–	–	eShop
45A 43 4778	Inductive length measuring probe, radial **Pack of 10 pcs.**	–	–	(eShop)
Measuring range	mm	±1		
Repeatability	µm	0.01		
Linearity error limit (L = meas. length in mm)	µm	$0.2 + 3 \times L^3$		
Compatibility		TESA	Mahr	TESA
Measuring force at electrical zero	N	0.63		

Standard probes - large measurement range

Probes **with large measuring range**.

Advantage: The Viton protective bellows renders the probe particularly suitable for applications involving coolants and lubricants. Particularly suitable for multi-location measurement devices.





Type		GT61	GT62
45A 43 4783	Inductive length measuring probe, axial	eShop	–
45A 43 4784	Inductive length measuring probe, axial **Pack of 10 pcs.**	(eShop)	–
45A 43 4785	Inductive length measuring probe, radial	–	eShop
45A 43 4786	Inductive length measuring probe, radial **Pack of 10 pcs.**	–	(eShop)
Measuring range	mm	±5	
Repeatability	µm	0.05	
Linearity error limit (L = meas. length in mm)	µm	$1 + 4 \times L$	
Compatibility		TESA	
Measuring force at electrical zero	N	0.9	

IP 64 | i Cal

Mahr Millimar inductive probe

Inductive length measuring probe with Mahr or Tesa semi-base attachment compatibility. Very robust, on ball guides and shielded against EMC influences by nickel-iron alloy. Very high linearity over the entire measurement range.

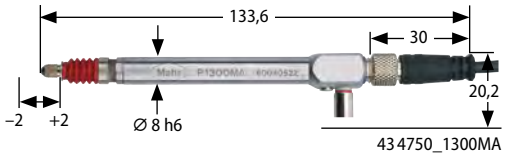
43 4750 – Vacuum lifter.

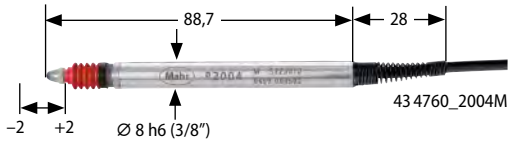
43 4760 – Angular cap for radial cable exit. Integral cap allows angular setting of the cable.

Application: Universally applicable for all high precision measurement tasks, particularly in workshop and manufacturing shop areas.

43 4750 – Ideal for measuring devices - because the plug connection is directly on the probe.

Supplied with: Operating instructions, connection cable (2.5m).



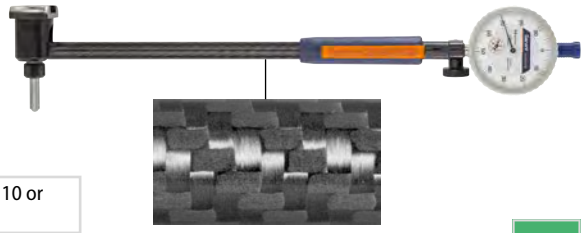


Type		P1300MA	P1300TA	P2004M	P2004T
43A 43 4750	Inductive length measuring probe, plug-in	(eShop)	(eShop)	–	–
43A 43 4760	Inductive length measuring probe	–	–	(eShop)	(eShop)
Measuring range	mm	±2			
Repeatability	µm	0.1			
Deviation from linearity at ± 0.5 mm	µm	0.4	1	0.4	0.4
Deviation from linearity at ± 1.0 mm	µm	1.5	3	1.5	1.5
Compatibility		Mahr	Tesa	Mahr	Tesa
Measuring force at electrical zero	N	0.75 ±0.15			

Standard

Garant

Precision bore gauges for Ø 18 – 300 mm



Precision two-point dial bore gauge with spring-loaded centring disc. **Lightweight,** stable version with **CRP elements**, hence reduced **thermal expansion** and increased **corrosion protection.** Hand heat insulation on the frame additionally reduces the effects of temperature. Smooth and precise transmission of the contact point travel by a curved segment. Fixed contact point with hardened steel ball allows adjustment to different Ø.

Application: For precise measuring of bores in terms of Ø, roundness, and cylindricity as well as measurements of internal profiles.

Note: When using precision dial indicators, an additional extension No. 434920 size 10 or contact point No. 434900 size 16 is required.

Supplied with: Precision bore gauge complete in a wooden case (without dial indicator).

Optional extras: Precision dial comparator No. 434674, inductive precision dial comparator No. 434671, dial indicator with anticlockwise scale 434807 size 10, digital dial indicator 434322, setting rings No. 484030.

C4 Cal



43 5190

Measuring range	mm	18-35	35-60	50-150	150-300
41C 43 5190 Precision bore gauge		eShop	eShop	eShop	eShop
Repetition accuracy without dial gauge	µm	1			
Measurement depth	mm	146	178	178	178
Number of contact points		9	6	11	11
Number of measuring discs		2	3	3	3
Centring plate width	mm	14.5	28	42.3	85

Precision bore gauge set for Ø 18 – 150 mm

Supplied with: 2 precision bore gauges No. 435190, additionally with extensions and setting rings.

S9 Cal



43 5192

Measuring range	mm	18-150
41C 43 5192 Precision bore gauge set		eShop
Repetition accuracy without dial gauge	µm	1
Measurement depth	mm	146 – 178
Number of contact points		20
Number of measuring discs		5

Standard

C1 Cal

Mitutoyo

Precision bore gauges with dial indicator

C4 Cal



43 5203

Self-centring precision bore gauge with three-point contact. Gauge holder and dial indicator matt chrome-plated. Shock-resistant plastic dial indicator housing. Gauge holder compensated for hand temperature. The gauge is set to the bore Ø by exchangeable contact points of different lengths and intermediate rings.
Measuring pins with spherical carbide tips.

Application: Dial bore gauge for checking bores for Ø accuracy, cylindrical form, and roundness.

Supplied with: Supplied with dial indicator No. 432051 size 10/58 with 1/100-mm scale.

Measuring range	mm	18-35	35-60	50-150	160-250
44A 43 5203 Precision bore gauge with dial indicator		eShop	eShop	eShop	eShop
Repetition accuracy without dial gauge	µm	0.5			
Measurement depth	mm	100	150	150	250
Number of contact points		9	6	11	6
Centring plate width	mm	12.7	20	38	90

Bore gauge set for Ø 18-150 mm

Supplied with: Supplied with dial indicator No. 432051 size 10/58 with 1/100-mm scale.
3 precision bore gauges No. 435203, additionally with measuring pins, extension and setting rings.

S9 Cal



43 5207

Measuring range	mm	18-150
44A 43 5207 Precision bore gauge set with dial indicator		eShop
Repetition accuracy without dial gauge	µm	0.5
Measurement depth	mm	100 – 150
Number of precision bore gauges		3
Number of contact points		26
Number of measuring discs		4

SU internal precision bore gauges for bores 4.5 – 510 mm

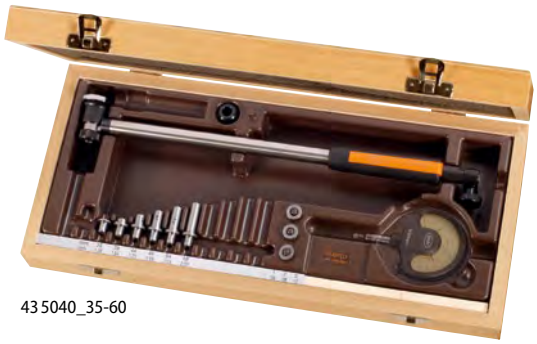
Self-centring two-point dial bore gauge with spring-loaded centring disc. Smooth and accurate transmission of the contact point travel via a ring segment. Fixed, exchangeable measuring pins can be set to different Ø. Carbide-tipped point. Gauge holder with hand and ambient temperature protection.

Application: For precise measuring of bores in terms of Ø, roundness, and cylindricity as well as measurements of internal profiles.

Supplied with: Precision bore gauge complete (without dial indicator).

Optional extras: Measuring depth extensions No. 435142, precision dial comparator No. 434674, digital precision dial comparator No. 434671, dial indicator with anticlockwise scale 434807 size 10, digital dial indicator 434322, setting rings No. 484030.

Note: When using precision dial indicators, an additional extension No. 434920 size 10 or probe No. 434900 size 16 is required. Versions up to 800 mm measuring range available on request.



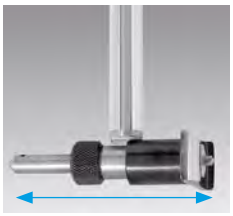
43 5040_35-60



Device tube of INVAR



Arc segment



Optimum gauging force

► C4 ◄ Cal

43 5040 – Fixed measuring pins **of steel.**
43 5050 – Fixed measuring pins **carbide-tipped.**

Measuring range	mm	4,5-6	6-8	8-12	12-20	18-35	35-60	50-100	100-160	160-290	280-510
46F 43 5040	Internal precision bore gauge, steel, without dial indicator **SU**	–	–	–	–	eShop	eShop	eShop	eShop	eShop	(eShop)
46F 43 5050	Internal precision bore gauge, carbide, without dial indicator **SU**	(eShop)	(eShop)	(eShop)	eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Repetition accuracy without dial gauge	µm	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.5
Measurement depth	mm	80	100	100	110	110	180	180	230	230	400
Number of contact points		9	7	9	9	9	6	11	7	7	7
Number of measuring discs		–	–	–	1	2	3	3	4	4	4
Centring plate width	mm	4	5.2	6.5	9	14.8	28	45	75	120	156

SU Internal precision bore gauge sets

► S9 ◄ Cal

43 5060 – Fixed measuring pins **of steel.**
43 5070 – Fixed measuring pins **carbide-tipped.**

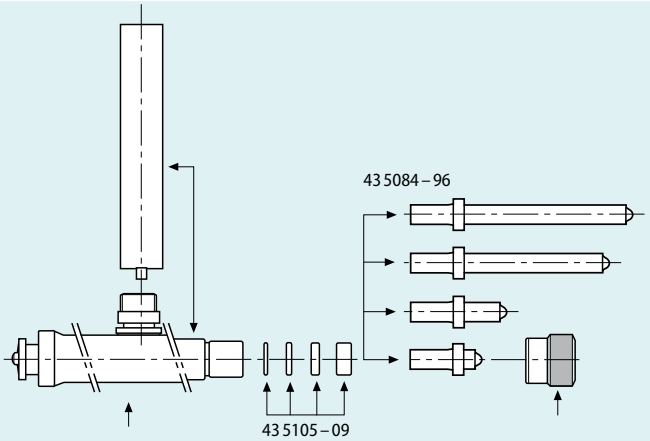
Measuring range	mm	18-100	18-150	50-160	50-230
46F 43 5060	Internal precision bore gauge set, steel without dial indicator **SU**	eShop	(eShop)	eShop	(eShop)
46F 43 5070	Internal precision bore gauge set, carbide, without dial indicator **SU**	eShop	(eShop)	(eShop)	(eShop)
Repetition accuracy without dial gauge	µm	0.5			
Measurement depth	mm	110 – 180	110 – 180	180 – 230	180 – 230
Number of precision bore gauges		3	3	2	2
Number of contact points		27	27	18	18
Number of measuring discs		7			



43 5060_18-150

Spare parts

We will be happy to provide you with a list of all available spare parts.
Please ask us.



OSIMESS internal precision bore gauges for bores of 1 – 12 mm

43 5010 – OSIMESS internal precision bore gauge for small bores from 1 mm.
DLC-coated tips (from size 4.5-7.5). The tapered form of the gauging pin, under the measuring force of the precision bore gauge, expands the slotted probe. **Repetition accuracy 1 µm.**

Size 1,5-4,2 – Probes of **carbide.**

Application:

43 5010 – Determination of deviation from nominal value and shape errors such as run-out or conicity.

Supplied with:

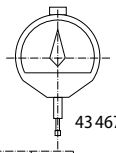
43 5010 – Probes, carbide gauging pins, standard holder (display unit and setting rings not included).

Optional extras:

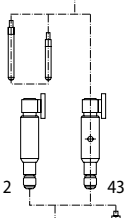
43 5010 – Precision dial comparator No. 434674, digital precision dial comparator No. 434671, dial indicator with anticlockwise scale No. 434807 size 10, digital dial indicator No. 434322, measuring table No. 435020.

Note: Versions up to 20 mm measurement range and for blind holes available on request.

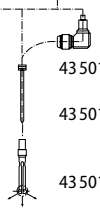




43 4674



43 5012 43 5013



43 5014
43 5016
43 5015

Measuring range	mm	1,5-4,2	4,5-7,5	8-12	4,5-12
46D 43 5010	Precision bore gauge **OSIMESS**	(eShop)	eShop	(eShop)	eShop
46D 43 5030	Set of steel setting rings (dimensions as for probes)	(eShop)	(eShop)	(eShop)	(eShop)
effective application range (43 5010)	mm	1.5 – 4.2	4.15 – 7.8	7.7 – 12.5	4.15 – 12.5
Repetition accuracy (43 5010)	µm	1			
Measurement depth (43 5010)	mm	17 – 25	41 – 45	45	41 – 45
Number of setting rings (43 5030)		10	7	6	13
Number of probe tips (43 5010)		10	7	6	13
Number of carbide gauging pins (43 5010)		2	1	2	2

Straight and angled clamps for OSIMESS internal precision bore gauges

Suitable for: Nominal measuring range 0.95 -20.6 mm.

Note:
43 5013 – When using precision dial indicators, an additional extension No. 434920 size 10 or probe No. 434900 size 16 is required.



43 5012



43 5013

for nominal measuring range	mm	0,95-20,6
46D 43 5012	Clamp without return key	(eShop)
46D 43 5013	Clamp with return key	(eShop)
46D 43 5014	Angle clamp for OSIMESS	(eShop)

Probes for Osimess internal precision bore gauges

OSIMESS tips for small diameters from 1.0 to 11.5 mm (without gauging pin).
In carbide for size 0.95-1.15 to size 3.80-4.20.
In DLC coating as from size 4.15-4.80.



435015 size 0.95/1.15 to 3.80/4.20



435015 size 4.15/4.80 to 10.2/11.5

Application range	mm	0,95-1,15	1,07-1,25	1,17-1,35	1,27-1,45	1,37-1,55	1,50-1,90	1,80-2,20	2,05-2,45	2,30-2,70
46D 43 5015	Probe for OSIMESS internal precision bore gauges	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)

Application range	mm	2,55-2,95	2,80-3,20	3,05-3,45	3,30-3,70	3,55-3,95	3,80-4,20	4,15-4,80	4,70-5,30	5,20-5,80
46D 43 5015	Probe for OSIMESS internal precision bore gauges	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)

Application range	mm	5,70-6,30	6,20-6,80	6,70-7,30	7,20-7,80	7,70-8,30	8,20-8,80	8,70-9,30	9,20-10,5	10,2-11,5
46D 43 5015	Probe for OSIMESS internal precision bore gauges	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)

Gauging pins for OSIMESS probes

Suitable for: Probes No. 435015.



43 5016

Application range	mm	0,95-1,55	1,50-2,45	2,30-4,20	4,15-9,30	9,20-20,6
46D 43 5016	Gauging pin for OSIMESS probes	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)

Comparator stands for OSIMESS internal precision bore gauges

Column type comparator stand for OSIMESS precision bore gauges.

Size OSM5 – The probe is inserted into the bore to be measured by means of a hand lever and rack movement.

Size OSM6 – The table is raised by means of a hand lever.

Advantage: Precise, reproducible, time-saving measurements.
Greatest possible protection of component and measuring tool.

Application: For quick series checking of similar components.



43 5020_OSM6



43 5020_OSM5

Manufacturer's designation		OSM5	OSM6
46D 43 5020	Comparator stand for OSIMESS	(eShop)	(eShop)
maximum workpiece ∅	mm	200	160
maximum working stroke	mm	60	40
Length	mm	225	231
Width	mm	120	
Height	mm	315	265

C4 Cal

Vario SV internal precision bore gauges

Two-point dial bore gauge, based on the **Schwenk version. Schwenk Vario SV** is a modular system which covers large measuring ranges due to exchangeable measuring heads. **With carbide measuring pins.**

Size 160-430 – Measuring range can be extended up to ∅ 800 mm.

Supplied with: Precision bore gauge **without** display unit and setting rings.

Optional extras: Precision dial comparator No. 434674, inductive precision dial comparator No. 434671, dial indicator with anticlockwise scale 434807 size 10, digital dial indicator 434322, setting rings No. 484030.

Note: When using precision dial indicators, an additional extension No. 434920 size 10 or probe No. 434900 size 16 is required.



43 5110_6–18

Measuring range	mm	6-18	18-160	160-430
46D 43 5110	Internal precision bore gauge without precision dial indicator **Vario SV HM**	eShop	eShop	(eShop)
Measurement depth	mm	100	140	180
Number of measuring heads		2	2	1
Number of contact points		17	20	7
Number of measuring discs		2	5	4

C4 Cal

SS internal precision bore gauges blind hole

Two-point dial bore gauge, based on the **Schwenk version. Schwenk blind hole SS.** For measuring blind holes and centring shoulders. Vernier caliper and movable contact point carbide tipped.

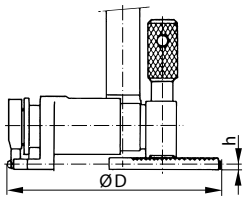
Supplied with: Precision bore gauge **without** display unit and setting rings.

Optional extras: Precision dial comparator No. 434674, inductive precision dial comparator No. 434671, dial indicator with anticlockwise scale 434807 size 10, digital dial indicator 434322, setting rings No. 484030.

Note: When using precision dial indicators, an additional extension No. 434920 size 10 or probe No. 434900 size 16 is required.



43 5120_50–110



Measuring range	mm	20-50	50-110	110-300
46D 43 5120	Internal precision bore gauge for blind holes **SS**	(eShop)	(eShop)	(eShop)
Measuring range of the digital calipers	mm	20 – 30; 30 – 40; 40 – 50	50 – 80; 80 – 110	110 – 150; 150 – 200; 200 – 250; 250 – 300
Measurement depth	mm	77	55	45
Distance from bottom of hole h	mm	1.5	1.5	2
Number of digital calipers		3	2	4
Centring plate width	mm	18	34	81

ESU setting devices for internal precision bore gauges

ESU setting device for exact setting of internal precision bore gauges to the desired nominal dimension by means of gauge blocks. Anvils made of carbide, lapped to gauge block quality. Horizontal and vertical setting options.

Optional extras: Stand base for vertical use available on request.



Adjustment range	mm	4,5-160	18-290	160-510
46D 43 5140	Setting device **ESU**	eShop	eShop	(eShop)
Setting resolution f_u (without taking gauge block quality into account) µm			2	

Garant

Setting Bench SB 1

Horizontal setting device with touch screen suitable for the workshop environment
for setting internal and external measurement devices.

Advantages:
- Easy and **convenient operation**.
- Large intuitive operating display.
- **High cost-effectiveness:**
  Approx. 85% time saving compared to setting with gauge blocks.



43 9900_600

C4 Cal

S/STL

Bore plug gauges OD

OD bore plug gauges are mechanical two-point dial bore plug gauges for highest requirements. Hardened gauging sleeve. For bores of 3 – 100 mm. Centring by the gauging sleeve prevents tilt errors and therefore ensures maximum precision irrespective of the user. No need to seek the return point. Dial indicators with shank ∅ 8 h6 can be used as displays.

- Repetition accuracy 1 µm.
- Robust and reliable.
- Minimum measuring time with maximum measuring reliability.
- Thread connection bore gauge/ holder M10×1.

43 5155/5157/5159 –Measuring sleeve made of stainless steel against corrosion.

Application: For bores of 3 – 100 mm. For quality assurance in series production, manual or automatic measuring.

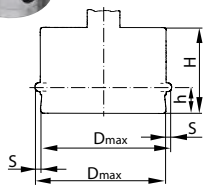
Supplied with: Gauging sleeve with two radially movable 180° offset carbide measuring bars.

Optional extras: Precision dial comparator No. 434674, inductive precision dial comparator No. 434671, dial indicator with anticlockwise scale 434807 size 10, digital dial indicator 434322, holder for plug gauges No. 435160, setting rings No. 484030. Measuring depth extensions, angle pieces and depth stops on request.

Note: When ordering, please state **additionally** the exact bore tolerances, for example:
No. 435154 size 6–12 **10H7,**
No. 435154 size 6–12 **10 + 0.15 / – 0.01,**
No. 435154 size 6–12 **9.990 / 10.15.**
When using precision dial indicators, an additional extension No. 434920 size 10 or probe No. 434900 size 16 is required.

- **Plug gauges for large bores (up to ∅ 500), recesses, grooves, also in 3-point version available on request.**
- **Tolerance range 10 µm or fine fit quality 5 and finer on request.**
- **Measuring range > 0.2 mm on request.**
- **Measuring contacts with larger radius as well as in ruby, ceramic and DLC-coated are available.**





S: Measuring range = 0.2 mm



Depth stop for serial measurements available on request.

Bore plug gauges OD standard version


43 5154


43 5155

Sleeve ∅ D	mm	3-6	6-12	12-20	20-30	30-40	40-60	60-80	80-100
46D 43 5154	Bore plug gauge standard **OD**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
46D 43 5155	Bore plug gauge standard **OD stainless**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Repetition accuracy	µm	1							
Sleeve dimension H	mm	10	15	15	20	20	28	33	33
Face dimension h	mm	1.5	2.5	2.5	3.5	3.5	3.5	4	4
Gauging force	N	2							

Bore plug gauges OD with extended guide for through holes


43 5156


43 5157

Sleeve ∅ D	mm	3-6	6-12	12-20	20-30	30-40	40-60	60-80	80-100
46D 43 5156	Bore plug gauge for through holes **OD**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
46D 43 5157	Bore plug gauge for through holes **OD stainless**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Repetition accuracy	µm	1							
Sleeve dimension H	mm	14.5	18.5	23	27	27	28	33	33
Face dimension h	mm	6	6	10	10	10	10	10	10
Gauging force	N	2							

Bore plug gauges OD for blind holes


43 5158


43 5159

Sleeve ∅ D	mm	3-6	6-12	12-20	20-30	30-40	40-60	60-80	80-100
46D 43 5158	Bore plug gauge for blind holes **OD**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
46D 43 5159	Bore plug gauge for blind holes **OD stainless**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Repetition accuracy	µm	1.5							
Sleeve dimension H	mm	10	13.5	13.5	20	20	28	33	33
Face dimension h	mm	1	1	1	1.2	1.2	1.2	1.2	1.2
Gauging force	N	2							

Holders for OD gauges

OD gauge holders with threaded connector M10×1. For direct connection to all OD bore plug gauges, 12 mm ∅ plunger.

Note:	Holders for electric probes and in reinforced version (∅ 18mm plungers), as well as holders with retraction to relieve the pressure on the measuring contacts are available on request.



Holder length	mm	50	105	235
46D 43 5160	Holder for plug gauge **OD**	(eShop)	(eShop)	(eShop)

i Cal

Contour measurement gauges Novometer

Novometer contour measurement gauge for measuring internal diameters of round, oval or regular polygon bores. For measuring **resilient components**.

Note:	Version with digital display or with slip clutch for reproducible gauging force available on request. Version for measuring external diameters available on request. Stationary version with table available as a support for the workpiece. Novometer with reading of 0.01 mm available on request.



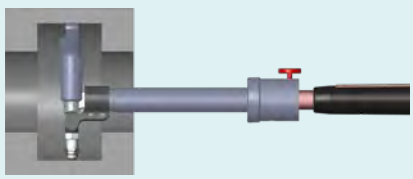


_55-100

Measuring range	mm	14-24	22-40	35-60	55-100	95-180	170-255	245-330
46D 43 5170	Novometer contour measuring gauge	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	mm	0.1						

Special designs

Measuring gauge for various internal geometries on request.



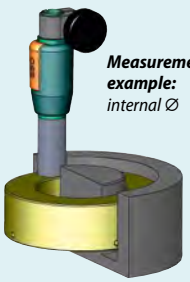




Measuring without oscillation



Measurement example: *external ∅*



Measurement example: *internal ∅*

Internal profile gauge KT



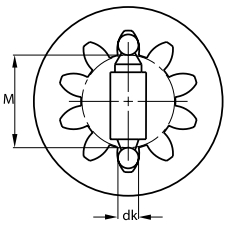
43 5125_22–55

Two-point dial bore gauge, based on the **Schwenk version.** For measuring internal profiles and splines, serrations and splined hub profiles. High accuracy and reliability due to segment deflection of the contact point travel. Wide measurement range covered by interchangeable measuring tips. The measuring inserts have an internal thread for fitting ball tips. The carbide balls on the spherical tips are available from ∅ 0.5 mm in 0.001 mm increments (tolerance < 2µm).

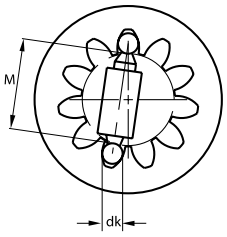
Supplied with: Gauge holder with probe rods and measuring tips, without spherical tips and display unit.

Optional extras: Spherical inserts with carbide balls, precision dial comparator No. 434674, inductive precision dial comparator No. 434671, dial indicator with anticlockwise scale 434807 size 10, digital dial indicator 434322.

Note: Version as a plug gauge for quicker and more reliable measuring without fluctuation.

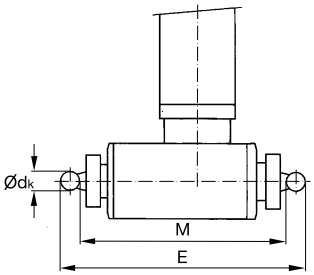


Application example for even number of teeth.



Application example for odd number of teeth.

Measuring range		mm	8-12	12-22	22-55	55-250	100-510
46D 43 5125	Internal precision bore gauge KT		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Repetition accuracy without dial gauge		µm	0.5				
Measurement depth		mm	100	102	110	177	235
Number of contact points			5	11	9	7	5
Number of measuring discs			1	1	2	3	4

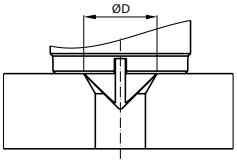


IFM chamfer gauges

IFM internal taper measuring gauge with 90° anvil cone for **determining the largest internal taper Ø.** The hardened anvil cone cross is inserted into the internal taper. The largest Ø is determined by pressing until reaching the stop.

Supplied with: Dial indicator.

Note: Special versions with other taper angles available on request. Measuring devices for measuring the chamfer length available on request. Dial indicator and base body available separately.







43 5172

Measuring range		mm	0,5-20	20-40	40-60
46D 43 5172	Measuring gauge for internal tapers **IFM**		eShop	eShop	(eShop)
Scale graduations		mm	0.01		

Garant Digital height gauge HG1

Discover the new GARANT HG1 height gauge No. 44 5355.
Easy measurement of holes, slots and many other features.

Outstanding handling.
- Dynamic thumbwheel for quick and precise positioning.
- Ergonomic handles with integral air bearing button for easy movement on the measuring plate.

Easy touch operation.
- Large touch control panel for very simple, easy operation using large operating buttons.
- Quick and reliable execution of measurements and calculations.

Excellent evaluation possibilities.
- Logs can be saved directly as a PDF.
- Wireless transmission of lists of measured values to wireless printer.







Standard | ▶ C6 ◀ Cal

Dial thickness gauges 1/10 reading

Thickness gauge with contact lever. Solid painted frame. Measuring faces hardened and ground.

Measuring range		mm	0-20	0-30	0-50
46C 43 8280	Dial thickness gauge		eShop	eShop	eShop
Scale divisions		mm		0.1	
Measurement variation MPE (measurement range)		mm	0.05	0.05	0.08
Measuring face ∅		mm		10	
Throat		mm		50	



43 8280_0-30

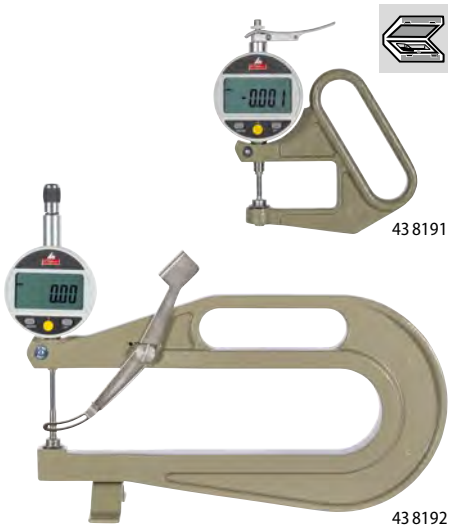
Standard | RS232C | ▶ C6 ◀ Cal

Digital dial thickness gauges

Digital thickness gauge with lift-off lever (gauging force is independent of the user), lightweight frame, painted. Measuring faces hardened and ground.
Data transmission via RS 232 or USB with data transmission cable (not included in the scope of supply).

Supplied with: 1 battery No. 081560 size CR2032.

Measuring range		mm	0-12,5	0-25
46C 43 8191	Digital dial thickness gauge		(eShop)	–
46C 43 8192			–	(eShop)
Scale divisions		mm	0.001	0.01
Measurement variation E MPE (measurement range)		mm	0.004	0.02
Measuring face ∅		mm	10	
Throat		mm	50	200



43 8191

43 8192

Standard | ▶ C6 ◀ Cal

Dial thickness gauge 1/100 reading

Dial thickness gauge with lift-off lever (gauging force is independent of the user). Lightweight frame, painted. Measuring faces hardened and ground.

43 8210 – Lapped measuring faces.

Measuring range		mm	0-10	0-30
46C 43 8205	Dial thickness gauge		eShop	eShop
42C 43 8210			eShop	–
Scale divisions		mm	0.01	
Error limit (43 8210)		mm	0.02	–
Measurement variation MPE (measurement range) (43 8205)		mm	0.015	0.02
Measuring face ∅		mm	10	
Throat (43 8205)		mm	50	
Throat (43 8210)		mm	30	–



43 8205

43 8210

Standard | ▶ C6 ◀ Cal

Digital quick thickness gauge 1/100 reading

Very small and handy device with a capacitive measuring system. Steel measuring faces hardened, ground and lapped.

Supplied with: 1 battery No. 081560 size 357.

Measuring range		mm	0-12
44A 43 8251	Quick thickness gauge		eShop
Scale divisions		mm	0.01
Error limit		mm	0.02
Measuring face ∅		mm	5
Throat		mm	20



43 8251

mm / Inch

Garant

Setting bench SB 1

Easy and convenient-to-use horizontal adjustment device with touch screen that is suitable for the workshop for setting internal and external measurement devices. The device is high-quality and has a solid granite base and high-precision guides. The highly accurate motor control regulates the set values in real time even with a variety of gauging forces. Multilingual software. USB interfaces for printers and scanners.

Function:
- Input of internal and external dimensions possible in millimetres or inches.
- Integrated tolerance calculator with quick selection of minimum, maximum and average values.
- Saving of favourites for repeated setting of measuring tools.
- the history is recorded and can be accessed at any time.
- Wireless data transmission of the configured pre-set values (nominal dimensions) including tolerances to the GARANT HCT dial indicator (with No. 498999 size STICK).

Supplied with: Supplied with power supply unit, dust cover, factory calibration, instruction handbook, transport restraints.
Size 1500 – Delivery excluded.

Optional extras: Adapter No. 439910; 439912; 439915; 439916, printer No. 085505, 2D barcode scanner No. 439930 size 1950GHD, socket strip No. 081163; 081179, No. 498999 STICK for HCT function, digital dial indicator HCT No. 434336; 434342.

Note: Limit value of measurement deviation (MPE) according to VDI/VDE/DGQ/DKD 2618 sheet 17.2. Permissible ambient conditions 20°C ±3 K, measured with calibrated standards or standard measuring equipment using the integrated temperature compensation. For newer setting benches on the market, the HCT function can be extended using a software update – please contact our measurement engineers.



43 4336_12,5 | 43 4336_25 | 43 4342_12,5

43 9900_600

Type		300	600	1000	1500
41R 43 9900	Setting Bench SB 1	–	–	–	–
Measuring range outside	mm	40.1 – 345	40.1 – 655	40.1 – 1056	40.1 – 1556
Measuring range inside	mm	1 – 305	1 – 615	1 – 1016	1 – 1516
Scale divisions	mm	0.001			
Accuracy	µm	1.5 + L(mm)/300			
Repetition accuracy (2 σ)	µm	1			
Interface		USB interface			
Display size	in	10			
Type of display		TFT touch screen			
Footprint length	mm	840	1140	1540	2240
Baseplate depth	mm	320			
Height	mm	573	596	626	706
Weight	kg	110	140	210	430
Power consumption	W	150			
Power supply	V	100 – 240			

Garant Advantages of the setting bench SB 1



Large intuitive touch display.



Integrated tolerance calculator based on the nominal size and fit.



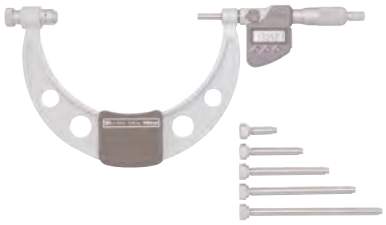
The setting data at the tool can always be traced using the optional printer No. 085505 and the optional scanner No. 439930.

Garant Adapter for Setting Bench SB1

Adapter for external measurement devices

Suitable for: External micrometers

Note: 2 pieces required each.



Type		OUTSIDE
41R 43 9910	Adapter, exterior contact area **1 piece**	–



43 9910

Adapter for internal measurement devices

Suitable for: Internal quick caliper

Note: 2 pieces required each.



Type		INSIDE
41R 43 9912	Adapter, interior contact area **1 piece**	–



43 9912_INSIDE

Adapter for two-point bore gauges

Suitable for:

Size FLAT – GARANT two-point bore gauges No. 435190 and many two-point bore gauges from additional manufacturers.

Size ANGLED – Two-point bore gauge No. 435203 size 160-250.



Type			FLAT	ANGLED
41R 43 9915	Adapter for two-point bore gauges **1 piece**		–	–
for measurement range ∅		mm	18 – 800	160 – 250

Improved adapter



43 9915_FLAT 43 9915_ANGLED

Adapter for universal measuring instruments

Suitable for: Universal measuring instruments No. 428051 and No. 428300.



Type		UNIVERSAL
41R 43 9916	Adapter set for universal measuring instruments	–
Content: 2× adapter		No. 439918 size BASE
4× attachment, height 31 mm		No. 439920 size 31
2× attachment, height 19 mm		No. 439920 size 19

Improved adapter





43 9916

Honeywell Hand scanner 2D and Flex-Neck holder

For scanning barcodes or 2D codes such as QR codes.

Suitable for: GARANT Setting Bench SB1 No. 439900.

Optional extras: Printer No. 085505.

Type			1950GHD
41R 43 9930	Hand-held 2D scanner		–
Weight		g	147

Suitable for: Hand-held 2D scanner No. 439930.

Type		HOLDER
41R 43 9940	Flex-Neck holder for hands-free reading	–



43 9940



43 9930

Standard | ▶ C7 ◀ Cal

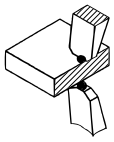
External quick caliper with dial gauge

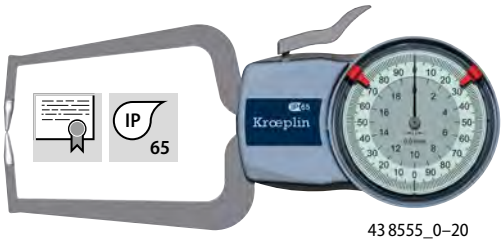
1 fixed and 1 movable arm with carbide spherical contact points.
The deflection of the moving contact point is transmitted to the dial indicator.
The measured result can be read directly.

Application: For quick measuring of external grooves, wall thicknesses, plates, pipe wall thicknesses, foils etc.



43 8545_0–10





43 8555_0–20

Measuring range		mm	0-10	0-20	0-50
42C 43 8545	HOLEX	External quick caliper with dial gauge	eShop	–	–
46Q 43 8555	Kroeplin Längenmesstechnik		eShop	eShop	eShop
Scale divisions (43 8545)		mm	0.1	–	–
Scale divisions (43 8555)		mm	0.005	0.01	0.05
Error limit (43 8545)		mm	0.1	–	–
Error limit (43 8555)		mm	0.015	0.03	0.05
Carbide spherical point ∅ (43 8545)		mm	2	–	–
Carbide spherical point ∅ (43 8555)		mm	1.5	1.5	3
max. contact point length L (measurement depth) (43 8545)		mm	36	–	–
max. contact point length L (measurement depth) (43 8555)		mm	35	80	167
Dial indicator ∅ (43 8545)		mm	50	–	–
Dial indicator ∅ (43 8555)		mm	65	65	66

Standard | IP 65 | ▶ C7 ◀ Cal

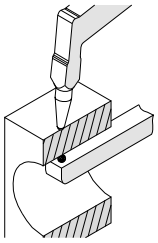
Kroeplin Längenmesstechnik

External quick caliper with dial gauge

1 fixed and 1 movable arm with carbide spherical contact points.
The deflection of the moving contact point is transmitted to the dial indicator.
The measured result can be read directly.



43 8560_0–20



Spherical point ∅ 1.5 mm (size 0 – 20)
Spherical point ∅ 3.0 mm (size 0 – 50)

Measuring range		mm	0-20	0-50
46Q 43 8560	External quick caliper with dial gauge **for pipes**		eShop	eShop
Scale divisions		mm	0.01	0.05
Error limit		mm	0.03	0.05
Carbide spherical point ∅		mm	1.5	3
minimum bore ∅		mm	10	12
maximum contact point length L (measurement depth)		mm	80	169
Dial indicator ∅		mm	65	66

Standard | mm / Inch | Digimatic | IP 67 | Absolute System | ▶ C7 ◀ Cal

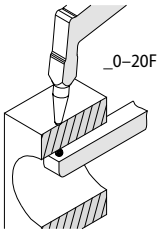
Kroeplin Längenmesstechnik

External quick caliper with digital gauge

1 fixed and 1 movable arm with carbide spherical contact points.
Digital display of the absolute value.
By entering **preset values**, variations can be determined against any value.

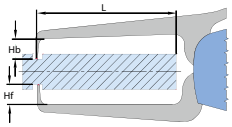
Supplied with: Supplied with 2 batteries No. 081561 size LR3.

Optional extras: Data cable adapter No. 498954 size A2, data cable No. 497440 and radio adapter No. 498954 size A5.





43 8573_0–20





43 8573_0–30

Measuring range		mm	0-20	0-20F	0-30	0-50
46Q 43 8573	Digital external quick caliper **with spherical anvils**		eShop	eShop	eShop	eShop
Graduations can be switched over		mm	0.001; 0.002; 0.005; 0.01; 0.02; 0.05			
Error limit		mm	0.03	0.03	0.04	0.05
Repetition accuracy		mm	0.01	0.01	0.02	0.03
Carbide spherical point ∅		mm	1.5	1.5	3	3
Measurement tip length top Hb		mm	24	24	30	30
Measurement tip length bottom Hf		mm	24	2.5	30	30
minimum bore ∅		mm	–	9	–	–
maximum contact point length L (measurement depth)		mm	80	80	115	167
Gauging force		N	1.1 – 1.6	1.1 – 1.6	1 – 1.5	0.9 – 1.2

Standard | IP 65 | ▸ C7 ◂ Cal

Kroeplin Längenmesstechnik

Internal quick calipers with dial gauge

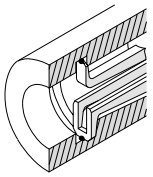
1 fixed and 1 movable arm with carbide spherical contact points. The deflection of the moving contact point is transmitted to the dial indicator. The measured result can be read directly.



43 8950_10-30

Adjustable tolerance marks.

Measuring range		mm	5-15	10-30	20-40	30-50	40-60	50-70	60-80
46Q 43 8950	Internal quick caliper		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Scale divisions		mm	0.005	0.01	0.01	0.01	0.01	0.01	0.01
Error limit		mm	0.015	0.03	0.03	0.03	0.03	0.03	0.03
Carbide spherical point ∅		mm	0.6	1	1	1	1	1	1
minimum groove width		mm	0.8	1.5	1.5	1.5	1.5	1.5	1.5
maximum groove depth		mm	2.3	5.2	7	7	8	8	8
maximum contact point length L (measurement depth)		mm	35	80	80	80	80	80	80
Dial indicator ∅		mm				65			



Ball ∅ 0.6 mm,Ball ∅ 1 mm.

Measuring range		mm	15-65	40-90	70-120
46Q 43 8953	Internal quick caliper **with long contact points**		eShop	eShop	eShop
Scale divisions		mm		0.05	
Error limit		mm		0.05	
Carbide spherical point ∅		mm	1.5	2	2
minimum groove width		mm	2.5	3.3	3.3
maximum groove depth		mm	4.5	8	8
maximum contact point length L (measurement depth)		mm	188	192	192
Dial indicator ∅		mm		66	



43 8953_15-65

Standard | mm / Inch | Digimatic | | | IP 67 | Absolute System | ▸ C7 ◂ Cal

Kroeplin Längenmesstechnik

Internal quick calipers with digital gauge

1 fixed and 1 movable arm with carbide spherical contact points. **Digital display of the absolute value.**
By entering **preset values**, variations can be determined against any value.

43 8985 – 3-point contact for quick and reliable determination of the measured value.

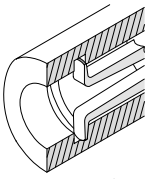
Supplied with: Supplied with 2 batteries No. 081561 size LR3, operating instructions.

Optional extras: Data cable adapter No. 498954 size A2; data cable No. 497440; radio adapter No. 498954 size A5.

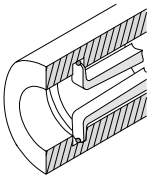


43 8965_2,5-12,5

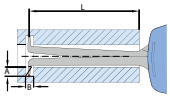
Measuring range		mm	2,5-12,5	5-15	10-30	20-40	30-50
46Q 43 8965	Digital internal quick caliper		eShop	eShop	eShop	eShop	eShop
Graduations can be switched over		mm			0.001; 0.002; 0.005; 0.01; 0.02; 0.05		
Error limit		mm	0.015	0.015	0.03	0.03	0.03
Repetition accuracy		mm	0.005	0.005	0.01	0.01	0.01
Carbide spherical point ∅		mm	–	0.6	1	1	1
Radius of the blade		mm	0.1	–	–	–	–
minimum groove width		mm	0.4	0.8	1.2	1.2	1.2
maximum groove depth		mm	0.7	2.3	5.2	7	7
maximum contact point length L (measurement depth)		mm	12	35	85	85	85
Gauging force		N	0.8 – 1.2	0.8 – 1.2	1.1 – 1.6	1.1 – 1.6	1.1 – 1.6



Knife R 0.1 mm.

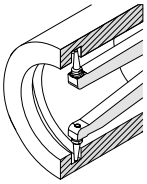


Ball ∅ 0.6 mm,Ball ∅ 1 mm.





Measuring range		mm	13-43	30-60	50-80	70-100	90-120
46Q 43 8979	Digital internal quick caliper **with long contact points**		eShop	eShop	(eShop)	(eShop)	(eShop)
Graduations can be switched over		mm			0.001; 0.002; 0.005; 0.01; 0.02; 0.05		
Error limit		mm			0.04		
Repetition accuracy		mm			0.02		
Carbide spherical point ∅		mm	1.3	1.5	2	2	2
minimum groove width		mm	2	2.5	2.5	2.5	2.5
maximum groove depth		mm	6.5	8.5	8.5	8.5	8.5
maximum contact point length L (measurement depth)		mm			127		
Gauging force		N	1.2 – 1.7	1.3 – 1.8	1.3 – 1.8	1.3 – 1.8	1.3 – 1.8



Ball ∅ 1.3 mm,Ball ∅ 2 mm.



43 8985_7-14

Measuring range		mm	7-14	10-20	15-30	25-45	40-60
46Q 43 8985	Digital internal quick caliper **with 3-point contact**		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Graduations can be switched over		mm			0.001; 0.002; 0.005; 0.01; 0.02; 0.05		
Error limit		mm	0.01	0.02	0.02	0.02	0.02
Repetition accuracy		mm	0.004	0.01	0.01	0.01	0.01
Measurement contact profile			1	2	2	3	3
minimum groove width		mm	0.8	1.6	1.5	1.6	1.6
maximum groove depth		mm	2.2	3.5	5	7	8
maximum contact point length L (measurement depth)		mm	34	75	77	85	84
Gauging force		N	1 – 1.4	1.1 – 1.6	1.1 – 1.6	1.1 – 1.6	1.1 – 1.6

Measurement contact profile



1



2



3

Standard | mm / Inch | Digimatic | | | IP 67 | Absolute System | ▶ C7 ◀ Cal | |

Kroeplin Längenmesstechnik

Digital external and internal quick calipers with dial gauge

One fixed and one movable arm with carbide spherical contact points. **Digital display of absolute value.** By entering preset values, variations can be determined against any value.

Supplied with: Including a charger pad with connection accessories and operating instructions.

Optional extras: Data cable adapter No. 498954 size A3, data cable No. 497440, radio adapter No. 498954 size A4.



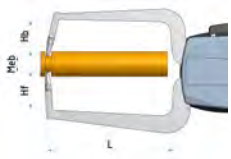
43 8990_0-15

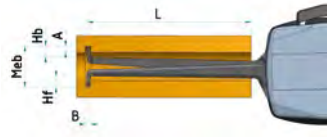


_0-15



_0-15S

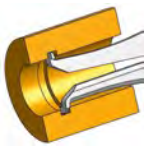






43 8995_5-20

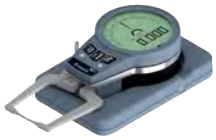
Measuring range		mm	0-15	0-15S	2,5-12,5	5-20	10-25
46Q 43 8990	Digital external quick caliper		eShop	eShop	–	–	–
46Q 43 8995	Digital internal quick caliper		–	–	eShop	eShop	eShop
Graduations can be switched over		mm	0.001; 0.002; 0.005; 0.01				
Error limit		mm	±0.010	±0.015	±0.010	±0.010	±0.010
Repetition accuracy		mm	0.005				
Carbide spherical point ∅		mm	1.5	–	–	0.6	1
Radius of the blade		mm	–	0.4	0.12	–	–
Measurement tip length top Hb		mm	17	12	0.9	2.2	4.4
Measurement tip length bottom Hf		mm	17	12	0.9	2.2	4.4
minimum groove width		mm	2.5	1.5	0.6	0.8	1.5
maximum groove depth		mm	15	11	0.7	2.2	4
maximum contact point length L (measurement depth)		mm	45	45	12	44	46
Gauging force		N	1.3 – 1.5	1.3 – 1.5	0.8 – 1.3	0.8 – 1.3	0.8 – 1.3



Blade R 0.12 mm



Spherical point ∅ 0.6



Wireless charging with charging pad.

▶ i ◀ Cal

Schwenk

Internal measuring gauge ON for slots and grooves

Internal measuring gauge for measuring slots and grooves up to a maximum slot depth of 5 mm.

Note: Measuring range 530 mm on request.

Holder for ON expanding head gauge

Holder for ON expanding head gauge.

Supplied with: Holder in wooden case (without dial indicator).



Reversal		mm	10
46D 43 5174	Holder for ON expanding head gauge		(eShop)

ON expanding head gauge

ON expanding head gauge with fixed application range. With carbide key pin.

Measuring range		mm	6-8	8-12	10-14	12-18	16-22
46D 43 5175	Internal measuring gauge for slots and grooves		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Access diameter		mm	6	8	10	12	16
Minimum width of groove		mm	0.8	1.2	1.2	1.2	1.2
largest measuring depth		mm			60		
maximum expansion travel		mm	2	4	4	6	6

HÖRGER & GÄSSLER Hydraulic magnetic measuring stands

Hydraulic measuring stand with central clamping. One hand remains free for configuring the dial indicator. All joints are rigidly clamped by the central button. Patented mechanism generates high pressure so that the hand wheel needs only slight force to close it. Oil hydraulics protected against oil leakage by double seals. Clamping force can be steplessly adjusted. **Jointed arms** 360° rotatable on the dial indicator holder and 180° pivotable. **Dial indicator holder** for dial and digital indicators with shank ∅ 8 mm or dovetail.

Note:	Hydraulic measuring stands can withstand large fluctuations in temperature when the **clamp is open**. However a certain time is required for the temperature of the oil to equalise. When the **clamp is closed** the maximum fluctuation in temperature without major fluctuations in pressure is 15 °C. These can lead to damage to the stand or to the object that is clamped.

Suitable spare parts in the eShop for the respective item



44 0790

Hydraulic stand with magnetic base

44 0790 – Additionally with **fine rotational adjustment** on the magnetic base; high stability even at high measurement forces.

44 0795 – Additionally with sensitive **hydraulic fine adjustment** on the magnetic base for **high-precision** applications.

44 0840 – Only column **without** base.

44 0790–0800 – **Magnetic base** with Vee sole. Powerful permanent magnet. Rotary switch for turning the magnetic force on and off. The magnetic force acts through the flat back and the Vee sole of the base.

Supplied with:

44 0795 – Magnetic base No. 440865 size 1

44 0800 Size 220–300 – Magnetic base No. 440868 size 1.

44 0800 Size 400; 550 – Magnetic base No. 440868 size 2.

Optional extras:

44 0840 Size 400; 550 – Magnetic bases No. 440868 size 2 and No. 440865 size 1.


44 0800

Throat		mm	220	260	300	400	550
46Q	**44 0790**	Hydraulic magnetic measuring stand (with base) **with mechanical fine adjustment at the base**	–	–	eShop ■	–	–
46Q	**44 0795**	Hydraulic magnetic measuring stand (with base) **with hydraulic fine adjustment at the base**	–	–	–	eShop	–
46Q	**44 0800**	Hydraulic magnetic measuring stand (with base) **with mechanical fine adjustment at the indicator holder**	eShop	eShop	eShop ■	eShop ■	eShop ■
46Q	**44 0840**	Hydraulic stand arm (without base) **with mechanical fine adjustment at the indicator holder**	eShop	eShop	eShop	eShop	eShop
Throat		mm	220	260	300	400	550
Connection thread			M8	M8	M8	M10	M10
Alignment of connecting thread			centre	centre	centre	side	side
Magnetic force		N	800	800	800	1000	1000
Magnetic base length(44 0790, 44 0795, 44 0800)		mm	60	60	60	81	81
Magnetic base width(44 0790, 44 0795, 44 0800)		mm			50		
Magnetic base height(44 0790, 44 0795, 44 0800)		mm			55		


With hydraulic fine adjustment

44 0795

Hydraulic small stand with magnetic base

Hydraulic small stand with extra powerful pot magnet, similar to No. 085940 size 35, not switchable. Magnetic force acts only downwards due to the double-wall housing. With keeper plate. **Particularly suitable for use with lever indicators.** The fine adjustment on the base is pivot-mounted on the magnet.



44 1000

46Q	**44 1000**	Hydraulic small stand with magnetic base	eShop ■
Throat		mm	150
Magnetic force		N	147
Magnetic base height		mm	30
Magnetic base ∅		mm	35

Garant Hydraulic magnetic measuring stands

Hydraulic measuring stand with central clamping - all joints are rigidly clamped by means of the central rotary knob. Oil hydraulics protected against oil leakage by double seals. Clamping force can be steplessly adjusted. **Large rubberised hand wheel** (∅ 54 mm) for easy tightening and releasing the clamp. Jointed arms on the dial indicator mounting rotates 360°, can be twisted 180° and suitable for dial indicators with shank ∅ 6 and 8 mm or dovetail.

44 0600 – Stand with magnetic base with **ergonomic rotary switch**. High performance ferrite magnet with ground contact faces on the back and ground Vee underneath for placing on shafts and cylindrical bodies. **Plastic enclosure** of the magnetic base for easy handling, enhanced shock protection and thermal insulation.

Supplied with:

44 0600 Size 300 – Jointed arm No. 440610 300 and magnetic base No. 440620 1.

Size 400 – Jointed arm No. 440610 400 and magnetic base No. 440620 1.

Note: Hydraulic stands can withstand large fluctuations in temperature when the clamp is open. However a certain time is required for the temperature of the oil to equalise. When the clamp is closed the maximum fluctuation in temperature without fluctuations in pressure is 15 °C. These can lead to damage to the stand or to the object that is clamped.



44 0600_300

Throat		mm	300	400
41D 44 0600	Hydraulic measuring stand (with magnetic base)		eShop ■	eShop ■
41D 44 0610	Hydraulic jointed measuring stand (without magnetic base)		eShop	eShop
Throat		mm	300	400
Connection thread			M8	
Alignment of connecting thread (44 0600)			side	
Magnetic force		N	1000	
Magnetic base length (44 0600)		mm	75	
Magnetic base width (44 0600)		mm	56	
Magnetic base height (44 0600)		mm	58	

Garant Mechanical magnetic measuring stands

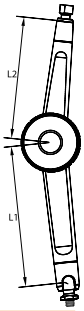
Mechanic measuring stand with central clamping – all joints are rigidly clamped by means of the central boring head. Clamping force can be steplessly adjusted. **Large rubberised handwheel** (∅ approx. 45 mm or approx. 55 mm) for easy tightening and releasing of the clamp. The dial indicator mounting on the jointed arm rotates 360°, can be twisted 180° and is suitable for dial indicators with shank ∅ 6 and 8 mm or vee block. Connection thread for magnetic base M8, connection thread for jointed arm at the top M6.

44 1600 – Stand with magnetic base and **ergonomic rotary switch.** High performance ferrite magnet with ground contact faces on the back and ground Vee underneath for placing on shafts and cylindrical bodies. **Plastic enclosure** of the magnetic base for easy handling, enhanced shock protection and thermal insulation.

Supplied with:

44 1600 – Measuring stand with magnetic base No. 440620 size 1.

Optional extras: Holder for measuring stand No. 442100 and 442104.





44 1600_240

Throat		mm	240	290
41D 44 1600	Mechanical measuring stand (with magnetic base)		eShop	eShop
41D 44 1610	Mechanical jointed measuring stand (without magnetic base)		eShop	eShop
Length of jointed arm L_1		mm	110	130
Length of jointed arm L_2		mm	101	110
Connection thread			M8	
Alignment of connecting thread (44 1600)			side	
Magnetic force (44 1600)		N	1000	

Garant Magnetic base

Magnetic base with Vee sole and rear face. Strong magnet with ergonomic rotary switch. **Plastic enclosure** of the magnetic base for easy handling, enhanced shock protection and thermal insulation.

Type			1
41D 44 0620	Magnetic base		eShop
Version			Switchable magnet
Magnetic force		N	1000
Connection thread			M8
Alignment of connecting thread			side
Length		mm	75
Width		mm	56
Height		mm	58



44 0620

Mechanical magnetic measuring stands

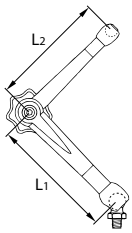
Mechanical magnetic measuring stand with central locking mechanism. All three joints are clamped in a single action. Continuously adjustable clamping force with high stability. Ball joints enable quick and easy positioning. Magnetic base with rotary switch and Vee sole.

44 1150 – Universal indicator holder with fine adjustment, for clamping shank ∅ 8 mm, ∅ 6 mm, ∅ 3/8 inch and indicators with dovetail clamping shanks.

44 1170 – Standard indicator holder for clamping shank ∅ 8 mm and dovetail, magnetic base with fine adjustment.

44 1174 – Universal indicator holder for clamping shank ∅ 8 mm, ∅ 6 mm, ∅ 3/8 inch; and indicators with dovetail clamping shanks. **Very precise adjustment thanks to double fine adjustment** at the indicator holder and the magnetic base.

44 1180 – Standard dial indicator mounting for clamping shank ∅ 6 mm, ∅ 8 mm and dovetail, fine adjustment at the indicator holder.





Type			120SF	240	290	600
46G 44 1150		Magnetic measuring stand with fine adjustment at the column	eShop ■	eShop	eShop	eShop
46G 44 1170	NOGA	Magnetic measuring stand with fine adjustment at the magnetic base	eShop	eShop	eShop	–
46G 44 1174		Magnetic measuring stand double fine adjustment	–	eShop	eShop ■	–
42D 44 1180	HOLEX	Magnetic measuring stand with fine adjustment at the column	eShop ■	eShop	eShop	eShop
Length of jointed arm L_1 (44 1150, 44 1170, 44 1174)		mm	56	110	133	287
Length of jointed arm L_1 (44 1180)		mm	56	110	149	287
Length of jointed arm L_2 (44 1150, 44 1170, 44 1174)		mm	51	101	113	223
Length of jointed arm L_2 (44 1180)		mm	51	101	129	223
Connection thread at bottom			M5	M8	M8	M10×1.25
Magnetic force		N	320	800	800	1300
maximum loading		kg	2.7	4	8	14
Magnetic base length (44 1150, 44 1170, 44 1174)		mm	40	60	60	120
Magnetic base length (44 1180)		mm	36	60	80	117
Magnetic base width		mm	30	50	50	50
Magnetic base height (44 1150, 44 1170, 44 1174)		mm	35	55	55	55
Magnetic base height (44 1180)		mm	36	55	55	55

Mechanical magnetic measuring stands

Mechanical central locking of all joints. Steplessly adjustable clamping force. Switchable magnetic base with Vee sole. Every position within the action radius can be reached. Fine adjustment with high stability. Dial indicator holder for dial and digital indicators with shank ∅ 8 mm or dovetail.

Supplied with:

Size 420 – Magnetic base No. 440868 size 2.

Size 220–350 – Magnetic base No. 440868 size 1.



Throat		mm	220	280	350	420
46Q 44 1100	Mechanical magnetic measuring stand		eShop	eShop	eShop	eShop
Connection thread			M8	M8	M8	M10
Alignment of connecting thread			centre	centre	centre	side
Magnetic force		N	800	800	800	1000
Magnetic base length		mm	64	64	64	81
Magnetic base width		mm	50			
Magnetic base height		mm	55			

Base for measuring stands

Powerful switched magnets with Vee sole. Switching by rotary handle.

44 0865 – With **hydraulic** fine adjustment.

Type		1	2
46Q 44 0868	Stand base	eShop	eShop
46Q 44 0865	Stand base with hydraulic fine adjustment	–	(eShop)
Version		Switchable magnet	
Magnetic force	N	800	1000
Connection thread		M8	M10
Alignment of connecting thread		centred	side
Length	mm	60	81
Width	mm	50	
Height	mm	55	





Modular stand system



44 2100_2SM



44 2104_2SM

Holder for measuring stands

Suitable for: Jointed arms No. 442110, 442114 and 441600.








Type			K1	K2	H	QR	2SM	CA
46G 44 2100	NOGA	Holder for measuring stand	eShop	eShop	eShop	eShop	eShop	eShop
42D 44 2104	HOLEX		–	–	–	–	eShop	–
Version			Clamp, 1 inch	Clamp, 2 inch	Camera adapter, 1/4 inch	Quick-change 1/4 inch	Indicator holder ∅ 6 / ∅ 8	Camera holder
Connection thread			M6					

3-D jointed arms

Mechanical 3-D jointed arm with central locking. All three joints are clamped in a single action. Continuously adjustable clamping force with high stability. Ball joints enable quick and easy positioning.



44 2110_600

44 2110_240

44 2110_120

44 2114_290

44 2114_120

Type			120	240	290	600
46G 44 2110	NOGA	3-D jointed arm	eShop	eShop	eShop	eShop
42D 44 2114	HOLEX		eShop	eShop	eShop	eShop
Length of jointed arm L_1 (44 2110)		mm	56	110	133	287
Length of jointed arm L_1 (44 2114)		mm	56	110	149	287
Length of jointed arm L_2 (44 2110)		mm	51	101	113	223
Length of jointed arm L_2 (44 2114)		mm	51	101	129	223
External thread ∅ bottom			M5	M8	M8	M10×1.25
Internal thread ∅ top			M6			

Base for measuring stands

Size S–F – Powerful attachment magnet with Vee sole. Switching by rotary handle.
Size F – Different internal threads to take different jointed arms.
Size V – Vacuum base for attachment to all flat, non–porous surfaces.
Size K1,7 – Clamp with special softgrip for fixing to flat and round surfaces. Different internal threads to take different jointed arms.
Size K3 – Clamp for fixing to flat and round surfaces.



44 2120_0



44 2125_0










Type			S	0	1	2	F	V	K1,7	K3
46G 44 2120	NOGA	Stand base	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
46G 44 2125		Stand base with fine adjustment	eShop	eShop	–	–	–	–	–	–
Version			Switchable magnet	Switchable magnet	Switchable magnet	Switchable magnet	Flexi magnet	Vacuum base	Clamp, 1.7 inch	Clamp, 3 inch
Connection thread			M5	M8	M8	M10×1.25	M6 / M8 / M10 / M10×1.25 / M12	M8	M6 / M8 / 1/4 inch / 3/8 inch	M8
Alignment of connecting thread			centre	centre	centre	centre	various	side	various	centre
Magnetic force		N	320	800	1000	1300	1000	350	–	–
Opening width		mm	–	–	–	–	–	–	45	75
Length		mm	40	60	75	120	75	100	–	–
Width		mm	30	50	50	50	50	100	–	–
Height		mm	35	55	55	55	55	26	–	–

Powerful attachment magnet with Vee sole. Switching by rotary handle.

Type			S	0	1	2	3
42D 44 2140	HOLEX	Stand base	eShop	eShop	eShop	eShop	eShop
Version			Switchable magnet				
Connection thread			M5	M8	M8	M10×1.25	M10
Alignment of connecting thread			centre	centre	side	side	side
Magnetic force		N	320	800	1000	1300	1300
Length		mm	36	60	80	117	117
Width		mm	30	50	50	50	50
Height		mm	36	55	55	55	55



44 2140_0

Universal measuring stands

3-point clamping of the measuring arm with very short clamping travel for high ease of use. Very low applied force generates sustained stable clamping.
Generously dimensioned frame for very high system stiffness. **Vario** dial indicator holder for shank ∅ 6 mm, 8 mm, 3/8 inch, lever dial indicator with dovetail slide and dial indicators with loop at rear.

44 1190 – **Fine adjustment at the indicator holder.**

44 1195 – **Fine adjustment at the magnetic base.** Advantage when adjusting µm lever dial indicators, as the column is not affected by the force applied.

Optional extras: Measuring microscope No. 440401.



Fine adjustment at the indicator holder

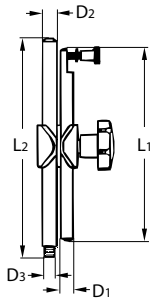


Fine adjustment at the magnetic base





Type		N0	N1	N2	N3
46G 44 1190	Magnetic measuring stand with fine adjustment at the column	–	eShop	eShop	eShop
46G 44 1195	Measuring stand with fine adjustment at the magnetic base	eShop	eShop	eShop	–
Cross arm ∅ D_1	mm	8	12	16	16
Cross arm length L_1	mm	110	185	225	225
Column ∅ D_2	mm	10	14	16	18
Column height L_2	mm	120	203	260	350
Connection thread		M5 external thread	M8 external thread	M8 external thread	M10×1.25 external thread
Magnetic force	N	320	800	1000	1300
Magnetic base length	mm	40	60	75	120
Magnetic base width	mm	30	50	50	50
Magnetic base height	mm	35	55	55	55



Magnetic measuring stand

Magnetic measuring stand with fine adjustment. Stable column with longitudinally adjustable cross arm. Magnetic base with Vee sole and rotary switch. Dial indicator holder for clamping shanks ∅ 6 mm and ∅ 8 mm.



Type		0	1	2
42D 44 1210	Magnetic stand **with fine adjustment**	eShop	eShop	eShop
Cross arm ∅ D_1	mm	10	14	14
Cross arm length L_1	mm	150	160	200
Column ∅ D_2	mm	12	16	20
Column height L_2	mm	175	220	350
Connection thread		M8 external thread	M8 external thread	M10×1.25 external thread
Magnetic force	N	800	1000	1300
Magnetic base length	mm	60	80	117
Magnetic base width	mm		50	
Magnetic base height	mm		55	

Universal stands with T-slot base

All-round machined base with ground contact faces. Vee underside for placing on shafts and cylindrical bodies. Top side with a T-slot for moving the measuring column. Sturdy column. Cross arm with fine adjustment on indicator arm.

44 1950 – **With hydraulic clamping of the knuckle joints. One hand remains free for configuring the dial indicator. All joints are rigidly clamped by the central head.**

Application: For concentricity checks on machine tools and appliances or for parallel measurements on guide slides.

46Q 44 1950	Universal measuring stand **with hydraulic clamping mechanism**	eShop
46Q 44 2000	Universal measuring stand	eShop
Throat (44 1950)	mm	260
Cross arm ∅ D_1 (44 2000)	mm	16
Cross arm length L_1 (44 2000)	mm	180
Column ∅ D_2 (44 2000)	mm	16
Column height L_2 (44 2000)	mm	300
Stand base length	mm	250
Stand base width	mm	60


44 1950


44 2000

Mini measuring stands

Compact measuring stand with **strong permanent magnet** for simple positioning in restricted working areas. Vario dial indicator holder for shank ∅ 8 mm and lever dial indicators wih dovetail guide.

44 1185 – Three **ball joints** with central clamping for quick and easy positioning.

44 1187 – **Measuring arm** with central clamping for rigid and sustained positioning. Vario dial indicator holder additionally for shank∅ 6 mm and 3/8 inch.



Type		LC6200	PH5000
46G 44 1185	Mini measuring stand with permanent magnet and ball joint	eShop	–
46G 44 1187	Mini measuring stand with permanent magnet and measuring arm	–	eShop
Length of jointed arm L_1 mm		38	110
Length of jointed arm L_2 mm		38	110
Connection thread		M5	
Magnetic force N		300	
Magnetic base ∅ mm		30	

Magnetic holder for dial indicators

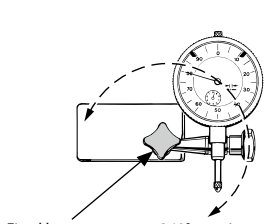
Light metal with inserted laminated permanent magnets. With bore to accept dial indicator shanks ∅ 8 mm.

44 2016 – Magnetic base ∅ 30 mm, height 25 mm.
Additional dial indicator holders ∅ 6 mm.

44 2020 – Flat face, grips well.
With 2 reinforced sintered permanent magnets with a high holding force.

44 2026 – Permanent laminated magnet with prismatic sole and flat long sides with particularly high holding force.

Advantage: Low height enables fast, safe, and easy mounting on machines and jigs.









42D 44 2016	Magnetic holder without dial indicator	eShop
42D 44 2020		eShop
42D 44 2026	Universal magnetic holder without dial indicator	eShop

DIN 876/1 ▸ D1 ◂ Cal

Universal precision comparator stands with jointed arm

Precision diamond lapped table, with test certificate. Solid 3D jointed arm with mechanical central clamping. Continuously adjustable clamping force with high stability. Quick and easy positioning. Universal indicator holder.
With fine adjustment, for clamping shank ∅ 8 mm, ∅ 6 mm, ∅ 3/8 inch and indicators with dovetail clamping shanks.

44 2500 – Large rubberised hand wheel (approx. 55 mm) on the jointed arm for easy tightening and releasing the central lock.



44 2500


44 2525

Table length×Width mm			400×250	400×400
41C 44 2500	Garant	Universal precision comparator stand **with 3-D GARANT jointed arm**	eShop	–
46H 44 2525	PLANOLITH	Universal precision comparator stand **with 3-D NOGA jointed arm**	eShop	eShop
Action radius of 3-D jointed arm mm			290	600
Length of jointed arm L_1 mm			133	287
Length of jointed arm L_2 mm			113	223
Connection thread			M8	M10×1.25
Weight kg			17.5	28

DIN 876 | D1 Cal

PLANOLITH Universal precision comparator stands

Stand table precision diamond lapped. Extremely rigid and solid structure. Natural granite table of finest quality and hardness.

Universal measuring stand

Precision comparator stand with universal measuring arm. 3-point clamping for high stiffness. **Dial indicator holder with fine adjustment,** for shank ∅ 6 mm, 8 mm, 3/8 inch and lever dial indicators with dovetailed clamping slides.
Flatness ≤ 2 µm.

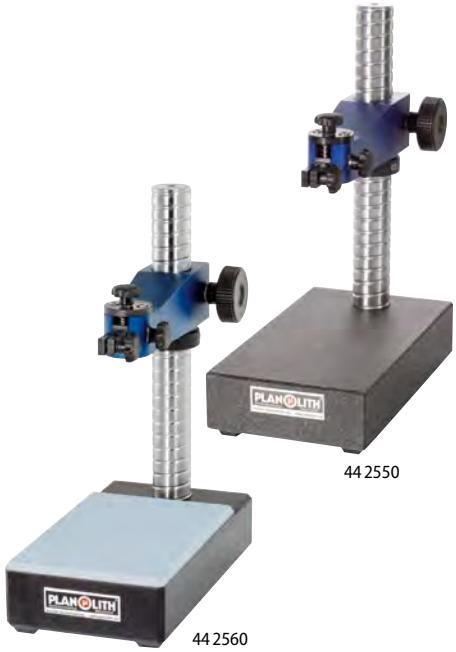

44 2534

Table length		mm	150	260
46H 44 2534	Universal precision comparator stand **Granite**		eShop	eShop
Throat		mm	120	210
Maximum measuring height		mm	210	260
Column ∅		mm	16	18
Cross arm ∅		mm	14	16
Measuring face length		mm	100	200
Measuring face width		mm	100	140
Connection thread			M10	
Table length		mm	150	260
Table width		mm	100	140
Weight		kg	2.8	7

With column

Column chrome-plated with thread for coarse setting of the cross arm. The rigid measuring arm is equipped with a **parallel fine adjustment**. Holder bore for dial indicators and precision dial indicators ∅ 8mm.
Flatness ≤ 2 µm.

44 2560 – With extremely wear-resistant ceramic coating (10 times harder than granite).


44 2550

44 2560

Table length		mm	260	300
46H 44 2550	Universal precision comparator stand **Granite**		eShop	eShop
46H 44 2560	Universal precision comparator stand **Granite with ceramic coating**		(eShop)	–
Throat		mm	120	
Maximum measuring height		mm	200	
Column ∅		mm	35	
Measuring face length		mm	200	240
Measuring face width		mm	140	200
Table length		mm	260	300
Table width		mm	140	200
Weight		kg	9.5	13

Large version with column

With a **clamping T-slot in the rear longitudinal outer edge, for moving and clamping the column**, with precision height adjustment and precision adjustment on the cross arm, chromium plated measuring rod. Dial indicator mounting bore ∅ 8 mm.
Flatness ≤ 3 µm.

Note:	Please note **additional carriage charge**.

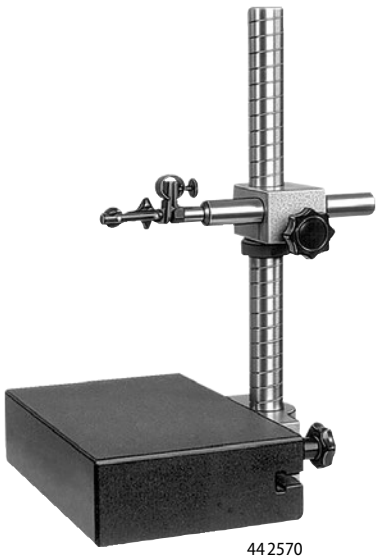

44 2570

Table length		mm	400
46H 44 2570	Universal precision comparator stand, large version **Granite**		(eShop)
Throat		mm	300
Maximum measuring height		mm	400
Column ∅		mm	35
Table length		mm	400
Table width		mm	300
Weight		kg	44

Garant Small comparator stand

Strong cast iron base with rigid column, comparator table with 2 dust grooves. The table is hardened, ground, and lapped. Very large measuring range, rigid one-piece indicator holder ∅ 8 mm with **parallel fine adjustment (4 mm range).**
Flatness ≤ 2 µm.

DIN 876/00 | D1 Cal



Indicator holder with parallel fine adjustment



Table length	mm	78
41D 44 2900	Small comparator stand	eShop
Throat	mm	62
Maximum measuring height	mm	150
Column ∅	mm	22
Table length	mm	78
Table width	mm	78
Overall height	mm	265
Weight	kg	4

44

Small comparator stands

Strong cast iron base with rigid column and sturdy indicator holder. Indicator holder ∅ 8 mm.
44 2917 – The table is of high-quality ceramic. Al_2O_3 99.7 %, lapped. Ra≤0.1µm.
Size 50 – **Flatness ≤ 1 µm** with round table.
Size 65×75 – **Flatness ≤ 2 µm.** Sturdy version.
44 2918 – Table top of sturdy granite.
Flatness ≤ 5 µm

D1 Cal

DIN 876/00 | DIN 876/0



_50



_65×75

Type		50	65×75
46K 44 2917	Small comparator stand **Ceramic**	(eShop)	(eShop)
46K 44 2918	Small comparator stand **Granite**	(eShop)	(eShop)
Throat	mm	49	90
Maximum measuring height (44 2917)	mm	100	
Maximum measuring height (44 2918)	mm	105	
Column ∅	mm	22	
Table length	mm	–	75
Table width	mm	–	65
Table ∅	mm	50	–
Overall height	mm	200	
Weight	kg	2.3	3.2

Small comparator stands

Strong cast iron base with rigid column and sturdy indicator holder. The table is hardened, ground, and lapped. Indicator holder ∅ 8 mm.
Table face with dust grooves. Sturdy version without fine adjustment.
Flatness ≤ 5 µm.

DIN 876/0 | D1 Cal



44 2930_50



44 2930_68



44 2934

Type		50	68	80	115
46K 44 2930	Small comparator stand	eShop	eShop	–	eShop
42D 44 2934	Small comparator stand	–	–	eShop	–
Throat	mm	49	90	60	135
Maximum measuring height	mm	100	100	110	150
Column ∅	mm	22	22	24.4	28
Cross arm ∅	mm	–	18	–	20
Table length	mm	–	68	80	115
Table width	mm	–	60	80	98
Table ∅	mm	50	–	–	–
Overall height	mm	200	200	210	284
Weight	kg	2.3	3.5	2.5	7.1

Universal comparator stands

Solid cast iron base; rectangular comparator stand. Comparator stand surface hardened and precision ground with machined dust grooves. Rigid, hardened, and hard chrome-plated centre column with thread and lock nut. Hardened and hard chrome-plated, horizontally adjustable cross arm for dial indicators or precision indicators. Interchangeable dial /digital indicator holder ∅ 8 mm (10 h7 on request).
Flatness ≤ 16 µm.

Standard | D1 Cal



_200

Table length	mm	180	200
46K 44 2940	Universal comparator stand	eShop	eShop
Throat	mm	180	
Maximum measuring height	mm	180	175
Column ∅	mm	35	
Cross arm ∅	mm	22	
Table length	mm	180	215
Table width	mm	98	170
Weight	kg	13	23

Concentricity test benches

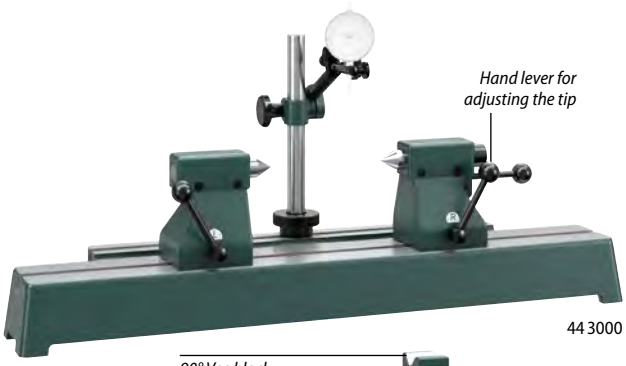
Measuring stand:
With fine setting adjustment and holder bore 8 H7. The cross arm is full adjustable for height and in all lateral directions.
Tailstocks:
adjustable. Left tailstock with fixed centre, right tailstock with axially movable quill.
Measuring bench:
Precision ground, with 2 T-slots. To take the tailstocks (tolerance H7) or the stand.
Flatness to DIN 876/1.

Application: For measuring round and plane accuracy as well as for comparative tests of parallelism and diameter.

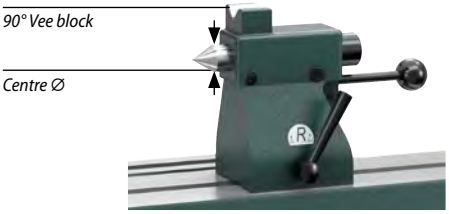
Supplied with: Bench, measuring stand.

Size 50; 100; 150 – Tailstocks without Vee blocks.

Size 75 – Tailstocks with 90° Vee blocks at the top for holding off-centred or overhanging parts (max. workpiece ∅ 20 mm).



44 3000



Tip height	mm	50	75	100	150
46K 44 3000	Bench centre with ground measuring faces, without dial indicator	eShop	eShop	eShop	(eShop)
Lateral and vertical alignment of tailstocks	mm	±0.01			
Maximum clear span between centres	mm	200	350	450	450
Centre ∅	mm	16	16	22	22
Column ∅	mm	16	16	22	22
Pillar height	mm	150	150	200	250
Cross arm ∅	mm	16			
Cross arm length	mm	60	60	125	125
overall height without stand	mm	110	150	200	250
T-slot width H7	mm	10	10	12	12
Footprint length	mm	350	500	700	700
Baseplate width	mm	100	110	180	180
maximum load capacity per pair	kg	10	10	20	20
Weight	kg	8	12	35	38

Bench inspection rollers for bench centres No. 443000 and 443210

Suitable for:

Size 50/75; 32 – Bench centre No. 443000 size 50 and 75 / 443210.

Size 65; 100 – Bench centre No. 443000 size 100 and 150.

Application: To hold off-centred or over-length parts.

44 3050 – Even for parts with different diameters.


44 3050


44 3160

for maximum workpiece ∅	mm	32	65
46K 44 3050	Pair of bench inspection rollers height adjustable	(eShop)	(eShop)
∅ range	mm	2 – 32	2 – 65
Tip height	mm	66 (at d = 10)	99 (at d=10)
Width of T-nut h6	mm	10	12
maximum load capacity per pair	kg	20	30

for tip height	mm	50/75	100
46K 44 3160	Pair of bench inspection rollers	eShop	eShop
∅ range	mm	2 – 40	2 – 60
Width of T-nut h6	mm	10	12
maximum load capacity per pair	kg	20	30

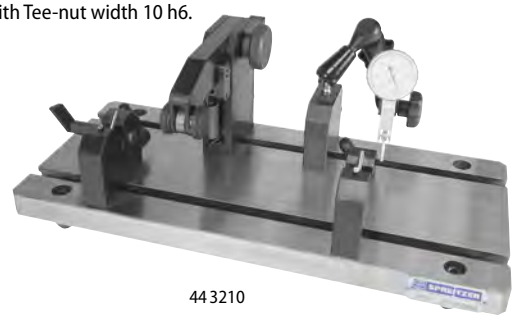
SPRETZER Bench centre RPGP with Vee blocks

Hardened and ground base plate with 2 clamping slots. Stepless movement of the Vee blocks (with carbide coating), the scrolling device, and the jointed stand. Universal stop, which is ground flat and can be mounted perpendicularly in relation to the Vee blocks. The **Vee angle of 108°** allows even polygonal parts to be inspected. Pivoting jointed stand for dial indicator or lever indicator.

Application: Inspection of axial and radial run-out of rotation parts.

Supplied with: Base plate with 2 Vee blocks and a stop, scrolling device, and jointed stand (without dial indicator)

Optional extras: Jointed stand with T-nut No. 443295. Scrolling and Vee blocks No. 443050 – 443160 with Tee-nut width 10 h6. Height-adjustable Vee blocks on request.

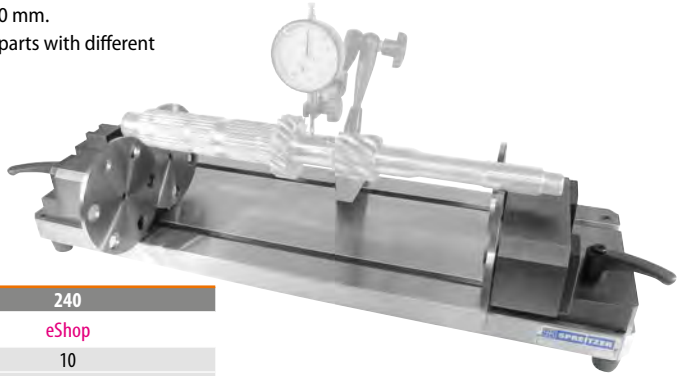

44 3210

for workpiece ∅	mm	1-25
46L 44 3210	Bench centre RPGP	eShop
T-slot width H7	mm	10
Footprint length	mm	350
Baseplate width	mm	160
Weight	kg	12

SPREITZER Bench centre RPGR with scroll plates

Hardened and ground base plate, bearing body of high-tensile aluminium. Movable scroll plates for high loadings; one of the scroll plates is adjustable for parts with different diameters (up to 60 mm). For correct use an **additional** jointed stand for mounting the dial indicator or lever dial indicator is **required**.

Accuracy: Concentricity **0.002 mm.**
Application: Inspection of axial and radial run-out of rotation parts up to ∅ 240 mm.
Supplied with: Base plate with 2 scroll plates; 1 of the scroll plates adjustable for parts with different diameters (without jointed stand and dial indicator).
Optional extras: Jointed stand with T-nut No. 443295.



44 3230

for maximum workpiece ∅	mm	240
46L 44 3230	Bench centre RPGR	eShop
T-slot width H7	mm	10
Footprint length	mm	600
Baseplate width	mm	200
Weight	kg	30

Jointed stands for bench centres No. 443000 / 3210 / 3230

Jointed stand with mechanical central clamping and fine adjustment. Attachment via T-nut in T-slots (10 H7). Dial / digital indicator holder (∅ 8 mm or Vee block).

Suitable for: Bench centre No. 443210.
Bench centre No. 443230, Bench centre No. 443000 size 50 and 75.



44 3295

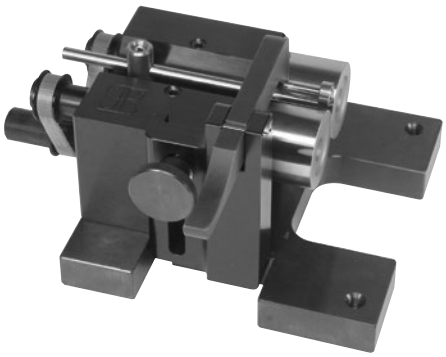
Throat	mm	130	200
46L 44 3295	Jointed stand with T-nut	(eShop)	(eShop)
Width of T-nut h6	mm	10	

SPREITZER Bench centres RPG Centreless

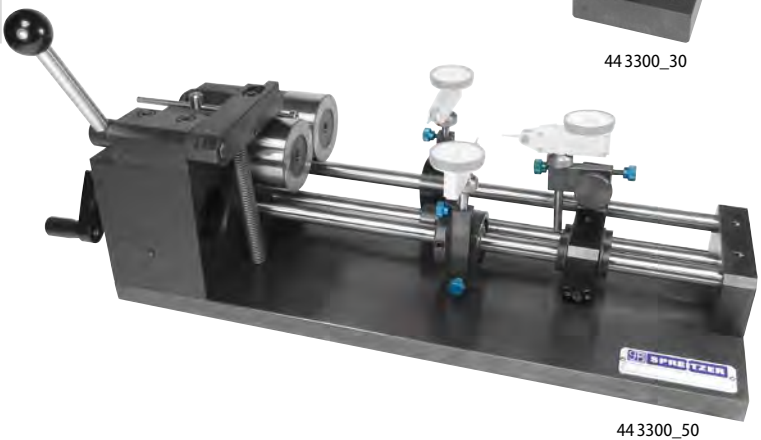
Robust design with pre-loaded roller bearings.
Type RPG for inspections in series production with 2 pivoting holders and 1 measuring slide (apart from size 30).

Accuracy: Concentricity **0.002 mm.**
Application: For inspection tasks on external, internal, and flat faces of rotating parts.
Size 30 – Due to the compact design particularly suitable for use on shadowgraphs, optical coordinate measuring machines and contour measurement gauges.
Supplied with: Key and oilstone (without dial indicator).
Optional extras: Cross slide for measurement of flat surfaces.
Measurement slide with centres or coated rollers.
Jointed arm with measuring tool mount.
Carbide-coated rollers.
Electrical drive with variable transformer.
Pneumatic pivoting arm with tensioning roller.

Note: All types are available on request with a different type of roller (grooved rollers or cylindrical rollers).



44 3300_30



44 3300_50

for maximum workpiece ∅	mm	30	40	50
46L 44 3300	Bench centre RPG	(eShop)	(eShop)	(eShop)
Roller type		cylindrical rollers	grooved rollers	cylindrical rollers
for workpiece ∅	mm	3 – 30	2 – 40	4 – 50
Footprint length	mm	120	400	400
Baseplate width	mm	120	160	160
Roll ∅	mm	30	55	50
Weight	kg	10.5	11	11

Standard | E1 Cal

Garant Precision vernier height gauges with magnifying glass

Strong base with ground standing surface and dirt trap grooves. Ergonomic and comfortable plastic cap with Haptoprene surface. Parallax-free reading with fine, high-contrast scale. **Additional magnifying glass for optimum legibility.** All reading parts are non-glare satin chrome-plated. With fine setting adjustment and high-speed screw. Flat carbide-tipped scriber for easy marking out even in narrow grooves, exchangeable, marking out from 0. Drawing dimensions can therefore be transferred directly without the risk of calculation errors. Fold-away or removable protection cap for injury-free working.

Supplied with: Scriber No. 444010 size 75.

Marking height		mm	300	600
41F 44 3450	Precision vernier height gauge **with magnifying glass**		eShop	eShop
Vernier		mm	1/50	
Error limit		mm	0.05	0.08
Column cross section		mm	30×12	
Base length		mm	165	
Base width		mm	110	



44 3450 _300

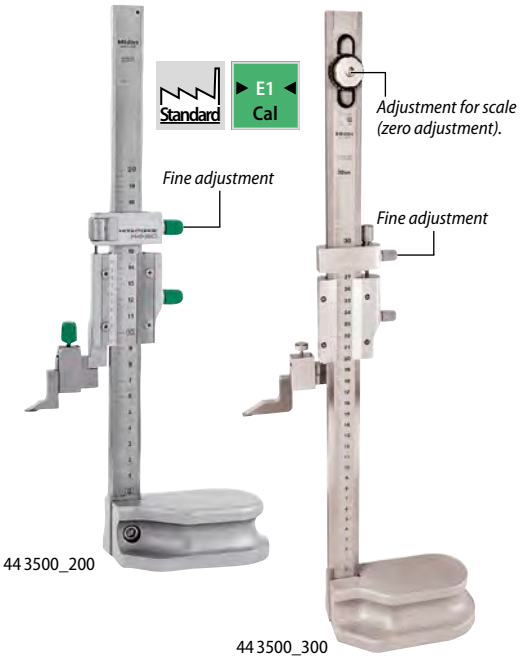
Mitutoyo Precision vernier height gauges

44 3500 – Sturdy base with ground base, **scale hardened and ground.** All reading parts are anti-glare satin chrome-plated. Sharp jet black scales. With fine adjustment. Slightly raised edges to the scale prevent the slide from damaging it. Reading zero and marking scriber are adjusted with reference to the bottom of the base (marking out from "0"). Drawing dimensions can therefore be transferred directly without the risk of calculation errors. The scriber is **carbide tipped.**

Size 300 – With adjustable measuring beam.

Marking height		mm	200	300
44A 44 3500	Precision vernier height gauge		eShop	eShop
Vernier		mm	1/50	
Error limit		mm	0.03	0.04
Column cross section		mm	20×6	28×9
Base length		mm	100	135
Base width		mm	65	91

for marking heights		mm	200	300
44A 44 3510	Spare scriber, carbide tipped		eShop	eShop
Cross-section of arbor		mm	12.7×6.35	9×9



44 3500_200
44 3500_300

HOLEX Vernier height gauges with magnifying glass

Standard | S/STL | E1 Cal

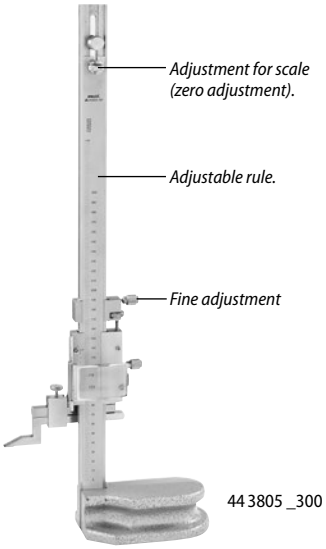
Strong base with lapped standing surface. Reading 0.02 mm with fine adjustment. The scriber is **carbide tipped.** With adjustable measuring beam, magnifying glass and locking screw.

Marking height		mm	300	600
42D 44 3805	Vernier height gauge **with magnifying glass**		eShop	eShop
Vernier		mm	1/50	
Error limit		mm	0.06	
Column cross section		mm	28×9	35×12
Base length		mm	135	175
Base width		mm	90	120

Size E – With rectangular-scriber for free-cutting scribing.

Size R – With rounded scriber for significantly longer working life.

Type			E	R
42D 44 3816	Spare scriber, carbide tipped		eShop	eShop
Cross-section of arbor		mm	9×8.9	



44 3805 _300

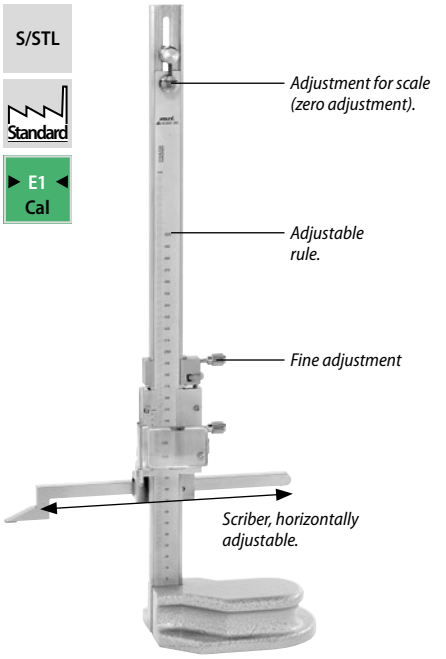

44 3816_E
With square section scriber.


44 3816_R
With round section scriber.

HOLEX Vernier height gauges

44 3720 – **Strong and sturdy base with a lapped standing surface.** With measuring beam for fine adjustment, magnifying glass and locking screw. Reading 0.02 mm. Reading zero and marking scriber are adjusted with reference to the bottom of the base (marking out from "0"). Drawing dimensions can therefore be transferred directly without the risk of calculation errors. The scriber is **carbide tipped and is longitudinally adjustable by 140 mm** (e.g. where access is difficult). Slim design of the scriber for scribing in narrow slots. Ergonomic shape of the foot prevents collisions between the scriber and the hand.

S/STL · Standard · ▸ E1 ◂ Cal



44 3720

Marking height	mm	300	600
42D 44 3720	Vernier height gauge with horizontally adjustable scriber	eShop	eShop
Vernier	mm	1/50	
Error limit	mm	0.06	
Column cross section	mm	28×9	35×12
Base length	mm	145	190
Base width	mm	105	120

Adjustment range	mm	140
42D 44 3730	Spare scriber, carbide tipped	eShop
Cross-section of arbor	mm	12×9

Garant Digital height gauges and marking-out systems

Standard · mm / Inch · RS232C · ▸ E1 ◂ Cal

Strong base with ground standing surface and dirt trap grooves. Ergonomic and comfortable plastic cap with Haptoprene surface. Flat carbide-tipped scriber for easy marking out even in narrow grooves, exchangeable. Fold-away or removable protection cap for injury-free working. Marking out from 0, drawing dimensions can therefore be transferred directly without the risk of calculation errors. Very easy to read, high-contrast 11 mm-high LCD display. Incl. data output. With fine adjustment and locking screw.

Function:
- Zeroing in any position
- Preset
- Selectable mm / inches
- Data output RS232 Proximity
- Hold function

Supplied with: Scriber No. 444010 size 75.
Battery No. 081560 size CR2032.

Optional extras: Data cable No. 498948.



44 4000

Marking height	mm	300	600
41F 44 4000	Digital height gauge and marking-out system with data output	eShop	eShop
Scale divisions	mm	0.01	
Scale divisions	in	0.0005	
Error limit	mm	0.04	0.05
Column cross section	mm	30×12	
Base width	mm	110	
Base length	mm	165	

Spare scriber

Spare scriber, carbide tipped.

Suitable for: Height gauges No. 443450 and 444000.



44 4010

Length	mm	75	150
41F 44 4010	Spare scriber, carbide tipped	eShop	eShop

Mahr Digital height gauges and marking-out systems Digimar

Standard | mm / Inch | RS232C | Digimatic | Reference Lock | E1 Cal

High contrast, 12 mm high LCD display. Stable ergonomic base with hardened and lapped surface for smooth movement without jolts. Beam and slide of hardened stainless steel. Large handwheel for positioning and measuring. Additional **fine adjustment and locking screw.**

Supplied with: 1 battery No. 081560 size CR2032,
1 carbide tipped scriber No. 445002.

Optional extras: Holder for lever indicators No. 445004. Data cable No. 498940.

Marking height	mm	350	600	980
43B 44 5000	Digital height gauge and marking-out system with data output	eShop	eShop	(eShop)
Scale divisions	mm	0.01		
Scale divisions	in	0.0005		
Error limit	mm	0.04	0.05	0.06
Column cross section	mm	35×15		
Base length	mm	180	180	220
Base width	mm	98	98	120

43B 44 5002	Spare scriber, carbide tipped	eShop
Cross-section of arbor	mm	11.5×7



44 5002 44 5000

Standard | Digimatic | Absolute System | E1 Cal

Mitutoyo ABSOLUTE Digimatic HDS height gauge and marking-out system

ABSOLUTE scale, no new reference point setting after switching on again and unlimited travel speed.
Large and smooth-running handwheel. Carbide-tipped scriber and Digimatic data output.
Large LCD display (digit height 12 mm) for easy, error-free reading.

Supplied with: Including battery No. 081560 size 357,
1 carbide-tipped scriber No. 443510 size 300.

Optional extras: Holder No. 445180, data cable No. 497080.

Marking height	mm	300	600
44A 44 5136	Digital height gauge and marking-out system with data output	eShop	eShop
Scale divisions	mm	0.01	
Error limit	mm	0.03	0.05
Column cross section	mm	35×12	
Battery life approx.	h	20000	
Base length	mm	149	180
Base width	mm	100	120



44 5136

HOLEX Digital height gauges and marking-out systems

Standard | mm / Inch | E1 Cal

Digital height gauge and marking out system with fine adjustment. Sturdy stand with ground base.
Easily legible LCD display. Scriber carbide tipped.

Function: Zeroing possible in any position.
Hold function (HOLD).
ABS / INC / TOL and SET.

Supplied with: 1 battery No. 081560 size 357, 1 carbide tipped scriber No. 443851.

Marking height	mm	300	600
42D 44 3850	Digital height gauge and marking-out system	eShop	eShop
Scale divisions	mm	0.01	
Scale divisions	in	0.0005	
Error limit	mm	0.05	0.07
Column cross section	mm	23×6.1	30.9×10.7
Base length	mm	135	180
Base width	mm	90	120

for marking heights	mm	300	600
42D 44 3851	Spare scriber, carbide tipped	eShop	eShop
Cross-section of arbor	mm	8×6	12×10



44 3851 44 3850

Mitutoyo Digital height gauges and marking-out systems

Height gauges and marking-out systems

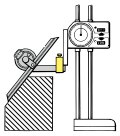
Standard | Digimatic | ▶ E1 ◀ Cal

Direct reading from clear digital display. Battery operation with very low current consumption.
Data storage key – The measured result can be stored by pressing a key. All critical parts are hardened. Great stability by two parallel hardened columns with rack teeth on the inner faces (size. 1000 has 3 columns).
2 preset values permit reference values to be saved (e. g. granite table and workpiece).
Carbide tipped scriber. Sturdy base with hardened and lapped surface. Crank on the back of the display housing for quick adjustment and a hand wheel for fine adjustment.

Supplied with: 1 battery No. 081560 size 357, 1 cover, 1 carbide tipped scriber No. 443510.

Optional extras: Square holder No. 445180 for holding dial indicators and lever indicators, centring gauge No. 445250, protractor No. 453500, holder No. 453520, and data cable No. 497080.





With protractor No. 45 3500 and holder No. 45 3520 (not included).



44 5152

Marking height	mm	300	600	1000
44A **44 5152**	Digital height gauge and marking-out system	eShop	eShop	(eShop)
Scale divisions	mm		0.005	
Error limit	mm	0.02	0.05	0.07
Battery life approx.	h		3500	
Base width	mm	91	120	150
Base length	mm	135	180	250

Height gauges and marking-out systems with signal probe

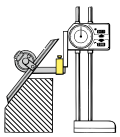
Standard | Digimatic | ▶ E1 ◀ Cal

Additionally **with signal contact point.** Particularly suitable for absolute measurements, comparison measurements and measurement of chained dimensions.

Application: The probe emits an acoustic signal when it touches the measured face. The measured value is also maintained when moving on (2 mm over-run), easy to use. **The probe tip Ø is automatically compensated.**

Supplied with: 1 battery No. 081560 size 357, 1 cover, 1 carbide scriber No. 445230, 1 signal contact point.





With protractor No. 45 3500 and holder No. 45 3520 (not included).



44 5222

Marking height	mm	300	600
44A **44 5222**	Digital height gauge and marking-out system with signal probe	eShop	eShop
Scale divisions	mm	0.005	
Error limit	mm	0.02	0.04
Battery life approx.	h	3500	
Base width	mm	91	120
Base length	mm	135	180

44A **44 5230**	Spare scriber, carbide tipped	eShop
Cross-section of arbor	mm	9×9



44 5230

Special accessories for height gauges and marking-out systems

Suitable for: No. 445136, 445152 and 445222.

Universal square holding arm

Application: For holding dial indicators and lever indicators.

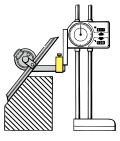
				Bore Ø mm	Shank length mm	Shank width mm	Shank height mm
40W **44 5180**	Mitutoyo	Universal square holding arm	eShop	8; 4	9	9	100



44 5180

Holder for "MARUI KEIK" protractor No. 453500, 453800 and 454000

Application: For clamping the protractor to height gauges and marking-out systems.





45 3520

46R **45 3520**	Holder for clamping the protractor	eShop

Standard | mm / Inch | TLC | IP 55 | E2 Cal

TESA TESA-HITE MAGNA digital height gauges

High accuracy, **very robust,** manually adjustable height gauges. Dynamic component contact with consistent measuring force. Easy to use, due to large numeric display and symbols for measurement functions.

- **TESA Magna µ magnetic measuring system for use in particularly rough environmental conditions.**
- Large clear display screen with 21 mm character height and intuitive symbols. Colour display and backlighting for better legibility.
- Very long battery life for cordless measurements.
- User-friendly with **multi-lingual context help** in the active functions.
- Significantly faster measurement of the return points (min, max, ∅) by use of **patented Quickcenter Dynamic technology.**

Advantage: Particularly suitable for **use in production areas. Highly immune to the effects of contamination by both solids and liquids.** Front face of the panel protected to IP65, measurement system protected to IP55.

Application: For measuring heights and steps, diameters, hole spacings, slot widths and deviations from parallelism etc.

Supplied with: Base unit with control panel, standard contact point carrier, mains cable, standard contact point with carbide ball ∅ 5 mm, 110 – 240 V power supply unit, rechargeable LI-ion battery. **SCS calibration certificate.**

Optional extras: Various accessories available on request. Contact point set No. 445266 and No. 445267, TLC-BLE radio remote control No. 498921, data cable No. 498918.



44 5240_400

Type		400	700
45B 44 5240	TESA HITE MAGNA digital height gauge	eShop	eShop
Measuring range	mm	0 – 415	0 – 715
maximum application range	mm	0 – 570	0 – 870
Graduations can be switched over	mm	0.001 / 0.005 / 0.01	
Error limit (L = meas. length in mm)	µm	8	
Repetition accuracy (2 σ)	µm	<3	
Measurement slide movement		manual	
Gauging force	N	1.5 ± 0.5	

Standard | mm / Inch | TLC | E2 Cal

TESA TESA HITE digital height gauge

High accuracy, **very robust,** manually adjustable height gauges. Dynamic component contact with consistent measuring force. Easy to use, due to large numeric display and symbols for measurement functions.

- **TESA Opto-µ opto-electronic measuring system.** Incrementally graduated glass scale with reference point for high accuracy.
- Large clear display screen with 21 mm character height and intuitive symbols. Colour display and backlighting for better legibility.
- Very long battery life for cordless measurements.
- User-friendly with **multi-lingual context help** in the active functions.
- Significantly faster measurement of the return points (min, max, ∅) by use of **patented Quickcenter Dynamic technology.**
- **Air pad for easy, jerk-free working.**

Advantage: Particularly suitable for **use in production areas.** Front face of the panel protected to IP65.

Application: For measuring heights and steps, diameters, hole spacings, slot widths and deviations from parallelism etc.

Supplied with: Base unit with control panel, standard contact point carrier, mains cable, standard contact point with carbide ball ∅ 5 mm, 110 – 240 V power supply unit, rechargeable LI-ion battery. **SCS calibration certificate.**

Optional extras: Various accessories available on request. Contact point set No. 445266 and No. 445267, TLC-BLE radio remote control No. 498921, data cable No. 498918.



44 5245_400

Type		400	700
45B 44 5245	TESA HITE digital height gauge	eShop	eShop
Measuring range	mm	0 – 415	0 – 715
maximum application range	mm	0 – 570	0 – 870
Graduations can be switched over	mm	0.0001 / 0.001 / 0.01	
Error limit (L = meas. length in mm)	µm	2.5 + 4L / 1000	
Repetition accuracy (2 σ)	µm	2	
Rectangularity error (frontal)	µm	9	13
Measurement slide movement		manual	
Gauging force	N	1.5 ± 0.5	

Standard | mm / Inch | Digimatic | Absolute System | E2 Cal

Mitutoyo Digital height gauge QM-Height

High-accuracy compact height gauge with manual adjustment and easy-to-read monochrome LCD display. Many measurement and analysis functions for data processing. Quick and easy selection of functions and all leading calculations of internal and external diameters, as well as distances. Unlimited speed of positioning. Improved battery life.

44 5234 – **Air pad for easy, jerk-free movement.**

Application: Ideal for the workshop and inspection room.

Supplied with: Supplied with ball contact point 5 mm ∅, calibration block, 4 batteries No. 081561 size LR6.

Optional extras: Contact point, marking out scriber, data cable and mains adaptor.



44 5233_600

Type			350	600
44B 44 5233	Digital height gauge QM-Height		(eShop)	(eShop)
44B 44 5234	Digital height gauge QM-Height with air pad		(eShop)	(eShop)
Measuring range		mm	0 – 350	0 – 600
maximum application range		mm	0 – 465	0 – 715
Graduations can be switched over		mm	0.001 / 0.0005	
Error limit (L = meas. length in mm)		µm	2.4 + 3.5 L / 1000	
Repeatability plane		µm	1.8	
Rectangularity error (frontal)		µm	7	12
Measurement slide movement			manual	
Gauging force		N	1.5 ±0.5	

Standard | mm / Inch | TLC | E2 Cal

TESA Digital height gauge TESA MICRO-HITE

TESA MICRO-HITE manually adjustable digital height gauge for comprehensive measurements in 1D or 2D coordinate measuring systems.

- Incrementally graduated glass scale with reference point.
- Automatic correction of systematic measurement variations ensures very high accuracy. Coefficient of linear expansion equals that of steel.
- Switchable air support cushion
- User-friendly with **multi-lingual context help** in the active functions.

Hybrid control panel

- Backlit keyboard with clear simplified presentation and clear information.
- Convenient and flexible operation with parallel use of the keyboard and touch display.
- Ergonomic posture due to flexible adjustment of the control panel.

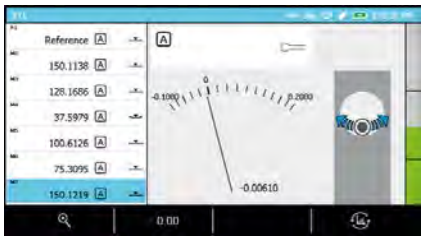
Software / measuring functions

- Comprehensive measurement facilities such as parallelism, angular measurements, simple 2D measurements, etc.
- Integral computer.
- Automatic calculation of measurement results by repeated use of programs stored as functions.
- Input facility for customer-specific tolerances. ISO tolerances are automatically incorporated in the software. **Direct and clear information to the user regarding OK/reject**.
- Easy generation of test reports.

Advantage: Significantly faster measurement of the return points (min, max, ∅) by use of the patented Quick-Center technology. All measurements shown visually for information in noisy environments.

Supplied with: TESA MICRO-HITE base unit incl. control panel, standard contact point carrier, standard contact point with contact rod and 5 mm ∅ measurement ball, reference piece, electric pump (fitted) for air pad for the gauge base, battery cartridge (rechargeable Lithium-ion battery), mains adaptor (charger), mains cable. **SCS calibration certificate.**

Optional extras: USB printer No. 445293; printer paper No. 445294; data cable No. 498918 size USB; Data-Direct software No. 498925; Stat-Express software No. 498926; radio transmitter TESA BLE No. 498921 size BT; spare battery No. 445443 size AKKU; dust cover; comprehensive range of accessories (such as for measuring squareness) available on request.



Simple measurement of the return points by Quick-Centre technology.



Quick and easy measurement of series production.



44 5285_600

Visual information for measurement in noisy environments.

Type			350	600	900
45B 44 5285	TESA MICRO-HITE digital height gauge including control panel		eShop	eShop	(eShop)
45B 44 5287	TESA MICRO-HITE digital height gauge including control panel and fine adjustment		(eShop)	(eShop)	(eShop)
Measuring range		mm	350	600	900
maximum application range		mm	0 – 520	0 – 770	0 – 1075
Graduations can be switched over		mm	0.01 / 0.001 / 0.0001		
Error limit (L = meas. length in mm)		µm	2 + 2L / 1000		
Repetition accuracy (2 σ)		µm	≤ 1		
Rectangularity error (frontal)		µm	7	9	11
Measurement slide movement			manual		
Gauging force		N	1.6 ±0.25		
Weight		kg	33	37	45

Standard | mm / Inch | RS232C | Digimatic

Mitutoyo Digital 2D height gauge LH-600F

- Perfect combination of multi-functionality and the **highest accuracy** in this device class.
- Intuitive operation thanks to self-explanatory menu system, including 21 languages.
- 8.4 inch touch screen with colour display and backlight.
- Pneumatic drive mechanism.
- Automatic execution of taught-in part programs.
- Outstanding visualisation of GO/±NG tolerance comparisons.
- Autonomous operation using rechargeable battery. Running time: approx. 4 hours. Second rechargeable battery can be retrofitted.
- DIGIMATIC input for digital indicators.
- DIGIMATIC output for U-Wave or printer.
- Print the measurement results using the document printer / Digimatic printer No. 498701 or transfer them to the PC via wireless communication (USB cable / USB stick).

Size 600FG – With handle for better handling of the device.

Supplied with: Includes ball contact point ∅ 5 mm with holder, calibration block, mains adapter, 1 pc. NiMH rechargeable battery and cover.



_600F

Type		600F	600FG
44B 44 5395	Digital 2D height gauge Linear Height	(eShop)	(eShop)
Measuring range	mm	0 – 600	
maximum application range	mm	0 – 977	
Graduations can be switched over	mm	0.1 / 0.01 / 0.001 / 0.0001	
Error limit (L = meas. length in mm)	µm	±(1.1+0.6L/600)	
Repeatability plane	µm	0.4	
Straightness	µm	4	
Rectangularity error (frontal)	µm	5	
Measurement slide movement		pneumatic	
Version		without handle	with handle
Gauging force	N	1	
Overall height	mm	996	
Weight	kg	26.1	

Standard | mm / Inch | TLC | E2 Cal

TESA Digital height gauge TESA MICRO-HITE + M with motorised drive

TESA MICRO-HITE motorised digital height gauge for comprehensive measurements in 1D or 2D coordinate measuring systems.

- Incrementally graduated glass scale with reference point. Patented opto-µ reading system.
- Automatic correction of systematic measurement variations ensures very high accuracy. Coefficient of linear expansion equals that of steel.
- Very high repetition accuracy due to constant gauging force.
- Switchable air support cushion
- User-friendly with **multi-lingual context help** in the active functions.

Software / measuring functions

- Comprehensive measurement facilities such as parallelism, angular measurements, simple 2D measurements, etc.
- Integral computer.
- Easy generation of test reports.
- Automatic calculation of measurement results by repeated use of programs stored as functions.
- Input facility for customer-specific tolerances. ISO tolerances are automatically incorporated in the software. **Direct and clear information to the user regarding OK/reject.**

Hybrid control panel

- Backlit keyboard with **clear simplified presentation** and clear information.
- Convenient and flexible operation with parallel use of the keyboard and touch display.
- Ergonomic posture due to flexible adjustment of the control panel.

Advantage: All measurements shown visually for information by LED in noisy environments.

Supplied with: TESA MICRO-HITE base unit incl. control panel, standard contact point carrier, standard contact point with contact rod and ∅ 5 mm measurement ball, reference piece, electric pump (fitted) for air pad for the gauge base, Li-ion battery No. 445443 size AKKU; mains adaptor (charger), mains cable. **SCS calibration certificate.**

Optional extras: USB printer No. 445293; printer paper No. 445294, data cable No. 498918 size USB; Data-Direct software No. 498925, TLC-BLE radio transmitter No. 498921 size BT, Stat-Express software No. 498926. Dust cover. Comprehensive optional accessories (such as for measuring squareness) available on request.



44 5290

Integral computer.

Detailed information about OK / scrap.

Type		M350	M600	M900
45B 44 5290	Digital height gauge TESA MICRO-HITE + M with motorised drive **including control panel**	eShop	eShop	(eShop)
Measuring range	mm	350	600	900
maximum application range	mm	0 – 520	0 – 770	0 – 1075
Graduations can be switched over	mm	0.01 / 0.001 / 0.0001		
Error limit (L = meas. length in mm)	µm	1.8 + 2L / 1000		
Repeatability plane	µm	≤ 0.5		
Repeatability hole	µm	≤ 1		
Rectangularity error (frontal)	µm	7	9	11
Measurement slide movement		motorised		
Gauging force	N	1.6 ±0.25		
Weight	kg	33	37	45

Standard | mm / Inch | i-wi | E2 Cal

Digital height gauges

Measuring system:

- Incremental optical measurement system gives outstanding measuring accuracy and reliability.
- Air bearings system for easy movement without jerking.
- Easy measuring procedures due to motorised measurement slides.
- Integrated rechargeable battery for cordless measurements.
- Temperature compensation using internal temperature sensor.

Control and display unit:

- Large, clear touch display with backlight.
- User guidance via self-explanatory icons in several languages.
- Facility for setting additional zero points on the component.
- Additional measuring device can be connected to the Mahr-Connect interface.
- Future-proof as it can be updated.
- Automatic stand-by circuit (no loss of measured values).

Functions:

- Approaching at bottom/top.
- Protrusion width/slot spacing incl. protrusion/slot centre.
- Bore/shaft diameter incl. bore/shaft centre.
- Reversal point of bores (top/bottom).
- Reversal point of shaft (top/bottom).
- Calculate spacing/symmetry.
- Dynamic measurement functions.
- Squareness measurement.
- Straightness measurement.
- Measurement programmes.
- Processing of measurement data.
- Direct print-out on USB or wireless printer.
- Measurement reports in PDF format or can be saved as a CSV file.

44 5355/5375 – In addition:

- Quick measuring keys and thumbwheel for quick movement of the measurement slide and easy start of the measurement.
- Quick-mode function.
- Further functions: Measure in 2D mode, cone measurement, automatic distance calculation, set a 3rd zero point, enter fits according to ISO (e.g. "H7").

Supplied with: Control and display unit. Carrier No. 445410 size T6, contact point No. 445420 size K6/51, adjustment block, USB cable, safety guard, power supply unit, lithium-ion battery and instruction manual.

Optional extras: Wireless printer set No. 499017 size PRINTER, iwi radio receiver No. 498912 size STICK (2 pcs. required), contact point set No. 445400, data connection cable No. 498941 size DK-M1, carrier No. 445410 size TI, dial indicator No. 434671.



44 5325_600



44 5375_600


Simply measure using touch functionality.



44 5355_600


Measurement report in PDF format.


Optional accessories: Wireless printer set No. 499017 size PRINTER


Optional accessories for angularity measurement: No. 445410 size TI, 498941 size DK-M1, No. 434671.

Type			350	600	1000
43B 44 5325	Mahr	Digital height gauge Digimar 816CLT	eShop	eShop	–
41F 44 5355	Garant	Digital 2D height gauge HG1	eShop	eShop	–
43B 44 5375	Mahr	Digital 2D height gauge Digimar 817CLT	eShop	eShop	eShop
Measuring range		mm	350	600	1000
maximum application range		mm	0 – 520	0 – 770	0 – 1170
Application area with rotated measuring probe carrier		mm	170 – 520	170 – 770	170 – 1170
Graduations can be switched over		mm	0.01 / 0.005 / 0.001 / 0.0005 / 0.0001		
Error limit (L = meas. length in mm) (44 5325)		µm	2.0 + L / 400	2.0 + L / 400	–
Error limit (L = meas. length in mm) (44 5355, 44 5375)		µm		1.8 + L / 600	
Repeatability plane (44 5325)		µm	1	1	–
Repeatability plane (44 5355, 44 5375)		µm		0.5	
Repeatability hole (44 5325)		µm	2	2	–
Repeatability hole (44 5355, 44 5375)		µm		1	
Rectangularity error (frontal) (44 5325)		µm	5	8	–
Rectangularity error (frontal) (44 5355, 44 5375)		µm	5	6	10
Gauging force		N		1.0 ±0.2	
Length of base		mm		255	
Width footprint		mm		278	
Overall height		mm	688	938	1338
Weight		kg	22	26	29

Contact point sets for digital height gauges

Suitable for: Digital height gauges GARANT HG1 No. 445355, Digimar 817 CLT No. 445375 and Digimar 816 CLT No. 445325.
Supplied with: Including plastic box.

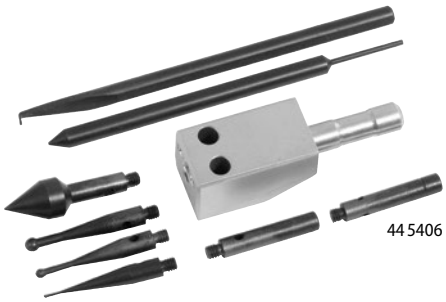


44 5400

Contents (pieces)		6	11
43B **44 5400**	Mahr Contact point set	eShop	eShop
Content: Carrier for measuring probe with shank 6 mm		No. 445410 size T6/100	
Carbide washer ∅ 15 mm		No. 445412 size 15	
Cylinder ∅ 10 mm		No. 445413 size 10	
Carbide taper ∅ 30 mm		No. 445414 size 30	
Depth contact point including carrier (TMT120)		No. 445415 size 120	
M2 carrier with measuring probe		No. 445416 size 2	
Carrier for measuring probe with shank 8 mm		–	No. 445410 size T8
Carbide balls ∅ 4 mm; 6 mm; 10/60 mm; 10/100 mm		–	No. 445420 size K4/30; K6/40; K10/60; K10/100

Universal contact point set for digital height gauges

Suitable for: Digital height gauges GARANT HG1 No. 445355, Digimar 817 CLT No. 445375.
Supplied with: Wooden case



44 5406

Number of individual parts		10
42D **44 5406**	Universal contact point set	eShop
Content: Carrier for measuring probe with shank 6 mm		No. 445422 size 6
Contact point holder ∅ 0.5 mm		No. 445423 size 0.5
Contact pointer ∅ 1.2 mm		No. 445424 size 1.2
Tapered contact point ∅ 8 mm		No. 445425 size 8
2 × extension length 20 mm		No. 445426 size 20/M3; 20/M2.5
Ball ∅ 0.9 mm; 1.9 mm; 2.9 mm		No. 445427 size 0.9; 1.9; 2.9

TESA Contact point set for TESA digital height gauges

Suitable for: TESA-HITE Magna No. 445240, TESA-Hite Magna No. 445260, TESA HITE No. 445245, TESA HITE No. 445261, TESA MICRO-HITE No. 445264; 445285; 445287; TESA MICRO-HITE plus M No. 445275; 445290, TESA-HITE plus M No. 445270.
Supplied with: Including plastic box.



44 5266



44 5267

Number of probe tips		4	17
45A **44 5266**	Contact point set small	eShop	–
45A **44 5267**	Contact point set large	–	eShop
Content: Carbide ball ∅ 3 mm (44 5266)		No. 445455 size 3	–
Carbide washer ∅ 14 mm (44 5266)		No. 445456 size 14	–
Carbide cylinder ∅ 2 mm (44 5266)		No. 445457 size 2	–
Contact rod ∅ 6 mm, radius 2.5 mm		No. 445458 size 2.5	
Carbide ball ∅ 3 mm; 10 mm (44 5267)		–	No. 445455 size 3; 10
Carbide washer ∅ 4.5 mm; 14 mm; 19 mm (44 5267)		–	No. 445456 size 4.5; 14; 19
Cylindrical carbide measuring face ∅ 2 mm (44 5267)		–	No. 445457 size 2
Barrel-shaped carbide measuring face ∅ 2.2 mm; 4.5 mm; 9.7 mm (44 5267)		–	No. 445459 size 2.2; 4.5; 9.7
Cylindrical carbide measuring face ∅ 10 mm; length 12 mm (44 5267)		–	No. 445460 size 10
Measuring tip carriers length 25 mm; 75 mm; 150 mm (44 5267)		–	No. 445461 size 25; 75; 150
Carbide contact rod and carbide ball ∅ 1 mm; 2 mm; 3 mm (44 5267)		–	No. 445462 size 1; 2; 3

TESA USB printer for TESA MICRO-HITE height gauges

Suitable for: TESA MICRO-HITE No. 445285, 445287 and TESA MICRO-HITE + M No. 445290.
Optional extras: Thermal paper for USB printer No. 445294.



44 5293

45A **44 5293**	USB printer for MICRO-HITE	(eShop)

HOLEX Marking gauge with rod

Sturdy, round measuring rod with precise mm graduation and guide groove. Slide with stop disc and 1/10 vernier. With exchangeable scriber ∅ 5 mm.

A2 Cal

Scribe reach	mm	300	500
42D 44 5500	Marking gauge with rod	eShop	eShop
Graduation/scale	mm	0.1	
42D 44 5600	Spare scriber for No. 445500	eShop	



44 5500



44 5600

HOLEX Trammel head and beam

Strong flat steel measuring beam with precise mm graduation; replaceable, hardened silver steel points. Trammel head with 1/10 vernier and fine adjustment.

Measuring range / Scribe reach	mm	500	1000	2000
42D 44 5800	Trammel head and beam with fine adjustment	eShop	eShop	(eShop)
Graduation/scale	mm	0.1		
42D 44 5900	Pair of spare points for No. 445800	eShop		



44 5800



44 5900

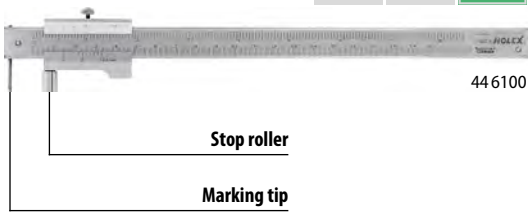
HOLEX Marking vernier calipers

Measuring beam with precise graduation. Carbide scriber; trammel head with vernier and stop roller.

Application: For marking out parallel lines.

S/STL mm/Inch A2 Cal

Scribe reach	mm	200
42D 44 6100	Marking vernier caliper	eShop ■
Graduation/scale	mm	0.1
Graduation/scale	in	1/128
42D 44 6110	Spare carbide scriber for No. 446100	eShop



44 6100

44 6110

S/STL A2 Cal

Mitutoyo Marking vernier calipers

Satin chromium plated anti-glare scales. Fine, high-contrast scale. Carbide-tipped measuring faces for scribing.

Measuring range	mm	150	200	300
44A 44 6120	Marking vernier calipers	eShop	(eShop)	(eShop)
Scale divisions	mm		0.05	
Graduation	mm		1/20	
Jaw length	mm	40 / 33	50 / 43	64 / 54

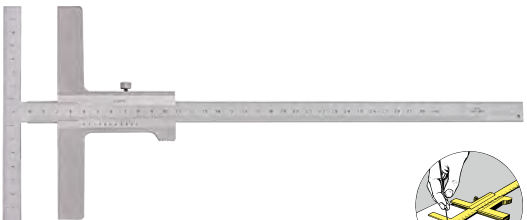


Standard S/STL A1 Cal

HOLEX Marking vernier calipers

Satin chrome-plated, with cleanly engraved scale.

Measuring range	mm	200	300	400
42D 44 6300	Marking vernier caliper	eShop ■	eShop	eShop
Graduation/scale	mm		0.05	
Length of marking edge	mm	135	160	160



Scribing edge

F8 Cal

HOLEX Marking gauges with flat slide

S/STL

Satin surface with cleanly engraved scale.

44 6152 – Made of hardened aluminium. Very hard, scratch-resistant surface. Easy-to-read graduations.



44 6150_200

ALU



44 6152_300

Scribe reach		mm	200	250	300
42D 44 6150	Marking gauge with flat slide		eShop ■	eShop	eShop
42D 44 6152			eShop	eShop	eShop
Graduation/scale (44 6150)		mm	0.1		
Graduation/scale (44 6152)		mm	0.05		
Width of marking edge		mm	40		

S/STL F8 Cal

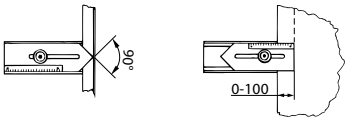
HOLEX Marking rules

Adjustable rule with one straight and one 90° pointed end. The rule can be clamped firmly in any setting.

Application: A stop on the component allows quick, accurate marking out to rule scale as well as marking 45° and 90° mitres.



For scribing lines at 45° to the edge of the component (mitres etc.).



For scribing straight lines to the edge of the component.

Measuring and marking range		mm	100	200
42D 44 6350	Marking rule stainless steel		eShop	eShop

i Cal

HOLEX Vee block pairs

Of dense non-porous special casting. Machined as a pair, Vee angle 90°.

44 6420 – Vee blocks and base face milled. **Parallelism tolerance 0.064 mm.**

44 6600 – Vee blocks and base face ground. **Flatness and parallelism tolerance 0.01 mm.**



44 6600

Length×Width		mm	100×40	150×50	200×70
42D 44 6420	Pair of Vee blocks		–	–	–
42D 44 6600			eShop	eShop	eShop
for shaft ∅		mm	6 – 40	8 – 50	8 – 70
Height		mm	30	40	50
Weight each		kg	0.6	1.4	2.85

i Cal

HOLEX Vee block pairs, precision version

Precision version of hardened steel. Finish ground in pairs, 90° Vee angle. **Flatness and parallelism tolerance 0.004 mm.**



Length×Width		mm	75×35	100×47	150×55	200×65	250×85
42D 44 6650	Pair of Vee blocks		eShop	eShop	eShop	eShop	eShop
for shaft ∅		mm	5 – 40	5 – 55	5 – 60	5 – 75	5 – 100
Height		mm	30	40	45	55	70
Weight each		kg	0.48	1.1	2.2	4.25	8.6

i Cal

HOLEX Double Vee blocks with clamp

Hardened steel, stress-relieved and precision ground in pairs. **Flatness and parallelism tolerance 0.01 mm.** Different depths of Vee-section; 2 support faces. Sturdy bench clamp with handle for clamping the components.



44 7000

Length×Width		mm	45×40	70×45
42D 44 7000	Pair of double Vee blocks with clamp		eShop	eShop
42D 44 7100	Single double Vee block with clamp		eShop	eShop
for shaft ∅		mm	6 – 30	6 – 33
Height		mm	36	40
Weight each		kg	0.5	0.85

Double Vee blocks with clamp, precision version

Precision version, **flatness and parallelism tolerance 0.004 mm.** Vee blocks of hardened steel, stress-relieved and precision ground. Different depths of Vee-section; 2 support faces. Sturdy bench clamp with handle for clamping the components.

44 7020 – Made of stainless steel.



44 7010

Length×Width		mm	50×40	75×55	100×75
42D 44 7010	Pair of double Vee blocks with clamp		–	–	–
42D 44 7020	Pair of double Vee blocks with clamp **stainless steel**		(eShop)	(eShop)	(eShop)
for shaft ∅		mm	5 – 30	5 – 50	7 – 70
Height		mm	40	55	75
Weight each		kg	0.55	1.4	3.2

Vee block, adjustable

Hardened steel, stress-relieved and precision ground.
Angle reading and adjustment using a vernier.
Can be locked with set screw. **Flatness tolerance 0.01 mm.**

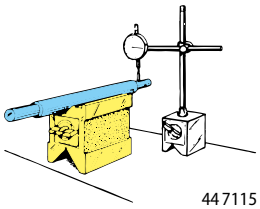


Length×Width		mm	75×25	102×30
42D 44 7070	Vee block adjustable		–	–
Angle reading		arc min.	10	
Angular accuracy		arc min.	10	
for shaft ∅		mm	6 – 28	6 – 40
Weight		kg	0.5	1

Magnetic Vee block

Three magnetic contact faces (small Vee, large Vee, upper and lower faces activated simultaneously). All faces hardened. The front and side faces are ground at right angles to the Vee blocks. **Flatness and parallelism tolerance 0.01 mm.**

44 7125 – The Vee blocks are ground as a matched pair.



44 7115



44 7115_120×70



44 7125_70×55

Length×Width		mm	70×55	80×70	120×70
42D 44 7115	Single magnetic Vee block		eShop	eShop	eShop
42D 44 7125	Pair of magnetic Vee blocks		eShop	eShop	eShop
Height tolerance of pair (44 7125)		mm		0.02	
for shaft ∅		mm	3 – 40	5 – 60	5 – 60
Height		mm	75	95	95
Weight each		kg	1.8	3.5	5

See No. 44 0620 and 44 2120 – 2140 for magnetic bases with Vee soles.





HOLEX Precision magnetic Vee block

Three magnetic contact faces (small Vee, large Vee, upper and lower faces activated simultaneously). The front and side faces are ground at right angles to the Vee blocks. **Flatness and parallelism tolerance 0.004 mm.**

44 7145 – The Vee blocks are ground as a matched pair.

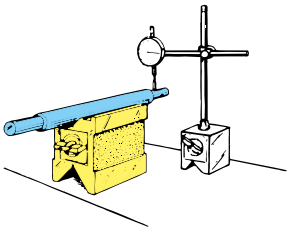


44 7135_120×70



44 7145_70×55

Length×Width		mm	70×55	80×70	120×70
42D 44 7135	Single magnetic Vee block		eShop	eShop	eShop
42D 44 7145	Pair of magnetic Vee blocks		eShop	eShop	eShop
Height tolerance of pair (44 7145)		mm		0.02	
for shaft ∅		mm	3 – 40	5 – 60	5 – 60
Height		mm	75	95	95
Weight each		kg	1.8	3.2	4.8



DIN 875/00 S/STL ▶ F1 ◀ Cal

Garant Precision bevel squares stainless, hardened

Very high accuracy. With two bevelled straight edges on the long blade.
Through hardened and stress-relieved. Test faces ground and lapped, other faces ground.

45 0020 – **With sturdy stock.**

Application: For inspection work using the light gap principle.



45 0010

45 0020

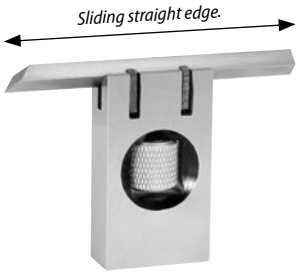
Stock length		mm	50×40	75×50	100×70	150×100	200×130
41G 45 0010	Bevel edge square, flat version **stainless, accuracy class 00**		eShop	eShop ■	eShop ■	eShop	eShop
41G 45 0020	Bevel try square hardened **stainless, accuracy class 00**		–	eShop	eShop	eShop	eShop
Right angle tolerance		mm	0.003	0.003	0.003	0.004	0.004
Shank cross-section (45 0010)		mm	13×4	15×4	20×5	30×6	33×7
Cross-section of long arm (45 0020)		mm	–	18×3	20×3.5	22×4	26×5
Cross-section of short arm (45 0020)		mm	–	16×12	18×12	22×12	26×14

DIN 875/00 S/STL ▶ F1 ◀ Cal

Garant Adjustable bevel square

High precision body with continuously adjustable **sliding bevelled straight edge.**
All measuring faces ground and lapped; square through hardened.

Application: For inspection work using the light gap principle.
The sliding straight edge also allows inspection work to be carried out on short, chamfered offsets, recesses etc.



41G 45 0030	Bevelled square with axially sliding straight edge **stainless, accuracy class 00**		eShop
Right angle tolerance		mm	0.007
Straight edge length		mm	60
Straight edge cross-section		mm	4×4
Base body width		mm	40
Base body height		mm	10
Base body depth		mm	22

DIN 875/00 | S/STL | ▶ F1 ◀ Cal

Garant Die maker's square

Highest accuracy. Bevelled edge on long narrow blade. High-tensile steel, fully hardened and stress-relieved. Test faces ground and lapped. All other faces ground.

Application: For jig and tool making.


Bevelled blade.

Stock length		mm	25×20	40×28
41G 45 0040	Die maker´s square hardened **stainless, accuracy class 00**		eShop	eShop
Right angle tolerance		mm	0.003	
Cross-section of short arm		mm	4×3.5	

45

S/STL | ▶ S16 ◀ Cal

Garant Measuring tool set, 5 pieces

Supplied with:
- Straight edge No. 460095 size 100.
- Bevel square No. 450010 size 75×50
- Die maker's square No. 450040 size 25×20 and size 40×28.
- Gauge block marking scriber 60×8×8 mm.



41G 45 0050	Measuring tool set, 5 pieces	eShop

HOLEX Wooden case for stock squares and try squares

Suitable for: Stock squares and try squares No. 451010 – 452600.


45 1600_200x130

for stock length		mm	75×50	100×70	150×100	200×130	250×165	300×200	400×265	500×330
42F 45 1600	Wooden case		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

DIN 875 | S/STL | ▶ F1 ◀ Cal

Garant Stock square and try square accuracy class 0

Precision squares of stainless steel, fully hardened and stress relieved. Test faces ground and very precisely adjusted, all other faces ground.

Accuracy: **DIN 875 / 0** – angle tolerance e.g. for size 100×70 = 0.007 mm.

Application: For inspection and high precision work.


Stock square


Try square

Stock length		mm	50×40	75×50	100×70	150×100	200×130
41G 45 1010	Stock square **stainless, accuracy class 0**		eShop	eShop	eShop	eShop	eShop
41G 45 1020	Try square **stainless, accuracy class 0**		eShop	eShop	eShop	eShop	eShop
Right angle tolerance		mm	0.007	0.007	0.007	0.008	0.009
Shank cross-section		mm	15×4	15×4	20×5	30×6	30×7

DIN 875 | S/STL | ▶ F1 ◀ Cal

Garant Stock square and try square accuracy class 1

All faces and edges precision ground. Inspection test faces finish ground. Stock squares of stainless steel, fully hardened and stress relieved.

Size 75×50–200×130 – Supplied in a plastic box.

Size 250×165–500×330 – Protective packaging for safe transport.

Accuracy: **DIN 875 / 1** – angle tolerance e.g. for size 100×70 = 0.015 mm.

Application: For inspection and high precision work.


Stock square


Try square

Stock length		mm	75×50	100×70	150×100	200×130	250×165	300×200	400×265	500×330
41G 45 1030	Stock square **stainless, accuracy class 1**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
41G 45 1040	Try square **stainless, accuracy class 1**		eShop ■	eShop ■	eShop ■	–	eShop ■	–	–	–
Right angle tolerance		mm	0.014	0.015	0.018	0.02	0.023	0.025	0.03	0.035
Shank cross-section		mm	15×4	20×5	30×6	30×7	35×7	40×8	45×10	50×10

DIN 875

HOLEX Stock square and try square accuracy class 2

All faces and edges ground. Inspection test faces ground.
Accuracy: **DIN 875 / 2** – angle tolerance e.g. for size 100×70 = 0.030 mm.
Application: For accurate general workshop work.

F1 Cal

Size 75×50 – 600×300



45 2590

Stock square



45 2600

Try square

Stock length		mm	75×50	100×70	150×100	200×130	250×165	300×175
42F 45 2590	Stock square **Accuracy class 2**		eShop	eShop	eShop	eShop	eShop	eShop
42F 45 2600	Try square **Accuracy class 2**		eShop ■	eShop ■	eShop ■	eShop	eShop	eShop
Right angle tolerance		mm	0.028	0.03	0.035	0.04	0.045	0.05
Shank cross-section		mm	15×5	20×5	25×5	30×6	35×7	35×7

Stock length		mm	400×200	500×250	600×300	750×375	1000×500
42F 45 2590	Stock square **Accuracy class 2**		eShop	eShop	eShop	eShop	eShop
42F 45 2600	Try square **Accuracy class 2**		eShop	eShop	eShop	eShop	eShop
Right angle tolerance		mm	0.06	0.07	0.08	0.095	0.12
Shank cross-section		mm	35×7	40×8	40×8	45×10	50×10

Standard ALU F1 Cal

HOLEX Stock square and try square accuracy class 1

Square of hardened aluminium (HRC 63). Corrosion-resistant. Non-magnetic. Scratch-resistant, black anodised non-dazzle surface. Test faces precision finished. Clear laser-engraved scale.



45 1050

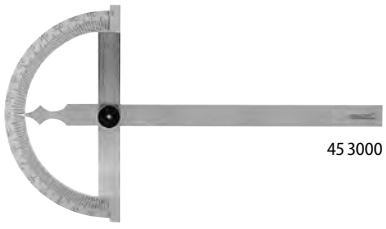


45 1060

Stock length		mm	75×50	100×70	150×100	200×130	250×165	300×200	400×265	500×330
42F 45 1050	Stock square of anodised aluminium **Accuracy class 1**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
42F 45 1060	Try square of anodised aluminium **Accuracy class 1**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Right angle tolerance		mm	0.014	0.015	0.018	0.02	0.023	0.025	0.03	0.035
Length of short arm		mm	50	70	100	130	165	200	265	330
Shank cross-section		mm	15×4	20×5	30×6	30×7	35×7	40×8	45×10	50×10

Standard S/STL F3 Cal

HOLEX Protractor reading 1°



45 3000

Open semicircular graduated arc with graduation 0 – 180°; reading 1°.
Non-glare matt chrome-plated scale. With clamping nut.

Graduated arc ∅×Stock length		mm	80×120	120×150	150×200	200×300
42F 45 3000	Protractor with open graduated arc		eShop	eShop ■	eShop	eShop
Scale divisions		degrees	1			
Error limit		arc min.	±30			



45 3200

Solid semicircular graduated arc with graduation 0 – 180°; reading 1°.
Scale plate non-glare chrome-plated. With clamping nut.

Graduated arc ∅×Stock length		mm	85×150
42F 45 3200	Protractor with solid graduated arc		eShop ■
Scale divisions		degrees	1
Error limit		arc min.	±30



45 3400

With longitudinally adjustable beam; beam end tapered 45°.
Open semicircular graduated arc with graduation 10 – 170°; reading 1°.
Scale matt chrome-plated. With clamping nut.

Graduated arc ∅×Stock length		mm	100×150	150×300	200×400
42F 45 3401	Protractor with adjustable beam		eShop	eShop	eShop
Scale divisions		degrees	1		
Error limit		arc min.	±30		

Standard

HOLEX Digital protractors

For easy measurement and transfer of angles on components. Easy-to-read display. Numeric value can be rotated through 180°. Zeroing in any position. Upper and lower edges both with 1 mm graduations.

Supplied with: 1 battery No. 081560 size CR2032



Stock length		mm	200	300
42F 45 3430	Digital protractor		eShop	eShop ■
Measuring range		degrees	360	
Scale divisions		degrees	0.05	
Error limit		degrees	± 0.3	

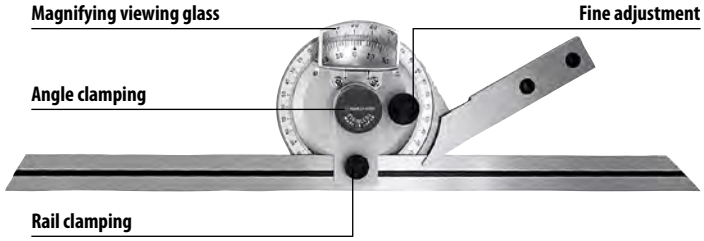
Standard S/STL F4 Cal

MARUI-KEIKI Universal protractor reading 5 arc minutes

Clear graduations and numbering of the scale disc 4×90°. Vernier and scale disc are on a common plane, resulting in **error-free parallax-free reading.** Measuring disc **anti-glare chrome-plated.**
The measuring blade has ends angled at 45° and 60°. It can be adjusted and clamped over its entire length. Vernier disc and slide can be locked by a knurled screw. With **fine setting** by knurled screw and **magnifying viewing glass** with field of view covering the whole vernier.

Optional extras: Clamp No. 453520 (for fixing to scribers No. 445152 – 445222), attachment square No. 453600.

Spare part: Measuring beam No. 453510, spare magnifying glass No. 453820 size 1.





Accurate and very simple setting using the vernier due to fine setting and magnifying glass.

Beam length		mm	150	300	500
46R 45 3500	Universal protractor with magnifying glass		eShop	eShop	eShop
Measuring range		degrees	360		
Scale divisions		arc min.	5		
Error limit		arc min.	±5		

Standard S/STL F4 Cal

MARUI-KEIKI Precision protractors with barrel read-off

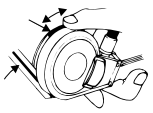
Error-free reading. The degree values are easily and clearly readable on a magnified 4×90° scale. The arc minutes are just as easily readable on a satin chrome-plated barrel with black scale markings. With double scale for both measurement directions. **Easy to handle quick adjustment and fine adjustment for the arc minute values. Satin chromium plated anti-glare reading parts.**

Supplied with: 1 stock square 60×90 mm for setting.

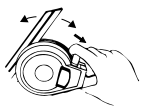
Optional extras: Clamp No. 453520 (for fixing to scribers No. 445152 – 445222), attachment square No. 453600.

Spare part: Measuring beam No. 453510. Magnifying glass No. 453820 size 2.



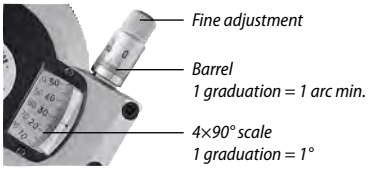


Rule clamping.



Quick adjustment

Beam length		mm	150	300
46R 45 3800	Precision protractor		eShop	eShop
Measuring range		degrees	360	
Scale divisions		arc min.	1	
Spindle pitch		degrees	1	
Error limit		arc min.	±2	



Standard | Digimatic | S/STL | ▶ F4 Cal ◀

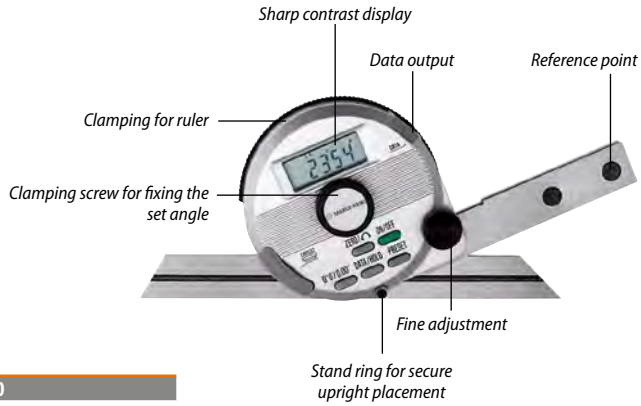
MARUI-KEIKI

Digital universal protractor

Digital universal protractor.

- Display either in arc degrees or minutes.
- Simple adjustment with fixed reference points.
- The measuring blade can be moved and clamped over its entire length.
- Fine setting for exact adjustment of any angles.
- Preset: Presetting any angles, e.g. for tolerance measurements.
- Data/Hold: Save (hold) or send the displayed value.
- Reversal of measuring direction.
- Zeroing in any position.

Supplied with: 1 battery No. 081560 size CR2032
Optional extras: Attachment square No. 453600 and data cable No. 497080.
Spare part: Blade slot No. 453510.



Beam length	mm	150
46R 45 4000	Digital universal protractor	eShop
Measuring range	degrees	-360 – 360
Reversible reading		1 minute or 0.01°
Error limit	arc min.	±2
Repetition accuracy	arc min.	1
Battery life approx.	h	2000

MARUI-KEIKI

Attachment square

Suitable for: Protractors No. 453500, 453800, 454000.
Application: The attachment square allows angle measurements from two different reference planes. It can be fixed on both sides and in any position inside the slotted shank on the protractor.



46R 45 3600	Attachment square	eShop

Standard | ▶ i Cal ◀

MARUI-KEIKI

Digital precision protractor

For easy measurement of angles on components. Can be used with caliper or with digital height gauge. Very easy to fit to caliper - uses only two clamping screws. Can be attached to digital height gauge or marking-out device using square holder.

Supplied with: Square holder for mounting on height gauges, 2 batteries No. 081561 size LR3.



Beam length	mm	180
46R 45 4005	Digital precision protractor	eShop
Measuring range	degrees	180
Reversible reading		1 minute or 0.01°
Error limit	arc min.	±5
Length of measuring beam	mm	35
Weight	g	150

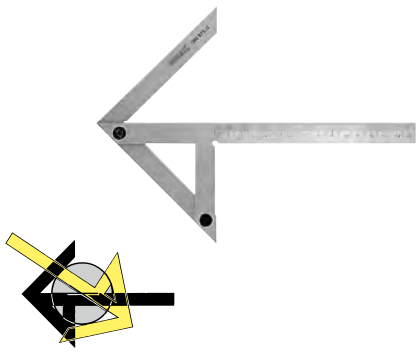
Standard | S/STL | ▶ F5 Cal ◀

HOLEX

Centring square

Precision steel version with mm graduation on the beam. Functional faces precision ground, remaining faces precision machined.

Application: For marking the centre point of round plates and shafts. Centre is marked crosswise 2 - 3 times.



Stock length	mm	70	130	150	180
42F 45 5000	Centring square	eShop	eShop	eShop	eShop
Beam graduations	mm	100	150	200	300
Error limit	arc min.	0.3			
Slide beam cross section	mm	12×4.0	15×4.0	15×4.0	20×4.0
for maximum shaft ∅	mm	90	190	220	270

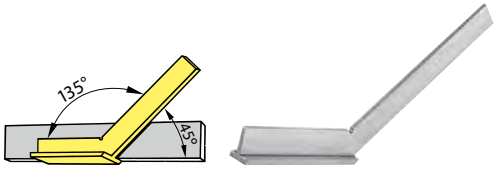
Standard | S/STL | F5 Cal

Mitre square with stop

Made of steel. With precision ground reference edges; other faces are precision machined.
Angular tolerances based on DIN 875/2.

Application: For accurate marking and checking of 45° for 90° corner butts.

Stock length		mm	120×80	150×100	200×130
42F 45 5400	Mitre square with stop		eShop	eShop	eShop
Shank cross-section		mm	20×5	20×5	30×7



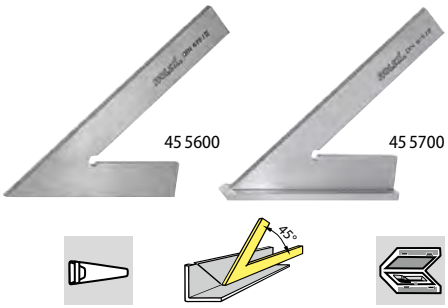
Standard | S/STL | F5 Cal

45° squares

Made of steel. With precision ground reference edges; other faces are precision machined.
Angular tolerances based on DIN 875/2.

Application: For accurate marking and checking of 45°.

Stock length		mm	120×80	150×100
42F 45 5600	Angle stock square		eShop	eShop
42F 45 5700	Angle try square		eShop	eShop
Shank cross-section		mm	20×5	



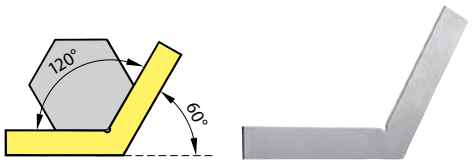
Standard | S/STL | F5 Cal

Hexagonal flat square

Precision steel version. With ground reference edges; other faces are accurately aligned.
Angular tolerances based on DIN 875/1.

Application: For accurate marking and checking of 60° and 120°.

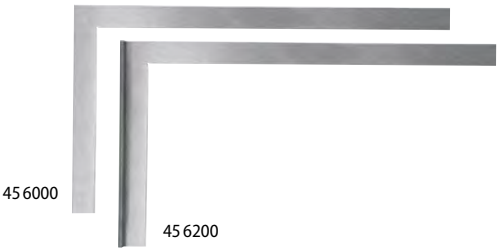
Stock length		mm	50×50	100×100
42F 45 5800	Hexagonal flat square		eShop	eShop
Shank cross-section		mm	15×4	20×5



Steel squares galvanised

Made of steel. Surface galvanised.
Reference edges and other faces finish machined.

Application: For simple alignment and marking work in fitting shops, tinsmithing shops etc.

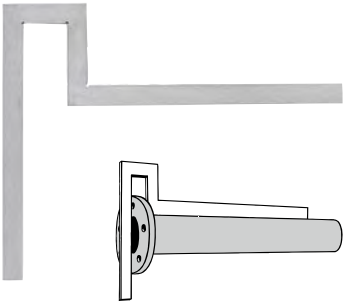


Stock length		mm	100×70	150×100	200×130	250×160	300×180	400×230	500×280	750×375	1000×500
42F 45 6000	Flat steel square galvanised		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
42F 45 6200	Flat try square galvanised		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shank cross-section		mm	20×5	20×5	20×5	25×5	25×5	30×5	30×5	30×5	30×5

Flange square

Steel, galvanised.
Reference edges and other faces precision machined.

Application: Special fitter's square for accurate alignment of flanges.

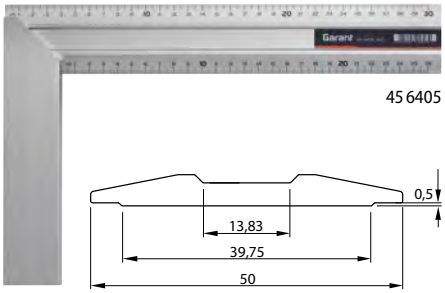


Stock length		mm	300	400
42F 45 6600	Flange square		eShop	eShop
Shank cross-section		mm	30×5	
Flange width		mm	105×65	115×65

EG II

Garant Try square with graduations or both sides

Made of anodised aluminium alloy, corrosion-resistant.
Special sub-surface printing of the anodised aluminium ensures a graduation scale proof against wiping and scratching for years to come.
Second inner graduation scale for taking measurements from the stop.

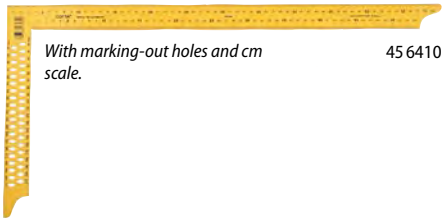


45 6405

Length of rail	mm	300	500
41G 45 6405	Try square with graduations or both sides	eShop	eShop
Length of short arm	mm	200	250

HOLEX Carpenter's square

Made entirely of steel, powder-coated with spring steel blades.



With marking-out holes and cm scale. 45 6410

Length of long arm	mm	700	800	1000
42F 45 6410	Carpenter's square	eShop	eShop	eShop
Length of short arm	mm	300	320	360
Arm width	mm	35		
Arm thickness	mm	1.67		

ERWEMA Sliding bevel MW 330

Innovative and versatile sliding bevel. Sturdy metal design, 330 mm spring steel blade with laser-engraved mm scale. Adjustment mechanism for 9 angular positions (30°, 45°, 60°, 75°, 90°, 105°, 120°, 145°, 160°) or stepless adjustment with a wing nut clamp.

Application: Marking gauge, protractor, sliding square, try square, mitre square, length measurement.





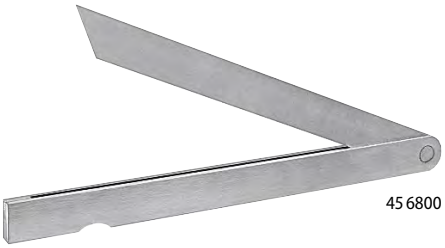
45 6900

Length of rail	mm	330
46R 45 6900	Sliding bevel	eShop
Angular misalignment	mm	±0.05

S/STL

HOLEX Setting or measuring bevel

Sliding square with reference edges and other faces machined. With screw clamp joint.
Application: The two movable stocks can be set to any angle and locked with a wing nut.



45 6800

Stock length	mm	200	250	300	400	500
42F 45 6800	Setting bevel stainless steel	eShop	eShop	eShop	eShop	eShop
Shank cross-section	mm	20×9	25×9	25×9	25×9	25×9

S/STL ▶ A2 ◀ Cal

HOLEX Precision scribing dividers

Sturdy **parallel marking jaws** with finely ground measuring faces. Caliper can be locked by clamping screw.
Application: For marking-out by direct settings without additional measuring aids.



45 8210

Measuring range	mm	200	300
42F 45 8210	Precision scribing dividers **with carbide tipped jaws**	eShop	eShop
Vernier	mm	1/10	
Jaw length	mm	45	

HOLEX Precision spring calipers

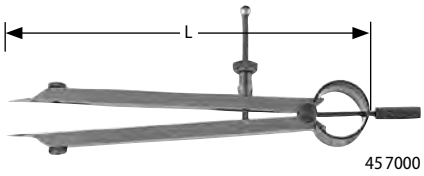
Sturdy design with long arms, made of tool steel. Points and measuring faces ground and hardened. Solid spindle with adjusting nut for quick and fine adjustment. Annular spring provides constant spring tension.

Spring dividers with points

With replaceable tips.

Spare part: Spare steel points set (2-piece) No. 457010.

Length L		mm	120	150	170	220	320
42F 45 7000	Spring dividers with points		eShop	eShop	eShop	eShop	eShop
Opening width		mm	80	110	125	185	285
Shank cross-section		mm			7×7		

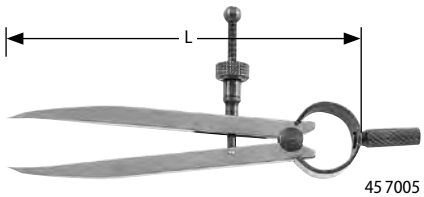


45 7000

Spring dividers with points

With fixed points.

Length L		mm	130	180	230	335
42F 45 7005	Spring dividers with points		eShop	eShop	eShop	eShop
Opening width		mm	80	120	160	240
Shank cross-section		mm			7×7	

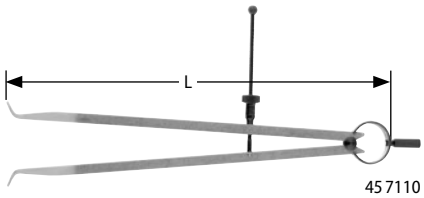


45 7005

Internal spring calipers

With fixed measuring faces.

Length L		mm	150	290
42F 45 7110	Internal spring calipers		eShop	eShop
Smallest bore size		mm	18	26
Opening width		mm	120	240
Shank cross-section		mm	7×7	8×8

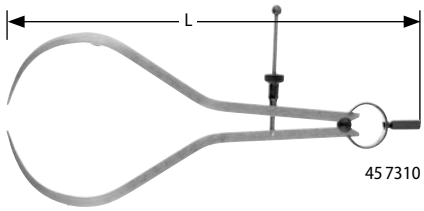


45 7110

External spring calipers

With fixed measuring faces.

Length L		mm	265	315
42F 45 7310	External spring calipers		eShop	eShop
Opening width		mm	175	210
Shank cross-section		mm	8×8	



45 7310

HOLEX Workshop dividers

Sturdy design with chamfered arms, tool steel, forged and ground. Riveted through joint hinge. Hardened and ground points.

Length L		mm	150	200	250	300	500
42F 45 7600	Dividers		eShop	eShop	–	eShop	–
42F 45 7700	Dividers **with quadrant**		eShop	eShop	eShop	eShop	eShop
42F 45 7750	Dividers **with quadrant and pencil holder**		–	eShop	–	eShop	–
Opening width (45 7700, 45 7750)		mm	190	250	310	355	610
Shank cross-section		mm	9×7	9.5×7	10×7	10.5×7	10.5×7


45 7600


45 7700


45 7750_200

Scribers

45 8300 – 1 straight and 1 angled point, nickel-plated and chrome-plated, **point hardness 59 HRC**, plastic handle. Suitable even for high-tensile steels / materials.

45 8400 – 1 straight and 1 angled point; plastic handle. Point hardness 48 - 55 HRC.

45 8500 – 1 straight point; knurled metal handle.

				overall length mm
46R 45 8300	PB SWISS TOOLS	Angle scriber	eShop ■	220
42F 45 8400	HOLEX	Angle scriber	eShop ■	230
42F 45 8500	HOLEX	Straight scriber	eShop ■	180


45 8300

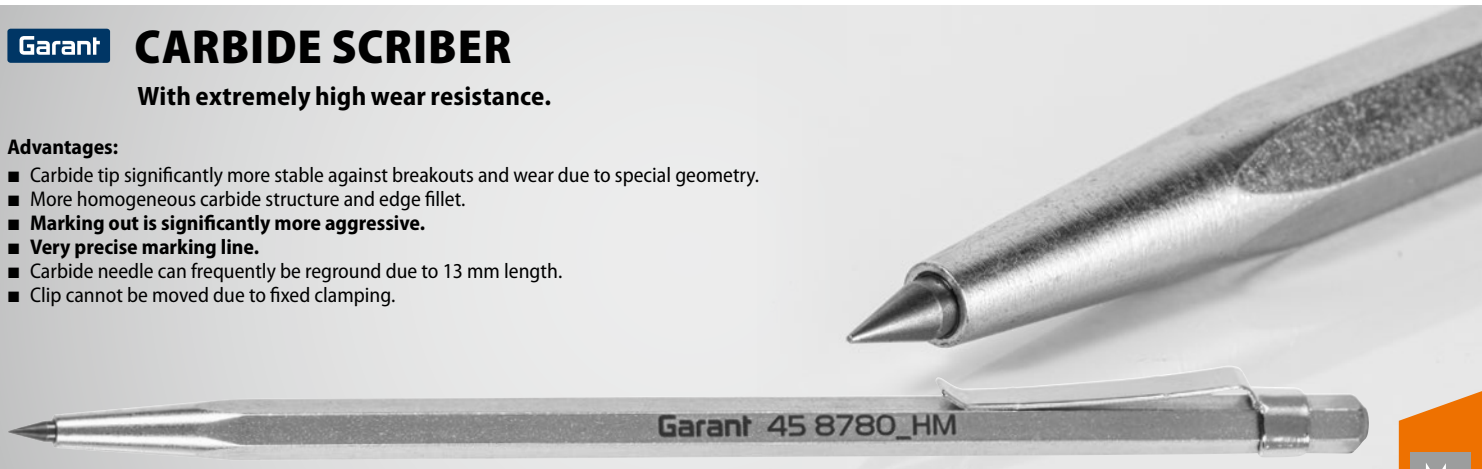

45 8400

45 8500

Garant CARBIDE SCRIBER

With extremely high wear resistance.

Advantages:
- Carbide tip significantly more stable against breakouts and wear due to special geometry.
- More homogeneous carbide structure and edge fillet.
- **Marking out is significantly more aggressive.**
- **Very precise marking line.**
- Carbide needle can frequently be reground due to 13 mm length.
- Clip cannot be moved due to fixed clamping.



45 8780

Carbide scribers

45 8600 – Carbide points, 1 straight and 1 angled point, nickel-plated and chrome-plated. Knurled handle.
45 8700 – Carbide points, 1 straight and 1 angled point, burnished. Knurled handle.
45 8760 – Short, straight carbide point. Handle of impact-resistant plastic with clip and protective cap, shank dia. 4 mm.
45 8780 – Carbide scriber with extremely high wear resistance. Very precise marking line thanks to the 30° angle and special geometry of the carbide tip. 6 mm hexagonal handle. Straight shape.
45 8800 – Straight form; sturdy shank with carbide point, shank hexagon coupling 6 mm

Application: Particularly suitable for marking extra hard materials.

Spare part:
45 8600/8700 – Spare points No. 458630; 458640.


45 8600


45 8700

Type			HM	overall length mm
46R 45 8600	PB SWISS TOOLS	Angle scriber, with carbide points	eShop	220
42F 45 8700	HOLEX	Angle scriber with carbide points	eShop	220
46R 45 8760	PB SWISS TOOLS	Straight carbide scriber with clip and protective cap	eShop	135
41G 45 8780	Garant	Straight carbide scriber	eShop	152
42F 45 8800	HOLEX		eShop ■	155


45 8760



45 8780


45 8800

HOLEX Scriber with replaceable points

Hollow steel shaft (5 mm) with clutch and plastic covering. Points hardened and replaceable.

Supplied with: With 12 spare points stored in the shank.

Spare part: Spare points set No. 459100.

			overall length mm
42F 45 9000	Scriber with 12 spare points	eShop	150


45 9000

Pocket scriber with carbide points

Holder with pocket clip. Scribing point retractable to protect the point and eliminate risk of injury. Point can be reground. Point projection adjustable. Point held securely in the clutch.

45 9500 – High-precision version with carbide point. Reach of the needle 12 mm (Ø 1.5 mm). Handy, knurled aluminium holder. Push-button mechanism of hardened steel. The slim taper on the scriber needle ensures scribing capability even in places where access is difficult.
45 9510 – Carbide needle (40 mm long), safely kept in sturdy hexagonal aluminium fluted holder.

Spare part:
45 9500 – Spare scriber needle 459700 size 165.
45 9510 – Spare scriber points No. 459700.


45 9500


45 9510

overall length			mm	150	165
46R 45 9500	rico marker	Pocket scriber **Rico marker**		–	eShop
42F 45 9510	HOLEX	Pocket scriber		eShop ■	–

DIN 874 | F6 Cal

Straight edges

Hardened, ground, and precision lapped straight edge. Wedge shaped cross section tapering to a point for inspection even in corners, grooves, cut outs etc. With plastic insulated handle to protection against body heat.

46 0095 – Made of **stainless** steel. **Both bevels anti-glare matt finished.**
46 0100 – Made of aged special steel, both bevels burnished (anti-glare).

Note: The straightness tolerance of the measuring edge refers to a displacement range of ± 15° to the symmetry plane.


46 0095


46 0100

Length		mm	50	75	100	125	150	200	300	500
41H 46 0095	Garant	Stainless straight edge in a case	eShop	eShop	eShop ■	eShop	eShop	eShop ■	eShop	eShop
42G 46 0100	HOLEX	Straight edge with burnished finish in a case	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Straightness tolerance of the measuring edge		mm	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.004

DIN 874 | F7 Cal

HOLEX Flat straight edges

The straight edges are made of special steel, ground all round.
Size 500; 1000; 1500 – With rectangular cross-section.
46 0300/0400 Size 2000; 3000 – Form B, with 2 hand slots and enamelled centre section.

Supplied with:
46 0300/0400 Size 2000; 3000 – Manufacturer's test certificate.

Note: **Stainless version** available ex works.
Size 1500; 2000; 3000 – **Please note that there is a carriage charge for these sizes!**

Cross-section Form A



Cross-section Form B



For high precision fine inspection work — Accuracy 0

Length			mm	500	1000	1500	2000	3000
42G 46 0300	Flat straight edge	**Accuracy class 0**		eShop	eShop	(eShop)	(eShop)	(eShop)
Flatness tolerance of the checking faces			mm	0.007	0.012	0.017	0.022	0.032
Shape				A	A	A	B	B
Cross-section width ±0.2 mm			mm	49.3	59.3	69.3	79.3	119.3
Cross-section height ±0.2 mm			mm	9.5	11.5	14.5	14.5	17.5

For inspection and precise work — Accuracy 1

Length			mm	500	1000	1500	2000	3000
42G 46 0400	Flat straight edge	**Accuracy class 1**		eShop	eShop	(eShop)	(eShop)	(eShop)
Flatness tolerance of the checking faces			mm	0.012	0.021	0.029	0.037	0.054
Shape				A	A	A	B	B
Cross-section width ±0.2 mm			mm	39.3	49.3	59.3	69.3	99.3
Cross-section height ±0.2 mm			mm	7.5	9.5	11.5	14.5	15.5

For precise general workshop work — Accuracy 2

Length			mm	500	1000	1500	2000	3000
42G 46 0500	Flat straight edge	**Accuracy class 2**		eShop	eShop	eShop	eShop	(eShop)
Flatness tolerance of the checking faces			mm	0.021	0.033	0.046	0.058	0.083
Shape						A		
Cross-section width ±0.2 mm			mm	29.3	39.3	49.3	59.3	79.3
Cross-section height ±0.2 mm			mm	5.5	7.5	9.5	11.5	14.5

HOLEX Assembly straight edge

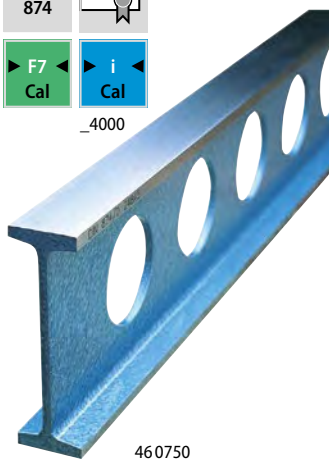
DIN 874 | F7 Cal | i Cal

Made of I-profile steel with weight-reducing holes. With precision ground main faces. Side faces also ground. Centre part hammer finish painted.

46 0750 – **Wide version, accuracy class 0.**
46 0800 – **Narrow version, accuracy class 1.**

Supplied with: Manufacturer's test certificate.

Note: Please note **additional carriage charge.** Supplied in a wooden case.


_4000
46 0750

Length			mm	1000	1500	2000	3000	4000
42G 46 0750	Assembly straight edge **wide version**	**Accuracy class 0**		(eShop)	(eShop)	(eShop)	(eShop)	–
42G 46 0800	Assembly straight edge **narrow version**	**Accuracy class 1**		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Cross-section width (46 0750)			mm	50	50	50	60	–
Cross-section width (46 0800)			mm	30	30	40	40	40
Cross-section height (46 0750)			mm	160	160	160	180	–
Cross-section height (46 0800)			mm	100	100	120	140	140
Weight (46 0750)			kg	12	18	24	45.5	–
Weight (46 0800)			kg	5	7.5	18	26	35

DIN 866 | ▶ F8 ◀ Cal

HOLEX Steel rules with graduations

46 1000/1005 – **Form A:** Vertical edges ground parallel and precisely squared. Flat faces accurately machined. With protective ends at the start and end of the scale. One edge with accurate mm graduations.

46 1005/1105 – **Stainless steel** version.

46 1100/1105 – **Form B:** Vertical edges ground parallel and precisely squared. Flat faces well finished. With protective end at the end of the scale. One face with accurate mm graduations.

Note:
Size 2000 – Please note **additional carriage charge.**



46 1000

S/STL



46 1005



46 1100

S/STL



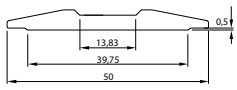
46 1105

Length		mm	500	1000	2000
42G 46 1000	Steel rule **Form A**		eShop	eShop	(eShop)
42G 46 1005	Steel rule **Form A stainless steel**		eShop	eShop	(eShop)
42G 46 1100	Steel rule **Form B**		eShop	eShop	(eShop)
42G 46 1105	Steel rule **Form B stainless steel**		eShop	eShop	(eShop)
Error limit (46 1000, 46 1005)		mm	0.04	0.04	0.06
Error limit (46 1100, 46 1105)		mm	0.1	0.1	0.15
Cross-section width (46 1000, 46 1005)		mm	30	40	50
Cross-section width (46 1100, 46 1105)		mm	24.5	30	40
Cross-section thickness (46 1000, 46 1005)		mm	6	8	10
Cross-section thickness (46 1100, 46 1105)		mm	4.5	6	8

EG II | ▶ F10 ◀ Cal

Garant Workshop straight edge with graduations on both sides, with chamfer

Made of anodised aluminium alloy, corrosion-resistant. Special sub-surface printing of the anodised aluminium ensures a wipe-proof and scratch-proof scale for years to come. Upper edge with mm graduations. Lower edge with inch graduations.





46 1170_300

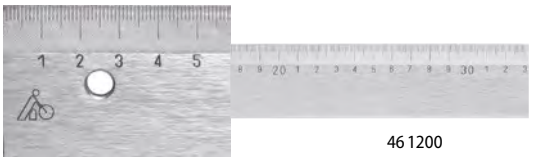
Length		mm	300	400	600	1000
41H 46 1170	Workshop straight edge with graduations on both sides		eShop	eShop	eShop	eShop
Cross-section width		mm	50			
Cross-section thickness		mm	5			

HOLEX Workshop straight edge steel, with bevel

46 1200 – With mm graduation on bevel. Of steel, faces finish ground and polished.

46 1300 – Without mm graduation. Of steel, faces finish ground and polished.

Note:
Size 2000; 3000 –Please note **additional carriage charge.**



46 1200


46 1300

Length		mm	500	1000	2000	3000
42G 46 1200	Workshop straight edge of steel with graduations		eShop	eShop	(eShop)	(eShop)
42G 46 1300	Workshop straight edge of steel without graduations		–	–	–	–
Cross-section width		mm	40	40	40	50
Cross-section thickness		mm	5	5	5	8

Overview of information / error limits

Error limits to EC Directives 2004/22

Pocket tape measures / steel rules								
Length	**m**	**1**	**2**	**3**	**4**	**5**	**8**	**10**
Tolerance EC I	**mm**	±0.2	±0.3	±0.4	±0.5	±0.6	±0.9	±1.1
Tolerance EC II	**mm**	±0.5	±0.7	±0.9	±1.1	±1.3	±1.9	±2.3

Folding rules				
Length	**m**	**1**	**2**	**3**
Tolerance EC II	**mm**	±0.5	±0.7	±0.9
Tolerance EC III	**mm**	±1.0	±1.4	±1.8

S/STL ▶F10◀ Cal

Engineer's precision steel rules

Of special **stainless** clock spring steel with ground measuring edges.
Wide version. Upper and lower edges both with mm graduations.
Very easy to read due to matt surface and sharp graduation scale.

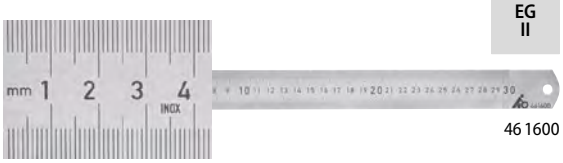
46 1400 – Graduations deeply engraved by laser beam.
High-precision graduations. Matt surface.
Particularly robust and wear resistant.
Individually tested and labelled with identification no.

46 1600 – Graduations electrolytically etched.
Matt non-reflective surface.



46 1400

EG II



46 1600

Length		mm	300	500	1000	1500	2000	3000
46R 46 1400	Engineer's precision steel rule **stainless, laser-engraved graduations**		eShop	eShop	eShop	(eShop)	eShop	(eShop)
42G 46 1600	Engineer's precision steel rule **stainless, matt finished**		eShop ■	eShop ■	eShop	eShop	eShop	eShop
Error limit (46 1400)		mm	0.1	0.1	0.15	0.2	0.2	0.3
Error limit (46 1600)		mm	0.4	0.4	0.5	0.6	0.7	0.9
Cross-section width		mm	30					
Cross-section thickness		mm	1					

EG I S/STL ▶F8◀ Cal

Engineer's precision steel rules

Made of **stainless** spring steel.
Smooth surface with very precise and sharp contrast graduations.
Very high accuracy and clear definition for legibility of the scale.
Upper edge with ½ mm graduations. Lower edge with 1 mm graduations.



46 1770_150

Length		mm	100	150	200	300	500
41H 46 1770	Steel rule, stainless		eShop	eShop ■	eShop ■	eShop ■	eShop
Cross-section width		mm	13	13	13	13	18
Cross-section thickness		mm	0.5				

EG I S/STL

Engineer's precision steel rules

Made of **stainless steel**, matt surface with sharp-contrast graduations.
Upper edge mm graduations, lower 1/2 mm graduations.
Rear with inch/metric conversion table and table of tapping drill ∅.

▶F8◀ Cal ▶F10◀ Cal
_150 _300–1000



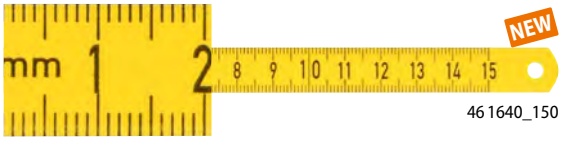
46 1630



Length		mm	150	300	600	1000
46R 46 1630	Steel rule, stainless		eShop ■	eShop ■	eShop	eShop
Error limit		mm	0.12	0.13	0.16	0.2
Cross-section width		mm	18	30	30	30
Cross-section thickness		mm	0.5	1	1	1

Isoflex rules, do not damage surfaces

Flexible spring steel rules with protective polyamide cover.
Very easy to read off and high wear protection.
Ideal for taking measurements on delicate surfaces such as painted surfaces.
Upper and lower edges 1/1 mm graduations.



46 1640_150

Length		mm	150	300	500
46R 46 1640	Flexible steel rule, does not damage surfaces		eShop	eShop	eShop
Cross-section width		mm	13		
Cross-section thickness		mm	0.3		

EG II | S/STL | ▶ F8 ◀ Cal

Flexible steel rules narrow

Made of **stainless** spring steel. Clean, electrolytically applied, black graduations and figures with smooth surface. Easy-to-read. Rounded edges to prevent injuries.

- 46 1796 – Upper and lower edges both with 1 mm graduations.
- 46 1805 – With additional scale on the rear.
- 46 1810 – Upper edge with inch graduations. Lower edge with mm graduations.
- 46 1815 – Upper edge with ½ mm graduations, lower edge with 1 mm graduations. **Scale from right to left.**
- 46 1818 – Upper and lower edges both with 1 mm graduations. **Scale from zero mid-point.**
- 46 1800/1805 – Upper edge with ½ mm graduations, lower edge with 1 mm graduations.


46 1796


46 1800


46 1805

mm / Inch


46 1810


46 1815


46 1818

Overall length		mm	100	150	200	300	500	1000
42G 46 1796	Flexible steel rule narrow, stainless **matt finished**		–	eShop	eShop	eShop	eShop	eShop
42G 46 1800			eShop	eShop ■	eShop	eShop ■	eShop ■	eShop
42G 46 1805	Flexible steel rule narrow, stainless **matt finished with graduations on rear**		–	eShop ■	eShop ■	eShop ■	–	–
42G 46 1810	Flexible steel rule narrow, stainless **matt finish with mm/inch graduations**		–	eShop	eShop	eShop	eShop	eShop
42G 46 1815	Flexible steel rule narrow, stainless **matted, scale from right to left**		–	–	–	eShop	eShop	eShop
42G 46 1818	Flexible steel rule narrow, stainless **matted, scale from zero mid-point**		–	–	–	eShop	eShop	eShop
Cross-section width		mm	13	13	13	13	18	18
Cross-section thickness		mm	0.5					

mm / Inch | S/STL | ▶ F10 ◀ Cal

Steel rule with sliding clip

Of stainless spring steel. Metric / imperial conversion table on the back. Removable sliding clip can be used as a retainer and as a depth gauge.

Length		mm	150
42G 46 1790	Steel rule with sliding clip, stainless		eShop ■



EG II | S/STL | ▶ G1 ◀ Cal

Roll-up steel tape measure

Stainless steel tape with wear-resistant stove-enamelled markings.

- 46 1992 – With a handy belt clip.
- Size 2H; 3H – With hinged hook.

Function:

- 46 1830 – Retracts easily at the push of a finger.
- 46 1992 – **Runs out automatically at the push of a button** and stops when the button is released.

Advantage: The convex camber allows the tape to lie **flat** on the desk, so that dimensions can be read and transferred easily and without errors.


The ruler retracts easily at the push of a finger.


46 1830

Band length		mm	500	1000
41H 46 1830	Roll-up steel tape measure		eShop	eShop
Tape width		mm	19	

Band length		m	2	3	2H	3H
41H 46 1992	Steel tape measure "Quickmeter"		eShop	eShop	eShop	eShop
Tape width		mm	16			
∅		mm	62			
Width		mm	24			

GERMAN DESIGN AWARD WINNER 2017




46 1992

EG I | ▶ G1 ◀ Cal

DESIGN AWARD 2019

Garant Tape measure, accuracy class 1

A particularly high-quality tape measure with a body made from glass-fibre-reinforced polyamide and automatic tape return. For the perfect grip, the contact areas and stop button are coated with **2-component Haptoprene**. Plain bearings with Teflon ensure smooth action and exceptionally easy running. **Innovative dampers** of special rubber absorb the reaction energy and protect the wrist. **Aluminium profile** inserted on the underside for precise standing. A special clear lacquer protects the tape against wear. The additional anti-glare correction ensures clear visibility under all light conditions.



46 2070_2

Band length		m	2	3	5
41H	46 2070	Tape measure	eShop	eShop	eShop
Tape width		mm	13	13	16
Body length		mm	62	62	70
Body width		mm	26	26	30
Body height		mm	59	59	69

EG I | ▶ G1 ◀ Cal

BMI Tape measure, accuracy class 1

A particularly lightweight and handy tape measure for professional use. Body of glass fibre-reinforced polyamide. **With push button for tape lock and automatic return.** Plain bearing of special TRIBOCOMP® material with Teflon ensures **smooth gliding** and exceptionally easy running. Innovative dampers of special rubber absorb the reaction energy and protect the wrist. A special clear lacquer protects the tape against wear. The **additional anti-glare correction** ensures clear visibility under all light conditions.



46 2090_5

Tape length		m	2	3	5	8	10
46M	46 2090	Tape measure Vario, accuracy class 1	eShop	eShop	eShop	eShop	eShop
Tape width		mm	13	13	16	19	19
Body length		mm	58	58	75	76	76
Body width		mm	26	26	26	32	32
Body height		mm	57	57	70	75	75

EG II | ▶ G1 ◀ Cal

DESIGN AWARD 2019

Garant Tape measures with viewing window

- Shock-resistant plastic casing.
- **Aluminium inlay on both work faces,** giving exact contact surfaces for inside and outside measurement.
- Aluminium profiles resistant to heat and mechanical loads.
- Tape measure stove enamelled, with black characters. Cambered = non-buckling with sliding end hook (for inside and outside measurements). Sharp-contrast, abrasion-resistant rustproof scale.
- Graduations mm / mm (upper / lower edges).
- **Viewing window scale reads in the same direction as the tape.**

46 2201 – Smallest tape measure with viewing window for inside measurements.

46 2215 – With two strong magnets in the base.



46 2201



46 2210





46 2215

Band length		m	2,5
41H	46 2201	Tape measure with viewing window	eShop ■
Tape width		mm	8
Body length		mm	48
Body width		mm	15
Body height		mm	48

Band length		m	2	3
41H	46 2210	Tape measure with viewing window	eShop	eShop
41H	46 2215	Tape measure with viewing window **and magnetic base**	–	eShop ■
Tape width		mm	16	
Body length		mm	63	
Body width		mm	24	
Body height		mm	63	

EG II | ▶ G1 ◀ Cal

DESIGN AWARD 2019

Garant Tape measure accuracy class 2

A particularly high-quality tape measure with a body made from glass-fibre-reinforced polyamide and automatic tape return.
For the perfect grip, the contact areas and stop button are coated with **2-component Haptoprene**.
Plain bearings with Teflon ensure smooth action and exceptionally easy running.
Innovative dampers of special rubber absorb the reaction energy and protect the wrist.
Aluminium profile inserted on the underside for precise standing.
A special clear lacquer protects the tape against wear. The additional anti-glare correction ensures clear visibility under all light conditions.

46 1900 – mm graduation
46 1910 – mm/inch graduations



46 1900_3



46 1910_2



Aluminium profile on the underside for precise standing.

Length		m	2	3	5
41H 46 1900	Tape measure		eShop ■	eShop ■	eShop ■
41H 46 1910	Tape measure mm/inch		eShop	eShop ■	eShop ■
Tape width		mm	13	13	16
Body length		mm	62	62	70
Body width		mm	26	26	30
Body height		mm	59	59	69

EG II | ▶ G1 ◀ Cal

BMI Tape measure accuracy class 2

A particularly lightweight and handy tape measure for professional use. Body of glass fibre-reinforced polyamide. **With push button for tape lock and automatic return**. Plain bearing of special TRIBOCOMP® material with Teflon ensures **smooth gliding** and exceptionally easy running. Innovative dampers of special rubber absorb the reaction energy and protect the wrist. A special clear lacquer protects the tape against wear. The **additional anti-glare correction** ensures clear visibility under all light conditions.

46 2122 – Particularly compact and lightweight tape measure - **35% less volume.**
46 2130 – **V2A version** with stainless bright measuring tape.



46 2122_3/MINI

46 2120_3



46 2130_5

Band length		m	2	3/MINI	3	5	8	10
46M 46 2120	Tape measure		eShop	–	eShop ■	eShop ■	eShop	eShop
46M 46 2122	Mini tape measure		–	eShop	–	–	–	–
46M 46 2130	Tape measure, stainless		eShop	–	eShop	eShop	eShop	–
Tape width		mm	13	10	13	16	19	19
Body length		mm	58	50	58	75	78	78
Body width		mm	26	22	26	26	32	32
Body height		mm	57	50	57	70	77	77

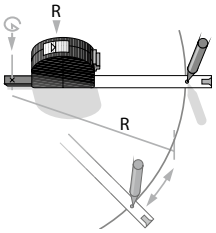
Casing of **chromium plated die–cast zinc.**
Metal tape black/red printing on white matt.
Particularly **insensitive** to **heat and mechanical stresses**. With automatic tape return and stop button.



46 2150

Tape length		m	2	3
46M 46 2150	Tape measure white in metal casing		eShop	eShop
Tape width		mm	13	
Body length		mm	55	
Body width		mm	20	
Body height		mm	60	

Function: 1. Length measurement 2. Internal measurement (reading in the viewing window in the same reading direction) 3. Circle measurement (fold-out centring pin for circles up to 6 m ∅.





46 2180

Tape length		m	3
46M 46 2180	Tape measure		eShop ■
Tape width		mm	16
Body length		mm	65
Body width		mm	25
Body height		mm	65

▶ G1 ◀
Cal

TAJIMA TopConve tape measure with automatic tape lock

- **Automatic tape stop (= locking) when pulling out.**
- Tape return by pressing button.
- Sliding end hook.
- Tape measure printed black/red on yellow, acrylic coated for high abrasion resistance
  Size 3,5; 5,5 – Grey plastic housing with white measuring tape. Accuracy to JIS1.

Band length		m	2	3	3,5	5	5,5
46R 46 2250	Tape measure with automatic tape lock **TopConve**		eShop	eShop	eShop	eShop	eShop
Tape width		mm			13		
Body length		mm	52	65	65	73	73
Body width		mm			22		
Body height		mm	49	61	61	68	68
Error limit		mm	0.7	0.9	0.8	1.3	1



46 2250_3,5

JIS I

EG II

46 2250_5

EG II

▶ G1 ◀
Cal

TAJIMA Tape measures extra sturdy

- Tape measure with particularly **high buckling stability.**
- Totally shock-proof plastic housing with removable belt clip.
- Automatic tape return and stop.
- Shock absorber reduces the impact at tape return.
- Sliding end hook.
- Tape measure printed black/red on yellow, acrylic coated for high abrasion resistance.
- Long-lasting spring made of high grade steel.

46 2330 – ■ Additionally with rubberised casing.
■ Tape printed both sides.

Band length		m	2	3	5	5/25	7	10
46R 46 2300	Tape measure **extra sturdy**		eShop	eShop	eShop	eShop	eShop	–
46R 46 2330	Tape measure, non-slip casing **extra sturdy**		eShop	eShop	–	eShop	eShop	eShop ■
Tape width		mm	13	16	19	25	25	25
Body length		mm	53	63	67	67	77	95
Body width		mm	21	25	28	28	34	45
Body height		mm	49	59	63	63	73	98



46 2300_5

46 2330_5/25

EG II

▶ G1 ◀
Cal

TAJIMA G-Lock tape measure

Your sturdy G-Lock tape measure with **extra-strong protective casing.** Non-slip casing. Sliding end hook secured with 3 rivets. Automatic tape return and stop. Shock absorber reduces the impact at tape return. Easy to read scale on the front and back. Tape measure printed black/red on yellow, acrylic coated for high abrasion resistance. Supplied with belt clip.

46 2338 – with magnetic end hook.

Band length		m	3	5	5/25	7	10
46R 46 2335	Tape measure **with extra-strong protective casing**		eShop	eShop	eShop	eShop	eShop
46R 46 2338	Tape measure **with extra-strong protective casing, with magnetic end hook**		–	–	eShop	–	–
Tape width		mm	16	19	25	25	25
Body length		mm	63	67	67	77	95
Body width		mm	25	28	28	34	45
Body height		mm	59	63	63	73	98



46 2335_5/25

46 2338_5/25

EG II

▶ G1 ◀
Cal

STANLEY Powerlock tape measure

Tape measure with shock-resistant chromium-plated metal casing. Extra-strong tape with scale of the front and back faces. With locking function and automatic tape return. Tape fully coated with a protective layer for high abrasion resistance. Supplied with belt clip.

Band length		m	3
46R 46 2360	Tape measure		eShop
Tape width		mm	12.7
Body length		mm	57
Body width		mm	22
Body height		mm	60



46 2360

EG II | G1 Cal

mm / Inch

Tape measures

Plastic casing with removable belt clip. Automatic tape return and stop, with damping effect. Sliding end hook.

46 2010 – Tape measure printed black/red on yellow. Casing in yellow with black rubber coating (except size 2)

46 2012 – Sliding end hook with 2 magnets. Tape measure printed black/red on yellow. Casing in yellow with black rubber coating.

46 2014 – White tape measure, with black characters, with mm/inch graduations (upper edge inch, lower edge mm). Casing in red with black rubber coating.



46 2010_10

Band length		m	2	3	5	8	10
42G	46 2010	Tape measure	eShop	eShop ■	eShop ■	eShop ■	eShop
42G	46 2012	Tape measure **with magnets**	–	eShop	eShop	–	–
42G	46 2014	Tape measure with mm/inch graduations	–	eShop ■	eShop ■	–	–
Tape width		mm	13	16	19	25	25
Body length		mm	65	66	74	80	90
Body width		mm	22	27	31	35	45
Body height		mm	57	59	68	75	90


46 2012

46 2014

mm / Inch

46

EG II | G1 Cal

Tape measure, inch graduations, accuracy class 2

Sturdy tape mechanism and handy belt clip. Body of impact-resistant ABS plastic with easy-grip soft components for secure handling. **With push button for tape lock and automatic return with damping.** White matt steel tape with black inch and feet graduated markings.

46 2220 – Pocket tape measure with **inch graduations.** Graduations inch/inch (upper and lower edges).

46 2225 – Pocket tape measure with **mm/inch graduations**. Graduations inch/mm (upper and lower edges).



46 2220_192

Tape length		in	120	192	312	396
46M	46 2220	Tape measure twoCOMP **Inch graduations**	eShop	eShop	eShop	eShop
46M	46 2225	Locking tape measure **mm/inch graduations**	eShop	eShop	eShop ■	eShop
Tape width		mm	16	19	25	30
Body length		mm	60	70	80	88
Body width		mm	60	70	80	88
Body height		mm	32	36	45	45

mm / Inch


46 2225

EG II | G1 Cal

White steel tape measure rust-proof

White steel tape measure enamelled both sides. Hardened tape, resistant to rust and moisture and abrasion-resistant due to the white synthetic resin coating. Retractable measuring hook (scale starts at inner face of hook). Casing made of impact resistant plastic.



46 2390



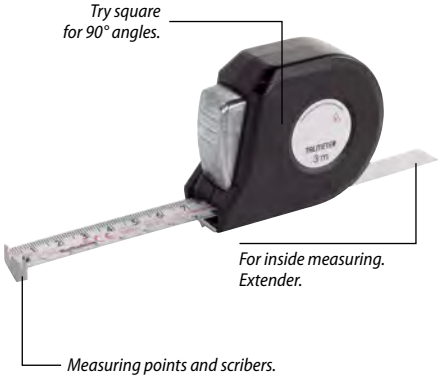
Band length		m	10
46M	46 2390	White steel tape measure in a capsule	eShop
Tape width		mm	10
Capsule length		mm	79
Capsule width		mm	20
Capsule height		mm	79

EG II | G1 Cal

Marking gauges TALMETER

Function:
- Marking and measuring in one.
- Even for **diameter and circumference measurement.**
- Measuring and marking edge of hardened and stainless spring steel.
- **Black** numbers = external dimensions, **red** numbers = internal dimensions.

Optional extras: Replacement tape No. 465691.



Band length		m	2	3	6
42G	46 5690	TALMETER marking gauge	eShop	eShop ■	eShop
Tape width		mm		16	

EG II | ▶ G1 ◀ Cal

Measuring tapes in capsule or frame

Capsule: Indestructible plastic casing with soft finish surface. Storage is provided in the casing for the crank arm and the pull ring. Can be converted for left-hand use.
Frame: Light metal frame with ball bearing mounted fast winding and folding crank.

46 5500 – Size 30 upwards with Vee side pieces.

46 2900/4500/3050/4850/3100/4900 – **Tape:** Patented tape start, **flextop coating.** Tape coating, made of transparent, highly flexible plastic, reliably prevents the tape from breaking at the start.

46 2900/4500 – **White steel measuring tape.** Hardened tape, phosphated coating provides corrosion resistance, with wear-resistant synthetic resin coating. Good legibility. With mm graduations throughout.

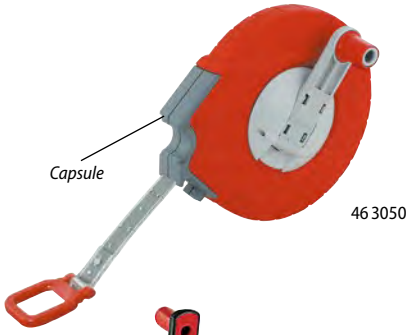
46 3050/4850 – **Stainless tape** of hardened chromium-nickel steel, transparently enamelled. Scale printed with clear, easy-to-read figures and graduations. Break-proof, with good flexibility. With cm graduations (first 20 cm graduated in mm).

46 3100/4900 – **Polyamide coated steel measuring tape.** Break-proof, with good flexibility. Non-buckling spring steel. **High abrasion resistance,** weather-proof and resistant to many chemicals and oils. With mm graduations throughout.

46 3300/5500 – **Glass fibre measuring tape. Extremely** buckling-resistant **and flexible,** weather-proof, and resistant to many chemicals. **Electrically non-conducting.** Good legibility. With cm graduations.

46 4500–4900 – Sizes 20 and 30 with straight side pieces, size 50 / size 100 with Vee side pieces.

Note: Additional versions with 100 m length, or with inch graduations, or with start of scale type B / C available on request.



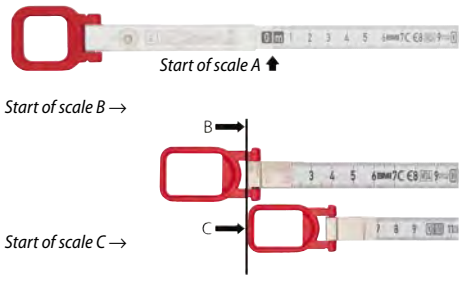
46 3050


46 4500_20–30



46 4500_50

Band length		m	10	20	30	50	100
46M 46 2900	White steel measuring tape **in a capsule**		eShop	eShop	eShop	–	–
46M 46 4500	White steel measuring tape **in a frame**		–	eShop	eShop	eShop	(eShop)
46M 46 3050	Stainless steel measuring tape **in a capsule**		eShop	eShop	eShop	eShop	–
46M 46 4850	Stainless steel measuring tape **in a frame**		–	eShop	eShop	eShop	–
46M 46 3100	Polyamide coated steel measuring tape **in a capsule**		eShop	eShop	eShop	–	–
46M 46 4900	Polyamide coated steel measuring tape **in a frame**		–	eShop	eShop	eShop	–
46M 46 3300	Glass fibre measuring tape **in a capsule**		eShop	eShop	eShop	–	–
46M 46 5500	Glass fibre measuring tape **in a frame**		–	–	eShop	–	–
Tape width		mm			13		
Type of tape start					A		
overall length (46 4500, 46 5500)		mm	–	280	310	340	430
overall length (46 4850)		mm	–	280	280	310	–
overall length (46 4900)		mm	–	310	310	390	–
Capsule length (46 2900, 46 3050)		mm	138	138	175	210	–
Capsule length (46 3100, 46 3300)		mm	138	175	210	–	–
Capsule width (46 2900, 46 3050)		mm	115	115	145	175	–
Capsule width (46 3100, 46 3300)		mm	115	145	175	–	–
Frame width (46 4500, 46 4850)		mm	–	120	120	150	200
Frame width (46 4900, 46 5500)		mm	–	150	150	180	–
Capsule height (46 2900, 46 3050, 46 3100, 46 3300)		mm	32	32	32	32	–
Capsule height (46 4500)		mm	–	–	–	–	42



EG II | ▶ G1 ◀ Cal

Measuring tapes self-adhesive

White lacquered steel measuring tape, corrosion-proof. Wear-resistant, mm graduations. **Ideal for workbenches.** Resistant to oil and chemicals. Tape thickness 0.5 mm.

46 2380 – With scale from left to right.

46 2382 – With scale from right to left.


46 2380


46 2382

Band length		m	2	5	10	15	20
46M 46 2380	Self-adhesive measuring tape		eShop	eShop	eShop	(eShop)	(eShop)
46M 46 2382	Self-adhesive measuring tape with scale from right to left		eShop	eShop	eShop	(eShop)	(eShop)
Tape width		mm			13		

Measuring tape CJU for measuring external circumferences and ∅

G2 Cal

Steel measuring tape **CJU** for measuring external circumferences and ∅ of spherical bodies. The spring steel strip is laser scaled on the front with 2 scales, one for circumference and the other for ∅. Graduations 1 mm. **Vernier reading 0.1 mm.** Scale graduation error limits to DIN 866.

46 5682/5684 – **V2A version** made of stainless spring steel.

Advantage:

46 5684 – Easy handling and centring capability thanks to broad contact face. Increased stability. Quicker and more reliable measuring.

Note: Measuring tapes C with reading 0.05 mm and measuring tapes with black coating available on request. Fixed version CJU on request.



46 5680





46 5684



maximum total measuring range		mm	950	2200	3460	4720	5980
46R	**46 5680**	Steel measuring tape for circumference and ∅	eShop	eShop	eShop	(eShop)	(eShop)
46R	**46 5682**	Stainless steel measuring tape for circumference and ∅	eShop	eShop	eShop	(eShop)	(eShop)
46R	**46 5684**	Stainless steel measuring tape for circumference and ∅ **Tape width 35 mm**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Measuring range for ∅		mm	20 – 300	300 – 700	700 – 1100	1100 – 1500	1500 – 1900
Measuring range for circumferences		mm	60 – 950	940 – 2200	2190 – 3460	3450 – 4720	4710 – 5980
Tape width (46 5680, 46 5682)		mm	16				
Tape width (46 5684)		mm	35				
Tape thickness		mm	0.2				
Scale divisions		mm	0.1				

Laser distance meter DISTO™

mm/Inch

Impact resistant plastic casing with easy-to-use keypad with symbols. High quality **Leica glass lens** in an particularly temperature-resistant and sturdy **magnesium casing.** Illuminated and rotating colour display for optimum legibility. Laser class 2 tested in accordance with ISO 16331-1.

Size D2 – Small and handy laser distance measuring tool, especially for indoor work.

Size X3 – The **integral 360° inclination sensor** shows the inclination of an object when the casing is placed directly on it, thus permitting indirect height measurement. Multi-function endpiece for measuring from corners. A robust rubber membrane protects the lens and also provides protection if dropped from a small height.

Size D5 – Powerful distance meter with integrated point finder camera for easy aiming over long distances or when outdoors. Patented gesture control with 2.4-inch colour display, XL end piece.

Size X6 – Integrated point finder camera for easy aiming when indoors and outdoors. 2 m drop resistance, patented gesture control with 2.8-inch touch colour display, XL end piece, measuring button on the side.

Supplied with: Protective holder and wrist strap.

Size D2 – Supplied with 2 batteries No. 081561 size LR3.

Size X3 – Supplied with 2 batteries No. 081561 size LR6.

Size D5; X6 – USB-C cable and integrated Li-ion rechargeable battery.

Note: Data transfer via Bluetooth® Smart; also by smartphone using Leica "DISTO™ Plan" app (Android from version 8.1, Apple from iOS 16.2). Easy generation of sketches.



Simple creation of dimensioned sketches and inserting dimensioning into a photo using the DISTO Plan app.



IP 54



_D2

IP 65



_X3

IP 54



_D5

IP 65



_X6

Type			D2	X3	D5	X6
47C	**46 5550**	Laser distance meter DISTO™	–	–	–	–
Measuring accuracy		mm	±1.5	±1.0	±1.0	±1.0
Threaded socket for stand		in	–	1/4 UNC	1/4 UNC	1/4 UNC
multi-function endpiece			yes			
Range		m	100	150	200	250
Addition/subtraction			yes			
Minimum / maximum measurements			yes			
Surface and volume calculations			yes			
indirect measurements (Pythagoras)			yes			
Clinometer		degrees	–	360	360	360
Digital target searcher with zoom			–	–	4-fold	4-fold
Recall last measurements			yes			
Power supply			081561 LR3	081561 LR6	Li-ion	Li-ion
Length		mm	116	132	144	155
Width		mm	44	56	60	68
Height		mm	26	29	24	25
Weight		g	100	184	180	230

BOSCH Laser distance meters

Laser distance measurement device with robust, shock-resistant casing, splash-proof and dust-proof. Illuminated three-row display for optimum legibility. Laser class 2 to IEC 825-1.

Size GLM50-27C – Simple operation with improved user interface and illuminated display. Plug-in function. The integral 360° inclination sensor shows the inclination of an object when the casing is placed directly on it, thus permitting indirect height measurement. Create a digital floor plan, import existing floor plans, edit them and export the result together with simple building site dimensioning. Quick and efficient data transmission and documentation thanks to Bluetooth® connectivity and Bosch MeasureOn app.

Size GLM150-27C – Save images in the internal memory and transfer images to the PC via USB. Integrated Li-ion battery makes for very flexible working and improves sustainability.

Size GLM100-25C; GLM150-27C – Precision over long distances. Measurements transmitted via Bluetooth® to the new MeasureOnApp.

Supplied with: Includes protective case.

Size GLM40 – With batteries 081551 LR3.

Size GLM150-27C – Incl. Li-ion battery + micro-USB cable.

Size GLM50-27C; GLM100-25C – Incl. batteries No. 081551 LR6.

Optional extras: Measuring stand No. 468558.

IP 54



IP 65



IP 54



IP 54



Type		GLM40	GLM50-27C	GLM100-25C	GLM150-27C
46T 46 5560	Laser distance meter	–	–	–	–
Measuring accuracy	mm	±1.5			
Threaded socket for stand	in	–	1/4	1/4	1/4
Range	m	40	50	100	150
Addition/subtraction		yes			
Minimum / maximum measurements		–	yes	yes	yes
Surface and volume calculations		yes			
indirect measurements (Pythagoras)		yes			
Clinometer	degrees	–	360	360	360
Digital target search		–	–	yes	yes
Recall last measurements		yes			
Power supply		081551 LR3	081551 LR6	081551 LR6	Li-ion battery
Length	mm	105	119	142	142
Width	mm	41	53	64	64
Height	mm	24	29	28	28
Weight	g	100	200	230	210

IP 54

HOLEX Laser distance meters

Attractively-priced laser distance measurement device for quick and easy performance of standard measurement tasks. Ergonomically shaped 2-component casing. Soft-touch keyboard with self-explanatory symbols. Background lighting of LCD display can be activated. Graphical symbols in the display support the user during measurement operations. Laser class 2.

Accuracy: Deviation ± 1.5 mm over a 10 m measuring length under optimum conditions.

Supplied with: Includes 2× batteries No. 081551 LR3, belt pocket and wrist strap.



46 5540

Range	m	60	110
42I 46 5540	Laser distance meter	–	–
Measuring accuracy	mm	±1.5	
Range	m	60	110
Addition/subtraction		yes	
Minimum / maximum measurements		yes	
Surface and volume calculations		yes	
indirect measurements (Pythagoras)		yes	
dynamic measurement		yes	
Measured value memory		20	
acoustic confirmation of measurements		yes	
Automatic switch-off	min	3	
Power supply		2× 081551 LR3	
Length	mm	110	
Width	mm	46	
Height	mm	28	
Weight	g	100	

L-BOXX

BOSCH Location device

Reliable location even of buried objects up to 120 mm deep. Three detection modes (plasterboard, metal, live cables) for different applications. Reliable detection of objects, giving a visual and acoustic signal.
Point measurement enables location even on very small surfaces. Optical indication of direction for precise localisation of the object centre.

Application: Detectable materials: Ferrous metals, non-ferrous metals, wooden frameworks, live cables. Additionally detectable material: Plastic pipes filled with water.

Supplied with: Li-ion battery, quick charger, L-Boxx



46 5570_DTECT120

Type		DTECT120
46T 46 5570	Location device	eShop
Measuring range	mm	120
Detection depth steel	mm	120
Detection depth copper	mm	120
Detection depth live conductors	mm	60
Detection depth wood	mm	38
Accuracy	mm	±10
Weight	g	490
Length	mm	206
Width	mm	92
Height	mm	85

EG III

BMI Wooden folding rules

Graduations in mm at both bottom and top. Easy-to-read graduations. Decimal figures red. Close-fitting sections of high-quality beech wood.

46 5960 – Folding wooden rule with jointed sections of reinforced plastic, integrated angles and continuous straight edge for scribing.
46 6005 – Yellow dip painted throughout.
46 6013 – Dip painted, alternating white / yellow every 10 cm for easier recognition.
46 6016 – Natural colour – slim sections for high flexibility.
46 6005–6016 – Enclosing high-strength jointed sections with hardened steel springs and concealed rivets.


46 5960


46 6005


46 6013


46 6016

Length	m	1	2
46M 46 5960	Wooden folding rule, white	–	eShop ■
46M 46 6005	Wooden folding rule, yellow	–	eShop
46M 46 6013	Wooden folding rule white / yellow	–	eShop
46M 46 6016	Wooden folding rule, natural	eShop	eShop
Number of sections		6	10
Width	mm	16	
Thickness (46 5960, 46 6005, 46 6013)	mm	–	3.3
Thickness (46 6016)	mm	3.3	

EG III

Hultafors Wooden folding rule – Swedish metre

Original Swedish metre. Graduations in mm at both bottom and top. Black-red duplex graduations, easy to read. **Highly resilient sections of Swedish birch**, natural colour, varnished. Sturdy, lubricated joints with invisible joint rivets.


46 6018

Length	m	2
46R 46 6018	Wooden folding rule "Swedish metre"	eShop
Number of sections		10
Width	mm	17
Thickness	mm	2.3

Light metal folding rule

Sections of tough aluminium with precision mm graduations on both sides. With **black anodised** surface and white graduations. Unaffected by dirt thanks to the sealed scale.

EG II



46 6400

Length		m	2
46M 46 6400	Light metal folding rule		eShop ■
Number of sections			10
Width		mm	14

Plastic folding rule Long life

Sections of **glass-fibre reinforced, rigid plastic** with matt surface. Extremely wear-resistant and unbreakable; crack-proof / scratch-proof / waterproof. With grooved connections between sections and precisely embossed mm graduations. Sections click into 90° and 180° positions.

Size 2R – With wear-resistant metal ends on first and last element. Reverse scale reading on front and back.

46 6210 – Outer layer of **longitudinally aligned glass fibres** absorbs bending forces and gives the rule **particular stiffness**. Patented joint with pre-loaded spring pins.

46 6220 – Type tested for working on live equipment up to 1000 V, with integral cable pull-in aid and additional marking for socket spacing.

EG III



46 6200_1



Precision plastic locking profiles. 46 6200_2



EG II

46 6200_2R



46 6210

EG III



46 6220_2

Length		m	1	2	2R
46R 46 6200	Plastic folding rule		eShop	eShop ■	eShop
46R 46 6210	Plastic folding rule **specially glass fibre-reinforced**		–	–	eShop
46R 46 6220	Plastic folding rule **Electrical industry**		–	eShop	–
Number of sections				10	
Width		mm	13	15	15

Digital telescopic rule with Bluetooth®

Features an integrated Bluetooth® interface, a large, illuminated display and a very robust design. Integrated Bluetooth® interface enables measurement values to be transferred directly to a smartphone, tablet or laptop. No need for special software for data transmission.

Supplied with: Incl. batteries No. 081561 size LR6 and padded bag.



46 6030

Length		m	3
46R 46 6030	Digital telescopic rule		(eShop)
Measuring range		m	0.7 – 3
Error limit		mm	±1
Resolution		mm	1

Light metal spirit levels

Compact light metal spirit level of aluminium. Flat and **Vee-form measuring faces.** Consistent accuracy thanks to non-stressed mounting of the ground glass vials, with scale.

Application: For easy adjustment of horizontal surfaces and shafts.



46 7490

Length		mm	100	150	200	250	300
46U 46 7490	Light metal spirit level		eShop ■	eShop	eShop	eShop	eShop
Scale divisions		mm/m	0,6				
Width		mm	22				
Height		mm	22				

Wooden spirit levels

Hardwood (bamboo) spirit level, oiled. For sensitive surfaces. High-precision CNC production process ensures both base faces are plane parallel.



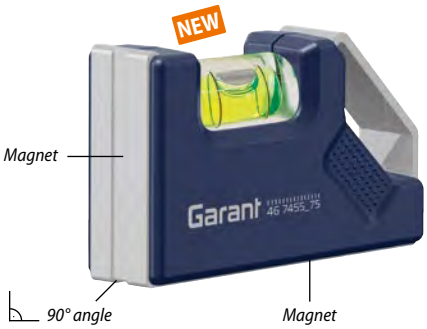
46 7472

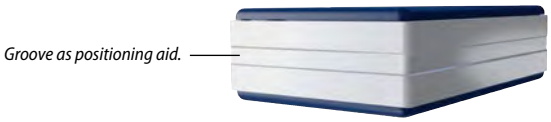
Length		mm	300	500
46M 46 7472	Hardwood spirit level		eShop	eShop
Error limit in normal position		mm/m	1	

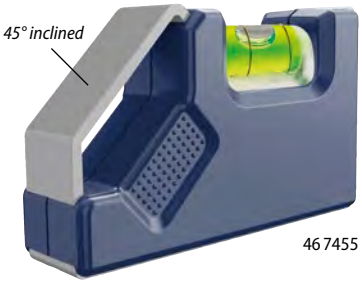
Garant Pocket spirit level

Pocket spirit level with all-round aluminium frame with groove as positioning aid as well as 45° angle and 90° angle.

Function:
- With magnet in the measuring surface.
- Round level for optimum visibility without reflection.







46 7455

Length	mm	75
41H 46 7455	Pocket spirit level	eShop
Error limit in normal position	mm/m	1
Length	mm	75
Width	mm	45
Height	mm	20

BMI Pocket spirit level e-level

- Sturdy body with securely encapsulated vial for horizontal and vertical measurement.
- For aligning flush-mounted sockets / switches or also tiles and strips.
- Integrated scaling.
- Zero mid-point.
- With powerful magnets on the back.



46 7478

Length	mm	70
46M 46 7478	Pocket spirit level **e-level**	eShop
Error limit in normal position	mm/m	1
Length	mm	70
Width	mm	45
Height	mm	20

STABILA Pocket spirit levels

Sturdy aluminium core body with securely encapsulated vials for horizontal measurements.
Extra-strong rare-earth magnet for secure attachment to metal objects.

46 7482 – Rectangular aluminium frame with precision milled measuring faces at the sides and base. Additionally with a Vee groove for placing on convex surfaces. Strong rare-earth magnets in the base and sides.

46 7484 – For quick and reliable alignment of flush-mounted switches and sockets. The recess for the screwdriver guide conveniently allows the component being installed to be aligned with the spirit level in place.

Supplied with: Sturdy belt clip.



46 7482



46 7484

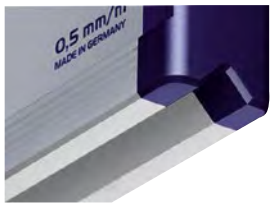
Length	mm	70
46M 46 7482	Pocket spirit level **Pro Magnetic**	eShop ■
46M 46 7484	Pocket spirit level **Electric**	eShop
Error limit in normal position	mm/m	1
Length	mm	70
Width	mm	20
Height	mm	40

Garant Small spirit levels with selectable magnet

Sturdy anodised aluminium profile. Flat and **Vee-form measuring faces.** The **selectable magnet** is effective on flat surfaces and **even on pipes.** Flush vials with magnifying effect create distortion-free views of the vial bubbles. The vertical head vial is also very clearly visible from above. **Error limit for overhead measurement: 0.5 mm/m.**

Size 600 – With two separately switchable magnets.
Size 250; 400 – With a switchable magnet.

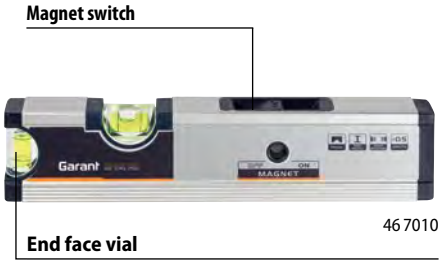
reddot design award winner 2010



Prismatic measuring face.



Switchable magnet.



46 7010

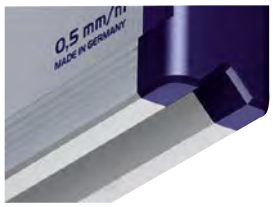
can be read without problems from virtually any position.

Length		mm	250	400	600
41H 46 7010	Spirit level **with selectable magnet**		eShop ■	eShop	eShop
Error limit in normal position		mm/m	0.5		

Garant Light metal spirit levels

Thick-walled anodised aluminium profile with very high rigidity. Flat and Vee-form measuring faces for perfect alignment on surfaces, pipes and edges. Flush horizontal vial with magnifying effect creates distortion-free view of the vial bubble.

46 7025 – With **powerful permanent magnets.**
Size 1800; 2000 – With two vertical vials.



Prismatic measuring face.



46 7020_600



46 7025_600

Length		mm	250	400	600	800	1000	1800	2000
41H 46 7020	Light metal spirit level		eShop	eShop	eShop	eShop	eShop	eShop	eShop
41H 46 7025	Light metal spirit level **with magnet**		–	–	eShop	eShop	eShop	–	–
Error limit in normal position		mm/m	0.5						
Error limit for overhead measurement		mm/m	0.75						

HOLEX Aluminium spirit levels

46 7435 – Sturdy powder-coated aluminium profile.
46 7436 – Sturdy anodised aluminium profile with **powerful permanent magnets.**



46 7435



46 7436

Length		mm	300	400	500	600	800	1000
42G 46 7435	Aluminium spirit level		eShop ■	eShop ■	eShop	eShop	eShop	eShop
42G 46 7436	Aluminium spirit level **with magnet**		eShop	eShop	eShop	eShop	eShop	eShop
Error limit in normal position		mm/m	0.5					

STABILA Light metal spirit levels

Body of rectangular profile. Unbreakable Perspex vials. Specially corrosion-resistant light metal alloy.

46 7210 – Two flat and parallel milled measuring faces. End caps of rubber prevent slipping when marking out.

46 7220 – Ribbed rectangular profile with two measuring faces. End caps of rubber prevent slipping when marking out. With **powerful magnets.**



46 7030_600



46 7210_600



46 7220_600

Length		mm	300	400	600	800	1000	1800	2000
46M 46 7030	Light metal spirit level		eShop	eShop	eShop	eShop	eShop	eShop	eShop
46M 46 7210			–	eShop	eShop	eShop	eShop	–	–
46M 46 7220	Light metal spirit level **with magnet**		–	eShop	eShop	eShop	eShop	–	–
Error limit in normal position		mm/m	0.5						
Error limit for overhead measurement		mm/m	0.75						

BMI Aluminium magnetic spirit levels

Sturdy, powder-coated aluminium profile with milled measuring faces.

- Round vials with magnification effect.
- With **powerful magnetic clamping system.**

46 7350 – Also with rotating vials (% and degrees).



46 7345

Length		mm	500	800
46M 46 7345	Light metal spirit level **with magnet**		eShop	eShop
46M 46 7350	Light metal spirit level **with magnet and angular vial**		eShop	–
Error limit in normal position		mm/m	0.5	
Error limit for overhead measurement		mm/m	0.5	



46 7350

BMI High-precision aluminium spirit levels Highprecision R1000

Extremely sturdy 4-chamber profile with shock-absorbing rubber end caps. Flush-mounted horizontal vial for undistorted view of the bubble. If the alignment is not level, the vial bubble travel is **5× greater than for conventional spirit levels.** Out-of-true alignments can thus be noticed more quickly, this enables **quick and highly precise alignment of surfaces.**





46 7460

Length		mm	1000	1200	1800	2000
46M 46 7460	High-precision aluminium spirit level **Highprecision R1000**		eShop	eShop	eShop	eShop
Error limit in normal position		mm/m	0.3			

BMI Aluminium levels

Aluminium profile with 2 through grips, one vertical vial and one horizontal vial.

Note: **Price including freight costs.**



46 7466

Length		mm	1800	2000	2500	3000	4000
46M 46 7466	Aluminium level		eShop	eShop	eShop	eShop	eShop
Error limit in normal position		mm/m	1				
Width		mm	18				
Height		mm	100				

IP 67 | ▶ H2 ◀ Cal

Garant Light metal spirit level with digital clinometer

Electronically measures the angle and displays it digitally. The measuring computer can be calibrated both horizontally and vertically in mere seconds. Can also be used conventionally thanks to one horizontal and one vertical level.

Advantage:
- Lithium-ion battery can be charged via USB-C.
- Automatic screen rotation.
- Sturdy anodised aluminium profile.
- Prismatic measuring face.
- Acoustic guidance.
- Dustproof and waterproof.
- Integrated digital circular level.

Supplied with: Rechargeable battery supplied. In a stable, transparent plastic screw tube.

Optional extras:
- USB charger No. 081601 size HC105.
- USB charging cable No. 081603 size USB-C.



46 7520_600

Length		mm	250	400	600	800	1000	1200	1800	2000
4TH 46 7520	Electronic light metal spirit level		eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
Error limit in normal position and for measurement reversal		mm/m	0.5							
Error limit of electronics module		degrees	0.05 (0°; 90°); 0.1 (1° – 89°)							

IP 67 | ▶ H2 ◀ Cal

STABILA Light metal spirit levels with electronic clinometer

Exceptionally robust aluminium rectangular profile with shock-absorbing end caps. Two optimally legible digital displays in every operating situation – illuminated at the push of a button. Dustproof and waterproof.
Display modes: °, %, mm/m, in/ft – decimal and as fractions. Keyboard lock. Acoustic targeting with two different audible signals. Reference value freely selectable. Warning if the spirit level is tipped in the second axis. **Self-calibrating in steps of 90°.** Up to 400 hours operation on a single battery charge.

Supplied with: Including batteries No. 081551 LR6.
Including transport bag.



46 7554_600

Length		mm	600	800	1000
46M 46 7554	Electronic light metal spirit level		eShop	eShop	eShop
Error limit in normal position and for measurement reversal		mm/m	0.5		
Error limit of electronics module		degrees	0.05 (0°; 90°); 0.2 (1°-89°)		

Garant Small spirit level

Handy small spirit level. Die-cast aluminium profile. Face-milled measuring surfaces with Vee base. Unbreakable acrylic vials (vertical + horizontal).

46 7445 – In addition, 360° rotatable level indicator with fine adjustment. Vee groove and magnet in the measuring face.



46 7440



46 7445

Length		mm	250
4TH 46 7440	Spirit level		eShop
4TH 46 7445	Spirit level **with magnet**		eShop
Error limit in normal position		mm/m	0.5

STABILA Small spirit levels

Handy small spirit level. Die-cast aluminium profile. Face-milled measuring faces. Unbreakable acrylic vials (vertical + horizontal).

46 7414 – Additionally 360° rotating vial. Vee groove and magnet in the measuring face.



46 7412



46 7414

Length		mm	250
46M 46 7412	Spirit level		eShop ■
46M 46 7414	Spirit level **with magnet**		eShop ■
Error limit in normal position		mm/m	0.5

BMI Control cabinet spirit level

Robust spirit level of glass fibre reinforced ABS plastic. Very easy to read round vials. With two strong button magnets.

Length		mm	250
46M	46 7475	Control cabinet spirit level **with magnet**	eShop
Error limit in normal position		mm/m	1



46 7475

STABILA Electrician's spirit level

Electrician's spirit level with slip stoppers on the end caps. Integral marking holes at standard intervals for measuring and marking the hole spacings of switches and sockets in a single operation.



46 7415

Length		mm	430
46M	46 7415	Electrician's spirit level	eShop
Error limit in normal position		mm/m	0.5
Spacing of drilled holes		mm	71

wiha Electrician's spirit level

For measuring and marking horizontal and vertical distances between flush-mounted boxes. **Variable distance marks** for up to 4 flush-mounted boxes. Convenient dimensioning with top view thanks to ingeniously positioned scales. End-to-end casing for uninterrupted marking of lines. Perfect visibility of both vials, even from a sharp angle.



46 7413

Length		mm	400
46P	46 7413	Electrician's spirit level	eShop
Error limit in normal position		mm/m	0.5
Spacing of drilled holes		mm	71

BMI Acrylic vials

Sturdy plastic body with 3 fastening holes. Round vial with ring markings for horizontal alignment in two axes.
Size 80 – With 3 additional ring markings (1°, 2°, and 3°).

∅		mm	30	80
46M	46 7492	Capsule vial	eShop	eShop
Height		mm	11	12



46 7492_30



46 7492_80

Unbreakable acrylic block; vial with 2 ring markings.
Size 55 – 2 fastening holes; underside white coated.



46 7494_55

Length		mm	55	100
46M	46 7494	Longitudinal vial	eShop	eShop
Width		mm	15	
Height		mm	15	



46 7494_100

Crossways spirit level for simultaneous alignment of two horizontal planes.
Size 60 – Sturdy plastic casing with two attachment holes.
Size 95 – 95 mm scale for measuring and easy marking.



46 7496_95



46 7496_60

Length		mm	60	95
46M	46 7496	Crossways spirit level	eShop	eShop
Width		mm	45	15
Height		mm	10	40

DIN 877 | ▶ H2 ◀ Cal

Garant Shaft spirit levels

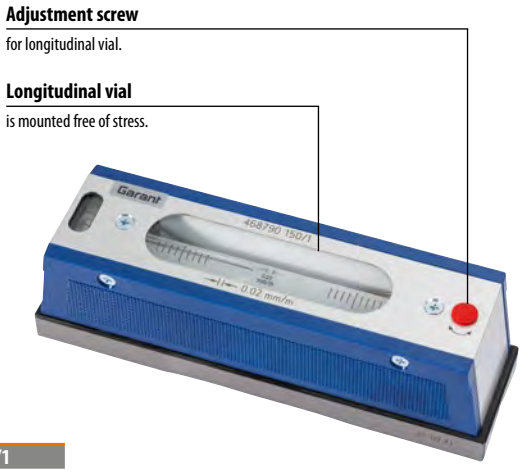
Sturdy housing of high quality special casting; Vee base with ground contact surfaces in the angle (important for marking out, aligning, etc.). All measuring faces are exactly parallel to the axis of the vial. One longitudinal and one transverse vial each of glass. With insulated handles on the housing and protective glass over the vials.

Adjustment of the longitudinal vial:
An adjustment screw allows the longitudinal vial to be reset to the 0 position easily and without play, with no need for disassembly.

Standard: **DIN 877**

Accuracy: **1** = with very high sensitivity longitudinal vial **0.02 mm/m.**
2 = with high sensitivity longitudinal vial **0.1 mm/m.**
4 = with normal sensitivity longitudinal vial **0.4 mm/m.**

Application: For aligning surfaces, shafts, machines etc.



46 8790

Base Length×Accuracy	mm	150/1	200/1	300/1
41H **46 8790**	Shaft spirit level with adjustable vial	eShop	eShop	eShop
Scale divisions	mm/m	0.02		
Sole width	mm	40		

DIN 877 | ▶ H2 ◀ Cal

Shaft spirit levels

Sturdy housing of high quality special casting; hammer finish. Vee and flat base with precision-ground contact surfaces in the angle (important for marking out, aligning, etc.). All measuring faces are exactly parallel to the axis of the vial. One longitudinal and one transverse vial each of glass. With insulated handles on the housing and protective glass over the vials.

46 8810 – Full thermal insulation over the entire housing protects against the effects of the heat of hands or breath. Recess in the body permits a side view of the vial. Supplied in a sturdy plastic case with suitable inlay.

Standard: **DIN 877**

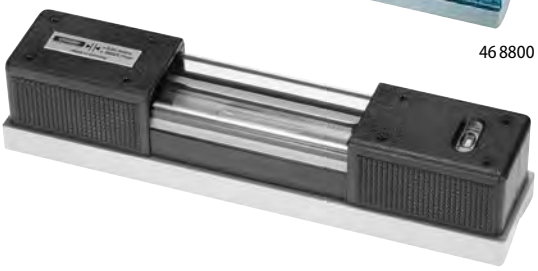
Accuracy: **1** = with very high sensitivity longitudinal vial **0.02 mm/m.**
2 = with high sensitivity longitudinal vial **0.1 mm/m.**
4 = with normal sensitivity longitudinal vial **0.4 mm/m.**

Application: For aligning surfaces, shafts, machines etc.

Note:
46 8810 – Magnetic version available on request.



46 8800



46 8810

Base Length×Accuracy	mm	160/1	160/2	160/4	200/1	200/2	200/4	250/1	250/2	300/1	300/2
46R **46 8800** STIEFELMAYER	Shaft spirit level	–	eShop	eShop	eShop ■	eShop ■	eShop	eShop	eShop	eShop	eShop
46U **46 8810** ROECKLE	Shaft spirit level	eShop	eShop	–	eShop ■	eShop	–	eShop	eShop	eShop	eShop
Scale divisions	mm/m	0.02	0.1	0.4	0.02	0.1	0.4	0.02	0.1	0.02	0.1
Sole width (46 8800)	mm	–	40	40	40	40	40	40	40	50	50
Sole width (46 8810)	mm	42	42	–	42	42	–	42	42	42	42

DIN 877 | ▶ H2 ◀ Cal

STIEFELMAYER Crankpin spirit levels

Sturdy housing of high quality special casting; hammer finish.
Longitudinal and traverse Vee profiles in the ground sole.
Longitudinal and traverse vials of glass.

Application: Mainly used for aligning crankshafts and crankpins on engines.



46 9400

Base Length×Width	mm	60×40	90×40
46R **46 9400**	Crankpin spirit level	eShop	eShop
Reading longitudinal vial	mm/m	0.1	
Reading transverse vial	mm/m	0.8	

DIN 877 | ▶ H1 ◀ Cal

Garant Square frame levels

Sturdy frame of high quality special casting; hammer finish.
3 sides Vee ground, 1 side flat. One longitudinal and one transverse vial each of glass.
The sensitivity (scale value) of the longitudinal vial is specified on the square.
Accuracy grade 1 has insulated handles on the housing and protective glass cover over the vials.
Adjustment of the longitudinal vial:
An adjustment screw allows the longitudinal vial to be reset to the 0 position easily and without play, with no need for disassembly.

Standard: **DIN 877**
Accuracy: **1** = with very high sensitivity longitudinal vial **0.02 mm/m.**
2 = with high sensitivity longitudinal vial **0.1 mm/m.**
Application: For aligning horizontal and vertical faces, shafts etc. and for accurate alignment at a 90° angle.

Note: Magnetic version available on request.


46 9190

Base Length×Accuracy		mm	150/2	200/1
41H **46 9190**	Square frame level with adjustable vial		eShop	eShop
Scale divisions		mm/m	0.1	0.02
Sole width		mm	40	

DIN 877 | ▶ H1 ◀ Cal

Square frame levels

Sturdy frame of high quality special casting; hammer finish. 3 sides prismatic and flat.
1 side flat, all precision ground. One longitudinal and one transverse vial each of glass.
The sensitivity (scale value) of the longitudinal vial is specified on the square.

46 9200 – Insulated handles on the housing protect against the effects of body heat.
46 9210 – Thermal insulation over the entire body protects against the effects of the heat of hands or breath. Recess in the body permits a side view of the vial.

Standard: **DIN 877**
Accuracy: **1** = with very high sensitivity longitudinal vial **0.02 mm/m.**
2 = with high sensitivity longitudinal vial **0.1 mm/m.**
Application: For aligning horizontal and vertical faces, shafts etc. and for accurate alignment at a 90° angle.

Note:
46 9210 – Magnetic version available on request.


46 9200


46 9210

Base Length×Accuracy		mm	100/2	150/1	150/2	200/1	200/2
46R **46 9200**	STIEFELMAYER	Square frame level	eShop	eShop	eShop	eShop	eShop
46U **46 9210**	ROECKLE		eShop	eShop	eShop	eShop	eShop
Scale divisions		mm/m	0.1	0.02	0.1	0.02	0.1
Sole width (46 9200)		mm	28	37	37	41	41
Sole width (46 9210)		mm	34	42	42	42	42

▶ H2 ◀ Cal

Nedo® Winkeltronic Easy protractor

Protractor with precise display of the angular position of the movable blade.
With integral horizontal and vertical vials. Data storage key for locking the measurement values.
Display can be zeroed in any position.
Supplied with: 4 batteries No. 081561 size LR6, case.



46 7540

Length		mm	400	600
46R **46 7540**	Winkeltronic protractor, resolution 0.1 degrees		eShop	eShop
Measuring range		degrees	0 – 200	
Graduations		degrees	0.1	
Error limit		degrees	0.2	

TAJIMA Clinometer

Simple, easy to use clinometer. Base made of aluminium with inset magnets.
Rotating vials can be positioned with thumbwheel.
Scaling on the rotating disc in degrees and mm/m.

Length		mm	250
46R 46 7355	Clinometer		eShop
Width		mm	20
Height		mm	125


46 7355

HOLEX Digital clinometer

Sturdy metal housing with 2 strong magnets on the base and on each of the flat side faces.
Angular measurement reading on the large LCD display.
The display rotates automatically for angles greater than 90°.
Angle can be displayed to the horizontal or between two faces (absolute and relative measurement).

Supplied with: 1 battery No. 081551 size 6LR61.

42G 46 7564	Digital clinometer		eShop
Graduations		degrees	0.05
Error limit of electronics module		degrees	0.5
Length		mm	56
Width		mm	56
Height		mm	31



46 7564

SPI Digital clinometer

Standard H2 Cal

- Aluminium frame with precision measurement faces, Vee profile at top.
- Direction arrows in the display facilitate alignment to 0° and 90°.
- Hold function for retaining the measurement result.
- Zero setting in any position.

Size 360 – ■ The display can be rotated for overhead measurement so the values can be read from below.

Supplied with: Storage case and 1 battery No. 081561 size 6LR61.

Type			360	3600
46R 46 7560	Digital clinometer		eShop	eShop
Measuring range		degrees	360 (4×90°)	
Graduations		degrees	0.1	0.01 (0° – 9.99°) / 0.1 (10° – 90°)
Error limit of electronics module		degrees	Horizontal 0.1 / vertical 0.2	0.05 (0° – 10°) / 0.1 (80° – 90°) / 0.2 (11° – 79°)
Flatness tolerance		mm	0.0762	
Length		mm	153	
Width		mm	31	
Height		mm	49	



46 7560

STABILA Digital clinometer

IP 65 H2 Cal

Compact and sturdy body, measuring face made of anodised aluminium.
Variable attachment methods via Tee-slot, Vee-slot and rare earth magnet system.
Illuminated digital display rotates when the position is inverted.
Integral warning function prevents incorrect measurements.
Button locking, hold and reference function.

Size 1000 – Smart documentation of individual or continuous measurements.
Serial interface for connection to a PC and bus systems.
Simultaneous use of multiple devices in a single system.
Free STABILA ANALYTICS software for easy evaluation and documentation of the measured values, without any programming effort.

Supplied with: Includes protective case.

Size 500 – 2× batteries No. 081561 size LR6.

Size 1000 – Li-ion rechargeable battery with mains power adapter, 4 country-specific exchangeable adapters, 2 data cables, evaluation software.



_500



_1000

Type			500	1000
46M 46 7563	TECH digital clinometer		eShop	eShop
Measuring range		degrees	360 (4×90°)	0 – 360
Graduations		degrees	0.01	
Error limit of electronics module		degrees	0.05 (0°; 90°); 0.2 (1° – 89°)	0.05 (0°; 90°; 180°; 270°); 0.1 (1° – 359°)
Flatness tolerance		mm	0.07	
Length		mm	175	
Width		mm	32	
Height		mm	70	

DIN 2276

TESA Clinometer Clinobevel 1 USB

Clinometer for universal use for absolute and relative measurements. Four precision-machined measurement bases permit inclination measurements in any designed quadrant. Strengthened housing of hard-anodised aluminium, protected against splashed water. With angular and inclination display.

Size SOFT – Automatic generation of test reports by Clinosoft software.

Supplied with: Supplied with case.

Size SOFT – Additionally USB data cable and Clinosoft software.





46 7555

Type		SOFT	SINGLE
45C 46 7555	Digital clinometer **CLINOBEVEL 1 USB**	(eShop)	(eShop)
Measuring range	degrees	±45	
Graduations	mm/m	0.02	
Accuracy	arc min.	2 +1 graduation	
Length	mm	100	
Width	mm	75	
Height	mm	35	
Weight	g	520	

Plumb bob

Plumb bob with slender tip and well visible nylon cord.

46 7580 – ■ Multiple fastening capabilities e.g. magnet, steel pin.
■ Adjustable tensile force.
■ Stainless steel plumb bob with protective cap.

Size 400 – Particularly robust with rubberised casing.

46 7582 – ■ Plumb bob of die-cast zinc



_200



_300



_200

Weight	g	200	300	400
46R 46 7580 TAJIMA	Plumb bob	–	eShop	eShop
42G 46 7582 HOLEX		eShop	–	–
Plumb line length	m	5	3	4.5

46 7584 – Of steel, bright turned. With centre point and screw-in brass button.

46 7586 – 10 m hemp plumb line, with varnished wooden roller. Length / ∅ of roller = approx. 80 mm / 40 mm.



46 7584



46 7586

42G 46 7584 HOLEX	Plumb bob 300 g	eShop ■
42G 46 7586 HOLEX	Hemp plumb line 10 m	eShop ■

Type		W	R	GR
42G 46 7598 HOLEX	Polypropylene plumb line 50 m, ∅ 1 mm	eShop	eShop	eShop
42G 46 7599 HOLEX	Polypropylene plumb line 50 m, ∅ 2 mm	eShop	eShop	eShop
Colour		white	red	green

46 7599_W



_R



_GR

Chalk snap line 30 m

46 7590 – Chalk snap line container of die-cast magnesium, red powder-coated. 30 m special multi-fibre line combines enormous break resistance (234 N) with high chalk absorbency for optimum marking properties. Hardened hook with curved point and storage location in the body. With steel eye at the line exit and stainless steel belt clip. The filling cap closes securely to prevent the escape of coloured powder.

Size 5 – With 5 : 1 quick retraction and push system for easy withdrawal of the line.

46 7595 – **250 g** chalk powder of pure calcium carbonate. Bonds well, resistant to wind and rain. In a transparent container with coloured sealing cap.

Supplied with:

46 7590 – Chalk snap line **without coloured powder.**



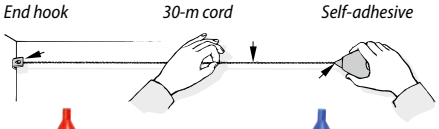
46 7590_1



46 7590_5

Retraction ratio (x-fold)		1	5
46R 46 7590 HOLEX	Chalk snap line 30 m	eShop	eShop
Line length	m	30	
Length	mm	125	132
Width	mm	76	84
Height	mm	47	58

Type		R	B
46R 46 7595	Coloured powder for the snap line **250 g**	eShop	eShop
Colour		red	blue





46 7595_R



_B

BMI Laser spirit level

Robust, easy to use aluminium housing with 3 point lasers at angles of 90° to each other.
The accuracy of the vials and laser in relation to the measuring face is 0.2 mm / m. Four powerful magnets are inset in the base.
Contact surface with laser reference edge (edge = centre of laser).

Application: For quick alignment, marking, and levelling.

Supplied with: Alignment plate for uneven ground. 3 batteries No. 081561 size LR3.

Length		mm	240
460	**46 8460**	Laser spirit level	–
Error limit		mm/m	0.2
Laser class			2
Range		m	30
Threaded socket for stand		in	1/4 UNC
Width		mm	25
Height		mm	44



46 8460

BOSCH Self-levelling cross-hair laser

Compact cross-hair laser with self-levelling laser lines.
Quick horizontal and vertical alignment of lines.
Robust design soft-grip coating protects against impact loads.
Dust-proof and splash-proof.
In addition, two vertical plumb-line points.

Size GCL12V – **Green cross-hairs** for optimum visibility even under poor lighting conditions.
Bluetooth® interface for precise working by remote control without touching the device.
Can be operated with rechargeable battery (supplied) or batteries.
Large working range up to 50 m using the LR 7 Professional receiver (accessories).

Supplied with:

Size 2-15 – 3 pcs. battery No. 081561 size LR6, multi-function holder, laser target plate and protective bag.

Size GCL12V – 12 V Li-ion battery, charger, multi-function holder, laser target plate, protective case and transport case.

IP 54



46 8488_2-15

Type			2-15	GCL12V
461	**46 8488**	Self-levelling cross-hair laser GCL	–	–
Error limit		mm/m	±0.3	
Laser class			2	
Colour of the laser			red	green
Range		m	15	25
Range with receiver		m	–	50
Levelling range		degrees	±4	
Threaded socket for stand		in	1/4; 5/8	1/4
Length		mm	112	152
Width		mm	55	68
Height		mm	106	116
Weight		g	490	590

IP 65



46 8488_GCL12V

IP 65

Green cross-hairs for optimum visibility even under poor lighting conditions.
Thanks to the rubber-reinforced housing and IP65 protection class, the lasers are durable and suitable for robust use on construction sites.
Convenient, quick and secure attachment thanks to the LB 10 professional universal holder with very strong magnets.
Dual power supply enables seamless switching between Li-ion rechargeable battery and alkaline batteries, eliminating downtime.

Supplied with:

Size GLL20 – 4× battery No. 081561 size LR6, LB 10 universal holder, laser target plate, bag.

Size GLL20BOX – 3.7V Li-Ion rechargeable battery, USB-C cable, LB 10 universal holder, laser target plate, bag and tradesman's case.

Size GLL12V – 12V Li-Ion rechargeable battery, quick charger, LB 10 universal holder, ceiling clip, laser target plate, bag and L-Boxx.



46 8490_GLL20



46 8490_GLL20BOX

Type			GLL20	GLL20BOX	GLL12V
461	**46 8490**	Self-levelling cross-hair laser GLL	–	–	–
Error limit		mm/m	±0.3		
Laser class			2		
Colour of the laser			green		
Range		m	20	20	30
Range with receiver		m	–	–	100
Levelling range		degrees	±4		
Threaded socket for stand		in	1/4	1/4	1/4; 5/8
Length		mm	129	129	162
Width		mm	68	68	89
Height		mm	116	116	139
Weight		g	560	560	960



46 8490_GLL12V

IP 54

Leica Geosystems Self-levelling cross-hair laser Leica LINO

Robust, ergonomic plastic casing; proof against dust and splashed water.

Size L2; L2G – Pulse function with power-saving mode. **Very long working life** of up to 44 h due to Li-ion battery. The magnetic adapter can be attached to any wall that has steel elements. **The magnet can be freely pivoted and easily released.** Locking for inclined projections and for protection in transport.

46 8481 Size L2G/8486 Size L6GS; L6G – **With green laser lines for optimum visibility. Up to 400% better visibility than red laser lines.**

Size L6RS–L6G – Self-levelling multi-mains laser with 3× 360° laser lines. One horizontal and two vertical 360° laser lines. Laser lines thin, sharp and clearly visible. Laser power can be set in 3 stages for better visibility or longer operating time. Self-levelling over long distances in the event of inclined positions. Time saving by easy setting up of the zero point. Fixed zero point thanks to integral base. Simple and precise alignment of the laser lines by ±10°. Memory function of personal settings. Dust-proof and splash-proof. The triple power-supply concept permits uninterrupted work. Can optionally be operated with Li-ion battery, AA batteries or power supply unit.

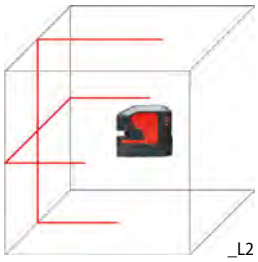
Supplied with:

46 8486 Size L6RS – 3× battery No. 081561 LR6, laser target plate, bag.

Size L6GS – Li-ion battery, charger with mains adaptor, laser target plate, bag.

Size L6G – Li-ion battery, charger with mains adapter, battery holder, laser target board, magnetic adapter TWIST 250, wall adapter UAL 130, fall protection rope, case.

Size L2; L2G – Supplied with adapter, Li-ion battery, charger, battery holder, target board and case.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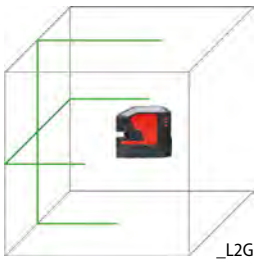
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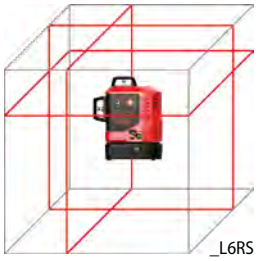
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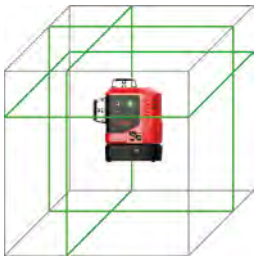
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46 8481

NEW

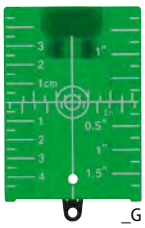
Type		L2	L2G	L6RS	L6GS	L6G
47C 46 8481	Self-levelling cross-hair laser LINO	–	–	–	–	–
47C 46 8486		–	–	–	–	–
Error limit	mm/m	0.2	0.2	±0.2	±0.2	±0.2
Laser class		2	2	–	–	–
Colour of the laser		red	green	red	green	green
Range	m	25	35	25	35	35
Range with receiver	m	80	80	70	70	70
Diameter with receiver	m	–	–	140	140	140
Levelling range	degrees			±4		
Threaded socket for stand	in			1/4 UNC		
Working time	h	–	–	25	11	11
Width	mm			60		
Height	mm			110		
Depth	mm			100		
Weight	g			530		


46 8486

BMI Laser target plate

Increases the precision, accuracy and visibility of the laser. With magnetic holder.


_R


_G

Type		R	G
460 46 8492	Laser target plate	eShop	eShop
Colour		red	green

BMI Laser safety glasses

To see the laser dot more clearly in sub-optimal lighting conditions.


_R


_G

Type		R	G
460 46 8493	Laser safety glasses	eShop	eShop
Colour		red	green

i Cal

BMI Universal laser autoMAGIC

Cross-hairs and 5-beam laser combined in a single device, **self-levelling via a magnetically damped pendulum system.** Pulsed laser lines horizontal and vertical, can be adjusted separately or jointly. Plumb-line lasers upwards and downwards; 3 horizontal laser beams forwards, to the left, and to the right; all laser beams are at an 90° angle to each other. Lockable for generating "oblique lines" and for protection during transport.

Supplied with: Magnetic wall bracket with threads for attachment to stands, laser target board, carrying case, and 3 batteries No. 081561 size LR6.



Type		5SP
46 8465	Universal laser "autoMAGIC"	–
Laser class		2M
Range	m	30
Levelling range	degrees	±3
Threaded socket for stand	in	1/4 UNC, 5/8 UNC
Width	mm	116
Height	mm	112
Depth	mm	69
Weight	kg	0.5

Leica Geosystems Construction and photography tripods

Robust tripod stand with crank column, light metal, telescopic legs with quick adjustment; with removable levelling base.



46 8557

		CET103
46 8557	Aluminium crank stand	eShop
Extension length	cm	84 – 246
Connection thread	in	5/8
Weight	kg	3.6

High-quality tripod stand of aluminium with easy fine adjustment (photography tripod) and crank column. Telescopic legs with quick adjustment. Conical rubber feet with steel mandrel for increased stability.



46 8558

Type		TRI105
46 8558	Photography tripod	eShop
Extension length	cm	72 – 180
Connection thread	in	1/4
Weight	kg	2.4

HOLEX Manual tally

Stainless steel casing. Cap of wear-resistant plastic. Zeroing by twist knob.

Size H – Manual tally.

Size T – Desktop version with screw mounting holes. Also for fixing to walls.



46 9700_H



46 9700_T

Type		H	T
46 9700	Hand tallies	eShop	eShop
Height of numerals	mm	4.5	
Number of numerals		4	
Body width	mm	29	
Body height	mm	45	

HOLEX Stroke counter for clockwise actuation

47 0100 – Six-digit counter with drive both sides for clockwise actuation. Zeroing can be done from the left or right with an insertable key. Drive shaft projects at both sides; stroke lever can be set to different positions on the shaft. Drive shaft 5 mm ∅, numerals height 4.5 mm, hammer finish housing.

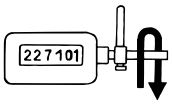
Application:

47 0100 – In the machine tool and metal industries on stamping machines, shears, power presses, packing machines, automatic dispensers etc.



47 0100

47 0100	Stroke counter with key	eShop
Maximum strokes	min^{-1}	500
Stroke movement minimum – maximum	degrees	32 – 60
Width	mm	70
Height	mm	60
Length	mm	28



Drive right side, clockwise



47 0150

47 0150	Zero reset key	eShop

hanhart 1882 Digital stopwatches

▶ N1 ◀ Cal

46 9622 – LCD display with 8 mm characters, 7 digits / + 2 decimal digits for use as an event counter. Display range 9 h, 59 min, 59.99 s. Display graduation value 1/100 s.

46 9624 – LC display, 7/5 mm character height, 6/7 places (upper/lower). Display range 9,999.99 min. / 99,999.99 min (upper/lower). Graduations 1/100 min., 1/100 s, suitable for REFA.

Function:
- Start / Stop / Reset.
- Cumulative / Split / Dual measurement.
- Time of day (2×12 hours a.m. / p.m.).

46 9624 – Additional split / lap / addition / count down / memory function with evaluation, quick search and date display.

Supplied with:

46 9622 – Neck cord and 1 battery No. 081560 size 357.

46 9624 – Neck cord and 1 battery No. 081561 size LR3.



46 9622



46 9624

46R 46 9622	Digital stopwatch	eShop
46R 46 9624	Digital stopwatch Spectron	eShop

hanhart 1882 Large stopwatches

▶ N1 ◀ Cal

Quartz-regulated stopwatch.

Size MESOTRON – Dial with 60ths and 100ths graduations. Functions: Start / Stop, Cumulative.

Size PRISMA – Large digital stopwatch with LCD display. Time resolution selectable: 1/10 sec or 1/100 min. Functions: 2 timers, stop-watch function, **countdown with acoustic signal.** Programmable sequencing. Standard time display.

Supplied with: 1 battery No. 081561 size LR6.



46 9625_MESOTRON



46 9625_PRISMA

Type		MESOTRON	PRISMA
46R 46 9625	Large stopwatch	eShop	eShop
Width	mm	130	
Depth	mm	95	
Height	mm	175	

HOFFMANN GROUP CONNECTED TOOLS: PRECISE, SIMPLE, ERROR-FREE.

- Hoffmann Group Connected Tools: Precise, simple, error-free.
- **Greater freedom of movement:** No messy data transmission cables.
- **Very high reliability:** no read errors or transmission errors.
- **Save time thanks to simple documentation:** At the push of a button, the measuring result is transmitted directly to your application (such as Excel or Word) or you export the test report directly via the app as a.csv file to your database.



Garant HOLEX sylvac Mitutoyo Bowers Group TESA

Digital hand-held tachometers

mm / Inch | i Cal

Non-contact measurement by reflector strip, contact measuring by means of mechanical adapter tip, memory selectable using MODE button for maximum value, minimum value, or most recent value. Switches off automatically 30 seconds after the last key action.

Application: **Rotational speed measurement:**
– optical 1 to 99999 rpm non-contact,
– mechanical 0.1 to 19999 rpm with contact tip.
Speed measurement (with measuring wheel).
– 0.10 to 1999 m/min
Length measurement (with surface disc).
– 0.00 bis 99999 m

Supplied with: Includes mechanical adapter, measuring wheel (0.1 m) No. 471180, hollow measuring tip No. 471190, drive cone centre No. 471170, measuring wheel (6 inch), reflector strips No. 471150, case, 2 batteries No. 081561 size LR6.



47 1100



47 1150

47B 47 1100	Digital hand-held tachometer		eShop ■
Error limit		%	0.02 (±1 digit)
Measurement distance (for optical measurement)		mm	600
Operating temperature		°C	0 – 50
Storage temperature		°C	-20 – 70

47B 47 1150	Reflector strip set **5 pieces**	eShop

ALLURIS Industrial precision hand-held tachometers

I2 Cal

47 1300 – Precision hand-held tachometer in **sturdy die-cast aluminium casing.** Large digital display, easy to use. Lengths and speeds in selectable international units.

Size CL – **Laser hand-held tachometer** for non-contact measurements at distances up to 4 m. **Also for contact measurements** using multi-impulse adapter (included).

Size C – High–precision **contact tachometer** (60 impulses / revolution). Especially suitable for measuring low speeds.

Application:

47 1300 – **Rotational speed measurement:** 0.1 – 99999 rpm (mechanically up to 25,000 rpm).
Speed: 0.1– 3810 m/min
Length measurement: 0.0– 99999 m/min
Counting: 0– 99999

Supplied with:

47 1300 – Includes 2 measuring tips, 6 inch measuring wheel, female centre, extension shaft, operating instructions, protective case, 2 batteries No. 081561 size LR6.

Size CL – Additionally with screw-in adapter and reflector strips.

Optional extras:

47 1300 – Reflector strips No. 471315.



47 1300_C



47 1300_CL

Type		CL	C
47F 47 1300 Precision hand-held tachometer		–	–
Error limit	%	0.006 (±0.5 digit)	
Impulses per revolution (contact measurement)		8 (with adapter)	60
Measurement distance (for optical measurement)	mm	150 – 1500 , maximum 4000	–
Measurement time	s	1	
Surface disc circumference	in	6	

47F 47 1315	Reflector strip set **35 pieces**	–

Hand-held stroboscope with particularly high light intensity

I2 Cal

High adjustment accuracy and stability thanks to dynamic response of the control wheel. High light intensity thanks to energy-efficient electronic circuitry and high-performance Xenon flash lamp. Memory function (last value is saved when switching off the device). Trigger input for synchronising the flash sequence. Stand connection on the casing. Battery life of min. 2 hours.

Application: For measuring very small objects or in inaccessible locations – without interrupting ongoing operations. Ideal for measuring rotational speed and for inspecting parts that move at a high frequency.

Supplied with: Incl. carrying case, charger with 4 country adapters and trigger signal plug.



47 1200

Type		476
47B 47 1200 LED hand-held stroboscope		eShop
Measuring range	min^{-1}	30 – 12500
Error limit	%	0.01 (±1 digit)
Length	mm	240
Width	mm	65
Height	mm	50
Weight	g	415
Operating temperature	°C	0 – 40

BENNING Socket tester

Quick and easy check of earthed plug sockets for correct connection. Wiring errors such as missing PE, N and L lines as well as mixing up of L and PE lines are clearly displayed via 3 LEDs. Easily understandable status table gives information about the correct connection (OK, green) and the type of error (red) of the earthed plug socket.

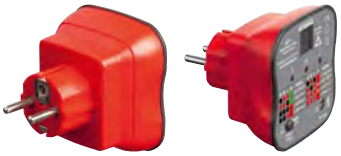
- Active PE test with contact electrode and LC display warns about the presence of a dangerous touch voltage (>50 V) at the earth conductor connection (PE).
- Test button for triggering 30 mA FI/RCD earth leak trip switches.
- Clear display via LEDs and LC display.

Application: Socket test, 30 mA test FI/RCD earth leak trip switches.



47 3275

Type		SDT1
47A 47 3275	Socket tester	–
Length	mm	78
Width	mm	72
Depth	mm	80
Weight	g	70



47

BENNING Non-contact phase and cable break tester

For quick and easy phase testing at sockets, junction boxes, switches and lamps. Locates cable breaks in insulated cables.

Standard: **DIN EN 61010-1.**

Function:

47 3282 Size VT1 – IP40: Protected against penetration by foreign bodies with Ø > 1 mm, however tools and wires should be kept away, and offers no protection against water.

Size VT2 – IP53: Protected against splashed water from directions up to 60° when in normal operating position and protected against penetration of dust into the inside (protected against dust), also completely protected against touching.

Application: Phase testing, testing of insulated cables and testing for broken cables.

47 3280 – Additional phase sequence testing.

47 3282 Size VT2 – Also magnetic field testing on valves, switches, relays, pumps and magnetic field coils.

Supplied with: 2 batteries No. 081561 size LR3.



IP 53



47 3280

IP 40



47 3282_VT1

IP 53



47 3282_VT2

Type		TRITEST	VT1	VT2
47A 47 3280	Phase and phase sequence tester **Tritest Easy**	eShop	–	–
47A 47 3282	Phase tester	–	eShop	eShop
Voltage range AC	V	200 – 1000	200 – 1000	12 – 1000
Overvoltage category		CAT III 1000 V; CAT IV 600 V		
Article no of the battery / rechargeable battery fitted		081561 LR3		
Number of batteries contained		2		

HOLEX Magnetic field tester

Compact two-component plastic casing with integral LED torch.
Prods with visual indication of magnetic fields.

Standard: **IEC/EN 61010-1.**

Application: Detecting and checking magnetic fields in pneumatic and hydraulic systems, testing relays, solenoid coils, valves, and pumps.

Supplied with: Test magnet for checking its operation.
2 batteries No. 081551 size LR3.



47 3012

42I 47 3012	Non-contact magnetic field tester	eShop
Article no of the battery / rechargeable battery fitted		081551 LR3
Number of batteries contained		2

HOLEX Non-contact voltage tester, AC

Compact two-component plastic casing with integral LED torch. Prods with visual indication of voltage by colour change (green to red) and additional acoustic signal. Easily transported, fits any pocket.

47 3011 – Additional illumination of probe points and 12 V mode for low voltages.

Standard: **IEC/EN 61010-1.**

Application: For non-contact detection of live conductors, e.g. in cables, sockets, junction boxes etc.

Supplied with: 2 batteries No. 081551 size LR3.

IP 40



47 3010

IP 67



47 3011

42I 47 3010	Non-contact voltage testers	eShop	
42I 47 3011		eShop ■	
Display range AC (47 3010)	V	50 – 1000	
Display range AC (47 3011)	V	12 – 1000	
Overvoltage category		CAT IV / 1000 V	
Article no of the battery / rechargeable battery fitted		081561 LR3	

IP 40

Non-contact voltage tester, AC

Compact voltage tester for non-contact detection of live conductors.
Size LVD2 – additional illumination of measurement points.

Function: IP40: Protected against penetration by foreign bodies with Ø > 1 mm, however tools and wires should be kept away, and offers no protection against water.

Application: Testing of cables, sockets, junction boxes etc., if voltage is present, the measuring prod lights up red and sounds a beep signal.



47 3005_ACII



47 3005_LVD2

		1ACII	LVD2
47H 47 3005	Non-contact voltage testers	eShop	eShop
Display range AC	V	200 – 1000	90 – 600
Overvoltage category		CAT IV / 1000 V	CAT IV / 600V
Article no of the battery / rechargeable battery fitted		081561 LR3	

47

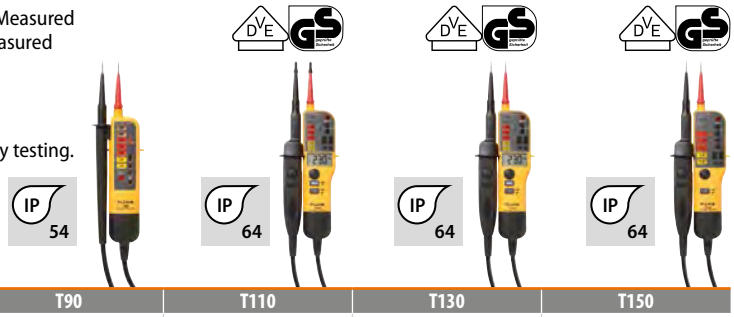
I1 Cal

Two-pole voltage and continuity tester

Two-pole voltage testers with ergonomic one-handed operation for sockets. Measured value display with backlighting. Battery indicator - if the battery is flat the measured voltage can continue to be displayed. Slip-on test prods with wear display.
Size T110–T150 – **VDE version**

Standard: **HSE GS 38 (measurement prods); IEC EN 61243-3.**

Application: For professional multi-stage voltage, polarity and continuity testing.



IP 54 IP 64 IP 64 IP 64

Type		T90	T110	T130	T150
47H 47 3090	Voltage and continuity tester	eShop	eShop	eShop	eShop
Display range AC	V	12 – 690	12 – 690	6 – 690	6 – 690
Display range DC	V	12 – 690	12 – 690	6 – 690	6 – 690
Display		LED	LED	LED / LCD	LED / LCD
Three phase sequence testing		–	yes	yes	yes
Phase testing		–	100V – 690V	100V – 690V	100V – 690V
Polarity testing		yes			
Continuity testing		visual / acoustic			
FI/RCD protective switch test current		yes			
Illumination of probe points		–	yes	yes	yes
Torch function		yes			
Resistance	kΩ	–	–	–	0 – 1.99
Frequency measurement	Hz	40 – 400			
Overvoltage category		CAT II 690 V; CAT III 600 V	CAT III 690 V; CAT IV 600 V	CAT III 690 V; CAT IV 600 V	CAT III 690 V; CAT IV 600 V
Article no of the battery / rechargeable battery fitted		081551 LR3			

I1 Cal

Two-pole voltage tester

Two-pole voltage testers, ergonomic design, plastic housing is waterproof, impact resistant, and unbreakable, two test prods with magnetic clips, suitable for one-hand operation.
Size DIGIPRO – AC voltage tester with true root mean square procedure True RMS. Diode test.

Standard: **IEC / DIN EN 61243-3; VDE 0682-401**

Supplied with: Supplied with 2 batteries 081561 size LR3, thicker test prods (screw-on), insulating protective caps.



IP 54 IP 65

_MASTER _DIGIPRO

Type		MASTER	COMBIPRO	DIGIPRO
47A 47 3201	Two-pole voltage tester	eShop	eShop	eShop
Display range AC	V	12 – 690	6 – 690	1 – 1000
Display range DC	V	12 – 690	6 – 690	1 – 1500
Display		LED	LED	digital LCD
Three phase sequence testing		–	yes	yes
Polarity testing		yes		
Continuity testing		visual / acoustic		
FI/RCD protective switch test current		–	yes	yes
Data storage key		–	–	yes
Illumination of probe points		–	yes	yes
Resistance	kΩ	–	–	0 – 1.99
Overvoltage category		CAT III 600 V; CAT IV 300 V	CAT III 690 V; CAT IV 600 V	CAT III 1,000 V; CAT IV 600 V
Article no of the battery / rechargeable battery fitted		081551 LR3		

▶ I1 ◀
Cal

BENNING Two-pole voltage tester with VDE kitemark

Size PROFIPOL+ – With test handle stop for one-handed operation at socket outlets and for secure storage. The voltage display is operational even it the batteries are flat or has been taken out

Size DIGITAL – AC voltage testing with true effective value procedure **True RMS.**

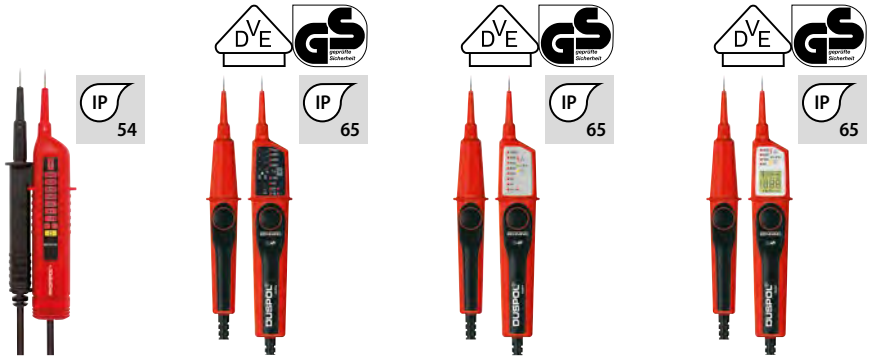
Size ANALOG–DIGITAL – **Two-pole voltage tester with VDE kitemark**. Shockproof, dustproof body. Protected against sprayed water, with rubberised gripping surfaces.

Size EXPERT; DIGITAL – The voltage display from 50 V is operational even it the batteries are flat or have been taken out.

Standard: **DIN EN 61243-3, VDE 0682-401:2015**

Application: Suitable for manual crafts, and for working on electrical systems, industrial systems, maintenance, servicing (troubleshooting),

Size ANALOG–DIGITAL – For professional multi-stage voltage and polarity testing, **with load switching (30 mA RCB trip by push button).** Approved for voltage testing on **systems up to 1000 V.** Suitable for working on photovoltaic and wind turbine installations and hybrid vehicles.



Device type		PROFIPOL+	ANALOG	EXPERT	DIGITAL
47A 47 3105	Voltage tester DUSPOL®	eShop	eShop	eShop	eShop ■
Display range AC	V	12 – 690	12 – 1000	12 – 1000	1 – 1000
Display range DC	V	12 – 690	12 – 1000	12 – 1000	1 – 1200
Display		LED	plunge coil (illuminated) / LED	LED	LCD (illuminated) / LED
Three phase sequence testing		–	LCD	5	LED
Phase testing		LED	LCD	LED	LED
Polarity testing		LED	LED	LED	LCD
Continuity testing		acoustic / LED	–	acoustic / LED	acoustic / LED
contactless detection of broken cables		yes	–	yes	yes
Vibration alarm		–	yes	yes	yes
Illumination of probe points		–	–	yes	yes
Diode	V	–	–	–	0.3 – 2
Resistance	kO	–	–	–	0.1 – 300
Frequency measurement	Hz	–	–	–	1 – 1000
Overvoltage category		CAT II 690 V; CAT III 600 V	CAT III 1000 V; CAT IV 600 V	CAT III 1000 V; CAT IV 600 V	CAT III 1000 V; CAT IV 600 V
Article no of the battery / rechargeable battery fitted		081551 LR3	–	081551 LR3	081551 LR3

IP 64 ▶ I1 ◀ Cal

Be sure. testo Two-pole voltage tester

Sturdy plastic casing and ergonomic handle shape with non-slip ring for safe working with no risk of slipping. **Clear 360° display** with fibre optic cable.

Size 750-3 – **Additional LCD display** of the actual measured value.

Size 750-2; 750-3 – **Integral torch** for illuminating the measurement area.

Standard: **DIN EN 61243-3 and CAT III**

Application: For professional multi-stage voltage, continuity, and polarity testing. Suitable for working on electrical systems, industrial systems, maintenance, servicing (troubleshooting),

Size 750-2; 750-3 – With load switching (30 mA RCB trip by push button).

Supplied with: Batteries No. 081561 size LR3, test prod protection and measurement prod extensions.



Type		750-1	750-2	750-3
47B 47 3210	Voltage tester	eShop	eShop	eShop
Display range AC	V	12 – 690		
Display range DC	V	12 – 690		
Display		–	–	LCD
Three phase sequence testing		100 – 690 V		
Phase testing		–	100 – 690 V	100 – 690 V
Continuity testing		acoustic / LED up to 500 kΩ		
FI/RCD protective switch test current		–	yes	yes
Illumination of probe points		–	yes	yes
Overvoltage category		CAT III 1000 V; CAT IV 600 V		
Article no of the battery / rechargeable battery fitted		081561 LR3		

IP 64 | I1 Cal

HOLEX

Two-pole voltage tester

Two-component plastic casing with 2 test prods. Integral LED lamp, test prod mounting for one-hand operation, auto-test for checking its operation. Automatic selection of measurement range.

Standard: **IEC / DIN EN 61243-3; GS TÜV Rheinland.**

Application: For professional multi-stage voltage, continuity, and polarity testing.

Supplied with: 2 batteries No. 081551 size LR3, protective caps.



_LED



_LCD

Device type		LED	LCD
421 47 3120	Voltage tester	eShop	eShop
Display range AC	V	12 – 400	6 – 400
Display range DC	V	12 – 690	6 – 690
Display		5	LCD
Display backlit		–	yes
Three phase sequence testing		yes	
Continuity testing		acoustic / LED	acoustic / LCD
Illumination of probe points		yes	
Overvoltage category		CAT III 1000 V; CAT IV 600 V	
Article no of the battery / rechargeable battery fitted		081551 LR3	

47

I4 Cal

FLUKE

Current and voltage tester

Open current clamp for **contactless measurement of voltage**, current and frequency, without measurement leads that create contact with live points. Exchangeable test prods. For measuring conductor cross-sections up to 120 mm². Easy-to-read display with back lighting.

Size T6-1000 – Simultaneous display of the actual voltage value and current value.

Standard: **IEC / EN 61010-1; IEC / EN 61326; VDE 0843-20-1.**

Application: For professional voltage and polarity testing, and for current measurement. Suitable for working on electrical systems, industrial systems, maintenance and servicing (troubleshooting).

Supplied with: Supplied with 2 batteries 081561 size LR6, connected measurement leads with detachable 4 mm caps to protect the measuring tips.



_T6-1000

Type		T6-600	T6-1000
47H 47 3215	Current and voltage tester	eShop	eShop
Measurement process		TRUE RMS	
Data storage key		yes	
Display range AC	V	1 – 600	1 – 1000
Display range DC	V	1 – 600	1 – 1000
AC current		0.1 – 200 A	
Frequency measurement	Hz	–	45 – 66
Resistance		1 Ω – 2 kΩ	1 Ω – 100 kΩ
Overvoltage category		CAT III 600 V	CAT III 1000 V; CAT IV 600 V
Article no of the battery / rechargeable battery fitted		081561 LR6	

IP 64 | I4 Cal

Be sure. testo

Current and voltage tester

Ergonomic plastic housing with non-slip ring, rubberised gripping area and measuring prod clips. **Fully automatic measurement of current, voltage and resistance.** Exchangeable test prods. Integral torch for illuminating the measurement area.

Standard: **DIN EN 61243-3:2014, EN 61010-1:2011.**

Function: IP64: Protected against splashed water from all directions and protected against penetration by dust (dust-tight), also completely protected against touching.

Application: For professional voltage and polarity testing, and for current measurement. Suitable for working on electrical systems, industrial systems, maintenance and servicing (troubleshooting).

Size 755-2 – Additional single-pole phase test and rotating field measurement. Approved for voltage testing on systems up to 1000 V.

Supplied with: Incl. batteries No. 081561 size LR3, measurement prods and measurement prod extensions.



_755-1

Type		755-1	755-2
47B 47 3220	Current and voltage tester	eShop	eShop
Information displayed		4000	
Continuity testing		yes	
Illumination of probe points		yes	
Phase testing		–	yes
Three phase sequence testing		–	yes
AC voltage		6 V – 600 V	6 V – 1000 V
DC voltage		6 V – 600 V	6 V – 1000 V
AC current		0.1 - 200 A	
Resistance		1 Ω - 100 kΩ	
Overvoltage category		CAT III 1000 V; CAT IV 600 V	
Article no of the battery / rechargeable battery fitted		081561 LR3	

▶ I4 ◀
Cal

BENNING TRUE RMS multimeter with open current clamp

Sturdy and ergonomic plastic casing with rubberised gripping area and measuring prod clips, together with open current clamp, illuminated LC display, LED display steps and illumination of probe points. **The voltage display is operational from 50 V even with flat batteries. One-handed operation** for voltage measurements at sockets (19 mm). Self-test device.

Standard: **IEC / DIN EN 61010-1 (DIN VDE 0411-1).**

Application: For measurement of alternating current, voltage, resistance and for continuity testing, phase testing, three-phase sequence testing, polarity testing. Suitable for electrical technology, industry, repair, service (troubleshooting), photovoltaic plants / wind power plants and hybrid vehicle technology.

Supplied with: Supplied with belt holster, probe lead set, rubberised contact tip protection, push-on caps (CAT III/IV), large contact tip extensions (∅ 4 mm), 2 batteries No. 081561 size LR3.



47 3230

Type		CM1-4
47 3230	Current clamp multimeter	eShop
Information displayed		9999
Basic accuracy	%	1.5
Continuity testing		acoustic / LED
Three phase sequence testing		LED
Phase testing		LED
Polarity testing		LED
Measurement process		TRUE RMS
Memory function		HOLD
AC voltage		6.0 V – 1000 V
DC voltage		6,0 V – 1000 V
AC current		0.1 A – 200 A
Resistance		1 Ω – 50 kΩ
maximum jaw aperture	mm	16
Illumination of probe points		LED
Overvoltage category		CAT III 1000 V; CAT IV 600 V
Article no of the battery / rechargeable battery fitted		081561 LR3

▶ I1 ◀
Cal

BENNING Phase sequence indicator

Phase sequence indicator with powerful LED torch.

Application: For testing the phase sequence in a three-phase system.

Supplied with: 3 test prods and crocodile clip.

Optional extras: Batteries 081561 size LR6.



47 3270

Device type		TRITESTPRO
47 3270	Phase sequence indicator **TRITEST pro**	eShop
Display phase voltage		L1, L2, L3 (LED)
Three-phase sequence display		right-hand / left-hand (LED)
Voltage range AC	V	400 – 500 (50 Hz-60 Hz)
Overvoltage category		CAT III 300 V
Article no of the battery / rechargeable battery fitted		081561 LR6

BENNING Continuity and semiconductor tester

High-resistance and low-resistance continuity testing with 3-stage LED display and sound intensity of the test buzzer. External voltage and polarity display, single-pole and contactless phase testing. The buzzer sound intensity (3-stage/ OFF) and illumination intensity (4-stage) are adjustable. With high-power LED torch.

Standard: **IEC / EN 61010-1, (DIN VDE 0411-1).**

Application: Testing electrical wiring, systems, devices and components.

Supplied with: Includes 4 mm test probes, magnetic holder and belt clip.

Optional extras: Batteries 081561 size LR6.



47 3260

Device type		DUTESTPRO
47 3260	Continuity tester **DUTEST pro**	eShop
Display polarity		LED +/–
Display continuity		LED, 3-stage
Continuity testing	kΩ	0 – 0.1 / 1 / 10 (LED); 0 – 0.1 (buzzer)
External voltage display AC / DC	V	6 – 400; pulsing warning tone
single-pole phase test		via 4 mm test lead /non-contact via detector
Article no of the battery / rechargeable battery fitted		081561 LR6

HOLEX Continuity and semiconductor tester

Compact tester in sturdy two-component housing, visual and acoustic indications. Easy to use due to crocodile clips, includes separate indicator lamp (red and green) for continuity and polarity testing at long distances, overvoltage protection 250 V.

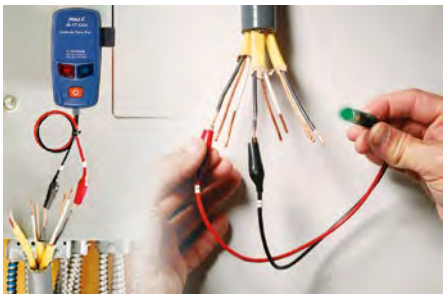
Standard: **EN 61326-1:2013.**

Application: Continuity testing of dead electrical wiring, etc. Polarity measurements of semiconductor elements such as diodes, transistors, etc.

Supplied with: 1 battery 081551 size 6LR61.



47 3264



421 47 3264	Continuity tester	eShop ■
Continuity testing	kΩ	≤1.0
Overload protection	V	250

▶ I4 ◀ Cal

BENNING Digital current clamps

Robust and ergonomic plastic casing with illuminated LCD display. Reliable AC and DC measurements without breaking the operating circuit. Recording of measured value and maximum value, relative measurement.

Standard: **IEC / EN 061010-1 (DIN VDE 0411-1).**

Application: Digital service multimeters for a wide range of applications. These provide a high level of safety and other additional functions.

Size CMP2 – Very high resolution of 10 mA AC in the 40 A measurement range. Integral Volt sensor (NCV) provides non-contact phase voltage signals and detects broken leads in cables (visual/acoustic). Inrush current measurement (INRUSH), low-pass filter (LPF), ZERO function.

Size CM2-1 – AutoV function for automatic AC/DC detection. Low input impedance (LoZ) to suppress "reactive voltages". Low-pass filter (HFR 800 Hz) for measurements on pulsed motor drives. Voltage sensor for non-contact phase and cable-break testing. Memory (HOLD, MAX/MIN). Zero setting.

Size CM10-1 – For professional use in industry, service and manual crafts. Capacitance measurement, diode testing. Data logger, memory, Bluetooth, app. Switch-on current measurement (INRUSH), low-pass filter (HFR), voltage sensor, ZERO function.

Size CM11 – Ideal for trouble-shooting in electrical systems, controls, equipment and vehicle electrics. Precise measurement of small AC/DC currents (stray currents, differential currents and leakage currents).

Supplied with: Batteries, probe leads, compact protective case, operating instructions.



Manufacturer's designation		CMP2	CM1-2	CM2-1	CM10-1	CM11
47A 47 3305	Digital current clamp	eShop	eShop	eShop	eShop	eShop
Information displayed		4200	2000	4000	6000	6000
Basic accuracy	%	2	1	0.5	1	1
acoustic continuity test		–	0 – 20 Ω	0 – 200 Ω	yes	0 – 100 Ω
Measurement process		TRUE RMS	RMS	TRUE RMS (AC)	TRUE RMS	TRUE RMS (AC)
Memory function		HOLD	5	HOLD; MAX/MIN; ZERO	HOLD, MAX / MIN	HOLD, MAX / MIN
AC voltage		–	0.1 V – 600 V	0.1 mV – 600 V	0.1 V – 1000 V	0.01 V – 600 V
DC voltage		–	0.1 V – 600 V	0.1 mV – 600 V	0.1 mV – 1000 V	0.01 V – 600 V
AC current		10 mA – 400 A	0.1 A – 400 A	10 mA – 400 A	10 mA – 1500 A	0.1 mA – 20 A
DC current		10 mA – 400 A	–	10 mA – 400 A	10 mA – 1500 A	0.1 mA – 10 A
Resistance		–	0.1 Ω – 20 MΩ	0.1 Ω – 40 MΩ	0.1 Ω – 600 Ω	0.1 Ω – 600 kΩ
Capacitance		–	–	1 nF – 100 mF	–	–
Frequency		–	–	0.01 Hz – 50 kHz	0.01 Hz – 10 kHz	–
maximum jaw aperture	mm	23	30	27	42	23
Overvoltage category		CAT III 600 V	CAT III 600 V	CAT IV 300 V; CAT III 600 V	CAT IV 600 V; CAT IV 600 V	CAT IV 300 V
Article no of the battery / rechargeable battery fitted		081561 LR3	081561 LR3	081561 LR3	081561 LR6	081561 LR3

I4 Cal

Current clamps

Current clamps with large easy-to-read LCD display in a slim and ergonomic design.

Size 325 – Additionally temperature measurement, frequency measurement, min/max function and display with backlight.
Size 365 – Additionally display with backlight. Removable pliers for easier measurement.
Size 376FC – Non-contact voltage and current measurement with the Fieldsense™ technology. Fluke Connect software for recording and analysing measurement results. Measurement of extremely high currents with the flexible iFlex® current transformer.
Size 323; 325 – True effective value measurements and optimised ergonomics for troubleshooting in industrial and building technology applications.

Standard: EN 61010-1
Supplied with: Incl. test leads and padded carrying case.
Size 323; 325 – Batteries 2 pcs. No. 081561 size LR3.
Size 365; 376FC – Batteries 2 pcs. No. 081561 size LR6.






Type		323	325	365	376FC
47H 47 3290	Clamp meter	eShop ■	eShop	eShop	eShop
Information displayed		4000	4000	6000	6000
Basic accuracy	%	2			
Measurement process		TRUE RMS (AC)			
Memory function		HOLD	HOLD, MAX/MIN	HOLD	HOLD, MAX/MIN
AC voltage		0.1 V – 600 V	0.1 V – 600 V	0.1 V – 600 V	0.1 V – 1000 V
DC voltage		0.1 V – 600 V	0.1 V – 600 V	0.1 V – 600 V	0.1 V – 1000 V
AC current		0.1 A - 400 A	0.1 A - 400 A	0.1 A – 200 A	0.1 A – 2500 A
DC current		–	0.1 A - 400 A	0.1 A – 200 A	0.1 A – 1000 A
Resistance		0.1 Ω – 4000 Ω	0.1 Ω – 40 kΩ	0.1 Ω – 6 kΩ	0.1 Ω – 60 kΩ
Capacitance		–	100.0 µF up to 1000 µF	–	100.0 µF up to 1000 µF
Frequency		–	5 Hz – 500 Hz	–	5 Hz – 500 Hz
Contact measurement of temperature	°C	–	-10 – 400	–	–
maximum jaw aperture	mm	30	30	18	34
Overvoltage category		CAT III 600 V; CAT IV 300 V	CAT III 600 V; CAT IV 300 V	CAT III 600 V	CAT III 1000 V; CAT IV 600 V
Article no of the battery / rechargeable battery fitted		081561 LR3	081561 LR3	081561 LR6	081561 LR6

I4 Cal

Current clamps

Sturdy plastic casing with large illuminated LCD display and rubberised gripping area. **Unique gripping mechanism** facilitates work in restricted spaces. **Automatic setting of the measurement range and type of measurement (AC/DC).** With µA measurement range for measuring ionisation currents (with measurement leads).

Size 770-3 – Data transmission via Bluetooth® and testo Smart Probes app (system requirements: iOS 8.3 or Android 4.3 or later / Bluetooth® 4.0). Power measurement.

Standard: **EN 61326-1, EN 61140**.
Supplied with: 3 batteries No. 081561 LR3 and test leads.
Size 770-2 – Additional adapter for type K thermocouples.
Size 770-3 – Additionally: transport bag and test report.



47 3315

Type		770-1	770-2	770-3
47B 47 3315	Digital current clamp	eShop	eShop	eShop
Information displayed		4000	4000	6000
Basic accuracy	%	0.8	0.8	0.1
Continuity testing		yes		
Diode testing		yes		
Measurement process		TRUE RMS		
AC voltage		1 mV – 600 V	1 mV – 600 V	1 mV – 1000 V
DC voltage		1 mV – 600 V	1 mV – 600 V	1 V – 1000 V
AC current		0.1 A - 400 A	0.1 A - 400 A	0.01 A - 600 A
DC current		0.1 A - 400 A	0.1 A - 400 A	0.01 A - 600 A
Power measurement		–	–	yes
Resistance		0.1 - 40 MΩ	0.1 - 40 MΩ	0.1 - 60 MΩ
Capacitance		0.001 µF - 100 µF	0.001 µF - 100 µF	0.001 µF - 60000 µF
Frequency		0.001 Hz - 10 kHz		
Temperature	°C	–	-20 – 500	-20 – 500
Overvoltage category		CAT III 1000 V; CAT IV 600 V		
Article no of the battery / rechargeable battery fitted		081561 LR3		

BENNING Multimeter

▶ I3 ◀ Cal
▶ I7 ◀ Cal

Sturdy plastic casing with large-format, 3½ inch, 4 inch or 4¾ inch LCD display.

Standard: **IEC / DIN EN 061010-1 (DIN VDE 0411-1).**

Application: Digital service multimeters for a wide range of applications. These provide a high level of safety and other additional functions.

Size MMP3 – Digital multimeter, pocket-sized. Small and narrow (132×86×19 mm) - only 130 g in weight.

Size MM2 – Precise current measurement ranges (200 µA and 2/20/200 mA) for ionization current measurement on the gas burner and for testing the sacrificial anode in the boiler (heating and air conditioning technicians).

Size MM5-2 – Microampere measurement range for ionisation current measurement, continuity testing with buzzer and red LED for noisy environments.

Size MM7-2 – AutoV function for automatic AC/DC changeover and measurement range selection, LoZ function with low input impedance, quick continuity test, socket check with warning (fuse protection).

Size MM10-PV – For precise and reliable measurements on PV systems and applications with high system voltages in industry, manual trades and service. Data logger, memory, Bluetooth, app, AutoV for automatic voltage detection, LoZ and low-pass filter (HFR).

Size MM2-3; MM2-1 – The entry-level category into professional measurement technology. Optimum price-performance ratio. Quick continuity test, socket check with warning (fuse protection).

Supplied with: Batteries, probe leads, compact protective case, operating instructions.

Size MM5-2 – Wire temperature probe, rubber protective surround with magnetic hanger.

Size MM10-PV – Wire temperature probe, rubber protective surround, crocodile clips, TA PV measurement adapter.

Size MM2; MM2-1 – Rubber protective surround.

Size MM2-3; MM7-2 – Wire temperature sensor, rubber protective frame.

_MM2-3
_MM5-2
_MM7-2
_MM10-PV



Manufacturer's designation		MMP3	MM2	MM2-1	MM2-3
47A 47 3300 Multimeter		eShop	eShop	eShop	eShop
Information displayed		5000	2000	6000	6000
Basic accuracy	%	0.6	0.5	0.2	0.2
Continuity testing		–	yes	yes	yes
Diode testing		–	yes	yes	yes
Voltage sensor (non-contact)		–	–	yes	yes
Measurement process		RMS	RMS	TRUE RMS	TRUE RMS
Memory function		HOLD	–	HOLD, MAX / MIN / AVG, REL	HOLD, MAX / MIN / AVG, REL
AC voltage		0.1 mV – 600 V	100 µV – 750 V	10 µV – 1000 V	10 µV – 1000 V
DC voltage		0.1 mV – 600 V	100 µV – 1000 V	10 µV – 1000 V	10 µV – 1000 V
AC current		–	0.1 µA – 20 A	–	1 mA – 10 A
DC current		–	0.1 µA – 20 A	–	1 mA – 10 A
Resistance		0.1 Ω – 40 MΩ	0.1 Ω – 20 MΩ	0.1 Ω – 60 MΩ	0.1 Ω – 60 MΩ
Capacitance		10 pF – 100 µF	–	–	0.01 nF – 10 mF
Frequency		1 mHz – 5 MHz	–	10 Hz – 1 kHz	10 Hz – 1 kHz
Temperature	°C	–	–	–	-40 – 400
Overvoltage category		CAT III 300 V; CAT II 600 V	CAT III 600 V; CAT II 1000 V	CAT IV 600 V; CAT IV 600 V	CAT IV 600 V; CAT IV 600 V
Article no of the battery / rechargeable battery fitted		081560 LR44	081561 6LR61	081561 LR3	081561 LR3



Manufacturer's designation		MM5-2	MM7-2	MM10-PV
47A 47 3300 Multimeter		eShop	eShop	eShop
Information displayed		6000	60000	6000
Basic accuracy	%	0.5	0.03	0.5
Continuity testing			yes	
Diode testing			yes	
Voltage sensor (non-contact)			yes	
Measurement process		TRUE RMS (AC)	TRUE RMS	TRUE RMS
Memory function		HOLD; Pmin / Pmax	HOLD, MAX / MIN / AVG, PEAK, REL	HOLD, MAX / MIN
AC voltage		0.1 mV – 600 V	10 µV – 1000 V	0.1 mV – 1500 V
DC voltage		0.1 mV – 600 V	10 µV – 1000 V	0.1 mV – 2000 V
AC current		1 mA – 10 A	0.01 µA – 10 A	1 mA – 10 A
DC current		0.1 µA – 10 A	0.01 µA – 10 A	1 mA – 10 A
Resistance		0.1 Ω – 40 MΩ	0.01 Ω – 60 MΩ	0.1 Ω – 40 MΩ
Capacitance		0.01 nF – 1 mF	0.01 nF – 10 mF	1 nF – 10 mF
Frequency		0.01 Hz – 50 kHz	0.001 Hz – 1 MHz	0.01 Hz – 100 kHz
Temperature	°C	-40 – 400	-200 – 1090	-40 – 400
Overvoltage category		CAT IV 300 V; CAT III 600 V	CAT IV 600 V; CAT III 1000 V	CAT IV 600 V; CAT III 1000 V
Article no of the battery / rechargeable battery fitted		081561 LR3	081561 LR3	081555 LR6

IP 64 | ▶ I3 ◀ Cal

Multimeter

Sturdy plastic casing with large illuminated LCD display and rubberised gripping area. **Automatic detection of the units of measurement, based on the socket assignment. Automatic setting of the measurement range and type of measurement (AC/DC). Simple error-avoiding operation with illuminated function keys.**

Standard: **DIN EN 61326-1, EN 61010-2-033**

Supplied with: 3 batteries No. 081561 size LR3 and measurement leads.

Size 760-2 – Additional adapter for type K thermocouples.

Optional extras:

Size 760-2 – Temperature sensor No. 474120 size OF

Type		760-1	760-2	760-3
47B 47 3310	Multimeter	eShop	eShop	eShop
Information displayed		4000	6000	6000
Basic accuracy	%	0.8	0.1	0.1
Continuity testing			yes	
Diode testing			yes	
Measurement process		–	TRUE RMS	TRUE RMS
AC voltage		0.1 mV – 600 V	0.1 mV – 600 V	0.1 mV – 1000 V
DC voltage		0.1 mV – 600 V	0.1 mV – 600 V	0.1 mV – 1000 V
AC current		1 mA - 10 A	0.1 µA - 10 A	0.1 µA - 10 A
DC current		1 mA - 10 A	0.1 µA - 10 A	0.1 µA - 10 A
Resistance		0.1 - 40 MΩ	0.1 - 60 MΩ	0.1 - 60 MΩ
Capacitance		0.001 nF - 100 µF	0.001 nF - 30000 µF	0.001 nF - 60000 µF
Frequency		0.001 Hz - 512 kHz	0.001 Hz – 30 MHz	0.001 Hz – 60 MHz
Temperature	°C	–	-20 – 500	-20 – 500
Overvoltage category		CAT IV 300 V; CAT III 600 V	CAT IV 600 V; CAT III 1000 V	CAT IV 600 V; CAT III 1000 V
Article no of the battery / rechargeable battery fitted			081561 LR3	



47 3310_760-1



47 3310_760-3

47

▶ I3 ◀ Cal

Multimeter

Ergonomic plastic housing with integral holster. Large LCD display for good legibility. Reliable and easy to use – **warning if the test leads are connected wrongly.**

Size 115 – Thanks to its simple operation, it is ideal for use in mobile services.

Size 177 – Additional LED backlight.

Size 179 – Additional LED backlight and temperature measurement.

Size 87V – Precise voltage and frequency measurements of motor drives with frequency inverters and other electrical devices on which harmonics overlay the fundamental frequency. Integral low-pass filter.

Size 175–179 – The leading measuring tools for troubleshooting electrical and electronic systems for professional technicians. Robust, reliable and precise.

Standard: **IEC 61010, ANSI/ISA S82.02.01, CSA C22.2-1010.1**

Application: Digital service measuring instruments with additional functions for numerous applications and the highest level of safety.

Supplied with: Includes battery 081561 6LR61, test leads and removable insulating caps.

Size 179; 87V – Temperature sensor.



47 3322_175

Type		115	175	177	179	87V
47H 47 3322	Multimeter	eShop	eShop ■	eShop	eShop ■	eShop
Information displayed				6000		
Display backlit		no	no	yes	yes	yes
Basic accuracy	%	0.05	0.15	0.09	0.09	0.05
Continuity testing				yes		
Diode testing				yes		
Measurement process				TRUE RMS		
AC voltage		0.1 mV – 600 V	0.1 mV – 1000 V	0.1 mV – 1000 V	0.1 mV – 1000 V	0.1 mV – 1000 V
DC voltage		0.1 mV – 600 V	0.1 mV – 1000 V	0.1 mV – 1000 V	0.1 mV – 1000 V	0.01 mV – 1000 V
AC current		0.1 mA – 10 A	0.1 mA – 10 A	0.1 mA – 10 A	0.1 mA – 10 A	0.1 µA – 10 A
DC current		0.1 mA – 10 A	0.1 mA – 10 A	0.1 mA – 10 A	0.1 mA – 10 A	0.1 µA – 10 A
Resistance		0.1 Ω – 40 MΩ	0.1 Ω – 50 MΩ	0.1 Ω – 50 MΩ	0.1 Ω – 50 MΩ	0.1 Ω – 50 MΩ
Capacitance		1 nF – 1 mF	1 nF – 10 mF	1 nF – 10 mF	1 nF – 10 mF	0.01 nF – 10 mF
Frequency		0.01 Hz – 50 kHz	0.01 Hz – 100 kHz	0.01 Hz – 100 kHz	0.01 Hz – 100 kHz	0.05 Hz – 200 kHz
Temperature	°C	–	–	–	-40 – 400	-200 – 1090
Overvoltage category		CAT III 600 V	CAT III 1000 V; CAT IV 600 V	CAT III 1000 V; CAT IV 600 V	CAT III 1000 V; CAT IV 600 V	CAT III 1000 V; CAT IV 600 V
Article no of the battery / rechargeable battery fitted				081561 6LR61		

▶ I7 ◀ Cal

Only size 179 and size 87V



47 3322_87V

IP 67 | ▶ I3 ◀ Cal

HOLEX Multimeter

Ergonomically shaped two-component casing with rubber cover. Large easy-to-read digital display with switchable background lighting. Auto ranging meters. All meters with test prod mounting on the rear for one-hand operation, with a stand.

Standard: **IEC / DIN EN 61010-1; GS TÜV Rheinland.**

Application: Digital service meters with comprehensive functions.

Supplied with: Supplied with batteries (2 pcs. size 960, 1 pc. size 9917), test prods No. 473328 size 2.
Size 9917 – Temperature sensor, cover caps, and carrying case.

Device type		960	9917
4.2.1 47 3320	Multimeter	eShop ■	eShop ■
Information displayed		4000	
Display backlit		yes	
Basic accuracy	%	1	1.5
acoustic continuity test		yes	
Diode testing		yes	
Measurement process		TRUE RMS (AC)	RMS
Data storage key		yes	
Illumination of probe points		yes	–
automatic power-off		yes	
AC voltage		1 mV – 600 V	0.1 mV – 1000 V
DC voltage		0.1 mV – 600 V	0.1 mV – 1000 V
AC current		0.1 µA – 10 A	
DC current		0.1 µA – 10 A	
Resistance		0.1 Ω – 40 MΩ	
Capacitance		0.01 nF – 4000 µF	1 pF – 200 µF
Frequency		0.01 Hz – 10 kHz	0.001 Hz – 9.9 MHz
Temperature	°C	–	-20 – 760
Overvoltage category		CAT III 600 V; CAT II 1000 V	CAT IV 600 V; CAT III 1000 V
Article no of the battery / rechargeable battery fitted		081551 LR3	081551 6LR61



47 3320_960



47 3320_9917

▶ I10 ◀ Cal

BENNING Appliance tester ST725

Testing of devices with mains-voltage circuit elements such as electronically-controlled devices/tools, devices for information technology and communications technology, and for devices which cannot be fully tested without applying mains voltage, in accordance with VDE 0701-0702, DGUV regulations 3.

Application: **Automatic testing procedure** with pass / fail indication for devices of classes I, II and III, and line test. VDE limit values are pre-installed. **Measured values memory** for 999 test objects can be read via the micro-**USB** port. Download software for creating test reports in MS Excel. Integral real-time clock for storing measured values with test date. Protective conductor current / contact current by means of differential current / direct measurement method with (mains mode) and leakage current measurement method (battery mode).

Supplied with: Case, test lead with crocodile clip, mains power cord, light-current mains power cord, batteries 6× No. 081561 LR6, micro-USB cable, download software (CD) and operating instructions.

Optional extras: Printer



Type		ST725
4.7.A 47 3400	Appliance tester	(eShop)
Voltage	V	50 – 270
Test voltage	V	250 / 500 (DC)
FI/RCD protective switch test current	mA	30 – 150
Test current	mA	± 200 (DC)
Protective conductor current / touch current	mA	0.1 – 20
Earth conductor resistance	O	0.05 – 20
Insulation resistance	MO	0.1 – 20
Length	mm	270
Width	mm	115
Height	mm	55
Weight	kg	1.1
Article no of the battery / rechargeable battery fitted		081561 LR6

BENNING Insulation resistance measurement device IT101

▶ I11 ◀ Cal

Insulation resistance measurement device for insulation and low-resistance measurements **on electrical systems, appliances, cables, motors, and generators.**

Function: Leakage current, polarisation index (PI), absorption factor (DAR), automatic discharge function, zero balancing of the measurement cables.

Application: **Measurements:** Amongst others low-resistance, insulation resistance (test voltages: 50 V, 100 V, 250 V, 500 V, 1000 V) and calculation of the resulting leakage current, resistance with 200 mA test current for testing earth continuity conductor connections, polarisation index, dielectric absorption factor, voltage, resistance.
Special features: Limit values can be selected for ISO measurement, green LED for OK, red LED for test / external voltage, switchable test prods for triggering the measurement process, memory for 100 values per measurement function, automatic discharge of capacitive voltages, zero balancing of the measurement cables, lock function.

Supplied with: Carrying case, test leads, crocodile clips, switchable test prods, rubber protective surround and 4 batteries No. 081561 size LR6.





Type		IT101
47A 47 3420	Insulation resistance meter	eShop
Information displayed		4000
Insulation resistance		50 kΩ – 20 GΩ
Low ohmic resistance	0	0.01 – 40
Resistance		0.01 Ω – 40 kΩ
Measurement process		TRUE RMS (AC/DC)
Overvoltage category		CAT IV 600 V
Article no of the battery / rechargeable battery fitted		081561 LR6

Accessories for electrical testers

Probe leads

Test leads, 2-piece red / black, Probe lead ∅ = 4 mm.
47 3308 – Test lead length 18 mm.
47 3318 Size 1 – TL40 probe leads with retractable tip 0 – 76 mm.
Size 2 – TL175 probe leads with retractable tip 4 – 19 mm.

Standard: **IEC / DIN EN 61010-1 (DIN VDE 0411-1).**

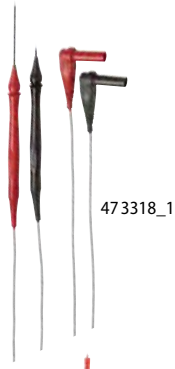
Suitable for:
47 3308 – Multimeters No. 473300; 473305 and No. 473320 size 960 and insulation resistance meter No. 473420.
47 3318 – Digital multimeters No. 473322; 473325.
Size 2 – Clamp meter No. 473290 size 378FC.
47 3328 – Digital multimeter No. 473320 size 960 and size 9917.



47 3308_2



47 3328_2



47 3318_1

Measuring tips ∅ mm		1	2	4	Cable length m
47A 47 3308	BENNING	–	eShop	eShop	1.4
47H 47 3318	FLUKE Test leads	eShop	eShop	–	1.2
42I 47 3328	HOLEX	–	eShop ■	–	1
Overvoltage category		CAT II 600 V	CAT IV 600 V / CAT III 1000 V (with protective caps), CAT II 1000 V (without protective caps)	CAT IV 600 V / CAT III 1000 V (with protective caps), CAT II 1000 V (without protective caps)	



47 3318_2

Test lead ∅ = 4 mm, red / black.

Suitable for: Multimeters No. 473300; 473305 and No. 473320 size 960 and insulation resistance meter No. 473420.



47 3332

Type		8	Cable length m
47A 47 3332	BENNING Test leads set TA3, 8 pieces	eShop	1
Overvoltage category		CAT III 1000 V	

Magnetic meter hanger

Magnetic stand, hook and loop fastener, hook retainer and multi-purpose retainer for suspending the measurement instrument on metal surfaces.

Suitable for: Multimeters No. 473322; 473325.



47 3329

Type		TPAK
47H 47 3329	FLUKE Magnetic meter hanger	eShop

Carrying case for voltage tester

Suitable for:
47 3336 – Two-pole voltage tester No. 473105.
47 3337 – Two-pole voltage tester No. 473090.



47 3337



47 3336

Type		B	F
47A 47 3336	BENNING Duspol carrying case	eShop	–
47H 47 3337	FLUKE Carrying case C150	–	eShop
Length	mm	330	298
Width	mm	100	114
Height	mm	60	56



FLUKE Thermal imaging camera

Sturdy high-performance thermal imaging camera for visible depiction of infra-red radiation.

- **Picture-within-picture mode:** Simple troubleshooting thanks to simultaneous display of the visual image and the thermal image.
- **Fluke Connect:** Simple saving of measurements and images via WLAN.

Size PTI120 – **Small compact design in pocket format.**
LC touchscreen 8.9 cm (3.5 inch) for easy operation and troubleshooting.

Size TC01A – Mobile version for connecting to Android.

Application: For preventative maintenance and monitoring of both mechanical and electrical systems or production processes. Particularly suitable for maintenance, building trades, heating and ventilation installations, together with facilities management and building services.

Supplied with:

Size PTI120 – Supplied with lithium ion battery, USB cable, carrying loop and carrying case.



47 4025_PTI120



47 4025_TC01A

Type		PTI120	TC01A
47H 47 4025	Pocket-sized thermal imaging camera	eShop	eShop
Temperature range	°C	-20 – 400	-10 – 550
Accuracy		±2 °C or 2%	
Thermal sensitivity	K	0.06	0.05
Image refresh frequency	Hz	9	
Field of view	degrees	50 × 38	56 × 42
Detector size	px	120 × 90	256 × 192
minimum focal length	m	0.228	–



Be sure. testo Thermal imaging camera



Camera for visual display of infra-red radiation. The outstanding image quality and close temperature resolution allow detection of even very small differences in temperature. This allows performance of qualitative and quantitative temperature analyses. **Auto-detection of hot spots and cold spots. Scale Assist:** A sensible scale for measuring the detected values is automatically set.

Size 872S – **With integrated 5 megapixel digital camera.** The device can be connected to your smartphone using Bluetooth® and the **testo Thermography app**. Intuitive operation with a modern tile display.

Size 868S; 871S – **With integrated 5 megapixel digital camera.** The device can be connected to your smartphone using Bluetooth® and the **testo Thermography app**. Intuitive operation with a modern tile display.

Application: For preventative maintenance and monitoring of both mechanical and electrical systems or production processes. Particularly suitable for maintenance, building trades, heating and ventilation installations, together with facilities management and building services.

Supplied with: Supplied with USB cable, power supply unit, lithium-ion rechargeable battery, professional software (free download), commissioning instructions, quick guide. Calibration certificate and case.



47 4040_868S

Type		865S	868S	871S	872S
47E 47 4040	Thermal imaging camera	eShop	eShop	(eShop)	(eShop)
Temperature range	°C	-20 – 280	-30 – 650	-30 – 650	-30 – 650
Accuracy		±2 °C or 2 % of the measured value			
Thermal sensitivity	K	0.1	0.08	0.08	0.05
Image refresh frequency	Hz	9			
Field of view	degrees	31×23	31×23	35×26	42×30
Detector size	px	320×240	320×240	480×360	640×480
minimum focal length	m	0.5			

Be sure. testo Infrared temperature measuring tools



Quick contact-less measurement over distances.

- Display: Min / max function
- Limit value monitoring with optical and acoustic alarm.
- Small and handy with illuminated display.
- Quick measurement: 2 measurements/s.

Size T4 – Precise contact measurement.

Size T2; T4 – Real measuring spot marking by **2 laser points.**

Supplied with: Supplied with test certificate and 1× battery No. 081561 size 6LR61.

Optional extras: Protective case No. 474029.

Size T4 – Temperature sensor No. 474120.

Type		T1	T2	T4
47B 47 4012	Infrared thermometer	–	–	–
Measuring range	°C	-30 – 400		
Infra-red resolution	°C	0.1		
Error limit (-30 to 0 °C)	°C	±2 or ±2 % of the measured value		
Error limit (0.1 to 400 °C)	°C	± 1.5 or ± 1.5 % of the measured value	± 1.5 or ± 1.5 % of the measured value	± 1 or ± 1 % of the measured value
Emission level adjustable		0.1 – 1		
Optics		10 : 1	12 : 1	30: 1
Length	mm	75		
Width	mm	38		
Height	mm	190		
Weight	g	200		

Be sure. testo Infrared temperature and moisture measuring tools

Quick and precise infrared thermometer with intuitive easy-to-use menu selection using icons and joystick.
The 50: 1 optics permit safe measurement even from a long range. The 4-point laser indicates the precise measurement area and prevents incorrect measurements.

- Automatically configurable emission level in conjunction with the surface sensor No. 47 4120 size OF.
- Online measurement in conjunction with free software.
- Memory for 200 measured values and 20 emission level values.
- On/Off display illumination.
- Visual and acoustic alarm if limit value exceeded.

Size 835T2 – With extended **measurement range up to 1500 °C.**
Size 835H1 – With unique patented **infrared surface moisture measurement** via the integral moisture module.

Application:

Size 835T1 – Greatest possible safety and precision for temperature measurement from a medium distance.
Size 835T2 – Precise measurement up to 1500 °C from a safe distance.
Size 835H1 – Infrared surface moisture measurement e.g. for detecting the risk of mould formation or to check how far above dewpoint.

Supplied with: 3 batteries No. 081561 size LR6 and calibration certificate.
Optional extras: Dial indicator sensor No. 474120 size OF. EasyClimate software available for download free of charge.

▶ I5 ◀ Cal



_835T1



_835H1

Type		835T1	835T2	835H1
47B 47 4022	Infrared temperature and moisture measuring device	–	–	–
Measuring range	°C	-30 – 600	-10 – 1500	-30 – 600
Relative humidity measurement range	%	–	–	0 – 100
Infra-red resolution	°C	0.1	0.1 (-10 to +999.9 °C); 1 (+1000 to +1500 °C)	0.1
Moisture module resolution		–	–	0.1 °C / 0.1 % rF / 0.1 °C td
Error limit (-30.0 to -20.1 °C)	°C	±2.5	–	±2.5
Error limit (-20.0 to -0.1 °C)	°C	±1.5	–	±1.5
Error limit (0.0 to 99.9 °C)	°C	±1.0	–	±1.0
Error limit humidity module		–	–	±2 % rH / ±0.5 °C
Error limit remainder of measurement range		±1 % of measured value	±2.0 °C / ±1 % of m.value	±1 % of measured value
Emission level adjustable		0.1 – 1		
Optics		50: 1		
Length	mm	193		
Width	mm	166		
Height	mm	63		
Weight	g	514		

▶ I6 ◀ Cal

Be sure. testo Thermo-hygrometer with min / max display

For exact determination of **humidity, temperature, and dew point.** Insensitive to condensation, maintenance-free. **Min / max display** with Reset function. Can be used free-standing or hung up.

Size 608H2 – Additionally with alert function (flashing light) when limit is exceeded.

Supplied with: Supplied with battery No. 081561 size 6LR61 and calibration certificate.



47 4050_608H1

Type		608H1	608H2
47B 47 4050	Humidity and temperature measuring tool	eShop	eShop
Temperature measurement range	°C	0 – 50	-10 – 70
Relative humidity measurement range	%	10 – 95	2 – 98
Measuring range dew point td	°C	-20 – 50	-40 – 70
Resolution temperature (0 – 50 °C)	°C	0.1	
Error limit dew point td	°C	±0.5 (at 25 °C)	
Error limit relative humidity	%	3	2
Width	mm	111	
Height	mm	90	
Depth	mm	40	

Pocket-size stick temperature measuring tools

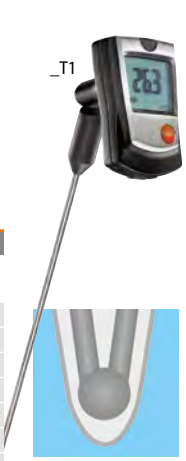
High accuracy (thermocouples type K).
Patented pivot head (180°).

Size T1 – Temperature stick with immersion / probe sensor for measuring in liquids, soft or powdered substances or in the air.

Size T2 – Temperature stick with hinged surface probe. The spring loaded hinge adapts to all surfaces.

Supplied with: Fastening clip, 3 batteries No. 081561 size LR3.

Type		T1	T2
47B 47 4080	Temperature measuring device with temperature stick	eShop	eShop
Measuring range	°C	-50 to +350, up to 500 for short periods	
Resolution	°C	0.1	
Error limit (-50.0 to 99.9 °C)	°C	±1	
Error limit remainder of measurement range	%	±1	
Measurement variables		°C / °F	
Sensor tube ∅	mm	3	12
Sensor tube length	mm	200	150
Response time t_{99}	s	10	5
Battery life approx.	h	1000	



Sensor directly on the measuring tip.

I7 Cal

Large display on patented 180° pivot head.



Spring-loaded hinge

Temperature measuring device

I8 Cal

Compact temperature measuring device with app connection for simple, quick and precise temperature measurement in industry and trade.

Supplied with: Supplied with 3 batteries No. 081561 size LR6, test certificate, TE type K sensor, transport case.

Type		925
47B 47 4111	Temperature measuring device **with measuring sensor**	eShop
Measuring range temperature (sensor type K)	°C	-50 – 1000
Resolution	°C	0.1 / 1 (from +500)
Error limit	°C	±0.5 +0.3 % of the measured value (at -50 to 1000°C)
Length	mm	135
Width	mm	60
Height	mm	28

for type		925
47B 47 4112	Top Safe "protective hood" for No. 474111	eShop



47 4111



47 4112

I7 Cal

Sensors for No. 474012 / 4022 / 4030 / 4110 / 4160 and 4180 size 175T3

47 4120 Size MF – Temperature sensor **with magnet** for surface temperature readings of metals. Self-adhesive. Adhesive force 10 N.

Note: Further temperature sensors on request.



47 4120_EF



47 4120_OF



47 4120_MF

Type		EF	OF	MF
47B 47 4120	Temperature sensor Type K	eShop	eShop	(eShop)
Measuring range	°C	-60 – 400	-60 to +300, up to 500 for short periods	-50
Error limit		Class 2		
Sensor type		Insertion sensor	Surface sensor	Magnetic sensor
Response time t_{99}	s	7	3	3

Type		EB
47B 47 4140	Built-in sensor type K	eShop
Measuring range	°C	-50 – 205
Error limit		Class 2
Response time t_{99}	s	20

Length	mm	1500
47B 47 4150	Flexible thermocouple, glass fibre type K	eShop
Measuring range	°C	-50 – 400
Error limit		Class 2
Response time t_{99}	s	5



47 4140_EB



47 4150_1500

Smart probes

Compact measuring devices optimised for the smartphone. All measured data are transmitted directly to the free testo Smart Probes app (system requirement: iOS 8.3 or Android 4.3 or later / Bluetooth® 4.0) and can be read by a mobile terminal, converted into a report and then sent out directly by e-mail.

- Simultaneous display of up to 6 Smart Probes.
- Wireless reading of the measured values on your mobile device.
- Variations of the measured values can be displayed as a graph or as a table.
- Measured data reports can be supplemented by photos.

Note:	Further smart probes (thermometer, clamp thermometer, differential pressure measuring device and high-pressure measuring device) available on request.



Infra-red temperature measuring device

Infrared temperature measuring device with smartphone operation. Contactless infra-red measurement of the surface temperature. Measuring spot marking by very easily visible 8-dot laser circle. Simple selection of the emission grade from the stored material list. Pictorial documentation with measured values and measuring spot marking.

Supplied with: 4 batteries No. 081561 LR3 and calibration certificate.

Type		805i
47B 47 4182	Infrared temperature measuring device	–
Measuring range	°C	-30 – 250
Optics		10 : 1
Length	mm	145
Width	mm	36
Height	mm	25
Weight	g	97



47 4182

Temperature and humidity measuring device

Thermo-hygrometer with smartphone operation. Measurement of atmospheric humidity and temperature in chambers and ducts. Automatic calculation of the dewpoint and the wet-bulb temperature. Can be angled 0°, 45°, 90°.

Supplied with: 4 batteries No. 081561 LR3 and calibration certificate.

Type		605i
47B 47 4184	Temperature and humidity measuring device	eShop
Relative humidity measurement range	%	0 – 100
Temperature measurement range	°C	-20 – 60
Weight	g	86
Length	mm	220
Width	mm	30
Height	mm	24



47 4184

Temperature and flow-rate measuring device

Thermo-anemometer with smartphone operation.

Size 405i – Measurement of air speed, volumetric flow and temperature. Easy configuration of dimension and geometry of the duct cross-section for determination of the volumetric flow. Telescopic tube with up to 400 mm extension.

Size 410i – Depiction of the volumetric flow at multiple outlets, for adjusting systems. Easy parameterisation of the outlet (dimension and geometry).

Supplied with: 4 batteries No. 081561 LR3 and calibration certificate.

Type		405i	410i
47B 47 4186	Temperature and flow-rate measuring device	eShop	eShop
Temperature measurement range	°C	-20 – 60	
Airspeed measurement range	m/s	0 – 30	0.4 – 30
Length	mm	200	154
Width	mm	30	43
Height	mm	41	21



47 4186_405i



47 4186_410i

Smart probes set

For easy measurement of air speeds, atmospheric humidity, volumetric flows and temperatures. Especially suitable for maintenance of air-conditioning systems.

Supplied with:
- Includes 1 smart case
- 1 Testo infra-red temperature measuring device No. 474182 size 805i
- 1 Testo temperature and humidity measuring device No. 474184 size 605i
- 1 Testo temperature and flow measurement device No. 474186 size 405i
- 1 Testo temperature and flow measurement device No. 474186 size 410i

47B 47 4195	Smart Probes VAC set	eShop
Weight	g	692
Length	mm	270
Width	mm	190
Height	mm	60



47 4195



Be sure. testo

Climate measuring instrument

testo 440 multi-function measuring device for measurement of temperature, moisture, pressure, air flow, illumination intensity, CO, and CO_2.

- Intuitive and clearly structured measurement menus with high user comfort.
- Comprehensive selection of climatic probes for a wide range of applications.
- Probe handles with cable or Bluetooth connections. Can be used universally for all probes.
- Clear parallel display of 3 values.
- Internal memory for up to 7500 measurement reports

Supplied with: 3 batteries No. 081561 size LR6, USB cable and calibration certificate.

Optional extras: Sensors No. 474144; 474146; 474148; 474152; 474156; 474157 and case No. 474161.

Note: **Testo 440 dp** with differential pressure sensor **for flow measurements in air containing particles (pitot tube measurements). Other probes** (with cable or Bluetooth connections) and **sets available on request for any application**.



47 4141_440

47

Type		440
47B 47 4141	Climate measuring instrument	(eShop)
Weight	g	250
Length	mm	154
Width	mm	65
Height	mm	32

Testo 440 set for measuring air flows

Testo 440 climatic measuring instrument for measuring the **flow speed and volumetric flow in air ducts (m/s, m³/h).**

Size FR – Impeller measurement probe Ø 16 mm for measuring large airflows up to 50 m/s.

Size HD – Hot wire measurement probe (sensor head Ø 9 mm) for small airflows up to 30 m/s. Supplied with a temperature sensor.

Supplied with: Testo 440 climatic measuring instrument No. 474141 size 440, 3× mignon batteries type AA, USB cable, case No. 474161 size K and calibration certificate.

Size FR – Flow rate sensor No. 474152 size FR

Size HD – Hot wire probe No. 474152 size FR



47 4162_HD

Type		FR	HD
47B 47 4162	Climate measuring instrument **Air flow kit**	(eShop)	(eShop)
Measuring range	m/s	0.6 – 50	0 – 30
Error limit (m/s + % of measured value)		±0.2 + 1 % (0.6 to 40 m/s) ±0.2 + 2 % (40.1 to 50 m/s)	±0.03 + 4 % (0 to 20 m/s) ±0.5 + 5 % (20.01 to 30 m/s)
Operating temperature	°C	-10 – 70	-20 – 70

Testo 440 CO_2 set with Bluetooth®

Climate measuring instrument Testo 440 CO_2 set with Bluetooth **for assessing the air quality in the room**. CO_2 probe with Bluetooth® incl. temperature and moisture sensor.

Supplied with: Climate measuring instrument No. 474141 size 440, 3 pcs. mignon batteries type AA, USB cable, CO_2 probe No. 474157 size CO2, case No. 474158 and calibration certificate.



47 4167_CO2

Type		CO2
47B 47 4167	Climate measuring instrument **CO_2 set with Bluetooth®**	(eShop)
Measuring range		0 – 10000
Accuracy (ppm + % of measured value)	ppm	±50 + 3 % (0 to 5000 ppm) ±100 + 5 % (0 to 10,000 ppm)

Testo 440 humidity kit with Bluetooth® for measuring temperature and humidity

Testo 440 climate measuring instrument and moisture / temperature probe **for measuring moisture and temperature in stores, cold rooms and work rooms, together with air ducts.**

Supplied with: Testo 440 climatic measuring instrument No. 474141 size 440, 3× mignon batteries type AA, USB cable, moisture and temperature probe No. 474148 size FT, case No. 474161 size K and calibration certificate.



47 4164_FT

Type		FT
47B 47 4164	Climate measuring instrument **Moisture / temperature set**	(eShop)
Temperature measurement range	°C	-20 – 70
Relative humidity measurement range	%	0 – 100
Error limit temperature	°C	±0.5
Error limit relative humidity	%	±2

Data logger for temperature and moisture

Robust and compact 2-channel data loggers with large back-lit display. Internal memory for 1 million measured values. High data security, even when the battery is flat. Measurement interval adjustable between 10 seconds and 24 hours. Battery life ≥3 years (measurement interval 15 min, 25 °C). Two standard interfaces (mini-USB and SD card) for easy programming and reading the logged data by direct connection to a PC.

Size 175T2 – Connection for 1 external temperature sensor (type NTC).
Size 175T3 – Port for 2 external temperature sensors (type K and T) No. 474120, 474140 or 474150.
Size 175H1 – Additional measurement and logging of the relative humidity.

Supplied with: With wall bracket, lock, 3 batteries No. 081561 size LR3, and calibration certificate; ComSoft Basic V5 software available for downloading free of charge.

Optional extras: USB cable 474183 size USB.
Size 175T2 – Temperature sensor (type NTC) on request.

IP 65 | I9 Cal



_175T2

IP 54 | I8 Cal



_175T3

IP 54 | I6 Cal



_175H1

Type		175T2	175T3	175H1
47B 47 4180	Data logger	eShop	eShop	eShop
Measuring range temperature (external sensor)	°C	-40 – 120	-50 to +1000 (type K); -50 to +400 (type T)	–
Measuring range temperature (internal sensor)	°C	-35 – 55	–	-20 – 55
Relative humidity measurement range	%	–	–	0 – 100
Error limit temperature (external sensor)	°C	±0.3	±0.5 (-50 to 70)	±0.5
Error limit temperature (internal sensor)	°C	±0.5	–	±0.4
Error limit relative humidity	%	–	–	±2
external sensor type		NTC	K and T	–
Length	mm	89	96	149
Width	mm	55	54	55
Height	mm	30	29	30

Data logger for temperature and moisture

Handy data logger with display. Internal memory for 16,000 measurement values. High data security, even when the battery is flat. Measurement interval adjustable between 1 min. and 24 h. Battery life > 1 year (measurement interval 15 min., 25 °C). Time-saving and intuitive data read-outs via USB-C. Professional software with Excel export function for programming the logger and analysing data as well as data logging in PDF format.

Size 174H – Additional measurement and logging of the relative humidity.

Supplied with: Wall bracket, 2 batteries No. 081560 size CR2032, USB-C 2.0 data transmission cable and calibration certificate.

NEW

IP 65 | I9 Cal



47 4202_174T

NEW

I6 Cal



47 4202_174H

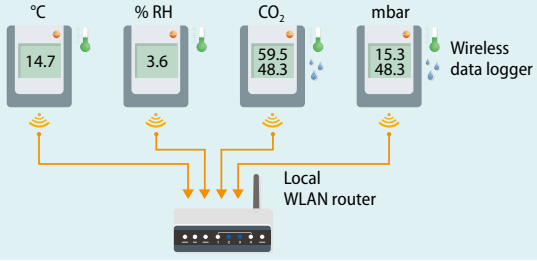
Type		174T	174H
47B 47 4202	Data logger	eShop	eShop
47B 47 4203	Data logger **with Bluetooth® wireless technology**	eShop	eShop
Temperature measurement range	°C	-30 – 70	-20 – 70
Relative humidity measurement range	%	–	0 – 100
Error limit temperature	°C	±0.5	
Error limit relative humidity	%	–	± 3
Length	mm	60	
Width	mm	38	
Height	mm	18.5	

testo Saveris 2 wireless data logger system

The testo Saveris 2 wireless data logger system is a simple, flexible and secure solution for monitoring the temperature and moisture values together with the CO_2 concentration in stores, cold stores and work rooms as well as process sequences.
The wireless data logger reliably displays temperature, moisture and CO_2 concentration at configurable intervals and transmits the measured values via WLAN to the testo cloud, where they can be evaluated and monitored at any time.

Advantages:

- All measured data are available at all times.
- Reports by e-mail, SMS or alarm limits or push communications when alarm limits are breached.
- Simple and automatic monitoring of critical processes.
- Data transmission via WLAN.
- Fee-free online data storage (testo cloud).



Pocket-sized measuring devices for temperature, humidity and illumination

▶ I5 ◀ Cal ▶ I9 ◀ Cal

Handy device, easy to operate, high quality sensors with long-term stability. Hold function, min / max memory and display illumination for ease of reading the measurement values.

Supplied with: Supplied with test certificate, protective cap, belt bag and 2 batteries No. 081561 size LR3.

Type		810
47B 47 4260	Air and infrared temperature measuring device	eShop
Measuring range air	°C	-10 – 50
Measuring range infra-red	°C	-30 – 300
Error limit infra-red	°C	±2
Error limit air	°C	±0.5
Optics		6: 1
Length	mm	119
Width	mm	46
Height	mm	25



47 4260

Measuring devices for material humidity

Application: Precise measurement of the material moisture content using stored characteristic curves for various types of wood (such as beech, fir, oak. . .) and various building materials (such as concrete, tiles, plaster. .).

Size 606-2 – Additional measurement of temperature and relative humidity of ambient air (dewpoint calculation).

▶ i ◀ Cal

▶ I6 ◀ Cal

_606-2

Type		606-1	606-2
47B 47 4262	Materials humidity measuring device	eShop	eShop
Temperature measurement range	°C	–	-10 – 50
Relative humidity measurement range	%	0 – 55	
Error limit temperature	°C	–	±0.5
Error limit relative humidity	%	±1	
Length	mm	119	
Width	mm	46	
Height	mm	25	



47 4262

Measuring devices for lighting intensity

▶ i ◀ Cal

Type		540
47B 47 4266	Illumination intensity measuring device	eShop
Measuring range	lx	0 – 99999
Accuracy	%	±3
Length	mm	133
Width	mm	46
Height	mm	25



47 4266

▶ I12 ◀ Cal

Noise level meter

Noise level meter, accuracy class 2 to IEC 60942.

Function: Frequency evaluation to characteristic curves A and C; current measured value; partial measurement ranges; evaluation over time (switchable between: FAST 125 ms / SLOW 1 s); min / max memory.

Application: The ideal tool for everyday use, whether air conditioning or heating systems, measurement of machine noise or noise of an incinerator.

Supplied with: Supplied with microphone, windshield, screwdriver for calibration and battery No. 081561 size 6LR61.

Note: Noise level **calibrator** available on request.

Type		815
47B 47 4300	Noise level meter	eShop
Measuring range	dB(A)	32 – 130
Error limit	dB(A)	±1.0
Length	mm	255
Width	mm	55
Height	mm	43
Weight	g	195



i Cal | IP 40 | IP 65

ALLURIS

Digital force gauges, tension – compression

- Sturdy force gauges in a handy aluminium die-cast housing for compressive and tensile forces from 0.001 to 2500 N.
- Overload protection up to 500% and protected measurement shaft.
- Attachment thread for additional handles.
- Precise positioning in test stands by a guide pin.

47 8980 – ■ Ready for use at all times thanks to the free-standing photo-voltaic power supply.
47 8983–8987 – ■ High measurement rate for precise recording of peak values to determine fracture or tearing forces.
47 8985/8987 – ■ Measured value memory with statistical analysis and limit value monitoring.
■ **USB interface** for data transmission to a PC.

Advantage:

47 8985 – Measurement data software for evaluation in MsExcel. COM-Bridge software for direct data transmission from the measuring device to the Windows PC.
47 8987 – Data evaluation and test bench control in combination with motorised test stands. **Supplied with DAkkS calibration certificate.**

Application: **Measurement of compressive and tensile forces in quality assessment and production.** For use as a mobile manual measurement gauge both in outdoor areas and in test stands or jigs. Attachment thread integrated into the housing permit attachment in test stands or mounting of additional handles.

Supplied with: Force gauge in a protective case. Screw-on accessories for force transfer (flat head, slot head, cone, hook). Quick-start instructions.
47 8985 – Software FMI-Connect.
47 8987 – Software FMI-AnalyzePro+.



47 8980



47 8983

Measuring range		N	5	50	100	500	1000	2500
47F 47 8980	FMI-S10 Digital force gauge (solar)		–	–	–	–	–	–
47F 47 8983	FMI-B20 Digital peak force gauge		–	–	–	–	–	–
47F 47 8985	FMI-B30 Digital precision force gauge (USB)		–	–	–	–	–	–
47F 47 8987	FMI-B50 Digital precision force gauge (USB)		–	–	–	–	–	–
Resolution (47 8980)		N	–	–	0.1	0.5	–	–
Resolution (47 8983, 47 8985, 47 8987)		N	0.001	0.01	0.02	0.1	0.2	1
Error limit (47 8980)		%	–	–	±0.3 maximum value (±1 digit)		–	–
Error limit (47 8983)		%	–	±0.2 maximum value (±1 digit)				–
Error limit (47 8985, 47 8987)		%	±0.15 maximum value (±1 digit)					
Connection thread			M6	M6	M6	M6	M6	M10
Length		mm	150					
Width		mm	82					
Height		mm	29					

ALLURIS

FMT-220 vertical test stand with handwheel

- Robust aluminium/stainless steel design can accept loading up to 2500 N, with additional guide rail.
- Perfect guidance for compressive and tensile force measurement, thanks to the additional linear unit.
- Precise positioning by means of a height-adjustable spindle lift gearbox with handwheel.
- Bench top with attachment facilities for clamps or slotted plates.
- Very flexible mounting plate for digital draw bar pulling force gauges.
- Side handwheel can be replaced by a motor unit.

Application: For simple non-speed-dependent tests on materials and components in quality assurance and production.

Supplied with: Vertical test stand with handwheel drive, including attachment points for force measurement devices and operating instructions (force measurement devices must be ordered separately).

Optional extras: Digital draw bar pulling force gauges No. 478980 – 478987. A motorised option can be retrofitted. T-slot plate including 4 Tee nuts FMT-937 on request.


47 8996

Type		1000-250	1000-600	2500-250	2500-600
47F 47 8996	Manual test stand FMT-220 **with handwheel**	–	–	–	–
maximum application range	N	1000	1000	2500	2500
Feed rate (maximum stroke)	mm	120	120	120	120
Feed rate (per revolution)	mm	1	1	1	1
Inspection room height	mm	250	600	250	600
Inspection room depth	mm	120	120	120	120
Connection of clamping tools		M6	M6	M6	M6
Length	mm	280			
Width	mm	200			
Height	mm	560	960	560	960

47

ALLURIS

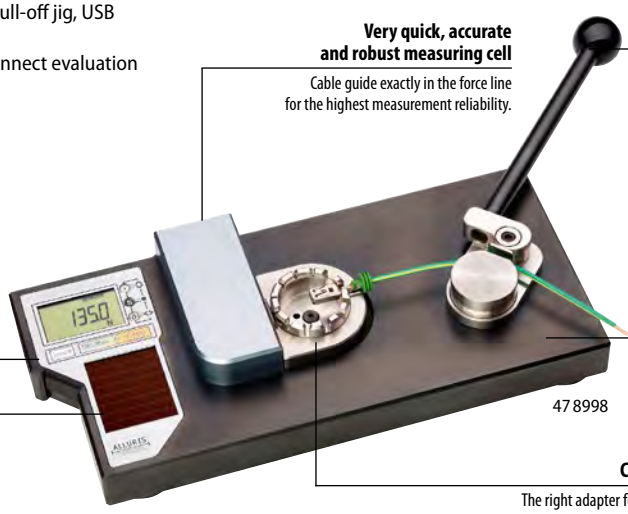
Manual pull-tester FMT-W30

- Manual pull-tester with manual lever for determining the tensile strength of all non-soldered (crimped) cable connections.
- Space-saving, non-slip and sturdy bench-top device with hardened non-scratch base plate.
- Cordless, so always ready for use.
- Interchangeable mounting adapters with 12 different slot widths cover all popular sizes of cable.

Application: Testing cable connections to IEC, DIN, EN, BS, UL, SAE, MIL and NASA standards.

Supplied with: Pull-tester complete with test adapter and terminal pull-off jig, USB interface and instruction manual.

Optional extras: Various exchangeable adapters available, FMT_W_Connect evaluation software.



Measuring range	N	500	1000
47F 47 8998 Pull-tester FMT-W30		–	–
Slot width test adaptor	mm	0.5 / 0.8 / 1.0 / 1.3/ 1.5 / 2.0 / 2.5 / 3.0 / 3.5 / 4.0 / 5.0 / 6.0	
Resolution	N	0.5	1
Accuracy		±0.5 % (±1/2 digit)	
Length	mm	350	
Width	mm	160	
Height	mm	75	

RS232C

MetLogix GMBH

Digital force gauge, tension – compression

Universal force gauge with colour display for precisely measuring tensile and compressive forces. Sturdy die-cast housing.

- Displays the current force value and peak value.
- Programmable function keys.
- Monitoring of tolerance limits with visual and acoustic display.
- Memory for storing measurements.
- Statistical evaluation of saved values.
- Interface for exporting data.
- Display can be switched between N, gf, kgf, lbf, ozf.

47 9027 –
- Measured values can be transmitted via Bluetooth®.
- Average force over time.

Supplied with: Carrying case, charging plug with USB connecting cable, accessories (pressure pad, hook, tip, fin, V-slot, extension).

Optional extras: Manual test stands No. 479029.



47 9025

Measuring range	N	50	100	250	500	1000	2500
47F 47 9025 DFG manual force gauge		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Resolution	N	0.01	0.02	0.05	0.1	0.2	0.5
Accuracy		0.2 %	0.2 %	0.2	0.2 %	0.2 %	0.2 %
Measured value memory		50					
Length	mm	191					
Width	mm	84					
Height	mm	42					

Measuring range	N	10	20	50	100	250	500	1000	2500
47F 47 9027 DFC manual force gauge		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Resolution	N	0.001	0.002	0.005	0.01	0.025	0.05	0.1	0.25
Accuracy		0.1 %	0.1	0.1 %	0.1 %	0.1	0.1 %	0.1 %	0.1 %
Measured value memory		99							
Wireless application		HID (Human Interface Device)							
Length	mm	191							
Width	mm	84							
Height	mm	42							

WIKA Load cells

Hydraulic load cell with directly attached pressure gauge for static and quasi-static force measurement.
Body and piston stainless steel, pressure gauge of pressed brass with memory pointer. Protected against contamination with foreign particles and water spray (IP43).

47 9100 – 3×M5 tapped hole in the cell base for attachment.

Advantage: When used in accordance with instructions, a leaktightness warranty of 5 years is given.

Application: In machine tool building.

47 9110 – Particularly suitable for **measurements on vices.**

47 9115 – Particularly suitable for **use in three-jaw chucks.**

Supplied with: Display unit, manufacturer's certificate of conformity, and transport case.



47 9100



47 9110



47 9115

Measuring range	kN	0-0,25	0-0,6	0-1	0-2,5	0-4	0-6	0-10
47F 47 9100 Load cell		(eShop)	(eShop)	eShop	eShop	eShop	eShop	eShop
Scale graduations	kN	0.01	0.02	0.05	0.1	0.1	0.2	0.5
Error limit	%	±1.6 of the full scale value (±2.5 with memory pointer)						
Piston ∅	mm	45						
Height of load cell	mm	30						
∅ load cell	mm	75						
Operating temperature	°C	-10 – 50						

Measuring range	kN	0-16	0-25	0-40	0-60	0-200	0-320
47F 47 9100 Load cell		eShop	eShop	eShop	eShop	(eShop)	(eShop)
Scale graduations	kN	0.5	1	2	2	10	10
Error limit	%	±1.6 of the full scale value (±2.5 with memory pointer)					
Piston ∅	mm	45	45	45	45	100	100
Height of load cell	mm	30	30	30	30	41	41
∅ load cell	mm	75	75	75	75	138	138
Operating temperature	°C	-10 – 50					

Measuring range	kN	0-1,2	0-5	0-60	0-200
47F 47 9110 Load cell **flat side form**		(eShop)	(eShop)	eShop	(eShop)
Scale graduations	kN	0.05	0.1	2	10
Error limit	%	±1.6 of the full scale value (±2.5 with memory pointer)			
Piston ∅	mm	50	50	50	100
Height of load cell	mm	38	38	38	41
∅ load cell	mm	90	90	90	138
Operating temperature	°C	-10 – 50			

Measuring range	kN	0-10	0-30	0-75	0-160
47F 47 9115 Clamping force load cell **for three-jaw chucks**		(eShop)	(eShop)	(eShop)	(eShop)
Scale graduations	kN	0.2	0.5	2	5
Error limit	%	±1.6 of the full scale value (±2.5 with memory pointer)			
Height of load cell	mm	40	40	57	77
∅ load cell	mm	70	70	90	110
Operating temperature	°C	-10 – 50			

WIKA Digital load cells

Hydraulic load cell with digital pressure gauge. Robust and straightforward design, ideally suited to rough operating conditions. 4 1/2-digit backlit display for directly displaying the force value enables the force value to be optimally read off.
The additional graphical display with memory pointer indicates the tendency of the instantaneous load force. Min./max. memory and tare function can be called up independently of the main display. To ensure simple and interference-resistant data transmission, the CPG1200 has a micro USB port; 3 pcs. M5 tapped hole in the cell base for attachment.

Advantage: When used in accordance with instructions, a leaktightness warranty of 5 years is given.

Supplied with: Display unit, 3 batteries No. 081561 size LR6, manufacturer's certificate of conformity, and transport case.



47 9131

Measurement range	kN	0-2	0-10	0-40	0-60	0-320
47F 47 9131 Digital load cell		eShop	eShop	eShop	eShop	(eShop)
Error limit	%	±0.5 of the full scale value ±1 digit				
Piston ∅	mm	45	45	45	45	100
Height of load cell	mm	30	30	30	30	41
∅ load cell	mm	75	75	75	75	138
Operating temperature	°C	-10 – 50				

HOLEX Spring balance – contactors

Sturdy metal housing in practical design; hammer finish. Clear dial face with double scale for measuring in both directions. With pointer and memory pointer.

Accuracy: ± 0.01×(measuring range + measured value).

Application: For electrical engineering and fine mechanical work, e.g. setting the contact pressure of relay springs, checking the brush pressure on motors or for adjusting tension or compression springs.

K1 Cal | i Cal

Size 50CN – 50N



maximum measuring range		50CN	100CN	250CN	5N	10N	30N	40N	50N	100N
42H 47 8900	Spring balance	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Measuring range	N	0.05 – 0.5	0.1 – 1	0.25 – 2.5	0.5 – 5	1 – 10	3 – 30	4 – 40	5 – 50	10 – 100
Scale graduations	cN	1	2	5	–	–	–	–	–	–
Scale graduations	N	–	–	–	0.1	0.2	0.5	1	1	2
Probe length L	mm	29	29	29	48	48	48	48	48	8
Dial face ∅	mm	36	36	36	72	72	72	72	72	72

47

K1 Cal

PESOLA Spring balances 60 g to 50 kg or spring force gauges 3 N to 500 N

Precision balances with high accuracy ± 0.3% of the load. Taring range up to 20% of the capacity. Any measuring position (apart from No. 479410 - only vertical). Zeroing and 20 % tare via the adjustment screw. Top and bottom mountings can be rotated by 360°.

47 9420/9422 – With drag pointer and handle.

Supplied with: Plastic case and instruction manual.

Optional extras: Conversion kit into spring force gauge No. 479421.



47 9420 / 9422
Application example

maximum weighing range	g	60	100
47F 47 9410	Spring balance Micro Line	eShop	eShop
Graduation	g	0.5	1
Scale length	mm	80	
Load capacity		Clip	

maximum weighing range	g	300	600	1000	2500
47F 47 9415	Spring balance Medio Line	eShop	eShop	eShop	eShop
Graduation	g	2	5	10	20
Scale length	mm	100			
Load capacity		Clip			Hook

maximum weighing range	N	3	6	10	25
47F 47 9417	Spring force gauge Medio Line **Newton**	eShop	eShop	eShop	eShop
Graduation	N	0.02	0.05	0.1	0.2
Scale length	mm	100			
Load capacity		Hook			

maximum weighing range	kg	5	10	20	35	50
47F 47 9420	Spring balance Macro Line	eShop	eShop	eShop	eShop	eShop
Graduation	g	50	100	200	500	500
Scale length	mm	140	140	140	90	90
Load capacity		Hook				

maximum weighing range	N	50	100	200	500
47F 47 9422	Spring force gauge Macro Line **Newton**	eShop	eShop	eShop	eShop
Graduation	N	0.5	1	2	5
Scale length	mm	140	140	140	90
Load capacity		Hook			



47 9415_600



47 9420_20

PESOLA Conversion kit for spring balances into spring force gauges

Suitable for:

Size MEDIO – Spring balance No. 479415, spring force gauge No. 479417.

Size MACRO – Spring balance No. 479420, spring force gauge No. 479422.

Application: Spring balance can be converted for compressive force measurement. 2 functions in one balance.

Supplied with: Pressure rod. Hook screw with handle and small parts.



Type		MEDIO	MACRO
47F 47 9421	Compression set	eShop	eShop



KERN Hanging scales up to 1000 kg

- Simple operation with 3 buttons.
- With tare button, attach empty container and set indication to zero.
- Hold button, the indication can be frozen for 5 seconds.
- Display unit switchable between kg, N and lb.

Supplied with: 1 battery No. 081561 size 6LR61.

K2 Cal

maximum weighing range	kg	15	50	50P
47D 47 9430	Hanging scales type CH	eShop	eShop	eShop
Scale divisions	g	20	100	50
Body width	mm		90	
Body depth	mm		30	
Body height	mm		176.5	
Net weight	kg		0.35	


47 9430

Supplied with: Stainless steel carabiner, stainless steel S-hook (non-standard for size 500 / 1000) and 3 batteries No. 081561 size LR6.

Optional extras:

Size 500; 1000 – Shackle and hook with safety lock on request.

K2 Cal | i Cal

maximum weighing range	kg	50	100	100P	200	200P	500	1000
47D 47 9435	Hanging scales type HCB	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)
Scale divisions	g	100	200	50	500	100	1000	2000
Body width	mm				80			
Body depth	mm	45	45	45	45	45	42	48
Body height	mm	150	150	150	150	150	152	150
Net weight	kg	0.6	0.6	0.6	0.6	0.6	0.35	0.55


47 9435

KERN Crane scales up to 12 t

Back-lit LCD display, easily read even from afar. Data hold function for retaining the display value.

47 9434 – Hight mobility thanks to stable lightweight design. Battery lasts approx. 20 hours.

47 9439 – Sturdy high-resolution crane scales up to 12 tonnes. Character height 30 mm. Battery lasts approx. 30 hours.

Supplied with:

47 9434 – Including remote control with 2 batteries No. 081561 size LR3. Scales including 4 batteries No. 081561 LR6.

47 9439 – Including remote control with 2 batteries No. 081561 size LR3. Scales incl. battery and mains adapter.

i Cal


47 9434

maximum weighing range	kg	60	150	300	1500	3000	6000	12000
47D 47 9434	Crane scales type HCD	eShop	eShop	eShop	–	–	–	–
47D 47 9439	Crane scales type HFD	–	–	–	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	g	20	50	100	100	200	500	1000
Reading the average weighing range	g	–	–	–	200	500	1000	2000
Reading at top of weighing range	g	–	–	–	500	1000	2000	5000
Error limit from maximum value	%				0.2			
Body width	mm				194			
Body depth	mm	79	79	79	145	145	145	145
Body height	mm	97	97	97	129	129	129	129
Overall length	mm	276	276	276	421	421	477	573
Net weight	kg	1.1	1.1	1.1	8.2	10	15	20
Operating temperature	°C	0 – 40	0 – 40	0 – 40	-10 – 40	-10 – 40	-10 – 40	-10 – 40


47 9439

Pocket scales

- With cumulative weighing function, tare button.
- Calibration programme CAL for high accuracy.

47 9442 – Operation via touch screen. Robust hard case for protection against damage and dust.

47 9446 – Flat pocket scales with large stainless steel weighing platform and handy tare dish. Backlit LCD display for easy reading of the weighed value.

Supplied with:

47 9442 – Supplied with 2 batteries No. 081551 size LR3.

47 9446 – Supplied with 2 batteries No. 081560 size CR2032.

K2 Cal


47 9442

maximum weighing range	g	150	500	1000
42H 47 9442	HOLEX Pocket scales	–	eShop	–
47D 47 9446	KERN Pocket scales, type TGC	eShop	eShop	eShop
Scale divisions	g	0.01	0.1	1
Width (47 9442)	mm	–	72	–
Width (47 9446)	mm		100	
Depth (47 9442)	mm	–	115	–
Depth (47 9446)	mm		130	
Height (47 9442)	mm	–	16	–
Height (47 9446)	mm		18	
Net weight	kg		0.18	


47 9446

KERN Basic compact scales

Very simple operation with 2 keys.

- Tare function (cumulative weighing function) for easy zeroing of the display.
- Battery-powered, auto-off after 3 minutes.
- Can be powered using a mains adaptor.

47 9450 – Simple compact scales, extremely light.

47 9452 – Large background illuminated LCD display (character height 21 mm). Weighing plate made of stainless steel.

Supplied with:

47 9450 Size 2200 – Supplied with 2 batteries No. 081561 size LR6.

Size 200; 500; 2000; 5200/1; 6000 – 1 battery No. 081561 size 6LR61.

Optional extras:

47 9452 – 6 batteries No. 081561 size LR6; mains adaptor or rechargeable battery on request.



47 9450



47 9452

maximum weighing range	g	200	500	2200	2000	5200/1	6000	10000	20000	50000
47D 47 9450	Compact scales type EMB	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
47D 47 9452	Compact scales type ECB	–	–	–	–	–	–	eShop	eShop	eShop
Scale divisions	g	0.01	0.1	1	0.01	1	0.1	5	10	20
Dimensions of weighing plate		Ø 105	Ø 150	Ø 150	Ø 150	Ø 150	Ø 150	320×260	320×260	320×260
Width	mm	170	170	170	170	170	170	320	320	320
Depth	mm	244	244	244	244	244	244	300	300	300
Height	mm	39	39	39	39	39	39	60	60	60
Net weight	kg	0.5	0.5	0.55	0.9	0.5	0.55	2.6	2.6	2.6

KERN Basic precision scales

- Selectable mains and battery operation. Auto-off after 3 minutes.
- **CAL calibration programme:** For accuracy adjustment (required external calibration weight available on request).
- **Quantity counting:** Reference quantities selectable 5, 10, 25, 50 pieces. Display selectable between pieces and weight.
- **Formulation weighing:** Separate memory for weight of the tare vessel and of the formulation ingredients (net totals).

KERN Universal Port (KUP): allows the connection of external KUP interface adapters, such as RS-232 or USB, for exchanging data and control commands, without installation effort.

47 9512 – Second display on the rear of the scales.

Supplied with: Mains adapter 230 V/ 50 Hz and protective hood.

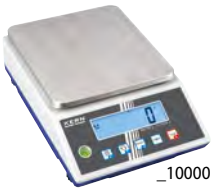
Optional extras:

47 9511 – Battery No. 081561 size 6LR61; internal rechargeable battery on request. Data cable, printer, interface adapter such as RS-232 or USB on request.

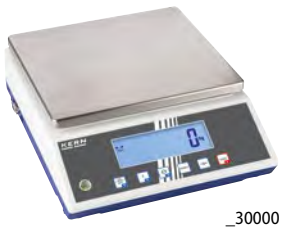
47 9512 – Battery No. 081561 size 6LR61; internal rechargeable battery on request. Data cable, printer on request.



_360



_10000



_30000

maximum weighing range	g	360	3600	10000	30000
47D 47 9511	Precision scales, type PCB	eShop	eShop	eShop	–
47D 47 9512	Precision scales, type FCB	–	–	–	eShop
Scale divisions	g	0.001	0.01	0.1	1
Reproducibility	g	0.001	0.01	0.1	1
Linearity	g	±0.005	±0.05	± 0.3	±3
Settling time	s	3			
Minimum unit weight	g	0.02	0.2	2	10
Dimensions of weighing plate	mm	Ø 82	130×130	150×170	253×227
Width	mm	163	163	163	325
Depth	mm	245	245	245	270
Height	mm	79	79	79	105
Net weight	kg	0.84	1.4	1.4	3

KERN Precision scales

- Robust metal casing.
- Simple self-explanatory user guide.
- Selectable mains and battery operation.
- Units of weight (e.g. screw weight) can be freely programmed.
- **Adjustment programme CAL:** For accuracy adjustment (external calibration weight available on request if required).
- **Quantity counting:** Reference quantities selectable 1, 5, 10, 20 pieces. Display selectable between pieces and weight.
- **Formulation:** separate memory for weight of the tare vessel and of the formulation ingredients (net total).
- **KERN Universal Port (KUP):** allows the connection of external KUP interface adapters, such as RS-232 or USB, for exchanging data and control commands, without installation effort.

Supplied with: Mains adapter 230 V / 50 Hz and protective hood.

Optional extras: External rechargeable battery, data cable, printer, interface adapter such as RS-232, USB on request.



_420



_3000



_12000

maximum weighing range	g	420	3000	4200	12000	24000
47D 47 9521	Precision scales, type 572	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	g	0.001	0.01	0.01	0.05	0.1
Reproducibility	g	0.002	0.02	0.02	0.05	0.1
Linearity	g	± 0.005	±0.05	± 0.05	±0.15	±0.3
Settling time	s	3				
Minimum unit weight	g	0.01	0.1	0.1	0.5	1
Dimensions of weighing plate	mm	Ø 106	Ø 150	Ø 150	160×200	160×200
Width	mm	180				
Depth	mm	310				
Height	mm	85				
Net weight	kg	2.3	2.3	2.3	2.7	2.7

KERN Counting scales

- Precision counting scales with automatic reference optimisation (progressive refinement of the average value of the item weight).
- Target item count and target weight programmable to give an acoustic signal.
- Cumulative item counter for totalling identical items by total quantity and overall weight.
- Reference quantities or reference weight.
- Selectable mains and battery operation.
- **CAL calibration programme:** For calibrating the accuracy (requires an external calibration weight which is available on request).
- Display switching between items and weight.

47 9541 – Checkweighing display: Acoustic or visual feedback if weighing is outside a pre-determined limit value.

47 9542 – **Counting system** consisting of **reference scales and quantity scales (platform scales)** with a 2.0 m connection cable.

Supplied with:

47 9541 – Mains adapter 230 V / 50 Hz, battery and protective hood.

47 9542 – Mains adapter 230 V/ 50 Hz and protective hood for reference scales.

Optional extras:

47 9542 – Internal battery, signal lamp available on request.



47 9541 *Visual checkweighing signal*



47 9542

maximum weighing range	kg	3	6	15	30	60	150
47D 47 9541	Counting scales, type CIB	eShop	eShop	eShop	eShop	–	–
47D 47 9542	Counting system, type CCS	–	–	–	–	(eShop)	(eShop)
Scale divisions	g	0.2	0.5	1	2	0.1	0.1
Reading the quantity scales	g	–	–	–	–	2	5
Reproducibility	g	0.2	0.5	1	2	0.1	0.2
Linearity	g	±0.4	±1	±3	±4	±0.2	± 0.2
Settling time	s	2					
Minimum unit weight	g	1	2	5	10	1	1
Dimensions of weighing plate	mm	315×215	315×215	315×215	315×215	294×225	294×225
Width	mm	350	350	350	350	320	320
Depth	mm	330	330	330	330	350	350
Height	mm	120	120	120	120	125	125
Platform scales width	mm	–	–	–	–	500	500
Platform scales depth	mm	–	–	–	–	400	400
Platform scales height	mm	–	–	–	–	137	137
Net weight	kg	3.5	3.6	4	3.6	13	16

KERN Basic platform / parcel scales

- Robust parcel scales for the dispatch department.
- Simple operation by 4 keys.
- Display unit with character height 25 mm can be placed away from platform; can be positioned or mounted using approx. 2 m long flexible cable.
- Suitable for mains and battery operation, auto-off after 3 minutes.

Supplied with: Mains adapter and wall bracket for display unit.

Optional extras: 6 batteries No. 081561 size LR6, stand for the display unit available on request.



47 9600

maximum weighing range	kg	35	60	60L	150	150L	300L
47D 47 9600	Platform scales, type EOB	eShop	eShop	(eShop)	eShop	(eShop)	eShop
Scale divisions	g	10	20	20	50	50	100
Reproducibility	g	10	20	20	50	50	100
Dimensions of weighing plate	mm	315×305	315×305	550×550	315×305	550×550	950×500
Display unit width	mm	215					
Display unit depth	mm	110					
Display unit height	mm	50					
Net weight	kg	3.8	3.8	12	3.8	11	17

KERN Calibration weights on request

Calibration weights for installing and checking the accuracy of scales available in various accuracy classes as individual weights or sets of weights from 1 mg to 50 kg.

On request also with DAkkS calibration.



RS232C IP 65

KERN Platform scales with buildtype approval for verification

- Robust stainless steel platform scales can be used as parcel, industrial, and counting scales.
- Dual-range scales with automatic changeover between the ranges (more precise display in the lower half of the weighing range).
- Display unit with numeral height 24 mm can be remote from platform; can be stood or mounted using flexible cable.
- High mobility due to optional battery operation and compact design.
- Provides an **optical and acoustic signal** to support portioning, metering or sorting within the tolerance range.
- **Percentage determination:** Enable weighing out to a prescribed value (100%) and determination of deviations from that set value.
- **Quantity counting:** Easy counting function allows quick counting of large numbers. Reference quantities selectable 5, 10, 25, 50 pieces.
- **CAL calibration programme:** For setting the accuracy (external calibration weight required for this available on request).

47 9608 – Platform scales **with buildtype approval for verification** (optional verification can be ordered under No. 479609.) A wide variety of (optional) data interfaces permit easy transfer of weighing data. Optional formulations available: Separate memory for weight of the tare vessel and of the formulation ingredients (net totals).

Supplied with: Supplied with mains adapter, table base including wall bracket, protective hood.

Optional extras:

47 9608 Size 30 – Calibration No. 479609 size 30

Size 60L; 150 – Calibration No. 479609 size 300

Note:

47 9608 – For proper verification, the installation location of the scales must be stated. When ordering scales, please also order verification No. 479609 and state the installation location.



47 9606

Size 6 – 150 Size 300L



47 9608

maximum weighing range	kg	6	30	35	60	60L	150	300L
47D 47 9606	Platform scales, type EOC	eShop	–	eShop	eShop	eShop	eShop	eShop
47D 47 9608	Platform scales, type IOC **buildtype approval for verification**	–	(eShop)	–	–	(eShop)	(eShop)	–
Reading at top of weighing range	g	2	10	10	20	20	50	100
Scale divisions	g	1	5	5	10	10	20	50
Reproducibility	g	2	10	10	20	20	50	100
Settling time	s				2			
Minimum unit weight	g	2.5	10	10	20	20	50	100
Dimensions of weighing plate (47 9606)	mm	300×300	–	300×300	300×300	500×400	300×300	600×500
Dimensions of weighing plate (47 9608)	mm	–	400×300	–	–	500×400	500×400	–
Net weight	kg	5.2	5.2	5.2	5.2	9	5.2	18.4

i Cal

KERN High resolution platform scales

- Robust platform scales can be used as parcel, industrial, and counting scales.
- Display unit with numeral height 21 mm can be remote from platform; can be stood or mounted using flexible cable.
- Robust platform with a protective hood over the display unit.
- Simple, self-explanatory user guidance with (yes/no) dialogue in the display.
- Selectable mains or battery operation (battery available on request).
- Units of weight (e. g. screw weight) can be freely programmed.
- With automatic reference optimisation for exact counting.
- **Adjustment programme CAL:** For accuracy adjustment (required calibration weight available on request).
- **Quantity counting:** Reference quantities selectable 1, 5, 10, 20 pieces.
- Display selectable between pieces and weight.
- **Numeric tare preference** for well-known container weight. Useful for filling quantities.
- **Percentage determination:** Display of deviation from the reference weight in % instead of in grammes.
- KERN Universal Port (KUP): allows the connection of external KUP interface adapters (not included) such as RS-232, USB for exchanging data and control commands, without installation effort.

Supplied with: Mains adapter 230 V / 50 Hz and protective hood.

Optional extras: Internal and external rechargeable battery, calibration weight, wall attachments, printer, stand and interface adapter such as RS-232, USB on request.



47 9611

maximum weighing range	kg	16	36	65	100	150
47D 47 9611	Platform scales, type DS **high resolution**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Scale divisions	g	0.1	0.2	0.5	0.5	1
Reproducibility	g	0.1	0.2	0.5	0.5	1
Settling time	s			3		
Minimum unit weight	g	1	2	5	5	10
Dimensions of weighing plate	mm	308×318	308×318	500×400	500×400	500×400
Net weight	kg	7.5	9.5	19	19	19

HOLEX Screw thread grinding gauge

Thread gauge of ground steel (3 pieces). Ground measuring faces. Labelled cut-outs for Vee-form threads 55° – 60°, square threads 2 – 8 turns / inch, metric threads 60°, Whitworth threads 55°, trapezoidal threads 30°, pitch 2 – 12 mm.



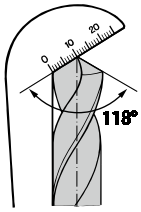
42H 47 5130	Screw thread grinding gauge set **3 pieces**	eShop

HOLEX Jobber drill point grinding gauge

47 5185 – **Adjustable,** with screwed, adjustable pointer and graduations 30° – 160°. Ground measuring faces.
47 5205 – **Fixed,** for drills up to ∅ 50 mm with tip angle 118°.



47 5185





47 5205

Measuring range	degrees	30-160	118
42H 47 5185	Drill point grinding gauge, adjustable	eShop	–
42H 47 5205	Drill point grinding gauge, fixed	–	eShop

HOLEX Nozzle checking gauges

47 5500 – Steel gauge pins in a labelled holder. For checking nozzle bores and small holes.
47 5805 – Precision version; pins hardened and cylindrically ground.



47 5500

Measuring range	mm	0,45-1,5	1,5-3
42H 47 5500	Nozzle checking gauge	eShop	eShop
0.05 mm increments	mm	0.45 – 1.3	–
0.1 mm increments	mm	1.3 – 1.5	1.5 – 3
Number of pins		20	16



47 5805

Measuring range	mm	0-5
42H 47 5805	Nozzle gauge precision version	eShop
Scale graduations	mm	1
Vernier value	mm	0.1

HOLEX Taper slot gauges

Taper slot gauge satin chrome-plated, size 0.5 -11K plastic.



Measuring range	mm	0,5-7	2,0-7	0,5-11	0,5-11K
42H 47 5810	Taper slot gauge	eShop	eShop	eShop	eShop
Scale graduations	mm	0.1			
Material		Steel	Steel	Steel	Plastic

HOLEX Thread gauges

Made of steel; **with precisely milled teeth.** Flat retaining clip with clamping screws for holding the blades.
Application: For checking the pitch of external and internal threads.



for threads		M/W	UNC	UNF
42H 47 7000	Thread gauge	eShop ■	eShop ■	eShop ■
for threads		metric and Whitworth	UNC	UNF
for pitches	mm	0.25 – 6	–	–
for TPI		4 – 62	4 – 64	12 – 80
Number of blades		24 / 28	22	16

Radius gauges

S/STL

Made of steel; precision **concave and convex gauges.** Flat retaining clip with clamping screws for holding the blades (except size 0.5 - 13). Each marked with the respective radius.

47 7550 – Stainless steel.

Size 0,5-13 – Each gauge has 5 measuring points.

Application: For checking internal and external radii.

for radius		mm	0,5-13	1-7	7,5-15	15,5-25
42H 47 7500	Radius gauge		–	eShop ■	eShop ■	eShop ■
42H 47 7550	Radius gauge, stainless steel		eShop	eShop	eShop	–
0.25 mm increments		mm	–	1 – 3	–	–
0.5 mm increments		mm	0.5 – 13	3 – 7	7.5 – 15	15.5 – 20
1.0 mm increments		mm	–	–	–	20 – 25
No. of blades for internal / external radii			26	17	16	15



47 7500



47 7550_0,5-13

47

S/STL

Angle gauge set

Set of angle gauges in 5° steps from 5° – 90°.

Application: For checking internal and external angles from 5° – 90°.

42H 47 7560	Set of angle gauges, stainless steel	eShop



47 7560

Weld seam gauges

47 7590 – Simple weld seam gauge of aluminium. Measuring range flat seams 0 – 5 mm. Measuring range corner seams 2 – 15 mm.

47 7600 – Measuring range 20 mm, reading 0.1 mm. Slide with clamping screw. Stainless steel.

47 7620 – Measuring range 0 – 20 mm. Reading accuracy 0.1 mm. Reading using reference line in the reading window. Measurement error largely eliminated by single-sided positioning of the gauge. Stainless steel. **Integral straight edge from 0 – 90 mm.**

47 7700 – 12 blades, held fan-shaped by a ring (3 / 3.5 / 4 / 4.5 / 5 / 5.5 / 6 / 6.5 / 7 / 8 / 10 / 12 mm).

Application:

47 7590 – For quick measurement of flat and corner seams.

47 7600 – For measuring flat and fillet welding seams.

47 7620 – For easy and quick measurement of the weld seam height. For measuring the flank angle α.

47 7700 – For checking welding seams in right-angled corners.

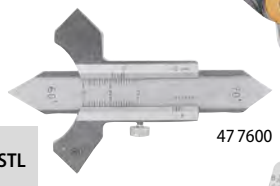


47 7590





47 7700



47 7600

S/STL

42H 47 7590	Weld seam gauge of aluminium	eShop
42H 47 7700	Weld seam gauge, 12 blades	eShop
42H 47 7600	Weld seam gauge with slide, stainless steel	eShop
42H 47 7620	Weld seam gauge with ABCD scale	eShop



47 7620

Standard | mm / Inch | Absolute System | S/STL | i Cal

Digital weld seam gauge

Large, high contrast digital display with sturdy metal housing. Digital weld seam gauge with **absolute scale**, no zeroing required. Electronics switch off automatically after approx. 5 minutes and switch on again as soon as the tool is moved.

Application: For measuring flat and fillet welding seams.

Supplied with: 1 battery No. 081560 size CR2032.

Measuring range		mm	30
42H 47 7630	Digital weld seam gauge		eShop ■
Reversible reading		mm	0.01
Reversible reading		in	0.0005
Error limit		mm	0.02



47 7630

Standard

HOLEX Feeler gauges (valve setting gauges)

Hard spring steel blades, clearly labelled. Equal width steel blades, pivoted on a riveted joint to fold away. Tapered steel blades. In nickel-plated casing, with clamp.

47 8100 – Steel feeler gauge, ground, tolerance T3.
47 8210 – Feeler gauge with brass blades.
Non-magnetic, tapered, 100 mm long, 12 mm at widest, tolerance T2.
47 8200/8220 – Steel feeler gauge, tolerance T2.

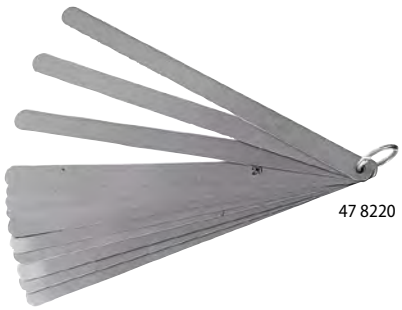


47 8200



47 8210

Number of blades		6	13	20	32
42H 47 8100	Feeler gauge, steel, T3	–	–	–	–
42H 47 8200	Feeler gauge, steel, T2	–	eShop ■	eShop ■	–
42H 47 8210	Feeler gauge, brass, T2	–	–	eShop ■	–
Blade thicknesses mm		0.1; 0.15; 0.2; 0.25; 0.3; 0.4	0.05 - 0.25 (0.05 increments) 0.3 -1.0 (0.1 increments)	0.05 -1.0 (0.05 increments)	0.03-0.10 (0.01 increments) 0.10-1.0 (0.05 increments) 0.125; 0.18; 0.23; 0.28; 0.32; 0.075
Blade length mm		75	100	100	100



47 8220

Number of blades		13	20
42H 47 8220	Feeler gauge on ring – 200 mm blade length, T2	eShop	eShop ■
Blade thicknesses mm		0.05 - 0.25 (0.05 increments) 0.3 -1.0 (0.1 increments)	0.05 – 1.0 (0.05 increments)

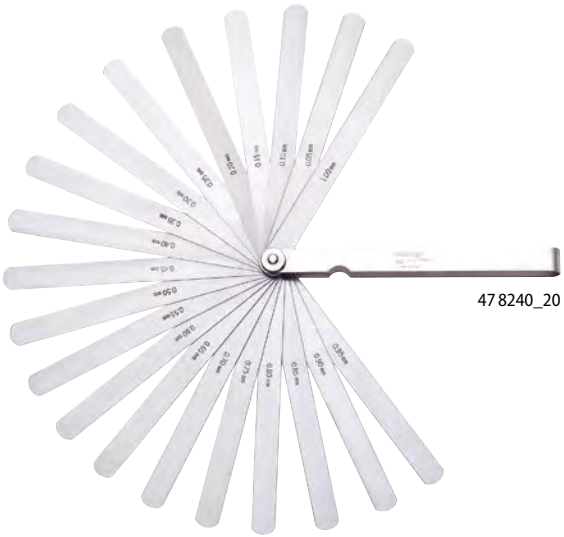
Standard

Mitutoyo Feeler gauge

Ideal for a wide variety of measurement tasks. Equal width steel blades, pivoted on a riveted joint to fold away. Size clearly stamped on each blade. The blades are easy to remove and can be opened and locked separately. Tolerance according to the factory standard.

Size 10 – **Tolerance:**
0.05 – 0.15 mm ±0.005; 0.2 – 0.5 mm ± 0.012; 0.55 – 0.8 mm ±0.020.
Size 20 – **Tolerance:**
0.05 – 0.15 mm ±0.005; 0.2 – 0.5 mm ± 0.012; 0.55 – 1.0 mm ±0.020.

Supplied with:
47 8242 – Incl. manufacturer's calibration certificate.



47 8240_20



47 8242_10

Number of blades		10	20
44A 47 8240	Steel feeler gauge	(eShop)	(eShop)
44A 47 8242	Steel feeler gauge, **calibrated**	(eShop)	(eShop)
Blade thicknesses mm		0.05 – 0.2 (0.05 increments); 0.3 – 0.8 (0.1 increments)	0.05 – 1.0 (0.05 increments)
Blade length mm		150	

Standard

HOLEX Spare feeler gauge blades, individual thicknesses

Steel feeler gauges; **loose, set of 10 pieces** of the same thickness, tolerance T3.
Supplied with: 10 feeler gauges of **the same** thickness provided with a ring.
Optional extras: Feeler gauge holder No. 478510.

Note: When ordering, please state the required thickness within the given pitch e.g. No. 478300 size 2 **0.04.**



Type		1	2	3	4
42H 47 8300	Feeler gauge set, 10 pieces, T3	(eShop)	(eShop)	(eShop)	(eShop)
Pitch	mm	–	0.01	0.05	0.1
Blade length	mm	100			
Thickness	mm	0.02	0.03 – 0.09	0.1 – 1	1.1 – 2

Standard

Garant Delrin gap gauge

Delrin (POM) gap gauges, can be folded away due to high-quality screw pivot. Gentle to surfaces, highly abrasion-resistant, with engraved thickness values.
Application: For checking gap and joint sizes without damaging surfaces and paint finishes.



_8



_9

Number of blades		8	9
41K 47 8360	Gap gauge **Delrin**	eShop	eShop
Tolerance zone	mm	± 0.1	
Blade thicknesses	mm	0.25 to 2 (0.25 increments)	2 to 6 (0.5 increments)
Blade length	mm	20	90

HOLEX Feeler gauge holder

Plastic holder with metal clip for feeler gauges or shim strips up to 13 mm wide.
Application: For holding feeler gauges or feeler gauge shim strip offcuts.



42H 47 8510	Feeler gauge holder	eShop

Norm

Thickness tolerances according to work standard for feeler gauges or feeler gauge shim strips.

Nominal thickness mm	0.000– 0.024	0.025– 0.039	0.040– 0.062	0.063– 0.124	0.125– 0.159	0.160– 0.199	0.200– 0.249	0.250– 0.314	0,315 – 0,399	0.400– 0.499	0.500– 0.629	0.630– 0.799	0.800– 0.999	1.000– 1.249
Tolerance T2 µm	± 2	± 3	± 4	± 5	± 6	± 7	± 8	± 9	± 11	± 12	± 14	± 17	± 19	± 24
Tolerance T3 µm	± 1.5	± 2	± 3	± 4	± 5	± 5	± 6	± 7	± 8	± 9	± 10	± 12	± 13	± 17

Standard

Feeler gauge shim strips in rolls – to tolerance T3

Cold rolled, hard spring feeler strip steel of maximum precision.
From size 0.02, the strip thickness is continuously marked and cannot be wiped off (exception: for No. 478502 from size 0.08).
Stored in a practical dispenser; pull out like a tape measure.
The desired length can be cut from the 5 or 10 m long strip.

47 8450–8504/8515–8525 – **C-steel –** Carbon steel, material No. 1.1274, cold rolled, hardened, bright surface. **(size 0.01 and 0.02 stainless)**.

47 8505/8507/8530/8540 – **Non-rusting** acid-resistant stainless steel, material No. 1.4310 (or 1.4301 for thickness 0.005–0.05 mm), cold rolled, spring hardened, bright surface.

Application: In jig and tool building for aligning and adjusting machine parts, as a shim for aligning components, for tolerance measurements of all kinds, for checking fits and guides, for setting up printing rollers.

Supplied with:

47 8525 – From size 0.8 supplied in a roll / ring.
47 8530/8540 – From size 0.3 supplied in a roll / ring.

Thickness	48B 47 8450	42H 47 8502	42H 47 8504	48B 47 8505	42H 47 8507	Error limit
		HOLEX			HOLEX	
	Feeler gauge shim roll 12.7 mm×5 m		Feeler gauge shim roll 12.7 mm×10 m	Feeler gauge shim roll 12.7 mm×5 m		
mm	Carbon steel	Carbon steel	Carbon steel	stainless steel	stainless steel	µm
0,005	–	–	–	–	–	±1
0,01	–	–	–	–	–	±2
0,02	–	–	–	–	–	±2
0,03	–	–	–	–	–	±2
0,04	–	–	–	–	–	±3
0,05	–	–	–	–	–	±3
0,06	–	–	–	–	–	±3
0,07	–	–	–	–	–	±4
0,08	–	–	–	–	–	±4
0,09	–	–	–	–	–	±4
0,1	–	–	–	–	–	±4
0,12	–	–	–	–	–	±4
0,15	–	–	–	–	–	±5
0,18	–	–	–	–	–	±5
0,2	–	–	–	–	–	±6
0,25	–	–	–	–	–	±7
0,3	–	–	–	–	–	±7
0,35	–	–	–	–	–	±8
0,4	–	–	–	–	–	±9
0,5	–	–	–	–	–	±10
0,6	–	–	–	–	–	±10
0,7	–	–	–	–	–	±12
0,8	–	–	–	–	–	±13
0,9	–	–	–	–	–	±13
1	–	–	–	–	–	±17

Thickness	48B 47 8515	48B 47 8520	48B 47 8525	48B 47 8530	48B 47 8540	Error limit
	Feeler gauge shim roll 6 mm×5 m	Feeler gauge shim roll 25 mm×5 m	Feeler gauge shim roll 50 mm×5 m	Feeler gauge shim roll 100 mm×5 m	Feeler gauge shim roll 150 mm×5 m	
mm	Carbon steel	Carbon steel	Carbon steel	stainless steel	stainless steel	µm
0,01	–	–	–	–	–	±2
0,02	–	–	–	–	–	±2
0,03	–	–	–	–	–	±2
0,04	–	–	–	–	–	±3
0,05	–	–	–	–	–	±3
0,06	–	–	–	–	–	±3
0,08	–	–	–	–	–	±4
0,1	–	–	–	–	–	±4
0,15	–	–	–	–	–	±5
0,2	–	–	–	–	–	±6
0,25	–	–	–	–	–	±7
0,3	–	–	–	–	–	±7
0,4	–	–	–	–	–	±9
0,5	–	–	–	–	–	±10
0,6	–	–	–	–	–	±10
0,7	–	–	–	–	–	±12
0,8	–	–	–	–	–	±13
1	–	–	–	–	–	±13

47 8450



47 8502



S/STL

47 8507

S/STL

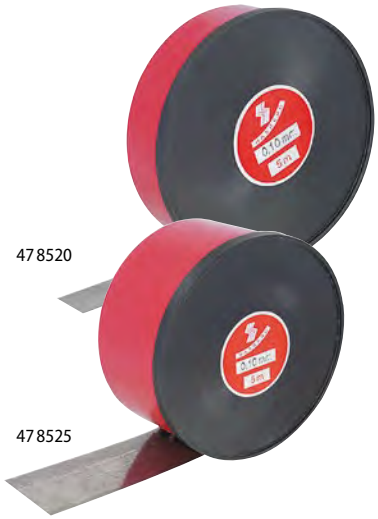
47 8505

47 8515



47 8520

47 8525



S/STL

47 8530



Standard

Feeler gauge shim strip set in a wall rack – in tolerance T3

15-piece set in a metal wall rack. Feeler gauges in plastic boxes.
Supplied with: Fastening material and feeler gauge holder No. 478510.

Type			0,01-0,25	0,3-1
42H 47 8440	Feeler gauge shim strip set **In a wall rack**		–	–
42H 47 8445	Feeler gauge shim strip set **Stainless in a wall rack**		–	–
Length		mm	330	
Height		mm	110	210
Depth		mm	100	220
Content: 1 each feeler gauge shim roll No. 478502 (47 8440)			0.01 to 0.1 (0.01 increments) 0.12; 0.15; 0.18; 0.20; 0.25	0.3 to 1 (0.05 increments)
1 each feeler gauge shim roll No. 478507 (47 8445)			0.01 to 0.1 (0.01 increments) 0.12; 0.15; 0.18; 0.20; 0.25	–



47 8440

S/STL



47 8445

Shim stocks 50 mm / 100 mm / 150 mm wide

Cold rolled, hard spring feeler strip steel of maximum precision. Shim thickness is marked and cannot be wiped off. Stored in sturdy boxes.

47 8750 – **C-steel** carbon steel, material No. 1.1274, cold rolled, hardened, bright surface (size 0.02 stainless).
47 8755/8760 – **Stainless** and acid resistant steel, material No. 1.4310 (or 1.4301 for thickness 0.02 and 0.05 mm), cold rolled, spring hardened, bright surface.

Application: **Setting** tools; **adjusting** devices; **balancing** tolerances; **shimming** components; **aligning** machines; **setting up** forms; **adjusting** bearing play; **adjusting** drive alignments; **setting** shear knives; **aligning** components etc.

Supplied with:
47 8750 – 1 pack with 10 shim stocks.
47 8755/8760 – 1 pack with 5 shim stocks.

Thickness	48B 47 8750	48B 47 8755	48B 47 8760	Error limit
	Shim stock set 10 pieces 50×300 mm	Shim stock set 5 pieces 100×500 mm	Shim stock set 5 pieces 150×500 mm	
mm	**Carbon steel**	**stainless**	**stainless**	µm
0,02	–	–	–	±2
0,05	–	–	–	±3
0,1	–	–	–	±4
0,15	–	–	–	±5
0,2	–	–	–	±6
0,25	–	–	–	±7
0,3	–	–	–	±7
0,4	–	–	–	±9
0,5	–	–	–	±10
0,6	–	–	–	±10
0,7	–	–	–	±12
0,8	–	–	–	±13
0,9	–	–	–	±13
1	–	–	–	±13
1,5	–	–	–	±20
2	–	–	–	±35


47 8750

S/STL


47 8755

S/STL


47 8760

Shim stock set







S/STL



Type			A	B	C	N
48B 47 8780	Shim stock set		–	–	–	–
Film thickness (per 1 piece)		mm	0.01; 0.02; 0.03; 0.04; 0.05; 0.06; 0.07; 0.08; 0.09; 0.10; 0.12; 0.15; 0.18; 0.2; 0.25; 0.3; 0.35; 0.4; 0.45; 0.5; 0.6; 0.7; 0.8; 0.9; 1.0	0.03; 0.04; 0.05; 0.06; 0.07; 0.08; 0.09; 0.1; 0.12; 0.15; 0.18; 0.2; 0.25; 0.3; 0.35; 0.40; 0.5; 0.6; 0.7; 0.8; 0.9; 1.0	0.02; 0.03; 0.05; 0.10; 0.15; 0.20; 0.25; 0.30; 0.40; 0.50; 1.00	0.02; 0.05; 0.1; 0.15; 0.20; 0.30; 0.40; 0.50; 1.00
Length		mm	300	300	300	500
Width		mm	50	50	50	100
Material			Carbon steel	Carbon steel	Carbon steel	stainless
Number of sheets			25	23	11	9

HOLEX Shim stocks (precision gauging stock) 150 mm wide

This precision gauging shim is provided on rolls in plastic boxes (easy to pull off). The individual boxes can be stacked in a block, saving space and protecting the material from dirt.

47 8700 – **C-steel –** Carbon steel, material No. 1.0330 (DC01 C490 MA), cold rolled, bright surface.
47 8720 – **Stainless** and acid resistant steel, material No. 1.4301, cold rolled, spring hardened, bright surface.
47 8740 – **Brass** material No. CuZn 37 (CW508L), hard rolled, bright surface.

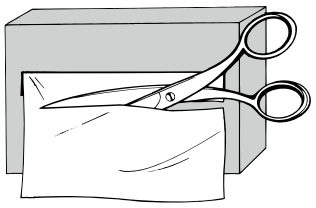
Application: **Setting** tools; **adjusting** devices; **balancing** tolerances; **shimming** components; **aligning** machines; **setting up** forms; **adjusting** bearing play; **adjusting** drive alignments; **setting** shear knives; **aligning** components etc.

47 8720



47 8740

Thickness	42H 47 8700	42H 47 8720	42H 47 8740	Error limit
	Shim stock 150×2500 mm			
mm	non-alloy steel	stainless steel	Brass	µm
0,025	–	–	–	±2
0,05	–	–	–	±3
0,075	–	–	–	±4
0,1	–	–	–	±4
0,15	–	–	–	±5
0,2	–	–	–	±6
0,25	–	–	–	±7
0,3	–	–	–	±7
0,4	–	–	–	±9
0,5	–	–	–	±10



47

DIN EN ISO 3650 ▶ S17 ◀ Cal

Mitutoyo Gauge block set, steel

Made of carefully selected, aged special steel. Particularly wear-resistant due to controlled hardness (HV 800). **Carefully hardened and hand lapped. Edges slightly bevelled. Manufacturer's test certificate traceable back to national standards:** Each gauge block is provided with its own unique identity number. The actual deviation from the nominal dimensions is recorded in the test certificate. The absolute actual dimension is therefore known.

48 0200 – **Tolerance class 0** as a master standard to check workshop gauges. For setting gauges to very high accuracies.
Size 8 – **Set with long dimensions**, 25 – 200 mm in 25 mm steps.
48 0300 – **Tolerance class 1** for checking standards, gauges and for setting length gauges as well as for normal inspection work in the inspection room.



48 0200_87

Number of gauge blocks		8	32	47	87	103
44A 48 0200	Gauge block set **Tolerance class 0**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
44A 48 0300	Gauge block set **Tolerance class 1**	(eShop)	eShop	eShop	eShop	eShop
Content: 1 pc. each of size		–	1.005; 60 mm	1.005 mm	–	1.005 mm
Graduation 0.001		–	–	–	9 pcs. 1.001 – 1.009	–
Graduation 0.01		–	9 pcs. 1.01 – 1.09 mm	21 pcs. 1.00 – 1.20 mm	49 pcs. 1.01 – 1.49 mm	49 pcs. 1.01 – 1.49 mm
Graduation 0.1		–	9 pcs. 1.1 – 1.9 mm	8 pcs. 1.3 – 2.0 mm	–	–
Graduation 0.5		–	–	–	19 pcs. 0.5 – 9.5 mm	49 pcs. 0.5 – 24.5 mm
Graduation 1.0		–	9 pcs. 1 – 9 mm	8 pcs. 3.0 – 10 mm	–	–
Graduation 10.0		–	3 pcs. 10 – 30 mm	9 pcs. 20 – 100 mm	10 pcs. 10 – 100 mm	–
Graduation 25.0		8 pcs. 25 – 200 mm	–	–	–	4 pcs. 25 – 100 mm

Garant Advantages of GARANT ceramic gauge blocks

Ideal for daily use in manufacture:

- Stainless.
- No need to degrease before use.
- No need to grease after use.
- Insensitive to shock and impact.
- Twice as hard as steel.
- 10 times higher wear resistance.
- Highly resistant to alkalis, acids, oil and grinding water.
- Non-magnetic.
- No galling.
- Low thermal conductivity.



DIN EN ISO 3650 | S17 Cal

HOLEX Gauge block set, steel workshop quality

Made of aged special steel. Hardened (HRC 64 – 66) with slightly bevelled edges. Lapped gauge faces.
With free test certificate traceable to national standards:
Each gauge block is provided with its own unique identity number. The actual deviation from the nominal dimensions is recorded in the test certificate. The absolute actual dimension is therefore known.

48 0450 – **Tolerance class 1** for checking standards and gauges.
48 0500 – **Tolerance class 2** workshop gauges for production.


48 0450_32

Number of gauge blocks		32	47	87	103
42K 48 0450	Gauge block set **Tolerance class 1**	eShop	eShop ■	eShop ■	eShop
42K 48 0500	Gauge block set **Tolerance class 2**	eShop	eShop	eShop	eShop
Content: 1 pc. each of size		1.000; 1.005; 50 mm	1.005 mm	0.5; 1.0 mm	0.5; 1.0; 50; 75; 100 mm
Graduation 0.001		–	–	9 pcs. 1.001 – 1.009 mm	–
Graduation 0.01		10 pcs. 1.01 – 1.10 mm	21 pcs. 1.00 – 1.20 mm	50 pcs. 1.01 – 1.5 mm	50 pcs. 1.01 – 1.5 mm
Graduation 0.1		9 pcs. 1.20 – 2.0 mm	8 pcs. 1.3 – 2.0 mm	–	–
Graduation 0.5		–	–	17 pcs. 2 – 10 mm	47 pcs. 2.0 – 25 mm
Graduation 1.0		8 pcs. 3.0 – 10 mm	8 pcs. 3.0 – 10 mm	–	–
Graduation 10.0		2 pcs. 20 – 30 mm	9 pcs. 20 – 100 mm	9 pcs. 20 – 100 mm	–

DIN EN ISO 3650 | S17 Cal

Gauge block set ceramic

Made of ultra-pure ceramic zirconium dioxide (ZrO_2) manufactured in a sintering process.

- **Hardness:** With approx. 1350 HV about twice as hard as steel.
- **Tensile strength:** Up to approx. 70 % of the flexural strength of steel. Insensitive to shock and impact.
- **Wear resistance: Lasts about 10 times longer than steel.** No burr formation. No plastic deformation. Scratches and small defects have no influence on the measured result. The surface remains slip capable longer than steel.
- **Handling / care:** Highly resistant to alkalis, acids, oil, and grinding water. **No need for time-intensive degreasing before use and re-greasing after use which is required for steel.** Low weight is an advantage for large sizes.
- **Temperature characteristics:** Coefficient of expansion (9.5 ±1.0) 10^{-6} K^{-1} similar to that of steel. Low thermal conductivity.
- **Anti-magnetic:** Cannot be magnetised.
- **Slip capability:** The homogeneous, high density structure gives optimum holding, even to steel, and easy slip capability. Galling is excluded.
- **Test certificate:** Each gauge block is provided with its own unique identity number. The actual deviation from the nominal dimensions is recorded in the test certificate. The absolute actual dimension is therefore known. **Manufacturer's test certificate traceable back to national standards.**

Application:

48 1300 – **Tolerance class 0** as a standard for checking working gauge blocks or high precision equipment.
48 1250/1310 – **Tolerance class 1** as working and adjusting master for gauge checking. For inspection rooms.


48 1250



48 1300 / 48 1310

Number of gauge blocks			32	47	87
41L 48 1250	Garant	Gauge block set **Ceramic, tolerance class 1**	eShop	eShop	eShop
44A 48 1300	Mitutoyo	Gauge block set **Ceramic, tolerance class 0**	(eShop)	–	(eShop)
44A 48 1310	Mitutoyo	Gauge block set **Ceramic, tolerance class 1**	–	eShop	eShop
Content: 1 pc. each of size (48 1250, 48 1310)			1.005; 10; 20; 30; 50 mm	1.005; 20; 30; 40; 50; 60; 70; 80; 90; 100 mm	10; 20; 30; 40; 50; 60; 70; 80; 90; 100 mm
1 pc. each of size (48 1300)			1.005; 10; 20; 30; 60 mm	–	10; 20; 30; 40; 50; 60; 70; 80; 90; 100 mm
Graduation 0.001			–	–	9 pcs. 1.001 – 1.009 mm
Graduation 0.01			9 pcs. 1.01 – 1.09 mm	21 pcs. 1.00 – 1.20 mm	49 pcs. 1.01 – 1.49 mm
Graduation 0.1			9 pcs. 1.1 – 1.9 mm	8 pcs. 1.3 – 2.0 mm	–
Graduation 0.5			–	–	19 pcs. 0.5 – 9.5 mm
Graduation 1.0			9 pcs. 1 – 9 mm	8 pcs. 3 – 10 mm	–

DIN EN ISO 3650 | ▶ L2 ◀ Cal

Individual gauge blocks

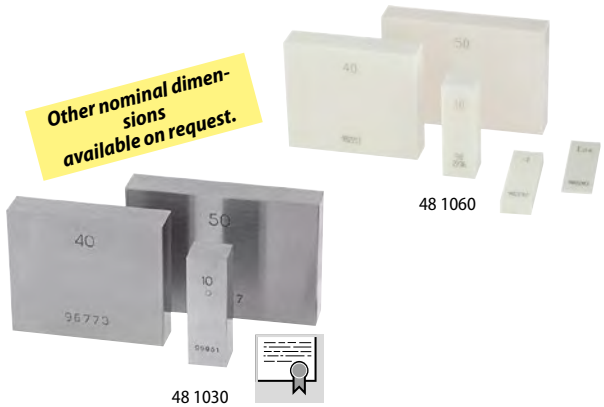
All gauge blocks are marked with an individual identification number.
Size 0.5 to 10 – cross section = 30×9 mm. Size 11 to 500 – cross section = 35×9 mm.

48 1030 – **Tolerance class 0** as a master standard to check workshop gauges. For setting gauges to very high accuracies. **Including traceable test certificate.**

48 1060 – Made of high purity industrial ceramic (Zirconium Dioxide ZrO_2).

48 1030/1050/1070 – Of special alloy steel, carefully hardened and stress-relieved.
Size 0.5 to 10 – cross-section = 30×9 mm.
Size 11 to 500 – cross-section = 35×9 mm.

Note:	Other nominal dimensions available on request.



Nominal size	41L 48 1030 Garant	41L 48 1060 Garant	42K 48 1050 HOLEX	42K 48 1070 HOLEX
	Steel gauge block	Ceramic gauge block	Steel gauge block	
mm	Tolerance class 0	Tolerance class 1	Tolerance class 1	Tolerance class 2
0,5	eShop	eShop	eShop	eShop
1	eShop	eShop	eShop	eShop
1,001	(eShop)	–	eShop	–
1,002	(eShop)	–	eShop	–
1,003	(eShop)	–	eShop	–
1,004	(eShop)	–	eShop	–
1,005	(eShop)	eShop	eShop	–
1,006	(eShop)	–	eShop	–
1,007	(eShop)	–	eShop	–
1,008	(eShop)	–	eShop	–
1,009	(eShop)	–	eShop	–
1,01	(eShop)	eShop	eShop	–
1,02	(eShop)	eShop	eShop	–
1,03	(eShop)	eShop	eShop	–
1,04	(eShop)	eShop	eShop	–
1,05	(eShop)	eShop	eShop	–
1,06	(eShop)	eShop	eShop	–
1,07	(eShop)	eShop	eShop	–
1,08	(eShop)	eShop	eShop	–
1,09	(eShop)	eShop	eShop	–
1,1	eShop	eShop	eShop	eShop
1,11	(eShop)	–	eShop	–
1,12	(eShop)	–	eShop	–
1,13	(eShop)	–	eShop	–
1,14	(eShop)	–	eShop	–
1,15	(eShop)	–	eShop	–
1,16	(eShop)	–	eShop	–
1,17	(eShop)	–	eShop	–
1,18	(eShop)	–	eShop	–
1,19	(eShop)	–	eShop	–
1,2	eShop	eShop	eShop	eShop
1,21	(eShop)	–	eShop	–
1,22	(eShop)	–	eShop	–
1,23	(eShop)	–	eShop	–
1,24	(eShop)	–	eShop	–
1,25	(eShop)	–	eShop	–
1,26	(eShop)	–	eShop	–
1,27	(eShop)	–	eShop	–
1,28	(eShop)	–	eShop	–
1,29	(eShop)	–	eShop	–
1,3	eShop	eShop	eShop	eShop
1,31	(eShop)	–	eShop	–
1,32	(eShop)	–	eShop	–
1,33	(eShop)	–	eShop	–
1,34	(eShop)	–	eShop	–
1,35	(eShop)	–	eShop	–
1,36	(eShop)	–	eShop	–
1,37	(eShop)	–	eShop	–
1,38	(eShop)	–	eShop	–
1,39	(eShop)	–	eShop	–
1,4	eShop	eShop	eShop	eShop
1,41	(eShop)	–	eShop	–
1,42	(eShop)	–	eShop	–
1,43	(eShop)	–	eShop	–
1,44	(eShop)	–	eShop	–
1,45	(eShop)	–	eShop	–
1,46	(eShop)	–	eShop	–
1,47	(eShop)	–	eShop	–

Nominal size	41L 48 1030 Garant	41L 48 1060 Garant	42K 48 1050 HOLEX	42K 48 1070 HOLEX
	Steel gauge block	Ceramic gauge block	Steel gauge block	
mm	Tolerance class 0	Tolerance class 1	Tolerance class 1	Tolerance class 2
1,48	(eShop)	–	eShop	–
1,49	(eShop)	–	eShop	–
1,5	eShop	eShop	eShop	eShop
1,6	eShop	eShop	eShop	eShop
1,7	(eShop)	eShop	eShop	eShop
1,8	(eShop)	eShop	eShop	eShop
1,9	eShop	eShop	eShop	eShop
2	eShop	eShop	eShop	eShop
2,5	eShop	eShop	eShop	–
3	eShop	eShop	eShop	eShop
3,5	(eShop)	eShop	eShop	–
4	eShop	eShop	eShop	eShop
4,5	(eShop)	eShop	eShop	–
5	eShop	eShop	eShop	eShop
5,5	(eShop)	eShop	eShop	–
6	eShop	eShop	eShop	eShop
6,5	(eShop)	eShop	eShop	–
7	eShop	eShop	eShop	eShop
7,5	(eShop)	eShop	eShop	–
8	eShop	eShop	eShop	eShop
8,5	(eShop)	eShop	eShop	–
9	eShop	eShop	eShop	eShop
9,5	(eShop)	eShop	eShop	–
10	eShop	eShop	eShop	eShop
11	(eShop)	eShop	eShop	–
12	(eShop)	eShop	eShop	–
13	(eShop)	eShop	eShop	–
14	(eShop)	eShop	eShop	–
15	eShop	eShop	eShop	–
16	(eShop)	eShop	eShop	–
17	(eShop)	eShop	eShop	–
18	(eShop)	eShop	eShop	–
19	(eShop)	eShop	eShop	–
20	eShop	eShop	eShop	eShop
21	(eShop)	eShop	eShop	–
22	(eShop)	eShop	eShop	–
23	(eShop)	eShop	eShop	–
24	(eShop)	eShop	eShop	–
25	eShop	eShop	eShop	–
30	eShop	eShop	eShop	eShop
40	eShop	eShop	eShop	eShop
41,3	–	–	eShop	–
50	eShop	eShop	eShop	eShop
60	(eShop)	eShop	eShop	eShop
70	(eShop)	eShop	eShop	–
75	(eShop)	eShop	eShop	–
80	(eShop)	eShop	eShop	–
90	(eShop)	eShop	eShop	–
100	eShop	eShop	eShop	eShop
125	(eShop)	–	(eShop)	eShop
131,4	(eShop)	–	eShop	–
150	(eShop)	–	eShop	eShop
175	(eShop)	–	eShop	eShop
200	(eShop)	–	(eShop)	eShop
250	(eShop)	–	eShop	eShop
300	(eShop)	–	(eShop)	eShop
400	(eShop)	–	(eShop)	eShop
500	(eShop)	–	(eShop)	eShop

DIN EN ISO 3650 | S5 Cal

Caliper test sets

Made of aged special steel.
Hardened with slightly bevelled edges.
Lapped measuring faces.
Caliper test set, 5 pieces, according to VDI / VDE / DGQ guideline 2618, sheet 9.1.



48 0301

Set contents			5
44A 48 0301	Mitutoyo	Caliper test set **Steel, tolerance class 1**	eShop
42K 48 0451	HOLEX	Caliper test set **Steel, tolerance class 2**	eShop
Content: 1 each gauge block (48 0301)			Size 30; 41.3; 131.4 mm
1 each gauge block (mm) (48 0451)			Size 25; 41.3; 131.4
Setting ring dimension (mm) (48 0301)			Size 4; 25
Setting ring dimension (mm) (48 0451)			Size 4; 20

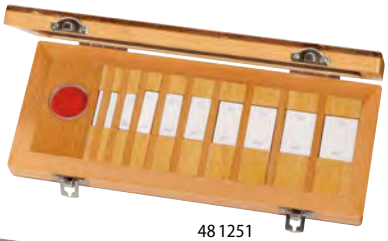

48 0451

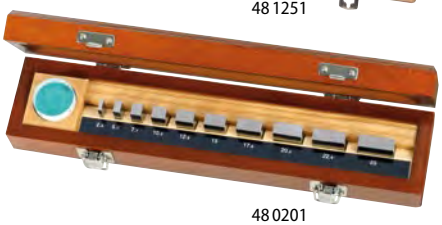
DIN EN ISO 3650 | S17 Cal

External micrometer gauge block test sets

48 0201 – Version same as No. 480200.
48 0452 – Version same as No. 480450.
48 1251 – Version same as No. 481250.

Application: For checking external micrometers to VDI / VDE / DGQ 2618, sheet 10.1.


48 1251


48 0201


48 0452

Set contents			10
41L 48 1251	Garant	Gauge block set **Ceramic, tolerance class 1**	eShop
44A 48 0201	Mitutoyo	Gauge block set **Steel, tolerance class 0**	eShop
42K 48 0452	HOLEX	Gauge block set **Steel, tolerance class 1**	eShop
Content: 1 each gauge block			Size 2.5; 5.1; 7.7; 10.3; 12.9; 15.0; 17.6; 20.2; 22.8; 25.0
Optical flat ∅ 30 mm			1 pc.

Tolerance classes for gauge blocks

Size limits t_e for deviation from nominal size at any point of the measurement face and tolerances t_v for the tolerance band								
Nominal size range	**Calibration class K**		**Tolerance class 0**		**Tolerance class 1**		**Tolerance class 2**	
	$\pm t_e$ in µm	$\pm t_v$ in µm	$\pm t_e$ in µm	$\pm t_v$ in µm	$\pm t_e$ in µm	$\pm t_v$ in µm	$\pm t_e$ in µm	$\pm t_v$ in µm
from 0.5 to 10	0.2	0.05	0.12	0.10	0.2	0.16	0.45	0.30
over 10 to 25	0.3	0.05	0.14	0.10	0.3	0.16	0.60	0.30
over 25 to 50	0.4	0.06	0.20	0.10	0.4	0.18	0.80	0.30
over 50 to 75	0.5	0.06	0.25	0.12	0.5	0.18	1.00	0.35
over 75 to 100	0.6	0.07	0.30	0.12	0.6	0.20	1.20	0.35
over 100 to 150	0.8	0.08	0.40	0.14	0.8	0.20	1.60	0.40
over 150 to 200	1.0	0.09	0.50	0.16	1.0	0.25	2.00	0.40
over 200 to 250	1.2	0.10	0.60	0.16	1.2	0.25	2.40	0.45
over 250 to 300	1.4	0.10	0.70	0.18	1.4	0.25	2.80	0.50
over 300 to 400	1.8	0.12	0.90	0.20	1.8	0.30	3.60	0.50
over 400 to 500	2.2	0.14	1.10	0.25	2.2	0.35	4.40	0.60
over 500 to 600	2.6	0.16	1.30	0.25	2.6	0.40	5.00	0.70
over 600 to 700	3.0	0.18	1.50	0.30	3.0	0.45	6.00	0.70
over 700 to 800	3.4	0.20	1.70	0.30	3.4	0.50	6.50	0.80
over 800 to 900	3.8	0.20	1.90	0.35	3.8	0.50	7.50	0.90
over 900 to 1000	4.2	0.25	2.00	0.40	4.2	0.60	8.00	1.00

Setting master for calipers

Hardened, ground, and lapped. For **quickly checking the dimensional accuracy** of measuring tips, measuring jaws and the depth gauge of a caliper gauge.

Internal / external ∅	mm	10/30
48B 48 1405	Setting master for calipers	eShop
External ∅	mm	30.00 ±0.002
Internal ∅	mm	10.00 ±0.002
Hole depth	mm	10.00 ±0.01



Gauge force tester for external micrometers

The measuring force tester provides for simple evaluation of the forces acting on the measuring faces. **According to DIN 863 T1** the measuring force has to be between 5 and 10 N.
Optional extras: Extensions No. 481348 for larger measurement ranges.

42K 48 1346	Gauge force tester for external micrometers	eShop

Advantage: External micrometers >25 mm can be checked using a screw-on measuring force tester.

for measuring range	mm	25-50	50-75	75-100
42K 48 1348	Extension for gauge force tester	eShop	eShop	eShop

S/STL

Thread protective cap
included in the scope of supply.

Thread
to screw on the extension.

Anvil screw
for anvil ∅ up to 8 mm, movable.


48 1346



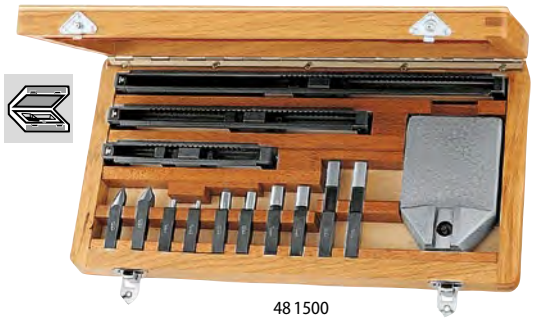


48 1348

Gauge block accessories

Application: For gauge blocks for precision measuring devices, for height masters and setting gauges.

Set contents		8	10
48B 48 1500	Gauge block accessory set	(eShop)	(eShop)
Content: Jaws No. 481900 1 pair each		Size 4; 10	Size 4; 10; 16; 20
Marking tip		1 pc.	
Centring drill		1 pc.	
Holder base No. 482900		1 pc.	
Gauge block holder No. 481700		1 pc. each size 0 – 50; 0 – 100; 100 – 200	


48 1500

Gauge block holder with quick adjustment. The patented quick adjustment allows quick, reliable clamping of the parallel gauge blocks. A clamping mechanism prevents the gauge blocks falling out.

Clamping range	mm	0-100	100-200	200-400
48B 48 1700	Gauge block holder with quick adjustment	eShop	eShop	eShop
Length	mm	206	306	506
Width	mm	30		


48 1700

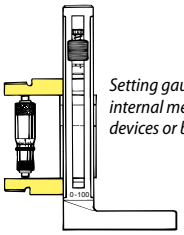
Holder base to accept gauge block holder No. 481700. For using as a setting gauge, precision height scriber etc. Base painted, bottom of base ground. The support for the gauge block holder is precision machined and aligned to the base.

48B 48 2900	Holder base	eShop
Length	mm	106
Width	mm	70
Height	mm	28


48 2900

Jaws with cylindrical step DIN 861, sheet 2, for internal and external measurements and as a setting aid.

Note: Jaws with wide face for internal measuring devices on request.

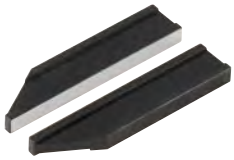

Setting gauge for internal measuring devices or bore gauges.

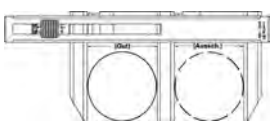
Stepped ∅ of jaw pairs	mm	4	10	16	20
48B 48 1900	Pair of jaws with cylindrical step	(eShop)	eShop	eShop	eShop
largest measuring depth	mm	8	15	20	40
Width	mm	9			
Height	mm	7	9	9	10
overall length	mm	43	50	55	75

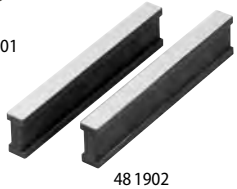

48 1900

Blade stocks with flat measuring face for external measurements.

Type		100	125
48B 48 1901	Pair of flat blade stocks	eShop	(eShop)
48B 48 1902	Pair of plane parallel blade stocks	eShop	eShop
Width	mm	9	
Height	mm	20	
overall length	mm	100	125


48 1901




48 1902



HOLEX Optical flat

Optical flat for testing the flatness of measuring faces, e. g. gauge blocks.

Optical flat ∅		mm	45
42K 48 1380	Optical flat for checking flatness		eShop
Flatness		µm	0.1





Sets of test pins in a wooden case

Of high quality gauge steel, hardened (60 ± 2 HRC) and tempered. The test pin sets are arranged in a wooden case for ease of location, with labelled holes (from 1.5 mm ∅ the pins are also directly marked). Test pin length 40 mm up to ∅ 0.99 mm, 70 mm above that. From ∅ 0.1 mm to ∅ 2.49 mm on both sides with chamfer, from ∅ 2.5 mm one side with chamfer.

Application: For work on jig boring machines or in jig and tool making, e. g. for measuring bore tolerances, for checking positions of bores, checking the spacing tolerances of two bores, gearwheel or thread dimensions as well as for angle and profile inspections etc.

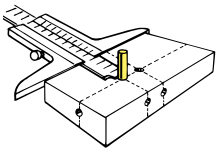
Tolerance class 1	Pin ∅ ± 0.001 mm cylindricity ± 0.0005 mm
Tolerance class 2	Pin ∅ ± 0.002 mm cylindricity ± 0.001 mm



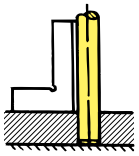
48 3810_91

Test pin sets in increments of 0.10 mm

Type			41	91
48A 48 3800	Test pin set in a wooden box **Tolerance class 1**		(eShop)	eShop
48A 48 3810	Test pin set in a wooden box **Tolerance class 2**		eShop	eShop
Nominal size range		mm	1 – 5	1 – 10
Pitch		mm	0.1	
Number of test pins			41	91



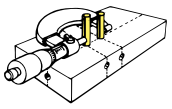
Measuring bore spacing / reference area



Position of bore

Test pin sets in increments of 0.05 mm

Type			81	100
48A 48 3801	Test pin set in a wooden box **Tolerance class 1**		(eShop)	(eShop)
48A 48 3811	Test pin set in a wooden box **Tolerance class 2**		eShop	eShop
Nominal size range		mm	1 – 5	5.05 – 10
Pitch		mm	0.05	
Number of test pins			81	100



Distance measurement



Gear wheel measurement

Test pin sets in increments of 0.01 mm

Size 0–6-7 – 1 wooden box.
Size 7-8–9-10 – 2 wooden boxes, 100 test pins distributed across 2 boxes.

Type			0,5-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
48A 48 3820	Test pin set in a wooden case **Tolerance class 1**		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
48A 48 3830	Test pin set in a wooden case **Tolerance class 2**		(eShop)	(eShop)	(eShop)	eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size range		mm	0.5 – 1	1 – 2	2.01 – 3	3.01 – 4	4.01 – 5	5.01 – 6	6.01 – 7	7.01 – 8	8.01 – 9	9.01 – 10
Pitch		mm	0.01									
Number of test pins			51	101	100	100	100	100	100	100	100	100

Empty wooden cases with hole for test pins

Size 0,5-1–6-7 – 1 wooden box.
Size 7-8–9-10 – 2 wooden boxes, 100 holes distributed across 2 boxes.

Application: For organised storage of gauge pins in the respective diameter range.



Type			0,5-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
48A 48 3840	Wooden case for test pins **not filled**		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size range		mm	0.5 – 1	1 – 2	2.01 – 3	3.01 – 4	4.01 – 5	5.01 – 6	6.01 – 7	7.01 – 8	8.01 – 9	9.01 – 10
Pitch bore ∅		mm	0.01									
Number of holes		pcs.	51	101	100	100	100	100	100	100	100	100

DIN 2269 | ▶ L5 ◀ Cal

Single test pins steel

Of high quality gauge steel, hardened (60 ± 2 HRC) and tempered. Surface ground and lapped.
From Ø 1.5 mm engraved with the size.

Application: Degrease before use and grease after use.

Note: When ordering, please additionally state the **desired Ø,** e.g. No. 483900 size 5 **10.08** or 483920 size 5 **10.082.**

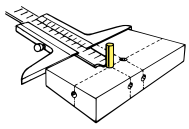


From Ø 0.1 mm to Ø 2.49 mm on both sides with chamfer, from Ø 2.5 mm one side with chamfer.

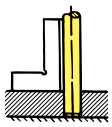
Tolerance class 1	**Pin Ø ± 0.001 mm** cylindrical form ± 0.0005 mm
Tolerance class 2	**Pin Ø ± 0.002 mm** cylindrical form ± 0.001 mm

Type		02	01	0	1	2	3
48A 48 3900	Single test pin **Tolerance class 1**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
48A 48 3910	Single test pin **Tolerance class 2**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size	mm	0.1 – 0.19	0.2 – 0.29	0.3 – 0.49	0.5 – 0.99	1 – 2.99	3 – 5.99
Pitch	mm	0.01					
Gauging pin length	mm	40	40	40	40	70	70

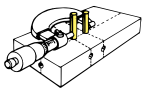
Type		4	5	6	7	8	9
48A 48 3900	Single test pin **Tolerance class 1**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
48A 48 3910	Single test pin **Tolerance class 2**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size	mm	6 – 9.99	10 – 11.99	12 – 13.99	14 – 15.99	16 – 18.99	19 – 20
Pitch	mm	0.01					
Gauging pin length	mm	70					



Measuring bore spacing / reference area



Position of bore



Distance measurement



Gear wheel measurement

Individual test pins in increments of 0.001 mm

Sharp edges broken at both ends.

Type		0	1	2	3	4	5	6	7	8	9
48A 48 3920	Single test pin **Tolerance class 1**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size	mm	0.301 – 0.499	0.501 – 0.999	1.001 – 2.999	3.001 – 5.999	6.001 – 9.999	10.001 – 11.999	12.001 – 13.999	14.001 – 15.999	16.001 – 18.999	19.001 – 19.999
Pitch	mm	0.001									
Gauging pin length	mm	40	40	70	70	70	70	70	70	70	70

DIN 2269 | ▶ L5 ◀ Cal

Single test pins stainless and acid-resistant

Test pin of stainless and acid-resistant material, hardened (58-62 HRC) and tempered.
Surface ground and lapped. From Ø 1.50 the dimension is marked on the sleeve; from Ø 3.00 on the end face.
From Ø 0.1 mm to Ø 2.49 mm on both sides with chamfer, from Ø 2.5 mm one side with chamfer.



Resistant to rust and acid

Note: When ordering, **please additionally state the desired Ø,** e.g. No. 483914 size 5 **10.08.**



Type		0	1	2	3	4	5	6
48A 48 3914	Individual stainless steel test pin **Tolerance class 1**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size	mm	0.3 – 0.49	0.5 – 0.99	1 – 2.99	3 – 5.99	6 – 9.99	10 – 11.99	12 – 13.99
Pitch	mm	0.01						
Gauging pin length	mm	40	40	70	70	70	70	70

Individual test pins in increments of 0.001 mm

Note: When ordering, **please additionally state the desired Ø,** e.g. No. 483915 size 5 **10.008.**

Resistant to rust and acid Pitch 0.001

Type		0	1	2	3	4	5	6
48A 48 3915	Individual stainless steel test pin **Tolerance class 1**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size	mm	0.301 – 0.499	0.501 – 0.999	1.001 – 2.999	3.001 – 5.999	6.001 – 9.999	10.001 – 11.999	12.001 – 13.999
Pitch	mm	0.001						
Gauging pin length	mm	40	40	70	70	70	70	70

DIN 2269 | ▶ L5 ◀ Cal

Single test pins carbide

Test pin of carbide. Surface ground and lapped. From Ø 5.01 marked with the size.

Advantage:
- Twice as hard as gauge steel
- Corrosion-resistant

Note: When ordering, please **state the desired Ø**, e. g. No. 483916 size 3 **4.35.**



48 3916

Type		1	2	3	4
48A 48 3916	Individual carbide test pin **Tolerance class 1**	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size	mm	0.5 – 0.99	1 – 2.99	3 – 5.99	6 – 9.99
Pitch	mm	0.01			
Gauging pin length	mm	40	70	70	70

DIN 2269 | ▶ L5 ◀ Cal

Single test pins ceramic

Made of high purity industrial ceramic (Zirconium Dioxide ZrO_2). Sharp edges broken at both ends.
From Ø 5.01 mm engraved on the end face with the size.

Advantage:
- Twice as hard as gauge steel.
- Very low coefficient of thermal expansion.
- Stainless and acid-resistant.
- No need to degrease before use.
- No need to degrease after use.

Note: When ordering, please additionally state the **desired Ø,** e.g. No. 483925 size 3 **4.35.**



48 3925

Type		1	2	3	4
48A 48 3925	Individual ceramic test pin **Tolerance class 1**	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size	mm	0.5 – 0.99	1 – 2.99	3 – 5.99	6 – 9.99
Pitch	mm	0.01			
Gauging pin length	mm	40			

Test pin holder

Die-cast test pin holder with clamping screw.
For mounting two test pins representing a tolerance range.
48 3935 – "Go" and "No Go" ends clearly distinguished by green and red identification markings



48 3930



48 3935

Type		1	2	3	4	5
48A 48 3930	Test pin holder	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
48A 48 3935	Two-colour test pin holder	(eShop)	eShop	eShop	(eShop)	(eShop)
Ø range	mm	1 – 1.99	2 – 4.5	4.51 – 6.99	7 – 9.5	9.51 – 12
Holder length	mm	60	68	76	84	92

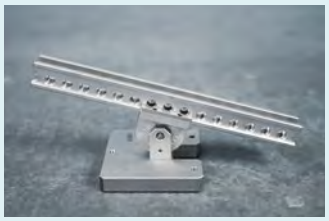
Other gauges and gauge blocks available on request



Gauging pins:
- Steel up to Ø 24.99 mm (tolerance class 1) or up to Ø 50 mm (tolerance class 2).
- Further intermediate sizes available on request or can simply be ordered at **www.hoffmann-group.com** e.g. No. 48 3910 size 13 (Ø 40 – 50 mm).



Measurement ball (±0.001 mm):
- Chromium steel
- Carbide
- Ceramic



KOBA-step® mini stepped gauge block:
- Optimised for use with small-volume, tactile coordinate measuring devices, e.g. multi-sensor devices.
- Nominal lengths of 210 mm and 310 mm.
- 10 mm intervals
- Optional DAkkS calibration.
- Tried-and-tested evaluation software is available, suitable for all measuring devices.

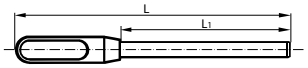
DIN 2269 | ▶ L5 ◀ Cal

Single test pins with handle

Test pins of alloyed tool steel 60 ± 2 HRC. Pin: Hardened, tempered, ground, and lapped. Handle: ∅ value engraved.

Note: When ordering, please **additionally state the desired ∅,** e.g. No. 483940 size 2 **0.35**.







Type		0	1	2	3	4	5	6
48A 48 3940	Single test pin **Tolerance class 1**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
48A 48 3941	Single test pin **Tolerance class 2**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size mm		0.1 – 0.19	0.2 – 0.29	0.3 – 0.49	0.5 – 0.99	1 – 2.99	3 – 4.99	5 – 5.99
Pitch mm		0.01						
Test length mm		33	33	33	33	63	60	60
Overall length mm		53	53	53	53	83	90	90

Martin+Tschopp Plug gauges with handle accuracy 0.5 µm

The attractively priced alternative to a test pin. ∅ tolerances better than DIN2269, tolerance class 1. Of high quality gauge steel; plastic handle with ∅ legend. Sharp edges broken at both ends.

Note: When ordering, please additionally state the **desired ∅**, e. g. No. 483950 size 2 **0.24.**

▶ L5 ◀ Cal



48 3950

∅ range	usable length	Overall length	Handle∅
∅ 0.06 – 0.09 mm	1.500 mm	33.5 mm	4 mm
∅ 0.09 – 0.30 mm	2.000 mm	34 mm	4 mm
∅ 0.30 – 0.50 mm	3.500 mm	35.5 mm	4 mm
∅ 0.50 – 1.50 mm	5.000 mm	37 mm	4 mm
∅ 1.50 – 2.00 mm	6.000 mm	38 mm	4 mm
∅ 2.00 – 3.50 mm	8.000 mm	43 mm	5 mm
∅ 3.50 – 6.00 mm	10.000 mm	55 mm	8 mm
∅ 6.00 – 8.00 mm	14.000 mm	59 mm	10 mm
∅ 8.00 – 10.00 mm	18.000 mm	63 mm	10 mm

▶ S18 ◀ Cal



48 3955

Type		0	1	2	3	4	5	6	7
48A 48 3950	Plug gauge with handle, accuracy ±0.5 µm	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Error limit µm		±0.5							
Nominal size mm		0.06 – 0.09	0.1 – 0.19	0.2 – 0.29	0.3 – 0.49	0.5 – 0.99	1 – 2.99	3 – 5.99	6 – 10
Pitch mm		0.01							

Plug gauge sets in increments of 0.01 mm

Type		0,06-0,5	0,5-1	1-1,5	1,5-2	2-2,5	2,5-3	3-3,5	3,5-4	4-4,5	4,5-5
48A 48 3955	Plug gauge set, accuracy ±0.5 µm	(eShop)	(eShop)	eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Error limit µm		±0.5									
Nominal size mm		0.06 – 0.5	0.51 – 1	1.01 – 1.5	1.51 – 2	2.01 – 2.5	2.51 – 3	3.01 – 3.5	3.51 – 4	4.01 – 4.5	4.51 – 5
Pitch mm		0.01									
Set contents		45	50	50	50	50	50	50	50	50	50

Type		5-5,5	5,5-6	6-6,5	6,5-7	7-7,5	7,5-8	8-8,5	8,5-9	9-9,5	9,5-10
48A 48 3955	Plug gauge set, accuracy ±0.5 µm	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Error limit µm		±0.5									
Nominal size mm		5.01 – 5.5	5.51 – 6	6.01 – 6.5	6.51 – 7	7.01 – 7.5	7.51 – 8	8.01 – 8.5	8.51 – 9	9.01 – 9.5	9.51 – 10
Pitch mm		0.01									
Set contents		50									

▶ L6 ◀
Cal

Plug gauges

The "Go" ends of these working gauges have a **wear allowance** to DIN 7164.

48 4000 – Plug gauge with tolerance class H7.
48 4020 – "Go" / "No Go" plug gauges for ISO **tolerance bands A – ZC** in **basic tolerance qualities 6 – 13.**
48 4040 – **"Go" end with hard chrome measuring faces.** This increases the gauge life about 8 times.
48 4000/4020 – Measuring body made of first class gauge steel, hardened, stress-relieved, ground, and lapped.

Standard: Tolerance and dimensions to **DIN EN ISO 1938-1, DIN 2245-1 and DIN 7164.**

Note:
- 48 4020 – ■ Specify required tolerance class. When ordering please state the tolerance band (A–ZC) and basic tolerance quality (6–13), e.g. No. 484020 **10F10.**
- 48 4000/4020 – ■ For **acceptance gauges** (without wear allowance) see No. 484027.
- ■ For gauges with intermediate sizes and all ∅ with numeric tolerances see No. 484025.


48 4000


48 4020


48 4040

Nominal size ∅ mm	48 4000 H7	48 4020 Plug gauge A-ZC 6-13	48 4040 Plug gauge "Go" chrome H7
1	eShop	(eShop)	eShop
1,5	eShop	(eShop)	eShop
2	eShop	(eShop)	eShop
3	eShop	(eShop)	eShop
4	eShop	(eShop)	eShop
5	eShop	(eShop)	eShop
6	eShop	(eShop)	eShop
7	eShop	(eShop)	eShop
8	eShop	(eShop)	eShop
9	eShop	(eShop)	eShop
10	eShop	(eShop)	eShop
11	eShop	(eShop)	eShop
12	eShop	(eShop)	eShop
13	eShop	(eShop)	eShop
14	eShop	(eShop)	eShop
15	eShop	(eShop)	eShop
16	eShop	(eShop)	eShop
17	eShop	(eShop)	eShop
18	eShop	(eShop)	eShop
19	eShop	(eShop)	(eShop)
20	eShop	(eShop)	eShop
21	eShop	(eShop)	(eShop)
22	eShop	(eShop)	eShop
23	eShop	(eShop)	(eShop)
24	eShop	(eShop)	eShop
25	eShop	(eShop)	eShop
26	eShop	(eShop)	eShop
27	eShop	(eShop)	(eShop)
28	eShop	(eShop)	eShop
29	(eShop)	(eShop)	(eShop)
30	eShop	(eShop)	eShop

Nominal size ∅ mm	48 4000 H7	48 4020 Plug gauge A-ZC 6-13	48 4040 Plug gauge "Go" chrome H7
31	(eShop)	(eShop)	(eShop)
32	eShop	(eShop)	eShop
33	eShop	(eShop)	(eShop)
34	eShop	(eShop)	(eShop)
35	eShop	(eShop)	eShop
36	eShop	(eShop)	eShop
37	eShop	(eShop)	(eShop)
38	eShop	(eShop)	(eShop)
39	(eShop)	(eShop)	(eShop)
40	eShop	(eShop)	eShop
41	(eShop)	(eShop)	(eShop)
42	eShop	(eShop)	(eShop)
43	(eShop)	(eShop)	(eShop)
44	eShop	(eShop)	(eShop)
45	eShop	(eShop)	eShop
46	eShop	(eShop)	(eShop)
47	eShop	(eShop)	(eShop)
48	eShop	(eShop)	(eShop)
50	eShop	(eShop)	(eShop)
52	eShop	(eShop)	(eShop)
55	eShop	(eShop)	(eShop)
60	eShop	(eShop)	(eShop)
62	(eShop)	(eShop)	(eShop)
65	eShop	(eShop)	(eShop)
70	eShop	(eShop)	(eShop)
75	eShop	(eShop)	(eShop)
80	eShop	(eShop)	(eShop)
85	eShop	(eShop)	(eShop)
90	eShop	(eShop)	(eShop)
95	eShop	(eShop)	(eShop)
100	eShop	(eShop)	(eShop)

▶ S12 ◀
Cal

"Go" / "No Go" plug gauge set

Content: 7 pieces, 1× "Go" / "No Go" plug gauge No. 484000 each in size 3, 4, 5, 6, 8, 10, 12 all in tolerance class H7.

Nominal size range	mm	3-12
48 4005	Plug gauges set H7	eShop


48 4005

Gauges from the Hoffmann Group – made in Germany

- Precision gauges from Germany's most renowned manufacturers.
- Aged gauge steel for the highest possible dimensional accuracy.
- Excellent wear performance due to optimum surface quality.
- High hardness for a long service life.

► L6 ◄
Cal

Plug gauges with intermediate size and ISO fit or numerical tolerance

Measuring body made of first class gauge steel, hardened, stress-relieved, ground, and lapped.

The "Go" ends of these working gauges have a wear allowance to DIN 7164.
Plug gauges with intermediate size and ISO fit, e.g. No. 484025 **2.37 H6** or numerical tolerance, e.g. No. 484025 **28 +0.01 / -0.02.**

Standard: Tolerance and dimensions to **DIN 1938-1, DIN 2245-1 and DIN 7164.**

Note:
- Please state the exact nominal ∅ with tolerance band (A-ZC) and quality (6-13) or numeric tolerance (±).
- Intermediate size plug gauges are just double-ended plug gauges in fractional sizes!
- For whole number (even) ∅ with ISO fits see No. 484000; 484020; 484040 or on request.
- For acceptance gauges (without wear allowance) see No. 484027.

Type	48B 48 4025 Double-ended plug gauge with intermediate sizes **with wear allowance**	Nominal size mm
A	(eShop)	2 – 2.999
B	(eShop)	3 – 10
C	(eShop)	10.001 – 14
D	(eShop)	14.001 – 18
E	(eShop)	18.001 – 24
F	(eShop)	24.001 – 30
G	(eShop)	30.001 – 40
H	(eShop)	40.001 – 50
I	(eShop)	50.001 – 60
J	(eShop)	60.001 – 90
K	(eShop)	90.001 – 99.999



Acceptance gauges (without wear allowance)

Acceptance gauges are made with no wear allowance at the "Go" end.
Acceptance gauge with intermediate size and ISO fit, e.g. No. 484027 **2.37 H6** or numerical tolerance, e.g. No. 484027 **28 +0.01 / -0.02.**

Note:
- Please state the exact nominal ∅ with tolerance band (A-ZC) and quality (6-13) or numeric tolerance (±).
- Intermediate size plug gauges are just double-ended plug gauges in fractional sizes!

Type	48B 48 4027 Acceptance gauges with intermediate sizes **without wear allowance**	Nominal size mm
A	(eShop)	2 – 2.999
B	(eShop)	3 – 10
C	(eShop)	10.001 – 14
D	(eShop)	14.001 – 18
E	(eShop)	18.001 – 24
F	(eShop)	24.001 – 30
G	(eShop)	30.001 – 40
H	(eShop)	40.001 – 50
I	(eShop)	50.001 – 60
J	(eShop)	60.001 – 90
K	(eShop)	90.001 – 99.999



Gauges with diamond graphite coating on request

- 3 times harder than hard chrome plating.
- Longer service life
- Corrosion-resistant
- Low friction
- Wear-resistant
- Environmentally-friendly manufacturing processes.



▶ L7 ◀
Cal

Setting rings

Setting rings (checking rings) of first class gauge steel, hardened, stress-relieved, ground and lapped. **Each setting ring is engraved with the actual size.** Manufacturer's tolerance for the bore is JS4.

Standard: To **DIN 2250 C.**

Application: For general applications, e.g. for setting and testing measuring tools.

Note: **Other intermediate sizes up to 320 mm can be easily ordered, e.g. 484030 size 82.**



Nominal size ∅ mm	48 4030 Setting ring DIN 2250 C
3	eShop
4	eShop
5	eShop
6	eShop
7	eShop
8	eShop
9	eShop
10	eShop
11	eShop
12	eShop
13	eShop
14	eShop
15	eShop
16	eShop
17	eShop
18	eShop
19	eShop
20	eShop
21	(eShop)
22	eShop

Nominal size ∅ mm	48 4030 Setting ring DIN 2250 C
23	(eShop)
24	eShop
25	eShop
26	eShop
27	(eShop)
28	eShop
29	(eShop)
30	eShop
32	eShop
34	eShop
35	eShop
36	eShop
37	(eShop)
38	eShop
40	eShop
42	eShop
44	eShop
45	eShop
46	eShop
47	(eShop)

Nominal size ∅ mm	48 4030 Setting ring DIN 2250 C
50	eShop
52	(eShop)
55	eShop
60	eShop
62	(eShop)
65	eShop
70	eShop
75	eShop
80	eShop
85	eShop
90	eShop
95	eShop
100	eShop
110	(eShop)
125	eShop
150	(eShop)
175	eShop
200	(eShop)
225	(eShop)
275	(eShop)

▶ L7 ◀
Cal

Setting rings with intermediate sizes

Setting rings (checking rings) of first class gauge steel, hardened, stress-relieved, ground and lapped. **Each setting ring is engraved with the actual size.** Manufacturer's tolerance for the bore is JS4.

Standard: To **DIN 2250 C.**

Note: Please state exact nominal ∅. Intermediate size rings are only setting rings with **fractional sizes!**For whole number (even) ∅ see 484030 or on request.**Ordering example: ∅ 10.002:** No. 484035 B 10.002.**Ceramic setting rings** in **full millimetre sizes** available on request.



Type	48 4035 Setting ring with intermediate sizes	Nominal size mm
A	(eShop)	3.001 – 3.499
B	(eShop)	3.501 – 14.999
C	(eShop)	15.001 – 19.999
D	(eShop)	20.001 – 24.999
E	(eShop)	25.001 – 31.999
F	(eShop)	32.001 – 39.999

Type	48 4035 Setting ring with intermediate sizes	Nominal size mm
G	(eShop)	40.001 – 49.999
H	(eShop)	50.001 – 59.999
I	(eShop)	60.001 – 69.999
J	(eShop)	70.001 – 79.999
K	(eShop)	80.001 – 89.999
L	(eShop)	90.001 – 99.999

Garant **Setting Bench SB 1**

Horizontal setting device with touch screen suitable for the workshop environment **for setting internal and external measurement devices.**

Advantages:

- Easy and **convenient operation**.
- Large intuitive operating display.
- **Integral tolerance calculator** when the nominal size and fit are input.
- **Generation of favourites** for repeated setting of measuring tools.
- **High cost-effectiveness: Approx. 85 % time saving** compared to setting with gauge blocks.



43 9900_600

▶ L7 ◀
Cal

Go and No Go ring gauges

Made of first class gauge steel, hardened, stress-relieved, ground and lapped. Rings with intermediate size and ISO fit, e.g. No. 484037 **5.56 h6** or numerical tolerance, e.g. No. 484037 **28 0.01 / -0.02.**

48 4037 – With wear allowance.

Standard:

48 4037 – According to **DIN 2250-G.**

48 4038 – According to **DIN 2254-A.**

Application: Smooth rings for gauging the external diameter.

Note: State the exact nominal ∅ with tolerance band (a-zc) and quality (6-13) or numeric tolerance (±) when ordering. Gauges for precision fit quality 5 and finer tolerances available on request.



48 4037



48 4038

Type	48B 48 4037 "Go" ring gauge	48B 48 4038 "No Go" ring gauge	Nominal size mm
A	(eShop)	(eShop)	3 – 3.999
B	(eShop)	(eShop)	4 – 9.999
C	(eShop)	(eShop)	10 – 14.999
D	(eShop)	(eShop)	15 – 19.999
E	(eShop)	(eShop)	20 – 24.999
F	(eShop)	(eShop)	25 – 31.999
G	(eShop)	(eShop)	32 – 39.999
H	(eShop)	(eShop)	40 – 49.999

▶ L6 ◀
Cal

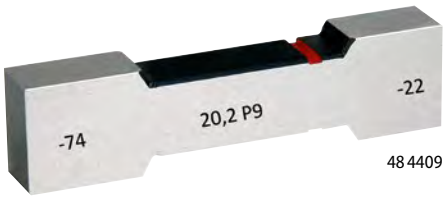
Groove width gauges

Groove width gauges with "Go" and "No Go" end. "Go" end with **wear allowance** to DIN 7164. Gauge body of hardened steel.
Groove width gauge with intermediate size and ISO fit, e.g. No. 484409 size **15.8 M6** or numerical tolerance, e.g. 484409 size **41.04 +0.01/-0.02**.

Standard: Tolerances and dimensions to **DIN EN ISO 1938-1 and DIN 7164.**

Application: For checking flat fits, e. g. grooves.

Note: Define the desired tolerance class. When placing the order, specify the **tolerance band (A–ZC)** and basic tolerance quality (7–13) or numerical tolerance. Gauges for precision fit quality 6 and finer tolerances available on request.



48 4409

Type	48B 48 4409 Groove width gauge	Nominal size mm
A	(eShop)	2 – 5.999
B	(eShop)	6 – 8.999
C	(eShop)	9 – 12.999
D	(eShop)	13 – 16.999
E	(eShop)	17 – 20.999
F	(eShop)	21 – 25.999
G	(eShop)	26 – 30

Other gauges in special formats and sizes on request

SCHMALKALDEN

- Precision gauges – Made in Germany.
- Aged gauge steel for the highest possible dimensional accuracy.
- High hardness for a long service life.

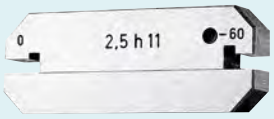

Flat bore gauges.



Taper gauges



Gauge for serration.



Assembled gap gauges.


Limit gap gauges for threads

▶ L8 ◀
Cal

Double-sided limit gap gauges

Double-sided gap gauge of first class gauge steel, hardened, stress-relieved, ground, and lapped. "Go" end with **wear allowance** to DIN 7163.
Limit gap gauge with ISO tolerance class, e.g. No. 484223 **size 15.8 m6** or numerical tolerance, e.g. No. 484223 **size 41.04 + 0.01/ -0.02.**
For ISO **tolerance bands a–zc** in **basic tolerance qualities 6–13**.

Standard: Tolerances and dimensions to **DIN EN ISO 1938-1** and **DIN 7163**.
Application: For testing shafts for clearance, transition or interference fits.

Note: Define the desired tolerance class. When placing the order, specify the **tolerance band (a–zc)** and **basic tolerance quality (6–13)** or **numerical tolerance**. Gauges for precision fit quality 5 and finer tolerances available on request.



48 4223

Type	48B 48 4223 Gap gauge	Nominal size mm
A	(eShop)	3 – 5.999
B	(eShop)	6 – 6.999
C	(eShop)	7 – 10.999
D	(eShop)	11 – 14.999
E	(eShop)	15 – 18.999
F	(eShop)	19 – 22.999
G	(eShop)	23 – 27.999
H	(eShop)	28 – 32.999
I	(eShop)	33 – 39.999

Type	48B 48 4223 Gap gauge	Nominal size mm
J	(eShop)	40 – 43.999
K	(eShop)	44 – 49.999
L	(eShop)	50 – 55.999
M	(eShop)	56 – 62.999
N	(eShop)	63 – 71.999
O	(eShop)	72 – 75.999
P	(eShop)	76 – 82.999
Q	(eShop)	83 – 92.999
R	(eShop)	93 – 100

▶ L8 ◀
Cal

Single-sided limit gap gauges

Forged version made of hardened gauge steel. Test surfaces hardened, ground, and lapped. "Go" end with **wear allowance** to DIN 7163.
Limit gap gauge with ISO tolerance class e.g. No. 484227 **size 125.05 m6** or numerical tolerance e.g. No. 484227 **size 125.05 + 0.01/ -0.02**. For ISO**tolerance bands a – zc in the basic tolerance qualities 6 – 13.**
Size H – Calibration on request.

Standard: Dimensions to **DIN 2231.**
Application: For testing shafts for clearance, transition or interference fits.

Note: Define the desired tolerance class. When placing the order, specify the **tolerance band (a–zc)** and **basic tolerance quality (6–13)** or **numerical tolerance**. Gauges for precision fit quality 5 and finer tolerances available on request.



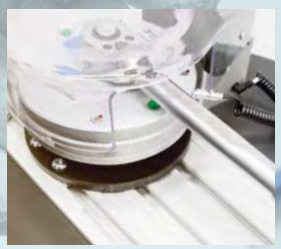
48 4227

Type		A	B	C	D	E	F	G	H
48B 48 4227	Limit gap gauge, single-sided	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Nominal size	mm	100 – 109.999	110 – 124.999	125 – 139.999	140 – 154.999	155 – 169.999	170 – 184.999	185 – 199.999	200 – 214

Hoffmann Group calibration service – perfect measurement processes

- Calibration services for the entire production industry.
- Personal advice.
- Efficient pick-up and delivery service, international network of calibration laboratories.
- **Comprehensive DAkkS accreditation.**
- **Peace of mind for audits.**






DIN 13 | M

Thread gauges for metric ISO threads

The ground first thread pitch removes coarse swarf in the component and prevents premature fracture of the first thread pitch. Version to DIN 2279 - 2299.

48 6008 – "Go" end TiN coated, resulting in longer working life, dirt trap groove from M6.
48 6055 – Design in accordance with DIN 2245.
48 6000/6008 – **"Go" and "No Go" ends on a single handle (DIN 2240, part 1, form R).** "No Go" end marked red.
48 6020/6030 – **"Go" and "No Go" gauges are separate (DIN 2240, part 2, form GE).**
Standard: Tolerances and dimensions to **DIN ISO 1502.**
Application: For metric ISO threads, right-hand DIN 13.
48 6000–6030 – Tolerance class 6H (up to M 1.4 = 5H).

Note: Thread gauges for threads with other pitches, Whitworth, trapezoidal, round, UNC, UNF, NPT, and LH threads available on request.



48 6000


48 6008



48 6020
"Go" plug gauge



48 6030
"No Go" plug gauge



48 6055
Core hole plug gauge

Thread	▶ L10 ◀ Cal	▶ L10 ◀ Cal	▶ L11 ◀ Cal	▶ L11 ◀ Cal	▶ L12 ◀ Cal	▶ L12 ◀ Cal	▶ L6 ◀ Cal	Thread pitch
	48B 48 6000	48B 48 6008	48B 48 6020	48B 48 6030	48B 48 6010	48B 48 6050	48B 48 6055	
	Threads							
	"Go" / "No Go" plug gauge	"Go" / "No Go" plug gauge TiN	"Go" plug gauge	"No Go" plug gauge	"Go" ring gauge 6g	"No Go" ring gauge 6g	Core hole "Go" / "No Go" plug gauge 6H	mm
M1	eShop	–	–	–	–	–	–	0.25
M1,4	eShop	–	–	–	–	–	–	0.3
M1,6	eShop	–	–	–	–	–	–	0.35
M2	eShop	–	–	–	eShop	eShop	–	0.4
M2,5	eShop	–	–	–	eShop	eShop	–	0.45
M3	eShop	eShop	–	–	eShop	eShop	eShop	0.5
M3,5	eShop	–	–	–	eShop	eShop	–	0.6
M4	eShop	eShop	–	–	eShop	eShop	eShop	0.7
M5	eShop	eShop	–	–	eShop	eShop	eShop	0.8
M6	eShop	eShop	–	–	eShop	eShop	eShop	1
M8	eShop	eShop	–	–	eShop	eShop	eShop	1.25
M10	eShop	eShop	–	–	eShop	eShop	eShop	1.5
M12	eShop	eShop	–	–	eShop	eShop	eShop	1.75
M14	eShop	eShop	–	–	eShop	eShop	–	2
M16	eShop	eShop	–	–	eShop	eShop	–	2
M18	eShop	–	–	–	eShop	eShop	–	2.5
M20	eShop	eShop	–	–	eShop	eShop	–	2.5
M22	eShop	–	–	–	eShop	(eShop)	–	2.5
M24	eShop	eShop	–	–	eShop	eShop	–	3
M27	eShop	–	–	–	eShop	(eShop)	–	3
M30	eShop	–	–	–	eShop	eShop	–	3.5
M33	(eShop)	–	–	–	(eShop)	(eShop)	–	3.5
M36	(eShop)	–	–	–	(eShop)	(eShop)	–	4
M42	–	–	(eShop)	(eShop)	(eShop)	(eShop)	–	4.5
M48	–	–	(eShop)	(eShop)	(eShop)	(eShop)	–	5



48 6010
„Go" ring gauge



48 6050
"No Go" ring gauge

Thread gauge sets

Supplied with: Strong wooden box with protective foam cushion.
Content:
48 6040 – 1x each thread plug gauge No. 486000 M3, M4, M5, M6, M8, M10, M12.
48 6060 – 1 each „Go" ring gauge No. 486010 M3; M4; M5; M6; M8; M10; M12.
48 6065 – 1 each "No Go" ring gauge No. 486050 M3; M4; M5; M6; M8; M10; M12.


48 6040
„Go" / „No Go" plug gauge set


48 6060 / 48 6065
„Go" and „No Go" ring gauge set

Set contents		M3-M12	
48B 48 6040	Thread "Go" / "No Go" plug gauge set	eShop	▶ S13 ◀ Cal
48B 48 6060	Thread "Go" ring gauge set	eShop	▶ S14 ◀ Cal
48B 48 6065	Thread "No Go" ring gauge set	eShop	▶ S14 ◀ Cal

DIN 13 | MF

Thread gauges for metric ISO fine threads

The ground first thread lead chamfer (from 1 mm pitch) removes contamination in the component and prevents premature fracture of the first full thread lead chamfer.
Design to **DIN 2279 – 2299**.

48 6100 – **"Go" and "No Go" ends on a single handle (DIN 2240, part 1 form R).** "No Go" end marked red.
48 6120/6130 – **"Go" and "No Go" gauges are separate (DIN 2240, part 2, form GE).**

Standard: Tolerances and dimensions to **DIN ISO 1502.**
Application: For metric ISO fine threads, right-hand DIN 13.

Note:	Thread gauges for threads with other pitches, Whitworth, trapezoidal, round, UNC, UNF, and NPT threads as well as left-hand threads available on request.

	▶ L10 ◀ Cal	▶ L11 ◀ Cal	▶ L11 ◀ Cal	▶ L12 ◀ Cal	▶ L12 ◀ Cal	
M × pitch	48B 48 6100	48B 48 6120	48B 48 6130	48B 48 6110	48B 48 6210	Thread pitch
	Fine thread					
	"Go" / "No Go" plug gauge 6H	"Go" plug gauge 6H	"No Go" plug gauge 6H	"Go" ring gauge 6g	"No Go" ring gauge 6g	mm
8×0,5	eShop	–	–	eShop	eShop	0.5
8×0,75	eShop	–	–	eShop	eShop	0.75
8×1	eShop	–	–	eShop	eShop	1
10×0,75	(eShop)	–	–	eShop	eShop	0.75
10×1	eShop	–	–	eShop	eShop	1
10×1,25	eShop	–	–	eShop	eShop	1.25
12×1	eShop	–	–	eShop	eShop	1
12×1,25	eShop	–	–	eShop	eShop	1.25
12×1,5	eShop	–	–	eShop	eShop	1.5
14×1	eShop	–	–	eShop	eShop	1
14×1,25	eShop	–	–	eShop	eShop	1.25
14×1,5	eShop	–	–	eShop	eShop	1.5
16×1	eShop	–	–	eShop	eShop	1
16×1,5	eShop	–	–	eShop	eShop	1.5
18×1	eShop	–	–	eShop	eShop	1
18×1,5	eShop	–	–	eShop	eShop	1.5
20×1	eShop	–	–	eShop	eShop	1
20×1,5	eShop	–	–	eShop	eShop	1.5
22×1,5	eShop	–	–	eShop	eShop	1.5
24×1	eShop	–	–	eShop	eShop	1
24×1,5	eShop	–	–	eShop	eShop	1.5
24×2	eShop	–	–	eShop	eShop	2
25×1,5	eShop	–	–	eShop	eShop	1.5
26×1,5	eShop	–	–	eShop	eShop	1.5
27×1,5	eShop	–	–	eShop	eShop	1.5
27×2	eShop	–	–	eShop	(eShop)	2
28×1,5	eShop	–	–	eShop	eShop	1.5
30×1	(eShop)	–	–	eShop	(eShop)	1
30×1,5	eShop	–	–	eShop	eShop	1.5
30×2	(eShop)	–	–	eShop	eShop	2
32×1,5	eShop	–	–	eShop	eShop	1.5
33×1,5	(eShop)	–	–	(eShop)	(eShop)	1.5
33×2	(eShop)	–	–	(eShop)	(eShop)	2
35×1,5	(eShop)	–	–	(eShop)	(eShop)	1.5
36×1,5	(eShop)	–	–	(eShop)	(eShop)	1.5
36×2	(eShop)	–	–	(eShop)	(eShop)	2
38×1,5	(eShop)	–	–	(eShop)	(eShop)	1.5
40×1,5	(eShop)	–	–	(eShop)	(eShop)	1.5
40×2	(eShop)	–	–	(eShop)	(eShop)	2
42×1,5	–	(eShop)	(eShop)	(eShop)	(eShop)	1.5
42×2	–	(eShop)	(eShop)	(eShop)	(eShop)	2
45×1,5	–	(eShop)	(eShop)	(eShop)	(eShop)	1.5
45×2	–	(eShop)	(eShop)	(eShop)	(eShop)	2
48×1,5	–	(eShop)	(eShop)	(eShop)	(eShop)	1.5
48×2	–	(eShop)	(eShop)	(eShop)	(eShop)	2
50×1,5	–	(eShop)	(eShop)	(eShop)	(eShop)	1.5
50×2	–	(eShop)	(eShop)	(eShop)	(eShop)	2
52×1,5	–	(eShop)	(eShop)	(eShop)	(eShop)	1.5
52×2	–	(eShop)	(eShop)	(eShop)	(eShop)	2
55×1,5	–	(eShop)	(eShop)	(eShop)	(eShop)	1.5
55×2	–	(eShop)	(eShop)	(eShop)	(eShop)	2
58×1,5	–	(eShop)	(eShop)	(eShop)	(eShop)	1.5
60×2	–	(eShop)	(eShop)	(eShop)	(eShop)	2



48 6100



48 6120
Go plug gauge



48 6130
No Go" plug gauge



48 6110
Go ring gauge



48 6210
"No Go" ring gauge

DIN 228 | G

Thread gauges for Whitworth pipe threads

Plug thread gauges to DIN EN ISO 228-2. Ring thread gauges tolerance class A.
48 6140/6170/6250 – "No Go" gauges marked red.

Standard: **DIN EN ISO 228**

Note: Thread gauges for other diameters available on request.



48 6140 *"Go" and "No Go" plug gauge*



48 6170 *"No Go" plug gauge*
48 6160 *"Go" plug gauge*

Threads in	▶ L10 ◀ Cal 48B 48 6140 "Go" / "No Go" plug gauge	▶ L11 ◀ Cal 48B 48 6160 "Go" plug gauge	▶ L11 ◀ Cal 48B 48 6170 "No Go" plug gauge	▶ L12 ◀ Cal 48B 48 6150 "Go" ring gauge	▶ L12 ◀ Cal 48B 48 6250 "No Go" ring gauge	Thread Ø mm	Threads per inch
	Pipe threads						
G1/8	eShop	–	–	eShop	eShop	9.73	28
G1/4	eShop	–	–	eShop	eShop	13.16	19
G3/8	eShop	–	–	eShop	eShop	16.66	19
G1/2	eShop	–	–	eShop	eShop	20.96	14
G3/4	eShop	–	–	eShop	eShop	26.44	14
G1	eShop	–	–	eShop	eShop	33.25	11
G1.1/4	–	eShop	eShop	eShop	(eShop)	41.91	11
G1.1/2	–	eShop	eShop	eShop	(eShop)	47.8	11
G2	–	eShop	eShop	(eShop)	(eShop)	59.61	11



48 6150



48 6250

Thread gauges for UNC and UNF threads

Plug thread gauges to ANSI B1.2.
48 6300–6302 – UNC = Unified National Coarse thread.
48 6320–6322 – UNF = Unified National Fine thread.
48 6300/6302/6320/6322 – "No Go" gauges marked red.

Standard: **ANSI B 1.1**



48 6300



48 6301

UNC

Thread	▶ L10 ◀ Cal 48B 48 6300 "Go" / "No Go" plug gauge UNC-2B	▶ L12 ◀ Cal 48B 48 6301 "Go" ring gauge UNC-2A	▶ L12 ◀ Cal 48B 48 6302 "No Go" ring gauge UNC-2A	Threads per inch
	Threads			
2-56	eShop	–	–	56
4-40	eShop	(eShop)	(eShop)	40
6-32	eShop	(eShop)	eShop	32
8-32	eShop	(eShop)	(eShop)	32
10-24	eShop	–	–	24
1/4	eShop	eShop	(eShop)	20
5/16	eShop	(eShop)	(eShop)	18
3/8	eShop	(eShop)	(eShop)	16
1/2	eShop	(eShop)	(eShop)	13
5/8	eShop	(eShop)	(eShop)	11
3/4	eShop	(eShop)	(eShop)	10

UNF

Threads	▶ L10 ◀ Cal 48B 48 6320 "Go" / "No Go" plug gauge UNF-2B	▶ L12 ◀ Cal 48B 48 6321 "Go" ring gauge UNF-2A	▶ L12 ◀ Cal 48B 48 6322 "No Go" ring gauge UNF-2A	Threads per inch
	Threads			
10-32	eShop	eShop	(eShop)	32
1/4	eShop	eShop	(eShop)	28
5/16	eShop	eShop	(eShop)	24
3/8	eShop	eShop	(eShop)	24
7/16	eShop	eShop	(eShop)	20
1/2	eShop	eShop	(eShop)	20
9/16	eShop	eShop	(eShop)	18
5/8	eShop	eShop	(eShop)	18
3/4	eShop	eShop	(eShop)	16
7/8	eShop	eShop	(eShop)	14

NPT

Thread gauges for tapered American pipe threads NPT

NPT = American Standard taper pipe thread. Taper 1: 16. For threads with sealants.

Standard: **ANSI / ASME B 1.20.1**



48 6400



48 6405

Threads	▶ L14 ◀ Cal 48B 48 6400 "Go" / "No Go" plug gauge	▶ L15 ◀ Cal 48B 48 6405 "Go" / "No Go" ring gauge	Thread Ø mm	Threads per inch
	NPT			
1/8	eShop	eShop	10.29	27
1/4	eShop	eShop	13.72	18
3/8	eShop	eShop	17.15	18

Threads	▶ L14 ◀ Cal 48B 48 6400 "Go" / "No Go" plug gauge	▶ L15 ◀ Cal 48B 48 6405 "Go" / "No Go" ring gauge	Thread Ø mm	Threads per inch
	NPT			
1/2	eShop	eShop	21.34	14
3/4	eShop	eShop	26.67	14
1	eShop	eShop	33.4	11.1/2

DIN 8140 | EG-M | ▶ L10 ◀ Cal

Thread gauges for metric ISO insert threads (EG)

Thread gauge for testing insert threads (EG) of wire thread inserts. The ground first thread pitch removes coarse swarf in the component and prevents premature fracture of the first thread pitch. Version to DIN 2279 – 2299. **"Go" and "No Go" ends on a single handle (DIN 2240, part 1, form R).** "No Go" end marked red.

Standard: Tolerances and dimensions to **DIN ISO 1502 and DIN 8140.**

Application: For metric ISO-profile insert threads (EG), right-hand DIN 8140-2.



48 6180

Threads	48B 48 6180 Thread "Go" / "No Go" plug gauge 6H mod.	Thread pitch mm
EG-M3	eShop	0.5
EG-M4	eShop	0.7
EG-M5	eShop	0.8
EG-M6	eShop	1

Threads	48B 48 6180 Thread "Go" / "No Go" plug gauge 6H mod.	Thread pitch mm
EG-M8	eShop	1.25
EG-M10	eShop	1.5
EG-M12	eShop	1.75
EG-M16	eShop	2

DIN 13 | M | ▶ i ◀ Cal

Thread gauges MultiCheck with depth measurement

Similar to No. 486000 and 486100.
Robust, easy-grip steel body with calibrated aluminium slide for measurement and direct reading of the **thread depth up to 4×D**.

Standard: Tolerances and dimensions to **DIN ISO 1502.**

Advantage: Checking the thread gauge conformity and the thread depth in a single operation. Time saved for one inspection task up to 50%. Easy replacement of a worn gauge head (fitting kit on request).

Note: MultiCheck for coarse and fine threads, with vernier (reading to 0.1mm) or with digital display (reading to 0.01mm) including data output available **on request** (see No. 486511 – 486516).



48 6510

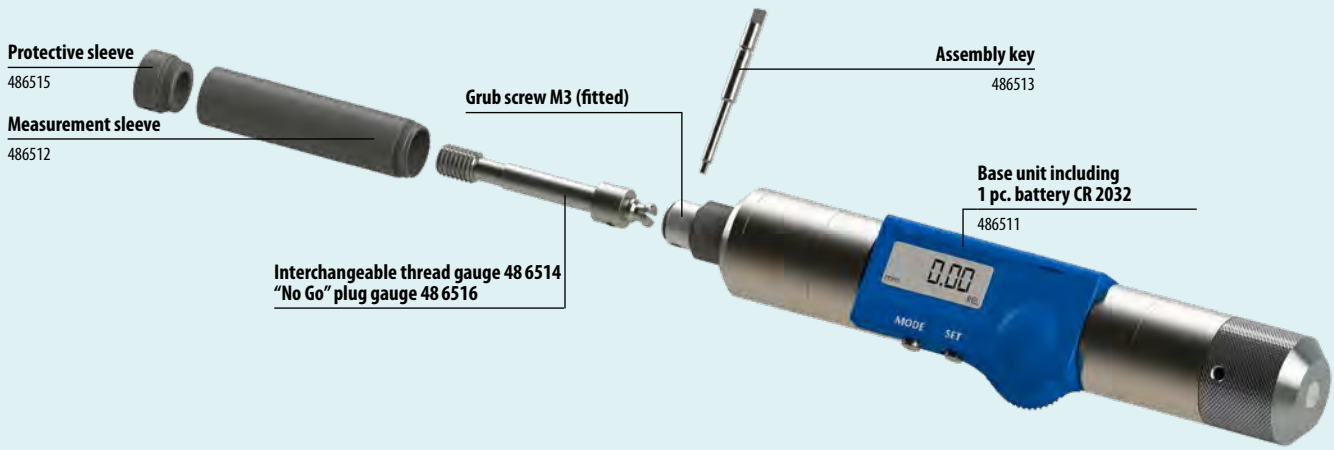
Thread	48B 48 6510 Thread "Go" / "No Go" plug gauge MultiCheck	Thread pitch mm	Scale divisions mm
M3	eShop	0.5	0.5
M4	eShop	0.7	0.5
M5	eShop	0.8	0.5
M6	eShop	1	0.5
M8	eShop	1.25	0.5

Thread	48B 48 6510 Thread "Go" / "No Go" plug gauge MultiCheck	Thread pitch mm	Scale divisions mm
M10	eShop	1.5	0.5
M12	eShop	1.75	0.5
M14	(eShop)	2	0.5
M16	(eShop)	2	0.5
M18	(eShop)	2.5	0.5

MultiCheck Digital with interchangeable gauge inserts

MultiCheck Digital base unit with interchangeable gauge inserts, measurement sleeve and protective sleeve for checking the conformity to gauge and measuring thread depths. Measuring depth of up to 4 × D, max. 80 mm.

Can be ordered easily at: www.hoffmann-group.com e.g. 48 6515.



SCHWEIZER Mounted magnifier Tech-Line 8× or 10× magnification

Aplanatic lens system with scratch-resistant silicate glass lenses. Sharp contrast image.
Housing of impact resistant transparent plastic. Can be combined with measurement scales No. 490440.

49 0410 – Vario focus, dioptre adjustment up to ± 4 dpt possible - particularly suitable for spectacle wearers.

Magnification (x-times)			8	10
49A 49 0400	Fixed focus mounted magnifier		eShop	eShop
49A 49 0410	Vario focus mounted magnifier		eShop	eShop
Lens ∅ (49 0400)		mm	30	
Lens ∅ (49 0410)		mm	22.8	



49 0400_8



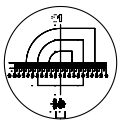
49 0410_8

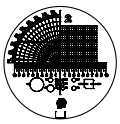
49 0400

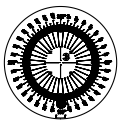

49 0440

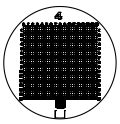
Duo measurement scales Tech-Line

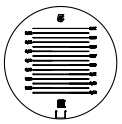
Graduations of hard chrome on the underside, for avoidance of parallax errors.
"Two scales in one": Macro scale (∅ 25 mm) and micro scale (∅2.5 mm).
Macro scale for reading at 8× and 10× magnification (no. 490400; 490410).
Suitable for: **No. 490400; 490410.**


Standard


Polar net, angle, radius


Angle 1°/ 0.1°


Polar net


Thickness

Type			1	2	3	4	5
49A 49 0440	Duo measurement scale		eShop	eShop	eShop	eShop	eShop
Graduation of the measurement scale Macro		mm	0.1	0.1	–	0.5	0.1
Graduation of the measurement scale Micro		mm	0.01	0.01	–	0.05	0.01

SCHWEIZER Mounted mangifier Tech-Line, 8x magnification with measuring scale

Supplied with: Vario focus scaled eye loupe No. 490410 plus measurement scales No. 490440.
Size 8/1 – Measuring scale type 1.
Size 8/5 – Measuring scales type 1 – 5.

Magnification (x-fold) / Number of measuring dials		8/1	8/5
49A 49 0450	Mounted magnifier Vario + measurement scales, set: in a storage box	eShop	eShop


49 0450

SCHWEIZER Thread counter Tech-Line

Aplanatic silica glass lens. Sharp-edged image, free of distortion

Magnification (x-times)			8
49A 49 0651	Thread counter with measurement scale Tech-Line		eShop
49A 49 0652	Thread counter Tech-Line		eShop
Graduation (49 0651)		mm	0.1
Scale length (49 0651)		mm	10
Lens ∅		mm	16.3
Aperture ∅ (49 0651)		mm	20
Cut-out (length×width) (49 0652)		mm	20×20
Height (49 0651)		mm	35
Height (49 0652)		mm	33


49 0651


49 0652

i Cal

Garant

Precision measuring magnifier in full metal body

With aplanatic lens system. Precision engraved anti-glare measuring scale.
Special open tube for optimum illumination and stability.
Optional extras: Lighting unit No. 490545.
Spare part: Measuring scale No. 490542.

Magnification (x-times)			8	10	12
41M 49 0540	Precision measuring magnifier		eShop	eShop ■	eShop
Measuring range		mm	10	10	6
Graduation		mm	0.1	0.1	0.05
Magnification (x-times)			8	10	12
Construction height		mm	52	48	41


Special accessories lighting unit No. 490545.


49 0540

Garant Precision ruler with magnifier

With aplanatic lens system. Laser engraved abrasions-resistant anti-glare measurement scale. Ruler of stainless steel with free-moving sliding precision scaled eye loupe. Ideally suited for workshop use.

Optional extras: Lighting unit No. 490545.

Note: 2nd precision magnifier; ruler with measurement range 300 mm and 400 mm available on request.



490570_212

Measuring range		mm	100	212
41M 49 0570	Precision ruler with magnifier		eShop	eShop
Magnification (x-times)			10	
Graduation		mm	0.1	
Construction height		mm	48	
Overall length		mm	150	262

SCHWEIZER Watchmaker's loupe Tech-Line

Black plastic setting. Aplanatic silica glass lens for a sharp-edged image. 2-component paint, which makes it more scratch-resistant, more resistant to sweat, chemicals and solvents.



490702

Magnification (x-times)			6	8	10	15
49A 49 0702	Watchmaker's loupe Tech-Line		eShop	eShop	eShop	eShop
Lens ∅		mm	23	25	25	16

SCHWEIZER Hand-held magnifiers Tech-Line

Aplanatic silica glass lens for a distortion-free image. Setting and handle all metal, solvent-resistant.

Size 10 – Black chrome-plated low-reflection metal setting with stainless steel handle.



490706_4



490706_10

Magnification (x-times)			2/4	4	10
49A 49 0706	Hand-held magnifier Tech-Line		eShop	eShop	eShop
Lens ∅		mm	90; 20	65	28

SCHWEIZER Folding magnifiers Tech-Line

Aplanatic silica glass lens in a plastic setting for a sharp-edged image. Ergonomic plastic housing for **one-handed use.**



490708 _10

Magnification (x-times)			6	10	15	20
49A 49 0708	Folding magnifier Tech-Line		eShop	eShop	eShop	eShop
Lens ∅		mm	22.8	22.8	22.8	16.3



490711_3/5



490711_3/3/3

Magnification (x-times)			3/5	3/3/3
49A 49 0711	Folding magnifier Tech-Line		eShop	eShop
Lens ∅		mm	38	
maximum magnification (times)			3 + 5 = 8	3 + 3 + 3 = 9
Number of individual lenses			2	3

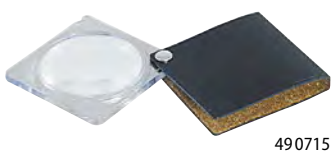
Pocket magnifiers

49 0714 – In fold-out rigid and dust-tight plastic case. PXM® lightweight lens; including neck cord.

49 0715 – In fold-out leather case.



490714



490715

Magnification (x-times)			3,5	4	7	10
49A 49 0714	ESCHENBACH	Pocket magnifier	–	eShop	eShop	eShop
49A 49 0715	SCHWEIZER		eShop	–	–	–
Type of lens			biconvex	aspherical	aspherical	aspherical
Lens ∅		mm	60	35	35	35

Reading glass / inspection magnifier

49 0800 – Biconvex silica glass lens in metal setting. Scratch-resistant and solvent-resistant.
Size 2,5/5 – With add-on lens for five times magnification.
49 0801 – Pull-out acrylic inspection magnifier. Pull-out length 270 – 720 mm.



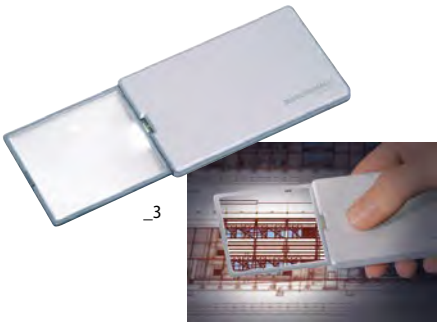
49 0800_3,5

49 0801_3,5

Magnification (x-times)		2,5/5	3,5	5
49A 49 0800	SCHWEIZER Reading glass	eShop	eShop	–
49A 49 0801	Pull-out inspection magnifier	–	–	eShop
Lens ∅ mm		75; 20	65	50

ESCHENBACH easyPOCKET illuminating magnifying glass

The illuminating magnifying glass has an aspherical diffracting lens and an CMD-LED.
The light comes on when the magnifying glass is pulled out of the glass fibre-reinforced plastic case.
Size 2,5XL – Large lens available for use as a bench magnifying glass thanks to the integral clip.
Size 3–6 – Compact credit card format.


_3

Type		2,5XL	3	4	6
49A 49 0816	easyPOCKET illuminating magnifying glass	eShop	eShop	eShop	eShop
Lens length mm		78	50	50	50
Lens width mm		50	45	45	45
Lens height mm		3			
Magnification (x-times)		2.5	3	4	6

Hand-held illuminating magnifying glass

49 0818 – Aspherical PXM lightweight lens, hard coated with ceratec® on both sides, bright homogeneous illumination by SMD LED and collimation optics.
Power control by step-up converter, giving bright and consistent illumination.
3 different light colours can be selected by 2 clip-on filters, supplied.
Size 3 – Extra large field of view for non-fatiguing work.
49 0821 – Hand-held magnifying glass with ergonomic shape.
Neutral white glass lens, neutral white light colour (4500 K) with 2-stage boost switch for optimisation of the illumination, acoustic feedback and haptic guidance.
SMD-LEDs for low power consumption.

Supplied with:
49 0818 – Supplied with 2 batteries No. 081561 size LR6, 3 clip-on filters, and lens protection case.
49 0821 – Supplied with 3 batteries No. 081561 size LR3 and micro-fibre bag for storage and cleaning.


49 0818_3


49 0818_4


49 0821_8

Type		3	4	6	8	10	15
49A 49 0818	ESCHENBACH mobilux LED hand-held illuminating magnifying glass	eShop	eShop	–	–	–	–
49A 49 0821	SCHWEIZER Tech-Line CLASSIC hand-held illuminating magnifying glass	–	–	eShop	eShop	eShop	eShop
Lens ∅ mm		–	–	30	30	30	22.8
Lens length mm		90	75	–	–	–	–
Lens width mm		54	50	–	–	–	–
Magnification (x-times)		3	4	6	8	10	15
Colour temperature K		–	–	4500	4500	4500	4500

SCHWEIZER Tech-Line INDUCTION hand-held illuminating magnifying glass

Hand-held illuminated magnifying glass with **innovative induction charging** for continuous and sustained charging when in continuous use.
Charging time approx. 3 hours, working time approx. 7 hours.
Scratch resistant silica glass lens with very large depth of focus and distortion-free image.
Sharp contrast and homogeneous light thanks to dual-stage adjustment of the light intensity.
Pleasant haptics thanks to ergonomic design with soft touch gripping zone.
Long-life SMD-LEDs with light colour 4500 K (neutral white). 2-component paint, which makes it more scratch-resistant, more resistant to sweat, chemicals and solvents.
Size 4 – Aspherical silica glass lens
Size 8–15 – Aplanatic silica glass lens

Supplied with: Supplied with induction charging pad, power supply unit, micro-fibre bag for storage and cleaning.


49 0822


Power supply by induction *– continuous and sustained charging for uninterrupted use.*

Magnification (x-times)		4	8	10	15
49A 49 0822	Tech-Line INDUCTION hand-held illuminating magnifying glass	eShop	eShop	eShop	eShop
Lens ∅ mm		55	30	22.8	16.3
Magnification (x-times)		4	8	10	15
Colour temperature K		4500			

ESCHENBACH Powerlux illuminated stand magnifiers

- High magnification 20 dpt/ 5× with a large field of vision.
- Best optical imaging quality, thanks to aspherical unbreakable plastic lens (PXM®), cera-tec® coated.
- Optimum shadow-free illumination by 2 SMD-LEDs opposite each other.
- Soft touch button for ON/ OFF, clear switching feedback, easy operation.
- Automatic switch-off: the lamp switches off automatically after 30 minutes.

Size 3,5/8000 – Suitable for binocular utilization.

Supplied with: 3 batteries No. 081561 size LR6 and rigid foam case.



49 0820

Type		3,5/8000	5/3000	5/8000	7/8000
49A 49 0820	"Powerlux" illuminated stand magnifier	eShop	eShop	eShop	eShop
Lens ∅	mm	54			
Magnification (x-times)		3.5	5	5	7
Colour temperature	K	approx. 8000 (cold white)	approx. 3000 (warm white)	approx. 8000 (cold white)	approx. 8000 (cold white)

Headband magnifier

High-quality binocular headband magnifying glass with scratch-resistant interchangeable lenses for sharp-edged images, free of distortion and with outstanding depth of focus. Highest possible flexibility at the workplace, with both hands free for work. The headband magnifying glass can be worn over glasses and is thus outstandingly suitable for those who wear glasses.

49 0950 – laboCOMFORT extra-light headband magnifying glass with adjustable hook and loop tape fastening. Head-mounted with air circulation openings. Screen protection against stray light. Click positions for adjustment to individual heights.

49 0952 – Tech-Line BINO LED binocular headband magnifier with silica glass exchangeable lenses in metal settings, and powerful pivoted LED illumination. Light colour 6000 K. Adjustment facility by means of a resilient rubber strap.

Optional extras:

49 0950 – LED headlight.



49 0950



49 0952

Magnification (x-times)		2
49A 49 0950	ESCHENBACH laboCOMFORT binocular headband magnifier	eShop
49A 49 0952	SCHWEIZER Tech-Line BINO LED binocular headband magnifier	eShop
Working distance	mm	250
Weight (49 0950)	g	105
Weight (49 0952)	g	185

ESCHENBACH maxDETAIL magnifying glasses and accessories

Magnifying glasses with dioptre adjustment (± 3 dpt. right / left).

Advantage: Lightweight. Large field of view: ∅ 15 cm at 40 cm distance.

Optional extras: LED headlight.



49 0954

Magnification (x-times)		2
49A 49 0954	maxDETAIL magnifying glasses	eShop
Distance to application	mm	400
Eye spacing	mm	60 – 68
Weight	g	49

maxDETAIL Clip ESCHENBACH additional lens

Galileo type additional lenses for glasses, can be adjusted for height and swung up.

Advantage: Especially for those who wear glasses, very low weight.



49 0960



Application example

Magnification (x-times)		2
49A 49 0960	maxDETAIL Clip additional lens	eShop
Distance to application	mm	350
Eye spacing	mm	62 – 70
Weight	g	23

Lens shapes for magnifying glasses



Convex *or converging lenses have the effect of concentrating the light. At least one of the faces represents the curvature of a sphere segment. Therefore these lenses are referred to as spherical lenses (sphere, Greek = ball).*
Biconvex *lenses are convex on both sides.*
They permit ***less distortion at higher magnifications*** *than planoconvex lenses.*



An ***aplanatic*** *lens system consists of 2 planoconvex lenses, whose flat faces both are directed outwards.*
This allows a ***sharp-edged image free of distortion.***

SCHWEIZER Standing magnifier Tech-Line without illumination



Aplanatic silica glass lens in low-reflection brass setting with lead-in protection. Heavy cast base with black plastic coating. Flexible metal swan neck 300 mm in length.

Size 90 – With additional add-on lens ∅ 20 mm for 4× magnification.

Lens ∅	mm	65	90
49A 49 0860	Tech-Line standing magnifier	eShop	eShop
Magnification (x-times)		4	2

ESCHENBACH Lamp magnifier varioLED+

- Ergonomic design - low power consumption - long-life LEDs (up to 50,000 operating hours).
- Lamp magnifier with 84 long-life high-power LEDs.
- Adjustable ring illumination or segmented illumination, dimmable in 3 stages. Strength of illumination ring illumination: 6000 lx/ 3500 lx/ 2400 lx; segmented illumination: 2350 lx/ 1450lx/ 960 lx.
- Colour temperature 6500 K.
- Ra value 86.
- Full light output immediately - flicker-free.
- PXM® aspherical lightweight lens with cera-tec® hard coating and 3.55 dpt/2× and ∅ 132 mm permits a wide field of view, image is sharp right to the edges and free from distortion, for non-fatiguing work.
- Lens cover can be swung aside or removed.
- Quick change of view between magnification and normal view using "free-swinging" lens.
- Extremely low weight and 6 joints allow optimum alignment of the magnification head for any situation – variety of fastening options.

Supplied with: Table clamp for worktop thicknesses 18 – 74 mm.

Optional extras: Additional lens 6 dpt/2.5× magnification with ∅ 132 mm.

Note: Table base and lens spray protection for the underside are available on request. The light source can be exchanged by the manufacturer.



Lens ∅	mm	132
49A 49 1655	Lamp magnifier varioLED+	eShop
Magnification (x-times)		1.9
Length of the jointed arm A	mm	400
Length of the jointed arm B	mm	400

HOLEX LED lamp magnifier

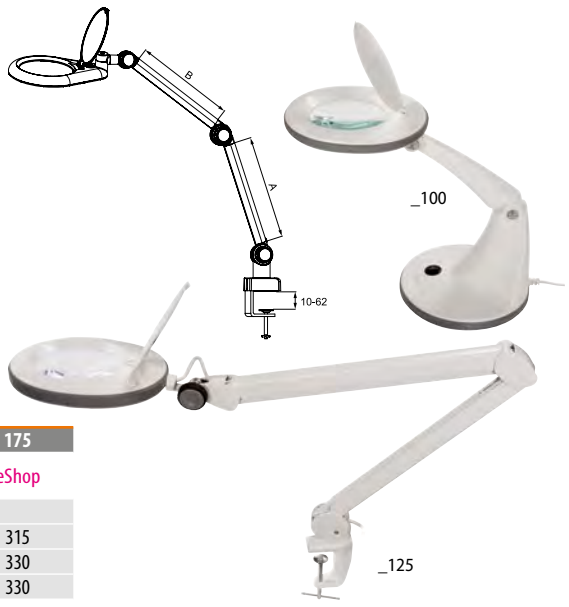
Lamp magnifier with high-quality SMD-LEDs for non-reflecting, shadow-free and evenly illuminated field of work. Sharp-edged image, free of distortion. Long-lived LEDs (up to 50,000 h), low power consumption.

Size 100 – 48 SMD-LEDs. Additional add-on lens ∅ 22 mm for 3.5× magnification.

Size 125 – 60 SMD-LEDs; 2 levels of brightness.

Size 175 – 40 SMD-LEDs; 3 levels of brightness.

Supplied with: Lens cover, table clamp for worktop thicknesses 10 - 62 mm (size 100 with table base).



Lens ∅	mm	100	125	175
42L 49 1545	Ring lamp magnifier	–	–	eShop
Magnification (x-times)			1.75	
Head ∅	mm	180	230	315
Length of the jointed arm A	mm	140	400	330
Length of the jointed arm B	mm	165	400	330

Lens shapes for magnifying glasses



__Aspherical__ lenses have a different radius at each point of the lens, and thus have nothing in common with a sphere. This variation in the curvature of the lens surface gives a great reduction in distortion, especially at the edges of the lens. Aspherical lenses permit __optimum freedom from distortion__ at a precisely determined eye distance.



Since the individual colours of the spectrum are refracted to different extents, the images display coloured edges.
This can be avoided by employing an __achromatic lens pair__. This ensures a __true colour image.__

Garant LED lamp magnifier

Elegant lamp magnifier with high light intensity. Lamp head, upright tube, and flexible neck of sturdy metal.

- The specially developed lamp cover with integral optics focuses the light **without dazzling and with minimum scattering losses** on the inspection area (4 times more light per Watt than a fluorescent tube, working life approx. 50,000 h = 6 years 24/7).
- **Distortion-free, hard-coated** plastic lens.
- Modern **highly efficient lighting concept**, consisting of 63 LEDs on a ring base.
- The lamp is **switched and dimmed** by placing a finger on a soft-touch sensor.
- The high quality flexible neck and the slender profile, reduced to the essentials, means the LED lamp magnifier can be used everywhere.

Advantage: 6 years 100 % illumination with no maintenance costs.
Easy and quick to clean (enclosed system).
Insensitive to vibration. Functional design.

Supplied with: With plug-in power supply adapter 100 - 240 V, lens cover and table clamp No. 491492 size TK.

Optional extras: Table base No. 491492 size TF.

Note: Further table or machine bases available on request.
The light source can be exchanged by the manufacturer.



4 times more light per Watt – switched and dimmed at the touch of a finger.

49 1490



Lens cover with quick-release attachment supplied.

Lens ∅	mm	72
41M 49 1490	LED lamp magnifier	eShop
Magnification (x-times)		2.3
Head ∅	mm	122
Head thickness	mm	13
Throat	mm	approx. 750

Innovative design of lamp magnifier for the most demanding applications.
Large viewing area with ∅ 153 mm for distortion-free viewing.
Robust jointed arms of aluminium and high performance plastic, well balanced with spring restraint (colourless anodised), hold the exact position.
Joints enclose and protect the cabling internally.

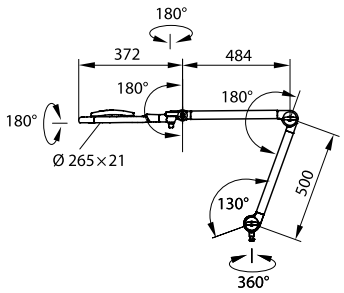
- **Absolutely scratch-resistant** glass lens - for distortion-free vision.
- **3D head joint** for individual adjustment and fixing.
- **Illumination:** 112 SMD high-power LEDs, power consumption only 13 W.
  Light intensity 5500 Lx, can be steplessly dimmed down to 10 %, LED working life up to 50,000 h.
- The **segment circuit (visualiser)** permits lighting effects that emphasise the structure.
  Colour reproduction stage 1A for brilliant rendering of colours.

Supplied with: With plug-in power supply adapter 100 - 240 V, 50/60 Hz, lens cover and table clamp No. 491492 size TK.
49 1497 – With additional add-on lens 30 mm ∅.

Note: The light source can be exchanged by the manufacturer.



49 1495



Lens ∅	mm	160
41M 49 1495	LED lamp magnifier	eShop
41M 49 1497	LED lamp magnifier **with additional lens**	eShop
Magnification (x-times)		1.9
Magnification of the add-on lens (times) (49 1497)		3.5
Head ∅	mm	250
Length of the jointed arm A	mm	500
Length of the jointed arm B	mm	484
Throat	mm	1356

Waldmann W Lamp magnifier

LED lamp magnifier for anti-glare and evenly illuminated work field. Freely moving jointed arm.
The spring holds the lamp in any position.

- Hardened, ground and **scratch-resistant** glass lens. **Pivoting.**
- Rectangular lamp magnifier for powerful and even illumination over a large area, with 54 LEDs. Power consumption only 12 W, light intensity 7000 Lx, luminous flux 970 lm, multi-stage switchable. LEDs with up to 60000 h working life.
- Segment switching for recognition of the finest structures and defects. Depending on the application, can be switched between light with formation of shadows and all-round shadow-free light.
- Large field of view for distortion-free viewing.

Supplied with: With cover and plastic screw-on foot.

Optional extras: Table base No. 491660, table clamp No. 491670.

Note: The light source can be exchanged by the manufacturer.



Type		2
49A 49 1521	LED rectangular lamp magnifier without stand	eShop
Lens length	mm	162
Lens width	mm	105
Magnification (x-times)		1.75
Throat	mm	900
Head dimensions length	mm	298
Head dimensions width	mm	194
Head dimensions height	mm	75



Illumination with shadows



Rear lamp switched on for shadow-free illumination.

Waldmann W LED lamp magnifier

Innovative design of lamp magnifier for the most demanding applications.
Large viewing area with Ø 153 mm for distortion-free viewing.
Unique balanced lamp support (aluminium) with enormous effective radius.
Enclosed design for protection of the user and the integral technology.

- **Absolutely scratch-resistant** glass lens
- **3D head joint** for individual adjustment and fixing.
- **Illumination:** 48 high-performance LEDs, power consumption just 16 W, max. light intensity 7503 lx, steplessly dimmable. Light characteristics can be adjusted by a three-position switch. LEDs with up to 50,000 h working life.
- The **segment circuit (visualiser)** permits lighting effects that emphasise the structure. Very good colour perception and high-contrast vision.
- Due to special coating, suitable for **ESD workstations**.

Supplied with: Plug-in power supply adapter 100 – 240 V, 50/60 Hz, lens cover, screw-on flange, base.

Optional extras: Table clamp 491670 size ESD

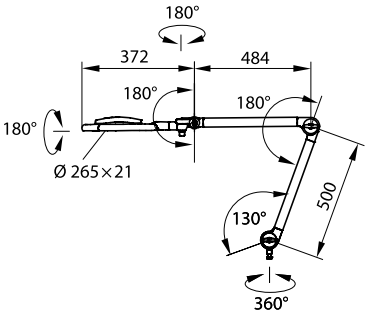
Note: The light source can be exchanged by the manufacturer.



49 1525







Lens Ø	mm	160
49A 49 1525	LED lamp magnifier **ESD version**	eShop
Magnification (x-times)		1.9
Head Ø	mm	250
Length of the jointed arm A	mm	500
Length of the jointed arm B	mm	484
Throat	mm	1356
Colour temperature	K	approx. 4000

KERN Stereo microscopes

Attractively-priced stereo microscope for simplified viewing of mechanical components, circuit boards and surfaces.
Greenough optics for the best reproduction quality.
Optimum illumination by steplessly dimmable LED incident illumination and transillumination.
The eye spacing of 55–75 mm is individually adjustable.
The tube is inclined at 45°.

49 1735 Size OSF439 – Particularly stable thanks to mechanical stand with handy carrying handle. Exchangeable lens with 3 levels of magnification for quick work.

49 1737 Size OZL465 – Shadow-free and even illumination thanks to integral LED ring illumination.

Size OZL463; OZL465 – Zoom lens for stepless magnification of 7–45×. Dioptre compensation adjustable on both sides for non-tiring work and a sharp image.

Supplied with: Dust cover, eyepieces.



_OSF439



_OZL463



_OZL465

Type		OSF439	OZL463	OZL465
49M 49 1735	OSF stereo microscope	–	–	–
49M 49 1737	OZL stereo microscope	–	–	–
Magnification (x-times)		10 – 40	7 – 45	7 – 45
Zoom		10–40×	0.7–4.5×	0.7–4.5×
Field of vision Ø	mm	20	28.6	28.6
Eyepiece		WF 10×	HWF 10×	HWF 10×
Working distance	mm	57	105	105

Leica High quality stereo microscopes E-series

Stereo zoom microscope for high resolution, intensely illuminated and sharp focus images. Adjustment buttons lie conveniently under the hand; adjustable settings allow non-fatiguing continuous use. The eye spacing is individually adjustable
Film key pad, 3 incident-light methods available with 5 LEDs.

Size EZ4W16 – Leica EZ4W with open tube and exchangeable eyepieces. The 16×/15B eyepieces allow images with a magnification of up to 56 times to be documented.

Size EZ4W; EZ4W16 –
- Integral **5 megapixel CMOS HD camera.**
- **Wireless data transmission via WLAN** using the free Leica app. The Leica app allows the camera to be set up and images and measurements to be taken, commented on and sent by e-mail. In addition images can be stored in the photo folders and linked into social networks.
- Concurrent access to the camera by multiple users.
- **Additional HDMI, USB 2.0 and Ethernet output.**
- **Integral SD card slot.**

Supplied with:
Size EZ4W – USB cable, HDMI cable, recording software, dust protection hood.
Size EZ4W16 – 2× eyepieces 16×/15B.

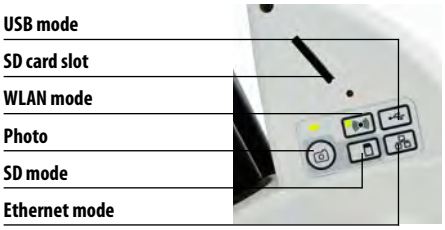
Optional extras:
Size EZ4W16 – Eyepiece 10×/20B.



49 1750_EZ410



49 1750_EZ4W16



Type		EZ410	EZ4W	EZ4W16
49B 49 1750	Stereo microscope	–	–	–
Optics system		10° Greenough parfocal optics		
LED illumination system		Built-in, incident illumination and transillumination can be switched on independently or together		
Incident light		3 methods available: Maximum brightness with 5 LEDs, oblique incident illumination with 3 LEDs, flat spotlight with 2 LEDs		
adjustable illumination		yes		
Magnification (x-times)		8 – 35	8 – 35	12 – 56
Zoom		4.4:1		
Field of vision ∅	mm	5.7 – 25	5.7 – 25	4.3 – 18.8
Angle of view	degrees	60		
Working distance	mm	100		
Weight	kg	5.4	6.3	6.3



Maximum illumination intensity.



Inclined incident light.



Flat grazing light.

Leica High quality stereo microscopes A-series

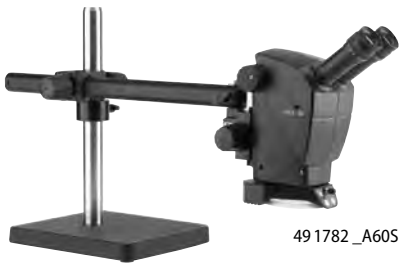
StereoZoom microscope with a magnification range from 5× to 30×, allowing both detail viewing and also a general overview.
Thanks to the patented FusionOptics™ technology, the Leica A60 achieves a depth of focus of 13.6 mm at the lowest zoom setting which avoids tedious refocussing when viewing higher components.

- Unrivalled depth of focus (13.6 mm).
- 46 mm object field.
- Ergonomic working due to the high working distance (122 mm).
- Antistatic plastic casing.
- Including LED ring light with 10 brightness steps.
- Clip-on diffuser (removable) for reduction in reflections.

Size A60S – With swing arm stand.
- For repeating objects.
- Direct earthing point in the base.
- Particularly high stability for working at high magnifications.

Size A60F – With flexible arm stand.
- Easy inspection of the object in x and y direction.
- Easy height adjustment for differing object heights.
- Table clamp mounting makes maximum space saving.

Application: Ideal for industrial inspections, assembly, and quality control.
Supplied with: Mains cable.
Optional extras: Transillumination No. 491777 size BLI.



49 1782 _A60S



49 1782 _A60F

Type		A60S	A60F
49B 49 1782	Stereo microscope	–	–
Optics system		Greenough with Fusion Optics™	
LED illumination system		16 Med Power SMT LEDs	
Magnification (x-times)		5 – 30	
Zoom		6: 1	
maximum depth of focus	mm	13.6	
Field of vision ∅	mm	46	
Angle of view	degrees	38	
Colour temperature of incident light	K	5600	
Working distance	mm	122	
Base length	mm	230	–
Base width	mm	266	–
maximum throat depth	mm	560	995



Leica High quality stereo microscopes M-series

- Modular product range and thus optimum adaptation of the microscope to the application.
- Common Main Objective (CMO) optical system:
  When the magnification is changed, sharpness remains constant.
- Ergonomic design.
- Version with ESD swingarm stand prevents damage from static discharges.

Size M50 – Five-stage magnification changer: 6.3×; 10×; 16×; 25×; 40×.
Size M60 – Zoom positions: 7 configurable positions, for repetitive tasks.
Size M80 – Zoom positions: 8 configurable positions, for repetitive tasks.
Base plate with anti-shock.

Supplied with: Lens carrier, binocular inclined tube 45°, 2× eyepieces suitable for glasses wearers, lens achromat 1.0×, stand, dust cover (antistatic).
49 1753 – Incident illumination incl. table insert black/white.
49 1754 – ESD swivel arm stand.

Optional extras: LED illumination No. 491755 and transillumination No. 491777 size BLI.

Please order lighting separately! Observe the scope of supply!

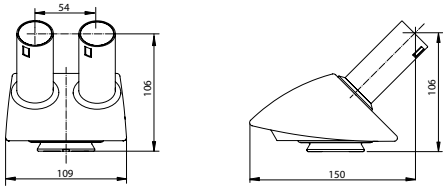

49 1753_M50


49 1753_M60


_M80 detail


_M80

Type		M50	M60	M80
49B 49 1753	Stereo microscope with incident illumination, **without lighting**	–	–	–
49B 49 1754	Stereo microscope with ESD swivel arm stand, **without lighting**	–	–	–
Optics system		Common Main Objective		
Magnification (x-times)		6.3 – 40	6.3 – 40	7.5 – 60
Zoom		5:1	6:1	8:1
Field of vision ∅	mm	5.75 – 36.5	5.75 – 36.5	3.8 – 30.7
Eyepiece		10×/23B		
Working distance	mm	89.6	89.6	83.4
Base length (49 1753)	mm	301		
Base length (49 1754)	mm	260	260	330
Base width (49 1753)	mm	278		
Base width (49 1754)	mm	220		
Depth of focus	mm	13.7		



All stereo microscopes are supplied with a 45° binocular inclined tube. Different product image for 491754.

Lighting and accessories

For 58 mm lens.

Size RL – Ring light for very bright and even illumination.
Switchable segments using the integral control panel.
Size NVI – **Near Vertical Illumination,** to look at recesses and holes, since the light falls almost vertically on the sample.
Size SLI – 2-arm swan neck 300 mm long,
2 power LEDs and control unit on separate swan neck.

Suitable for: Stereo microscope No. 491753, 491754 and S series No. 491785.

Supplied with: 1 power supply unit incl. 2-metre mains cable.
Size RL – 1 high-performance diffuser.

Note:
Size SLI – The adaptor set No. 491757 is required for installation.


LED display for active segments


Size RL with high-performance diffuser, mounted

Type		RL	NVI	SLI
49B 49 1755	LED 3000 light	–	–	–
Colour temperature	K	5600		
Working distance	mm	65 – 150	60 – 150	60 – 150


49 1755_NVI


49 1755_ SLI

With engagement in the case of crossed polarisation, to minimise gloss points.

Suitable for: Ring lamp No. 494755 size RL.


49 1756

for type		RL
49B 49 1756	Polarisation set	–

Suitable for:
Size 1 – M series with incident illumination No. 491753.
Size 2 – M series with swingarm stand No. 491754.

Application: For fitting the swan neck LED No. 491755 size SLI.


49 1757_1

Type		1	2
49B 49 1757	Adapter set	–	–

Stereo viewing system Mantis® without eyepieces

Excellent, high-quality images for a wide range of applications in an easy-to-use, ergonomic system. The Mantis® optical stereo microscope provides a detailed and high-contrast 3D image that is perfect for 3D viewing and manipulation of a wide range of applications. A comfortable body position, maximum eye comfort, improved hand-eye coordination, user-friendliness and perfect stereo vision enable a higher level of precise, comfortable, and productive performance over longer periods of time.

Size PIXO – includes integrated digital camera for dynamic viewing.

49 1985 – With the versatile VERSO universal stand, the system can be raised and lowered to the correct position as required.

49 1986 – Additional range of the stand with extension arm. Rotate by 270°.

49 1987 – Compact, stable table stand with large focusing range. Maximum object height 146 mm. Incl. transillumination.

Advantage:

- Uniquely large, high-quality optical stereo image.
- Ergonomic design for user comfort and productivity.
- Five different options for illuminating your object.
- Digital imaging for collaboration, traceability and training.
- Perfect for numerous applications thanks to large working distances and excellent depth perception.

Supplied with: Incl. stereo head, LED lighting, dust cover, power supply unit, glare protection.

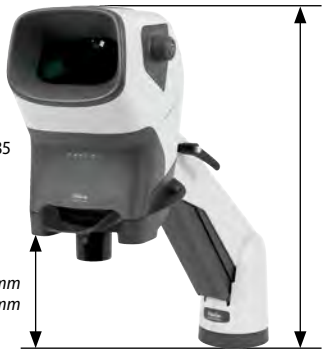
Size PIXO – includes 5 MP digital camera, ViCapture software.

Optional extras:

Size IOTA – Lenses No. 491991.

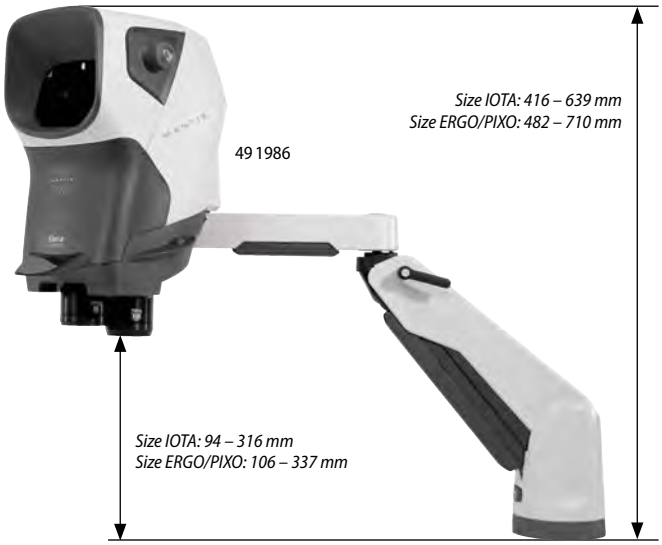
Size ERGO; PIXO – Lenses No. 491992.

Size IOTA: 360 – 590 mm
Size ERGO/PIXO: 429 – 652 mm



49 1985

Size IOTA: 39 – 263 mm
Size ERGO/PIXO: 40 – 285 mm



49 1986

Size IOTA: 416 – 639 mm
Size ERGO/PIXO: 482 – 710 mm

Size IOTA: 94 – 316 mm
Size ERGO/PIXO: 106 – 337 mm



The exceptional 3D stereo view makes Mantis the ideal solution for precision mechanical inspection jobs such as
finishing work on components, detecting anodising or hardness defects or for jobs requiring the use of tools, such as deburring.

Size IOTA: 449 – 559 mm
Size ERGO/PIXO: 513 – 663 mm



49 1987

Size IOTA: Max 239 mm
Size ERGO/PIXO: Max 246 mm

Type		IOTA	ERGO	PIXO
49B 49 1985	Mantis® stereo viewing system **with universal stand**	–	–	–
49B 49 1986	Mantis® stereo viewing system **with universal stand and extension arm**	–	–	–
49B 49 1987	Mantis® stereo viewing system **with table stand and transillumination**	–	–	–
Magnification with special accessories (times)		3-8	3-15	3-15
Brightness of incident light	lx	26000	21000	21000

Optional extras

Type		3	4	6	8
49B 49 1991	Lens for Mantis® IOTA	–	–	–	–
Magnification (x-times)		3	4	6	8
Field of vision ∅	mm	37	29	20.1	15
Working distance	mm	104	108	74	61



49 1991

Type		3	4	6	6SL	8	8SL	10	15
49B 49 1992	Lens for Mantis® ERGO/PIXO	–	–	–	–	–	–	–	–
Magnification (x-times)		3	4	6	6	8	8	10	15
Field of vision ∅	mm	44.1	35.7	24.2	22.5	18	17.9	14.2	9.1
Working distance	mm	100	100	68	114	60	113	54	40

Example image of all sizes



49 1992

Stereo microscope STEMI 305

Stereo microscope for high resolution, intensely illuminated sharp focus images. Greenough design for the best image quality. **Integral vertical LED light source.** Individually adjustable to compensate for eye spacing and short-sightedness. Carrying handle for mobile use. Cold light stand, adjustable incident light: flat transillumination base (bright field / dark field), column with drive and 145 mm length of travel. Can be segmented with additional K LED spotlight with light beam adjustable for zoom and height.

Size 305FLEX – With additional double spotlights (swan-neck).

Size 305RING – With additional segmentable K LED ring lamp - 48 LEDs in 2 rows.

Optional extras: Eyepieces No. 491832.



_305EDU



_305FLEX



_305RING

Type		305EDU	305FLEX	305RING
49B 49 1835	STEMI 305 stereo microscope	–	–	–
Magnification (x-times)		8 – 40		
Zoom		5: 1		
Field of vision ∅	mm	29		
Eyepiece		PL 10×		
Working distance	mm	110		



Integral, almost vertical LED light for illuminating bores and undercuts.

Stereo microscope STEMI 508

Stereo microscope for high resolution, intensely illuminated sharp focus images. Greenough design for the best image quality. **Apochromatic lenses** correct the chromatic aberration at the lens for three colours (red, green and blue) and thus enable brilliant colour images. Individually adjustable and to compensate for eye spacing and short-sightedness. Carrying handle for mobile use. Cold light stand, adjustable incident light, flat transillumination base (bright field / dark field), column with drive and 145 mm length of travel.
Segmentable K LED ring lamp – 48 LEDs in 2 rows.
With integral C-Mount camera output.

Supplied with: Includes eyepieces No. 491832. Polarisation accessories for spotlighting and transillumination.

Optional extras: AxioCam 491852 and 491853.



49 1846

Type		508CMAT
49B 49 1846	STEMI 508 stereo microscope **with camera output**	–
Magnification (x-times)		6.3 – 50
Zoom		8: 1
Field of vision ∅	mm	35
Eyepiece		PL 10×
Working distance	mm	92

Microscope camera AxioCam

Versatile colour camera AxioCam 212 Color with 12.3 megapixel resolution for training, documentation or routine uses; features standalone functionality.

- Sharp, highly detailed live images. High colour fidelity at full 4K resolution and 30 images per second.
- Flexibility in use: Choose between different operating modes.
- Simple to use thanks to automatic adjustment of brightness, contrast and white balance.
- Standalone mode without PC. The camera is network-capable and can be used with the Zeiss iOS app, Android app and Zeiss Labscope software.



49 1877

Type		212
49B 49 1877	AxioCam Color microscope camera	–
Resolution	px	4032 × 3044
Interface		USB 3.0, HDMI, Ethernet, Wi-Fi compatible
Camera sensor		CMOS
Pixel size	µm	1.85 × 1.85
Length	mm	125
Width	mm	92
Height	mm	78

Eyepieces for stereo microscopes

Suitable for: STEMI 305 stereo microscope No. 491835; 491836. STEMI 508 stereo microscope No. 491846.



49 1832

49B 49 1832	Eyepieces for stereo microscopes, pair	–

Garant Measurement and documentation software on request

Simple measurement software for image archiving, measurement and labelling of images. Measurement directly on the live image with cross hair (adjustable, can be moved and rotated). Image feed via the USB camera or PNG file. Image export as a file, e-mail and to the printer.

System requirements:

- Requires Windows 7 (32/64 bit) or later, Windows 10 recommended.
- Free USB port.

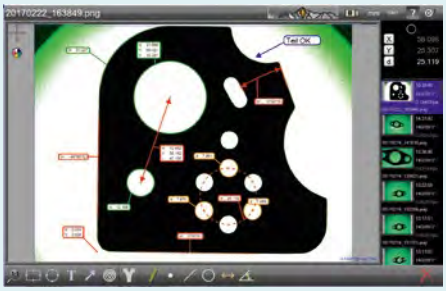
Function:

- Measurement of points, straight lines, circles, angles and distances.
- Construction of intersection points (tangent point, zero point), distances (centre/centre, min, max), straight lines (alignment lines, centre lines, tangents), cross-section circles and pitch circles.

Supplied with: USB stick with software D1, USB dongle for software activation and instruction manual.



Intuitive measurement and dimensioning of different elements.



Labelling of images for easy documentation.

PHOTONIC LED ring light with segment control

Neutral white light (40 LEDs, light temperature 5900K), continuously dimmable.
Segment selection (1/4 circle) and rotation (left/right) for optimum contrast conditions.
Homogeneous illumination and flicker-free operation due to DC power supply.
LED working life 25,000 hours. ESD socket for dissipating static electrical charges.
Sturdy slim design of the lighting head, internal ∅ 66 mm, including the adapter.

Supplied with: Including control unit, international switched-mode power supply (100-240V) and adapter from ∅66mm to 58mm.

Optional extras: Accessory parts adapter ∅ 66 mm to 60 mm No. 492232 size 66/60, diffuser No. 492232 size DIFF, polarisation filter set No. 492232 size FILTER.

Note:	Adapters for lenses with other ∅ (Zeiss, Leica, Nikon) available on request.



Individual control of segments



Without polarisation filter.



With polarisation filter.

The use of a polarisation filter no. 49 2232_Filter eliminates reflections that can occur when using direct lighting.



49 2230

49K 49 2230	LED ring light with segment control		eShop
Ring lamp ∅		mm	66
Ring lamp height		mm	25

PHOTONIC High-power ring light with segment control

LED ring light with integral controller for user-friendly operation – no separate control unit necessary.
Ergonomic and intuitive to use for left and right-handed users.
2 working distances can be set (45 – 130 mm and 80 – 300 mm). Homogeneous illumination.
Segments can be adjusted individually. Memory function for the preferred setting.
Can be integrated into an ESD environment.

Advantage:
- Multiple working distances can be set
- No external control unit required
- Flexible and intelligent segment control

Supplied with: Supplied with an adapter ∅ 66 mm to 58 mm, international power supply unit (100 – 240 V), hexagon key L-wrench.

Optional extras: Diffusor, polarisation filter, adapter for lenses





49 2225

Ring lamp ∅		mm	66
49K 49 2225	High-power ring light with segment control		(eShop)
Ring lamp ∅		mm	66
Ring light length		mm	107
Ring light width		mm	128
Ring lamp height		mm	31

PHOTONIC LED cold light source with swan neck fibre optic cable

Very bright dimmable cold light source with long-life (> 30,000 h) and energy-saving LED technology (5800 K).
Sturdy metal casing, can be stacked as a stable assembly. ESD socket for dissipating static electrical charges.
Extremely high light densities at the illuminated area.

Size F1 – Passive cooling, silent and vibration-free.
Size F3000 – Remotely controlled with a foot switch or USB, extremely quiet fan. Shutter functionality. Can be used in vertical orientation. Optional halogen filter simulates halogen light 3500 K.

Supplied with: LED cold light source, double swan neck fibre optic cable (∅ 4.5 mm, length 550 mm) with integral focussing lenses.
Size F1 – Including international power supply unit (100 – 240 V).
Size F3000 – With EU mains cable.

Optional extras: Halogen filter, foot switch No. 492244 size SWITCH.

Note:	Further fibre optic cables, gap ring light sources, colour filters and other accessories available on request.



49 2242_F1



49 2242_F3000

Type			F1	F3000
49K 49 2242	LED cold light source		eShop	(eShop)
Intensity of illumination		lm	350	640
Power consumption		W	22	65
comparable light output to a halogen bulb		W	100	> 150
Overall length		mm	196	
Overall width		mm	110	170
Overall height		mm	175	98
Weight		kg	0.5	3.8

Stereo microscope without eyepiece Lynx EVO

Stereo microscope without eyepiece, for viewing and analysing your components and samples in 3D. The patented Dynascope® stereo viewer generates a 3-dimensional image of first-class quality. The unique Lynx EVO stereo observation system without eyepiece allows the user a pleasant working position and hence significantly more efficient working.

- The modular design permits configuration to suit individual applications.
- The magnification is performed steplessly from 6× – 60× and can be increased to 120× by use of additional lenses.
- **Flexible stand options**
- **Ergo stand**. Compact size for **small working areas**. Exceptional stability at high magnifications.
- **Multi-axis column stand**. Precise and sturdy, ideal for industrial applications which require the **largest possible working area**.
- Large working distance for easy processing of components.
- **First-class ergonomics.** Non-fatiguing working due to straight natural posture, no restriction in the movement of the head and noticeable reduction in eye fatigue.
- **High image quality** due to true colour images at high resolution, rich in detail, with high contrast.

49 1865 – 8-point LED ring light with regulation of lighting intensity and integral rotating diffusion lens.

49 1866 – LED angled optics for a 360° all-round view to allow a **better view of details** and inspection of concealed details on vertical components. Easy changeover from oblique view to conventional perpendicular view.

Application: For all application areas in production and inspection where long working distances and high image quality are important. For assembly under a microscope. For continuous use due to non-fatiguing working. Also ideal for glasses wearers.

Supplied with: Projection head with lens and zoom unit 10: 1. LED illumination, dimmable.

Size ERGO – Table stand with removable lens carrier.

Size AXIS – Column stand for mounting at the workplace, base plate.

Optional extras: Smart Cam (with software) No. 491867, reticules.

Size ERGO – Movable table 100 × 100mm with plastic surface, LED transillumination.

49 1865 – Other lenses (0.45 × / 0.62 × / 1.0 × / 1.5 × / 2.0 ×)



Lynx EVO with Ergo stand. Compact size for small working areas.

49 1865_ERGO



Lynx EVO with multi-axis pillar stand. Ideal for industrial applications for which the largest possible working area is required.

49 1865_AXIS



49 1866

Type		ERGO	AXIS
49B 49 1865	Stereo microscope Lynx EVO	–	–
49B 49 1866	Stereo microscope Lynx EVO with LED angled optics	–	–
Manufacturer's designation (49 1865)		EVO501	EVO502
Manufacturer's designation (49 1866)		EVO503	EVO504
Stand		Table stand	Column stand
Magnification (x-times) (49 1865)		6 – 60	3.7 – 37
Magnification (x-times) for oblique view (49 1866)		4.2 – 42	
Magnification (x-times) for perpendicular view (49 1866)		6.8 – 68	
Lens (times) (49 1865)		1.0	0.62
Working distance (49 1865)	mm	75	128
Working distance for oblique view (49 1866)	mm	35.5	
Working distance for perpendicular view (49 1866)	mm	56.5	
Reach of optical axis	mm	200	439
Power supply	V		
Weight	kg	15.3	26.6



The 360° rotation permits improved detail viewing. At an angle of 34° even hidden details on vertical components or features are clearly recognisable.

49 1866

Smart Cam digital camera

Simple and practical image capture and video storage, with simultaneous stereo viewing. Including software for image labelling and identification.

Suitable for: Stereo microscope Lynx No. 491865; 491866.



49 1867

Type		EVC131A
49B 49 1867	Smartcam USB HD camera module	–
Resolution	px	2560×1920
Interface		USB 3.0
Camera sensor		CMOS
Pixel size	µm	2.8

Vision ENGINEERING EVOCam II video inspection system

Digital full-HD microscope with brilliant live video image quality for precise magnification of objects. Various optional wide-field and precision lenses allow up to 300× magnification with constant image sharpness.

- Brilliant full-HD video images (1080p / 60 fps).
- Large 30 : 1 optical zoom range with many magnification options (up to 300×) and 12× digital zoom.
- Effortless image storage either on external media (USB stick) or optional software solution (Vifox). **Integrated USB3 interface.**
- High-quality optics with modern digital technology.
- Fast, professional imaging for reliable results.
- Integrated 8-point LED ring lamp.
- High-quality stand versions for precision and stability.
- 24 inch full-HD monitor with HDMI input.

Size ECO2503; ECO2501 – Table stand.

Size ECO2504; ECO2502 – Multi-axis column stands (without base plate), focus module.

49 1895 Size ECO2CE1 – Variable jointed arm.



_ECO2CE1



_ECO2501

Application: Video inspection system for goods receiving, production and development. Large detailed live image for continuous use and viewing by several users at the same time.

Supplied with: With full HD colour monitor 24 inch, USB stick.

49 1895 – Lens 0.62×.

Optional extras: EVO Cam II control panel No. 491898, LED transillumination, WiFi transmitter dongle and additional lenses (0.45 × / 1.00 ×).

Size ECO2503; ECO2501 – Movable table 100 × 100.

Size ECO2504; ECO2502 – Base plate No. 491889.

Size ECO2CE1; ECO2502 – Lens (4 dioptre / 5 dioptre).



_ECO2502

Type		ECO2CE1	ECO2501	ECO2502	ECO2503	ECO2504
49B 49 1895	EVOCam II video inspection system	–	–	–	–	–
49B 49 1896	EVOCam II video inspection system with LED angled optics	–	–	–	–	–
Resolution live image maximum	px	1920×1080				
Resolution individual image maximum	px	1920×1080				
Stand		Jointed arm	Table stand	Column stand	Table stand	Column stand
Lens ∅	mm	55	55	55	–	–
Magnification (x-times)		3.1 – 93	3.1 – 93	3.1 – 93	–	–
Working distance	mm	106	106	106	–	–
Working distance for oblique view	mm	–	–	–	35.5	35.5
Working distance for perpendicular view	mm	–	–	–	56.5	56.5
Magnification (x-times) for oblique view		–	–	–	19 – 105	19 – 105
Magnification (x-times) for perpendicular view		–	–	–	28 – 151	28 – 151
Weight	kg	10	23	35	23.5	35.5



_ECO2503

EVOCam II control panel

- Adjustable overlay grid and moveable cursor for easy on-screen measurement and calibration.
- 10× memory settings (lighting, magnification, and focus position) allow you to store and recall optimised settings for individual objects.
- Adjusting the camera gain and aperture settings allow better control of image brightness and depth of field.

Suitable for: EVOCam II No. 491895 + 491896.



49 1898

Type		ECX155
49B 49 1898	EVOCam II control panel	–

Base plate for column stand

Suitable for: No. 491895 size ECO2502, No. 491896 size ECO2504.

49B 49 1889	Base plate for column stand	–
Length	mm	635
Width	mm	455



49 1889

Vision ENGINEERING Movable table for table stand

Movable table for simple and precise positioning of fragile and delicate samples and objects. Can be adapted to an EVOCam II with a table stand and Lynx EVO with table stand.

Suitable for: Lynx EVO No. 491865 size ERGO, No. 491866 size ERGO; EVOCam II No. 491895 size ECO2501, No. 491896 size ECO2503.



Type		EVS120
49B 49 1891	Movable table for table stand	–
Weight	kg	1.5

Dino-Lite Digital Microscope USB hand-held microscopes



_AF3113T



_AM4113ZT



_AF4115ZTL



_AF4915ZTL



_AM7915MZT

Easy-to-use portable digital microscope for professional use in various disciplines. Thanks to the CMOS chip / USB 2.0 connectivity, it can be easily connected to any device and offers outstanding image quality and up to 220x magnification. Polarisers reduce reflections on shiny objects and improve contrast. The magnification depends on the desired field of view. The smaller the field of view, the higher the potential magnification. Models with a long working distance can be used if you need a greater distance to the object. Includes intuitive measurement software for Windows and macOS.

Size AF3113T – Has measurement functions as well as microtouch button for recording images directly.

Size AM4113ZT – A handy, easy-to-use professional hand-held microscope with first-class image quality and up to 200 times optical magnification.

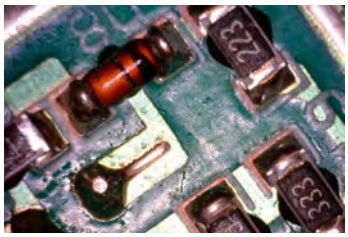
Size AF4115ZTL; AF4915ZTL – With a longer working distance (LWD), connected to the device via USB. The (optional) WF-20 is required for fully cordless operation.

Size AM7915MZT – The product offers outstanding image quality and colour reproduction in a sturdy, compact and attractive casing and up to 220x optical magnification. Also available as a model with a large working distance.

Supplied with: Measurement software DinoCapture 2.0 (Windows) and DinoXcope (macOS).

Optional extras: Pillar stand No. 492035

Note: Other versions (e.g. with coaxial incident light, ESD protection, etc.) and system calibration service available on request.





Manufacturer's designation		AF3113T	AM4113ZT	AF4115ZTL	AF4915ZTL	AM7915MZT
49K 49 2032	USB hand-held microscope	–	–	–	–	–
Camera		VGA (640x480) CMOS colour camera	1.3 megapixel CMOS colour camera	1.3 megapixel CMOS colour camera	1.3 megapixel CMOS colour camera	5.0 megapixel CMOS colour camera
Magnification (x-times)		20 – 55; 220	10 – 70; 200	10 – 140	10 – 140	10 – 220
Polarisation filter		–	yes	yes	yes	yes
Large working distance possible		–	–	yes	yes	–
Extended depth sharpness (EDOF)		–	–	–	yes	yes
Extended dynamic range (EDR)		–	–	–	yes	yes
Automatic magnification reading (AMR)		–	–	–	yes	yes
Interface		USB interface				

Pillar stand for No. 492032

Stable pillar stand including quick setting and fine setting for wobble-free mounting, even at high magnifications. 180 mm height adjustment, 150 mm horizontal mounting arm including 150 mm extension (can pivot through 360°).

Suitable for: All Dino-Lite models.


49 2035

49K 49 2035	Pillar stand RK-10A		–
Width of the support face		mm	150
Depth footprint		mm	220
Height of the support face		mm	230

Garant Video measuring microscopes MM-OS

The high-quality video measuring system in conjunction with the user-friendly M3 measuring software is **particularly well suited for the quick and comparative measurement of flat components.**

- Long-lived **LED incident light** for clear and homogeneous illumination of the workpiece.
- Telecentric dimmable **LED transillumination.**
- **Aluminium granite base** and measuring table with **tapped holes** for attachment of clamping systems.
- High-resolution colour camera with telecentric lens.
- Extremely user-friendly, intuitively usable M3 measurement software including **DXF functionality.** Very high repetition accuracy thanks to **automatic edge detection.**
- **Automatic component recognition in seconds** at any angle of view.
- **Mechanical height adjustment with graduated scale** permits both the measuring plane and a clamping system to be adjusted individually and reproducibly.

Application:
- Measuring, dimensioning, and evaluation of flat components such as O-rings, washers, plugs in seconds, in a single operation.
- A wide variety of geometric shapes and materials can be reliably measured in a user-friendly manner. Documentation can also be performed.
- Various applications, for instance in production, inspection rooms or goods receiving.
- Compact general-purpose measuring system.

Supplied with: Multi-touch panel PC, wireless mouse and keyboard, dust cover, power supply unit, test certificate, and user manual.

Optional extras: Test standard No. 491928; precision vice No. 494480; base cabinet for measuring microscopes No. 492580.

Note: Length measurement variation $E_{UXY, MPE}$ to DIN EN ISO 10360-7.
Permissible ambient conditions: 20 °C ± 1 K, temperature gradient Δ_{th} = 0.5 K/h, Δ_{td} = 4.0 K/d, measured with a calibrated standard. We reserve the right to make technical changes and to change the touch panel version.

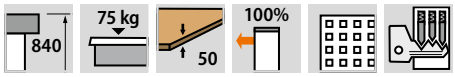


reddot award 2014 winner



491915_MM-OS1

Type		MM-OS1	MM-OS2
41P 49 1915	Video measuring microscope MM-OS	–	–
Measuring range X	mm	26	65
Measuring range Y	mm	19	50
Adjustment range Z	mm	50	
Length measurement variation $E_{UXY, MPE}$ optically (2D)	µm	4.9 + L/50 (L in mm)	
Magnification (x-times)		0.2 ±3%	0.08 ±3%
Camera		5 megapixels	
maximum component height	mm	50	
Nominal voltage	V	230	
Length	mm	354	
Width	mm	444	
Height	mm	600	800
Weight	kg	30	32
maximum component weight	kg	20	



GRID LINE

Garant GRIDLINE Base cabinets for measuring microscopes

Body of welded sheet steel, with bench top of Eluplan dark grey, edges veneered with 3 mm thick graphite. Incorporating the GARANT locking system.

Suitable for:
Size 1500×700 – GARANT video measuring microscopes with measuring range max. X=200 / Y=100.
Size 1800×900 – GARANT video measuring microscopes with measuring range X=300 / Y=200.

Colour: Body light grey RAL 7035, drawers anthracite grey RAL 7016.

width×depth	mm	1500×700	1800×900
41M 49 2580	Base cabinet for measuring microscopes	(eShop)	(eShop)
Width	mm	1500	1800
Depth	mm	700	900
Drawer usable width	mm	500	
Drawer usable depth	mm	500	
Load capacity, distributed	kg	1000	
Weight	kg	124	188
Fitted with: Drawer front height (left)		50; 300; 300 mm	



_1800×900

Garant Video measuring microscope MM1

Measuring microscope with quick image processing, high-resolution colour camera, and a multi-touch panel PC that is easy to operate and suitable for the workshop environment, with **intuitive M3 measurement software.**
Incident illumination: 56 white LEDs in 2 concentric rings. 1 ring and 4 segments can each be separately switched and dimmed.
Transillumination: Long-life LEDs, telecentric, can be switched and dimmed. **Solid granite base** with surface-hardened indexing table and high-precision guides. Ergonomic quick adjustment with one-handed operation in both axes (X and Y). **Diode laser** as positioning guide. Very high repetition accuracy thanks to **automatic edge detection.**

Size 200MZ; 300MZ –With motorised zoom lens, magnification from 0.3× to 3.5 and coaxial light for uniform illumination of components.

Application:
- In goods receiving, in the inspection room, in manufacturing.
- Suitable for general purpose use due to flexible four-quadrant incident light and compact measurement computer.
- A wide variety of geometric shapes and materials can be reliably measured in a user-friendly manner. Documentation can also be performed.

Supplied with: All-in-One PC, wireless mouse and keyboard, dust cover, power supply unit, test certificate, and user manual.

Optional extras: Lens No. 491912, software option No. 491913, cutting edge cleaner No. 354788; test standard No. 491928; precision vice No. 494480; quick-clamping system No. 494451; base cabinet for measuring microscopes No. 492580.

Note:
Length measurement variation $E_{UXY, MPE}$ to DIN EN ISO 10360-7 for magnification factor = 0.5.
Permissible ambient conditions: 20 °C ± 1 K, temperature gradient Δ_{th} = 0.5 K/h, Δ_{th} = 4.0 K/d, measured with a calibrated standard.

For all GARANT video measuring microscopes we can offer you the following on request:
- Maintenance contract.
- Installation and commissioning with brief instruction on use.
- Individual training for your employees.
- On-site calibration.

We reserve the right to make technical changes and to change the touch panel version.



MM1_200



Zoom step	Display presentation	Field of view
0.35×	16×	20 × 13 mm²
0.5×	23×	14 × 9 mm²
1×	43×	7 × 4 mm²
1.5×	65×	4 × 3 mm²
2×	90×	3 × 2 mm²
2.25×	100×	3 × 2 mm²

Type		200	300	200MZ	300MZ
41P 49 2500	Video measuring microscope **MM1**	–	–	–	–
Measuring range X	mm	200	300	200	300
Measuring range Y	mm	100	200	100	200
Measuring range Z	mm	100	200	100	200
Length measurement variation $E_{UXY, MPE}$ optically (2D)	µm	2.9 + L / 100 (L in mm) at 20 °C ±1 K			
Lens (times)		0.5	0.5	0.3 – 3.5	0.3 – 3.5
Magnification at the screen (times)		23	23	10 – 162	10 – 162
Field of view	mm	14×9	14×9	24×16 – 2×1	24×16 – 2×1
Camera		6.4 megapixels			
Working distance	mm	80			
maximum component height	mm	100	200	100	200
Nominal voltage	V	230 / 240			
Length	mm	500	730	500	730
Width	mm	600	900	600	900
Height	mm	770	950	770	950
Weight	kg	60	115	60	115
maximum component weight	kg	20			


56 LEDs can be switched and dimmed flexibly in rings and segments for optimum illumination of the workpiece.

Garant MM1 video measuring microscope

Laser for contour measurement on the MM1 for CNC/CMZ applications available on request

Advantages:
- **Height measurement: non-contact and quick.**
- Profile tracking with a dynamic Z-axis.
- Various sensor accuracies available.
- **Can be retrofitted.**



Garant MM1 CNC video measuring microscope

CNC-controlled video measuring microscope with quicker image processing, high-resolution colour camera, and a multi-touch panel based on a PC, easy to operate, suitable for the workshop environment.
Incident light: 56 white LEDs in 2 concentric rings. 1 ring and 4 segments can each be separately switched and dimmed.
Transillumination: Long-life LEDs, telecentric, can be switched and dimmed. **Solid granite base** with surface-hardened indexing table and high-precision guides.

- Easy installation and use of **measurement programmes.**
- Practical **automation** of measuring processes, for example pallet measurements.
- Modern user-friendly measurement software for **intuitive operation**.

Supplied with: All-in-One PC, wireless mouse and keyboard, dust cover, power supply unit, test certificate, and multi-lingual user manual.



Size 200CMZ; 300CMZ – With motorised zoom lens, magnification from 0.3× to 3.5 and coaxial light for uniform illumination of components.

Optional extras: Lens No. 491912, software option No. 491913, cutting edge cleaner No. 354788; test standard No. 491928; precision vice No. 494480; quick-clamping system No. 494451; base cabinet for measuring microscopes No. 492580.

Note: Length measurement variation $E_{UXY, MPE}$ according to DIN EN ISO 10360-7, measured with magnification factor = 0.5.
Permissible ambient conditions: 20 °C ± 1 K, temperature gradient Δ_{th} = 0.5 K/h, Δ_{td} = 4.0 K/d, measured with a calibrated standard.
We reserve the right to make technical changes and to change the touch panel version.

Type		200CNC	300CNC	200CMZ	300CMZ
41P 49 2550	CNC video measuring microscope **MM1**	–	–	–	–
Measuring range X	mm	200	300	200	300
Measuring range Y	mm	100	200	100	200
Measuring range Z	mm	100	200	100	200
Length measurement variation $E_{UXY, MPE}$ optically (2D)	µm	2.9 + L / 100 (L in mm) at 20 °C ±1 K			
Lens (times)		0.5	0.5	0.3 – 3.5	0.3 – 3.5
Magnification at the screen (times)		23	23	10 – 162	10 – 162
Field of view	mm	14×9	14×9	24×16 – 2×1	24×16 – 2×1
Camera		6.4 megapixels, autofocus			
Working distance	mm	80			
maximum component height	mm	100	200	100	200
Length	mm	500	730	500	730
Width	mm	600	900	600	900
Height	mm	770	950	770	950
Weight	kg	60	115	60	115
maximum component weight	kg	20			



_MM1-300CNC

CNC video measuring microscope MM1 with TP20 tactile measurement system

Optical measurement system with additional Renishaw TP20 type tactile measurement system for measuring regular geometries that cannot be measured optically.

- Quick and simple tactile measurement.
- Creation of automated measurement procedures (optical **and** tactile)

Size 200CMZ/TP; 300CMZ/TP – With motorised zoom lens, magnification from 0.3× to 3.5 and coaxial light for uniform illumination of components.

Optional extras: Lens No. 491912, software option No. 491913, cutting edge cleaner No. 354788.

Note: Length measurement variation $E_{UXY, MPE}$ according to DIN EN ISO 10360-7, measured with magnification factor = 0.5.
Length measurement variation $E_{OZ, MPE}$ according to DIN EN ISO 10360-2, measured with a straight edge finder (Ø = 2.5 mm, length 20 mm).
Permissible ambient conditions: 20 °C ± 1 K, temperature gradient Δ_{th} = 0.5 K/h, Δ_{td} = 4.0 K/d, measured with a calibrated standard.
We reserve the right to make technical changes and to change the touch panel version.



Type		200CNC/TP	300CNC/TP	200CMZ/TP	300CMZ/TP
41P 49 2560	Video measuring microscope **MM1 with TP20 probe system**	–	–	–	–
Measuring range X	mm	200	300	200	300
Measuring range Y	mm	100	200	100	200
Measuring range Z	mm	100	200	100	200
Length measurement variation $E_{UXY, MPE}$ optically (2D)	µm	2.9 + L / 100 (L in mm) at 20 °C ±1 K			
Length measurement variation $E_{1, Z axis}$ tactile (1D)	µm	4.0 + L/75 (L in mm)			
Lens (times)		0.5	0.5	0.3 – 3.5	0.3 – 3.5
Magnification at the screen (times)		23	23	10 – 162	10 – 162
Field of view	mm	14×9	14×9	24×16 – 2×1	24×16 – 2×1
Camera		6.4 megapixels, autofocus			
Working distance	mm	80			
maximum component height	mm	100	200	100	200
Nominal voltage	V	240			
Length	mm	500	730	500	730
Width	mm	600	900	600	900
Height	mm	770	950	770	950
Weight	kg	60	115	60	115
maximum component weight	kg	20			



_300CNC-TP

Garant Software options for MM1

Size DXF – Loading complex DXF files and overlaying them with the live image. The DXF coordinate system can be brought into conformity with that of the workpiece (congruence) or it can remain independent of the workpiece (for matching the workpiece to a DXF geometry). Definition of tolerance bands. Active change of colour when the tolerance band is exceeded. Exporting measured elements in DXF format. Definition and overlaying of cross-hairs.

Size PROFIL – For the best possible matching of relative measurement points within a specified tolerance band (DXF option required). Several profiles with different tolerance ranges can be integrated into a single measurement procedure. Solely the component zero point must match that of the DXF file, following which the device (under CNC control), then automatically follows the contour.

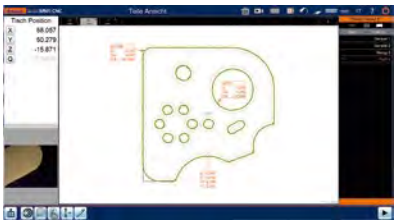
Advantage:

Size PROFIL –
- Automatic matching of the measurement point cloud within a DXF tolerance band.
- Automatic contour tracking in accordance with the DXF file that was loaded.

Note: Individual links to your statistics software available on request.
Size PROFIL – The availability of a DXF option (pre-existing or ordered with the tracking unit) is required for the profiling option.



49 1913_DXF


49 1913_PROFIL

Type		DXF	PROFIL
41P 49 1913	Software option for MM1	–	–

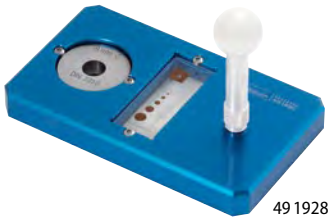
Garant Test standard

Base plate of anodised aluminium **including setting ring** ∅ 10 mm DIN 2250 (without chamfer) and **glass standard** No. 491926 with 6 sized holes. M6 tapped hole for attaching the calibration sphere No. 491929 size 20. Setting ring and glass standard supplied with manufacturer's test certificate.

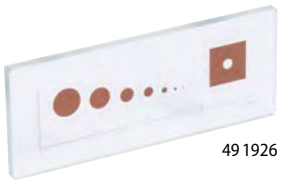
Application: For setting and checking optical and tactile measurement tools.

Supplied with: Base plate, setting ring ∅10 mm, glass standard No. 491926 size 50×20.

Optional extras: Ceramic calibration sphere ∅ 20 mm No. 491929 size 20


49 1928

Length×Width	mm	120×70
41M 49 1928	Test standard	eShop


49 1926

Glass standard with 6 sized holes and manufacturer's test certificate.

Length×Width	mm	50×20
41M 49 1926	Glass standard with test certificate	eShop


49 1929

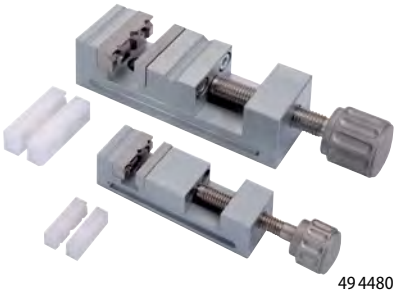
Ceramic calibration sphere 20 mm ∅ with M6 threaded mounting pin, supplied with manufacturer's test certificate.

∅	mm	20
41M 49 1929	Calibration sphere ceramic	(eShop)

HOLEX Precision vices

Precision vice in hard chrome-plated (brass) or anodised (aluminium) version. Ideal for use with small parts, e.g. on microscopes and shadowgraphs or with surface roughness measuring tools. Angular accuracy 0.04 mm, exchangeable clamping jaws of hardened, stainless steel and plastic. Fixed jaws with Vees for cylindrical parts. The additional Vee on the fixed jaw and the clamping slots on the long sides increase the versatility.

Note: Also available as Inox version (stainless) on request.


49 4480

Jaw width A	mm	15	25	35
42L 49 4480	Precision vice	eShop	eShop	eShop
maximum clamping range b	mm	14.5	24.5	34.5
Jaw height C	mm	6	10	14
Overall length a	mm	50	75	100
Overall width B	mm	15	25	35
Overall height c	mm	15	25	35
Material of vice		hard chrome-plated brass	Aluminium anodised	Aluminium anodised

Clamping system for optical and tactile measuring machines

Modular, flexible, and versatile sets of high-quality aluminium components with long-life Hardcoat surface. All construction sets are specifically extendable.

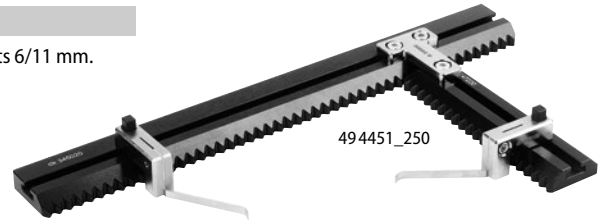
Rail fixing basic set

Suitable for: All GARANT measuring microscopes and all measuring machines with T-slots 6/11 mm. Other arrangements and slot sizes available on request.

Size 250 – For table widths ≥ 200 mm.

Size 350 – For table widths ≥ 300 mm.

Supplied with: Rack rails with fine-pitch racking, clamping clips, T-nuts, left/right spring clamps, bolts.



Type		250	350
49K 49 4451	Rail fixing basic set quick-clamping system	eShop	(eShop)
Length of base rail (rack teeth one side)	mm	250	350
Length of cross rail (rack teeth both sides)	mm	100	200
Length of spring clamps	mm	60	

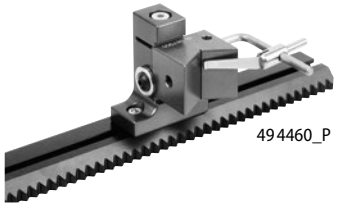
Extension sets

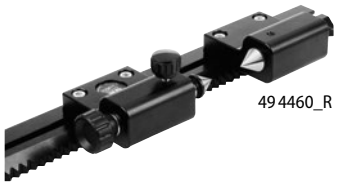
Size P – Small 120 degree Vee block for clamping rotationally symmetrical parts by means of spring clamps. Can be mounted vertically or horizontally.

Size R – Pair of tailstocks for quick and easy mounting of test pieces. One with fixed tip, one with sprung tip which can be clamped as required. The tailstocks are secured directly to the T-slot of the rack rail.

Supplied with:

Size P – Including Vee block on the rack rail.





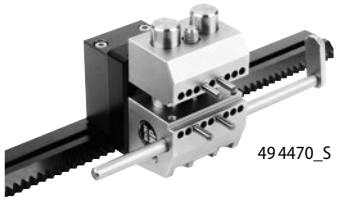
Type		P	R
49K 49 4460	Extension set	(eShop)	(eShop)
Clamping range	mm	2 – 25	–
Tip height	mm	–	20
Vee length	mm	25	–

Horizontal and vertical mounting on the rack rail (does not include attachment set No. 494475).

Size S – Precision vice with offset jaws and exchangeable guide pillars for extending the clamping range.

Supplied with:

Size S – Including 8 parallel pins (of which 4 are offset) for pin clamping, adjustable stop with scale, separate pillar set.



Type		S
49K 49 4470	Extension set	(eShop)
Clamping range	mm	0 – 75
Jaw width	mm	50

Horizontal and vertical mounting on the rack rail (does not include attachment set No. 494475).

Size D – Three-jaw manual chuck for inside and outside clamping of rotationally symmetrical parts. Jaws reversible without tools.

Supplied with:

Size D – With 3 plug-in parallel pins for clamping small parts, for increased clamping of small parts outside the jaws, offering complete accessibility.



Type		D
49K 49 4471	Extension set	(eShop)
Internal clamping ∅	mm	17 – 50
External clamping ∅	mm	0 – 55

Quick-release clamp and clamping bracket for fitting to the rack rail.

Suitable for: No. 494470 and 494471.



49K 49 4475	Attachment set for No. 494470 / 494471	(eShop)

Drawing stamp / position stamp

Practical drawing stamp for positioning feature marks on technical drawings in order to identify measurement points or remarks.

Application:
- Design.
- First-off sample inspection.





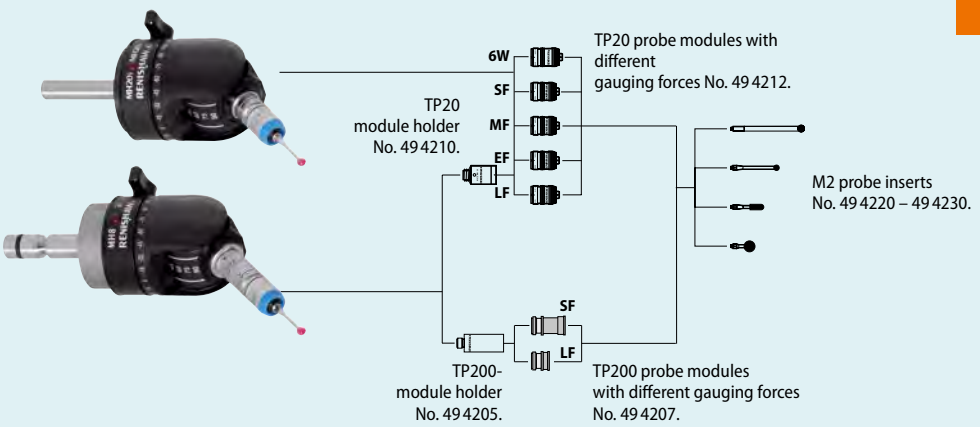


Type		1	2
49K 49 4485	Drawing stamp / position stamp	eShop	eShop
Height of the motif	mm	12	17
Width of the motif	mm	8	11

RENISHAW Measurement probe systems

MH20i manually indexable rotating / tilting head with integral TP20 probe module holder (on request).

MH8 manually indexable rotating / tilting head (on request).



49

RENISHAW Probe holders with probe modules

The modular design of probe holder and removable probe modules allows the facility of exchanging manual and automatic probe modules without laborious recalibration. For probes with RENISHAW automatic holder (autojoint), a PAA adapter has to be used.

Probe holder + probe modules TP20

The TP20 is a switching 5 or 6 way measuring probe. The TP20 can be used with all probes which have an M8 connection thread.



49 4210

Type		TP20
49D 49 4210	Module holder	(eShop)

The TP20 probe module contains the electro-mechanical sensor, carries the probe inserts (connection thread M2) and permits the probe movement in ± X, ± Y, and ± Z direction (± Z if the TP20 6-way probe module is used). Different application-specific probe modules are available. Their different gauging forces are indicated by different protective cap colours.



Type		SF	LF	MF	EF	6W
49D 49 4212	Probe module TP20	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Colour of cap		black	turquoise	grey	red	blue
Gauging force		Standard	low	medium	high	Standard

Probe holder + probe modules TP200

The TP200 measurement probe uses a sensor based on strain gauge technology, which ensures excellent reproducibility and highly accurate 3D free-form measurements, even when using long probe inserts. The TP200 can be used with all probes which have an M8 connection thread.



49 4205

Type		TP200
49F 49 4205	Module holder	(eShop)

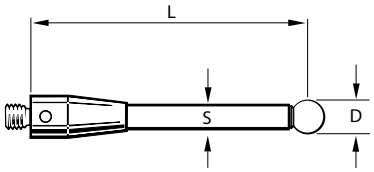
The TP200 probe module contains the electro-mechanical sensor, carries the probe inserts (connection thread M2) and permits the probe movement in ± X, ± Y and ± Z. Different application-specific probe modules are available.


49 4207_SF 49 4207_LF

Type		SF	LF
49F 49 4207	Probe module TP200	(eShop)	(eShop)
Gauging force		Standard	low

RENISHAW Stylus, ruby ball, with M2 connection thread

Note: Further styli with other sizes and shank types available on request.



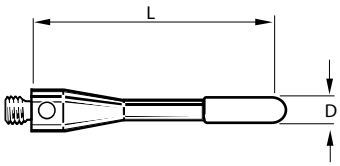

49 4222

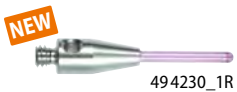
Contact point ∅ D	mm	0,3	0,5	1	1,5	2	2,5	3	4	5	6	8
49F 49 4220 Stylus, ruby ball **Length 10/11 mm**		eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	eShop	(eShop)	eShop	(eShop)
Length L	mm	10	10	10	10	10	10	10	10	10	10	11
effective working length	mm	2	3	4.5	4.5	6	6.5	7	10	10	10	11
Shank ∅ S	mm	0.2	0.4	0.7	0.7	1	1	1.5	1.5	2.5	2.5	2.5
Material of shank		Carbide	Carbide	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel
Weight	g	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.7	0.9	1.5

Contact point ∅ D	mm	0,5	0,7	1/7	1/12,5	1,5	2	2,5	3	4
49F 49 4222 Stylus, ruby ball **Length 20 mm**		eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	eShop
Length L	mm					20				
effective working length	mm	7	12	7	12.5	12.5	14	16.4	17	20
Shank ∅ S	mm	0.3	0.5	0.7	0.8	1	1.4	1.4	1.5	1.5
Material of shank		Carbide	Carbide	Carbide	Carbide	Carbide	Steel	Steel	Steel	Steel
Weight	g	0.5	0.3	0.5	0.4	0.5	0.4	0.4	0.5	0.6

Contact point ∅ D	mm	2	3	4	5
49F 49 4224 Stylus, ruby ball **Length 40 mm**		eShop	eShop	eShop	(eShop)
Length L	mm			40	
effective working length	mm	32.5	37	40	40
Shank ∅ S	mm	1.5	2	2	2.5
Material of shank				Carbide	
Weight	g	1.29	1.97	2.04	3.17

Stylus, ruby spherically ended cylinder, with M2 connection thread




NEW 49 4230_1R


NEW 49 4230_1.5R


49 4230_2R


NEW 49 4230_4R

Cylinder ∅ D	mm	1R	1,5R	2R	4R
49F 49 4230 Stylus, ruby spherically ended cylinder		(eShop)	(eShop)	eShop	(eShop)
Length L	mm	15	15	20	22
effective working length	mm	8	8	7.2	10
Material of shank				Steel	
Weight	g	0.3	0.3	0.5	0.9

RENISHAW Stylus, ruby ball, ceramic with M4 connection thread

Ceramic stylus with M4 connection thread for measuring machines and machine tools.

Note: Further probe inserts with other sizes and shank types available on request.


49 4234_6


49 4236_6

Contact point ∅ D	mm	4	5	6
49F 49 4234 Stylus, ruby ball **Ceramic length 50 mm**		eShop	eShop	eShop
NEW 49F 49 4235 Stylus, ruby ball **Ceramic length 75 mm**		–	(eShop)	(eShop)
49F 49 4236 Stylus, ruby ball **Ceramic length 100 mm**		–	(eShop)	eShop ■
Length L (49 4234)	mm		50	
Length L (49 4235)	mm	–	75	75
Length L (49 4236)	mm	–	100	100
effective working length (49 4234)	mm	33.5	33.5	38.5
effective working length (49 4235)	mm	–	58.5	63.5
effective working length (49 4236)	mm	–	83.5	88.5
Shank ∅ S	mm	3	3.8	4.5
Material of shank			Ceramic	
Weight (49 4234)	g	3.9	5	4.8
Weight (49 4235)	g	–	5.63	5.64
Weight (49 4236)	g	–	6.3	6.3

RENISHAW Accessories for styli

With M2 thread, shank ∅ 3.0 mm.

Note: Stylus extensions and adaptors in other sizes available on request.



49 4214



49 4215

Length	mm	5	10	20	30	40	50
49F 49 4214	Stylus extension	(eShop)	eShop	eShop	eShop	eShop	–
49F 49 4215		–	–	–	(eShop)	(eShop)	(eShop)
Material (49 4214)		stainless steel	stainless steel	stainless steel	stainless steel	stainless steel	–
Material (49 4215)		–	–	–	Ceramic	Ceramic	Ceramic
Weight (49 4214)	g	0.2	0.4	0.9	1.4	1.8	–
Weight (49 4215)	g	–	–	–	0.97	1.22	1.51

Size M3/M2 – With M2 internal thread and M3 external thread.
Size M4/M2 – With M2 internal thread and M4 external thread.

Type		M3/M2	M4/M2
49F 49 4218	Adaptor	eShop	eShop
Weight	g	0.6	1.5



49 4218

With M2 connection thread for accepting up to five different probes with M2 threads.

Type		M2/5
49F 49 4219	5-way stylus centre M2	eShop
Weight	g	0.8



49 4219

RENISHAW Cleaning kit

Application: For cleaning the contact faces of contact points, probe modules, and extensions. Simply pressing it on removes dirt and deposits gently.
All contact faces should be cleaned regularly so as to ensure and maintain the reliability of the probe system.



49F 49 4240	Stylus cleaning kit	eShop

▶ L10 ◀ Cal

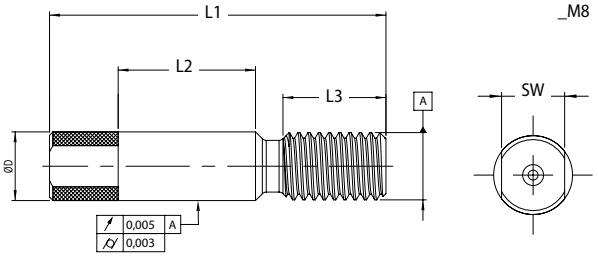
Coordinate plug gauge

Coordinate plug gauge for determination of the position and alignment of internal threads using a coordinate measuring instrument or tactile MM1 measuring microscope with the tactile TP20 measuring system.

Application: The plug supports itself by means of a difference in pitch between two successive turns of the thread and thus centres itself on the flanks of the thread. The probe measures the alignment in space of the smooth functional faces.



_M8



Thread		M3	M4	M5	M6	M8	M10	M12	M14	M16
48B 49 4250	Coordinate plug gauge	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Material		Gauge steel								
∅ D	mm	6	6	6	6	8	10	12	14	16
Width across flats AF	mm	4	4	4	4	6	8	10	12	14
Dimension L1	mm	26	29	29	31	41	49	59	67	73
Dimension L2	mm	12	12	12	12	16	20	24	28	32
Dimension L3	mm	5	7	8	10	13	15	18	20	20

Industrial endoscopes

The stainless steel tube and high-quality lenses make it especially well suited to tough day-to-day work in industrial environments. The metal shaft and special glass lens-type end piece make the endoscope extremely resistant to damage and wear and provide optimal protection for the lenses. The rod lens system reliably provides clear, sharp and bright images and impresses by providing super-sharp images through to the edges in combination with the largest possible image aperture angle. Viewing directions from 0°–120° and aperture angles of 0°–105° for a wide range of applications.

Advantage:
- Optimum image quality – clear, sharp, bright.
- True-colour image reproduction.
- Built-in fibre optics.
- Pressure resistance up to +5 bar (in air).
- Maximum durability due to metal shafts.
- Oil, fuel and solvent resistance.
- Temperature resistance up to 150°C (and above).
- Available in the range 1.6 mm to 10 mm.
- Small diameter for viewing small workpieces and access points.

Optional extras: LED light sources, lens, HD camera, protective cover.

Note: Further probes with direction of view of 0°-120° and image aperture angle of 65°-105° are available on request. Versions with 340° rotatable lens shaft are also available.



49 2770

Probe length			mm	100	110	140	175	190	300	330	430	690
49C 49 2770	Rigid micro-endoscope	Ø1.6 mm		(eShop)	–	–	(eShop)	–	–	–	–	–
49C 49 2771		Ø1.9 mm		(eShop)	–	–	(eShop)	–	–	–	–	–
49C 49 2772		Ø2.7 mm		–	(eShop)	(eShop)	(eShop)	–	(eShop)	–	–	–
49C 49 2775	Rigid endoscope	Ø4 mm		–	(eShop)	–	(eShop)	–	(eShop)	–	–	(eShop)
49C 49 2776		Ø5.5 mm		–	–	–	–	–	(eShop)	–	(eShop)	(eShop)
49C 49 2777		Ø6 mm		–	–	–	–	(eShop)	–	(eShop)	–	–
Direction of view			degrees	0	0	0	0	90	0	90	0	0
Image aperture angle (49 2770, 49 2771, 49 2776, 49 2777)			degrees	90	–	–	90	70	105	70	105	105
Image aperture angle (49 2772)			degrees	–	80	80	80	–	80	–	–	–
Image aperture angle (49 2775)			degrees	–	80	–	105	–	105	–	–	105

Illumination units for endoscopes

Mobile handheld light source. Independent of mains supply. 4-way adjustable.



49 2842

Type			LED
49C 49 2842	Handheld light source		(eShop)
Intensity of illumination		lx	120000
Illumination time		h	4

The stationary LED light source is extremely bright at 900,000 lux. Its colour temperature of 5,500 Kelvin corresponds to daylight and enables realistic colour reproduction during application.
- Outstanding light output with the latest LED technology.
- Continuous light intensity control.
- Consistent colour temperature of 5,500 Kelvin over the entire working life.
- Sturdy metal casing especially for industrial use.

Optional extras: Fibre optic cable no. 494845



49 2844

Type			LED
49C 49 2844	LED light source stationary		(eShop)
Intensity of illumination		lx	900000
Colour temperature		K	5500

Glass fibre optic cable.



49 4845

Application example. Supplied without light source.

Length		1800	2500
49C 49 4845	Fibre optic cable	(eShop)	(eShop)

Video endoscope VIPER

Lightweight, compact and flexible VIPER video endoscope. Quickly interchangeable probes with different diameters (from 2.2 mm) and operating lengths increase flexibility. With its low weight, the VIPER endoscope is extremely light and handy.

- Bright 4.3 inch monitor with CMOS camera technology for images in HD quality.
- Intuitive, easy to use.
- Long, uninterrupted inspections with commercially available battery packs.
- Fast data transmission with micro USB 2.0, mini HDMI connection and SD memory card slot.
- Quickly interchangeable probes with different diameters and operating lengths.

Supplied with: Power supply unit, micro-USB cable, video cable, 2× Li-ion rechargeable batteries, SD memory card 8 GB, metal stand, carrying case.



49 2790

Probe length			mm	1000	2000	3000
49C 49 2790	Video endoscope VIPER with probe	Ø 2.2 mm		(eShop)	(eShop)	–
49C 49 2791		Ø 2.8 mm		(eShop)	(eShop)	(eShop)
49C 49 2792		Ø 3.0 mm		(eShop)	(eShop)	(eShop)
Camera sensor				CMOS		
Image aperture angle			degrees	90		
Direction of view (49 2790, 49 2791)			degrees	0		
Direction of view (49 2792)			degrees	90		
Focus range			mm	3 – 50		
Display size			in	4.3		

HD camera for endoscopes

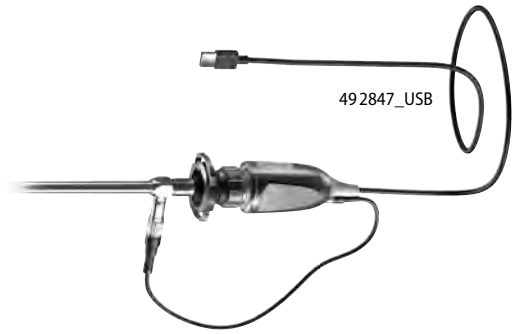
The EN-sure USB HD camera is a compact and exceptionally versatile system, suitable for all rigid and fibre optic endoscopes. No matter how difficult the conditions are on site, the small dimensions and easy to use system means that it is ready for operation in just a few seconds. It delivers crisp, sharp images and videos in HD quality – for accurate, meaningful diagnostics. The bright LED light source is integrated into the system, eliminating the need for separate light sources and control units. Pick up the camera, connect your laptop, PC or tablet and get started right away. No software is required – you can save the inspection results directly to your connected device.

- Application with and without software.
- Zoom in / Zoom out.
- Automatic and manual white balance.
- Image memory function.
- Video recording function.
- Easy plug and play. Connection of notebook, PC or tablet – can be used with or without software (USB 3.0 or USB-C) and with Windows 7 or higher.
  - Size USB – Connection via USB interface.
  - Size HDMI – Connection via HDMI interface.

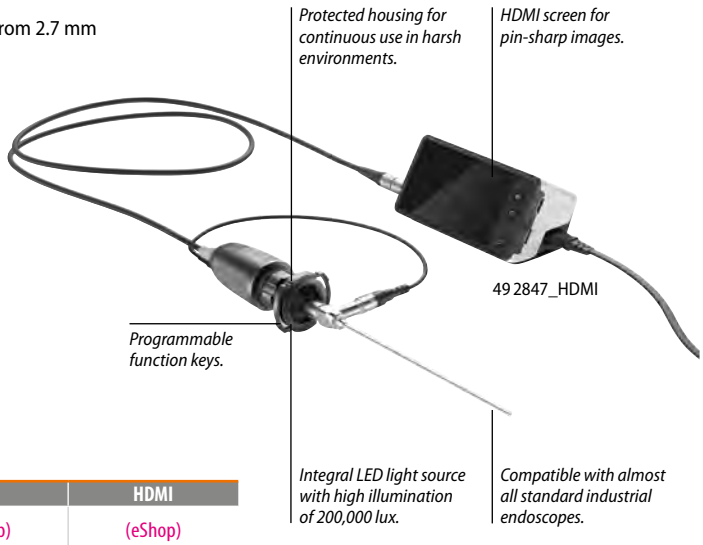
Supplied with: Including adapter for connecting endoscopes with diameters from 2.7 mm to 4 mm.
Size HDMI – Incl. screen.

Optional extras: Further adapters on request.

Note: Version without cable (WiFi) No. 492847 size WIFI.



49 2847_USB



Type			USB	HDMI
49C 49 2847	USB-HD camera EN-sure		(eShop)	(eShop)
Resolution		px	1920x1080	
Intensity of illumination		lx	200000	
Light output		W	5	
Colour temperature		K	5700	
Weight		g	200	
Length L		mm	80	
Width B		mm	45	
Height H		mm	45	

Cordless inspection camera

Compact cordless inspection camera for visual inspection of places that are difficult to access.

49 2710 –
- 127 mm / 5 inch **colour LCD** display.
- Automatic rotation of the image (“Up is Up”™ function).
- Transmission of images and videos directly via microUSB cable or microSD card.

49 2712 –
- Large 4.3-inch LCD screen for sharp and clear images.
- Screen can be rotated by 270°.
- 5 brightness levels ensure optimum lighting.
- 3-step digital zoom for quick focus on specific points.

Supplied with:

49 2710 – Supplied with 1 × 12 V / 2.0 Ah Li-ion battery, charger, 32 GB microSD card, camera cable No. 492716 size 1.5, micro-USB cable, hook, magnet, mirror, L-BOXX.

49 2712 – Supplied with 1× 12 V / 2.0 Ah Li-ion battery, charger, camera cable, hook, magnet, mirror, carrying case.

IP 54

MB 12

L-BOXX



_GIC12V



IP 67

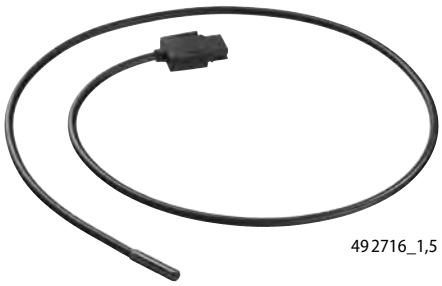
MB 12

_M12-360IC

Manufacturer’s designation			GIC12V	M12-360IC
46B	49 2710	BOSCH Cordless inspection camera	eShop	–
03L	49 2712	Milwaukee Cordless inspection camera	–	eShop
Battery voltage		V	12	
Battery capacity		Ah	2	
Display size		in	5	4.3
Display resolution		px	1280 ×720	480×272
Camera head ∅		mm	8.3	10
Length of the camera cable		mm	1500	1200
Weight		kg	0.7	0.9

Camera cable with probe

Suitable for: Cordless inspection camera No. 492710.



49 2716_1,5

Cable length			m	1,5	3,5
46T	49 2716	BOSCH Camera cable with probe	∅ 8.3 mm	(eShop)	(eShop)

Cordless tools with compatible battery systems in product group 07

MB 12



07 4014_M12FID2-2



07 0110_M12FPD2-2



07 8219_M12CHZ2

B 12



07 0241_GSR1235



07 8183_GKS1226



07 8201_GST1270

HOLEX Video endoscope

Base unit with 3.5 inch LCD display. Zoom mode (1.5×), image and video data can be saved on an SD memory card. USB and AV ports for data transmission. Integral rechargeable lithium-ion battery (3.7 V).

Supplied with: Sturdy watertight and dust-tight transport case. SD memory card, power supply unit (AC 100 – 240 V / 50 – 60 Hz) No. 492958, USB data cable, AV cable, cleaning set, lithium-ion battery No. 492926.
Without probe.



49 2924



42L 49 2924	Video endoscope **without probe**	eShop
Recording format		JPEG / AVI (30 fps)
Display resolution	px	320×240
depth of focus when focussed	mm	16 – 60
Operating temperature	°C	0 – 50
Weight	kg	0.385

HOLEX Video endoscope with measurement grid

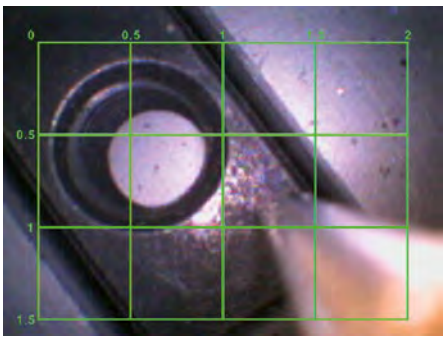
Base unit with 3.5 inch LCD display and 2 m long flexible probe (Ø 5.5 mm, direction of view 0°). Robust watertight probe head (IP67) of stainless steel. Zoom mode (2×), mirror mode. Image aperture angle 60°, contrast and brightness control, black/white image mode for higher-contract images, images and videos can be saved on the SD memory card, USB, and AV output for data and image transmission. Probe with high-intensity LEDs at 0° alignment forwards and side LEDs at 90° to the direction of view.
Side-LED mode: When the screw-on probe mirror (110°) is used, activation of the side LEDs avoids generation of confusing reflections.
Measurement grid mode: Measurement of an object on the screen surface in conjunction with the measurement probe. Measurement field size 20×15 mm.
Illumination mode: Control switch for turning the image illumination on and off. For use in large voids and/or very dark surroundings.
Image rotation: 90° image rotation clockwise using the control button.

Application: For instance, for quick checking of weld seams. Defects can be measured immediately during the inspection.

Supplied with: Includes 1× probe No. 492940 size 2000 (IP67), carrying case, screw-on probe mirror (110°), SD memory card, contact point, USB data cable, cleaning set and 4 batteries No. 081551 size LR6.



49 2928



Probe length	mm	2000
42L 49 2928	Video endoscope **with measurement grid display and probe flexible, Ø 5.5 mm**	eShop
Recording format		JPEG / AVI (30 fps)
Camera resolution	px	640×480
Display resolution	px	320×240
depth of focus when focussed	mm	16 – 60
Operating temperature	°C	0 – 60
Weight	kg	0.37

HOLEX Accessories for video endoscopes

Application:

49 2896 – Adapter for using the probes with the earlier series of photo / video endoscopes (such as No. 492890 size 2000).

49 2952 – Screw-on probe ball for probes with Ø 5.5 mm, external Ø 15 mm. The probe ball allows the probe to be guided better along uneven paths and around corners.



49 2896



49 2952

42L 49 2896	Probe adapter	eShop
42L 49 2952	Probe ball for Ø 5.5 mm	eShop

HOLEX Video endoscope

IP 55

HOLEX video endoscope with large LCD display showing true-scale details, and comprehensive functions. The sun shade offers additional protection when in sunlight. The unit can be held steady using the two handles. The base unit is compatible with all HOLEX endoscope probes No. 492932 – 492944.

- **Base unit with 7 inch LCD display** (image cut-out 6 inches).
- **Zoom mode**; 3 stages of digital zoom: 1.5×, 2× and 5×.
- **Images and video recordings can be saved.**
- **USB and AV output.** The integral USB and AV outputs allow your images and videos to be transferred to a PC.
- **Integral rechargeable Li-ion battery with 5 hour capacity.**
- **180° image rotation** / reflection.



49 2923

Advantage:
- Intuitive touch display with full screen display.
- Exceptionally robust and ideally suited for use outdoors.
- Very large image aperture of 6 inches.
- Image aperture with adapter can be divided for parallel display of 0° and 90° viewing when using a probe ∅ 6 mm.
- Facility for adding comments by sound recording. The built-in microphone can be used during **video operation** for recording comments during the inspection. This eliminates the need for laborious writing and compilation of notes.
- Notes can be added **for images**.
- Comparison of saved images with live images.
- Selected settings can be clearly shown directly on the display.

Supplied with: Sturdy watertight and dust-tight transport case, SD memory card, power supply unit (AC 100 – 240 V / 50 – 60 Hz), USB data cable, AV cable, cleaning kit. **Without probe**.

Optional extras: Endoscope probes No. 492932 – 492944.



Touch screen.

Type		F1100
42L 49 2923	Video endoscope **without probe**	eShop
Recording format		JPEG / AVI (30fps)
Display size	in	7
Display resolution	px	640×480
depth of focus when focussed	mm	16 – 60
Operating temperature	°C	0 – 40

Accessories

Adapter for splitting the image in 0° and 90° direction of view.

Suitable for: Probe No. 492942 size 1000.

Application: For parallel display on the screen of 0° and 90° views.



49 2898

42L 49 2898	Adapter for 0° and 90° directions of view	eShop



IP 67

HOLEX Endoscope probes for HOLEX video endoscopes

Sturdy watertight probe head (IP67) of stainless steel with dimmable white LEDs. Direction of view 0°.

49 2937 – Probe particularly resistant over its entire length due to metal mesh protective sleeve. Particularly suitable for sharp-edged cast iron parts. Very flexible. Image aperture angle 90°.

49 2940 – Image aperture angle 60.7°.

49 2942 – **Elbow bend probe head:** Probe with hand grip and setting handle for bending the camera head in two directions (maximum 2× 155°). In conjunction with the probe mirror supplied, this allows inspection even of a recess that faces in the opposite direction to the insertion of the probe. A stop function for the desired angular position allows non-fatiguing working. Probe tip with braided metal protective sheath.
Image aperture angle 87.1°.

49 2944 – **2× 180° flexible probe head:** Probe with hand grip and setting handle for bending the camera head in two directions (maximum 2× 180°). For inspection of voids opposite the direction of entry of the probe, no additional probe mirror is needed. A stop function for the desired angular position allows non-fatiguing working. Complete probe with metal-braided protective hose, particularly resistant. Image aperture angle 90°.

49 2940/2942 – Very high image quality with 16.7 million colours.
Illumination mode: Control switch for turning the image illumination on and off. For use in large voids and/or very dark surroundings.
Side-LED mode: When the screw-on probe mirror is used, activation of the side LEDs avoids generation of confusing reflections.
Image rotation: 90° image rotation clockwise using the control button.

Suitable for: All endoscope versions No. 492923; 492924; 492925; 492928.

Application: Ideal for inspection of voids where access is difficult, e.g. **automotive:** Engine, gearbox, fuel tank, bodywork, dashboard, appraisal. **Aerospace:** engines, turbines, pipework, and wiring systems. **Buildings:** Assessment of the structure of buildings, water damage, pest infestation. **Pipework systems:** weld seams, traces of foreign bodies, leaks. **Hydraulic systems:** cylinders, leaks. **Heating - sanitation - air conditioning:** ovens, furnaces, boilers, air conditioning systems, drainage systems. **Pest control:** Bees' nests, wasps' nests, birds' nests, insect entry points. **Police, customs:** Vehicle checking, goods checking.

Supplied with:

49 2940 – Screw-on probe mirror 110°.

49 2942 – Screw-on probe mirror 70°.

Note: Other types of probe (up to 30 m) with other probe head Ø and directions of view available on request.

Ø 5.5 mm



49 2937

Ø 5.5 mm



Front LED activated. 49 2940



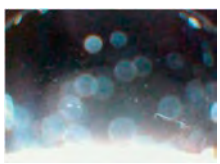
Side LED activated (with mirror). 49 2940



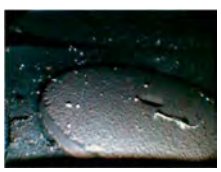
49 2940_2000



49 2942_1000



Application without side LEDs (with mirror).



Application with side LEDs (with mirror).



Illumination mode inactive.



Illumination mode active.

Ø 4.5 mm



49 2944



49 2944

Probe length		mm	1000	1500	2000	3000	Camera resolution px
42L 49 2937	Endoscope probe, flexible	5.5 mm Ø	eShop	–	–	–	640×480
42L 49 2940		5.5 mm Ø	–	–	eShop	–	640×480
42L 49 2942	Endoscope probe, elbow bend, flexible	6 mm Ø	eShop	–	–	–	640×480
42L 49 2944		4.5 mm Ø	–	eShop	–	eShop	640×480

Mitutoyo Measuring projectors PJ-PLUS



Detail with application example

Projector for the exact transillumination and incident light inspection of small to medium-sized components. **Universal tool** for use in production, laboratories, inspection, and grinding shops.

- **Standard lens 10×**. 20x, 50x and 100x magnification lenses on request.
- **Vertical, rotating 315 mm cross hair screen** with built-in digital angle display, changeover function for reading in degrees or decimal.
- The **telecentric lighting system** guarantees a vertical and even illumination of the image field.
- **LED transillumination and incident lighting** with stepless light intensity control ensure a long service life with low power consumption.
- **Fanless design** prevents the ingress of contamination into the unit.
- **Sturdy coordinate measurement table,** with quick adjustment in both axes.
- **Built-in digital display** (with data output) guarantees reliable, error-free measuring.
- For **measuring lengths, angles, curves, and radii**.

Supplied with: Incl. lens 10× magnification, anti-glare, cover, and mains lead.

Optional extras: Cutting edge cleaner No. 354788.

Note: Further special accessories such as lenses, tilting central support, horizontal Vee, toolholder, standard comparison scales or an edge sensor with QM-Data 200 analysis unit available on request.



49 3513

Type		P1010A	P2010A
44C 49 3513	Measuring projector with screen and lens **PJ-PLUS**	(eShop)	(eShop)
Measuring range x-axis	mm	100	200
Measuring range, y-axis	mm	100	
Scale divisions	mm	0.001	
Screen ∅	mm	315	
Length	mm	742	
Width	mm	575	633
Height	mm	1093	
Weight	kg	114	118
maximum component weight	kg	10	8

Mitutoyo Profile projector PV-5110

Profile projector for precise transillumination and incident light checking of large components. **Robust free-standing device** for universal application in production and inspection.

- **Standard lens 10× magnification.** 5x, 20x, 50x and 100x magnification lenses on request. Maximum distortion of the lenses 0.2%.
- **Rotating screen ∅** effective 508 mm.
- **Integral digital LED display** for angular measurements, selectable degrees / decimal.
- **Telecentric illumination system** for even illumination of the image field and exact measurements.
- **Sturdy coordinate comparator stand** 380×250 mm, with integral glass scales.
- Ensures straightforward observation and easy measuring of lengths, angles, curves, radii, and threads etc.

Supplied with: 10× magnification lens, measurement table, halogen incident illumination and transillumination, digital angle display, mains lead.

Optional extras: Digital display unit No. 499356, cutting edge cleaner No. 354788.

Note: Further special accessories such as lenses, tilting central support, horizontal Vee, toolholder, standard comparison scales or an edge sensor with QM-Data 200 analysis unit, 2-D-Geopak software programme, digital display or cover available on request.



49 3535

Type		PV5110
44C 49 3535	Profile projector PV-5110 with lens	(eShop)
Measuring range x-axis	mm	200
Measuring range, y-axis	mm	100
Scale divisions	mm	0.001
Screen ∅	mm	508
Length	mm	738
Width	mm	1021
Height	mm	1520
Comparator stand length	mm	380
Comparator stand width	mm	250
Weight	kg	210
maximum component weight	kg	5

IP 67 | Absolute System

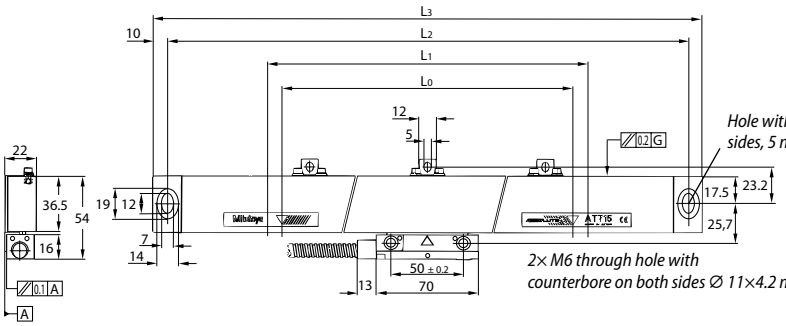
Mitutoyo Linear scale with absolute system

- With **absolute measuring system.**
- After switching on, the current position is displayed; thus it is not necessary to move to reference points.
- Straightforward assembly and installation.
- Resistant to water, oil, and dust due to electromagnetic induction.

Application: For exact measurement and positioning of axial adjustments e.g. on milling machines, lathes, positioning tables or measurement tools. Also suitable for converting machine tools to digital display.

Note: **Applicable only in conjunction with display unit No. 499356.**





effective measuring length L_0	mm	100	150	200	250	300	350	400
44D **49 9241**	Linear scale	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
maximum micrometer head distance L_1	mm	120	170	220	270	330	380	430
Measuring accuracy (20°)	µm				5			
Hole centre distance L_2	mm	258	308	358	408	468	518	568
Overall length L_3	mm	278	328	378	428	488	538	588
Width	mm				22			
Cable length	m				3.5			

effective measuring length L_0	mm	450	500	600	800	1000	1500
44D **49 9241**	Linear scale	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
maximum micrometer head distance L_1	mm	480	540	640	840	1040	1540
Measuring accuracy (20°)	µm	5	5	7	7	7	7
Hole centre distance L_2	mm	618	678	778	978	1178	1678
Overall length L_3	mm	638	698	798	998	1198	1698
Width	mm				22		
Cable length	m	3.5	3.5	3.5	3.5	5	5

Standard | Digimatic | Absolute System | i Cal

IP 66

Mitutoyo Scale unit with absolute system

With **absolute electronics** and large easy-to-read display digits. One-off setting of the zero position, which remains the absolute zero point until the battery has to be replaced (approx. 1.5 years). Maximum measuring precision with very high speed of travel. ZERO/ABS function – zero setting and changeover between relative and absolute measurement.

49 9401 – Scale unit with electro-magnetic inductive measuring system. **For horizontal installation.**

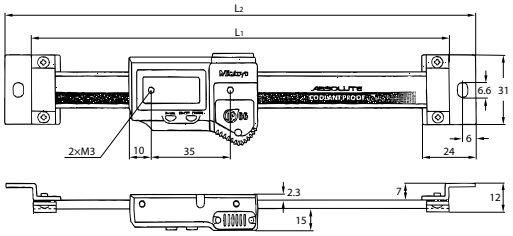
49 9402 – Scale unit with capacitive electronic measuring system. **For vertical installation.**

Application: Suitable for measuring and positioning tasks on machine tools, jigs, etc.

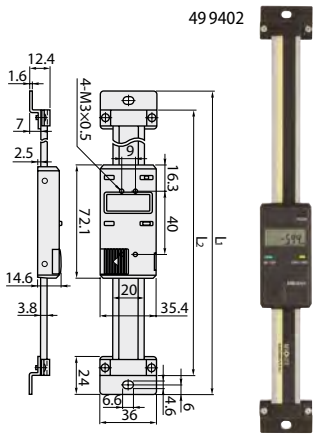
Supplied with: 1 battery No. 081560 size 357.

Optional extras: Data cable No. 497085.





49 9402



Measuring range	mm	100	150	200
44A **49 9401**	Scale unit IP66 **horizontal**	(eShop)	(eShop)	(eShop)
44A **49 9402**	Scale unit **vertical**	(eShop)	(eShop)	(eShop)
Scale divisions	mm		0.01	
Error limit	mm		0.03	
Overall length L_2 (49 9401)	mm	209	259	311
Overall length L_2 (49 9402)	mm	220	270	320
Length of the measuring beam L_1 (49 9401)	mm	185	235	287
Length of the measuring beam L_1 (49 9402)	mm	244	294	344
Weight (49 9401)	g	390	410	430
Weight (49 9402)	g	250	280	310

mm / Inch

Mitutoyo Digital display units for Linear Scale

Easy-to-operate display unit for connection to linear measurement systems. Display range: 8 digits and sign (–), mains connection: 220 Volt.

Function: Zero setting, changing the counting direction, mm / inch changeover. Halving the displayed value, ABS / INC coordinate switching, addition / subtraction, pitch circle calculation, programmable. **Comprehensive calculation functions:** (+, –, ×, ÷, COS, SIN, TAN, ARC, √, π), function buttons for milling machines and lathes, hole sequence machining.

Supplied with: Mains cable (2 m) and spare fuse.

Optional extras: Quick setting unit (RS 232, USB, Digimatic input) for sensing the workpiece offset, linear scale No. 499241.



49 9356

Number of displayed axes		2	3
44D 49 9356	Digital display	(eShop)	(eShop)
Scale divisions	mm	0.005 / 0.001	
Scale divisions	in	0.0001 / 0.0005	
Length	mm	260	
Width	mm	80	
Height	mm	167	

mm / Inch | USB | RS232C | ▶ Q1 ◀ Cal | ▶ Q2 ◀ Cal

Mahr Surface roughness measuring instrument PS10

Portable roughness measuring instrument for precise roughness measurement and documentation conforming to standards, using the stylus tracing method. **With integral (removable) calibration standard**. Large illuminated 4.3 inch TFT touch display. Display can be rotated. Feed unit can be operated as part of the main unit and separately. Mounting for height adjustment for measurements on cones etc., data saved as TXT, X3P, CSV and PDF files. Gauss filter to ISO 16610 – 21 (supersedes DIN EN ISO 11562), special filter to DIN EN ISO 13565 – 1, IS filter to DIN EN ISO 3274 (can be switched off).

Advantage:
- Switch on and start measurement right away – intuitive, no training.
- Storage of PDF certificates.
- Automatic cut-off selection.
- For direct access to the start view press the start button at the same time as the home button.
- Quick access to your desired functions, using the favourites list in the display.
- Take measurements according to the standards DIN EN ISO 4287/4288 and DIN EN ISO 21920-2:2021.

Supplied with: Supplied with feed unit, standard probe No. 499004 size 6 – 350, integral roughness standard No. 499575 including works calibration certificate, integral height adjustment, probe guard, charger / mains adapter, operating instructions, carrying case with shoulder strap, mini USB cable, extension cable for the feed unit.

Optional extras: Spare and special probe No. 499004, probe extension No. 499008, probe guard No. 499038, stand No. 499011; 498857.

Spare part: Battery No. 499548 size AKKU.

Note: Set for transverse sensing available on request.

Large illuminated 4.3 inch TFT touch display
Display can be rotated.

Start button is also the Home button
for direct access to the start view.

More flexibility thanks to removable feed unit.

Probe (2 µm) with detachable probe guard.



Freely programmable function keys
Direct access to your chosen functions via your own favourites list, e.g. measurement conditions, Ra, Rz, etc.

Interface:
USB, micro SD card, Marconnect (RS 232, USB).


49 8835
with stand No. 49 9011 (optional accessory).

Type		PS10
43C 49 8835	Surface roughness measuring instrument	eShop
maximum measuring range	µm	350
maximum measuring range	in	0.014
Measurement travel for longitudinal sensing	mm	1.25 / 4.0 / 12.5
Measurement travels to standard		1.5 mm / 4.8 mm / 15.0 mm / automatic / N × Lc freely selectable
Cut-off (λ_c)	mm	0.25 / 0.8 / 2.5
Scanning speed	mm/s	0.5 / 1.0
Evaluation unit length	mm	160
Evaluation unit width	mm	50
Evaluation unit height	mm	77
Weight of the evaluation unit	kg	0.5

mm / Inch | HID | ▶ Q1 Cal ◀ | ▶ Q2 Cal ◀

HCT

Garant

Surface roughness measuring instrument ST2

Portable roughness measuring instrument for precise roughness measurement and documentation conforming to standards, using the stylus tracing method. **With integral (removable) calibration standard.** Large illuminated 4.3 inch TFT touch display. Display can be rotated. Feed unit can be operated as part of the main unit and separately. LED light bar for status display (green - battery status display, red - error message, blue - measurement, data transmission), integral height adjustment, data saving as TXT, X3P, CSV and PDF files. Gauss filter to ISO 16610 – 21 (supersedes DIN EN ISO 11562), special filter to DIN EN ISO 13565 – 1, IS filter to DIN EN ISO 3274 (can be switched off). **Tolerance monitoring:** It can be quickly determined whether the measured value is within the specified tolerance from the colour of the parameters (green – inside and red – outside the tolerance). IATF 16949 compliant – reliable traceability.

Advantage:

- Switch on and start measuring immediately – **intuitively** without training, e.g. automatic cutoff selection, information on roughness characteristics directly on the device, pre-set measuring programs and quick access to desired functions by saving favourites in the display.
- Transmission of the **measuring results wirelessly** or alternatively by a cable connection. Compatible with the optional HCT (Hoffmann Group Connected Tools) mobile app. Available free of charge for Android and iOS. Can also be used via a Human Interface Device (HID).
- Summarise multiple measurements (for example, for a series) in a **PDF log** using the HCT mobile app. **Adding a photo (for example,** component or measurement setup and making individual comments on the log possible.)
- Document the results via wireless or cable connection using the optional thermal printer for printouts of the profile and results.
- The software interface of the device **can be switched between bright and dark views depending on the lighting conditions.**
- **Ergonomic stand** ensures optimum viewing angle.
- Take measurements according to the standards DIN EN ISO 4287/4288 and DIN EN ISO 21920-2:2021.

Supplied with: Supplied with feed unit, manual Vee, erector No. 499023, standard probe No. 499004 size 6 – 350, integral roughness standard No. 499575 incl. factory calibration certificate, integral height adjustment, probe guard, charger / mains adapter, operating instructions, mini-USB cable, USB Wireless dongle No. 499024, extension cable for feed unit, carrying case.

49 9022 – Additionally with wireless printer No. 499017.

Optional extras: Spare / special probe No. 499004.
Probe extension No. 499008.
Probe guard No. 499038.
Stand No. 499011; 498857.
Data cable for MarConnect No. 498941 size USB2.

Spare part: Battery No. 499548 size AKKU.





Wireless printer included in 49 9022.

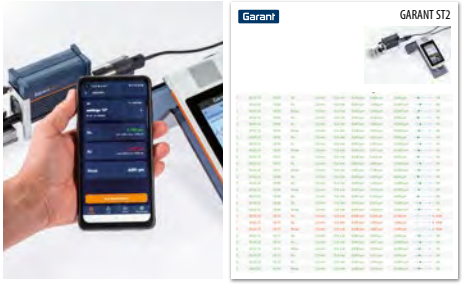


Can be switched to bright or dark mode depending on lighting conditions.



Ergonomic stand and manual Vee for hard-to-reach places.

Type		ST2
41M 49 9021	Surface roughness measuring instrument without printer	–
41M 49 9022	Surface roughness measuring instrument with printer	–
maximum measuring range	µm	350
maximum measuring range	in	0.014
Roughness standards		DIN / ISO / JIS / ASME
Measurement travel for longitudinal sensing	mm	1.25 / 4.0 / 12.5
Measurement travels to standard		1.5 mm / 4.8 mm / 15.0 mm / automatic / N x Lc freely selectable
Cut-off (λ_c)	mm	0.25 / 0.8 / 2.5
Scanning speed	mm/s	0.5 / 1.0
Evaluation unit length	mm	160
Evaluation unit width	mm	50
Evaluation unit height	mm	77
Weight of the evaluation unit	kg	0.5



View the measured values on the HCT mobile app and generate a measurement report with several individual measurements and photo.

mm / Inch | ▶ Q1 ◀ Cal | ▶ Q2 ◀ Cal

Mahr

Surface roughness measuring instrument MarSurf M310

Portable roughness measuring instrument for precise roughness measurement and documentation conforming to standards, using the stylus tracing method. **With integral (removable) calibration standard.** Large illuminated 4.3 inch TFT touch display. Display can be rotated. Feed unit can be operated as part of the main unit and separately. LED light bar for status display (green - battery status display, red - error message, blue - measurement, data transmission), integral height adjustment, data saving as TXT, X3P, CSV and PDF files. Gauss filter to ISO 16610 – 21 (supersedes DIN EN ISO 11562), special filter to DIN EN ISO 13565 – 1, IS filter to DIN EN ISO 3274 (can be switched off). Tolerance monitoring.



49 9002



49 9003

Advantage:

- Switch on and start measurement right away – intuitive, no training.
- MarConnect Duplex interface for starting the measurement remotely.
- USB A port (use for instance for a wireless stick and scanner).
- USB B port (use for instance for mass storage or connection of a power supply unit).
- Document the results via wireless or cable connection using the optional thermal printer for printouts of the profile and results.
- Transmission of the measuring results by a cable connection or alternatively via wireless.
- MarWin Roughness Viewer software for simple evaluation with generation of results print-outs from up to 100 profile files (download free of charge).
- Saving of measurement programs (Quick & Easy).
- Scanning QR codes/barcodes for starting assigned measurement programs and reading in workpiece information (scanner not included in delivery).
- Scanning QR codes/barcodes for starting assigned measurement programs and reading in workpiece information.
- Automatic cut-off selection.
- For direct access to the start view press the start button at the same time as the home button.
- Quick access to your desired functions, using the favourites list in the display.
- Remote control (SPC) of the MarSurf M 310 by external software.
- IATF 16949 compliant – reliable traceability with MarConnect.
- Take measurements according to the standards DIN EN ISO 4287/4288 DIN EN ISO 21920-2: 2021

Supplied with: Supplied with feed unit, manual Vee, standard probe No. 499004 size 6 – 350, including integral roughness standard No. 499575. Factory calibration certificate, integral height adjustment, probe guard, charger / main adapter, operating instructions, carrying satchel with shoulder strap, mini-USB cable, extension cable for head advance unit, carrying case No. 499016.

49 9003 – Additionally with Bluetooth® printer No. 499017.

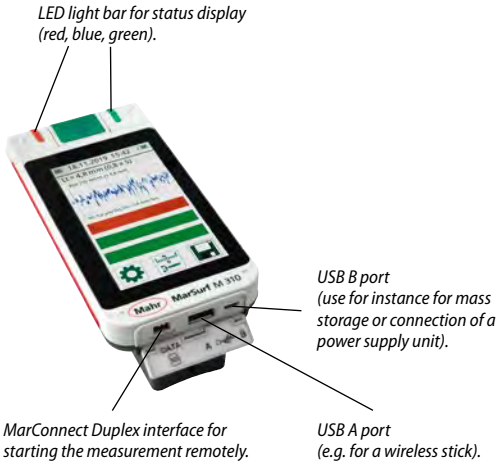
Optional extras: Spare and special probe No. 499004, probe extension No. 499008, probe guard No. 499038, stand No. 499011; 498857, data cable for MarConnect Duplex interface No. 498941 size USB2, scanner.

Spare part: Battery No. 499548 size AKKU.

Note: Set for transverse sensing available on request.



Application example for manual Vee.



Type		M310
43C 49 9002	Surface roughness measuring instrument, without printer	eShop
43C 49 9003	Surface roughness measuring instrument, with printer	eShop
maximum measuring range	µm	350
maximum measuring range	in	0.014
Measurement travel for longitudinal sensing	mm	1.25 / 4.0 / 12.5
Measurement travels to standard		1.5 mm / 4.8 mm / 15.0 mm / automatic / N × Lc freely selectable
Cut-off (λ_c)	mm	0.25 / 0.8 / 2.5
Scanning speed	mm/s	0.5 / 1.0
Probe tip	µm	2
Evaluation unit length	mm	160
Evaluation unit width	mm	50
Evaluation unit height	mm	77
Weight of the evaluation unit	kg	0.5

Mahr

Surface roughness measuring instrument MarSurf M410 with free scanning system

mm / Inch | Q1 Cal

Surface roughness measuring tool with free probe travel and automatic zeroing for precise roughness and wave measurement in accordance with relevant standards. The MarSurf M 410 has a practical touch display, evaluation device can be removed from the feed unit, an integrated PDF memory and wireless data transmission is possible.

- **Free probe travel** with high-precision probe system.
- **Quick-change probe arm** without tools and with additional protection.
- **PDF protocol creation** directly in the device without additional software.
- **Only a few seconds of set-up time** using motorised height adjustment of the feed unit with **automatic zeroing.**
- Unique probe arm management for creating, changing and deleting over 50 probe arms. The calibration data of a calibrated probe arm is retained.
- Probe travel in accordance with DIN EN ISO 4288 / ASME B46.
- Automatic selection of filters and probe travels to the standard.
- Measurement travel for longitudinal sensing 0.1 to 26 mm.
- Phase correction Gauss filter to DIN EN ISO 16610-21 (supersedes DIN EN ISO 11562), robust Gauss filter according to DIN EN ISO 16610-31 and special filter ISO 13565-1.
- Wireless data transmission to a PC, e.g. to Excel or to third-party software.
- Assistance-guided tilt adjustment.
- **Portable use** with mains and battery power.
- **International up to date** incorporating all the usual reference values to DIN/ISO, JIS, ASME, MOTIF.
- 17 languages integrated.
- Inclination correction ±1°, manually.
- Storage of over 30,000 measurement programs.
- Read in information using a scanner by scanning a QR or barcode (scanner not included).
- Take measurements according to the standards DIN EN ISO 4287/4288 and DIN EN ISO 21920-2: 2021.

Supplied with: MarSurf M 410 evaluation device, MarSurf MD 26 feed unit including BFW 250 probe system, standard probe arm, M 410 docking station, wide-range power supply unit with 3 adapters, micro USB cable, MD 26 cover cap, screwdrivers, 3 pcs. assembly key, operating instructions and carrying case.

49 9043 – Additionally with Bluetooth® printer No. 499017.

Note: Other probe arms, e.g. for small bores and slots, available on request.



49 9042

Example: Feed unit evaluation device removed, without printer



49 9043

Example: Evaluation device mounted to feed unit, with printer



Carrying case

Type		M410
43C 49 9042	Surface roughness measuring instrument, without printer	(eShop)
43C 49 9043	Surface roughness measuring instrument, with printer	(eShop)
Roughness standards		DIN / ISO / JIS / ASME, MOTIF
Measurement travel for longitudinal sensing	mm	26
Cut-off (λ_c)	mm	0.08; 0.25; 0.80; 2.50
Cut-off (λ_c)	in	0.003; 0.010; 0.032; 0.100
Scanning speed	mm/s	0.1 – 1.0
Feed unit length	mm	194
Feed unit width	mm	38
Feed unit height	mm	72
Evaluation unit length	mm	162
Evaluation unit width	mm	77
Evaluation unit height	mm	35
Weight feed unit	kg	1.1
Weight of the evaluation unit	kg	0.3

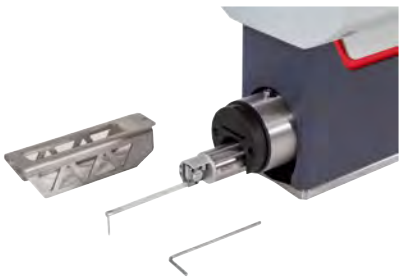


Illustration shows the edge finder without probe guard

Accessories for M410 surface roughness measuring tool

Mounting for the feed unit of the MarSurf M410. For attachment to stands No. 498857 or 499011.



49 9047

Adapter No. 499047 screwed to the feed unit

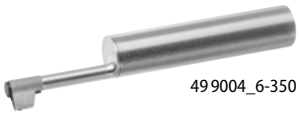
Type		MD26
43C 49 9047	Measuring stand mounting	(eShop)
Pivot range	degrees	±15

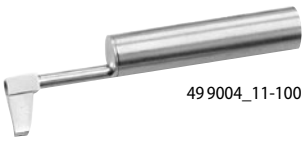
Mahr Probe for surface roughness measuring instruments

Probe for surface roughness measuring instruments ST2, PS1, PS10, M300 and M310

Size 3-350 – Probe for small bores from 3 mm.
Size 6-350 – Standard probe for bores from 6 mm.
Size 11-100 – Probe for slots from 2.5 mm wide and up to 7.5 mm deep. Measurement range 100 µm.


49 9004_3-350


49 9004_6-350


49 9004_11-100

Type		3-350	6-350	11-100
43C 49 9004	Probe for ST2 / PS1 / PS10 / M300 and 310	(eShop)	eShop	(eShop)
minimum bore ∅	mm	3	6	–
minimum groove width	mm	–	–	2.5
maximum groove depth	mm	–	–	7.5

Probe extension for surface roughness measuring instruments ST2, PS1, PS10, M300 and M310


49 9008

Length	mm	80
43C 49 9008	Probe extension for ST2 / PS1 / PS10 / M300 and 310	(eShop)

Probe guard for surface roughness measuring instruments ST2, PS10 and M310

Suitable for: GARANT ST2 No. 499021, 499022,
MarSurf M310 No. 499002, No. 499003,
MarSurf PS10 No. 498835.


49 9038

Type		P	S
40N 49 9038	Probe guard for feed unit with projecting block	eShop	(eShop)
Material		Plastic	Metal

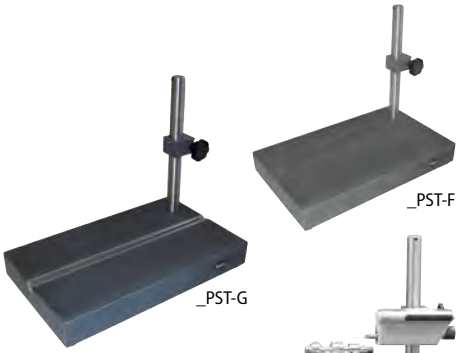
Mahr Measuring stand

Suitable for: Surface roughness measuring instrument 499021 size ST2; 499022 size ST2, No. 498835 size PS10, No. 499001 size M300, No. 499002 size M310; 499003 size M310, No. 499041 size M400, No. 499042 size M410, No. 499043 size M410.

Measuring stand with granite plate for surface roughness measuring instruments ST2, PS10, M300, M310, M400 and M410

Size PST-F – Measuring stand ST-G. Granite plate **without** slot.
Size PST-G – Measuring stand ST-G. Granite plate **with** central 10 mm T-slot.

Optional extras: Indexing table CT120 on request.
Mounting No. 499035 for manual Vee PS10; M310 and GARANT ST2.
Mounting No. 499012 for M300 feed unit.
Mounting No. 499046 for M400 feed unit.
Mounting No. 499013 for roughness measuring instrument PS10; M310 and GARANT ST2.
Holder No. 499047 for feed unit MD26 / M410.


_PST-F

_PST-G


_PST-G
Application example

Type		PST-F	PST-G
43C 49 8857	Measuring stand ST-G for roughness measuring instruments with granite plate	(eShop)	(eShop)
Height adjustment range of column	mm	300	
Base length	mm	400	500
Base width	mm	250	300

Measuring stand for surface roughness measuring instruments ST2, PS10, M300 and M310

Stand with sturdy base.
A hand wheel is provided for adjusting the height of the feed unit mounting.


49 9011

43C 49 9011	Stand ST-D	(eShop)
Height adjustment range of column	mm	300
Base length	mm	175
Base width	mm	190
Overall height	mm	385

Mahr Mountings for surface roughness measuring instruments ST2 / PS10 / M310

Suitable for: Surface roughness measuring instrument No. 499021; 499022 each in size ST2, No. 498835 size PS10, No. 499002 size M310 and No. 499003 size M310.

Stand mounting for surface roughness measuring instruments ST2, PS10 and M310

For attachment to stands No. 498857 or 499011.



49 9013

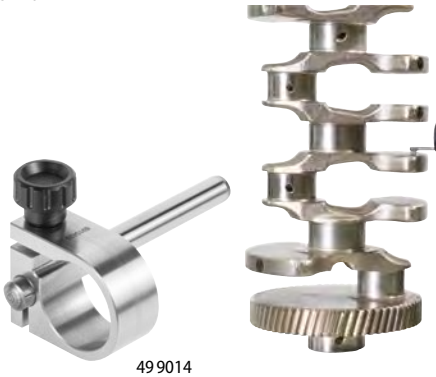


Application example.

43A **49 9013**	Stand mounting **for roughness measuring instrument ST2 / PS10 / M310**	(eShop)
Pivot range	degrees	±15

Stand mounting for feed units ST2, PS10 and M310

For mounting the cylindrical feed unit on measuring stands with mounting ∅ 8 mm.



49 9014



Application example.

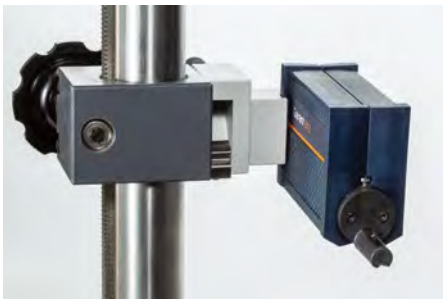
Type		RD18C
43C **49 9014**	Stand mounting **for feed unit ST2 / PS10 / M310**	(eShop)

Stand mounting for manual Vee ST2, PS10 and M310

Manual Vee mounting for attachment of manual Vee to measuring stands No. 498857 or 499011.



49 9035



Application example.

43C **49 9035**	Stand mounting **for manual Vee ST2 / PS10 / M310**	(eShop)
Pivot range	degrees	±15

Q2 Cal

Mahr Roughness standard (geometry standard)

Mobile, metal roughness standard with calibration certificate.
Ra approx. 2.5 µm, RSM >130 µm, Rz approx. 10 µm.



49 9580

Type		PRN10
43C **49 9580**	Mobile roughness standard (geometry standard) **with factory calibration certificate**	eShop

Mitutoyo Surface roughness testers SJ-220 and SJ-310 with skid system

RS232C | Digimatic | ▶ Q1 ◀ Cal | ▶ Q2 ◀ Cal

Transportable cordless rail system for determining surface roughness. Gauge force 0.75 mN to DIN/ISO. Separate feed unit for measurements in very small spaces and for attachment to stands. Phase correction Gauss filter to DIN EN ISO 16610-21 (supersedes DIN EN ISO 11562). Automatic protection of the probe during transport. Auto-calibration function and integral memory for measurement conditions.

49 9205 –
- High-resolution 2.8-inch touchscreen with user-friendly menu guidance. Feed unit can be operated as part of the main unit or separately. Measured data and measurement conditions can be archived to micro-SD memory card.
- All recognised parameters to DIN EN ISO, VDA, JIS, ANSI, and freely selectable conditions.
- Contains, among other things, the new roughness standard DIN EN ISO 21920.
- Supports 25 languages.

49 9207 –
- Very easy intuitive menu-guided controls with clear presentation of measured results and profiles on a 5.7 inch colour display.
- Statistics function and colour-coded tolerance evaluation.
- Large number of internationally recognised parameters to DIN EN ISO, VDA, JIS, ANSI, and MOTIF, and 16 integral languages.
- Two different calculations can be performed based on just a single measurement.
- Measurements where access is difficult or overhead can be performed using the separate feed unit.
- Automatic calibration function / mean value calibration can be performed with up to 12 multiple measurements.
- Saving of up to 10 measurement conditions.
- Quick output and documentation of measurement results, graphics and measurement conditions on the integral printer.
- Individual password protection.
- Easy archiving of measured data on an SD memory card.


49 9205

Feed unit in the device


49 9205

Feed unit removed

Supplied with: Feed unit with contact point, mains adapter, calibration standard, and carrying case.

49 9207 – Includes 5 rolls thermal paper No. 499050, 1 pair of support legs No. 499220 size FUSS, rail for flat and cylindrical workpieces No. 499220 size Z-KUFE, mains adapter and user manual as USB stick.

Optional extras: Transmitter and probe for small bores (from 2.5 mm) No. 499210, rail for flat and cylindrical components No. 499220 size Z-KUFE, support legs (2 pieces) No. 499220 size FUSS, adapter for clamping in height gauge No. 499220 size H-ADAPT, granite measurement stand No. 499415, data cable No. 498430, printer No. 498701.

Note: Free-of-charge analysis software, further adapters, and probes available on request.


Application example

Type			SJ220	SJ310
44D 49 9205	Surface roughness measuring instrument		eShop	–
44D 49 9207			–	eShop
maximum measuring range		µm	360	
graphic representation			Measurement profile, BAC curve, ADC curve	
Roughness standards			DIN EN ISO, VDA, ANSI, JIS, MOTIF	
Measurement travel for longitudinal sensing		mm	17.5	16
Cut-off (λ_c)		mm	0.08; 0.25; 0.8; 2.5; 8	
Scanning speed		mm/s	0.25; 0.5; 0.75	0.25; 0.5; 0.75; 1.0;

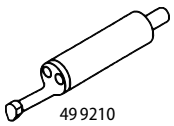

49 9207

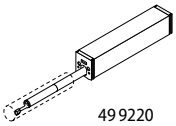
Accessories for surface roughness measuring instruments SJ-210, SJ-220, SJ-310, SJ-201 and SJ-301

Suitable for: Roughness measuring instruments No. 499205 size SJ210 as well as SJ220 and No. 499207 size SJ310 as well as SJ201 and SJ301.

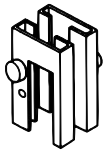
Application:

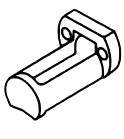
Size 2,5 – For small holes.
Size 6/60 – Standard probe for SJ210/310.
Size 6/90 – Standard probe for SJ-201/301.


49 9210


49 9220

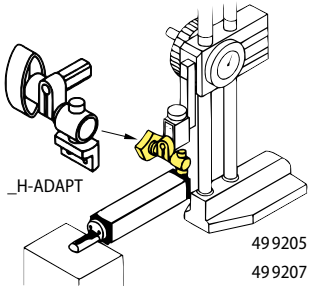
Type			2,5	6/60	6/90
44D 49 9210	Sensor / probe head		eShop	eShop	eShop
Point angle		degrees	90	60	90
Tip radius		µm	5	2	2
minimum bore ∅		mm	2.8	6.5	6.5


49 9220_FUSS


_Z-KUFE

Application:

Size FUSS – Support legs (pair) for variable height adjustment of the probe.
Size Z-KUFE – Rail for cylindrical components (also applicable for flat parts).
Size H-ADAPT – Adaptor for clamping in height gauge No. 445152 For work where the feed unit cannot be placed on the component.
Size EXT – Extension 50 mm for SJ-210 / SJ-310 series


_H-ADAPT

49 9205
49 9207

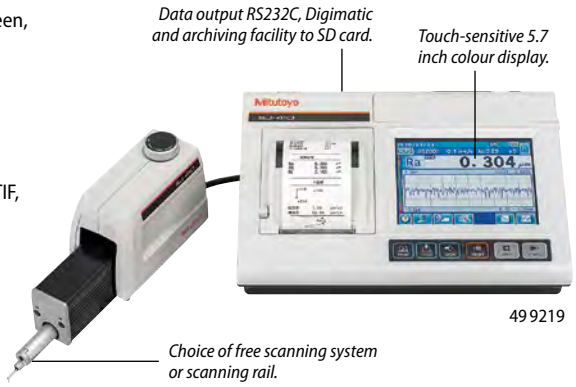
Type		FUSS	Z-KUFE	H-ADAPT	EXT
44D 49 9220	Optional extras	eShop	eShop	eShop	(eShop)

Mitutoyo Surface roughness measuring instrument SJ411 with free scanning system

Digimatic | RS232C | Q1 Cal | Q2 Cal

Transportable cordless reference level system with dust-protected, touch-sensitive operating screen, and integral printer.

- Very easy intuitive menu-guided controls with clear presentation of measured results and profiles on a 5.7 inch colour display.
- Optional measuring with free scanning system or scanning rail.
- Measurement of roughness, ripple and primary profile.
- Statistics function and colour-coded tolerance evaluation.
- Large number of internationally recognised parameters to DIN EN ISO, VDA, JIS, ANSI, and MOTIF, and 16 integral languages.
- Phase correction Gauss filter to DIN EN ISO 16610-21 (supersedes DIN EN ISO 11562).
- Compensation function for radii and inclinations.
- DAT function: Digital inclination wizard for aligning the feed unit position.
- Two different calculations can be performed based on just a single measurement.
- Quick output and documentation of measurement results, graphics and measurement conditions on the integral printer.
- Easy archiving of measured data on an SD memory card.
- The calibration values can be saved and recalled using five different buttons.



49 9219

Supplied with: Including feed unit with standard contact point, 5 rolls of thermal paper No. 499050, mains adapter, calibration standard, user manual, and storage case.

Optional extras: Standard probe No. 499221, measuring stand No. 499415, pack of paper rolls (5 pieces) No. 499050.

Note: Free-of-charge analysis software available on request.
Only available in Germany and Austria!

Type			SJ411
44D 49 9219	Surftest surface roughness measuring instrument		–
maximum measuring range		µm	800 / 80 / 8
graphic representation			Measurement profile, BAC curve, ADC curve
Measurement travel for longitudinal sensing		mm	25 (straightness 0.3 µm)
Cut-off (λ_c)		mm	0.08; 0.25; 0.8; 2.5; 8; 25
Scanning speed		mm/s	0.05; 0.1; 0.2; 0.5; 1
Gauging force		mN	0.75
Contact point radius		µm	2

Suitable for: SJ411 surface roughness measuring tool No. 499219.

44D 49 9221	Standard probe insert for SJ-411		eShop
Point angle		degrees	60
Tip radius		µm	2


49 9221

Optional extras

Suitable for:

49 9415 – Roughness measuring instruments SJ201, SJ210, SJ220, SJ301, SJ310, SJ401, SJ411 and SJ412.

Note:
49 9415 – To use with instruments SJ201, SJ210, SJ220, SJ301 and SJ310 please order adapter 499418.

40W 49 9415	Granite stand with T-slot		eShop
Base length		mm	400
Base width		mm	250
Overall height		mm	556
manual adjustment range		mm	250

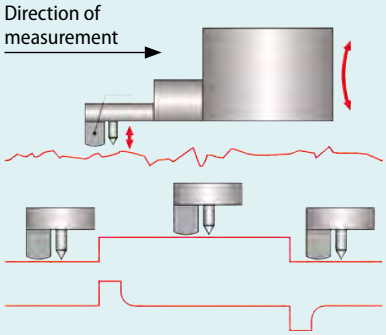

49 9415

40W 49 9418	Adapter / holder for SJ210 / SJ220 / SJ310	(eShop)


49 9418

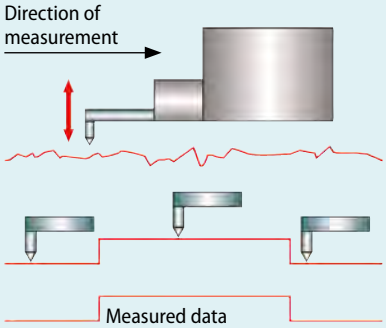
Surface roughness measurement with or without a rail

Measurement with a rail



- During measurement with a rail, the measurement system supports itself with the rail on the surface being measured. This ensures that only the movement of the contact point relative to the rail is measured.
- Measurement with a rail is suitable for measuring the surface roughness.

Measurement without a rail (free scanning system)



When measuring without a rail it is the irregularities of the surface relative to the guide of the feed unit that are detected. Therefore in addition to the surface roughness, also the ripple and the primary profile are measured.

Mahr MarSurf CD 140 A contour measuring station

The MarSurf CD 140 A has a touch probe system with a measurement range of up to 70 mm, and the stylus tips can be changed quickly and without the need for any tools – all without recalibration.

Application: The computer-aided measuring station permits comprehensive and quick evaluation of the measurement results:

- Comprehensive contour measurement functions, fast and simple
- Stylus tips can be changed without the need for tools
- Traversing velocity in X axis of up to 200 mm/s
- Simple creation of programs or individual measurements with MarWin
- Automatic evaluation, best contour fit, CAD contour comparison and many more.
- Can optionally be expanded with roughness measurement feature (Rz > 2 µm)
- Measurements with double stylus tip are possible

49 9299 –
- Flexible mounting plate with 25 mm hole grid, no additional X/Y table required

49 9301 –
- Quick adjustment of the Z axis with easy-to-use handle
- Flexible mounting plate with 50 mm hole grid, e.g. for KMG workpiece holders

Supplied with: Contour measuring machine, machine base incl. Y adjustment, PG A 36-350-25 contact element, MarWin EasyContour plus mobile software, contour calibration standard with 2 balls (45 mm and 6 mm).

Size CD140AG11R; CD140AFR – Incl. roughness option.

Optional extras: PC, probe elements No. 499314 – 499318.

Note:	Commissioning and training available on request. **Only available in Germany and Austria!**



49 9299

Probe system with a contact point length of 350 mm permits quick change of contact points without using tools – without recalibration. The automatic contact force selection guarantees the correct contact force when changing several contact points.





49 9301

Type		CD140AF	CD140AFR	CD140AG11	CD140AG11R
40W 49 9299	CD contour measuring station **140AF**	–	–	–	–
40W 49 9301	CD contour measuring station **140AG11**	–	–	–	–
Traverse path X	mm	140			
Measuring range Z	mm	70			
Guide deviation Z	µm	1 (over 140 mm)			
Gauging force	mN	4 – 30			
Measuring speed X	mm/s	0.1 – 10			
Positioning speed in X	mm/s	1 – 200			
Contact point length	mm	350			
Resolution	nm	19			
Height	mm	426	426	905	905
Width	mm	836	836	822	822
Depth	mm	385	385	572	572

BAQ Shore hardness tester

P1 Cal

Shore hardness testers for determining hardness to Shore A or D to DIN ISO 7619-1 (supersedes DIN 53505) and ASTM D 2240. Sturdy, handy aluminium casing.

49 5002/5004 – High-contrast bright LED graphical display. Memory for 100 measurement values with date and time. USB interface for PC and charger.

Application:

49 5002/5003 – **Shore A:** Soft rubber, elastomers, natural rubber products, cast resin, leather, neoprene rubber, polyester, plasticised PVC.

49 5004/5005 – **Shore D:** Hard rubber, hard plastics, Perspex, Formica, stiff thermoplastics, vinyl boards, polystyrene, pressure rollers.

Optional extras: Test stand No. 495016. Test blocks for checking on request.

49 5002/5004 – Software for generating test certificates, statistics, and graphics available on request.



49 5002



49 5003

Type		A
49G 49 5002	Digital hardness tester **Shore A**	eShop
49G 49 5003	Analogue hardness tester **Shore A**	eShop

Type		D
49G 49 5004	Digital hardness tester **Shore D**	eShop
49G 49 5005	Analogue hardness tester **Shore D**	eShop

Test stand / supplementary weight

49 5016 – Test stand for Shore hardness testers, specially for series testing. The test stand ensures that the hardness tester is exactly square to the surface of the test piece and that the correct gauging pressure is applied.

Suitable for:

49 5016 – Shore hardness testers No. 495002 – 495005.

49 5018 – Shore hardness testers No. 495004; 495005.


49 5016

49G 49 5016	Test stand		eShop
Throat		mm	70
Test table ∅		mm	170
Height		mm	400

49G 49 5018	Supplementary weight **for Shore D**	eShop

BAQ Digital rebound hardness tester dynaROCK III

Sturdy casing made of powder-coated aluminium. Evaluation to DIN 50156 and ASTM A956 in Rockwell HRC and HRB, Vickers HV, Brinell HB, and the tensile strength of steel. The device can be used in any orientation (horizontal, facing upwards, facing downwards...). Internal memory for >1,000,000 measurement values, USB port for data transmission to a USB stick.

Accuracy: ±4 HL (0.5 % at 800 HL).

Supplied with: Impact tool type D, hardness comparison block, USB data cable, cleaning brush, transport case, charger, and manufacturer's certificate.

Optional extras: Alignment rings for curved surfaces, test blocks with DAkkS certificate and impact tools types DC, DL, D+15, C and G on request.

Spare part: Connecting cable to impact measuring tool 495023.

Materials and hardness values (HLD 200 – 900)				
Material	**HRC**	**HRB**	**HB**	**HV**
Steel and cast steel	20 – 68	60 – 100	80 – 650	80 – 940
Tool steel	20 – 68	–	–	80 –940
Stainless steel	20 – 62	46 – 100	80 – 650	80 – 800
Cast iron	–	–	90 – 380	–
Die-cast aluminium alloys	–	–	20 – 160	–
Brass	–	–	40 – 170	–
Bronze	–	–	60 – 290	–
Copper	–	–	45 – 315	–



			1
49G 49 5024	Digital rebound hardness tester		eShop
Minimum weight of test piece		kg	2.5
Length		mm	154
Width		mm	84
Height		mm	23
Weight		g	430

BAQ Portable UCI hardness tester alphaDUR II and alphaDUR mini

RS232C

The **alphaDUR II** portable UCI test unit can accept test probes to DIN 50159-1 issue 2008-10, ASTM A 1038 and VDI-/VDE guideline 2616, together with type D rebound impact tools to DIN 50156 and ASTM A956. The measurement of the impression is performed using a test load. The test load of the probes is detected automatically. Simple menu-driven operation using the large high-resolution colour display. Memory for 50 materials calibrations and up to 500,000 measured data items with date, time, material and evaluation. Evaluations with a wide range of statistical functions.

Application: For portable use (about 8 hours operating time on batteries) and also for quick hardness testing of all metallic materials during production and goods receipt.

Supplied with: Basic unit with built-in lithium-ion rechargeable battery, mains adapter / charger, probe cable and transport case. User manual on USB stick. (Probe No. 495043 is also necessary for measurement.)

Optional extras: Carrying case, probe handle. UCI hardness comparison plates in different dimensions including ISO/ASTM certificate on request.



49G 49 5042	Portable hardness tester alphaDUR II (without probe)		(eShop)
Power supply			Li-ion battery
Length		mm	198
Width		mm	160
Height		mm	78
Weight		g	1400



49 5042

The **alphaDUR mini II** is a portable UCI hardness tester for measurements to DIN 50159-1, ASTM A 1038 and VDI/VDE guideline 2616. Measurement range 10 to 3000 HV, high-resolution colour display, memory for 50 differently calibrated materials and >1,000,000 items of measuring data. Conversion into HRC, HRB, HB and tensile strength. Statistics functions and integral Lithium-ion battery with 10 h operation life. Measurement is performed using the probe No. 495043 – which should ordered separately.

Supplied with: Basic device with integral battery, probe cable, charger with USB cable, transport case and user manual on USB stick (without the probe).



49 5051

			1
49G 49 5051	Portable hardness tester alphaDUR mini II (without probe)		(eShop)
Power supply			Li-ion battery
Length		mm	154
Width		mm	84
Height		mm	23
Weight		g	430

Suitable for: **alphaDUR II** No. 495042 and **alphaDUR mini II** No. 495051 UCI hardness testers. Also for alphaDur mini old version 495047.

Note: Other versions for measuring holes, slots or gear wheels available on request.



49 5052

Test load		N	10	20	30	49	98
49G 49 5052	UCI probe for alphaDUR II and alphaDUR mini II		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Shank ∅		mm			19.5		
Length		mm			175		
Weight		g	300	300	300	300	650

Setting aid (guide) for UCI probes No. 495043. Facilitates vertical alignment to the component and improves reproducibility.



49 5046

49G 49 5046	Setting aid for flat surfaces	(eShop)



49 5048

for workpiece ∅		mm	10-50	50-250
49G 49 5048	Setting aid for round materials		(eShop)	(eShop)

Measuring stand for holding and guiding UCI probes No. 495043.



49 5049

49G 49 5049	Precision measurement stand	(eShop)

Mitutoyo Rockwell hardness testing machine

Easy-to-use Rockwell hardness testing machine HR-210. The test force is applied by motor, reducing the operator's influence on the measurement. Analogue display. Manual weight change for overall test force.

Standard: ISO 6508-2, JIS B 7726

Supplied with: Flat anvil ∅ 64 mm, Vee anvil ∅ 40 × 30 mm, spirit level.

Optional extras: Diamond penetration head incl. DAkkS calibration certificate No. 495092, power cable No. 495093, hardness comparison plates.



49 5080

Type		HR-210
44F 49 5080	Hardness testing machine **Rockwell**	–
Scale divisions HR		0.5
Display		Analogue dial indicator
Test procedure		Rockwell
Rockwell scales		A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
Operation		manual
Main load test force	N	588.4; 980.7; 1471
Pre-load test force	N	98.07
maximum sample width	mm	165
maximum sample height	mm	180
Length	mm	780
Width	mm	680
Height	mm	1010
Weight	kg	69

INNOVATEST Rockwell hardness testing machine

Rockwell hardness testing machine with very high precision. Stiff machine frame, suitable even for rough workshop conditions.

Size 300RS – Large 6.5 inch industrial colour touch screen. Easy-to-understand user interface with internal and external data storage facilities. Test load application within the closed control loop (**load cell, closed loop system**).

Standard:

Size 300RS – DIN EN ISO 6508, ASTM E-18 and ISO 2039/1.

Supplied with: HRC hardness comparison plate with grid.

Size 300RS – Ready-to-use basic equipment: Rockwell cone 120°, flat support table ∅ = 80 mm, Rockwell ball holder 1/16 inch. Including dispatch packaging.

Note: Delivery charged separately. Please contact your specialist advisor with regard to calibrating the required load levels and methods. Further accessories such as Vee supports available on request.



49 5071_300RS

Type		300RS
49G 49 5071	Hardness testing machine **Rockwell FENIX**	–
Scale divisions HR		1
Display		6.5 inch touch screen
Test procedure		Rockwell / Super-Rockwell
Interface		USB-2
Rockwell scales		A, B, C, D, E, F, G, H, K, L, M, P, R, S, V
Operation		semi-automatic
Main load test force	kg	15, 30, 45, 60, 100, 150
Pre-load test force	kg	3; 10
maximum sample width	mm	250
maximum sample height	mm	240
Power supply		100 – 240 V / 50-60 Hz / 3A
Length	mm	580
Width	mm	270
Height	mm	770
Weight	kg	115

INNOVATEST Hardness testing machine

Comprehensive range of products available

- **Rockwell**
- **Vickers**
- **Brinell**
- **Knoop**



ISSERSTEDT Prüfmaschinen GmbH & Co.KG

Hardness comparison plates

High-quality hardness comparison plates of optimised and homogeneous steel for periodic calibration of hardness testers.

Advantage: Colour-coded and symbolic organiser system on all packaging.

Supplied with: Every hardness comparison plate is supplied with a **DAkkS calibration certificate**.

Note: **Calibrations for other processes, hardness comparison plates in other sizes and with pitch lines available on request. Quick availability ex-stock from the manufacturer.**



49 5131



Hardness value approx.		150	200	250	300	350	400	450	500
49L 49 5131	Hardness comparison plate **HBW 2.5 / 187.5**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5133	Hardness comparison plate **HBW 5 / 750**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5135	Hardness comparison plate **HBW 10 / 3000**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Ø	mm	125	–	–	–	–	–	–	–
Length	mm	–	100	100	100	100	100	100	100
Width	mm	–	100	100	100	100	100	100	100
Height	mm	16							



Label example

Hardness value approx.		200	300	400	550	620	700	780
49L 49 5152	Hardness comparison plate **HV 0.1**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5154	Hardness comparison plate **HV 0.2**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5156	Hardness comparison plate **HV 0.3**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5158	Hardness comparison plate **HV 0.5**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5160	Hardness comparison plate **HV 1.0**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5162	Hardness comparison plate **HV 5**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5164	Hardness comparison plate **HV 10**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5166	Hardness comparison plate **HV 20**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
49L 49 5168	Hardness comparison plate **HV 30**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Ø (49 5152, 49 5154, 49 5156, 49 5158)	mm	40						
Ø (49 5160, 49 5162, 49 5164, 49 5166, 49 5168)	mm	65						
Height	mm	10						



Label example



Label example

Hardness value approx.		20	25	30	35	40	45	50	55	60	62
49L 49 5151	Hardness comparison plate **HRC**	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	eShop	(eShop)	(eShop)	(eShop)
49L 49 5172		(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Length (49 5151)	mm	100									
Length (49 5172)	mm	60									
Width (49 5151)	mm	100									
Width (49 5172)	mm	60									
Height	mm	16									

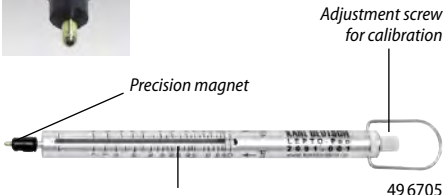
KARL DEUTSCH

Thickness measuring tools – LEPTO-Pen

Quick and easy thickness measurement using the attraction force method. Suitable for non-magnetic coatings such as paints, varnishes, plastics, and galvanised coatings on unhardened iron and steel. With precision magnet, mechanical spring balance, graduated scale and scale calibrated and graduated in µm of coating thickness. For use in any position: horizontal, vertical and "overhead".

Supplied with: Plastic case, user manual, and test certificate.





49 6705

Type		2091A
49G 49 6705	Thickness measuring tool LEPTO-Pen	eShop
Measuring range	µm	10 – 500
Error limit		±10 % / ±3 µm



KARL DEUTSCH Thickness measuring tools – Pocket Leptoscope

Robust, handy thickness measuring tool for precision, non-destructive testing of film thicknesses on steel and non-ferrous metals.

- Probe integral within the device and immediately ready for measuring.
- Single-point and two-point calibration with averaging can be performed.
- Cordless battery mode, auto-off.
- Convenient user guide in plain text, multi-language.
- Graphics display with background illumination.
- Large characters for ease of legibility.
- Data output for thermal printer.

Size 2021 – **Fe tool** for measuring non-magnetic coatings, e. g. Cr, Cd, Cu, Zn coatings, paints, varnishes, plastics etc. on magnetisable iron and steel.

Size 2026 – **Fe / non-Fe combination device.** The substrate is recognised automatically. Additionally for measuring electrically non-conductive coatings e. g. Eloxal, paints, varnishes, plastics etc. on all non-ferrous metals e. g. aluminium, copper, brass etc.

Supplied with: Transport case, check bodies (size 2021: one-piece; size 2026: two-piece), calibration foil kit (two-piece), 1 battery No. 081561 size LR3, instruction manual and calibration certificate.

Note:	Version with measured value memory and statistics function on request.

Membrane keypad
is dirt-proof.

Spring-mounted measurement probe
exerts constant pressure.



49 6800

Type			2021	2026
49G 49 6800	Thickness measuring tool Pocket Leptoscope		eShop	eShop
Measuring range Fe		µm	0 – 3000	
Measuring range non-Fe		µm	–	0 – 1250
Error limit for coatings < 100 µm		µm	1 % / ±1.5	
Error limit for coatings 100 to 1200 µm		µm	1 – 3 % / ±1	
Error limit for coatings > 1200 µm		µm	3 – 5 % / ±1	
Measuring principle Fe			Magnet inductive	
Measuring principle non-Fe			–	Eddy current
Battery life approx.		h	100	
Length		mm	95	
Width		mm	47	
Height		mm	17	



KARL DEUTSCH Wall thickness and sonic speed measuring tool (Echometer)

mm / Inch | IP 54

Small, easy to use, ultrasonic wall thickness measuring tool with automatic test head recognition. **Testable materials: All materials which transmit sound, such as steel, iron, non-ferrous metals, plastics, glass, ceramic etc.** Wall thickness and sonic speed measurement in a single tool.

- Convenient user guide in plain text (multi-language).
- Variable display modes for optimum matching to the measurement task: – Standard display – Difference value – Minimum value

Supplied with: Transport case, coupling fluid (100 ml), 2 batteries No. 081561 size LR3, and calibration certificate.

Optional extras: Measuring heads with measuring range up to 400 mm available on request.

Note:	Variants with data memory, data output, and statistics module or for measurement of the wall thickness of coated materials available on request.



49 6950_1076B

Type			1076B
49G 49 6950	Wall thicknesses and sonic speed measuring tool (without test head)		eShop
Measuring range wall thickness			see test head No. 496954
Measuring range sonic speed		m/s	100 – 19999
Scale divisions		mm	0.01
Battery level display			optical and acoustic
Length		mm	131
Width		mm	81
Height		mm	32
Weight including batteries without protective case		g	175

Accessories for Echometer No. 496950

Type			PB4	PB10
49G 49 6954	Test head		eShop	eShop
49G 49 6956	Grip handle for test head PB		eShop	eShop
49G 49 6957	Protective foil set **10 pieces**		eShop	–
Measuring range in steel (49 6954)		mm	1.2 – 250	0.5 – 25
Type of test head (49 6954)			Standard	Miniature
Frequency (49 6954)		MHz	4	10
Transducer dimensions (49 6954)		mm	10×4	4×2

Contents		ml	500
49G 49 6958	Coupler		eShop



49 6954_PB4

49 6954_PB10



49 6956_PB4



49 6957_PB4

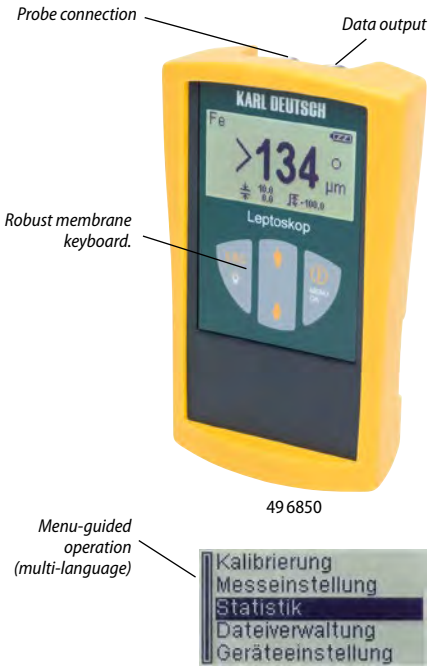
KARL DEUTSCH

Thickness measuring tools – Universal Leptoscope

Universal thickness measuring tool for Fe and/or non-Fe material depending on the probe No. 496900, 496910 or 496912.

- Interchangeable measuring probes.
- Clear display with background illumination.
- Ready for measuring immediately without calibration.
- Extensive calibration capability, e.g. patented adjustment when measuring a coating of unknown thickness.
- Mains and battery mode, auto off.
- Data output for thermal printer.
  Size 2042SET – ■ Extensive statistical functions, large data memory.

Supplied with: 2 batteries No. 081561 size LR6, transport case, user manual, and calibration certificate.
Size 2042SET – Set including standard probe Fe No. 496900 size EP, check sample (two-piece), calibration foil kit (six-piece), PC cable, and iCom software.



49 6850

Type		2042	2042SET
49G 49 6850	Thickness measuring tool Universal Leptoscope	eShop	eShop
Measuring range	µm	0 – 20000	
Error limit for coatings < 100 µm	µm	1 % / ±1	
Error limit for coatings 100 to 1000 µm	µm	1 – 3 % / ±1	
Measuring principle Fe		Magnet inductive	
Measuring principle non-Fe		Eddy current	
Data storage		10000 measured values	
Battery life approx.	h	90	

KARL DEUTSCH

Ferrous and non-ferrous measuring probes for Universal Leptoscope No. 496850

Application:

49 6900 – **Ferrous probe** for measuring non-magnetic coatings, e.g. Cr, Cd, Cu, Zn coatings, paints, varnishes, plastics etc. on magnetisable iron and steel.

49 6910 – **Non-ferrous probe** for measuring electrically non-conductive coatings e.g. Eloxal, paints, varnishes, plastics etc. on all non-ferrous metals such as aluminium, copper, brass etc.

49 6912 – **Fe / non-Fe combination probe.** The substrate is recognised automatically. Application as for Fe / non-Fe combination probe.

Supplied with:

49 6900–6912 – Including the manufacturer's calibration certificate.

Optional extras:

49 6900–6912 – Positioning aids for microprobes, other microprobes available on request.



Type		EP	EP90	MIKRO	MIKRO45	MIKRO90	KOMBI
49G 49 6900	Fe measuring probe for No. 496850	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	–
49G 49 6910	Non-Fe measuring probe for No. 496850	(eShop)	–	(eShop)	(eShop)	–	–
49G 49 6912	Fe / non-Fe measuring probe for No. 496850	–	–	–	–	–	(eShop)
Measuring range Fe (49 6900, 49 6912)	µm	0 – 5000	0 – 5000	0 – 500	0 – 500	0 – 500	0 – 3000
Measuring range non-Fe (49 6910, 49 6912)	µm	0 – 1000	–	0 – 500	0 – 500	–	0 – 1250
Probe type		single pole probe	single pole probe	Micro probe	Micro probe	Micro probe	Combi
Measurement head ∅	mm	11.4	10.2	5	5	5	11.4

Type	FE	NFE
49G 49 6920 Checking piece	(eShop)	(eShop)
Suitable for: Measurement probe No.	496900	496910



49 6920



49 6940

Suitable for: All probes and tools No. 496800 – 496912. Composed of: 11 µm, 22 µm, 50 µm, 90 µm, 190 µm, 750 µm (all coating thickness figures are approximate values).

Type		A
49G 49 6940	Calibration foil set, 6 pieces	eShop
for measuring range	µm	0 – 1250

Mitutoyo Mini-processor / printer DP-1 VA for connection of Digimatic measuring tools

49 8701 – Fast and quiet data printer. Large easily legible characters. Timed reading of measured values (clock function). Data logging up to 9999 values. Thermal printer paper with long-term stability. Very compact. Press key to start. Powered by 6V mains adapter, batteries or rechargeable batteries. Data logger function with time stamp. Printing and data transmission can be performed concurrently. Compatible with measuring devices with the Digimatic 2 format.

Printable data: Measured values; OK / not OK values, number of data, min / max value, range; average value, standard deviation, number of rejects, percentage of rejects, process capability index, histogram, intervention limits; date and time.

Application:

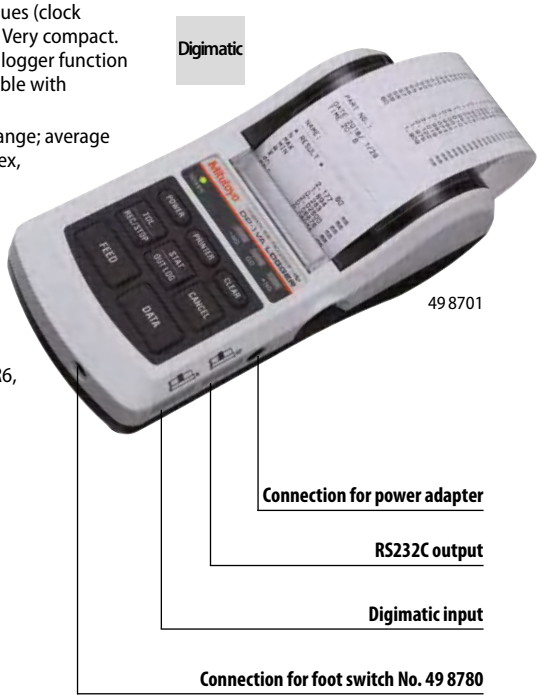
49 8701 – For data collection, printing, and statistical evaluation of the measured data of small measuring tools with Digimatic interface.

Supplied with:

49 8701 – Supplied with 1 roll thermal paper, carrying strap, and mains adapter.

Optional extras:

49 8701 – Thermal paper No. 498710, foot switch No. 498780. Batteries (4 pieces) No. 081570 size LR6, batteries (4 pieces) No. 081561 size. LR6.



Type		DP1VA
44A 49 8701	Mini-processor / printer DP-1 VA	eShop

Type		VR
44A 49 8710	Thermal register paper set, 5 pieces, for No. 498700	eShop

Mitutoyo Accessories for other Mitutoyo printers / mini-processors

44A 49 8840	Paper roll for DP-1HS **1 piece**	eShop

Number of cartridges		5
44A 49 8841	Ink ribbon cartridge for DP-1HS **Set of 5**	eShop


49 8840


49 8841

Keyboard interfaces including data cable

Keyboard interface and measuring tool cable with data button all in a single unit. In addition, termination characters (enter, tab. .) can be set and then automatically sent with the data.

49 8963 – Integral timer function.

Suitable for:

49 8963 Size G2 – GARANT calipers No. 412616; 412618; 412680; 412682; 412690; 412692; 418682.

Size D2 – Mitutoyo measuring tools No. 412641; 412642; 412671; 415350 – 415400; 445135; 415152; 415222.

49 8969 – HOLEX caliper No. 412805.

Supplied with: With data cable to the measuring tool.

49 8969 – Additional foot switch (cable length 1.2 m) and data cable 1.8 m to the PC (1.4 m from the measuring tool).


49 8963 _G2 _D2


49 8969_USB

Type		G2	D2	USB
49H 49 8963	Keyboard interface **USB**	eShop	eShop	–
42L 49 8969		–	–	eShop
Cable length	m	2	2	3

STEINWALD Keyboard interface

For connecting measuring devices to a PC via USB interface (HID). Data transfer is performed either by a foot switch or by the data button on the measuring tool. The integral device set-up allows parameterisation of measurement values range and positioning of the decimal point, plus process triggers and time triggers for taking measurements.

Supplied with: Supplied with USB cable for connection to the PC.

Optional extras: Foot switch No. 498905. Radio adapter on request.


Radio adapter

maximum number of measuring devices that can be connected		1	3	6
49H 49 8959	Keyboard interface **USB**	eShop	eShop	eShop
Number of Digimatic inputs		1	3	6
Cable connection port		Opto-RS; PROXIMITY; POWER; RS232 (measuring tool-specific - available on request)		
Radio adapter		Mahr i-wi; STEINWALD BT		
Foot switch connection port		yes		


49 8959

BOBE INDUSTRIE-ELEKTRONIK Keyboard interface

Keyboard interface for connecting measuring devices to a PC via USB interface (HID). Integral timer function permits "Automated" interrogation of the measurement values (adjustable from 0 to 99 seconds or minutes). The data can be loaded using the data button on the measuring tool, or using an optional pedal switch.

49 8868 – Data loading can be performed as standard by the data button on the interface.

Supplied with: Data cable for connection to the PC.

Optional extras: Foot switch No. 498780.



49 8960_3



49 8868_1

maximum number of measuring devices that can be connected		1	3
49H 49 8960	USB keyboard interface	eShop	eShop
49H 49 8868		eShop	–
Number of Digimatic inputs (49 8960)		1	3
Number of RS232 inputs (49 8868)		1	–
Number of USB outputs		1	
Connection foot-switch		yes	

BRECHT ELEKTRONIK Keyboard interface

Keyboard interface for connecting measuring devices to a PC via USB interface (HID). Data loading is performed by default with the data key on the interface or optionally using a foot switch.

49 8971 – A special cable No. 498908 allows connection also of measuring tools with Opto, Proximity, or Power output.

Supplied with: Data cable for connection to the PC.

Optional extras: Foot switch No. 498903.

49 8971 – Adapter cable for connection of measuring tools with the Opto-RS interface No. 498908.



49 8962_5+1

maximum number of measuring devices that can be connected		1	2	3+1	5+1
49H 49 8962	USB keyboard interface	–	–	eShop	eShop
49H 49 8971		(eShop)	(eShop)	–	–
Number of Digimatic inputs		–	–	3	5
Number of RS232 inputs		1	2	1	1
Opto-RS connection adapter		yes	yes	–	–
Connection foot-switch		yes			

BOBE INDUSTRIE-ELEKTRONIK Data transmission unit

For connection of measuring tools with Digimatic data outputs via a USB interface to a PC. Data loading can be performed by a foot switch.

Size 2 – Can also be used as keyboard interface.

Supplied with: USB data cable for connection to the PC.

Optional extras: Foot switch No. 498780.



49 8866_2

maximum number of measuring devices that can be connected		1	2
49H 49 8866	Data transmission unit	eShop	eShop
Number of Digimatic inputs		1	2
Number of USB outputs		1	
Connection foot-switch		yes	

Data transmission unit

For connection of measuring tools with a Digimatic data output via an RS-232 interface to a PC. Data loading can be performed by a foot switch.

Optional extras: Foot switch No. 498780 and data cable No. 498870.



49 8869_1



49 8900_2

maximum number of measuring devices that can be connected		1	2
40N 49 8900	Mitutoyo	–	eShop
49H 49 8869	BOBE INDUSTRIE-ELEKTRONIK Data transmission unit	eShop	–
Number of Digimatic inputs		1	2
Number of RS232 outputs		1	
Connection foot-switch		yes	

Data transmission unit

For connection of measuring tools with Digimatic data outputs to a PC via a USB interface. The USB cable can also be used for the power connection. The data can be loaded under software control, or using the data button on the measuring tool, or using an optional pedal switch. Devices can be extended later.

49 8902 – A special cable allows connection also of measuring tools with Digimatic and RS232 interfaces.
49 8904 – Data transmission device for measuring tools with Digimatic and Opto-RS interfaces.

Supplied with: USB data cable for connection to the PC.
Size 3; 5 – Supplied with adapter cable Opto RS No. 498908.

Optional extras: Foot switch No. 498903.
49 8904 – Adapter cable for connecting measuring tools with Opto-RS interface No. 498908, set for connecting RS232 to a PC including power supply unit and connecting cable.



49 8904_5



49 8902_8+1

maximum number of measuring devices that can be connected		1	2	3	5	8+1
49H 49 8902	Data transmission unit	–	–	–	–	(eShop)
49H 49 8904		(eShop)	(eShop)	(eShop)	eShop	–
Number of Digimatic inputs		1	3	3	5	8
Number of RS232 inputs		–	–	–	–	1
Opto-RS connection input		yes	yes	yes	yes	–
Number of USB outputs				1		
Number of RS232 outputs		–	–	1	1	–
Connection foot-switch				yes		

Accessories for data transmission equipment

Suitable for:
49 8780 – No 498700; 498730; 498866; 498868; 498900; 498960.
49 8903 – No. 498902; 498904; 498962; 498971.
49 8905 – No. 498959.

44A 49 8780	Mitutoyo	Foot switch for data transmission units	eShop
49H 49 8903	Brecht Elektronik		eShop
49H 49 8905	STEINWALD	Foot switch for keyboard interface	eShop


49 8780


49 8903

Suitable for: No. 498900.

Type		A	B
40W 49 8870	Mitutoyo Signal cable, length 2 m	(eShop)	(eShop)


49 8870

Adapter cable for connecting measuring tools with Duplex interface (Opto-RS, Proximity, Power).

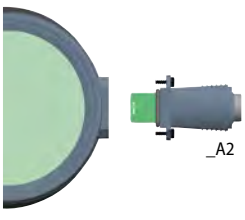
Suitable for: No. 498904; 498971.

Type		DUPLEX
49H 49 8908	Brecht Elektronik Adapter cable	(eShop)


49 8908

Interface adapter

Suitable for:
Size A2 – External and internal quick calipers No. 438573; 438965; 438979; 438985 in conjunction with data cable No. 497440.
Size A3 – External and internal quick calipers No. 438990; 438995 in conjunction with data cable No. 497440.
Size A4 – External and internal quick calipers No. 438990; 438995 for data transmission via Bluetooth® (USB dongle included). Up to 8 devices can log on at the same time.
Size A5 – External and internal quick calipers No. 438573; 438965; 438985; 438979 for data transmission via Bluetooth® (USB dongle included). Up to 8 devices can log on at the same time.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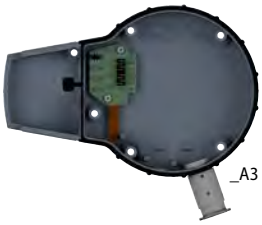
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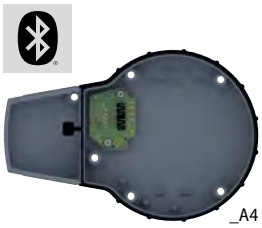
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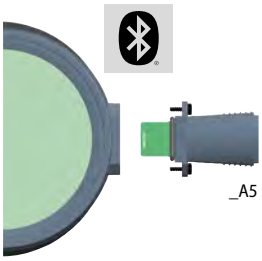

_A5

Type		A2	A3	A4	A5
49K 49 8954	Interface adapter	eShop	(eShop)	(eShop)	eShop

Mitutoyo Wireless transmission U-WAVE fit

Wireless data transmission system U-WAVE fit.

Connection module and transmitter

- Direct connection of the transmitter to the rear of the measuring instrument - no annoying cables.
- Reliable data transfer confirmation by signal beep or red/orange/green LED signal.
- Range approx. 20 metres (in a line of sight)
- Outstanding battery life: 400,000 data transmissions using just one battery.

49 8893/8894 – Compatible with the optional **HCT** (Hoffmann Group Connected Tools) app. Available free of charge for Android and iOS.

Note: Please order the connection module and transmitter.

Type		ST	IP	DG
44A 49 8885	Connection module	(eShop)	(eShop)	(eShop)
Suitable for:		Standard vernier caliper	IP67 vernier caliper Coolant Proof IP65 external micrometers	Dial indicators No. 434065, 434461, 434622

Type		IP67	BUZZ
44A 49 8890	U-WAVE-TC transmitter **for vernier calipers**	eShop	(eShop)
44A 49 8892	U-WAVE-TM transmitter **for outside micrometers and dial indicators**	(eShop)	eShop
44A 49 8893	U-WAVE-TCB transmitter **with Bluetooth® for calipers**	eShop	(eShop)
44A 49 8894	U-WAVE-TMB transmitter **with Bluetooth® for outside micrometers and dial indicators**	(eShop)	(eShop)
Feedback		LED	Audible signal / LED
Suitable for: (49 8890, 49 8893)		IP67 vernier caliper / standard vernier caliper 100, 150, 200, 300 mm	
(49 8892, 49 8894)		Coolant Proof IP65 external micrometers / dial indicators No. 434065, 434461, 434622	

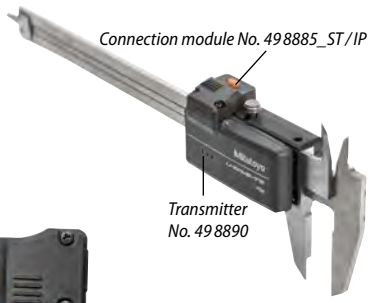
Receiver

U-WAVE-R data receiver with U-WAVE PAK software. A maximum of 100 transmitters can be connected.

Suitable for: Transmitters No. 498890 and 498892.

Supplied with: Supplied with 1 m USB cable.

Type			REC
44A 49 8895	U-WAVE-R receiver **incl. U-WAVE-PAK software**		(eShop)
Length		mm	140
Width		mm	80
Height		mm	31.6
Weight		g	130




49 8885_ST / IP



49 8890


49 8885_DG



49 8894



49 8893


49 8895

TESA TLC-BLE wireless transmitter / receiver

49 8921 – The TESA TLC wireless system enables wireless transmission of measurement data, using Bluetooth. Compatible with the optional HCT (Hoffmann Group Connected Tools) app. Available free of charge for Android.

49 8922 – Wireless receiver supplied with 2-metre cable for improved reception, e.g. for when the computer is underneath a worktable.

49 8922/8923 – The TESA TLC wireless system enables wireless transmission of measurement data, using Bluetooth.

Suitable for:

49 8922 – TESA wireless transmitter No. 498921.

49 8921/8923 – TESA calipers No. 412765; 412766; 412785; 412786; 415357; 415358; 418695; 418697. Height gauges No. 445240; 445245; 445285; 445287; 445290; 445441.

Supplied with:

49 8922 – Supplied with 2-metre cable.

49 8923 – Starter set consisting of 498921 BT, 498922 DONGLE and a 2-m cable.

Note: Free-of-charge download of TESA DATA-VIEWER measurement software from www.tesatechnology.com for easy transmission, analysis and saving of measurement results. For Android and iOS.

Type		BT	DONGLE	START
45C 49 8921	TLC-BLE wireless transmitter	eShop	–	–
45C 49 8922	Wireless receiver	–	eShop	–
45C 49 8923	TLC-BLE starter set	–	–	eShop


49 8921


49 8922


49 8921

TESA Link Connector TLC

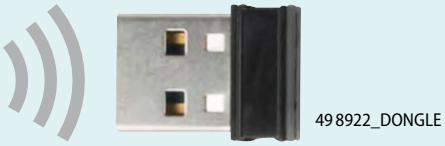
TLC-TWIN measurement device
The TLC-BLE wireless transmitter can be retrofitted at any time in place of the battery compartment cover.



49 8921_BT

Measurement software
Free-of-charge download of TESA DATA-VIEWER measurement software from www.tesatechnology.com.

USB Dongle wireless receiver
Compact USB wireless receiver, can be connected to up to 8 measurement devices.


49 8922_DONGLE

V-MUX Dongle

HCT

Dongle with software (in German and English) for easy integration of several tools into CAQ systems under Windows 10 and 11.
Communication is performed with EUROmux protocol or MUX10 / MUX50 / Dmx16.
Connects measuring devices that are connected to a PC via USB, Bluetooth® or other radio technology.
Brecht hardware multiplexers (498902; 498904) can be incorporated as a data source.
Foot switch No. 498903 can also be incorporated.

Suitable for: GARANT HCT, HOLEX HCT, Mahr i-wi (calipers, dial indicators, external micrometers), TESA TLC, Mitutoyo U-Wave Bluetooth, Sylvac Bluetooth.



49 8989

Type		DONGLE
49H 49 8989	V-MUX Dongle	–

HCT

HCT Windows app software

The HCT worker guidance system to work through your workflows efficiently, integrate them into production processes and take care of documentation automatically, quickly and accurately.

- Connect up to 16 different HCT devices to a PC simultaneously via Bluetooth®.
- Simple to create and work through work plans.
- Images and live measurements for each work step guide the user through the workflow.
- Data is sent from the HCT Windows app to the HCT measurement equipment and generated readings are transferred to the computer. The workpiece's serial number is linked directly and automatically to the associated measurement value.
- Measured data is transmitted to e.g. CAQ systems (MUX50, DMX16, Open Protocol, CSV and DFQ)
  Setting Bench function: Wireless data transmission of the configured pre-set values (nominal dimensions) including tolerances to the GARANT HCT dial indicator via HCT.

Suitable for: **GARANT** No. 655010; 659021; 654410; 412781; 412783; 418685; 434336; 434342; 421575.
HOLEX No. 655025; 412790; 412792; 418743; 434008.
Stahlwille No. 655015; 655017.

Supplied with: USB wireless dongle.

Note: **GARANT** No. 412781 and 434336 as from measuring tool firmware version R 5.

https://hog.tools/win-app-hct


Application example.

Type		STICK
49H 49 8999	Wireless receiver for HCT Windows app	eShop

HID

HCT

HCT smart dongle

Radio receiver that connects various HCT tools to the PC without the need for software.
Set it up once and then use it on any computer.

- Very reliable connection with HCT tools using only the USB port on the computer.
- Measurement values can be uniquely assigned via freely selectable names.
- Simple configuration via MS Excel without the need for additional software.
- No need for authorisation to install software on the computer.

Suitable for: **GARANT** No. 655010; 654410; 412781; 412783; 418685; 434336; 434342; 421575; 415371; 415373.
HOLEX No. 655025; 412790; 412792; 418743; 434008.

Supplied with: USB wireless dongle.

Note: **GARANT** No. 412781 and 434336 as from measuring tool firmware version R 5.



49 8998

Type		STICK
49H 49 8998	HCT smart dongle	eShop

HID HCT HCT

HCT

GARANT FootSwitch HCT

Non-contact transmission of measurement values – no impact on the measurement set-up.

- **Radio receiver integrated into Footswitch for simple and reliable connection of HCT measuring tools to different workstations and computers.**
- Simple configuration via MS Excel without the need for additional software.
- No need for authorisation to install software on the computer.
- Very reliable connection with HCT tools using only the USB port on the computer.
- Measurement values can be uniquely assigned via freely selectable names.
- **The Footswitch can trigger the transmission of measurement values either in parallel or sequentially.**



49 8997

Type		FS
49H 49 8997	GARANT Footswitch HCT	eShop

Wireless transmission

The Bobe system allows wireless transmission of measured data to the PC at the press of a button.

Note:	**When ordering the transmitter and receiver please specify the required frequency.** **Available frequencies:** 433.920 MHz 434.075 MHz 434.600 MHz 434.700 MHz 868.300 MHz 869.750 MHz 869.800 MHz 869.9250 MHz



49 8985

Transmitter

Transmitters **without** external antennas. Range 10 – 15 m. Very small size.
Size suffix E: With data button on the transmitter.

Note:	**Other transmitters** for other measuring tools and measuring devices from GARANT, Mahr, Mitutoyo, Kröplin, Tesa, Sylvac, etc. are available on request.



Type		S1	S2	S121	S4E	S11E	S16E	S73
49H 49 8985	Transmitter	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Suitable for:		Mitutoyo vernier callipers, dial indicators (except No. 434065; 434461; 434622)	Mitutoyo micrometers, Kröplin external/internal sensors (6-pin)	TESA TLC	Mahr EX series	Mitutoyo IP calipers	Mitutoyo IP micrometers	Sylvac Proximity, GARANT calipers (from 08/2018)

Receiver

Buzzer and LEDs for confirmation of receipt at the receiver. A maximum of 99 transmitters can be received.

49 8975 – Multi-receiver for various radio systems. Signals can be received from measuring tools with inbuilt transmitters such as i-wi (Mahr) or Bluetooth® Sylvac.
A maximum of 8 transmitters can be received in each case.

Supplied with: USB cable.



49 8975

Type		BOX
49H 49 8965	Receiver / USB keyboard interface	(eShop)
49H 49 8975	Multi-receiver / USB keyboard interface	(eShop)

Wireless receiver

USB stick for receiving a wireless system for wireless transmission of measurement data from the measuring instrument to the PC.

49 8914–8952 – **No additional software required.**

Supplied with:

49 8912 – MarCom driver software.



49 8914



49 8915

Type			STICK
49H 49 8914	BOBE	Wireless receiver for Mahr i-wi	eShop
49H 49 8915		Wireless receiver for TESA TLC	(eShop)
46B 49 8952	Bowers	Bluetooth® wireless receiver for Bowers	–
43A 49 8912	Mahr	Wireless receivers for Mahr i-wi	eShop ■



49 8912



49 8952

Mahr i-wi – integrated wireless

i-wi measurement device
The radio transmitter is incorporated in the measurement device.
No untidy cables to the transmitter.



Measurement software
Supplied with MarCom software.

i-Stick radio receiver
Compact USB radio receiver, can be connected to up to 8 measurement devices.



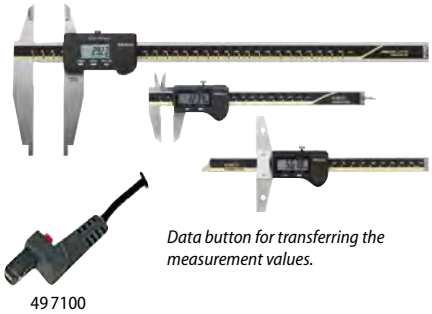
49 8912

Mitutoyo Connection cable for digital measuring tools

Suitable for: Calipers No. 412641; 412642; 412671; 415350; 418710; 418711,
Digital micrometer head No. 426510 size 0–50,
Internal quick measuring device No. 429250,
Dial indicators No. 434062 – 434090; 434460; 434540; 434551,
Height gauges No. 445135; 445152; 445222,
Protractor No. 454000.

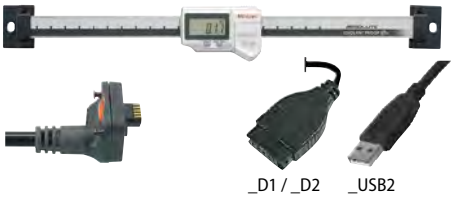


Type		D1	D2	USB2
44A 49 7080	Connecting cable	eShop	eShop	eShop
44A 49 7100	Connecting cable **with data switch**	eShop	eShop	eShop
Power supply		Digimatic	Digimatic	USB
Length	m	1	2	2



Data button for transferring the measurement values.

Suitable for: For calipers with **IP protection.**
Calipers No. 412628; 415354; 415400.
Scale unit No. 499401.



Type		D1	D2	USB2
44A 49 7085	Connecting cable **with data switch**	eShop	eShop	eShop
Power supply		Digimatic	Digimatic	USB
Length	m	1	2	2

Suitable for: Micrometer (6-pin) No. 421560, external and internal quick measuring devices in conjunction with interface adaptor No. 498954 A2.



Type		D1	D2	USB2
44A 49 7440	Connecting cable	eShop	eShop	eShop
Power supply		Digimatic	Digimatic	USB
Length	m	1	2	2

Suitable for:

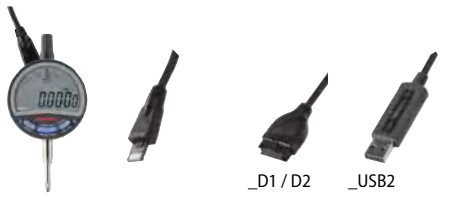
49 7445 – External and internal micrometers No. 421525; 421527; 421558; 421572; 421590; 421608 – 421675; 425400; 426510 size 0–25; 426850; 429110.

49 7447 – External micrometer No. 421573.



Type		D1	D2	USB2
44A 49 7445	Connecting cable **with data switch**	eShop	eShop	eShop
44A 49 7447		eShop	eShop	eShop
Power supply		Digimatic	Digimatic	USB
Length	m	1	2	2

Suitable for: Dial indicators No. 434065; 434461 and 434622.



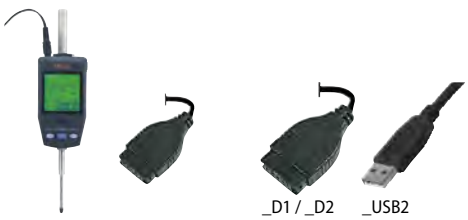
		D1	D2	USB2
44A 49 7081	Connecting cable	eShop	eShop	eShop
Power supply		Digimatic	Digimatic	USB
Length	m	1	2	2

Suitable for: Dial indicators No. 434410.



Type		D1	D2	USB2
44A 49 8428	Connecting cable	(eShop)	eShop	(eShop)
Power supply		Digimatic	Digimatic	USB
Length	m	1	2	2

Suitable for: Indicators No. 434621; 434651,
Height gauges No. 445231; 445232.



Type		D1	D2	USB2
44A 49 8430	Connecting cable	eShop	eShop	eShop
Power supply		Digimatic	Digimatic	USB
Length	m	1	2	2

Connection cable for digital measuring tools

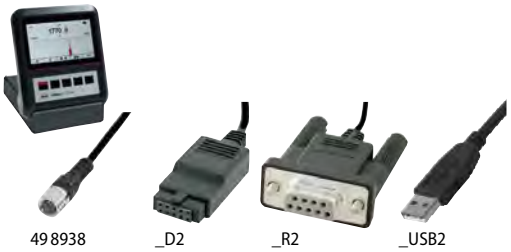
Suitable for: Calipers No. 412765; 412766; 412785; 412786; 415357; 415358; 418695; 418697. Length measurement device No. 434716.

Type			D	USB
45C 49 8918	TESA	Data cable TLC, 2 m	eShop	eShop
45C 49 8928	TESA	Data cable TLC, 3 m	–	eShop
Power supply			Digimatic	USB
Length (49 8918)		m	2	
Length (49 8928)		m	–	3



Suitable for: Length measuring tools No. 434707. Height gauges No. 445320.

Type			D2	R2	USB2
43A 49 8938	Mahr	Connection cable	eShop	(eShop)	eShop
Power supply			Digimatic	RS232	USB
Length		m	2		



Suitable for:

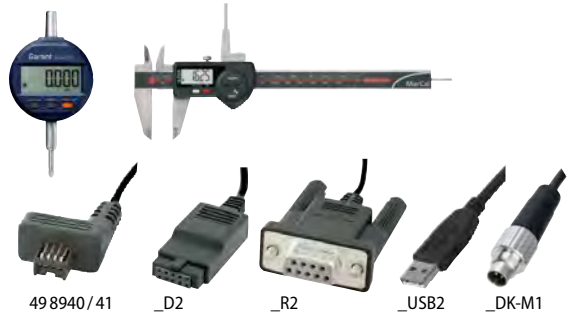
49 8940 – Calipers No. 412516; 412518; 412728; 412729; 412742 – 412755; 415320; 415322; 415546; 415551; 415555; 418686 – 418702; 418751,
External micrometers No. 421304; 421306; 421320; 421680 – 421686; 428930,
Dial indicators No. 434000 – 434024; 434312; 434318; 434324;
Height gauge No. 445000.

49 8941 – External micrometers No. 421318; 421328; 421602; 421681; 421683; 421685; 421687; 421321.
Dial indicators No. 434671; 434304; 434306; 434311; 434315; 434317; 434319; 434325; 434660; 434661.
Internal micrometers and internal quick measuring devices No. 428931 – 428934.

Size USB2 – Roughness measuring tools No. 499002; 499003.

Size DK-M1 – Height gauges No. 445355; 445375; 445325.

Type			R2	D2	USB2	DK-M1
43A 49 8940	Mahr	Connection cable **simplex with data key**	eShop	eShop	eShop	–
43A 49 8941	Mahr	Connection cable **bi-directional with data key**	–	eShop	eShop	(eShop)
Power supply			RS232	Digimatic	USB	Mini-5-pin
Length		m	2	2	2	0.4



Connecting cable communicates via a COM-POT interface and requires appropriate software, e.g. the free software Vmux LITE from Sylvac.

Suitable for: Calipers No. 412616; 412618; 412680; 412682; 412690; 412692; 415541; 418682,
Internal quick measuring devices No. 428602; 428652; 428702; 428752,
Dial indicators No. 434110; 434210; 434330; 434334; 434336; 434340; 434342.

Size USB2 – Caliper No. 415365; 415366.

Type			R2	USB2
41M 49 8948	sylvac	Connection cable	eShop	eShop
Power supply			RS232	USB
Length		m	3	



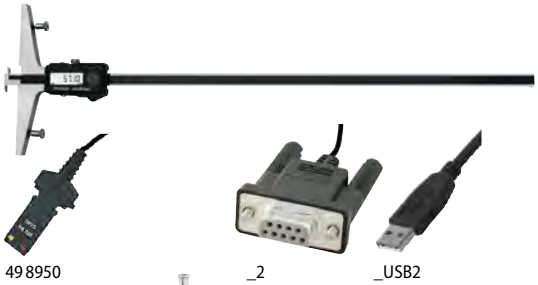
sylvac Connection cable for digital measuring tools

Suitable for: Caliper No. 418770,
Internal quick measuring devices No. 428761 (from size 20).

Supplied with:

Size USB2 – Including CD with driver software.

Type			2	USB2
46A 49 8950	Connection cable Duplex		eShop	eShop
Power supply			RS232	USB
Length		m	2	



Suitable for: Internal quick measuring devices No. 428760 (up to size 20),
Small dial indicators and lever dial indicators No. 434031; 434036; 436501; 436506.

Supplied with:

Size USB2 – Including CD with driver software.

Type			R2	USB2
46A 49 8951	Connection cable Duplex		eShop	eShop
Power supply			RS232	USB
Length		m	3	



5 Innovations – Grinding and cutting

NEW

We use this symbol to tag new items in our range of catalogue products



Page **301**
GARANT CaraFin diamond polishing bodies for GARANT vibratory finishing machine GMT2



Page **302**
GARANT GreenPlus Compound UNI



Page **320**
GARANT Master UNI mini burrs with 3 mm shank



Page **327**
GARANT mini burr set Master UNI with 3 mm shank



Page **355**
3M fleece abrasive discs HD-DR



Page **362**
HOLEX universal abrasive cleaner aluminium oxide and silicon carbide



Page **364**
GARANT CaraFin polishing pads D64, D126, D151



Page **378**
GARANT Master UNI rough grinding discs



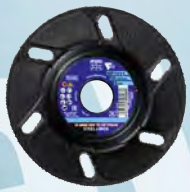
Page **381**
GARANT Master UNI cutting discs



Page **394**
Lukas grinding disc (PG Easy CeramicPS CER)



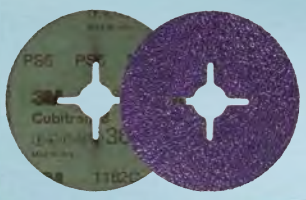
Page **394**
Pferd grinding disc CC-GRIND-Robust SGP STEELOX



Page **394**
Pferd grinding disc CC-GRIND-View SGP STEELOX



Page **395**
Lukas compact grinding disc U-Edge Pro (ZA)



Page **397**
3M Cubitron™ 3 fibre discs grit 60 and 80



Page **410**
GARANT hook and loop backing pad



Page **410**
GARANT protective pads



Page **439**
Bosch Expert circular saw blades Ø136 mm



Page **446**
Lenox sabre saw blades



Page **447**
Bosch Pro sabre saw blade THIN METAL



Page **447**
Bosch Expert hole saws SHEET METAL

Grinding and cutting

STARCKE 3M DICK vallorbe LUKAS PFERD TYROLIT LESSMANN LENOX MIRKA

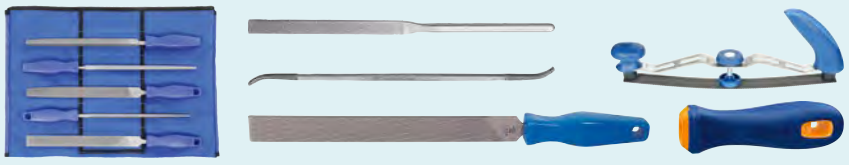
The whole catalogue for these brands is available from the Hoffmann Group – just ask us!



Garant Garant GREENPLUS

Vibratory finishing machines, grinding bodies, compounds

50 298 – 302



Garant DICK PFERD vallorbe HOLEX

Engineer's files, precision files, Valtitan files, needle files, riffler files, Habilis files, diamond files, wood rasps, file handles

51/52 303 – 317



Garant LUKAS PFERD HOLEX

Carbide burrs, HSS burrs, engraving burrs

54 318 – 331



Garant LUKAS TYROLIT AVSM PFERD 3M KYOCERA STARCKE HOLEX

Grinding points, polishing tools, abrasive caps, small abrasive discs, flap wheels, fleece rollers, fleece pads, abrasive sponges, abrasive paper, abrasive cloth economy rolls, linishing belts, hones, whet stones

55 332 – 377

5



Garant LUKAS TYROLIT AVSM PFERD 3M MIRKA STARCKE HOLEX

Rough grinding / cutting / diamond discs, flap discs, fibre-based grinding discs, coarse cleaning discs, fleece abrasive discs, velour-backed abrasive discs, burnishing belts, burnishing rollers, burnishing brushes, compact discs

56 378 – 415



Garant 3M LESSMANN HOLEX

Technical machine brushes, hand brushes

57 416 – 430



Garant PUK BOSCH LENOX Tajima HOLEX

Hand saws, hand saw blades, jig saw blades, sabre saw blades, circular saw blades, hole saws

58 431 – 449



TYROLIT

Precision grinding wheels, bench grinder wheels, dressing tools

59 450 – 461

Garant Vibratory finishing machine

Mobile vibratory finishing machine GMT35 in **compact design,** for automated finishing work on **small to medium batch sizes.**

- Powerful motor.
- Steel trough (35 l) with 15-mm polyurethane lining.
- Integrated separating station for automated separation of workpiece and grinding medium.
- Closed water circuit with wastewater treatment.
- Controlled via touch screen.
- Individual processing steps can be programmed.
- Machine with soundproof cover and lid.
- Rollers on the underside for easy transportation.

Application: The preferred choice for **deburring turned and milled parts** and **3D-printed** workpieces. Suitable for **metals** and **plastics**. This machine can also handle the subsequent steps of **polishing** and **cleaning**.

Supplied with: 1× vibratory finishing machine with integrated separating station, water circuit and PLC control,
1× transport trolley (No. 918558 TNB1),
2× small storage boxes (No. 964486 EF4220),
1× large storage box (No. 964486 EF4320),
2× dividers (aluminium, plastic),
2× measuring jugs,
1× hand shovel,
3× separating sieves with different hole patterns.

Note:	Unavailable in some countries. Express delivery not available

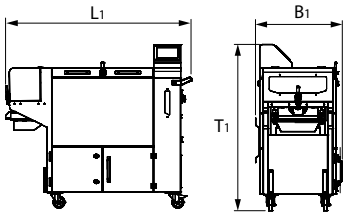


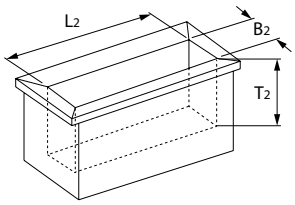

Control unit


Work container (can be partitioned)


Wastewater treatment


Separation station





		GMT35
51B **50 1305**	Vibratory finishing machine (35 litres) with trolley	–
Length of machine L_1	mm	1565
Width of machine W_1	mm	710
Depth of machine D_1	mm	1385
Inner length of trough L_2	mm	590
Inner width of trough W_2	mm	180
Inner depth of trough D_2	mm	300
Volume of trough	l	35
Volume of water tank	l	45
Speed range	min^{-1}	1500 – 3000
Weight	kg	350
Power consumption	W	700
AC supply voltage	V	230
Mains frequency	Hz	50

Garant Vibratory finishing machine

Vibratory finishing machine GMT2 in **compact design,** for automated finishing work on **small to medium batch sizes.**

- Powerful motor with defined speed range.
- Steel trough (2 l) with polyurethane coating.
- Removable separating station for manually separating the workpiece and grinding medium.
- Effortless separation thanks to ergonomic tipping mechanism.
- Intuitive to control via control panel with timer function.
- Quiet, dust-free working thanks to transparent cover.

Application: The preferred choice for **deburring turned and milled parts** and **3D-printed** workpieces. Suitable for **metals** and **plastics**. This machine can also handle the subsequent step of **polishing**. **Only dry machining is recommended (no compound required).**
For wet machining, we recommend our GARANT GreenPlus Compound UNI (No. 501600 UNI).

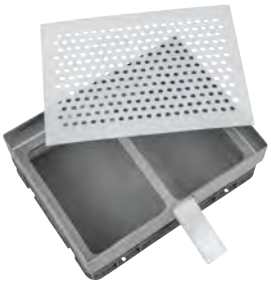
Supplied with: 1x vibratory finishing machine with control panel and removable separating station
1x separating screen with 10 mm hole grid
1x separating screen with 18 mm hole grid
1x ceramic grinding bodies (3 kg), triangular, coarse (No. 501505 0606T)
1x ceramic grinding bodies (3 kg), triangular (oblique), coarse (No. 501515 1015TA)
1x ceramic grinding bodies (3 kg), cylinder (oblique), coarse (No. 501525 0305CA)
1x porcelain grinding bodies (3 kg), cylinder (oblique), polishing (No. 501585 0406CA)
1x storage box (No. 964486 EF4070)
1x GARANT GreenPlus Flex Cleaner 500 ml (No. 088001 500)
1x 3M high-performance cleaning cloth (No. 089190 BLUE)



Ergonomic tipping mechanism



Recessed handle



Removable separating station with stainless steel base body.



50 1310



Control panel with start/stop timer function

Type		GMT2
51B **50 1310**	Vibratory finishing machine (2 litres) with separating station	–
Length of machine L_1	mm	750
Width of machine W_1	mm	400
Height of machine	mm	285
Inner depth of trough D_2	mm	85
Volume of trough	l	2
Inner ∅ of trough	mm	100
Outer ∅ of trough	mm	220
Speed range	min^{-1}	3000
Total weight	kg	20
Power consumption	W	50
AC supply voltage	V	230
Mains frequency	Hz	50

Garant VIBRATORY FINISHING MACHINES

A simple solution for any requirement.
Post-processing of workpieces made using additive manufacturing:



A

Garant Ceramic grinding bodies

Ceramic grinding bodies (aluminium oxide abrasive grit bonded in ceramic) are the **most widely used mass finishing tools** and are **suitable for universal use**. **Very dense** and **excellent abrasive effect.**

50 1505–1530 – High-performance version for **fast machining.** Low self-abrasion, long service life.

Application: For **fast deburring and rounding** of edges and as a **preliminary stage for polishing steel, stainless steel** and other **steel alloys.** Also suitable for rough machining on plastic and non-ferrous metals, with the risk that the grinding bodies clog faster, which reduces their abrasive effect.

50 1505/1510 – The **triangular** shape is the **sturdiest version** with the longest service life. Ideal for rough **edge machining** on workpieces with a **simple geometry.**

50 1515/1520 – The **triangular (oblique)** shape is the most universal shape.

50 1525–1535 – **Cylinder (oblique)** shape, ideal for surface preparation (flat, free-form surface).



	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
50 1505–50 1535	○	●	●	●	●	●	●	●	●	●	○					●	●	



Type			0606T	1010T	2020T	Contents kg
58F 50 1505	Ceramic grinding bodies **Triangular**	**coarse**	–	–	–	3
58F 50 1510		**coarse**	–	–	–	25
Length		mm	6	10	20	
Height		mm	6	10	20	



Type			1010TA	1015TA	1525TA	2020TA	Contents kg
58F 50 1515	Ceramic grinding bodies **Triangular (oblique)**	**coarse**	–	–	–	–	3
58F 50 1520		**coarse**	–	–	–	–	25
Length		mm	10	15	25	20	
Height		mm	10	10	15	20	



Type			0305CA	0510CA	0815CA	1020CA	1530CA	Contents kg
58F 50 1525	Ceramic grinding bodies **Cylinder (oblique)**	**coarse**	–	–	–	–	–	3
58F 50 1530		**coarse**	–	–	–	–	–	25
58F 50 1535		**medium**	–	–	–	–	–	25
Length		mm	5	10	15	20	30	
Diameter		mm	3	5	8	10	15	

Garant Porcelain grinding bodies

Porcelain grinding bodies (without abrasive grit) have **no** removal effect.

Application: For **polishing** and **smoothing all materials.** Creates **homogeneous, shiny surfaces.** Ideal as a follow-up step after pre-grinding with ceramic grinding bodies and plastic grinding bodies.



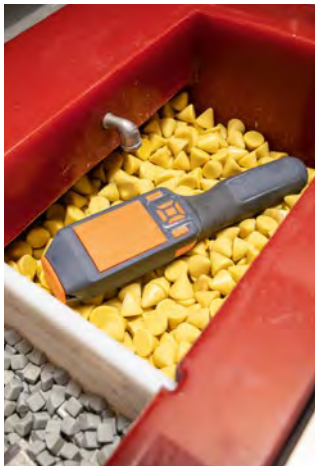
	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
50 1585/1590	●	●	●	●	●	●	●	●	●	●	●	●					●	



Type			0205CA	0406CA	0715CA	Contents kg
58F 50 1585	Porcelain grinding bodies **Cylinder (oblique)**	**Polishing**	–	–	–	3
58F 50 1590		**Polishing**	–	–	–	25
Length		mm	5	6	15	
Diameter		mm	2	4	7	

A

Garant Plastic grinding bodies



Plastic grinding bodies (aluminium oxide abrasive grit bonded in plastic) have a **low density** and a **softer substrate.**
This enables **gentle processing** and the **grinding bodies do not become clogged.**
Significantly **lower abrasive effect** compared to ceramic grinding bodies.
50 1561/1567/1570 – Higher abrasive performance due to coarser grit.
50 1565/1575 – Finish grinding to polishing.

Application: For **fine grinding** and for **light deburring work** on soft materials such as **aluminium, copper** and **plastic.**
Achieves very high surface quality with a matt sheen.
50 1561/1565 – **Taper** form for workpieces with **bores and contours.**
50 1567–1575 – **Pyramid** form for workpieces with **corners and recesses.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
50 1561–50 1575	●										●	●					●	



Type			1010K	1919K	1010P	2525P	Contents kg
58F 50 1561	Plastic grinding bodies **Taper**	coarse	–	–	–	–	25
58F 50 1565		medium	–	–	–	–	25
58F 50 1567	Plastic grinding bodies **Pyramid**	coarse	–	–	–	–	3
58F 50 1570		coarse	–	–	–	–	25
58F 50 1575		medium	–	–	–	–	25
Width		mm	10	19	10	25	
Height		mm	10	19	10	25	

50

D

Garant CaraFin diamond polishing bodies

Diamond polishing bodies (diamond bound in EVA-PU) have micro-abrasive removal properties.
For polishing, smoothing and cleaning all materials. Creates shiny surfaces.
Ideal as a follow-up step after pre-grinding with ceramic grinding bodies and plastic grinding bodies.
Safely removes microburrs on non-ferrous metals and aluminium. A long service life of the polishing bodies is guaranteed, since the diamond is directly bonded to the EVA-PU and therefore the diamond material cannot break off when used correctly. If the polishing bodies are heavily soiled, they can be cleaned with water and cleaning agents.

Application: For use in our **GARANT vibratory finishing machine GMT2 (No. 501310 GMT2).**
Supplied with: Contains enough diamond polishing bodies for a complete filling of the GARANT vibratory finishing machine GMT2.



CaraFin diamond polishing bodies in GMT2

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
50 1595	●	●	●	●	●	●	●	●	●	●	●	●						●



Type			D10	D1
55A 50 1595	CaraFin diamond polishing bodies	**Polishing**	–	–
Polishing stage			Final polishing	Mirror finish
Length		mm	10	
Width		mm	10	
Height		mm	5	

Garant Compound without hazard labels – powerful and safe

GARANT GreenPlus Compound UNI: for safer handling of your vibratory finishing machine. 5–7% of the liquid compound without hazard labels is added during the wet process in vibratory finishing machines. The probiotic ingredients and regular operation of the vibratory finishing machine ensure long service lives and less waste. Changing the process water after approx. 80 machine hours or 4 weeks is recommended. Any odours are prevented and the service life extended by adding an additional 1% of the compound. Protects employees, the environment and makes storage simpler by doing away with corrosive ingredients.

- Universally suitable for all ferrous metals and NSF-certified.
- It boosts the grinding performance and effectively cleans workpieces and grinding bodies.
- Corrosion protection ensures safety.

Application: Only add the compound to the process water in the water tank in the specified dose. The measuring jug supplied with the vibratory finishing machine facilitates correct dosing. Also very well suited for use in our GARANT vibratory finishing machine GMT2 (No. 501310 GMT2).



50 1600

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
50 1600	○	●	●	●	●	●	●	●	●	●	○					●	●	

Type			UNI
58F 50 1600	GARANT GreenPlus liquid treatment agent, 5 l **Steel, stainless steel**	**Grinding and polishing**	–
pH value		%	7.6
Dosage		%	5 – 7

Garant Compound

Compounds (liquid treatment agents / treatment agents in powder form) are added during the wet process in vibratory finishing machines. They **will improve the grinding performance** and **clean workpieces** and **grinding bodies.**

50 1650/1655 – With **corrosion protection** for all ferrous metals.

Application: Only add the compound to the process water in the water tank in the specified dose. The measuring jug supplied with the vibratory finishing machine facilitates correct dosing.

Note: Unavailable in some countries. Express delivery not available.



50 1660

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
50 1650–50 1657	○	●	●	●	●	●	●	●	●	●	○					●	●	
50 1660	●							○									●	
50 1665	○							○			●						●	
50 1670												●					●	

Type			UNI	SHINY	ALUMINIUM	COPPER	PLASTIC	CLEAN
58F 50 1650	Liquid treatment agent, 5 l **Steel, stainless steel**	**Grinding and polishing**	–	–	–	–	–	–
58F 50 1655		**High gloss mirror finish**	–	–	–	–	–	–
58F 50 1657	Treatment agent in powder form, 5 kg **Steel, stainless steel**	**Grinding and polishing**	–	–	–	–	–	–
58F 50 1660	Liquid treatment agent, 5 l **Aluminium, zinc**	**Grinding and polishing**	–	–	–	–	–	–
58F 50 1665	Liquid treatment agent, 5 l **Copper, brass**	**Grinding and polishing**	–	–	–	–	–	–
58F 50 1670	Liquid treatment agent, 5 l **Plastics**	**High gloss mirror finish**	–	–	–	–	–	–
pH value		%	7.6	7.6	9.5	3.3	8.6	12
Dosage		%	5 – 7	5 – 7	3 – 5	2 – 4	2 – 4	2 – 3

Pictograms

General	DIN 7261 To DIN	80 m/s Maximum circumferential speed	22.23mm Bore ∅ 22.23 mm	M14 M14 thread mounting	20-30° Recommended grinding angle	90° Vertical cut	Fe,S,Cl <0.1% Iron, sulphur, chlorine content < 0.1 %
Grinding wheel form	Form 41 (straight)	Form 42 (depressed centre)	Flat form	Dished form	Overlap between strips	Radial arrangement of strips	
Type of abrasive	A Aluminium oxide	ZA Zirconium aluminium oxide	SiC Silicon carbide	CER Ceramic grit	D Diamond	CBN Cubic boron nitride	
Material suitability	S/STL Stainless steel	Steel Steel	ALU Aluminium	Non-ferrous Metals Non-ferrous metals	Cast iron Cast iron	CRP/ GRP Fibre-reinforced plastics	

DIN 7261

DICK Workshop file set

The blanks are forged and ground; manufactured with an exact cut of even density and depth using special machines. These **non-convex files** have tooth profiles appropriate to each grade of file.
To protect the files, the set is arranged in a **strong transparent roll-up nylon wallet**.
Protected files cannot be contaminated and the cut is protected against damage; this ensures a consistently high removal rate, smooth file surfaces, and an extended working life.

Application: **Quality file** for workshop use with long tool life and high removal rate.

Bastard = Cut 1
2nd cut = Cut 2
Smooth = Cut 3

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
51 7100–51 7600	○	●	●	●	○			○		●	●	●	●					

Sets of files with plastic handle, wooden handle

51 7240 – With hardwood file handle.
51 7100/7200/7300 – With impact resistant plastic handles.

Supplied with: **5-piece** set of files with one each **flat, 3-square, square, half-round and round file.**

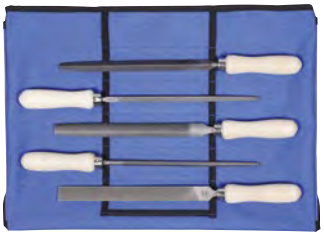




51 7100 / 7200 / 7300

flat | 3- square | square | half round | round

Length without tang	mm	200	250	300
56B 51 7100	Set of engineer's files, 5 pieces, in a tool roll **Cut 1**	eShop	eShop	eShop
56B 51 7200	Set of engineer's files, 5 pieces, in a tool roll **Cut 2**	eShop ■	eShop	eShop
56B 51 7240	Set of engineer's files, 5 pieces, in a tool roll **Cut 2, with wooden handle**	eShop	eShop	–
56B 51 7300	Set of engineer's files, 5 pieces, in a tool roll **Cut 3**	eShop	eShop	eShop



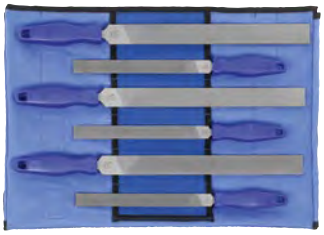
51 7240

With impact resistant plastic handles.

Supplied with: **6-piece** set of files with one each **flat file** in bastard - 2nd cut - smooth in 200 mm and 300 mm length.

flat

56B 51 7600	Flat files set, 6 pieces, in a tool roll	eShop



51 7600

DIN 7261

Sets of files with ergonomic file handle

With ergonomic 2-component plastic handles.

Supplied with:

51 7417 – **6-piece** file set with one each of **flat, half-round and round rasp for wood,** and one each of **flat, half-round and round file for metal.**

51 7411–7415/7419–7426 – **5-piece** set of files with one each **flat, 3-square, square, half-round and round file.**



51 7411



51 7417



51 7415



51 7419_250

flat | 3- square | square | half round | round

Length without tang				mm	200	250	300
56B	51 7411	DICK	File set with 2-component handle, 5 pieces in a tool roll **Metal**	Cut 2	eShop	eShop	eShop
55B	51 7415	PFERD		Cut 2	eShop	eShop	eShop
56B	51 7417	DICK	File set with 2-component handle, 6 pieces in a tool roll **Metal/wood**	Cut 2	–	eShop	–

Length without tang				mm	200	250
52A	51 7419	HOLEX	File set with 2-component handle, 5 pieces in a tool roll	Cut 1	eShop	eShop
52A	51 7420			Cut 2	eShop ■	eShop ■
52A	51 7426			Cut 3	eShop	eShop

DIN 7261

Engineer's files

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
51 0100–51 4300	○	●	●	●	○			○		●	●	●	●					

Form A



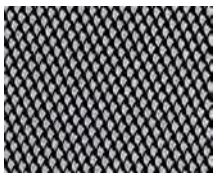
51 0200

Cuts on 3 faces; square end.



51 0201

Length without tang					mm	100	150	200	250	300	350
56B	51 0100	DICK	Hand file	Cut 1 (bastard)		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop
56B	51 0200			Cut 2 (2nd cut)		eShop	eShop	eShop ■	eShop ■	eShop	eShop
56B	51 0201		Hand file with 2-component handle	Cut 2 (2nd cut)		–	–	eShop	eShop	eShop	–
56B	51 0300		Hand file	Smooth (cut 3)		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop
Cross section					mm	12×3	16×4	20×5	25×6.3	30×7	35×7.5



Full size
smooth, size 300.

Length without tang				mm	150	200	250
52A	51 0210	HOLEX	Hand file	Cut 2	–	eShop ■	eShop
52A	51 0220			Cut 3	eShop	eShop ■	–
Cross section				mm	16×4	19×5	24×5

Engineer's files with GARANT 2-part ergonomic file handle

Advantages:

- No need to knock the file into the handle.
- Files always fit exactly into foam inlays produced using the eForm on-line configurator.



Form C



51 1200

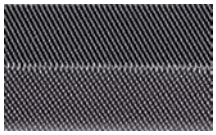


51 1201

Cuts on all faces; convex end.

Length without tang				mm	100	150	200	250	300
56B 51 1100	DICK	Three square file	Cut 1 (bastard)		eShop	eShop ■	eShop	eShop	eShop
56B 51 1200	DICK	Three square file	Cut 2 (2nd cut)		eShop	eShop	eShop	eShop	eShop
56B 51 1201	DICK	Three square file with 2-component handle	Cut 2 (2nd cut)		–	–	eShop	eShop	eShop
56B 51 1300	DICK	Three square file	Smooth (cut 3)		eShop	eShop ■	eShop	eShop	eShop
Width				mm	8.7	12	15	18	21

Length without tang				mm	150	200
52A 51 1210	HOLEX	Three square file	Cut 2		–	eShop
52A 51 1220	HOLEX	Three square file	Cut 3		eShop	eShop
Width				mm	11	13



Full size
smooth, size 300.

Form D



51 2200

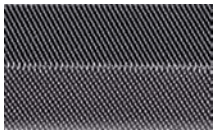


51 2201

Cuts on all faces; convex end.

Length without tang				mm	100	150	200	250	300
56B 51 2100	DICK	Square file	Cut 1 (bastard)		–	eShop ■	eShop	eShop	eShop
56B 51 2200	DICK	Square file	Cut 2 (2nd cut)		eShop	eShop	eShop	eShop	eShop
56B 51 2201	DICK	Square file with 2-component handle	Cut 2 (2nd cut)		–	–	eShop	eShop	eShop
56B 51 2300	DICK	Square file	Smooth (cut 3)		–	eShop ■	eShop	eShop	eShop
Width				mm	4	6	8	10	12

Length without tang				mm	200	250
52A 51 2210	HOLEX	Square file	Cut 2		eShop	eShop
Width				mm	7	9



Full size
smooth, size 300.

Form E



51 3200



51 3201

With helical cut; convex end.

Length without tang				mm	100	150	200	250	300	350
56B 51 3100	DICK	Half round file	Cut 1 (bastard)		eShop	eShop ■	eShop ■	eShop	eShop	eShop
56B 51 3200	DICK	Half round file	Cut 2 (2nd cut)		eShop	eShop	eShop	eShop	eShop	–
56B 51 3201	DICK	Half round file with 2-component handle	Cut 2 (2nd cut)		–	–	eShop	eShop	eShop	–
56B 51 3300	DICK	Half round file	Smooth (cut 3)		eShop	eShop	eShop	eShop	eShop	–
Cross section				mm	11×4	16×5	21×6	25×7	30×9	35×10

Length without tang				mm	150	200	250
52A 51 3210	HOLEX	Half round file	Cut 2		–	eShop	eShop
52A 51 3220	HOLEX	Half round file	Cut 3		eShop	–	–
Cross section				mm	16×5	20×5	23×6



Full size
bastard, size 300.

Form F



51 4200



51 4201

With helical cut; convex end.

Length without tang				mm	100	150	200	250	300
56B 51 4100	DICK	Round file	Cut 1 (bastard)		eShop	eShop ■	eShop	eShop	eShop
56B 51 4200	DICK	Round file	Cut 2 (2nd cut)		eShop	eShop	eShop	eShop	eShop
56B 51 4201	DICK	Round file with 2-component handle	Cut 2 (2nd cut)		–	–	eShop	eShop	eShop
56B 51 4300	DICK	Round file	Smooth (cut 3)		eShop	eShop	eShop	eShop	eShop
Diameter				mm	4	6.3	7.1	9.2	12

Length without tang				mm	150	200	250
52A 51 4210	HOLEX	Round file	Cut 2		–	eShop	eShop
52A 51 4220	HOLEX	Round file	Cut 3		eShop	–	–
Diameter				mm	5.5	7.1	9.2



Full size
bastard, size 300.

General-purpose files

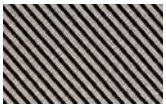
	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
51 5000/9280	●	●	○	●	○			○		●	●	●	●			

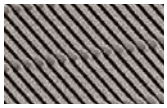
High performance / universal file

Hand files with corner radius profile teeth and wide chip breakers for easy, low force filing and very high metal removal rates no clogging of the teeth good filings clearance.
Flat faces with special cut, one side with filings breaker groove for highest removal rate. File with square end. Rear face with continuous cut for particularly fine finishing. File with plain end.

Size 100 – Mini general-purpose file, steel handle with PVC coating.
Size 200–300 – Plastic handle with hanging hole.

Enlargement of cut







_100



_200 / _250 / _300

Length without tang	mm	100	200	250	300
56B **51 5000** DICK Multi-purpose hand file with handle, special cut		eShop	eShop	eShop	eShop
Cross section	mm	10×4	20×5	25×6.3	30×6,5

4in1 general-purpose hand file

Versatile 4in1 general-purpose hand file with a **flat side** and a **half-round side,** each provided with two cuts.
File cut for plastics and soft metals, **rasp cut** for wood.

51 9280



Overall length	mm	200
52A **51 9280** HOLEX General-purpose hand file		eShop
Cross section	mm	19×5

DICK Special files

The blanks are forged and ground; manufactured with an exact cut of even density and depth using special machines. The finished files have an ideal tooth profile for each type of file. These special files guarantee smooth filed surface finishes. **Special files** are manufactured on precision automated machines. They **guarantee a high removal rate and long tool–life.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
51 8100–51 8300	●	●	●	●	○			○		●	●	●	○			

Form G | **DIN 7262**

Cuts on all faces; plain end.



51 8100

Length without tang	mm	200	250
56B **51 8100** Knife file cut 3 (smooth)		eShop	eShop
Cross section	mm	20×6.4	21.8×10.1

Form H | **DIN 7261**

Cuts on 2 sides with single cut (improved chip evacuation).



51 8200

Length without tang	mm	250	300
56B **51 8200** Lathe file cut 2 (2nd cut)		eShop	eShop
Cross section	mm	25×6.3	30×7

Cuts on 3 sides with cross cut, plain end.



51 8300

Length without tang	mm	150	200
56B **51 8300** Deburring file special cut for plastic		eShop	eShop
Cross section	mm	16×3	20×3.5

DIN 7264

Milled files with chip breaker

Milled files are characterised by the special **sharpness** of their teeth milled out of the solid with optimum chip grooves. This allows filings from soft and clogging materials to be cleared reliably. **Will not clog.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
51 9110/9160	●	○								○	●	●	●			
51 9120		●								●	●					
51 9130	●	●	○	○				●		●	●	●				

Form A

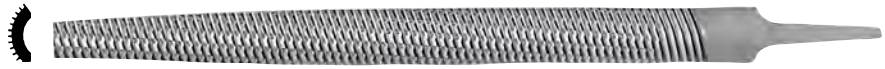
Parallel flat, milled on 3 sides.



Length without tang			mm	250	300	350	Tooth spacing approx. mm
56B 51 9110	Milled file, flat plain medium	coarse		eShop	eShop	eShop	3
56B 51 9120		medium		eShop	eShop	eShop	2
56B 51 9130		fine		–	eShop	–	1.5
Cross section			mm	26×7	31×7	36×7	

Form D

Half-round hollow, taper plain end, teeth only on the outer face.



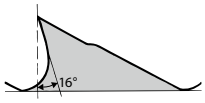
Length without tang			mm	250	300	Tooth spacing approx. mm
56B 51 9160	Milled file, half-round coarse	coarse		eShop	eShop	3
Cross section			mm	23×7	27×9	

51

PFERD Milled tooth files, teeth radially milled, flexible version

Teeth on both sides, milled radially from the solid; top side **convex** – this **prevents scratches** on the component from the edges of the file. The special tooth shape and the positive cutting angle ensure high filing performance.
Cuts convex on both faces.

Application: Suitable for working sheet metal, particularly in **car production**, **bodywork building** and **car body repairs. Using these milled tooth files, groove-free, smooth surface finishes are obtained which can be painted without polishing.**



Teeth milled from solid.


The convex cross section prevents the edges of the file damaging the workpiece whilst filing


Teeth as sharp as a knife due to special finishing process

Tooth type			1	2	3
53B 51 9200	Milled tooth file 350×36×4.7 mm		eShop	eShop	eShop
Grit designation			coarse	medium	fine
Tooth spacing approx.		mm	2.9	2.5	2.2

With flexible base and ergonomic handle. An adjusting screw allows the milled tooth file to be used flat or convex.

		KFH350
53B 51 9215	Adjustable blade holder for milled tooth file 350 mm	eShop


51 9215

Thread files for Vee-form threads

Each file with 8 different pitches. For finishing or cleaning external and internal threads. Overall length 230 mm.



Type			ISO	WW	UNF
56B 51 9250	Thread file		eShop ■	eShop	eShop
Thread pitch (ISO)		mm	0.8–1–1.25–1.5–1.75–2–2.5–3	–	–
Thread pitch (UNF-UNC)		threads/inch	–	–	24–20–18–16–14–13–12–11
Thread pitch (WW)		threads/inch	–	24–20–18–16–14–12–11–10	–
suitable for thread type			ISO	Whitworth	UNF-UNC

DIN 7283

Key files and contact file

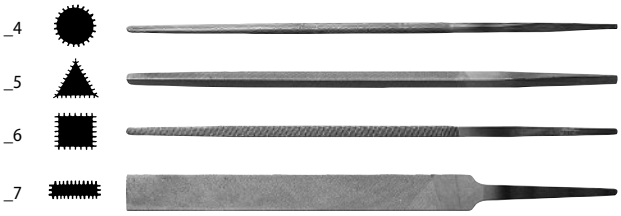
	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
51 8700–51 9000	●	●	○	○				○		●	●	●	●			

Key files 2nd cut

Key files are manufactured on precision automated machines. They **guarantee a high removal rate and long tool–life.** The blanks are stamped and ground and given a precise cut of even density and depth using special machines. The finished files have an ideal tooth profile for each type of file. Key files guarantee smoothly filed surface finishes.

Note: For file handles see No. 519600, 519400, 519510 and 519550.





Type		1	2	3	4	5	6	7
56B 51 8700	DICK Key file cut 2 **Length 100 mm**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
56B 51 8900	DICK Key file cut 2 **Length 150 mm**	eShop	eShop	–	–	–	–	–
Shape description		flat pointed	flat plain	half round	round	three- square	square	flat plain extra thin
Cross section (51 8700)	mm	10×1.4	10×1.4	9×2.5	3.2	5	3.2	10×0.8
Cross section (51 8900)	mm	16×1.8	16×1.8	–	–	–	–	–

Sets of key files

6-piece key file set with 1 each key file, flat tapered, hand, half-round, round, 3-square, square. Length without tang 100 mm, 2nd cut.

51 8975 – With 2-component plastic handle.
51 8930–8970 – With hardwood file handle.


51 8930



51 8970


51 8950



51 8975

56B 51 8930	Precision key file set, 6 pieces **in plastic case**	eShop ■
56B 51 8950	Precision key file set, 6 pieces **in metal case**	eShop ■
56B 51 8970	DICK Set of precision key files, 6 pieces **in a plastic case**	eShop
56B 51 8975	DICK Set of precision key files, 2-component handle, 6 pieces **in a plastic case**	eShop

Contact file

Cuts on both faces; 2nd cut (medium fine); overall length 140 mm; cross section 8×1.0 mm.

Application: For dressing / cleaning small gaps (e.g. electrical contacts).


51 9000

56B 51 9000	DICK Contact file	eShop

Garant Hard chromium coated high-performance file

Hard chromium coated high-performance files of **HRC 67** cover a wide range of applications from soft materials such as **aluminium** through to very hard materials such as **high-alloy steels, stainless steels and ceramics**. Length without tang 100 mm.

Advantage:
- High **resistance to corrosion**
- **3-6 times longer working life** than conventional files.
- **Will not clog** when filing very soft materials.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
51 9100	●	●	●	●	●	○		●	○	●	●	●	●			●		●



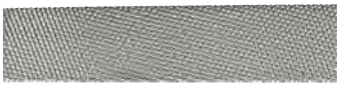
51 9100



Type		1	3	4	5	6
51S **51 9100**	Hard chromium coated high-performance file **Cut 2**	eShop	eShop	eShop	eShop	eShop
Shape description		flat plain	half round	round	square	three-square
Cross section	mm	10.7×3.2	13×4	6.2	5.8×5.8	9



conventional



hard chromium plated

File handles

Ergonomic 2-component file handle with hole for hanging up and **practical colour code clips** (red, green, yellow) for individual marking of, for example, the cut. The non-slip surface and **ergonomic shape** ensure **non-tiring power transmission** even in wet or oily hands. Reversible reduction inserts ensure a secure grip on all tangs.

Application: For all workshop, key, and precision files.

Supplied with: File handle including 1 red, 1 green and 1 yellow colour-coded clip.



51 9605_RED _GREEN _YELLOW



51 9600_110

Overall length		mm	95	110	120
51E **51 9600**	Garant 2-component ergonomic file handle		eShop ■	eShop ■	eShop ■
suitable for file length		mm	100	150 – 250	200 – 350



51 9510

File handle made of impact resistant plastic, with large hole for hanging up.
No need to drill for the file tang; anti-roll handle.
51 9550 Size 110; 120 – With insert for secure assembly; insert can be used both ways.

Application: For all engineer's files, precision files, and key files.



51 9550_110/_120

Overall length		mm	90	100	110	120	125
56B **51 9510**	PB SWISS TOOLS Plastic file handle		eShop	eShop	eShop	–	eShop
56B **51 9550**	DICK Plastic file handle		–	eShop ■	eShop ■	eShop ■	–
suitable for file length (51 9510)		mm	100 – 150	150 – 200	200 – 250	–	250 – 350
suitable for file length (51 9550)		mm	–	100	150 – 250	250 – 350	–



51 9550_100

DIN 395

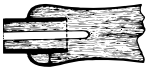
Of hardwood drawn from PEFC-certified forests, ergonomically shaped. Ferrule made of **seamless steel tube**, pressed deeply into the handle, so that the handle cannot split when the file is fitted. The ferrule is permanently attached to the handle.



51 9400

Overall length		mm	70	80	100	120	140	160
56B **51 9400**	Hardwood file handle		eShop	eShop	eShop ■	eShop ■	eShop ■	eShop
suitable for file length (flat, three-square, half-round files)		mm	–	100	100	150 – 200	250	300 – 350
suitable for file length (square, round files)		mm	100	100	150 – 200	250	300 – 350	350

Ferrule pressed in deeply, cannot become loose.



Precision files

Swiss precision files
satisfy the highest demands for accuracy of shape, precision cut, removal rate and tool life. Special steel with hardness **65 – 66 HRC.** Unlike engineer's files, these have **slightly convex shapes** exactly matched to the application, a special cut angle and an extensive selection of different cuts. As a result smooth surfaces are always achieved in the most cost-effective way.

VALTITAN high performance precision files
with extremely high wear resistance due to surface hardness of **1200 HV.**
The special tooth profile prevents the file becoming clogged. Maximum metal removal rate and tool life. Virtually non-rusting, therefore suitable for use in highly corrosive environments. Leaves no corrosion-susceptible residues.

Comparison Swiss cut SC – German cut GC			
Length (L)			
100 – 150 mm		200 – 250 mm	
SC	GC	SC	GC
00	1	00	1
0	1 – 2	0	2
1	3	1	3
2	3 – 4	2	4
3	4	3	4 – 5
4	4 – 5	4	5
6	6	–	–

Precision files

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
Precision file	●	●	●	●	●	○		●	○	●	●	●	●			○		
VALTITAN	●	●	●	●	●	●		●	●	●	●	●	●			●		

52

Cuts on 3 faces; square end.



52 0100

Length without tang mm / Swiss cut		100/00	100/1	100/2	100/3	100/4	100/6	150/00	150/0	150/1	150/3	150/4
53B 52 0100	Precision hand file	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 0150	VALTITAN precision hand file	–	–	–	–	–	–	–	eShop	–	–	–
equivalent to German cut		1	2 – 3	3 – 4	4	4 – 5	6	1	1 – 2	2 – 3	4	5
Cross section	mm	12.5×3	12.5×3	12.5×3	12.5×3	12.5×3	12.5×3	18.5×4	18.5×4	18.5×4	18.5×4	18.5×4

Length without tang mm / Swiss cut		200/00	200/0	200/1	200/2	200/4	250/00	250/0	250/1	250/3
53B 52 0100	Precision hand file	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 0150	VALTITAN precision hand file	eShop	eShop	–	eShop	–	eShop	eShop	–	–
equivalent to German cut		1	2	3	4	5	1	2	3	4 – 5
Cross section	mm	21.3×4.8	21.3×4.8	21.3×4.8	21.3×4.8	21.3×4.8	25.3×6.3	25.3×6.3	25.3×6.3	25.3×6.3

52 1100 – **Cuts on 3 faces.**
52 1150 – **Cuts on flat faces; square end.**


52 1100

Length without tang mm / Swiss cut		100/1	150/00	150/0	150/1	150/2	150/3
53B 52 1100	Precision pillar file standard	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 1150	VALTITAN precision pillar file	–	–	eShop	–	–	–
equivalent to German cut		2 – 3	1	1 – 2	2 – 3	3 – 4	4
Cross section	mm	9.5×2.5	12×4	12×4	12×4	12×4	12×4

Length without tang mm / Swiss cut		200/00	200/0	200/1	200/2	250/00	250/0	250/1	250/2
53B 52 1100	Precision pillar file standard	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 1150	VALTITAN precision pillar file	–	eShop	–	eShop	–	–	–	–
equivalent to German cut		1	2	3	4	1	2	3	4
Cross section	mm	14.5×4.5	14.5×4.5	14.5×4.5	14.5×4.5	17.5×5.3	17.5×5.3	17.5×5.3	17.5×5.3

Cuts on flat faces; square end.


52 2100

Length without tang mm / Swiss cut		150/00	150/0	150/2	150/3	200/00	200/0	200/2	250/0	250/2
53B 52 2100	Precision pillar file narrow	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
equivalent to German cut		1	1 – 2	3 – 4	4	1	2	4	2	4
Cross section	mm	6.5×3	6.5×3	6.5×3	6.5×3	8.3×3.5	8.3×3.5	8.3×3.5	9.3×4.3	9.3×4.3

Cuts on flat faces; square end.


52 3100

Length without tang mm / Swiss cut		150/00	150/0	150/1	150/2	200/00	200/0	200/1	200/2	250/00	250/0
53B 52 3100	Precision pillar file extra narrow	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
equivalent to German cut		1	1 – 2	2 – 3	3 – 4	1	2	3	4	1	2
Cross section	mm	4.5×2.5	4.5×2.5	4.5×2.5	4.5×2.5	6.3×2.8	6.3×2.8	6.3×2.8	6.3×2.8	8.3×3.8	8.3×3.8

Cuts on all faces; tapers to a point.



52 4000

Length without tang mm / Swiss cut		125/0	150/0	150/1	150/3	200/0	200/1	200/2	250/00
53B 52 4000	Precision three square file	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 4050	VALTITAN precision three square file	–	–	–	–	eShop	–	–	–
equivalent to German cut		1 – 2	1 – 2	3	4	2	3	4	1
Width	mm	8.3	10.3	10.3	10.3	14.2	14.2	14.2	17.2

Cuts on all faces; tapers to a point.
Size 150/0 – Square end.



52 4500

Length without tang mm / Swiss cut		150/0	150/1	150/3	200/1
53B 52 4500	Precision square file	eShop	eShop	eShop	eShop
equivalent to German cut		1 – 2	3	4	3
Width	mm	5.5	5.5	5.5	7.5

Cuts on all faces; tapers to a point.



52 5000

Length without tang mm / Swiss cut		100/2	125/00	125/2	150/00	150/0	150/1	150/3
53B 52 5000	Precision half-round file	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 5050	VALTITAN precision half-round file	–	–	–	–	eShop	–	–
equivalent to German cut		3 – 4	1	3 – 4	1	1 – 2	3	4
Cross section	mm	12.7×3.5	13.1×4.1	13.1×4.1	15.1×5.8	15.1×5.8	15.1×5.8	15.1×5.8

Length without tang mm / Swiss cut		200/00	200/0	200/1	200/2	200/4	250/00	250/0	250/1
53B 52 5000	Precision half-round file	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 5050	VALTITAN precision half-round file	–	eShop	–	eShop	–	–	–	–
equivalent to German cut		1	2	3	4	5	1	2	3
Cross section	mm	21.1×6.3	21.1×6.3	21.1×6.3	21.1×6.3	21.1×6.3	25.5×7.5	25.5×7.5	25.5×7.5

Tapers to a point.
Size 125/0; 150/00; 150/0; 200/00; 250/1 – Square end.



52 5500

Length without tang mm / Swiss cut		100/2	125/0	125/2	150/00	150/0	150/1	150/2	150/3
53B 52 5500	Precision round file	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
equivalent to German cut		3 – 4	1 – 2	3 – 4	1	1 – 2	3	3 – 4	4
Diameter	mm	3.85	4.85	4.85	5.75	5.75	5.85	5.85	5.85

Length without tang mm / Swiss cut		200/00	200/0	200/1	200/2	250/1
53B 52 5500	Precision round file	eShop	–	eShop	–	eShop
53B 52 5550	VALTITAN precision round file	–	eShop	–	eShop	–
equivalent to German cut		1	2	3	4	3
Diameter	mm	7.5	7.8	7.8	7.8	9.4

Cuts on all sides; tapers to a point.



52 6000

Length without tang mm / Swiss cut		100/2	150/0	150/2	200/0	200/2
53B 52 6000	Precision knife file	eShop	eShop	eShop	eShop	eShop
equivalent to German cut		3 – 4	1 – 2	3 – 4	2	4
Cross section	mm	12.4×2.8	17.9×3.5	17.9×3.5	22×4.2	22×4.2

Tapers to a point.



52 6500

Length without tang mm / Swiss cut		150/1	150/2	200/2
53B 52 6500	Precision crossing file	eShop	eShop	eShop
equivalent to German cut		3	3 – 4	4
Cross section	mm	14.8×5	14.8×5	21.3×6.3

Precision needle files

Swiss precision needle files satisfy the highest demands for accuracy of shape, precision cut, removal rate and tool life. Cut length = $^1/_2$ file length.
Manufactured from special steel for precision files with high wear resistance (65-66 HRC).
Precisely determined shapes, special cut angle and large selection of different cuts.
High metal removal rate.
Quick-release handle see No. 519700.

Standard: **SC = Swiss cut; GC = German cut**

Note: See also Habilis precision files No. 527050 – 527070.


SH 00
20 H/cm

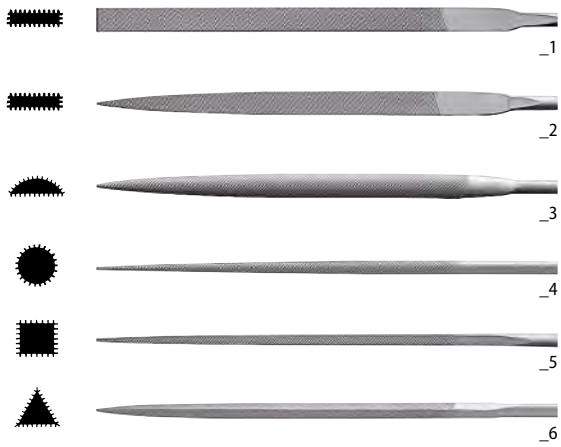

SH 0
25 H/cm

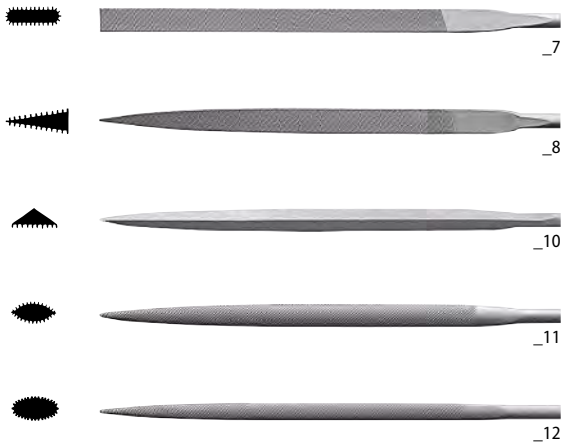

SH 1
31 H/cm


SH 2
38 H/cm

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
52 7130–52 7650	●	●	●	●	●	○		●	○	●	●	●	●			○		

Precision needle files





Type			1	2	3	4	5	6	7	8	10	11	12
53B 52 7130	Precision needle file **Overall length 140 mm**	SC 0 / GC 1	eShop	–	eShop	eShop	eShop	eShop	–	–	eShop	–	–
53B 52 7230		SC 1 / GC 2	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
53B 52 7330		SC 2 / GC 3	eShop	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	–
53B 52 7140	Precision needle file **Overall length 160 mm**	SC 0 / GC 1	eShop ■	–	eShop ■	eShop ■	eShop ■	eShop ■	–	–	–	–	–
53B 52 7240		SC 1 / GC 2	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	–
53B 52 7340		SC 2 / GC 3	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–
53B 52 7150	Precision needle file **Overall length 180 mm**	SC 00 / GC 00	eShop	–	eShop	eShop	eShop	eShop	–	–	–	–	–
53B 52 7250		SC 0 / GC 1	eShop	–	eShop	eShop	eShop	eShop	–	–	–	–	–
53B 52 7350		SC 2 / GC 3	eShop	–	eShop	eShop	eShop	eShop	–	–	–	–	–
53B 52 7160	Precision needle file **Overall length 200 mm**	SC 00 / GC 00	eShop	–	eShop	eShop	eShop	eShop	–	–	–	–	–
53B 52 7260		SC 0 / GC 1	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop
53B 52 7360		SC 2 / GC 3	eShop	–	eShop	eShop	eShop	eShop	–	–	–	–	–
Shape description			flat plain	flat pointed	half round	round	square	three-square	flat round edged	Knife	barrette	Crossing file oval pointed	Crossing file oval round

Precision needle file sets

Supplied with: In a plastic wallet.



52 7650


52 7600

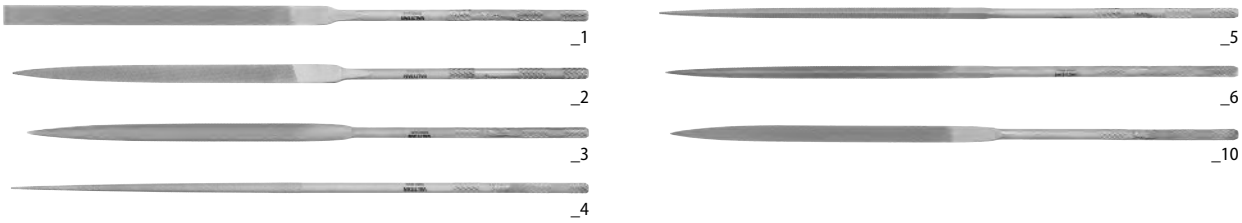
Overall length mm / Swiss cut		140/1	160/0	160/1	180/0	200/0	Content:
53B 52 7600	Precision needle files **Set, 12 pieces**	eShop	–	eShop ■	eShop	eShop	1 piece each Form 1 – 12
53B 52 7650	Precision needle files **Set, 6 pieces**	eShop ■	eShop	–	–	–	1 pc. each Shape 1; 3; 4; 5; 6; 10

VALTITAN precision needle files

High performance needle files with extremely high wear resistance. Surface hardness **1200 HV.** The special tooth profile prevents files clogging, files can be easily cleaned by gentle tapping (on wood).

Standard: **SC = UK/Swiss cut; GC = German cut**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
52 7550–52 7660	●	●	●	●	●	●		●	●	●	●	●	●			●



Type			1	2	3	4	5	6	10
53B 52 7550	VALTITAN precision needle file **Overall length 180 mm**	SC 0 / GC 1	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 7570		SC 2 / GC 3	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			flat plain	flat pointed	half round	round	square	three- square	barrette

VALTITAN precision needle file sets

Supplied with: In a plastic wallet. 1 each file form flat plain, half-round, round, square, 3-square and barette.

Overall length mm / Swiss cut		180/0	180/2
53B 52 7660	VALTITAN precision needle file **Set 6 pieces**	eShop	eShop



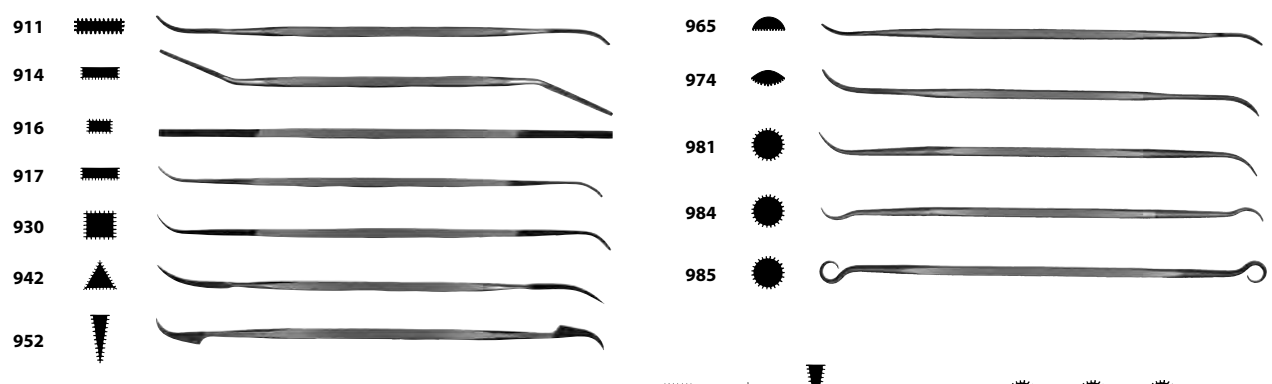
Precision riffler files

The blanks for the **Swiss precision riffler files** are forged from special steel and ground; precision machines give them an extremely precise cut of even density and depth with a hardness of **65 – 66 HRC.** The quality of these riffler files is provided by a clean and precise cut to the very tip of the point. These files feature a very high shape accuracy and a high metal removal rate with extremely long tool life.

Application: For precise and delicate work even on very hard materials, e.g. in mould and tool making.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
52 8010–52 8310	●	●	●	●	●	○		●	○	●	●	●	●			○

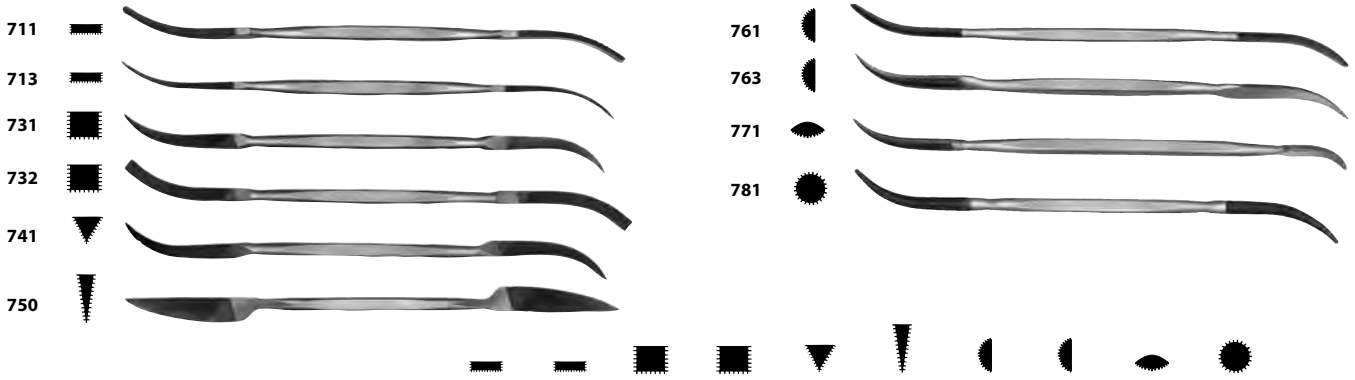
Precision riffler files 150 mm



Type			911	914	916	917	930	942	952	965	974	981	984	985	Cut cm
53B 52 8050	Precision riffler file fine **Length 150 mm**	SC 2 / GC 2	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	38

Precision riffler files 180 mm

Size 761 – Plain end.
Size 763 – Tapers to a point.



Type			711	713	731	732	741	750	761	763	771	781	Cut cm
53B 52 8200	Precision riffler file coarse **Length 180 mm**	SC 0 / GC 1	eShop	–	–	–	–	–	–	–	–	eShop	16
53B 52 8300	Precision riffler file medium **Length 180 mm**	SC 2 / GC 2	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	25

Precision riffler file sets

Supplied with:

52 8010 – In a roll-up wallet. 1 each file No. 528050 Form 911 – 985.
52 8310 – In a roll-up wallet. 1 each file No. 528300 Form 711 – 790.

			Cut cm	Overall length mm
53B 52 8010	Precision riffler file set SC 2 = fine (13 pieces)	eShop	38	150
53B 52 8310	Precision riffler file set SC 2 = medium (12 pieces)	eShop	25	180



52 8010 52 8310

Habilis precision files

Swiss precision files with highest shape accuracy, cut precision, removal rate, and tool life. Shapes similar to needle files, however with **strong, forged** square or hexagonal **tang** and **strengthened cross section. No file handle required.**

Application: Particularly suitable for tool and mould making due to tapered, slim shape. **Habilis precision files** allow **heavier working pressures** than needle files.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
52 7050–52 7070	●	●	●	●	●	●		●	○	●	●	●	●			○		



Type			1	3	4	5	6
53B 52 7060	Habilis precision file **Overall length 215 mm**	SC 00 / GC 1	eShop	eShop	eShop	eShop	eShop
53B 52 7070		SC 1 / GC 3	eShop	eShop	eShop	eShop	eShop
Shape description			flat plain	half round	round	square	three- square
Cross section		mm	10.0×2.6	12.2×3.4	6.5	6.0×6.0	9.5×9.5

Supplied with: 1 each file No. 527060 / 7070 size 1, 3, 4, 5, 6 in a wallet.



No file handle required!

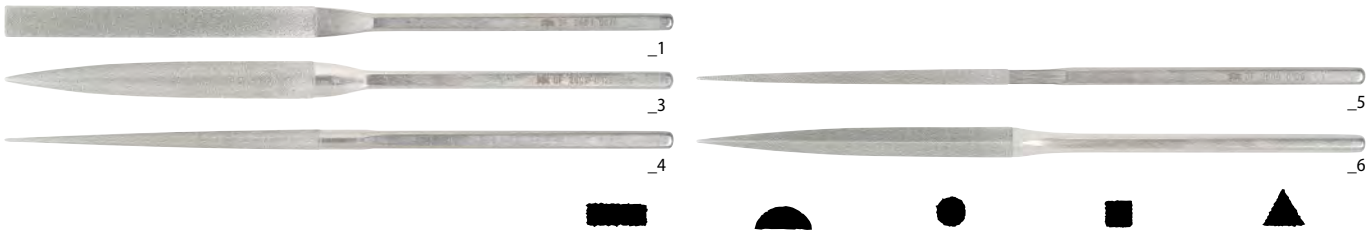
Overall length mm / Swiss cut		215/00	215/1
53B 52 7050	Set of Habilis high precision files **5 pieces**	eShop	eShop
equivalent to German cut		1	3

D

PFERD Diamond handy files

Equivalent to needle files No. 529220, however made from blanks similar to the Habilis files No. 527060 (thicker cross section, high-strength forged tang); approx. **3 times the coated area** of needle files.

Application: For filing **hardened steels, hard metal, glass, ceramic** and **fibre-reinforced plastics.** Use **light pressure** for filing, particularly on edges. Heavier pressure does not increase the removal rate but damages the file.



Type		1	3	4	5	6
53B 52 9150	Diamond handy file, 215 mm **Grit D126 (medium) general-purpose**	eShop	eShop	eShop	eShop	eShop
Shape description		flat plain	half round	round	square	three-square
Cross-section with coating	mm	10.3×2.8	12.5×3.8	6.7	5.5×5.5	10
Coating length	mm			100		

Diamond handy file set

Supplied with: **5 pieces,** 1 each file No. 529150 size 1; 3; 4; 5; 6 in a sturdy plastic box.

53B 52 9160	Diamond handy file set, 5 pieces, 215 mm **Grit D126**	eShop ■



52 9160

D

PFERD Diamond needle files

The blanks for these needle files are forged and ground from special steel. The diamond needle files are evenly spread with diamond powder of uniform grit and electro-bonded in place. The even diamond coating and the hardness of the diamond ensure best filing results. **Overall file length = 140 mm;** diamond coated length = 70 mm; shank ∅ = 3 mm.

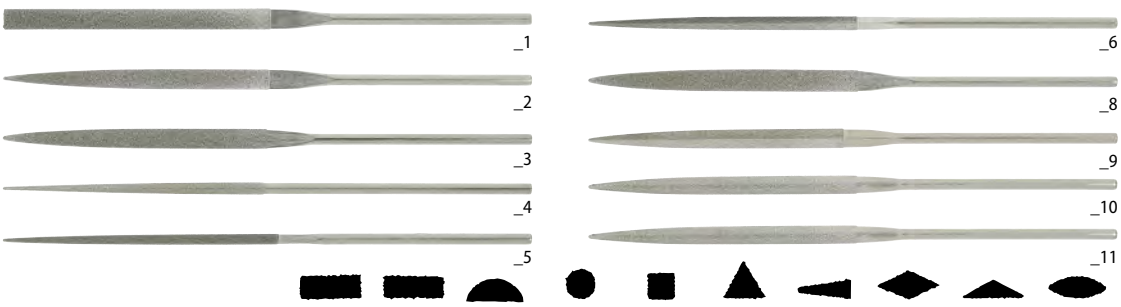
Application: For precision finishing of cutting, stamping and press tools made of **hardened steel** or **carbide.** Also for working **glass, ceramic** etc. Use **light pressure** for filing, particularly at edges. Heavier pressure does not increase the removal rate but damages the file.

Optional extras: A **quick-release handle** for these files can be found under No. 519700.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
52 9210–52 9350			●	●	●	●	●	●	●	●		●		○				

Grit:

52 9210 – Fine grit **D 91**
52 9220 – Universal grit (standard file) **D 126**
52 9230 – Coarse grit **D 181**



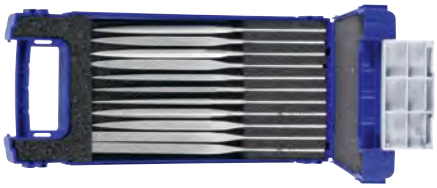
Type		1	2	3	4	5	6	8	9	10	11
53B 52 9210	Diamond needle file, 140 mm **Grit D91 (fine)**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop
53B 52 9220	Diamond needle file, 140 mm **Grit D126 (medium) general-purpose**	eShop ■	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53B 52 9230	Diamond needle file, 140 mm **Grit D181 (coarse)**	eShop	–	eShop	eShop	–	eShop	eShop	–	–	–
Shape description		flat plain	flat pointed	half round	round	square	three-square	knife	sword	barrette	crossing
Cross-section with coating	mm	5.5×1.6	5.5×1.6	5.5×1.6	3.2	2.6×2.6	3.5	5.0×1.8	5.0×2.4	5.0×2.0	5.0×2.2
Coating length	mm					70					

Diamond needle file sets

Supplied with: In a plastic box.
52 9300 – **5 pieces,** 1 each file of shape 1; 3; 4; 5; 6.
52 9350 – **11 pieces,** 1 file each of shape 1-11 (all shapes), additionally 1 flat file with round edges.



52 9300



52 9350

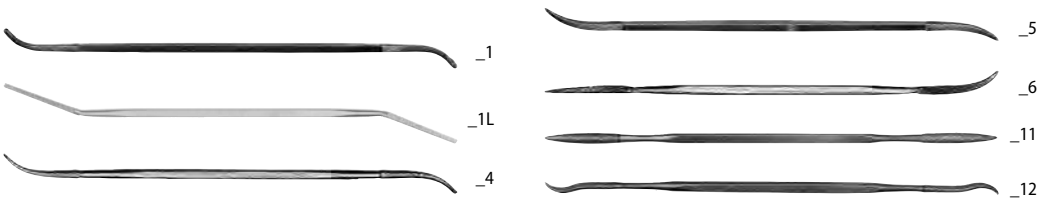
Grit		µm	D91	D126	D181
53B 52 9300	Diamond needle file set, 5 pieces, 140 mm		eShop	eShop ■	eShop
53B 52 9350	Diamond needle file set, 11 pieces, 140 mm		eShop	eShop	eShop

52

D

PFERD Diamond riffler files

Shape similar to No. 528050, but covered at both ends with diamond powder of uniform grit.
Application: For precision finishing of form tools made of **hardened steel** or **carbide.**
Minimum pressure in use.



	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
52 9650/9660			●	●	●	●	●	●	●	●		●		○				



Type			1	1L	4	5	6	11	12
53B 52 9650	Diamond riffler file, 150 mm **Grit D126 (medium) general-purpose**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			flat plain, curved	flat plain, straight	round	square	three- square	crossing, straight	crossing, curved
Cross-section with coating		mm	3.1×3	3.8×1.6	3	2.5×2.5	3	3.2×2	3.7×2
Coating length		mm	25						

Diamond riffler file set

Supplied with: In a plastic box.
5 pieces, 1 each file of shape 1; 4; 5; 6; 12.



52 9660

Grit		µm	D126
53B 52 9660	Diamond riffler file set, 5 pieces, 150 mm		eShop

Quick-release handles for needle files / diamond needle files

Size 2 – Quick-release handle, suitable for all hand sizes. **High clamping force,** tool can easily be inserted and removed.

Size 3 – High quality handle with **spring collet and rotary knob clamping** for ease of use and secure fixing.



51 9700_2



51 9700_3

Type		2	3
56B 51 9700	Quick-release handle **for needle files**	eShop ■	eShop
Clamping ∅ mm		2.2 – 4.5	3 – 4
suitable for file length mm		140 – 200	

D

Flexible diamond files

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
52 9110/9112/9120			●	●	●	●	●	●	●	●		●		○				
52 9115	●	●	●	●	●	●	●	●	●	●	●	●			●	●		

Flexible diamond polishing files

Polishing file with **flexible metal base body.** Outer face of **resilient PU material,** one side coated with diamond grit.

Size D126; D64 – Very homogeneous surface roughness due to multi-crystalline diamonds.

Advantage: Ancillary times for preparation and cleaning, such as are required when polishing pastes are used, are eliminated.

Application: Ideal for polishing work on concave and convex surfaces. Suitable for **hard materials such as carbide, cast iron, hardened steels, ceramic** and non-ferrous metals.





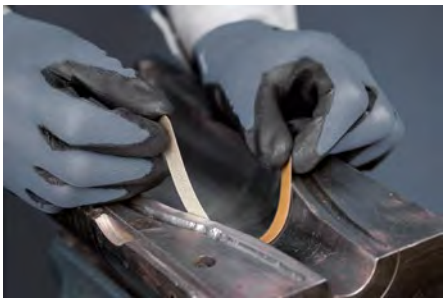
52 9115

Grit	µm	D126	D64	D15	D3	Width mm	Length mm
51G 52 9115	Garant CaraFin flexible diamond polishing file	eShop	eShop	eShop	eShop	14	165
Grit designation		Pre-polishing	Polishing	Final polishing	Mirror finish		

Flexible diamond files

Very thin plastic backing, coated **on one side** with diamond abrasive grit. Height including grit 0.5 mm.

Application: Ideal for fine abrasive work on concave and convex surfaces, or in narrow slots. **Very high flexibility,** maximum bending radius 15 mm.





52 9120

Grit	µm	D181	D126	D76		Width mm	Length mm
53B 52 9120	PFERD Flexible diamond files	eShop	eShop	eShop	5	14	165
Grit designation		coarse	medium	fine			

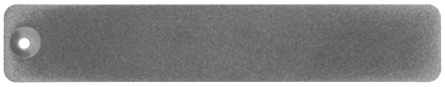
Diamond sheet

Flexible diamond sheet, coated **on both sides** with abrasive diamond grit. Height including grit 0.7 mm.

Application: Ideal for grinding work on concave and convex surfaces.

Note: Diamond files can be cleaned in petrol with a metal brush (e.g. 576000).





52 9110

Grit	µm	D126	D64	Width mm	Length mm
53B 52 9110	PFERD Diamond sheet	eShop	eShop	30	170
53B 52 9112		eShop	eShop	35	350
Grit designation		medium	fine		

MASTERFUL RESULTS IN ALL MATERIALS – THE GARANT BURR RANGE.

Maximum precision and efficiency: Minimal vibrations, perfect surfaces and the highest possible metal removal rate.

GARANT Master UNI

All-rounder for machining steel, stainless and acid-resistant steels and aluminium alloys.

- High removal rate, smooth cutting.
- Low thermal stress, long tool life.



GARANT Master Steel

Specialist for machining steel and cast steel.

- Noticeably higher aggressiveness.
- Optimum chip formation (no pointed chips).
- Optimised for high material removal.
- AlCrN coating.



GARANT Master Cast

Specialist for machining cast iron.

- AlTiSiN coating prevents breakouts.
- No chip adhesion.
- High rate of material removal and smooth running behaviour.



GARANT Master Alu

Specialist for machining aluminium alloys, plastics, bronze and non-ferrous metals.

- High removal rate, smooth cutting.
- Low thermal stress, long tool life.
- DLC coating prevents chip adhesion.



GARANT Master Uni mini burrs

All-rounder for machining steel, stainless and acid-resistant steels and aluminium alloys.

- High removal rate, smooth cutting.
- Low thermal stress, long tool life.



GARANT Master Inox

Specialist for machining austenitic, stainless and acid-resistant steels.

- Noticeably higher aggressiveness.
- Low thermal output.
- Optimised for high material removal.
- AlTiSiN coating.



1

First, select the material and the machining method.

2

Find the recommended tooth type and cutting speed in the table below.

	Material	Surface finish	Tooth type	Recommended cutting speed v_c (m/min)
	Aluminium	coarse	Z9	600 – 1.000
		medium	Master Alu, Z1	500 – 800
		fine	Master Uni	500 – 700
	Steel < 900 N	coarse	Master Steel	500 – 700
		medium	Master Uni (+TiALN), Z7, Z4	500 – 700
		fine	Z5, Z fine	350 – 700
	Steel < 1400 N	coarse	Master Steel	500 – 700
		medium	Master Uni (+TiALN), Z7, Z4	500 – 700
		fine	Z5, Z fine	350 – 700
	Steel < 55 HRC	coarse	Master Steel	500 – 700
		medium	Master Uni TiALN, Z7, Z4	500 – 700
		fine	Z5, Z fine	350 – 700
	Steel < 60 HRC	coarse	Master Steel	500 – 700
		medium	Master Uni TiALN, Z7, Z4	500 – 700
		fine	Z5, Z fine	500 – 700
	Steel < 67 HRC	coarse	Master Uni TiALN	500 – 700
		medium	Z4 TiALN	500 – 700
		fine	Z5, Z fine	350 – 700
	INOX	coarse	Master INOX	500 – 700
		medium	Master Uni (+TiALN), Z7, Z4	500 – 700
		fine	Z5, Z fine	350 – 700
	Titanium	coarse	Master INOX	500 – 700
		medium	Master Uni TiALN, Z4 TiALN	500 – 700
		fine	Z5, Z fine	350 – 700
	Cast iron	coarse	Master Cast	500 – 700
		medium	Master Uni TiALN, Z7	500 – 700
		fine	Z5, Z fine	350 – 700
	Copper Tin	coarse	Master Cast	500 – 700
		medium	Master Cast	500 – 700
	Plastic GRP	medium	Z1	500 – 700
	wood	medium	Z1	500 – 700



GARANT Master Uni



GARANT Master Steel



GARANT Master INOX



GARANT Master Alu



GARANT Master Cast

54

Recommended cutting speed v_c (m/min)									
		300	400	500	600	700	800	900	1000
Tool diameter D (mm)	2	48,000	64,000	80,000	95,000	111,000	127,000	143,000	159,000
	3	32,000	42,000	53,000	64,000	74,000	85,000	95,000	106,000
	4	24,000	32,000	40,000	48,000	56,000	64,000	72,000	80,000
	6	16,000	21,000	27,000	32,000	37,000	42,000	48,000	53,000
	8	12,000	16,000	20,000	24,000	28,000	32,000	36,000	40,000
	10	10,000	13,000	16,000	19,000	22,000	25,000	29,000	32,000
	12	8,000	11,000	13,000	16,000	19,000	21,000	24,000	27,000
	16	6,000	8,000	10,000	12,000	14,000	16,000	18,000	20,000
	20	5,000	6,000	8,000	10,000	11,000	13,000	14,000	16,000
Speed (rpm)									

3

Determine the appropriate speed for your drive machine.

$$n = \frac{v\ [m/min] \times 1000}{D\ [mm] \times \pi}$$

Materials with poor heat conductivity; reduce speed to avoid overheating of the burr.

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
MasterUni/ MasterUniTiAlN	○	●	●	●	●			●	●	●						●		
Tooth type Z7		●	●	●	●			○	○	●						●		
Tooth type Z5		●	●	●	○			○	○	○								
Tooth type Z4 TiAlN		●	●	●	●	○		●	●									
Tooth type Z FINE		●	●	●	●	●		●	●	●								
Tooth type Z1	○	○								○	○	○	○					
MasterCast	○	●	●	●	●			●	○	●	○							

3mm
⌀

Carbide mini burrs

54 6906 Size AF0324 – With guide face at the tip.
Precise deburring without damage to the workpiece.

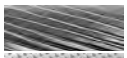
Application:
54 6840 Size I0204; I0408 – Also for cutting forms of internal ∅.



Type				A0210	A0313	A0613	AS0210	AS0313	AS0613
51D 54 6906	Garant	Mini burr **GARANT Master Uni – medium**	Carbide	–	eShop	eShop	eShop	eShop	eShop
51D 54 6800	Garant	Mini burr **Z5 – fine**	Carbide	eShop	eShop	eShop	eShop	eShop	eShop
51D 54 6840	Garant	Mini burr **Z FINE – very fine**	Carbide	–	eShop	–	eShop	eShop	eShop
51D 54 6908		Mini burr **Z9 very coarse (NF/Alu)**	Carbide	–	eShop	–	–	–	–
52D 54 6910	HOLEX	Mini burr **Z7 – medium, diamond cut**	Carbide	–	eShop	eShop	–	eShop	eShop
Shape description					Cylindrical			Cylindrical with end cut	
Head ∅ (54 6906, 54 6800, 54 6840, 54 6908)			mm	2	3	6	2	3	6
Head ∅ (54 6910)			mm	–	3	6.3	–	3	6.3
Head length (54 6906, 54 6800, 54 6840, 54 6908)			mm	10	13	13	10	13	13
Head length (54 6910)			mm	–	14	12.7	–	14	12.7
Overall length (54 6906, 54 6800, 54 6840, 54 6908)			mm	40	40	43	40	43	43
Overall length (54 6910)			mm	–	38	45	–	38	45

Illustration: Tooth configuration


Uni


Z5


Z FINE


Z9

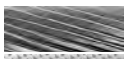

Z7



Type				AF0324	C0210	C0313	C0613	D0302	D0403
51D 54 6906	Garant	Mini burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop	eShop
51D 54 6800	Garant	Mini burr **Z5 – fine**	Carbide	–	eShop	eShop	eShop	eShop	eShop
51D 54 6840	Garant	Mini burr **Z FINE – very fine**	Carbide	–	–	eShop	–	–	eShop
51D 54 6908		Mini burr **Z9 very coarse (NF/Alu)**	Carbide	–	–	eShop	–	–	eShop
52D 54 6910	HOLEX	Mini burr **Z7 – medium, diamond cut**	Carbide	–	–	eShop	eShop	eShop	eShop
Shape description				Cylindrical with guide face	Ball nose			ball	
Head ∅ (54 6906, 54 6800, 54 6840, 54 6908)			mm	3	2	3	6	3	4
Head ∅ (54 6910)			mm	–	–	3	6.3	3	4
Head length (54 6906, 54 6800, 54 6840, 54 6908)			mm	24	10	13	13	2	3
Head length (54 6910)			mm	–	–	14	12.7	2.5	3.4
Overall length (54 6906, 54 6800, 54 6840, 54 6908)			mm	40	40	40	43	40	34
Overall length (54 6910)			mm	–	–	38	44	38	38

Illustration: Tooth configuration


Uni


Z5


Z FINE

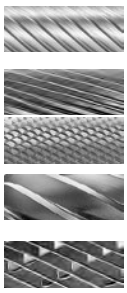

Z9


Z7



Type				D0605	E0307	E0610	F0307	F0313	F0613
51D 54 6906	Garant	Mini burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop	eShop
51D 54 6800	Garant	Mini burr **Z5 – fine**	Carbide	eShop	–	eShop	–	eShop	eShop
51D 54 6840	Garant	Mini burr **Z FINE – very fine**	Carbide	–	–	–	–	eShop	–
51D 54 6908		Mini burr **Z9 very coarse (NF/Alu)**	Carbide	–	–	–	–	eShop	–
52D 54 6910	HOLEX	Mini burr **Z7 – medium, diamond cut**	Carbide	eShop	eShop	eShop	–	eShop	eShop
Shape description				Ball	teardrop		round arch		
Head ∅ (54 6906, 54 6800, 54 6840, 54 6908)			mm	6	3	6	3	3	6
Head ∅ (54 6910)			mm	6.3	3	6.3	–	3	6.4
Head length (54 6906, 54 6800, 54 6840, 54 6908)			mm	5	7	10	7	13	13
Head length (54 6910)			mm	5	5.5	9.5	–	14	12.7
Overall length (54 6906, 54 6800, 54 6840, 54 6908)			mm	35	40	40	40	40	43
Overall length (54 6910)			mm	38	38	42	–	38	45

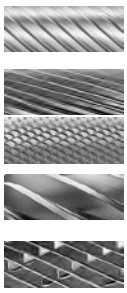
Illustration: Tooth configuration





Type				G0307	G0313	G0613	H0307	H0613
51D 54 6906	Garant	Mini burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop
51D 54 6800	Garant	Mini burr **Z5 – fine**	Carbide	eShop	eShop	eShop	eShop	eShop
51D 54 6840	Garant	Mini burr **Z FINE – very fine**	Carbide	–	eShop	–	–	–
51D 54 6908		Mini burr **Z9 very coarse (NF/Alu)**	Carbide	–	eShop	–	–	–
52D 54 6910	HOLEX	Mini burr **Z7 – medium, diamond cut**	Carbide	–	eShop	eShop	eShop	eShop
Shape description				Pointed arch			Flame	
Head ∅ (54 6906, 54 6800, 54 6840, 54 6908)			mm	3	3	6	3	6
Head ∅ (54 6910)			mm	–	3	6.3	3	6
Head length (54 6906, 54 6800, 54 6840, 54 6908)			mm	7	13	13	7	13
Head length (54 6910)			mm	–	14	12.7	6	13
Overall length (54 6906)			mm	–	40	43	40	43
Overall length (54 6800, 54 6840, 54 6908)			mm	40	40	43	40	43
Overall length (54 6910)			mm	–	38	45	38	43

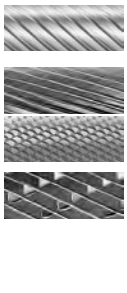
Illustration: Tooth configuration





Type				I0204	I0408	M0307	M0311	M0613	N0307	N0607
51D 54 6906	Garant	Mini burr **GARANT Master Uni – medium**	Carbide	–	–	–	eShop	eShop	eShop	–
51D 54 6800	Garant	Mini burr **Z5 – fine**	Carbide	–	–	eShop	eShop	eShop	eShop	eShop
51D 54 6840	Garant	Mini burr **Z FINE – very fine**	Carbide	eShop	eShop	–	eShop	–	–	–
52D 54 6910	HOLEX	Mini burr **Z7 – medium, diamond cut**	Carbide	–	–	–	eShop	eShop	–	–
Shape description				Internal		pointed cone			Angle	
Head ∅ (54 6906, 54 6800, 54 6840)			mm	2.5	4	3	3	6	3	6
Head ∅ (54 6910)			mm	–	–	–	3	6.8	–	–
Head length (54 6906, 54 6800, 54 6840)			mm	4	8	7	11	13	7	7
Head length (54 6910)			mm	–	–	–	11	17	–	–
Overall length (54 6906)			mm	–	–	–	40	43	37	–
Overall length (54 6800, 54 6840)			mm	40	50	40	40	43	40	37
Overall length (54 6910)			mm	–	–	–	38	49	–	–

Illustration: Tooth configuration



Burrs shape cylindrical without end face cut (ZYA)



Type				A0616	A0820	A1020	A1625	A1225	
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop	*Uni*
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	Carbide TiAlN	eShop	eShop	eShop	eShop	eShop	*Uni TiAlN*
51D 54 0400	Garant	Burr **Z5 – fine**	Carbide	eShop	eShop	–	–	eShop	*Z5*
51D 54 0440	Garant	Burr **Z FINE – very fine**	Carbide	–	eShop	eShop	–	eShop	*Z FINE*
56L 54 0560	Lukas	Burr, coated **Z 4 – fine, diamond cut**	Carbide TiAlN	–	eShop	eShop	eShop	eShop	*Z4 TiAlN*
Shape description				Cylindrical, without end cut					
Head ⌀			mm	6	8	10	16	12	
Head length			mm	16	20	20	25	25	
Overall length			mm	50	60	60	65	65	

Type				A0616	A0820	A1020	A1225	A1625	*Illustration: Tooth configuration.*
52D 54 0750	Holex	Burr **Z7 – medium, diamond cut**	Carbide	eShop	eShop	eShop	eShop	eShop	*Z7*
Shape description				Cylindrical without end cut					
Head ⌀			mm	6	8	9.5	12	16	
Head length			mm	18	19	19	25	25	
Overall length			mm	50	64	64	70	70	

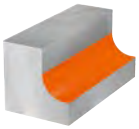
Burrs shape cylindrical with end cut (ZYAS)



Type				AS0616	AS0820	AS1020	AS1225	AS1625	*Illustration: Tooth configuration.*
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop	*Uni*
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	Carbide TiAlN	eShop	eShop	eShop	eShop	eShop	*Uni TiAlN*
51D 54 0400	Garant	Burr **Z5 – fine**	Carbide	–	eShop	eShop	–	–	*Z5*
51D 54 0600	Garant	Burr **Z1 - coarse**	Carbide	–	eShop	eShop	eShop	–	*Z1*
51D 54 7600	Garant	Burr **GARANT Master Alu – very rough (non-ferrous / aluminium)**	Carbide DLC	eShop	–	eShop	eShop	eShop	*Alu DLC*
56L 54 0560	Lukas	Burr, coated **Z 4 – fine, diamond cut**	Carbide TiAlN	eShop	–	–	eShop	–	*Z4 TiAlN*
Shape description				Cylindrical with end cut					
Head ⌀			mm	6	8	10	12	16	
Head length			mm	16	20	20	25	25	
Overall length			mm	50	60	60	65	65	

Type				AS0616	AS0820	AS1020	AS1225	AS1625	*Illustration: Tooth configuration.*
52D 54 0750	Holex	Burr **Z7 – medium, diamond cut**	Carbide	eShop	eShop	eShop	eShop	eShop	*Z7*
52D 54 0800	Holex	Burr **Z3 - medium, with chip breaker**	HSS	eShop	eShop	eShop	eShop	eShop	*Z3*
Tooth type abbreviation (54 0800)				Z3					
Shape description				Cylindrical with end cut					
Head ⌀ (54 0750)			mm	6	8	9.5	12	16	
Head ⌀ (54 0800)			mm	6	8	10	12	16	
Head length (54 0750)			mm	18	19	19	25	25	
Head length (54 0800)			mm	16	20	20	25	25	
Overall length (54 0750)			mm	50	64	64	70	70	
Overall length (54 0800)			mm	58	60	60	65	65	

Burrs shape cylindrical ball nose (WRC)





6mm ⌀

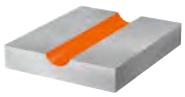
Illustration: Tooth configuration.

Type				C0616	C0820	C1020	C1225	C1625	
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop	*Uni*
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	Carbide TiAlN	eShop	eShop	eShop	eShop	eShop	*Uni TiAlN*
51D 54 0400	Garant	Burr **Z5 – fine**	Carbide	eShop	eShop	eShop	eShop	–	*Z5*
51D 54 0440	Garant	Burr **Z FINE – very fine**	Carbide	–	eShop	eShop	eShop	–	*Z FINE*
51D 54 0600	Garant	Burr **Z1 - coarse**	Carbide	eShop	eShop	eShop	eShop	–	*Z1*
51D 54 7600	Garant	Burr **GARANT Master Alu – very rough (non-ferrous / aluminium)**	Carbide DLC	eShop	eShop	eShop	eShop	eShop	*Alu DLC*
56L 54 0560	LUKAS	Burr, coated **Z 4 – fine, diamond cut**	Carbide TiAlN	eShop	eShop	eShop	eShop	eShop	*Z4 TiAlN*
Shape description						ball nose			
Head ⌀			mm	6	8	10	12	16	
Head length			mm	16	20	20	25	25	
Overall length			mm	50	60	60	65	65	

Illustration: Tooth configuration.

Type				C0616	C0820	C1020	C1225	C1625	
52D 54 0750	HOLEX	Burr **Z7 – medium, diamond cut**	Carbide	eShop	eShop	eShop	eShop	eShop	*Z7*
52D 54 0800	HOLEX	Burr **Z3 - medium, with chip breaker**	HSS	eShop	eShop	eShop	eShop	–	*Z3*
Tooth type abbreviation (54 0800)				Z3	Z3	Z3	Z3	–	
Shape description						ball nose			
Head ⌀ (54 0750)			mm	6	8	9.5	12	16	
Head ⌀ (54 0800)			mm	6	8	10	12	–	
Head length (54 0750)			mm	18	19	19	25	25	
Head length (54 0800)			mm	20	20	20	25	–	
Overall length (54 0750)			mm	50	63	63	70	70	
Overall length (54 0800)			mm	60	60	60	65	–	

Burrs shape ball (KUD)





6mm ⌀

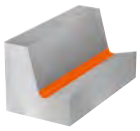
Illustration: Tooth configuration.

Type				D0605	D0807	D1009	D1210	D1614	
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop	*Uni*
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	Carbide TiAlN	eShop	eShop	eShop	eShop	eShop	*Uni TiAlN*
51D 54 0400	Garant	Burr **Z5 – fine**	Carbide	eShop	eShop	eShop	eShop	eShop	*Z5*
51D 54 0600	Garant	Burr **Z1 - coarse**	Carbide	eShop	–	eShop	–	eShop	*Z1*
51D 54 7600	Garant	Burr **GARANT Master Alu – very rough (non-ferrous / aluminium)**	Carbide DLC	–	eShop	eShop	eShop	eShop	*Alu DLC*
56L 54 0560	LUKAS	Burr, coated **Z 4 – fine, diamond cut**	Carbide TiAlN	eShop	eShop	eShop	eShop	–	*Z4 TiAlN*
Shape description						Ball			
Head ⌀			mm	6	8	10	12	16	
L_1 (54 7600)			mm	–	–	9	–	–	
Head length			mm	5	7	9	10	14	
Overall length			mm	50	47	49	51	54	
Shank ⌀			mm			6			

Illustration: Tooth configuration.

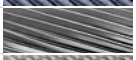
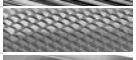
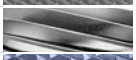
Type				D0605	D0807	D1009	D1210	D1614	
52D 54 0750	HOLEX	Burr **Z7 – medium, diamond cut**	Carbide	eShop	eShop	eShop	eShop	eShop	*Z7*
52D 54 0800	HOLEX	Burr **Z3 - medium, with chip breaker**	HSS	–	eShop	eShop	eShop	eShop	*Z3*
Tooth type abbreviation (54 0800)				–	Z3	Z3	Z3	Z3	
Shape description						ball			
Head ⌀ (54 0750)			mm	6	8	9.5	12	16	
Head ⌀ (54 0800)			mm	–	8	10	12	16	
Head length (54 0750)			mm	4.7	6	8	11	14	
Head length (54 0800)			mm	–	7	9	10	14	
Overall length (54 0750)			mm	50	52	54	56	60	
Overall length (54 0800)			mm	–	60	60	60	60	

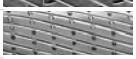
Burrs shape pointed arch (SPG)



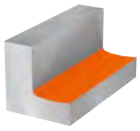


6mm ⌀

Type				G0618	G1020	G1225	G1630	Illustration: Tooth configuration.
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	 *Uni*
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	Carbide TiAlN	eShop	eShop	eShop	eShop	 *Uni TiAlN*
51D 54 0400	Garant	Burr **Z5 – fine**	Carbide	eShop	–	eShop	–	 *Z5*
51D 54 0440	Garant	Burr **Z FINE – very fine**	Carbide	eShop	eShop	–	–	 *Z FINE*
51D 54 0600	Garant	Burr **Z1 - coarse**	Carbide	eShop	eShop	eShop	–	 *Z1*
56L 54 0560	LUKAS	Burr, coated **Z 4 – fine, diamond cut**	Carbide TiAlN	eShop	eShop	eShop	eShop	 *Z4 TiAlN*
Shape description				Pointed arch				
Head ⌀			mm	6	10	12	16	
Head length			mm	18	20	25	30	
Overall length			mm	50	60	65	70	

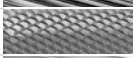
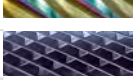
Type				G0618	G1020	G1225	G1630	Illustration: Tooth configuration.
52D 54 0750	HOLEX	Burr **Z7 – medium, diamond cut**	Carbide	eShop	eShop	eShop	eShop	 *Z7*
52D 54 0800	HOLEX	Burr **Z3 - medium, with chip breaker**	HSS	eShop	–	eShop	eShop	 *Z3*
Tooth type abbreviation (54 0800)				Z3	–	Z3	Z3	
Shape description				Pointed arch				
Head ⌀			mm	6	9.5	12	16	
Head length			mm	18	19	25	30	
Overall length (54 0750)			mm	50	64	70	75	
Overall length (54 0800)			mm	58	–	65	70	

Burrs shape round arch (RBF)



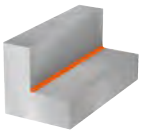


6mm ⌀

Type				F0618	F0820	F1020	F1225	F1630	Illustration: Tooth configuration.
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop	 *Uni*
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	Carbide TiAlN	eShop	eShop	eShop	eShop	eShop	 *Uni TiAlN*
54 0400	Garant	Burr **Z5 – fine**	Carbide	–	–	–	–	–	 *Z5*
51D 54 0440	Garant	Burr **Z FINE – very fine**	Carbide	–	–	eShop	eShop	–	 *Z FINE*
51D 54 0600	Garant	Burr **Z1 - coarse**	Carbide	–	–	–	eShop	–	 *Z1*
51D 54 7600	Garant	Burr **GARANT Master Alu – very rough (non-ferrous / aluminium)**	Carbide DLC	eShop	–	eShop	eShop	–	 *Alu DLC*
56L 54 0560	LUKAS	Burr, coated **Z 4 – fine, diamond cut**	Carbide TiAlN	–	–	eShop	eShop	–	 *Z4 TiAlN*
Shape description				round arch					
Head ⌀			mm	6	8	10	12	16	
Head length			mm	18	20	20	25	30	
Overall length			mm	50	60	60	65	70	

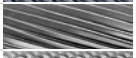
Type				F0618	F0820	F1020	F1225	F1630	Illustration: Tooth configuration.
52D 54 0750	HOLEX	Burr **Z7 – medium, diamond cut**	Carbide	eShop	eShop	eShop	eShop	eShop	 *Z7*
Shape description				round arch					
Head ⌀			mm	6	8	9.6	12	16	
Head length			mm	18	20	19	25	30	
Overall length			mm	50	65	64	70	75	

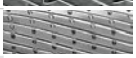
Burrs shape pointed cone (SKM)





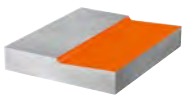
6mm ⌀

Type				M0618	M1020	M1225	Illustration: Tooth configuration.
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	**Carbide**	eShop	eShop	eShop	 *Uni*
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	**Carbide TiAlN**	eShop	eShop	eShop	 *Uni TiAlN*
51D 54 0400	Garant	Burr **Z5 – fine**	**Carbide**	eShop	–	–	 *Z5*
51D 54 0440	Garant	Burr **Z FINE – very fine**	**Carbide**	eShop	eShop	eShop	 *Z FINE*
51D 54 0600	Garant	Burr **Z1 - coarse**	**Carbide**	–	eShop	–	 *Z1*
56L 54 0560	Lukas	Burr, coated **Z 4 – fine, diamond cut**	**Carbide TiAlN**	eShop	eShop	eShop	 *Z4 TiAlN*
Shape description					pointed cone		
Head ⌀			mm	6	10	12	
Head length			mm	18	20	25	
Overall length			mm	50	60	65	

Type				M0618	M1020	M1225	Illustration: Tooth configuration.
52D 54 0750	HOLEX	Burr **Z7 – medium, diamond cut**	**Carbide**	eShop	eShop	eShop	 *Z7*
52D 54 0800	HOLEX	Burr **Z3 - medium, with chip breaker**	**HSS**	eShop	eShop	eShop	 *Z3*
Tooth type abbreviation (54 0800)					Z3		
Shape description					pointed cone		
Head ⌀			mm	6	10	12	
Head length (54 0750)			mm	20	20	25	
Head length (54 0800)			mm	18	20	25	
Overall length (54 0750)			mm	50	64	70	
Overall length (54 0800)			mm	58	60	65	

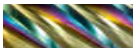
54

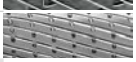
Burrs shape round cone (KEL)





6mm ⌀

Type				L0820	L1020	L1230	L1630	Illustration: Tooth configuration.
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	**Carbide**	–	eShop	eShop	eShop	 *Uni*
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	**Carbide TiAlN**	–	eShop	eShop	eShop	 *Uni TiAlN*
51D 54 7600	Garant	Burr **GARANT Master Alu – very rough (non-ferrous / aluminium)**	**Carbide DLC**	eShop	eShop	eShop	–	 *Alu DLC*
56L 54 0560	Lukas	Burr, coated **Z 4 – fine, diamond cut**	**Carbide TiAlN**	–	eShop	–	–	 *Z4 TiAlN*
Shape description					Round cone			
Head ⌀			mm	8	10	12	16	
Head length			mm	20	20	30	30	
Overall length			mm	60	60	70	70	

Type				L1020	L1230	L1630	Illustration: Tooth configuration.
52D 54 0750	HOLEX	Burr **Z7 – medium, diamond cut**	**Carbide**	eShop	eShop	eShop	 *Z7*
52D 54 0800	HOLEX	Burr **Z3 - medium, with chip breaker**	**HSS**	–	eShop	eShop	 *Z3*
Tooth type abbreviation (54 0800)				–	Z3	Z3	
Shape description					Round cone		
Head ⌀			mm	10	12	16	
Head length (54 0750)			mm	20	30	33.3	
Head length (54 0800)			mm	–	30	30	
Overall length (54 0750)			mm	65	75	78	
Overall length (54 0800)			mm	–	70	70	

Burrs shape teardrop (TRE) / burrs shape flame

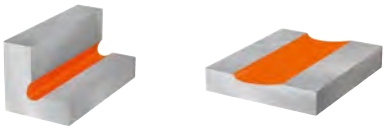


Form E



Form H

6mm
⌀



Type				E0610	E0813	E1220	H0820	H1230	Illustration: Tooth configuration.
51D 54 0220	Garant	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop	 Uni
51D 54 0222	Garant	Burr, coated **GARANT Master Uni – medium**	Carbide TiAlN	eShop	eShop	eShop	eShop	eShop	 Uni TiAlN
Shape description				teardrop	teardrop	teardrop	Flame	Flame	
Head ∅			mm	6	8	12	8	12	
Head length			mm	10	13	20	20	30	
Overall length			mm	50	53	60	60	70	

Type				E0610	E0813	E1220	H0820	H1230	Illustration: Tooth configuration.
52D 54 0750	HOLEX	Burr **Z7 – medium, diamond cut**	Carbide	eShop	eShop	eShop	eShop	eShop	 Z7
52D 54 0800	HOLEX	Burr **Z3 - medium, with chip breaker**	HSS	–	–	eShop	–	–	 Z3
Tooth type abbreviation (54 0800)				–	–	Z3	–	–	
Shape description				teardrop	teardrop	teardrop	flame	flame	
Head ∅			mm	6	8	12	8	12	
Head length			mm	10	15	20	19	30	
Overall length			mm	50	60	60	64	75	

54

Garant GARANT Master Uni / Master Alu burrs with shank ∅ 8 mm

The innovative tooth geometry permits a high metal removal rate and at the same time extremely smooth running and very good guidance.
Extra-sturdy shank with 8 mm.

Application: For the most demanding burring operations.

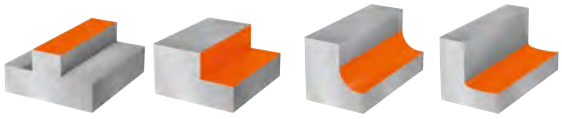
54 3220 – Suitable for use with power tools and industrial robots, on almost all materials.
For deburring, edge breaking, cleaning,
weld and surface preparation.

54 3710 – Optimised for machining hard and soft aluminium alloys, plastics, bronze and non-ferrous metals.

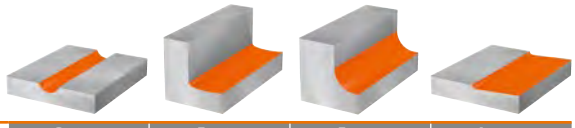
Note: Materials with poor thermal conductivity: Reduce speed in order to avoid overheating the burr and smearing.



8mm
⌀



Type				A1225	AS1225	C1020	C1225	Illustration: Tooth configuration.
51D 54 3220	Burr **GARANT Master Uni – medium**		Carbide	–	eShop	eShop	eShop	 Uni
51D 54 3710	Burr **GARANT Master Alu – very rough (non-ferrous / aluminium)**		Carbide DLC	eShop	–	–	eShop	 Alu DLC
Shape description				cylindrical	Cylindrical with end cut	ball nose	ball nose	
Head ∅		mm		12	12	10	12	
Head length		mm		25	25	20	25	
Overall length		mm		65	65	60	65	



Type				D1210	F1225	F1630	L1230	Illustration: Tooth configuration.
51D 54 3220	Burr **GARANT Master Uni – medium**		Carbide	eShop	eShop	–	–	 Uni
51D 54 3710	Burr **GARANT Master Alu – very rough (non-ferrous / aluminium)**		Carbide DLC	–	eShop	eShop	eShop	 Alu DLC
Shape description				Ball	round arch	round arch	Round cone	
Head ∅		mm		12	12	16	12	
Head length		mm		10	25	30	30	
Overall length		mm		50	65	70	70	

Garant Burrs with shank Ø 6 mm (long)

Shank length 200 mm (can be cut to length).
Application: Do not start the machine until the burr is inside the component.



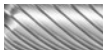
_C1225

Type			C0616	C0820	C1225	E1220	F0618
51D 54 0355	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop	eShop
Shape description			ball nose	ball nose	ball nose	teardrop	round arch
Head Ø		mm	6	8	12	12	6
Head length		mm	16	20	25	20	18
Overall length		mm	216	220	225	220	218

Illustration: Tooth configuration

Uni

Type			D0605	D0807	D1009	D1210
51D 54 0355	Burr **GARANT Master Uni – medium**	Carbide	eShop	eShop	eShop	eShop
Shape description			Ball			
Head Ø		mm	6	8	10	12
Head length		mm	5	7	9	10
Overall length		mm	205	207	209	210

Illustration: Tooth configuration

Uni

PFERD Spindle extension for burrs

Spindle extension for milling and grinding points.
Application: For working in hard to reach spots.

Note: For reasons of safety, extensions are not permissible in combination with milling points with long shanks.

Countersink shank Ø		mm	3	6
55A 54 6930	Spindle extension		eShop	eShop
Clamping shank Ø		mm	6	8
Overall length		mm	150	


54 6930

54

Burr sets

Shank Ø 3 mm

				5	7	10	Supplied with:
NEW 51D 54 6941		Mini burr set, 10 pieces **GARANT Master Uni – medium**	Carbide	–	–	eShop	1 pc. each No. 546900 size AS0313; AS0613; D0605; C0313; C0613; G0313; G0613.
NEW 51D 54 6961	Garant	Mini burr set, 7 pieces **GARANT Master Uni – medium**	Carbide	–	eShop	–	1 pc. each No. 546900 size AS0313; AS0613; C0313; C0613; D0302; D0605; F0313; G0313; G0613; M0613.
51D 54 6965		Mini burr set, 5 pieces **Z9 very coarse (NF/Alu)**	Carbide	eShop	–	–	1 pc. each No. 546908 size A0313; C0313; D0403; F0313; G0313.
52D 54 6970	HOLEX	Mini burr set, 10 pieces **Z7 – medium, diamond cut**	Carbide	–	–	eShop	1 pc. each No. 546910 size A0313; AS0313; C0313; D0302; D0403; E0307; F0313; G0313; H0307; M0311.

3mm Ø


54 6941
54 6965
54 6970

Shank Ø 6 mm

Number of burrs				5	8	10	Supplied with:
51D 54 1405		Burr set **GARANT Master Uni – medium, 5 pieces**	Carbide	eShop	–	–	1 pc. each No. 540220 size A0616, C0616, D0807; G0618; M1020.
51D 54 1406			Carbide TiAlN	eShop	–	–	1 pc. each No. 540222 size A0616, C0616, D0807; G0618; M1020.
51D 54 1410	Garant	Burr set **GARANT Master Uni – medium, 8 pieces**	Carbide	–	eShop	–	1 pc. each No. 540220 size A0616; A1020; C0616; C1020; D0605; D1009; G0618; M1020.
51D 54 1411			Carbide TiAlN	–	eShop	–	1 pc. each No. 540222 size A0616; A1020; C0616; C1020; D0605; D1009; G0618; M1020.
51D 54 7605		Burr set **8 pieces, GARANT Master Alu – very coarse**	Carbide	–	eShop	–	1 pc. each No. 547600 size AS0616; AS1225; C0616; C1225; D0807; F0618; F1225; L1020.
51D 54 1460		Burr set **8 pieces, Z9 – very coarse (non-ferrous / aluminium)**	Carbide	–	eShop	–	1 pc. each No. 540709 size AS0616; AS1225; C0616; C1225; D0807; F0618; F1225; L1020.
56L 54 1470	LUKAS	Burr set **5 pieces, Z4 – medium, diamond cut**	Carbide TiAlN	eShop	–	–	1 pc. each No. 540560 size A1020; C1020; D1009; F1020; M1020.
52D 54 1510	HOLEX	Burr set **10 pieces, Z7 - medium, diamond cut**	Carbide	–	–	eShop	1 pc. each No. 540750 size AS0616; AS1020; AS1225; C0616; C1225; D1009; G0618; G1630; F1225; M1020.
52D 54 1550		Burr set **10 pieces, Z3 – medium, with chip breaker**	HSS	–	–	eShop	1 pc. each No. 540800 size AS0616; AS1020; AS1225; C0616; C1225; M1225; D1210; G0618; G1225; G1630.

6mm Ø


54 1410
54 1510

Burrs for deburring work

6mm ⌀ 8mm ⌀

54 1000 Size AF0627 – **Deburring head** with guide face, without cutter at the tip.
Size MN1225 – **Combination** of pointed cone and angle for deburring and chamfering **inner and outer edges.** Special tooth geometry for **optimum guidance even on sharp edges.**
Size R0812 – **Deburring head (external)** with flat tip on the head and radius for edge rounding.
Size J1010–J1613 – Conical shape for **countersinking** and **chamfering.**
Size T1610/6; T1610/8 – **Deburring head (internal)** with left-hand helical toothing and 45° angle for **chamfering**.
Size R1015; R1315 – **Deburring head (external)** with radius for edge rounding.

Note: Reduced speed for burrs with an overall length of 120 mm: maximum 11,000 rpm



Type			AF0627	NS1230	K1230	MN1225	T1610/6	T1610/8
51D 54 1000	Garant Burr	Carbide	eShop	–	–	eShop	eShop	eShop
52D 54 1200	HOLEX Burr Z3 – medium **with chip breaker**	HSS	–	eShop	eShop	–	–	–
Tooth type abbreviation			–	Z3	Z3	–	–	–
Shape description			Cylindrical with guide face	Angle with end cut	club	Deburring	Deburring	Deburring
Head ⌀		mm	6	12	12	12	16	16
Head length		mm	27	30	30	25	10	10
Overall length		mm	60	70	70	70	70	120
Shank ⌀		mm	6	6	6	6	6	8
Angle		degrees	–	8	–	–	45	45



Type			R0812	R1015	R1315	J1010	J1013	J1613
51D 54 1000	Garant Burr	Carbide	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			deburring	deburring	deburring	countersink	countersink	countersink
Head ⌀		mm	8	10	13	10	10	16
Head length		mm	12	15	15	10	13	13
Overall length		mm	52	55	55	50	53	53
Shank ⌀		mm	6					
Angle		degrees	–	–	–	90	60	90
Radius		mm	2.5	8	10	–	–	–

Garant Carbide burrs for shaping plastics (CRP/GRP)

3mm ⌀ 6mm ⌀

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
Z P plastic												●				

The special tooth geometry generates **reduced cutting forces** and **avoids frayed fibres.** Cylindrical shape (ZYA).
Cutter geometry ideal for hard CRP/GRP with fibre content > 40 %.

Application: Side milling, contour milling and deburring (especially of fibre-reinforced plastics).



Type			AS0315	AS0625
51D 54 7330	Burr, fine **Tooth configuration P – plastic**	Carbide	–	eShop
51D 54 7340	Burr, coarse **Tooth configuration P – plastic**	Carbide	eShop	eShop
End face profile			Two-flute end face cut	
Head ⌀		mm	3	6
Head length		mm	15	25
Overall length		mm	43	64
Shank ⌀		mm	3	6

GARANT Master Steel burrs / HOLEX Z steel

The innovative tooth geometry permits **very high metal removal rates** combined with **smooth cutting and good guidance accuracy.**
The optimised chip formation (no pointed chips) ensures good surface quality. Shank ∅ 6 mm.

Application: Optimised for **use on steel and steel castings.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
54 0740–54 7405		●	●	●	●	●				●						

6mm ∅

54 7400 – With high-performance coating for longer tool life, less heat input, better chip evacuation.





Type				A0616	A0820	A1020	A1225	C0616	C0820	C1625	C1225	C1625
51D 54 7400	Garant	Burr, coated **GARANT Master Steel – coarse**	**Carbide AlCrN**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
52D 54 0740	HOLEX	Burr **Z steel – coarse**	**Carbide**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
Shape description				cylindrical	cylindrical	cylindrical	cylindrical	ball nose	ball nose	ball nose	ball nose	ball nose
Head ∅ (54 7400)			mm	6	8	10	12	6	8	10	12	16
Head ∅ (54 0740)			mm	6	8	9.6	12.7	6	8	9.6	12.7	–
Head length (54 7400)			mm	16	20	20	25	16	20	20	25	25
Head length (54 0740)			mm	18	19	19	25	18	19	19	25	–
Overall length (54 7400)			mm	55	60	60	65	55	60	60	65	70
Overall length (54 0740)			mm	50	64	64	70	50	64	64	70	–
Shank ∅			mm					6				





Type				D0605	D0807	D1009	D1210	D1614	G0618	G0820	G1020	G1225
51D 54 7400	Garant	Burr, coated **GARANT Master Steel – coarse**	**Carbide AlCrN**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
52D 54 0740	HOLEX	Burr **Z steel – coarse**	**Carbide**	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop
Shape description				ball	ball	ball	ball	ball	Pointed arch	Pointed arch	Pointed arch	Pointed arch
Head ∅ (54 7400)			mm	6	8	10	12	16	6	8	10	12
Head ∅ (54 0740)			mm	6	8	9.6	12.7	–	6	8	9.6	12.7
Head length (54 7400)			mm	5	7	9	10	14	18	20	20	25
Head length (54 0740)			mm	5	7	8	11	–	20	19	19	25
Overall length (54 7400)			mm	45	47	49	51	54	55	60	60	70
Overall length (54 0740)			mm	50	52	54	56	–	50	64	64	70
Shank ∅			mm					6				





Type				F0618	F0820	F1020	F1225	L1020	L1230
51D 54 7400	Garant	Burr, coated **GARANT Master Steel – coarse**	**Carbide AlCrN**	eShop	eShop	eShop	eShop	eShop	eShop
52D 54 0740	HOLEX	Burr **Z steel – coarse**	**Carbide**	eShop	eShop	eShop	eShop	eShop	eShop
Shape description				round arch	round arch	round arch	round arch	round cone	round cone
Head ∅ (54 7400)			mm	6	8	10	12	10	12
Head ∅ (54 0740)			mm	6	8	9.6	12.7	9.6	13.2
Head length (54 7400)			mm	18	20	20	25	20	30
Head length (54 0740)			mm	18	20	19	25	30	32
Overall length (54 7400)			mm	55	60	60	65	60	70
Overall length (54 0740)			mm	50	65	64	70	76	77
Shank ∅			mm				6		

Burr sets – GARANT Master Steel / HOLEX Z steel

6mm ∅

54 7405 – With high-performance coating for longer tool life, less heat input, better chip evacuation.

Number of burrs				5	8	Supplied with:
51D 54 7405	Garant	Burr set, coated **GARANT Master Steel – coarse, 5 pieces**	**Carbide AlCrN**	eShop	–	1 pc. each No. 547400 size A1225; C1225; D1210; G1225; F1225.
52D 54 7120	HOLEX	Burr set **8 pieces, Z steel – coarse**	**Carbide**	–	eShop	1 pc. each No. 540740 size A0616; A1020; A1225; C1225; D1009; G0820; F1225; L1020.


54 7405


54 7120

GARANT Master INOX / HOLEX tooth configuration INOX

The innovative tooth geometry permits **very high metal removal rates** combined with **smooth cutting and good guidance accuracy.** Outstanding chip formation and surface results, low heat input into the material (no tempering colouration). Shank ∅ 6mm.

Application: Optimised for use on **austenitic, rust-resistant and acid-resistant steels**, soft titanium alloys and non-ferrous metals.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
54 7115–54 7505	○							●	○		○					

6mm

∅

54 7500 – With high-performance coating for longer tool life, less heat input, better chip evacuation.





Type				A0616	A0820	A1020	A1225	C0616	C0820	C1020	C1225	C1625
51D 54 7500	Garant	GARANT Master INOX burr, coated **coarse**	**Carbide AlTiN**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
52D 54 7250	HOLEX	Burr **Tooth profile INOX – coarse**	**Carbide**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
Shape description				cylindrical	cylindrical	cylindrical	cylindrical	ball nose	ball nose	ball nose	ball nose	ball nose
Head ∅ (54 7500)			mm	6	8	10	12	6	8	10	12	16
Head ∅ (54 7250)			mm	6	8	9.6	12.7	6	8	9.6	12.7	–
Head length (54 7500)			mm	16	20	20	25	16	20	20	25	25
Head length (54 7250)			mm	18	19	19	25	18	19	19	25	–
Overall length (54 7500)			mm	55	60	60	65	55	60	60	65	70
Overall length (54 7250)			mm	50	64	64	70	50	63	63	70	–
Shank ∅			mm	6								





Type				D0605	D0807	D1009	D1210	D1614	G0618	G0820	G1020	G1225
51D 54 7500	Garant	GARANT Master INOX burr, coated **coarse**	**Carbide AlTiN**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
52D 54 7250	HOLEX	Burr **Tooth profile INOX – coarse**	**Carbide**	–	–	eShop	–	–	–	eShop	–	–
Shape description				ball	ball	ball	ball	ball	Pointed arch	Pointed arch	Pointed arch	Pointed arch
Head ∅ (54 7500)			mm	6	8	10	12	16	6	8	10	12
Head ∅ (54 7250)			mm	–	–	9.6	–	–	–	8	–	–
Head length (54 7500)			mm	5	7	9	10	14	18	20	20	25
Head length (54 7250)			mm	–	–	8	–	–	–	19	–	–
Overall length (54 7500)			mm	45	47	49	51	54	55	60	60	70
Overall length (54 7250)			mm	–	–	54	–	–	–	64	–	–
Shank ∅			mm	6								





Type				F0618	F0820	F1020	F1225	L1020	L1230
51D 54 7500	Garant	GARANT Master INOX burr, coated **coarse**	**Carbide AlTiN**	eShop	eShop	eShop	eShop	eShop	eShop
52D 54 7250	HOLEX	Burr **Tooth profile INOX – coarse**	**Carbide**	eShop	eShop	eShop	eShop	eShop	eShop
Shape description				round arch	round arch	Round arch	round arch	round cone	round cone
Head ∅ (54 7500)			mm	6	8	10	12	10	12
Head ∅ (54 7250)			mm	6	8	9.6	12.7	10	12.7
Head length (54 7500)			mm	18	20	20	25	20	30
Head length (54 7250)			mm	18	20	19	25	20	32
Overall length (54 7500)			mm	55	60	60	65	60	70
Overall length (54 7250)			mm	50	65	64	70	65	77
Shank ∅			mm	6					

Burr sets – GARANT Master INOX / HOLEX tooth configuration INOX

6mm

∅

54 7505 – With high-performance coating for longer tool life, less heat input, better chip evacuation.

Number of burrs				5	8	Supplied with:
51D 54 7505	Garant	GARANT Master INOX burr set, coated **5 pieces, coarse**	**Carbide AlTiN**	eShop	–	1 pc. each No. 547500 size A1225; C1225; D1210; G1225; F1225.
52D 54 7115	HOLEX	Burr set **8 pieces, tooth profile INOX - coarse**	**Carbide**	–	eShop	1 pc. each No. 547250 size A0616; A1020; A1225; C1225; D1009; G0820; F1225; L1020.



54 7505 54 7115

GARANT Master Cast

The newly developed innovative tooth geometry permits a **very high metal removal rate** and at the same time **smooth running and good guidance.** No chip adhesion and outstanding surface results.
Shank ∅ 6mm.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
54 7700–54 7705	○	●	●	●	●			●	○	●	○							





Type			A0616	A1020	A1225	C0616	C1020	C1225
51D 54 7700	Burr, coated **GARANT Master Cast – coarse**	**AlTiSiN**	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			cylindrical	cylindrical	cylindrical	ball nose	ball nose	ball nose
Head ∅		mm	6	10	12	6	10	12
Head length		mm	16	20	25	16	20	25
Overall length		mm	55	60	65	55	60	65
Shank ∅		mm	6					





Type			D0605	D0807	D1009	D1210	G0618	G1020	G1225
51D 54 7700	Burr, coated **GARANT Master Cast – coarse**	**AlTiSiN**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			Ball	Ball	Ball	Ball	Pointed arch	Pointed arch	Pointed arch
Head ∅		mm	6	8	10	12	6	10	12
Head length		mm	5	7	9	10	18	20	25
Overall length		mm	45	47	49	51	55	60	70
Shank ∅		mm	6						





Type			F0618	F1020	F1225	F1630	L1230
51D 54 7700	Burr, coated **GARANT Master Cast – coarse**	**AlTiSiN**	eShop	eShop	eShop	eShop	eShop
Shape description			round arch	round arch	round arch	round arch	Round cone
Head ∅		mm	6	10	12	16	12
Head length		mm	18	20	25	30	30
Overall length		mm	55	60	65	–	70
Shank ∅		mm	6				

Burr set – GARANT Master Cast



54 7705

Number of burrs			5	Supplied with:
51D 54 7705	Burr set, coated, 5 pieces **GARANT Master Cast – coarse**	**AlTiSiN**	eShop	1 pc. each 547700 size A1225; C1225; D1210; G1225; F1225

Chip guard for burrs

Chip guard with clear sight glass. Easy fixing for quick clamping on the straight die grinder with the help of a fastening ring. Targeted chip evacuation for greater protection against chips flying. Includes 5 chip shields.

Application: For use on all standard straight die grinders.
Supplied with: Set of 5 swarf protection.

Note: Does not replace wearing safety glasses!



54 7723

GERMAN INNOVATION AWARD '23 GOLD



Type		SET
55A 54 7723	Swarf protection 5 pieces	eShop

Grinding and polishing points

GARANT / LUKAS / PFERD grinding points (OSA certified and tested to DIN EN 12 413) are specially designed for hardness, bonding, grit type, and grit size for the specific applications and cover a very wide application range. Minimal radial run-out ensures vibration-free grinding which is good for man, machine, and component. GARANT grinding points are generally suitable for **edge and surface grinding** and are characterised by very high material removal rates, long service life, and consistent surface finish quality of the component.

GARANT polishing points are characterised by long service life and quick production of fine, even surface finishes. Finest polishing grades or surfaces right up to mirror finish can be achieved, depending on the version used. GARANT polishing points can be profiled using dressing sticks.



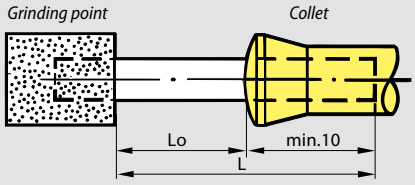
Grinding medium	Pink aluminium oxide **AR**	Standard aluminium oxide **AN**	Mixed alum. oxide **AW-AN**	Mixed alum. oxide **AD-AW**	Mixed alum. oxide **AW-CER**	Silicon carbide **SiC**	Aluminium oxide / polishing rubber			Polishing felt with grinding compound	Polishing felt with diamond compound	Diamond-polishing points
Brand	Garant	Garant	Garant	LUKAS	PFERD	LUKAS	Garant			Garant	Garant	Garant
No.	55 0100 – 55 1200	55 1600	55 1700	55 0310 / 55 1510	55 1790 / 55 1791	55 1780	55 1850 – 55 1922			55 2250	55 2330	55 1940 – 55 1943
Low-alloy steel	●	○	○				●	●	●	●	○	●
Stainless steel	○	●	○		○		●	●	●	●	○	●
High-alloy steel	○	●	○	○	●		●	●	●	●	○	●
Cast (grey temp.)	○	○	●			○	○	○	○	●	○	●
Tempered steel	○	○	○	●	●		○	○	○	○	●	●
Hardened steel	○	○		●	●	○	○	○	○	○	●	●
Titanium alloys / nickel alloys					●		●	●	●			●
Alu / NF metals						●	●	●	●	●	○	●
Grit	coarse (24 – 60 grit)* fine (46 – 100 grit)	coarse (24 – 46 grit)	coarse (30 grit)	fine (100 grit)	coarse (46 grit) fine (80 grit)	fine (80 grit)	coarse (80 grit)	medium (120 grit)	fine (220 grit)	fine (55 2250_150) very fine (55 2250_280)	very fine up to polishing	very fine up to gloss polishing
Degree of hardness	medium	soft	medium	medium	soft	soft	soft resilient			very soft	very soft	soft resilient
Bonding	ceramic	artificial resin	ceramic	ceramic	ceramic	ceramic	soft rubber			–	–	PU
Recommended cutting speed v in m/s	**30 – 50**	**40 – 50**	**40 – 50**	**10 – 30**	**30 – 50**	**25 – 40**	**10 – 15**			**5 – 10**	**1 – 3**	**1 – 2**
Application	**Grinding**	**Grinding**	**Grinding**	**Fine grinding, deburring,** edge grinding	**Grinding**	**Grinding**	**Fine grinding** (not for edges or rough surfaces)			**Polishing**	**Polishing**	**Polishing** up to **high-gloss polishing**

*) The larger the grinding point, the coarser the grit.

Speeds

Calculation: $$n = \frac{v\ [m/s] \times 60{,}000}{D\ [mm] \times \pi}$$

Maximum permissible speeds
(for grinding points No. 55 0100 – 55 1791 to DIN EN 12413).
Each package of grinding points (10 pieces) includes information about the maximum working speed in conjunction with the free shaft length L_0.



Permissible maximum speed in rpm for a free shank length LO of

L_0	10	**15**	20	mm
rpm	64	53	45	×1000

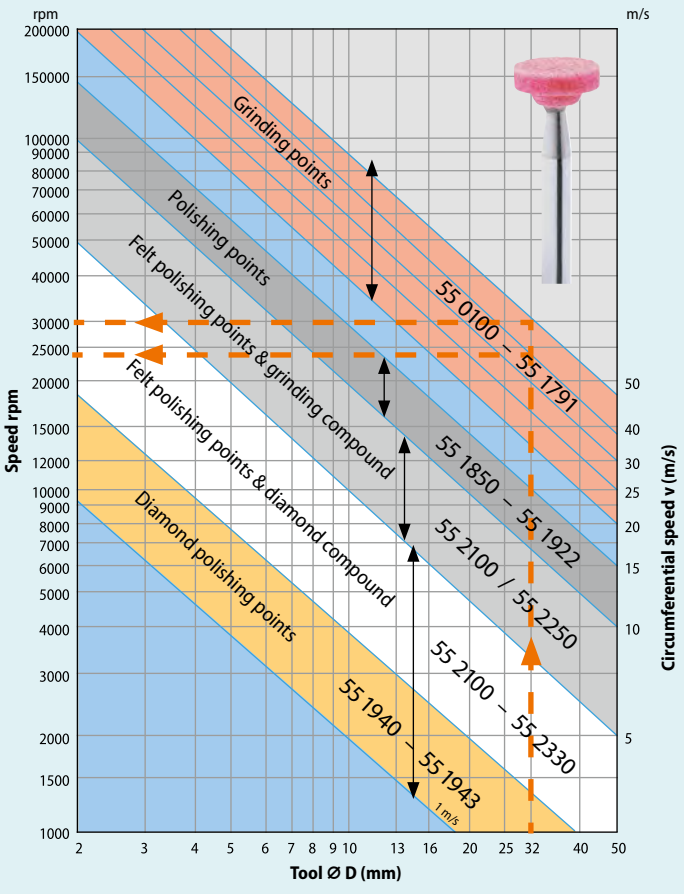
Important!

- The maximum permissible speed relates to the unsupported shank length L_0, i.e. depends on the mounting.
- 10 mm minimum clamped length in the collet must be maintained in all cases.
- Max. permissible circumferential speed v_{max} = 50 m/s.

Grinding medium

Code		Code LUKAS	PFERD
Aluminium oxide, pink	= AR	EKR	AR
Aluminium oxide, dark red	= AD	EKD	AD
Aluminium oxide, white	= AW	EKW	AW
Standard aluminium oxide	= AN	NK	AN
Ceramic grit	= CER	CERAMIC	CO
Silicon carbide green	= SiC	SiC-ALU	CN
Mixed grit AN + AD + AW	= AD-AW	NDW	ADW
Mixed grit AW + AN	= AW-AN	HK	AWN
Mixed grit AW + CER	= AW-CER	CERAMIC	AWCO

Recommended speeds



Example grinding points No. 55 1700 ZY 3232 (mixed alum. oxide AW-AN).
Head Ø: 32 mm. Recommended circumferential speed: 40 – 50 m/s.
Recommended speed range: 24,000 – 30,000 rpm.

A

Garant

Grinding point pink aluminium oxide (AR)

Ceramic bonded grinding points in **pink aluminium oxide (AR).** Medium-hard version.

Application: For general-purpose grinding of **unalloyed and low-alloy** steels and **cast iron.**
Recommended cutting speed 30 – 50 m/s.


ZY


SP KU

Small grinding point shank Ø 3 mm.

Fine grit. Shank Ø 3 mm, shank length 30 mm.

Type			ZY0205	ZY0306	ZY0408	ZY0510	ZY0610	ZY0613	ZY0810	SP0306	SP0510	KU10	
51E 55 0400	Mini grinding point **fine**	AR	eShop	eShop ■	eShop ■	eShop ■	eShop	eShop ■	eShop ■	eShop	eShop	eShop	10
Head Ø		mm	2	3	4	5	6	6	8	3	5	10	
Head length		mm	5	6	8	10	10	13	10	6	10	10	
Shank Ø		mm	3										

Grinding points shank Ø 6 mm and 8 mm

55 0700 – Fine grit. Shank length 40 mm.
Size ZY5025 – Shank Ø 8 mm.
55 0600/0800/0900/1200 – Coarse grit. Shank length 40 mm.

Type			ZY0610	ZY0613	ZY0816	ZY1020	ZY1032	ZY1325	ZY1632	ZY2025	ZY2532	
51E 55 0600	Grinding point **coarse**	AR	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
51E 55 0700	Grinding point **fine**	AR	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
Head Ø		mm	6	6	8	10	10	13	16	20	25	
Head length		mm	10	13	16	20	32	25	32	25	32	
Shank Ø		mm	6									


ZY

Type			ZY1604	ZY2006	ZY2513	ZY3216	ZY4020	ZY5025	
51E 55 0800	Grinding point **coarse**	AR	eShop	eShop	eShop	eShop	eShop	eShop	10
Head Ø		mm	16	20	25	32	40	50	
Head length		mm	4	6	13	16	20	25	
Shank Ø		mm	6	6	6	6	6	8	


ZY

Type			SP0510	SP0816	SP1320	SP2032	
51E 55 0900	Grinding point **coarse**	AR	eShop	eShop	eShop	eShop	10
Head Ø		mm	5	8	13	20	
Head length		mm	10	16	20	32	
Shank Ø		mm	6				


SP

Type			KU08	KU16	KU20	KE1025	KE1645	KE2032	
51E 55 1200	Grinding point **coarse**	AR	eShop	eShop	eShop	eShop	eShop	eShop	10
Head Ø		mm	8	16	20	10	16	20	
Head length		mm	8	16	20	25	45	32	
Shank Ø		mm	6						


KU KE

Grinding point sets

Assortment of grinding points in the most popular shapes and sizes.

Supplied with:

55 0100 – 1 each grinding point ZY0205 / ZY0306 / ZY0510 / ZY1303 / ZY1604 / KU06 / KU10 / SP0306 / D18 0708 / B53 0816.

55 0200 – 1 each grinding point ZY1020 / ZY1325 / ZY1632 / ZY2006 / ZY2025 / SP1320 / SP2032 / KE2032 / KU16 / KU20.

Number of grinding points			10	Shank Ø mm	Shaft length mm
51E 55 0100	Set of grinding points **fine**	AR	eShop	3	30
51E 55 0200	Set of grinding points **coarse**	AR	eShop	6	40


55 0200

A

Small grinding points, mixed grit (AD-AW)

Mini grinding points with **mixed grit** (**AD-AW**) of standard aluminium oxide, dark red aluminium oxide and white monocrystalline aluminium oxide (LUKAS designation NDW) in 100 grit (fine). Ceramic bonding. Shank ∅ 3 mm, shank length 50 mm.

Application: Grinding points with high shape stability are particularly suitable for fine grinding and edge grinding of **(hardened) tool steels** and **Cr-Ni steels** in toolmaking and mould-building. Recommended cutting speed 10 – 30 m/s.

Small grinding point shank ∅ 3 mm.

Type			ZY0205	ZY0306	ZY0408	ZY0610	ZY0810	ZY1013	WR1013	
56L 55 1510	Mini grinding point **fine**	AD-AW	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
Head ∅		mm	2	3	4	6	8	10	10	
Head length		mm	5	6	8	10	10	13	13	
Shank ∅		mm	3							



_ZY _WR

Type			SP0510	SP0810	KU03	KU04	KU06	KU08	
56L 55 1510	Mini grinding point **fine**	AD-AW	eShop	eShop	eShop	eShop	eShop	eShop	10
Head ∅		mm	5	8	3	4	6	8	
Head length		mm	10	10	3	4	6	8	
Shank ∅		mm	3						



_SP _KU

Small grinding point set

Assortment of grinding points in the most popular shapes and sizes.

Supplied with: 1 each grinding points No. 551510 size ZY0408 / ZY0610 / ZY0810 / ZY1013 / SP0510 / SP0810 / WR1013 / KU04 / KU06 / KU08.

Number of grinding points			10	Shank ∅ mm	Shaft length mm
56L 55 0310	Set of grinding points **fine**	AD-AW	eShop	3	50



55 0310

A

Grinding points standard aluminium oxide (AN)

Grinding point in **standard aluminium oxide (AN)** in coarse grit and synthetic resin bonding. Shank length 40 mm.
Size ZY5025 – Shank ∅ 8 mm.

Application: For grinding of **high-alloy** steel, stainless steel and **cast iron.**
Recommended cutting speed 40 – 50 m/s.

Type			ZY1032	ZY1325	ZY1632	ZY2025	ZY4020	ZY5010	ZY5025	
51E 55 1600	Grinding point **coarse**	AN	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
Head ∅		mm	10	13	16	20	40	50	50	
Head length		mm	32	25	32	25	20	10	25	
Shank ∅		mm	6	6	6	6	6	6	8	



55 1600

A

Grinding points mixed aluminium oxide (AW-AN)

Grinding point in special quality **mixed aluminium oxide,** 30 grit (coarse), and ceramic bonding. Shank ∅ 6 mm, shank length 40 mm.

Application: For coarse grinding of **cast iron** and **stainless steel.** Recommended cutting speed 40 – 50 m/s.

Type			ZY1632	ZY2025	ZY2040	ZY3232	SP2032	
51E 55 1700	Grinding point **coarse**	AW-AN	eShop	eShop	eShop	eShop	eShop	10
Head ∅		mm	16	20	20	32	20	
Head length		mm	32	25	40	32	32	
Shank ∅		mm	6					



_ZY _SP

SiC

Silicon carbide (SiC) grinding points

Ceramic bonded **SiC** grinding points, 80 grit (fine), with high self-sharpening effect and open-pore structure for improved reduction of clogging. Shank ∅ 6 mm, shank length 40 mm.

Application: For grinding **aluminium alloys** and **soft materials (non-ferrous metals).**
Recommended circumferential speed 25 –40 m/s.

Type			ZY1013	ZY1020	ZY2025	ZY4020	KE1632	
55L 55 1780	Grinding point **fine**	SiC	eShop	eShop	eShop	eShop	eShop	10
Head ∅		mm	10	10	20	40	16	
Head length		mm	13	20	25	20	32	
Shank ∅		mm			6			


_ZY


_KE

CER

PFERD Grinding points mixed grit (AD-CER)

Grinding point with **mixed grit (AW-CER)** in **hardness J.** Soft bonded combination of **white aluminium oxide** and **ceramic micro-crystalline sintered aluminium oxide** with high self-sharpening characteristics for consistently high metal removal rates coupled with cool grinding behaviour (Pferd designation AWCO).

Application: For surface grinding of superalloys that are difficult to grind such as **titanium materials, nickel** and **cobalt-based alloys**, and also **hardened steel.**
Recommended cutting speed 30 – 50 m/s.



55

Shank ∅ 3 mm

55 1790 – **Coarse,** 46 grit.
55 1791 – **Fine,** 80 grit.

Type			ZY0205	ZY0408	ZY0613	ZY0816	
55E 55 1790	Grinding point hardness J **coarse**	AW-CER	–	–	eShop	eShop	10
55E 55 1791	Grinding point hardness J **fine**	AW-CER	eShop	eShop	eShop	eShop	10
Head ∅		mm	2	4	6	8	
Head length		mm	5	8	13	16	
Shank ∅		mm			3		


_ZY

Type			SP0408	SP0613	SP0816	KU03	KU06	KU08	
55E 55 1790	Grinding point hardness J **coarse**	AW-CER	–	eShop	eShop	–	–	eShop	10
55E 55 1791	Grinding point hardness J **fine**	AW-CER	eShop	eShop	eShop	eShop	eShop	eShop	10
Head ∅		mm	4	6	8	3	6	8	
Head length		mm	8	13	16	3	6	8	
Shank ∅		mm			3				


_SP


_KU

Shank ∅ 6 mm

55 1795 – **Coarse,** 46 grit.
55 1796 Size KE1645 – **Fine,** 60 grit.
Size SP1320; ZY1020; ZY1325 – **Fine,** 80 grit.

Type			ZY1020	ZY1325	ZY4020	SP1320	KE1645	
55E 55 1795	Grinding point hardness J **coarse**	AW-CER	eShop	eShop	eShop	eShop	eShop	10
55E 55 1796	Grinding point hardness J **fine**	AW-CER	eShop	eShop	–	eShop	eShop	10
Head ∅		mm	10	13	40	13	16	
Head length		mm	20	25	20	20	45	
Shank ∅		mm			6			


_ZY


_SP


_KE

Grinding point set

Assortment of grinding points in the most popular shapes and sizes.

Supplied with: 1 each grinding point ZY0205 / ZY0306 / ZY0408 / ZY0510 / ZY0613 / ZY0816 / ZY1303 / ZY2006 / KU03 / KU06 / KU08 / SP0306 / SP0408 / SP0613 / SP0816.



Number of grinding points			15	Shank ∅ mm	Shaft length mm
55E 55 0305	Grinding point set **fine**	AW-CER	eShop	3	30

SiC

Garant Marbling points, PU-bonded

Silicon carbide (SiC) in 46 grit **resiliently bonded in plastic (PU)** and mounted on a backing pad, with 6 mm steel shank.

Application: For marbling and decorative effects on steel, stainless steel, non-ferrous metals.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 2000	●	●	●	●	●	●	○	●	●	○		●					●	●

Head ∅		mm	30	40	50	
51E 55 2000	Marbling point		eShop	eShop	eShop	10
Head ∅		mm	30	40	50	
Head length		mm		30		
Shank ∅		mm		6		
Shaft length		mm		40		
maximum speed		min^{-1}	10000	7500	6000	





55 2000

A

Garant Polishing points, rubber-bonded

Polishing points with **standard aluminium oxide (A)** in resilient rubber bonding.

Application: **For fine abrasion and polishing of steel, stainless and acid-resistant steel, high-temperature materials and non-ferrous metals.** Polishing grinding points do not clog even when used on materials prone to clogging. For matt finish or application of visual effects on stainless containers etc. **Due to resilient bonding of abrasive grit a very fine polish is achieved.**
Not suitable for sharp edges and rough surfaces.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 1850–55 1924	●	●	●	●	●	●		●	●		●							●



55 1850



55 1900



55 1920



55 1922



55 1923



55 1924

Head ∅×head length		mm	4×8	6×10	8×10	10	
51E 55 1850	Polishing point grit 80 (grey) **coarse**		eShop	eShop	eShop	–	10
51E 55 1900	Polishing point grit 120 (red) **medium**		eShop	eShop	eShop	eShop	10
51E 55 1920	Polishing point grit 220 (brown) **fine**		eShop	eShop	eShop	–	10
51E 55 1922	Polishing point 280 grit (green) **very fine**		eShop	eShop	eShop	–	10
51E 55 1923	Polishing point 400 grit (white) **super-fine**		eShop	eShop	eShop	–	10
51E 55 1924	Polishing point 600 grit (orange) **ultra-fine**		eShop	eShop	eShop	–	10
Shape description			cylindrical			ball	
Head ∅		mm	4	6	8	10	
Shank ∅		mm	3				
recommended circumferential speed		m/s	10 – 15				

Head ∅×head length		mm	10×20	13×20	16×32	20×32	25×25	32×32	
51E 55 1850	Polishing point grit 80 (grey) **coarse**		eShop	eShop	eShop	–	–	–	10
51E 55 1900	Polishing point grit 120 (red) **medium**		eShop	eShop	eShop	eShop	eShop	eShop	10
51E 55 1920	Polishing point grit 220 (brown) **fine**		eShop	eShop	eShop	eShop	–	–	10
51E 55 1922	Polishing point 280 grit (green) **very fine**		eShop	eShop	–	–	–	–	10
51E 55 1923	Polishing point 400 grit (white) **super-fine**		eShop	eShop	–	–	–	–	10
51E 55 1924	Polishing point 600 grit (orange) **ultra-fine**		eShop	eShop	–	–	–	–	10
Shape description			cylindrical						
Head ∅		mm	10	13	16	20	25	32	
Shank ∅		mm	6	6	6	6	6	6	
recommended circumferential speed		m/s	10 – 15	10 – 15	10 – 15	10 – 15	10 – 15	10 – 15	

Garant Felt polishing points

Long-lived felt polishing point with **medium-hard felt which keeps its shape especially well.**

Application: For rough polishing and high-gloss finish polishing of ground surfaces where there is a strict requirement for maintaining the exact geometrical shapes.

Note: Felt polishing points must be used in conjunction **with grinding and polishing pastes** such as No. 552250 / 552330 / 552340 / 555740. Recommended circumferential speed 5 -10 m/s.



Type			ZY0610	ZY0810	ZY1012	SP0610	KU10	KE1012	
51E 55 2100	Felt polishing point **Shank Ø 3 mm**		eShop	eShop	eShop	eShop	eShop	eShop	10
Head Ø		mm	6	8	10	6	10	10	
Head length		mm	10	10	12	10	9	12	
Shank Ø		mm	3						



Type			167	169	170	171	172	173	
51E 55 2200	Felt polishing point **Shank Ø 6 mm**		eShop	eShop	eShop	eShop	eShop	eShop	10
Head Ø		mm	10	10	20	25	30	40	
Head length		mm	15	15	25	30	40	10	
Shank Ø		mm	6						

Garant Buffing wheel / abrasive fleece wheels

55 2205 – 3-layered felt for gloss polishing of fine contours.
55 2206 – Fine cotton yarn for gloss polishing of fine contours.
55 2207 – Abrasive fleece for fine matting work.

Application: For high-gloss finish polishing of ground surfaces where there is a strict requirement for maintaining the exact geometrical shapes.

Note: Polishing sponges must be used in conjunction **with grinding and polishing pastes** such as No. 552250 / 552330 / 552340 / 555740. Recommended circumferential speed 5 - 10 m/s.



Type			220	280	360	F	B	
55A 55 2207	Abrasive fleece wheel		eShop	eShop	eShop	–	–	10
55A 55 2205	Felt buffing wheel		–	–	–	eShop	–	10
55A 55 2206	Cotton yarn buffing wheel		–	–	–	–	eShop	10
Head Ø		mm	30	30	30	22	22	
Shank Ø		mm	3					
Brush material			A	SiC	A	Felt	Cotton thread	

D

Garant CaraFin diamond polishing point

Polishing points of **resilient PU material** coated on the outer face with diamond grit. The effectiveness of the bonded diamond grit is significantly greater than that achieved by loose diamond grit in polishing pastes.

Application: Polishing work with very high flexibility and conformity to contours.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 1940–55 1944	●	●	●	●	●	●	●	●	●	●	●	●			●	●		●

Type				ZY0608	ZY1010	ZY1610		Grit designation
NEW 51G 55 1944	CaraFin diamond polishing point	D151		eShop	eShop	eShop	1	Pre-polishing
51G 55 1943		D126		eShop	eShop	eShop	1	Pre-polishing
51G 55 1942		D64		eShop	eShop	eShop	1	Polishing
51G 55 1941		D10		eShop	eShop	eShop	1	Final polishing
51G 55 1940		D3		eShop	eShop	eShop	1	Mirror finish
Head Ø			mm	6	10	16		
Head length			mm	8	10	10		
Shank Ø			mm	3	6	6		
recommended circumferential speed			m/s	1 – 2				



_ZY0608 _ZY1610

D

Garant Diamond grinding points – brazed metal bonding

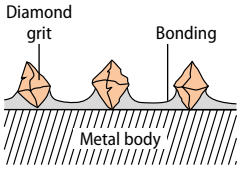
Precision-ground blanks with **diamond application** in **vacuum brazing processes.**

Advantage:
- More free-cutting than galvanically bonded grinding points due **large grit projection** (about 70% of the grit projects from the bonding material) and **stronger bonding.**
- The **open structure** and **coarse D427 grit** reduce the grinding temperature and minimise the tendency to clog up.

Application: For hand-held use, on industrial robots or CNC grinding machines for **rough grinding work** with high material removal rates. **Side milling, contour milling** of composite materials (CRP/GRP), fibreglass, graphite, honeycomb.

Note: Other grit grade, special shapes or grinding points with internal cooling for stationary use are available in request.

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 2750												15-20		15-20			●	○





Type			ZY0620	ZY0825	ZY1025	ZY1240	ZY4004	C0620	SK1508
51E 55 2750	Diamond grinding points **brazed D427**	D	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			Cylindrical	Cylindrical	cylindrical	cylindrical	Disc	ball nose	countersink
Head ∅		mm	6	8	10	12	40	6	15
Head length		mm	20	25	25	40	3.5	20	7.5
Overall length		mm	60	80	80	100	50	60	48
Shank ∅		mm	6	8	8	8	6	6	6
Angle		degrees	–	–	–	–	–	–	90

D

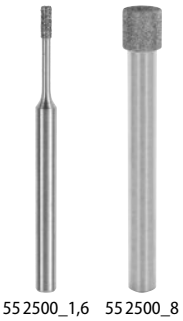
Garant Diamond grinding points – galvanic metallic bonding

Application: For **carbide, technical ceramic, grey cast iron and spheroidal graphite iron, glass, CRP/GRP.**

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 2500–55 2810							15-20					15-20		15-20			●	○

Precision ground points with **diamond coating.** Very free-cutting and very long service life due to **galvanic nickel bonding.**

Application: For hand-held use, on industrial robots or internal cylindrical grinding machines and CNC grinding machines for **finish grinding** of bores, radii, contours, and for **deburring and chamfering.**


55 2500_1,6 55 2500_8

Head ∅		mm	1	1,4	1,6	2	2,4	3	4	5	6	8	10	12	15
51E 55 2500	Diamond grinding points **galvanic D126**	D	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			Cylindrical												
Head ∅		mm	1	1.4	1.6	2	2.4	3	4	5	6	8	10	12	15
Head length		mm	4	4	4	4	4	4	5	5	6	8	8	8	10
Overall length		mm	40	40	40	40	40	40	50	50	60	60	60	60	60
Shank ∅		mm	3	3	3	3	3	3	3	3	6	6	6	6	6


55 2600_3 55 2600_8

Head ∅		mm	1	2	3	4	6	8	12
51E 55 2595	Diamond grinding points **galvanic D91**	D	–	eShop	–	eShop	–	–	–
51E 55 2600	Diamond grinding points **galvanic D126**	D	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			ball						
Head ∅		mm	1	2	3	4	6	8	12
Head length		mm	1	2	3	4	6	8	12
Overall length		mm	45	45	45	45	45	60	60
Shank ∅		mm	3	3	3	3	3	6	6



Shape			ZY1401	C0618	G0307	M0630	T0307
51E 55 2695	Diamond grinding points **galvanic D64**	**D**	eShop	–	–	–	–
51E 55 2700	Diamond grinding points **galvanic D126**	**D**	–	eShop	eShop	eShop	eShop
Shape description			disc	Ball nose	Pointed arch	pointed cone	Tapered
Head ∅		mm	14	6	3	6	3
Head length		mm	1	18	7	11	7
Overall length		mm	36	68	50	61	50
Shank ∅		mm	3	6	3	6	3
Angle		degrees	–	–	–	30	8

Diamond grinding point set

Assortment of grinding points in the most popular shapes and sizes. Shank ∅ 3 mm.

Supplied with: 1 each grinding point.
Cylinder No. 552500 size 1; 2; 3; 5;
Ball No. 552600 size 1; 2; 3; 4; 6;
Gothic arch No. 552700 G0307.

Number of grinding points			10
51E 55 2810	Diamond grinding point set, 10 pieces **D126**	**D**	eShop
Shank ∅		mm	3



55 2810

55

CBN

Garant CBN grinding points – galvanic metallic bonding

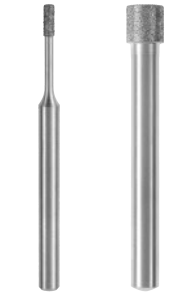
Application: For **all hardened, tempered and high-alloy steels.**

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni	●	○
55 2550–55 2820			**20-30**	**20-30**	**20-30**	**20-30**		**20-30**	**20-30**	**20-30**							●	○

Precision ground points with **CBN coating.** Very free-cutting and very long service life due to **galvanic nickel bonding.**

Application: For hand-held use, on industrial robots or internal cylindrical grinding machines and CNC grinding machines for **finish grinding** of bores, radii, contours, and for **deburring and chamfering.**

Head ∅		mm	1	1,4	1,6	2	2,4	3	4	5	6	8	10	12	15
51E 55 2550	CBN grinding points **galvanic B126**	**CBN**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			Cylindrical												
Head ∅		mm	1	1.4	1.6	2	2.4	3	4	5	6	8	10	12	15
Head length		mm	4	4	4	4	4	4	5	5	6	8	8	8	10
Overall length		mm	40	40	40	40	40	40	50	50	60	60	60	60	60
Shank ∅		mm	3	3	3	3	3	3	3	3	6	6	6	6	6



55 2550_1,6 55 2550_8

Head ∅		mm	1	2	3	4	6	8	12
51E 55 2650	CBN grinding points **galvanic B126**	**CBN**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shape description			ball						
Head ∅		mm	1	2	3	4	6	8	12
Head length		mm	1	2	3	4	6	8	12
Overall length		mm	45	45	45	45	45	60	60
Shank ∅		mm	3	3	3	3	3	6	6



55 2650_3 55 2650_8

CBN grinding point set

Assortment of grinding points in the most popular shapes and sizes. Shank ∅ 3 mm.

Supplied with: 1 each grinding point.
Cylinder No. 552550 size 1; 2; 3; 4; 5; Ball No. 552650 size 1; 2; 3; 4; 6.

Number of grinding points			10
51E 55 2820	CBN grinding point set, 10 pieces **B126**	**CBN**	eShop
Shank ∅		mm	3



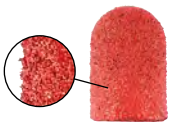
55 2820

Garant Abrasive caps

Optimised grit bonding yields very aggressive abrasion and a high material removal rate.

Application: The seamlessly formed abrasive caps slide on to the rubber body and are securely held in place by centrifugal force when the machine is running. The **abrasive caps can be replaced quickly and easily** (replace in direction of slots).

Note: Compatible only for use with ground abrasive cap holder No. 553100.



	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3035 – 55 3040	○	●	●	●	●	●		●	●	○	○							●
55 3047 – 55 3056	○	●	●	●	○			●	○	●	●	○	○			●		●

Abrasive caps, ceramic (CER)

Ceramic grit (CER) ideal for working on stainless steels and nickel alloys. High removal rate and cool cut.



Abrasive cap ∅, length, form			0511G	0713G	1319G	1626G	1317A	
51E 55 3035	Abrasive cap (CER)	80 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3038		150 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3040		220 grit	eShop	eShop	eShop	eShop	eShop	100
Abrasive cap ∅		mm	5	7	13	16	13	
Abrasive cap length		mm	11	13	19	26	17	
recommended speed		min⁻¹	40000	30000	16000	12000	16000	



Abrasive cap ∅, length, form			1626A	1319C	1626C	1125L	2140L	
51E 55 3035	Abrasive cap (CER)	80 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3038		150 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3040		220 grit	eShop	eShop	eShop	eShop	eShop	100
Abrasive cap ∅		mm	16	13	16	11	21	
Abrasive cap length		mm	26	19	26	25	40	
recommended speed		min⁻¹	12000	16000	12000	20000	9500	

Abrasive caps, special aluminium oxide (A)

A

Special Aluminium Oxide (A) with upper layer bonding for general-purpose use in toolmaking and mould making.



Abrasive cap ∅, length, form			0511G	0713G	1015G	1319G	1626G	
51E 55 3047	Abrasive cap (Special aluminium oxide)	60 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3050		80 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3053		150 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3056		320 grit	eShop	eShop	eShop	eShop	eShop	100
Abrasive cap ∅		mm	5	7	10	13	16	
Abrasive cap length		mm	11	13	15	19	26	
recommended speed		min⁻¹	40000	30000	20000	16000	12000	



Abrasive cap ∅, length, form			1015A	1317A	1626A	0713C	1015C	
51E 55 3047	Abrasive cap (Special aluminium oxide)	60 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3050		80 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3053		150 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3056		320 grit	eShop	eShop	eShop	eShop	eShop	100
Abrasive cap ∅		mm	10	13	16	7	10	
Abrasive cap length		mm	15	17	26	13	15	
recommended speed		min⁻¹	20000	16000	12000	30000	20000	



Abrasive cap ∅, length, form			1319C	1626C	1125L	1632L	2140L	
51E 55 3047	Abrasive cap (Special aluminium oxide)	60 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3050		80 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3053		150 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3056		320 grit	eShop	eShop	–	–	–	100
Abrasive cap ∅		mm	13	16	11	16	21	
Abrasive cap length		mm	19	26	25	32	40	
recommended speed		min⁻¹	16000	12000	20000	12000	9500	

SiC

Garant Abrasive caps silicon carbide (SiC)

Silicon carbide (SiC) ideal for grinding titanium, aluminium and alloys of those metals.

Application: The seamlessly formed abrasive caps slide on to the rubber body and are securely held in place by centrifugal force when the machine is running. **Abrasive caps can be replaced quickly and easily** (replace in direction of slots).

Note: Compatible only for use with ground abrasive cap holder No. 553100.

55

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3327 / 3328	●						●		●		●	●						●



Abrasive cap ∅, -length, shape			0511G	0713G	1319G	1626G	1317A	
51E 55 3327	Abrasive cap (SiC)	80 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3328		150 grit	eShop	eShop	eShop	eShop	eShop	100
Abrasive cap ∅		mm	5	7	13	16	13	
Abrasive cap length		mm	11	13	19	26	17	
recommended speed		min⁻¹	40000	30000	16000	12000	16000	

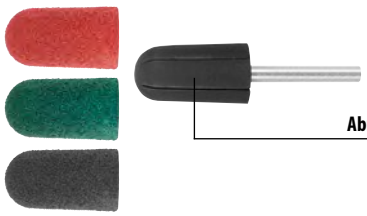


Abrasive cap ∅, -length, shape			1626A	1319C	1626C	1125L	2140L	
51E 55 3327	Abrasive cap (SiC)	80 grit	eShop	eShop	eShop	eShop	eShop	100
51E 55 3328		150 grit	eShop	eShop	eShop	eShop	eShop	100
Abrasive cap ∅		mm	16	13	16	11	21	
Abrasive cap length		mm	26	19	26	25	40	
recommended speed		min⁻¹	12000	16000	12000	20000	9500	

Garant Abrasive cap holder

Slotted, resilient rubber body with steel shank.

Suitable for: Abrasive caps No. 553035 – 553328.



Abrasive cap holders

Head ∅, head length, shape			0511G	0713G	1015G	1319G	1626G	1015A	1317A	1626A	
51E 55 3100	Abrasive cap holder		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	5
Shank ∅		mm	3	3	3	3	6	3	3	6	
maximum speed		min⁻¹	95000	65000	45000	35000	30000	45000	35000	30000	

Head ∅, head length, shape			0713C	1015C	1319C	1626C	1125L	1632L	2140L	
51E 55 3100	Abrasive cap holder		eShop	eShop	eShop	eShop	eShop	eShop	eShop	5
Shank ∅		mm	3	3	3	6	6	6	6	
maximum speed		min⁻¹	65000	45000	35000	30000	40000	30000	20000	

HOLEX Abrasive sleeve holders cylindrical

Slotted, resilient rubber body with steel shank. Ground outer face for best concentricity.



Head ∅×head length		mm	15×30	10×20	22×20	30×20	30×30	45×30	60×30	
52E 55 3600	Abrasive sleeve holder, slit, shank ∅ 6 mm		eShop	eShop	eShop	eShop	eShop	eShop	eShop	5
minimum speed		min^{-1}	25000	38000	18000	13000	13000	9000	6500	
maximum speed		min^{-1}	36000	55000	26000	19100	19100	12700	9500	

Abrasive sleeves and abrasive flap sleeves

The rubber body of the abrasive sleeve holder expands at high speed to hold the abrasive sleeve in place. The full width of the sleeve can be used, it does not slip and can be replaced quickly and easily (twist in the direction of slots when fitting/removing). Only compatible with abrasive sleeve holders.

Suitable for: Abrasive sleeve holder No. 553600.

Application: Abrasive sleeves are predominantly used for surface grinding tasks which require the removal of large amounts of material – even at sharp edges.

55

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3700–55 3740	●	●	○	○				○		○	●	●	●					●
55 3760/3780/3820	○	●	●	●	○			●	○	●								●
55 3790/3795		○	●	●	●	●		●	●	●	●	●	●					●

Abrasive sleeves cylindrical

Made of non-tearing, synthetic resin bonded material with long service life and good grit adhesion. Unsuitable for use with cooling lubricants.

55 3700–3740 – **Aluminium oxide (A).**
55 3760/3780 – **Zirconium Aluminium Oxide (ZA).**
55 3790/3795 – **Ceramic grit (CER).**

A ZA CER



Sleeve ∅×Width of sleeve			mm	10×20	15×30	22×20	30×20	30×30	45×30	60×30	
52E 55 3700	HOLEX	Abrasive sleeve (A) 40 grit **coarse**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
52E 55 3710		Abrasive sleeve (A) 60 grit **medium coarse**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
52E 55 3720		Abrasive sleeve (A) 80 grit **medium**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
52E 55 3740		Abrasive sleeve (A) 150 grit **fine**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
52E 55 3760		Abrasive sleeve (ZA) 36 grit **coarse**		–	eShop	eShop	eShop	eShop	eShop	eShop	50
52E 55 3780		Abrasive sleeve (ZA) 80 grit **medium**		–	eShop	eShop	eShop	eShop	eShop	eShop	50
53L 55 3790	LUKAS	Abrasive sleeve (CER), 40 grit **coarse**		–	–	–	–	eShop	eShop	eShop	50
53L 55 3795		Abrasive sleeve (CER), 60 grit **medium**		–	eShop	–	–	eShop	eShop	eShop	50

Abrasive flap sleeves cylindrical

ZA

Densely packed around a stable core **abrasive strips** of Zirconium Aluminium Oxide (ZA) fabric. Due to the even wear of the individual abrasive strips, new abrasive fabric is constantly being exposed, thus increasing the service life and material removal rate several-fold.

Application: For aggressive surface grinding work as an alternative to sander bands and flap wheels. For use exclusively in the direction of rotation of the support body. The direction of rotation is marked on the core of the sleeve.





Sleeve ∅×Width of sleeve			mm	30×30	45×30	60×30	
52E 55 3820	HOLEX	Abrasive flap sleeve (ZA) 40 grit **coarse**		eShop	eShop	eShop	10
External ∅			mm	45	60	75	
maximum speed			min^{-1}	19100	12700	9500	

HOLEX Abrasive sleeve holders conical

Slotted, resilient rubber body with steel shank.
Ground outer face for best concentricity.


_20×63


_29×30

largest ∅×head length		mm	20×63	29×30	36×60	
52E 55 3830	Abrasive sleeve holder slit, conical shank 6 mm ∅		eShop	eShop	eShop	5
smallest ∅		mm	14	22	22	
maximum speed		min⁻¹	21000	21000	13500	

HOLEX Abrasive sleeves conical

Made of non-tearing, synthetic resin bonded material with long service life and good grit adhesion.
The rubber body of the abrasive sleeve holder expands at high speed to hold the abrasive sleeve in place.
The full width of the sleeve can be used, it does not slip and can be replaced quickly and easily (twist in the direction of slots when fitting/removing).
Only compatible with abrasive sleeve holders.

55 3850–3870 – **Aluminium Oxide (A)** for general-purpose grinding work.
55 3871/3873 – **Zirconium Aluminium Oxide (ZA).**
55 3875/3877 – **Ceramic grit (CER).**

Suitable for: Abrasive sleeve holder No. 553830.
Application: Abrasive sleeves are predominantly used for surface grinding tasks which require the removal of large amounts of material – even at sharp edges.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3850–55 3870	●	●	●	●	○			○		○	●	●	○					●
55 3871/3873		●	●	●	●	○		○	○	●			○					●
55 3875/3877	○	●	●	●	●	●		●	●	●	●							●

largest sleeve ∅× sleeve width		mm	20×63	29×30	36×60		
52E 55 3850	Abrasive sleeve, conical (A) 40 grit **coarse**		eShop	eShop	eShop	50	A
52E 55 3860	Abrasive sleeve, conical (A) 80 grit **medium**		eShop	eShop	eShop	50	
52E 55 3870	Abrasive sleeve, conical (A) 150 grit **fine**		eShop	eShop	eShop	50	
52E 55 3871	Abrasive sleeve, conical (ZA), 40 grit **coarse**		eShop	–	–	50	ZA
52E 55 3873	Abrasive sleeve, conical (ZA), 80 grit **medium**		eShop	–	–	50	
52E 55 3875	Abrasive sleeve, conical (CER) 40 grit **coarse**		eShop	–	–	50	CER
52E 55 3877	Abrasive sleeve, conical (CER) 80 grit **medium**		eShop	–	–	50	


_20×63


_29×30

HOLEX Abrasive rolls

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3880–55 3895	●	●	●	●	○			○		○	●	●	○					●

Abrasive roll holder

Abrasive roll holder with 6 mm shank ∅ to take abrasive rolls No. 553880 ff.


55 3835

Mounting-∅×Overall length		mm	3×63	3×70	5×85	
52E 55 3835	Abrasive roll holder 6 mm shank ∅		eShop	eShop	eShop	5

Abrasive rolls

Abrasive roll consisting of wound abrasive cloth with **Aluminium Oxide (A).**

55 3880/3885 – Cylindrical form.
55 3890/3895 – Conical shape for restricted places.

Suitable for: Abrasive roll holder No. 553835.


55 3880


55 3890

Abrasive roll ∅× abrasive roll length		mm	10×25	6×38	10×38	13×38	20×38	
52E 55 3880	Abrasive roll, cylindrical (A) 80 grit **medium**		–	eShop	eShop	eShop	eShop	50
52E 55 3885	Abrasive roll, cylindrical (A) 150 grit **fine**		–	eShop	eShop	eShop	–	50
52E 55 3890	Abrasive roll, conical (A) 80 grit **medium**		eShop	–	–	eShop	–	50
52E 55 3895	Abrasive roll, conical (A) 150 grit **fine**		eShop	–	–	–	–	50
maximum speed		min⁻¹	26000	26000	26000	26000	18000	
Suitable for: Holder mounting ∅ × overall length			3×63	3×63	3×70	3×70	5×85	

Flap wheel

Flap strips bonded on to the shank of the tool.

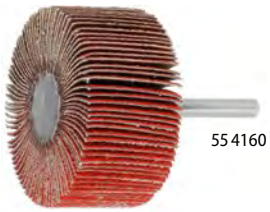
Application: Primarily for finish grinding and polishing tasks on larger radii in tool and mould making, for vessel and machine fabrication. The abrasive strips adapt to the contours of the component.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
A	●	●	○	●	○					○	●	●	●					●
A-INOX	●	●	●	●	●			●	○	○	●	●	●					●
CER		○	●	●	●	●		●	●	●	●	●	●					●
SIC	●		●	●	●	○		●	○	●	●	●		○	○			●

Flap wheel, ceramic grit (CER)

CER

Abrasive strips covered with **ceramic grit (CER)**.



55 4160

Head ∅×head width			mm	20×20	30×10	40×15	50×20	60×30	
51E 55 4150	Garant	Flap wheel (CER)	60 grit	–	eShop	eShop	eShop	eShop	10
51E 55 4160	Garant	Flap wheel (CER)	80 grit	eShop	eShop	eShop	eShop	eShop	10
51E 55 4170	Garant	Flap wheel (CER)	120 grit	eShop	eShop	eShop	eShop	eShop	10
Shank ∅			mm			6			
recommended speed			min^{-1}	20000	16000	12000	9000	8000	
maximum speed			min^{-1}	38200	25400	19100	15300	12700	

Flap wheels regular aluminium oxide (A)

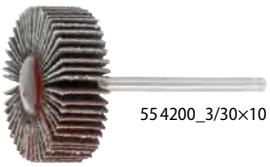
A

Abrasive strips covered with **regular Aluminium Oxide (A)**.



55 4300_15×15

Head ∅×head width			mm	10×10	15×15	20×10	3/30×5	3/30×10	
52E 55 4100	HOLEX	Flap wheel (A)	60 grit	–	eShop	–	eShop	eShop	10
52E 55 4200	HOLEX	Flap wheel (A)	80 grit	eShop	eShop	eShop	eShop	eShop	10
52E 55 4300	HOLEX	Flap wheel (A)	120 grit	eShop	eShop	eShop	eShop	eShop	10
52E 55 4400	HOLEX	Flap wheel (A)	150 grit	eShop	–	eShop	eShop	eShop	10
52E 55 4500	HOLEX	Flap wheel (A)	240 grit	eShop	eShop	eShop	eShop	eShop	10
Shank ∅			mm	3	3	3	3	3	
recommended speed			min^{-1}	26000	24000	20000	16000	16000	
maximum speed			min^{-1}	35000	35000	28000	18000	18000	



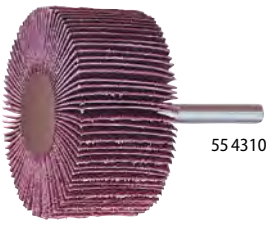
55 4200_3/30×10

Head ∅×head width			mm	20×15	30×5	30×10	40×15	40×20	50×5	50×15	50×20	50×30	60×30	60×40	60×50	80×30	80×50	
52E 55 4095	HOLEX	Flap wheel (A)	40 grit	–	–	–	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
52E 55 4100	HOLEX	Flap wheel (A)	60 grit	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
52E 55 4200	HOLEX	Flap wheel (A)	80 grit	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
52E 55 4300	HOLEX	Flap wheel (A)	120 grit	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
52E 55 4400	HOLEX	Flap wheel (A)	150 grit	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	eShop	10
52E 55 4500	HOLEX	Flap wheel (A)	240 grit	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	–	–	eShop	10
52E 55 4600	HOLEX	Flap wheel (A)	320 grit	–	eShop	eShop	eShop	–	–	eShop	–	eShop	eShop	–	–	–	eShop	10
Shank ∅			mm							6								
recommended speed			min^{-1}	20000	16000	16000	12000	12000	11000	9000	9000	9000	8000	8000	8000	6000	6000	
maximum speed			min^{-1}	38200	25400	25400	19100	19100	16000	15300	15300	15300	12700	12700	8500	9500	7500	

Flap wheel, regular aluminium oxide (A) with active abrasive bonding

A

Abrasive strips covered with **Aluminium Oxide (A)**.
With **active abrasive bonding** for stainless steels



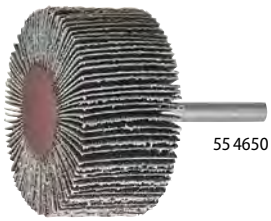
55 4310

Head ∅×head width			mm	30×10	40×15	50×20	60×30	
52E 55 4110	HOLEX	Flap wheel for stainless steel	60 grit	eShop	eShop	eShop	eShop	10
52E 55 4210	HOLEX	Flap wheel for stainless steel	80 grit	eShop	eShop	eShop	eShop	10
52E 55 4310	HOLEX	Flap wheel for stainless steel	120 grit	eShop	eShop	eShop	eShop	10
52E 55 4410	HOLEX	Flap wheel for stainless steel	150 grit	eShop	eShop	eShop	eShop	10
Shank ∅			mm			6		
recommended speed			min^{-1}	16000	12000	9000	8000	
maximum speed			min^{-1}	25400	19100	15300	12700	

Flap wheels silicon carbide (SiC)

SiC

Abrasive strips covered with **silicon carbide grit(SiC)**. Shank ∅ 6 mm.


55 4650

Head ∅×head width			mm	30×10	60×30	
52E 55 4650	HOLEX Flap wheel (SiC)	60 grit		eShop	eShop	10
52E 55 4660		80 grit		eShop	eShop	10
52E 55 4670		120 grit		eShop	eShop	10
52E 55 4680		150 grit		–	eShop	10
Shank ∅			mm	6		
recommended speed			min^{-1}	16000	8000	
maximum speed			min^{-1}	25400	12700	

Flap wheel brushes regular aluminium oxide (A)

A

Flap wheel with multiple slits in each strip. Shank ∅ 6 mm.
Application: Highly recommended for sanding contoured surfaces.


55 4700

Head ∅×head width			mm	40×20	50×30	
52E 55 4700	HOLEX Flap wheel brush (A)	120 grit		eShop	eShop	10
52E 55 4800		240 grit		eShop	eShop	10
Shank ∅			mm	6		
recommended speed			min^{-1}	12000	9000	
maximum speed			min^{-1}	19100	15300	

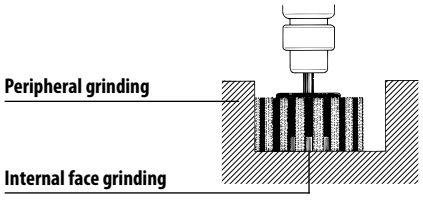
Cupped flap wheels regular aluminium oxide (A)

A

Cup shaped strip arrangement around the shank of the tool, with recessed core.
Shank ∅ 6 mm.
Application: Particularly suitable for peripheral and internal face grinding.


55 5000

Head ∅×head width			mm	60×40	
52E 55 5000	HOLEX Cupped flap wheel (A)	60 grit		eShop	10
52E 55 5010		80 grit		eShop	10
52E 55 5030		150 grit		eShop	10
Shank ∅			mm	6	
recommended speed			min^{-1}	8000	
maximum speed			min^{-1}	12000	



A

LUKAS Flexible flap wheel, minimal grit

Flap strips bonded on to the shank of the tool.
Inserted strips bonded at the end.
Application: Deburring of holes, cross holes and pipe internal diameters.
The abrasive strips adapt to the diameter of the component.
Radial use.


55 5035

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 5035	●	●	○	●	○					○	●	●	●					●

Head ∅×head width			mm	15×10	15×30	20×10	20×30	25×10	25×30	
56L 55 5035	Flap wheel (A)	150 grit		eShop	eShop	eShop	eShop	eShop	eShop	10
Shank ∅			mm	6						
Overall length			mm	100						
maximum speed			min^{-1}	18000						

A

HOLEX Combi abrasive cloth / fleece flap wheels

Flap strips bonded on to the shank of the tool. Fleece is combined with abrasive cloth to **increases the abrasive effect** of the fleece. Shank ∅ 6 mm.

Application: For removal of dirt and oxide layers on metals as well as for matt finishing of Cr-Ni, other stainless steels, and also non-ferrous metals.



55 4920

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 4910–55 4930	●	●	●	●	○	○		●	○	●	●	●	●		○			●

Head ∅×head width			mm	30×20	40×20	50×20	60×30	60×50	80×50		Grit equivalent
S2E 55 4910	Flap wheel **Fleece / cloth**	**coarse**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	100 / 80
S2E 55 4920		**medium**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	180 / 150
S2E 55 4930		**fine**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	280 / 240
recommended speed			min^{-1}	7500	7500	6000	5000	5000	4000		
maximum speed			min^{-1}	14000	14000	11000	9000	9000	7000		

55

Abrasive fleece flap wheels

Flap strips of fleece around the shank of the tool. Shank ∅ 6 mm.

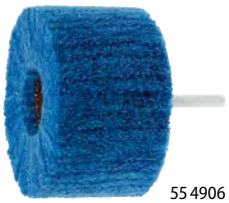
Application: For removal of dirt and oxide layers on metals as well as for matt finishing of Cr-Ni, other stainless steels, and also non-ferrous metals.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 4906–55 4970	○	●	●	●	○	○		●	○	●	●	●	●		○			●
55 4971–55 4973	●		●	●	●	○		●	●	●	●	●		○	○			●

Abrasive fleece flap wheel, zirconium aluminium oxide

ZA

Especially wear-resistant and fine-structured fleece with Zirconium Aluminium Oxide (ZA). **Ideal for use on stainless steel.**



55 4906

Head ∅×head width			mm	20×15	30×20	40×20	50×20	60×30	80×50		Grit equivalent
S1E 55 4906	Garant Flap wheel **Fleece (ZA)**	**medium**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	180
S1E 55 4908		**fine**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	280
recommended speed			min^{-1}	10000	7500	7500	6000	5000	4000		
maximum speed			min^{-1}	14000	14000	14000	11000	9000	7000		

Abrasive fleece flap wheel, standard aluminium oxide

A

Fleece impregnated with Aluminium Oxide (A). Creates a **consistent matt finish.**



55 4950

Head ∅×head width			mm	30×20	40×20	50×20	60×30	60×50	80×50		Grit equivalent
S2E 55 4950	HOLEX Flap wheel **Fleece (A)**	**coarse**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	100
S2E 55 4960		**medium**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	180
S2E 55 4970		**fine**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	280
recommended speed			min^{-1}	7500	7500	6000	5000	5000	4000		
maximum speed			min^{-1}	14000	14000	11000	9000	9000	7000		

Abrasive fleece flap wheel, silicon carbide

SiC

The sharp-edged silicon carbide grit (SiC) provides aggressive grinding characteristics and a **slightly lustrous finish.**



55 4971

Head ∅×head width			mm	40×20	60×30	80×50		Grit equivalent
S2E 55 4971	HOLEX Flap wheel **Fleece (SiC)**	**coarse**		eShop	eShop	eShop	**10**	100
S2E 55 4972		**medium**		eShop	eShop	eShop	**10**	180
S2E 55 4973		**fine**		eShop	eShop	eShop	**10**	280
recommended speed			min^{-1}	7500	5000	4000		
maximum speed			min^{-1}	14000	9000	7000		

ZA

Garant Non-woven abrasive flap wheel, disc-shaped, zirconium aluminium oxide


55 4940

Especially wear-resistant and fine-structured fleece with Zirconium Aluminium Oxide (ZA).
Ideal for use on stainless steel. Shank ∅ 6 mm.
Application: Highly recommended for sanding contoured surfaces.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 4940	○	●	●	●	○	○		●	○	●	●	●	●		○			●

Head ∅×head width		mm	60×50	80×50		Grit equivalent
51E 55 4940	Flap wheel **Fleece (ZA), disc-shaped**	**medium**	eShop	eShop	**10**	180
recommended speed		min⁻¹	4000			
maximum speed		min⁻¹	7000			

A

HOLEX Abrasive fleece flap wheel sinusoidal


55 4975

Sinusoidal abrasive fleece without cut edges. Shank ∅ 6 mm.
Application: For matting and **polishing** without abrupt changes in texture.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 4975–55 4977	○	●	●	●	○	○		●	○	●	●	●	●		○			●

Head ∅×head width		mm	80×50	100×50		Grit equivalent
52E 55 4975	Flap wheel **Fleece sinusoidal**	**coarse**	eShop	eShop	**10**	100
52E 55 4976		**medium**	eShop	eShop	**10**	180
52E 55 4977		**fine**	eShop	eShop	**10**	280
recommended speed		min⁻¹	4000	3000		
maximum speed		min⁻¹	7000	6000		

Garant Felt fan-form polishing heads and brushes

Note: Felt fan-form polishing heads / brushes must be used in conjunction **with grinding and polishing pastes** such as No. 552250 / 555740. Recommended circumferential speed 5 -10 m/s.

Felt fan-form polishing head

Felt arranged in a fan-form around the shank.
Application: Polishing work with enhanced flexibility and conformity to contours.
Successive use of medium-hard and soft grades allows creation of a top-class mirror finish.


55 2212

Type			ZY2010	ZY3020	ZY4020	ZY5030	ZY6040	ZY8050		Degree of hardness
51E 55 2212	Felt fan-form polishing head **Shank ∅ 6 mm**		eShop	eShop	eShop	eShop	eShop	eShop	**10**	medium
51E 55 2213			eShop	eShop	eShop	eShop	eShop	eShop	**10**	soft
Head ∅		mm	20	30	40	50	60	80		
Head length		mm	10	20	20	30	40	50		
Shank ∅		mm	6							

Felt fan-form polishing brushes

Felt arranged in a fan-form around the shank, with multiple slits.
Application: Polishing work with very high flexibility and conformity to contours.


55 2215

Type			ZY3020	ZY5020	ZY8050		Degree of hardness
51E 55 2215	Felt fan-form polishing brush **Shank ∅ 6 mm**		eShop	eShop	eShop	**10**	soft
Head ∅		mm	30	50	80		
Head length		mm	20	20	50		
Shank ∅		mm	6				

3M Scotch-Brite™ Fleece compact grinding points

Scotch-Brite™ fibre fleece with resin-bonded grit, **compressed grinding point shape,** can be dressed.

Application:

Size 180M – For **universal finishing work.**

Size 280S – Leaves a **fine finish** and reduces the roughness of all materials.

Grit equivalent			180M	280S		recommended speed min^{-1}
53M 55 1930	Fleece compact grinding point Ø 25 × 25 mm		eShop	eShop	50	13000
Grit designation			medium	fine		
Degree of hardness			medium	soft		
Version			6A medium	2S fine		
Bore Ø		mm	5			



55 1930

Accessories for fleece compact grinding points

Steel threaded spigot with **6 mm shank** for mounting fleece compact grinding points.

			maximum speed min^{-1}
55G 55 1935	Clamping mandrel for fleece compact grinding points	eShop	18200



55 1935

55

Garant Fleece abrasive star

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 5915–55 5917	●	●	●	●	●	●		●	●	●	●	●	●	○	●	●	○	●

Fe,S,Cl <0.1%

Star-shaped abrasive fleece with thread mounting. Tear-resistant and sturdy fleece body, no fraying at cut edges. 3-layer.

Application: For cleaning, deburring, and finishing at hard-to-access places such as **bores, internal threads, pipes,** and **recesses**. Use clamping pin No. 555920.





55 5917_280

Grit equivalent			100	180	280		recommended speed min^{-1}	maximum speed min^{-1}
51E 55 5915	Fleece abrasive star	Ø 19 mm	eShop	eShop	eShop	20	10000	20000
51E 55 5916		Ø 25 mm	eShop	eShop	eShop	20	10000	20000
51E 55 5917		Ø 38 mm	eShop	eShop	eShop	10	7500	13000
Grit designation			coarse	medium	fine			
Colour			brown	red	red			

Stainless steel clamping pin with shank Ø 6 mm for mounting fleece abrasive stars No. 555911 - 555913.

Overall length		mm	75	120
51E 55 5920	Clamping pin		eShop	eShop



55 5920

Abrasive strip rings

55 5180 – 4 layers of strips of abrasive cloth are crimped on to a core. The irregular slot spacing permits high flexibility. With reducing adapters from Ø 19 to 10 mm.

55 5181 – Folded abrasive cloth. Bore Ø 10 mm.

Application:

55 5180 – Deburring, rounding and finishing grinding of contours and surfaces.

55 5181 – Ideal for dressing weld seams, corners and narrow slots. Wrap-around use or flat use.

Note: Use clamping mandrel No. 555785 size 10.

Grit				80	120	180	
56Z 55 5180		Abrasive strip ring 4 layers	Ø 150 mm	eShop	–	eShop	10
52E 55 5181	HOLEX	Fan folded flap disc	Ø 160 mm	eShop	eShop	eShop	1
recommended speed (55 5180)			min^{-1}	1900	–	1900	
recommended speed (55 5181)			min^{-1}	3800			



55 5180



55 5181

Coarse cleaning discs

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 5930–55 5946	●	●	●	●	●	●		●	●	●	●	●	●	○	●	●	○	●

Coarse cleaning disc with synthetic nylon fleece evenly impregnated with abrasive grit on glass fibre pad. Open structure, will not clog.

Fe,S,Cl <0.1%

55 5942 – **High grinding performance with a fine finish.**
55 5930/5934 – **Stable edge, extremely high material removal rate and service life.** Ideal for removal of scale.
55 5938/5946 – **High material removal rate** for general-purpose cleaning work.

Application: **For radial use** on flexible shafts and straight die grinders. For rust removal, paint removal, dressing weld seams and removing surface dirt.


55 5930


55 5934


55 5938


55 5942


55 5946


55 5934


55 5938

Disc ∅			mm	75	100	150		Degree of hardness	Grit designation
53M 55 5930	3M	Coarse cleaning disc with shank (SiC)	XT-ZS	eShop	–	–	10	very hard	extra coarse
53M 55 5934	3M	Coarse cleaning disc (SiC)	XT-DC	–	eShop	eShop	2	very hard	extra coarse
53M 55 5938	3M	Coarse cleaning disc (SiC)	CG-DC	–	eShop	eShop	2	hard	extra coarse
53M 55 5942	3M	Cleaning disc (A)	BF-DC	–	–	eShop	2	soft	medium
52E 55 5946	HOLEX	Coarse cleaning disc (SiC)		–	–	eShop	10	hard	extra coarse
Thickness			mm		15				
Shank ∅			mm	6	–	–			
Bore ∅			mm	–	13	13			
recommended speed			min^{-1}	8000	6000	4000			

Mandrel (stainless steel).

Suitable for: Coarse cleaning discs No. 555930 - 555946,
Abrasive brushes No. 573555 / 573565 with bore ∅ 13 mm.


55 6380

Number of discs to be clamped			1	1-2
53M 55 6380	Mandrel		eShop	eShop
Shank ∅		mm	6	8
Clamping range		mm	0 – 19	0 – 26

osborn Lipprite® abrasive fleece rings

The **Unipol® fleece rings** are wound round a metal core; **each set contains three rings.**

Application: The fleece rings can be clamped in any number and width.

55 5760 – Suitable for all metals (stainless steel, steel, aluminium, brass), plastics, wood, and ceramics. **Coarse and aggressive abrasive fleece** (approx. 100 grit) for removal of rust film and superficial dirt. For roughening old paint, varnish, plastic, and rubber parts, for burnishing decorative metal surfaces (roughness Rt approx. 3.5 - 4 µm).

55 5765 – **Medium-fine abrasive fleece** (approx. 180 grit), for regrinding of ground or brushed surfaces (roughness Rt approx. 3 µm).

55 5770 – **Fine abrasive fleece** (approx. 280 grit), for removing fine scratches and for brushing (roughness Rt approx. 1.5 µm).

Note: For clamping mandrels for fleece rings see No. 555785.


55 5760

Ring ∅			mm	100	150	200	Ring width mm
56Z 55 5760		Abrasive fleece ring set, 3 pieces (A), for cleaning and matting **coarse**		eShop	eShop	eShop	25
56Z 55 5765		Abrasive fleece ring set, 3 pieces (A), for matting **medium fine**		eShop	eShop	eShop	25
56Z 55 5770		Abrasive fleece ring set, 3 pieces (SiC), for matting **fine**		eShop	eShop	eShop	25
Bore ∅			mm		20		
Reducing ring ∅			mm	10; 14; 16	14; 16	14; 16	

osborn Abrasive fleece – matting assortment

Abrasive fleece matting set Ø 100 mm with abrasive fleece rings for the three stages of matting: coarse, medium, and fine.
With **matting guide.**

55 5780 – Supplied with clamping mandrel Ø 6 mm (for power drills and flexible drive shafts).
55 5783 – Supplied with M14 thread (for easy mounting on adjustable angle grinders and cordless tools).

Application: Suitable for all metals (stainless steel, aluminium, brass).



Ring Ø		mm	100
56Z 55 5780	Abrasive fleece matting assortment 4 pieces, with clamping mandrel **Unipol®**		eShop
56Z 55 5783	Abrasive fleece matting set 3 pieces, with M14 thread **Unipol®**		eShop
Bore Ø (55 5780)		mm	10

Polishing cloth and polishing fleece rings

55 5725/5742 – The impregnation of the sisal cotton cloth rings permits higher effectiveness, more stability, longer working life, and better retention of paste.
Size 100; 150; 200 – **Unipol®** Cloth ring wrapped around metal core (support).
Size 250; 350 – Cloth ring wrapped on a cardboard core (mounting).

Application:

55 5725/5742 – **Sisal cotton cloth rings,** especially for smoothing (stainless steel, steel) and matting of non-ferrous metals.
55 5730/5745 – **Polishing fleece** for flatting and polishing (stainless steel, non-ferrous metals) and finishing without creating a high gloss.
55 5735/5747 – **Very fine polishing fleece** is used for bringing up a gloss finish on all metals and plastics.



Reducing ring set

Ring Ø			mm	100	150	200	Ring width mm
56Z 55 5725		Sisal cloth ring set, 3 pieces, with impregnation **for smoothing**		eShop	eShop	eShop	20
56Z 55 5730	osborn	Polishing fleece ring set, 3 pieces **for flatting**		eShop	eShop	eShop	14
56Z 55 5735		Very fine polishing fleece ring set, 3 pieces **for matting**		eShop	eShop	eShop	14
Bore Ø			mm	20			
Reducing ring Ø			mm	10; 14; 16	14; 16	14; 16	



55 5725

Ring Ø			mm	250	350	Ring width mm
51G 55 5742		Sisal cloth ring **for smoothing**		eShop	eShop	18
51G 55 5745	Garant	Polishing fleece ring **for flatting**		eShop	eShop	18
51G 55 5747		Very fine polishing fleece ring **for matting**		eShop	eShop	18
Bore Ø			mm	40		
Reducing ring Ø			mm	22.2; 20; 16; 12		
Reducing ring Ø			in	1; 1/2		



55 5742

Polishing set Ø 100 mm with a sisal cloth ring and 2 pieces each **polishing fleece cloth rings** for the three stages of polishing: smoothing, flatting and high gloss polishing. Three coordinated **polishing pastes** (size BROWN, WHITE and BLUE).
With **polishing guide.**

55 5750 – Supplied with **mandrel Ø 6 mm** (for drills and flexible drive shafts).
55 5755 – Supplied with M14 thread (for easy mounting on adjustable angle grinders and cordless tools).

Application: Suitable for all metals (stainless steel, aluminium, brass).

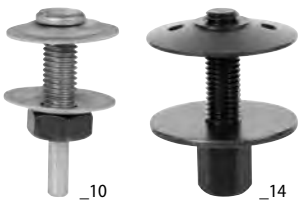


55 5750

Ring Ø			mm	100
56Z 55 5750	osborn	Polishing assortment, 9 pieces, with pastes and mandrel Ø 6 mm **Unipol®**		eShop
56Z 55 5755		Polishing set, 6 pieces, with pastes and M14 thread **Unipol®**		eShop
Bore Ø (55 5750)			mm	10

Accessories for polishing tools

Clamping mandrel for cloth rings and fleece rings.
Size 10 – For clamping on drilling machines or flexible shafts.
Size 14 – For clamping on angle polishers.



_10 _14

Suitable for bore - Ø		mm	10	14
56Z 55 5785	Mandrel		eShop	eShop
Thread			–	M14
Shank Ø		mm	6	–

osborn Polishing paste bar

Solid polishing pastes in homogeneous bar form, easy to clean after use.

Application: For application to the cloth rings No. 555725 to 555747 or to the workpiece surface.

Size DARKPINK – For **pre-polishing all metals** (stainless steel, steel, aluminium, brass, bronze).

Size WHITE – For **smoothing** of **stainless steel and steel** – universally applicable.

Size BLUE – For **gloss finish polishing all metals** (stainless steel, steel, aluminium, brass, bronze).



55 5740

Colour		DARKPINK	WHITE	BLUE
56Z 55 5740	Polishing paste bar **Unipol®**	eShop	eShop	eShop
Manufacturer's designation		433	5333	462
Polishing stage		smoothing	smoothing	gloss fin. polish.
Suitable for materials		all metals	INOX; steel	all metals
Weight	g	1000	550	650

Grinding compounds

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 2250	5-10	5-10	5-10	5-10	5-10	5-10		5-10	5-10	5-10	5-10						●	
55 2330/2350			1-3	1-3	1-3	1-3	1-3	1-3	1-3			1-3		1-3				●
55 2340		1-3	1-3					1-3						1-3				●

Silicon carbide grinding compound

SiC

Grinding compound **(oil-soluble)** with silicon carbide (SiC), contents 400 g.

Application: For polishing ground surfaces.



55 2250

Grit SiC grinding compound			150	280
51E 55 2250	Garant	Grinding compound SiC	eShop	eShop
Grit equivalent		µm	55 – 88	20 – 40
Grit designation			medium – fine	very fine

Diamond grinding and polishing compound

D

Silicone-free diamond paste in a handy spray can.

55 2330 – **Highly concentrated natural diamond grit** in a 5g spray for an even surface roughness over the entire surface of the component.

55 2340 – Synthetic mono-crystalline diamond in 10g spray for applications covering a large area.

55 2350 – Synthetic poly-crystalline diamond in 10g spray for quick polishing results.

Application:

55 2330 – For polishing work on **hardened steel, carbide, ceramics and composite materials.**

55 2340 – For polishing work on **all tools steels in general use.**

55 2350 – Ideal for steels and titanium with harness greater than 60 HRC. Very economical, since the polycrystalline structure of the diamond constantly reveals new cutting edges and the polishing proceeds.



55 2330_3



55 2340_3

Grit diamond grinding compound			µm	30	15	10	7	3	1	0,5
51E 55 2330	Garant	Diamond grinding compound 5 g, alcohol and water-soluble **mono-crystalline**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
52E 55 2340	HOLEX	Diamond grinding compound 10 g, alcohol and water-soluble **mono-crystalline**		–	eShop	eShop	eShop	eShop	eShop	–
Grit designation				coarse	medium	medium	fine	very fine	very fine	micro-fine
Colour code				dark brown	dark blue	pale blue	red	green	yellow	white

Grit diamond grinding compound			µm	15	9	6	3	1
56L 55 2350	LUKAS	Diamond grinding compound 10 g, universally soluble **Polycrystalline**		eShop	eShop	eShop	eShop	eShop
Grit designation				medium	medium	fine	very fine	very fine
Colour code				orange	red	yellow	green	blue


55 2350_1

Thinners for diamond grinding compounds

Thinners containing alcohol for diamond grinding compound, in a dripper bottle.

Application: For economical thinning of diamond grinding compound.
Creates an uniform lubrication film and prevents the polishing agent thickening.
Particularly suitable with hard or medium-hard polishing agents.



Content	ml	125
562 55 2400	Thinners for diamond grinding compounds	–

D

Garant Diamond suspension

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 2410			1-3	1-3	1-3	1-3	1-3	1-3	1-3			1-3		1-3				●

Alcohol and water-soluble diamond suspension in a handy pump spray bottle.

Advantage: No clumping of the diamond particles, so that the full cutting performance of the diamond grit is utilised.

Application: For economical polishing and lapping of larger surfaces, as well as for impregnating polishing cloths and polishing discs.



Grit diamond grinding compound	µm	15	10	7	3	1	0,5
51E 55 2410	Diamond suspension **alcohol and water-soluble mono-crystalline**	–	–	–	–	–	–
Grit designation		medium	medium	fine	very fine	very fine	micro-fine
Colour code		dark blue	pale blue	red	green	yellow	white

osborn Unipol® polishes

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 2420 DUR												5-10					●	
55 2420 UNI	5-10	5-10	5-10	5-10	5-10	5-10		5-10	5-10	5-10	5-10						●	

Polishing paste for cleaning and polishing. Integrated surface protection for long-term protection against environmental influences.

Size UNI – For metal working. Removes dirt and metal oxides in a single operation.

Size DUR – For plastics and powder coatings.

Application: For manual and machine polishing.



_UNI _DUR

Type		UNI	DUR
51E 55 2420	Unipol® polish	–	–
Capacity	ml	125	

Grinding discs (quick-change system, external thread)

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 4001/4002/4005 4006/4012/4013	○	●	●	●	●	●		●	○	●	●							●
55 4003/4004/4014 4016	●	●	●	●	●	●		●	●	●	●							●
55 4008/4009	○	●	●	●	●	●		●	●	●								●
55 4018/4019		●	●	●	●	○		○	○	●	○							●
55 4023	●	●	●	●	●		○	●	●	●	●	●		○				●
55 4033							●		●			●		●				●

Quick-change system

The Roloc™ Combisic® CDR quick-change abrasive system with a plastic external thread permits safe abrasive tool changing "with a single twist of the hand" in a very short time.

Application: For efficient abrasion of small areas, even with changing contours.
Reduced tool changing times save costs on multi-stage operations.

Note: **Sabre Special cleaning brushes can be** found under No. 57 3511 onwards.



Grinding discs ceramic grit (CER)

CER

Very high material removal rate and service life due to the use of self-sharpening ceramic grit (CER).
55 4001/4002 – Grit type: **100% geometrically shaped VSM ceramic grit** with abrasive coating (TOP SIZE).
55 4003/4004 – Grit type: **100% geometrically shaped VSM ceramic grit.**
55 4005–4016 – With precision formed **Cubitron™ II** grit.
55 4014/4016 – Strong **fibre substrate**, ideal for edge grinding.

Application:
55 4012–4006/4016 – Use in conjunction with hard backing pad No. 554089.



55 4001



55 4005

Grit				36	60	80	120		maximum speed min^{-1}
51E 55 4012	Garant	Grinding disc (CER)	Ø 50.8 mm	eShop ■	eShop ■	eShop	eShop ■	100	25000
51E 55 4013			Ø 76.2 mm	eShop	eShop	eShop	eShop	50	20000
56V 55 4001	VSM	Actirox grinding disc AF 890 (CER)	Ø 50.8 mm	eShop	eShop	eShop	–	50	25000
56V 55 4002			Ø 76.2 mm	eShop	eShop	eShop	–	50	20000
56V 55 4003		Actirox grinding disc AF 799 (CER)	Ø 50.8 mm	eShop	eShop	eShop	–	50	25000
56V 55 4004			Ø 76.2 mm	eShop	eShop	eShop	–	50	20000
53M 55 4005	3M Roloc™	Grinding disc 984F	Ø 50.8 mm	eShop	eShop	eShop	–	50	25000
53M 55 4006			Ø 76.2 mm	eShop	eShop	eShop	–	50	20000
53M 55 4014		Grinding disc 787C	Ø 50.8 mm	eShop	eShop	eShop	eShop	50	25000
53M 55 4016			Ø 76.2 mm	eShop	eShop	eShop	eShop	50	20000

Grinding discs zirconium aluminium oxide (ZA)

ZA

Zirconium aluminium oxide (ZA) with the **best cost-benefit ratio** for economic performance on steel and non-ferrous metals.



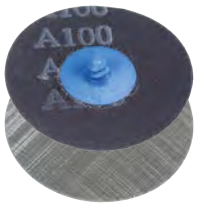
55 4018

Grit				36	50	60	80	120		maximum speed min^{-1}
52E 55 4018	HOLEX	Grinding disc (ZA)	Ø 50.8 mm	eShop	eShop	eShop	eShop	eShop	50	25000
52E 55 4019			Ø 76.2 mm	eShop	eShop	eShop	eShop	eShop	50	25000

Grinding discs 237AA Trizact™

A

237AA Trizact™ with fine-structured pyramidal surface of micro-Aluminium Oxide mineral particles.
Application: Specially for **surface finishing** of hard and difficult-to-grind materials such as **stainless steel, titanium, high-alloy steels** etc. Consistently **reproducible finish and long service life** compared to grinding discs of a similar grit grade.



55 4008

Grit				120	180	280	400	600		maximum speed min^{-1}
53M 55 4008	3M Roloc™	Grinding disc 237AA	Ø 50.8 mm	eShop	eShop	eShop	eShop	eShop	10	25000
53M 55 4009			Ø 76.2 mm	eShop	eShop	eShop	eShop	eShop	10	20000
3M grit designation				A160	A100	A65	A45	A30		
Colour code				white	blue	orange	green	brown		

Grinding discs silicon carbide (SiC)

SiC

Sharp-edged Silicon Carbide grit (SiC) for aggressive grinding with light pressure.
Application: Specially suitable for grinding titanium alloys, aluminium, copper and bronze.



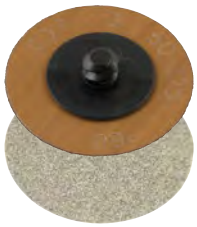
55 4023

Grit				36	60	80	120		maximum speed min^{-1}
55G 55 4023	PFERD	Combidisc® grinding disc (SiC)	Ø 50.8 mm	eShop	eShop	eShop	eShop	100	25000

Grinding discs diamond (D)

D

Grinding discs with diamond grit (D) for **extremely hard materials** such as carbide, glass, ceramic, CRP/GRP and wear protection coatings (such as enamel). Use on hard or medium-hard backing pads.



55 4033

Grit				60	120	220		maximum speed min^{-1}
55G 55 4033	PFERD	Combidisc® grinding disc **Diamond**	**Ø 50.8 mm**	eShop	eShop	eShop	**10**	7500
equivalent to grit size			µm	251	126	76		

Abrasive flap discs, CONTOUR grinding disc (quick-change system, external thread)

Compared to conventional grinding discs, **mini-flap discs** with abrasive strips arranged at a very steep angle offer a **longer working life**, **more flexible grinding characteristics** and a **more even surface finish** (roughness value) down to the wear limit.
The Roloc™, Combidisc® CDR **quick-change system** with a plastic external thread permits safe abrasive tool changing "with a single twist of the wrist" in a very short time.

55 4030 – Very flexible version with stand-up strips and strip overlaps **for extremely gentle even grinding**.
55 4040 – Very high material removal rate due to the use of **self-sharpening ceramic grit (CER)**.
55 4032/4035 – Flat, compact arrangement of the strips for **weld seam dressing** and for **deburring work**.

Application: For efficient abrasion of small areas, even with changing contours. Reduced tool changing times save costs on multi-stage operations.

Note: **Roloc™ bristle discs** can be found from No. 573511 onwards.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 4030–55 4035	○	●	●	●	●	○		○	○	●	○							●
55 4040	○	●	●	●	●	●		●	○	●	●							●

CER



55 4040

Grit				40	60	80		maximum speed min^{-1}
51E 55 4040	Garant	Flap disc **(CER)**	**Ø 50.8 mm**	eShop	eShop	eShop	**10**	19100
51E 55 4032		Flap disc **(ZA)**	**Ø 50.8 mm**	eShop	eShop	eShop	**10**	19100
56L 55 4035	LUKAS	Abrasive flap disc **(ZA)**	**Ø 50.8 mm**	eShop	eShop	eShop	**10**	20000
53T 55 4030	TYROLIT	Soft Job Abrasive flap disc **(ZA)**	**Ø 50.8 mm**	eShop	eShop	eShop	**10**	20000

ZA



55 4032



55 4030

Fe,S,Cl <0.1%

A SiC

Compact abrasive discs, fleece (quick-change system, external thread)

Fibre fleece with resin-bonded grit, **compacted disc shape.**

Application: Especially suitable for **finish grinding and deburring.**
Leaves a **fine finish** and reduces the roughness of all materials.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 4061–55 4067	●	●	●	●	●	●		●	●	●	●	●	●	○	●	●	○	●

Grit equivalent				100	180/2	180/6	280		maximum speed min^{-1}
51E 55 4061	Garant	Compact disc	**Ø 50.8 mm**	eShop	eShop	eShop	eShop	**15**	22000
53M 55 4066	3M Roloc™	Compact disc **XL-UR**	**Ø 50.8 mm**	eShop	eShop	eShop	eShop	**15**	22000
53M 55 4067			**Ø 76.2 mm**	eShop	eShop	eShop	eShop	**10**	15000
Grit designation				coarse	medium	medium	fine		
Degree of hardness				hard	soft	medium	soft		
Version				8 A coarse	2 A medium	6 A medium	2 S fine		





55 4067_180/2

Fleece abrasive discs (quick-change system, external thread)

Fe,S,Cl <0.1%

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 4042–55 4069	●	●	●	●	●	●		●	●	●	●	●	●	○	●	●	○	●

Cleaning / coarse cleaning discs

Coarse cleaning disc with synthetic nylon fleece evenly impregnated with abrasive grit on glass fibre pad. Open structure, will not clog.

Size CRS – **High material removal rate** for general-purpose cleaning work.
Size MED – Combines **cleaning** with imparting a **fine finish.**
Size FINE – For **very gentle cleaning work** and a **fine finish.**
Size XCRS – **Stable edge, extremely high material removal rate and service life.** Ideal for removal of scale.

Application: For rust removal, paint removal, dressing weld seams and removing surface dirt.

SiC



55 4050_CRS

A



55 4054_MED

A



55 4054_FINE

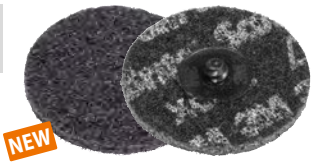
Fleece version				XCRS	CRS	MED	FINE	
51E 55 4050	Garant	Coarse cleaning disc (SiC)	Ø 50.8 mm	–	eShop	–	–	20
51E 55 4051	Garant	Coarse cleaning disc (SiC)	Ø 76.2 mm	–	eShop	–	–	10
51E 55 4054	Garant	Cleaning disc (A)	Ø 50.8 mm	–	–	eShop	eShop	50
51E 55 4055	Garant	Cleaning disc (A)	Ø 76.2 mm	–	–	eShop	eShop	25
53M 55 4056	3M Roloc™	Coarse cleaning disc (SiC)	Ø 50.8 mm	eShop	eShop	–	–	10
53M 55 4057	3M Roloc™	Coarse cleaning disc (SiC)	Ø 76.2 mm	eShop	eShop	–	–	10
53M 55 4064	3M Roloc™	Cleaning disc (A)	Ø 50.8 mm	–	–	eShop	–	50
53M 55 4065	3M Roloc™	Cleaning disc (A)	Ø 76.2 mm	–	–	eShop	–	25
Grit designation				extra coarse	extra coarse	coarse	medium	
Degree of hardness				very hard	hard	medium	soft	
3M designation (55 4056, 55 4057, 55 4064, 55 4065)				XT-DR	CR-DR	BF-DR	–	
maximum speed (55 4050, 55 4054, 55 4056, 55 4064)			min^{-1}	18000				
maximum speed (55 4051, 55 4055, 55 4057, 55 4065)			min^{-1}	15000				

Fleece abrasive discs, material removal and finishing

Fleece disc **with aggressive Cubitron grit (CER)** in combination with wear-resistant fabric.

Application: Allows **material removal** and **burr-free finishing** with only a single tool.
High edge stability and long working life.
Size 80 – Ideal for improving surface finish smoothness after pre-grinding with Cubitron™ II.

CER



55 4059_80



Grit equivalent				50	80		maximum speed min^{-1}
53M 55 4058	3M Roloc™	Fleece disc **HD-DR**	50.8 mm Ø	eShop	eShop	50	25000
53M 55 4059	3M Roloc™	Fleece disc **HD-DR**	76.2 mm Ø	eShop	eShop	25	20000
Grit designation				extra coarse	very coarse		
Version				x-Extra Coarse	Extra Coarse		

Fleece abrasive finishing discs

High performance general-purpose **nylon fleece.**

Application: For cleaning, degreasing, and matt finishing of metal surfaces.

A



55 4042 _100

Grit equivalent				100	180	280		maximum speed min^{-1}
51M 55 4042	Garant	Fleece abrasive finishing disc	Ø 50.8 mm	eShop	eShop	eShop	50	23000
51M 55 4043	Garant	Fleece abrasive finishing disc	Ø 76.2 mm	eShop	eShop	eShop	25	18000
53M 55 4044	3M Roloc™	Fleece abrasive finishing disc **SC-DR**	Ø 25.4 mm	eShop	eShop	eShop	50	25000
53M 55 4045	3M Roloc™	Fleece abrasive finishing disc **SC-DR**	Ø 50.8 mm	eShop	eShop	eShop	50	23000
53M 55 4047	3M Roloc™	Fleece abrasive finishing disc **SC-DR**	Ø 76.2 mm	eShop	eShop	eShop	25	18000
52E 55 4052	HOLEX	Fleece abrasive finishing disc	Ø 50.8 mm	eShop	eShop	eShop	50	23000
52E 55 4053	HOLEX	Fleece abrasive finishing disc	Ø 76.2 mm	eShop	eShop	eShop	25	18000
Grit designation				coarse	medium	fine		
Version				A coarse	A medium	A very fine		

Fleece abrasive finishing discs, ceramic grit (CER)

Fe,S,Cl <0.1%

CER

General-purpose and high performance **nylon fleece** combined **with precisely formed ceramic abrasive grit (CER)** for a high material removal rate and a long working life.

Application: For cleaning, degreasing, and matt finishing of metal surfaces.



55 4069_100



55 4069_180



55 4069_280

Grit equivalent			100	180	280		maximum speed min^{-1}
53M 55 4068	3M Roloc™	Fleece abrasive finishing disc (CER) **PN-DR** Ø 50.8 mm	eShop	eShop	eShop	50	23000
53M 55 4069	3M Roloc™	Fleece abrasive finishing disc (CER) **PN-DR** Ø 76.2 mm	eShop	eShop	eShop	25	18000
Grit designation			coarse	medium	fine		
Version			A coarse	A medium	A very fine		

Garant Polishing flap wheels (quick-change system, external thread)

55

Edge-mounted felt strips (height 10 mm).

Application: Polishing work with enhanced flexibility. Successive use of medium-hard and soft grades allows creation of a top-class mirror finish.

Note: Felt fan-form polishing heads / brushes must be used in conjunction **with grinding and polishing pastes** such as No. 552250 / 555740. Recommended circumferential speed 5 - 10 m/s.



55 4078

Type			MED	SOFT	
51E 55 4078	Polishing flap wheel (felt)	Ø 50.8 mm	eShop	eShop	10
Degree of hardness			medium	soft	

Garant Quick-change system set

Quick-change system set for multi-stage grinding processes with **optimally matched operations.**

Content:
5 pcs. each abrasive discs CER No. 554012 sizes 36, 80 and 120.
2 pcs. coarse cleaning discs SiC No. 554050 CRS.
3 pcs. each cleaning discs A No. 554054 size MED, FINE.
3 pcs. each fleece abrasive finishing discs A No. 554042 size 100, 180 and 280.
Rubber backing pad shank Ø 6 mm, medium hard, 50 mm, No. 554093 50.



55 4077

Type			SET
51E 55 4077	Quick-change system set	Ø 50.8 mm	eShop
Number of pieces			33

Backing pads (external thread quick-clamping system)

To take abrasive discs with **external thread quick-clamping systems (Roloc™, Combidisc®).**

Plastic backing pad with **integral 6 mm shank.**

External Ø		mm	50	75	
53M 55 4090	3M Roloc™	Plastic backing pad shank Ø 6 mm	eShop	eShop	5
maximum speed		min^{-1}	25000	20000	



55 4090

55 4091/4092/4089 – Rubber backing pad with **1/4 inch mounting and 6 mm shank.**
Adapter No. 554081 allows mounting on an M14 spindle.

External Ø			mm	25	50	75
53M 55 4091	3M Roloc™	Rubber backing pad shank Ø 6 mm **soft**		–	eShop	eShop
53M 55 4092	3M Roloc™	Rubber backing pad shank Ø 6 mm **medium**		eShop	eShop	eShop
52E 55 4093	HOLEX	Rubber backing pad shank Ø 6 mm **medium hard**		–	eShop	eShop
53M 55 4089	3M Roloc™	Rubber backing pad shank Ø 6 mm **hard**		–	eShop	eShop
maximum speed			min^{-1}	30000	25000	20000



55 4091



55 4093

Rubber backing pad with **M14 mounting.**

External Ø			mm	75
52E 55 4088	HOLEX	Rubber backing pad with mounting M14 **hard**		eShop
53M 55 4094	3M Roloc™	Rubber backing pad with mounting M14 **hard**		eShop
Thread				M14
maximum speed			min^{-1}	20000



55 4088



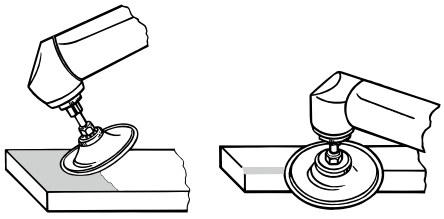
55 4094

Grinding discs (quick-change system, internal thread)

Optimum connection between the backing pad and grinding disc by the quick-clamping system (internal thread). Easy and quick disc replacement by hand, even after heavy use.

Application: **For efficient sanding down of small areas, even with varying contours** in tool, mould and model making, machine, plant and container building. Reduced tool changing times save costs on multi-stage operations.

Note: Other dimensions and grits available on request.

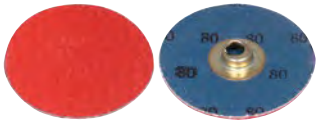


	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3921/3923	○	●	●	●	●	○		●	○	●	●	●	●					●
55 3925–55 3955	●	●	●	○				○		○	●	●	●					●

Grinding discs ceramic grit (CER)

CER

Ceramic grit (CER) ideal for working on stainless steels and nickel alloys. High removal rate and cool cut.



55 3921

Grit				36	60	80	120		maximum speed min^{-1}
51E 55 3921	Garant	Grinding disc (CER)	Ø 50.8 mm	eShop	eShop	eShop	eShop	100	25000
51E 55 3923			Ø 76.2 mm	eShop	eShop	eShop	eShop	50	20000

Grinding discs regular aluminium oxide (A)

A

Standard Aluminium Oxide (A) for general-purpose use.



55 3925

Grit				36	60	80	120		maximum speed min^{-1}
52E 55 3925	HOLEX	Grinding disc (A)	Ø 25.4 mm	–	eShop	eShop	eShop	100	30000
52E 55 3950			Ø 50.8 mm	eShop	eShop	eShop	eShop	100	25000
52E 55 3955			Ø 76.2 mm	eShop	eShop	eShop	eShop	50	20000

A

Garant Fleece abrasive finishing disc (quick-change system, internal thread)

High performance general-purpose **nylon fleece.**

Application: For cleaning, degreasing, and matt finishing of metal surfaces.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3965/3966	●	●	●	●	●	●		●	●	●	●	●	●	○	●	●	○	●

Grit equivalent				100	180	280		maximum speed min^{-1}
51M 55 3965	Fleece abrasive finishing disc		Ø 50.8 mm	eShop	eShop	eShop	50	23000
51M 55 3966			Ø 76.2 mm	eShop	eShop	eShop	25	18000
Grit designation				coarse	medium	fine		
Version				A coarse	A medium	A very fine		



55 3965_100

HOLEX Backing pads (quick-change system, internal thread)

Rubber backing pad **shank Ø 6 mm.** To take grinding discs with the **metal lock quick-clamping system.**



Fit the sanding disc on to the sanding disc holder – rotate a little – ready!

External Ø		mm	25M	50M	50	75M	75
52E 55 3920	Rubber backing pad shank Ø 6 mm **medium hard**		eShop	eShop	–	eShop	–
52E 55 3927	Rubber backing pad shank Ø 6 mm **hard**		–	–	eShop	–	eShop
Degree of hardness			medium hard	medium hard	hard	medium hard	hard
maximum speed		min^{-1}	40000	30000	30000	20000	20000

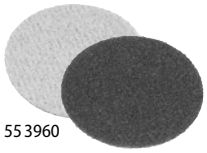
LUKAS Hook and loop abrasive sheets

The **back of the disc is covered with velour loops** which are self-attaching to **hook and loop fastener backing pads**, e.g. No. 553995.
For quick disc changing.

Application: On micro-abrasive systems.
For very high speeds see the rubber hook and loop fastener backing pad No. 553995.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3960/3963	○	●	●	●	○					○	○	○	●			●		●
55 3970/3975	●	●	●	●	●	○		●	●	●	●	●		●				●

Grit			80	120	150	180	220	240	280	320	400	600
53L 55 3960	Hook and loop abrasive sheets (A) pack of 100	Ø 21 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53L 55 3963		Ø 32 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
53L 55 3970	Hook and loop abrasive sheets, (SiC) pack of 100	Ø 21 mm	eShop	eShop	eShop	eShop	eShop	–	–	eShop	eShop	eShop
53L 55 3975		Ø 32 mm	eShop	eShop	eShop	eShop	eShop	–	–	eShop	eShop	eShop


55 3960

55 3970

CaraFin diamond polishing pads

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 3980–55 3992	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●

CaraFin diamond polishing discs

CaraFin diamond polishing tools coated on one side with **mono-crystalline diamond**.
The bonded diamond grit achieves significantly **higher effectiveness** than loose diamond grit in polishing pastes.

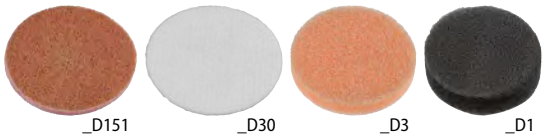
Size D151; D64; D3; D1 – Soft PU backing for truly following the contours.
Size D30–D5 – Hard polyamide backing.
Optimum for polishing out the orange peel effect.

Advantage: Ancillary times for preparation and cleaning such as are required when polishing pastes are used are eliminated. Moulds optimally to the contours.

Application: Polishing work with high flexibility and conformity to contours **without polishing pastes.**
Ideally suited to use in combination with micro-abrasive systems No. 078140 and 078150.
Recommended speed 2000 rpm.


D




_D151 _D30 _D3 _D1

Grit			µm	D151	D64	D30	D10	D5	D3	D1	recommended speed min⁻¹
51G 55 3980	Garant	CaraFin diamond polishing disc set, 5 pieces	Ø 22 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	2000
51G 55 3985			Ø 32 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	2000
Polishing stage				Pre-polishing	Polishing	Final polishing		Mirror finish		High mirror finish	
Colour				pink	pink	white	white	white	orange	black	

CaraFin flower-shaped polishing tool

55 3992 – CaraFin flower-shaped polishing tool made of **elastic PU material** for maximum adaptability to complex workpiece geometries. **Coated on both sides** with **diamond.**
55 3997 – Clamping pin with shank Ø 3 mm for holding flower-shaped polishing tool No. 553992.

Application:
55 3992 – Ideally suited for use in combination with shank No. 553997 43 and micro abrasive systems No. 078140 and 078150.


D


55 3992

Grit			µm	D151	D64	recommended speed min⁻¹
51G 55 3992	Garant	CaraFin flower-shaped polishing tool set **5 pieces**	Ø 20 mm	eShop	eShop	6000
Polishing stage				Pre-polishing	Polishing	
Colour				pink		


55 3997

Overall length			mm	43
55G 55 3997	PFERD	Clamping pin **Shank Ø 3 mm**		eShop

Garant CaraFin polishing fluid

CaraFin polishing fluid effectively avoids black polishing, which is a frequent occurrence when polishing aluminium and chrome-nickel steels. CaraFin polishing fluid can be used in conjunction with all CaraFin diamond polishing discs and polishing sheets. In addition it also prevents formation of the orange peel effect.



55 3993

Type		UNI
51G 55 3993	CaraFin polishing fluid	–
Capacity	ml	250

LUKAS Backing pad for hook and loop abrasive discs and polishing discs

Rubber backing pad **shank Ø 3 mm.**
The back of the pad is provided with steel hooks for optimum engagement.



55 3995

External Ø	mm	18	30
56L 55 3995	Hook and loop rubber pad	eShop	eShop
maximum speed	min^{-1}	20000	12500

Garant GARANT CARAFIN DIAMOND POLISHING TOOLS

Since diamond is the hardest abrasive material, it is suitable for grinding all materials: Polishing of metals, paints, composite fibre materials (GRP) and ceramics. The new generation of GARANT CaraFin diamond polishing tools now offer you innovative environmentally-friendly products for surface treatment, which in addition will make your production process significantly cleaner and more efficient.

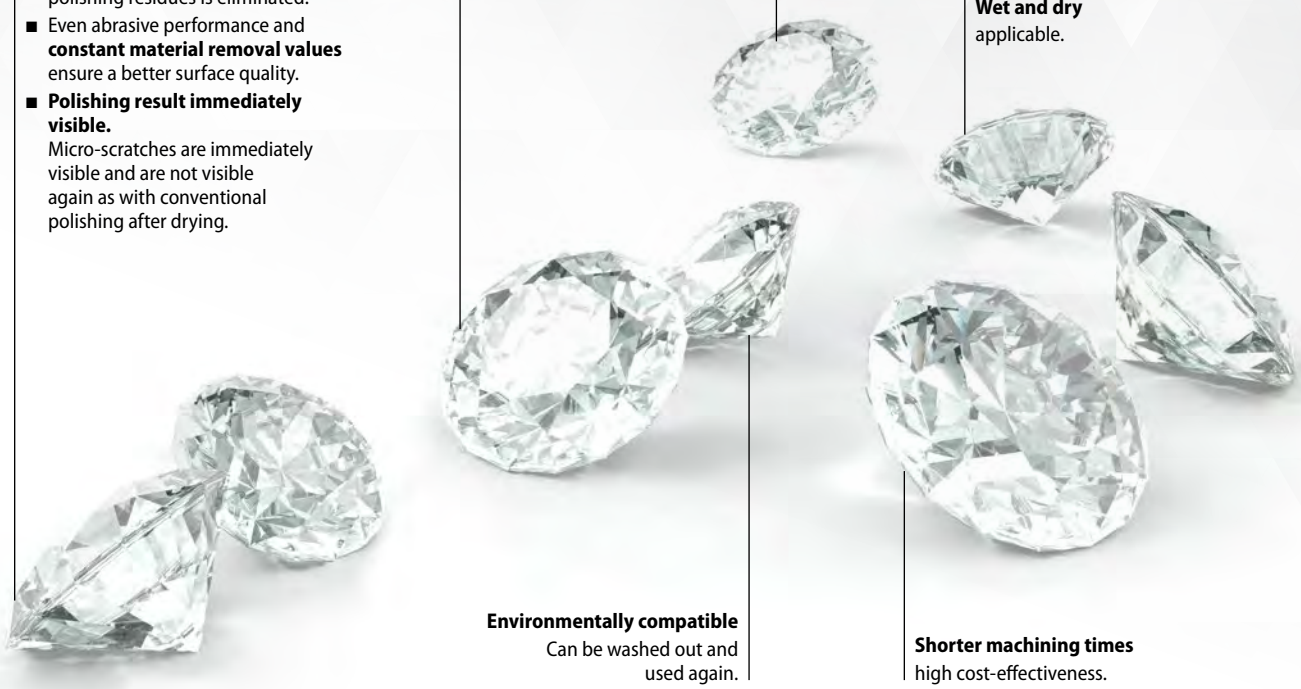
More effective than polishing pastes.

- **Better surface quality and more gloss** – no penetration of polishing agent into the surface of the workpiece.
- **Higher effectiveness** due to **longer tool life** than with conventional polishing pastes.
- **Further operations can be commenced** immediately – the time-consuming removal of polishing residues is eliminated.
- Even abrasive performance and **constant material removal values** ensure a better surface quality.
- **Polishing result immediately visible.** Micro-scratches are immediately visible and are not visible again as with conventional polishing after drying.

Easily automated
Geometry and removal behaviour are constant.

High-gloss results
without any use of chemical polishing pastes.

Wet and dry
applicable.



Environmentally compatible
Can be washed out and used again.

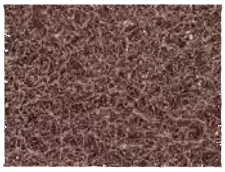
Shorter machining times
high cost-effectiveness.

Fe,S,Cl <0.1%

Abrasive / polishing fleece

Synthetic nylon fleece impregnated with abrasive grit in synthetic resin bonding.

Advantage:
- Adapts to the component shape.
- The open structure prevents clogging and reduces heat development.
- Even and reproducible finish.
- Can be used wet or dry.
- Contains no materials that could cause corrosion.



Cross section of the nylon fibre structure.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 5995–55 6150	●	●	●	●	●	●		●	●	●	●	●	●	○	●	●	○	●

Abrasive fleece pads/rolls (standard)

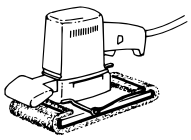
55 5995/5999/6087/6089 – High-performance fleece with **extremely dense grit distribution** deep into the fibres of the material. The special type of fleece structure permits **aggressive grinding characteristics**, a very long working life without clogging and an even **more uniform finish**.

Application: Can be used by hand, on hand block No. 556020 or on an orbital sander.

Size 100 – **Coarse and aggressive:** removes rust, rust film, and surface soiling. For roughening old paint, varnish, plastics, rubber parts (e. g. prior to bonding).

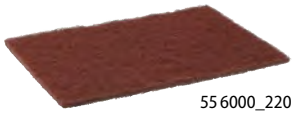
Size 220; 280 – **Medium / medium fine:** Can be used universally for removing rust film, light soiling, discolouration; for rubbing down ground or brushed surfaces, or for degreasing and cleaning prior to painting.

Size 400; 1000 – **Fine / very fine:** for cleaning delicate surfaces, for removing light scratches on metals. Also suitable for applying fine / very fine matt finishes to steels and non-ferrous metals.





55 5999_1000



55 6000_220

Fleece structure				100	220	280	400	1000	
51M 55 5995	Garant	Abrasive fleece pad	158×224 mm	eShop	eShop	eShop	eShop	eShop	10
53M 55 5999	3M Scotch-Brite™	Abrasive fleece pad CF-PRO	152×228 mm	–	–	eShop	–	eShop	20
53M 55 6000	3M Scotch-Brite™	Abrasive fleece pad	158×224 mm	eShop	eShop	eShop	eShop	eShop	20
52M 55 6015	HOLEX	Abrasive fleece pad	152×229 mm	–	eShop	eShop	–	eShop	20
Grit equivalent				180 – 220	240 – 280	280 – 360	400 – 600	600 – 1000	
Grit designation				coarse	medium	medium fine	fine	very fine	
Version				A Medium	A Fine	A Very Fine	S Super Fine	S Ultra Fine	
3M designation (55 5999)				–	–	CF-PRO	–	CF-PRO	
3M designation (55 6000)				WR-SH	WR-SH	CF-HP	WR-SH	CF-HP	
Colour (55 5995, 55 5999, 55 6000)				red	red	red	grey	grey	
Colour (55 6015)				–	green	red	–	grey	



55 6089_1000



55 6089_220

Fleece structure				100	220	280	400	1000
51M 55 6087	Garant	Roll of abrasive fleece	115 mm × 10 m	eShop	eShop	eShop	eShop	eShop
53M 55 6089		Roll of abrasive fleece CF-PRO	100 mm × 10 m	–	–	eShop	–	eShop
53M 55 6090	3M Scotch-Brite™	Roll of abrasive fleece	100 mm × 10 m	eShop	eShop	eShop	eShop	eShop
53M 55 6100	3M Scotch-Brite™	Roll of abrasive fleece	115 mm × 10 m	eShop	eShop	eShop	eShop	eShop
52M 55 6110	HOLEX	Roll of abrasive fleece	100 mm × 10 m	–	eShop	eShop	–	eShop
52M 55 6115	HOLEX	Roll of abrasive fleece	115 mm × 10 m	–	eShop	eShop	–	eShop
Grit equivalent				180 – 220	240 – 280	280 – 360	400 – 600	600 – 1000
Grit designation				coarse	medium	medium fine	fine	very fine
Version				A Medium	A Fine	A Very Fine	S Super Fine	S Ultra Fine
3M designation (55 6089)				–	–	CF-PRO	–	CF-PRO
3M designation (55 6090, 55 6100)				WR-SH	WR-SH	CF-RL	WR-SH	CF-RL
Colour (55 6087, 55 6089, 55 6090, 55 6100)				red	red	red	grey	grey
Colour (55 6110, 55 6115)				–	green	red	–	grey

Abrasive fleece pads / rolls (flexible)

55 6143/6150 – Hand-Pads of flexible and aggressive abrasive fleece.

55 6145/6148/6083/6085 – **Flexible** high-performance fleece with **extremely dense grit distribution** deep into the fibres of the material. The special type of fleece structure permits **more aggressive abrasive characteristics**, a very long working life without clogging and an even **more uniform finish**. The **enormous flexibility** enables use even in inaccessible places.

Application: For manual cleaning and finishing, ideal substitute for steel wool products.

Size 280 – **Medium / medium fine:** universally applicable to remove rust film, light soiling, discolouration; for rubbing down ground or brushed surfaces or for degreasing and cleaning prior to painting.

Size 1000 – **Fine / ultra fine:** for cleaning delicate surfaces, for repairing light scratches on metals. Also suitable for applying fine / very fine matt finishes to steels and non-ferrous metals.

Supplied with:

55 6143 – Pack of 10 hand pads.

55 6145 – Pack of 25 hand pads.

55 6148/6150 – Roll with 60 tear-off pads for dispensing.



55 6145_280



55 6148_280



55 6150_1000

Fleece structure				280	1000
51M 55 6143	Garant	Abrasive fleece hand pads, set of 10 pieces **flexible**	**100×200 mm**	eShop	eShop
53M 55 6145	3M Scotch-Brite™	Abrasive fleece hand pads, set of 25 pieces **Durable Flex**	**114×228 mm**	eShop	eShop
53M 55 6148	3M Scotch-Brite™	Abrasive fleece hand pads, roll with 60 pieces **Durable Flex**	**100×200 mm**	eShop	eShop
53M 55 6150	3M Scotch-Brite™	Abrasive fleece hand pads, roll with 60 pieces **Multiflex**	**100×200 mm**	eShop	eShop
Grit equivalent				280 – 360	600 – 1000
Grit designation				medium fine	very fine
Version				A Very Fine	S Ultra Fine
3M designation (55 6145, 55 6148)				DF	
3M designation (55 6150)				MX	
Colour (55 6143, 55 6145, 55 6148)				red	grey
Colour (55 6150)				purple	grey



55 6083_280



55 6083_1000

Fleece structure				280	1000
51M 55 6083	Garant	Roll of abrasive fleece **flexible**	**100 mm × 10 m**	eShop	eShop
53M 55 6085	3M Scotch-Brite™	Roll of abrasive fleece **Durable Flex**	**100 mm × 10 m**	eShop	eShop
Grit equivalent				280 – 360	600 – 1000
Grit designation				medium fine	very fine
Version				A Very Fine	S Ultra Fine
3M designation (55 6085)				DF	
Colour				red	grey

3M Accessories abrasive fleece

Hand block 115×80 mm

Suitable for: Abrasive fleece pads No. 555999 – 556115.
Application: Hand block to accept fleece hand pads and fleece rolled material.


55 6020

53M 55 6020	Hand block		eShop
Length		mm	115
Width		mm	80

Mandrel shank ⌀ 6.35 mm

Application: Mandrel for mounting pieces of fleece and abrasive paper. For cleaning pipes etc.


55 6030

53M 55 6030	Mandrel		eShop
Shank ⌀		mm	6.35

55

HOLEX Universal abrasive cleaner

Flexible hand abrasive block with flexibly bonded abrasive grit (long service life, fully usable). Open pore bonding ensures the abrasive body never clogs. Suitable for wet and dry use. Water and oil resistant.

Application: **Multi-purpose** for **cleaning, polishing, smoothing, mat finishing** and **abrading all materials.**

Note: Water, oil, compounds or similar agents **increase the effectiveness.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 7665–55 7685	●	●	●	●	●		●	●	●	●	●	●	○	●	●		●	●

Universal abrasive cleaner, aluminium oxide

Version with **electro-bonded aluminium oxide.**


55 7665_G

Type			G	M	F
52E 55 7665	Universal abrasive cleaner	**80×50×20 mm**	eShop	eShop	eShop
Grit designation			coarse	medium	fine
Length		mm	80		
Width		mm	50		
Height		mm	20		

Version in **electro-bonded aluminium oxide.**
Set composed of one piece each abrasive cleaner No. 557665 coarse / medium / fine.


55 7675_SET

		SET
52E 55 7675	Universal abrasive cleaner set **3 pieces**	eShop

Universal abrasive cleaner silicon carbide

High quality version with **pure silicon carbide (SiC)** abrasive grit and special elastic composite material.


55 7685_80×65


55 7685_120×65


55 7685_115×60

Length×Width		mm	80×65	120×65	115×60
52E 55 7685	Elasto-abrasive cleaner **(SiC)**		eShop	eShop	eShop
Grit designation			fine	fine	coarse
Length		mm	80	120	115
Width		mm	65	65	60
Height		mm	20	30	30

Garant Soft-Pad roll, soft

A

Soft-Pad roll coated on one side with **standard aluminium oxide (A)**. **Ceramic coating** for a longer working life. Stored in a handy dispenser box, with visibility slot for quick assessment of the fill level.

Advantage: **Pure foam backing material.** This achieves the greatest flexibility and resistance to grit break-away. Reduced alien material penetration into the workpiece surface by a bonding structure free of solvents. **200 perforated pads**, each 100×120×3 mm.

Application: **Finish grinding of contours, edges, and at inaccessible places**, e.g. cleaning and preparation for painting. For wet and dry grinding.



	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 7460	●	●	●	●	●	○		●	●	●	●	●	●	○	●	●	●	●

Grit				60	100	180	1000	1500
51E 55 7460	Soft-Pad roll **soft**		**100 mm × 24 m**	eShop	eShop	eShop	eShop	eShop
Grit designation				medium	fine	super-fine	ultra-fine	micro-fine

Abrasive sponges

Advantage:
- **Resilient,** no formation of kinks or folds.
- All sponges also suitable **for wet grinding.**
- **Low tendency to clog,** can be washed out.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 7470–55 7545	●	●	●	●	●	○		●	●	●	●	●	●	○	●	●	●	●

55

Abrasive block, hard

A

Abrasive block in **hard** version, with increased edge stability. **Coated on 4 sides** with aluminium oxide grit (A).

55 7470 – **Ceramic coating** for a **longer working life.**
Reduced ingress of foreign materialinto the workpiece surface by a bonding structure free of solvents.

Application: For deburring and surface sanding of wood, metal and paintwork.



55 7470

Grit					60	100	150	180
51E 55 7470	Garant	Abrasive block pack, 24 pieces **hard**		**100×68×26 mm**	eShop	eShop	eShop	eShop
53M 55 7540	3M			**100×68×26 mm**	–	eShop	–	–
Grit designation					medium	fine	very fine	super-fine

Abrasive sponge, extra soft

SiC A

Grinding sponge with **extra soft** intermediate layer. An outstanding fit to all profiles. **Coated on 2 sides.**
Aluminium oxide (A) with a **ceramic coating** for a **longer working life.**
Reduced alien material penetration into the workpiece surface by a bonding structure free of solvents.

Application: For **finish smoothing of irregularities and profiled surfaces** without changing the geometry. Grinding metal, wood and plastics before painting, or between coats of paint, to provide a key.



55 7480

Grit					60	100	180
51E 55 7480	Garant	Abrasive sponge pack, 24 pieces **extra soft**		**120×98×13 mm**	eShop	eShop	eShop
Grit designation					medium	fine	super-fine

Soft-Pad, soft

A

Coated on 2 sides

Soft-Pad with foam structure for **pressure distribution**. Coated with aluminium oxide grit (A).

55 7490 – Coated on 2 sides.
Reduced ingress of foreign material into the workpiece surface by a bonding structure free of solvents.

55 7545 – Coated on 1 side.

Application: **Finish grinding of contours, edges, and at inaccessible places**, e.g. cleaning and preparation for painting. For wet and dry grinding.



55 7490



55 7545

Grit					60	100	220	1000	1500
51E 55 7490	Garant	Soft-Pad pack, 20 pieces **soft**		**120×98×5 mm**	eShop	eShop	eShop	eShop	–
53M 55 7545	3M			**140×115×5 mm**	eShop	eShop	eShop	eShop	eShop
Grit designation					medium	fine	super- fine	ultra-fine	micro-fine

D

Garant

CaraFin diamond polishing tools

CaraFin diamond polishing tools coated on one side with **mono-crystalline diamond**.
The bonded diamond grit achieves significantly **higher effectiveness** than loose diamond grit in polishing pastes.
Advantage: Ancillary times for preparation and cleaning such as are required when polishing pastes are used are eliminated.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 2785	●	●	●	●	●	●	○	●	○	○	●	●			●	●		●
55 2790	○	●	●	●	●	●	●	●	●	●	○	○			○	○		●
55 7510–55 7521	●	●	●	●	●	●	●	●	●	●	●	●			●	●	○	●

CaraFin diamond polishing block, resilient

Advantage: Of high-quality **resilient polyurethane foam.**
Application: Ideally suited for fine polishing of **hard materials and non-ferrous metals.**
Moulds optimally to the workpiece geometry.
Suitable for wet and dry polishing.



55 7510_D151

Grit		µm	D151	D64	D10
51G 55 7510	CaraFin diamond polishing block **resilient**	**98×69×22 mm**	eShop	eShop	eShop
Polishing stage			Pre-polishing	Polishing	Final polishing



55 7515_D10

CaraFin diamond polishing pad

CaraFin diamond polishing pad (EVA) with **open structure,** will not clog.
Advantage: Of high-quality **resilient polyurethane foam.**
Application: Handy for **contour-true finish polishing and mirror finishing** of polished surfaces on all **hard materials and non-ferrous metals.** Quick polishing thanks to free-cutting characteristics.
Suitable for wet and dry polishing.



Grit		µm	D151 (NEW)	D126 (NEW)	D64 (NEW)	D10	D3
51G 55 7515	CaraFin diamond polishing pad	**125×175 mm**	eShop	eShop	eShop	eShop	eShop
Polishing stage			Pre-polishing	Pre-polishing	Polishing	Final polishing	Mirror finish

CaraFin self-adhesive diamond polishing strip

Polishing strips **self-adhesive.** Outer face of **resilient PU material,** one side coated with mono-crystalline diamond grit.
Advantage: Of high-quality **resilient polyurethane foam.**
Application: With linishing belt holder No. 557900.
Suitable for wet and dry polishing.



55 7521



Grit		µm	D64	D15
51G 55 7521	CaraFin diamond polishing strip **self-adhesive**	**25×120 mm**	eShop	eShop
Polishing stage			Polishing	Final polishing

CaraFin diamond polishing cloths, soft

Soft polishing cloth for **contour-true mirror finish polished surfaces** on **soft and easily-scratched** materials.
Advantage: **Diamond polishing cloths** (microfibre) coated on one side with **mono-crystalline diamond**.
Application: For quick, dry polishing by hand.

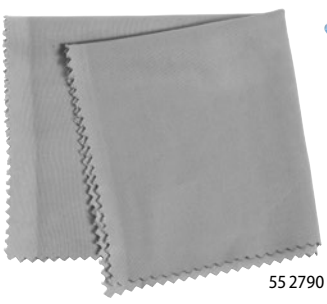


55 2785

Grit		µm	D3	D1	D0,25
51G 55 2785	CaraFin diamond polishing cloth, soft	**150×180 mm**	eShop	eShop	eShop
Grit designation			Mirror finish	High mirror finish	High mirror finish

CaraFin diamond polishing cloths, medium

Polishing cloth for **contour-true high-gloss finish polished surfaces** on hard materials.
Advantage: **Diamond polishing cloths** (microfibre) coated on one side with **mono-crystalline diamond**.
Application: For quick, dry polishing by hand.



55 2790

Grit		µm	D15	D3	D1	D0,25
51G 55 2790	CaraFin diamond polishing cloth, medium	**180×180 mm**	eShop	eShop	eShop	eShop
Grit designation			Final polishing	Mirror finish	High mirror finish	High mirror finish

Abrasive sheets

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 7571/7576	○	○	○	○							○	●	●		●	●	○	●
55 7620/7630	●	●	●	●	●	●		○									○	●

For sanding wood and painted surfaces

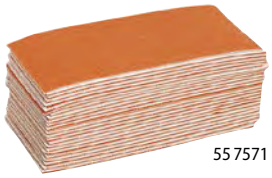
Flexible B or C paper, containing latex, spread with Aluminium Oxide (542B7 / 542C7). **Back with hook and loop fastener** for quick change of sheets and high tear resistance.

Advantage: For sanding wood and painted surfaces

- **Outstanding grit bonding** – long service life, no premature grit break-away damage to surfaces.
- **Dust-repellent additives** prevent clogging with grinding dust.
- **High-quality Aluminium Oxide grit** for max. grinding performance right to the end.

Application: Grinding of primed paintwork, fillers, finish paintwork together with deburring and roughening of plastic components and general preparation of wood.

55 7571 – For manual use with hand sanding block No. 557550 size140.



55 7571



55 7576

Grit			40	60	80	100	120	180	240	320	400	Width mm	Length mm
56Z 55 7571	STARCKE	Abrasive paper pack, 50 pieces **no holes**	–	eShop	eShop	–	eShop	–	–	–	–	67	140
56Z 55 7576	STARCKE	Abrasive paper pack, 50 pieces **8 holes**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	93	185
Grit designation			coarse	coarse	coarse	medium	medium	fine	fine	very fine	very fine		

Metal grinding

Tough elasticated paper spread with Aluminium Oxide. Very high metal removal rate

55 7620 – Rear face with hook and loop fastener attachment for quick change of sheets.

55 7630 – For clamping to orbital sanders.

Application: Grinding of metal and hardwood.

55 7620 – Special perforation system for orbital sander No. 077326 SPS140.



55 7620



55 7630

Grit			40	60	80	120	240	Width mm	Length mm
56Z 55 7620	Milwaukee	Abrasive paper pack, 10 pieces **10 holes**	–	eShop	eShop	eShop	eShop	115	107
56V 55 7630	VSM	Abrasive paper pack, 50 pieces **14 holes**	eShop	eShop	eShop	eShop	–	115	280
Grit designation			coarse	coarse	coarse	medium	fine		

A | Fe,S,Cl <0.1%

STARCKE® Abrasive sheets, triangular

Starcke abrasive paper 540 FK (F paper) with **high strength and dense distribution.** High material removal rates due to specially treated aluminium oxide **(A).**

Suitable for:

55 7635 – Suitable for Fein MultiMaster.

55 7636 – Suitable for Bosch Multi-Cutter.

Application: **General purpose** for grinding metal, non-ferrous metals, varnish, paint, wood, and plastic.



55 7635



55 7636

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 7635/7636	○	●	●	●	●	○		○	○		●	●	●		○	●		●

Grit		40	60	80	120	180		Width mm	Length mm
56Z 55 7635	Paper velour-backed abrasive triangle (A) **no holes**	eShop	eShop	eShop	eShop	eShop	**50**	83	83
56Z 55 7636	Paper velour-backed abrasive triangle (A) **6 holes**	eShop	eShop	eShop	eShop	eShop	**50**	88	93
Grit designation		coarse	coarse	coarse	medium	medium			

Hand sanding block

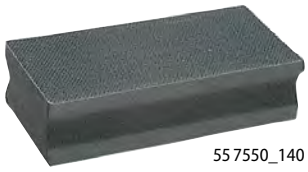
Quick change of sheets due to double–sided hook and loop fastener.

55 7550 – Made of resilient foam rubber.

55 7555 – Combi hand sanding block, with two different hardnesses of foam: Hard side for surface sanding, soft side for contours.

Suitable for: See No. 557571 for velour abrasive paper sheets.

Application: For rubbing down surfaces and contours by hand. No slipping of the abrasive paper.



55 7550_140



55 7555_140

Length		mm	140
56Z 55 7550	Ergonomic hand sanding block		eShop
56Z 55 7555	Combi hand sanding block **hard / soft**		eShop
Length		mm	140
Width		mm	67
Height		mm	35
Suitable for: Abrasive sheet W×L			67×140 mm

A

55

Abrasive cloth by the sheet

Densely woven cotton fabric, evenly spread with synthetic resin bonded **standard aluminium oxide (A)**.
Very good grain adhesion, high abrasive performance and long working life.**Sheet size 230×280 mm.**

Application: Universally applicable, primarily for rubbing down by hand (for rubber sanding rubber see No. 557600).

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 6790–55 6910	●	●	●	●	●	○		●	○	●	●	●	●		○	●		●

Very **sturdy and highly flexible abrasive cloth** (resistant to oil and petroleum).
Moulds itself ideally to the workpiece geometry.
Can be torn in longitudinal direction to yield clean edges along the weave without fraying.



55 6790

Grit				40	60	80	100	120	150	180	240	320	400	600	
51E 55 6790	Garant	Abrasive cloth (A) robust, highly flexible	230×280 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
Grit designation				coarse	coarse	coarse	medium	medium	medium	fine	fine	very fine	very fine	polishing	

Type **VSM KK 114 F: Brown fabric, for extremely demanding applications.**
This grade is particularly supple, resistant to oil and petroleum and
can be torn in longitudinal direction to yield clean edges without fraying.

Size 600; 800 – Type **Starcke 531 JFF, highly flexible, ideal for rubbing down fittings.**



55 6900

Grit				40	60	80	100	120	150	180	240	320	400	600	800	
56V 55 6900	VSM	Abrasive cloth (A) brown, very flexible **KK 114 F**	230×280 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
Grit designation				coarse	coarse	coarse	medium	medium	medium	fine	fine	very fine	very fine	polish-ing	polish-ing	

Abrasive cloths assortment, 50 pieces

Supplied with: 10 sheets each in 60, 80, 120, 180, 320 grit.

Type				5GRITS
51E 55 6908	Garant	Abrasive cloth assortment, 50 pieces (A), sturdy, very flexible	230×280 mm	eShop
56V 55 6910	VSM	Abrasive cloth assortment, 50 pieces (A), brown, very flexible **KK 114F**	230×280 mm	eShop



55 6910

SiC

STARCKE® Abrasive paper waterproof

Very strong and flexible latex paper evenly spread with **Silicon Carbide (SiC).** Good grit bonding, high abrasion force and long service life.
Sheet size 230×280 mm.

Application: Primarily for rubbing down by hand in bodywork building, repair workshops, and paint shops, for fine rubbing down of varnished or filled areas.



55 7500

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 7500	●		●	●	●	●		●	●	●		●		○	●	○	●	○

Grit			150	180	220	240	320	360	400	500	600	800	
56Z 55 7500	Abrasive paper (SiC) waterproof **Matador**	**230×280 mm**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	**50**
Grit designation			medium	medium	fine	fine	very fine	very fine	polishing	polishing	polishing	polishing	

Grit			1000	1200	1500	2000	2500	3000	5000	7000	
56Z 55 7500	Abrasive paper (SiC) waterproof **Matador**	**230×280 mm**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	**50**
Grit designation			polishing								

A

Garant Abrasive cloth economy rolls

Densely woven, robust and **highly flexible** cotton fabric (resistant to oil and petroleum) evenly spread with synthetic resin bonded **standard aluminium oxide (A).** Moulds ideally to the workpiece geometry. **High abrasive performance and long tool life.**

55 6980 – **Economy roll 115 mm wide** for all popular orbital sanders. **Cloth is drawn from the middle of the roll**, ensures a tidy workplace. Allows the roll to be used right up to the last piece without damage.

55 6960–6970 – **Economy roll in a handy dispenser box** with viewing slot for quick monitoring of the remaining cloth. With high-quality cut-off blade.

Application: **Ideal for metal.** Suitable also for wood and for abrading paint.



55 6960 – 55 6970 55 6980

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 6960–55 6980	●	●	●	●	●	○		●	○	●	●	●	●		○	●		●

Grit			40	60	80	100	120	150	180	240	320	400	600
51E 55 6960	Economy roll of abrasive cloth (A) robust, highly flexible	**25 mm × 50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
51E 55 6965		**40 mm×50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
51E 55 6970		**50 mm × 50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
51E 55 6980		**115 mm×50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Grit designation			coarse	coarse	coarse	medium	medium	medium	fine	fine	very fine	very fine	polishing

A

VSM Abrasive cloth economy rolls

Densely woven cotton cloth evenly spread with synthetic resin bonded **Aluminium Oxide (A).** Very good grit bonding, high abrasion performance and long service life.
Type **VSM KK 114 F: Brown fabric, for extremely demanding applications.** This grade is **particularly supple, resistant to oil and petroleum** and can be torn in longitudinal direction to yield clean edges without fraying.
Application: Predominantly for rubbing down metals by hand, but also suitable for all other materials.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 7700–55 7950	●	●	●	●	○	○		●	○	●	●	●	●		○	●		●

55 7730–7750 – Packaging tape **with integral tear-off cutter.**
55 7840/7850 – Packaging tape **without tear-off cutter.**
Application:
55 7850 – Ideal for use on orbital sanders.



55 7700 - 7800 55 7840 / 7850

Grit			40	60	80	100	120	150	180	240	320	400
56V 55 7730	Abrasive cloth (A) economy roll, brown **KK 114 F**	**40 mm × 25 m**	–	eShop	eShop	–	eShop	–	eShop	eShop	–	eShop
56V 55 7800		**25 mm × 50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
56V 55 7700		**40 mm × 50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
56V 55 7750		**50 mm × 50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
56V 55 7840		**100 mm × 50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
56V 55 7850		**115 mm × 50 m**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Grit designation			coarse	coarse	coarse	medium	medium	medium	fine	fine	very fine	very fine

Economy roll sets in dispenser box

Length 50 m, pack **includes integral tear–off cutter.**
Size 5 – **5 pieces** = Basic version with 1 each economy roll 40, 80, 150, 240, 400 grit.
Size 10 – **10 pieces** = Complete set with 1 each economy roll 40 to 400 grit.

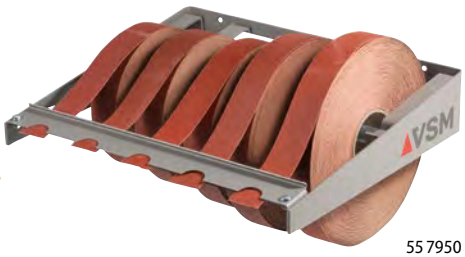


55 7880

Number of different rolls			5	10
56V 55 7880	Abrasive cloth (A) economy roll set, brown **KK 114 F**	**25 mm × 50 m**	eShop	eShop
56V 55 7870		**40 mm × 50 m**	eShop	eShop

Economy roll set in a magazine

The rack takes 5 economy rolls No. 557700 - 60, 80, 120, 150, 240 grit (40 mm wide, 50 m long).



55 7950

56V 55 7950	Abrasive cloth (A) economy roll set, brown, with magazine **KK 114 F**	**40 mm × 50 m**	eShop

VSM Magazine for economy rolls

Robust rack (hammer finish) complete with cutter and clamp (for abrasive cloth economy rolls 20–50 mm wide and 50 m long).



55 7960

56V 55 7960	Magazine for 5 economy rolls **20 – 50 mm, 50 m**	eShop

HOLEX Flexible abrasive belt holder “flexible file” 13 or 25 mm wide

Made of flexible plastic material with wedge-shaped abrasive belt support. Quick, safe tensioning of the abrasive belt by retaining clamps with clamping screw. Overall length 280 mm, abrasive surface length 120 mm.

Application: Uses abrasive cloth strips of length 280 mm (by the sheet or economy rolls). Particularly useful where access is difficult. Many applications, ideal supplement to files also in difficult applications.





55 7900_13



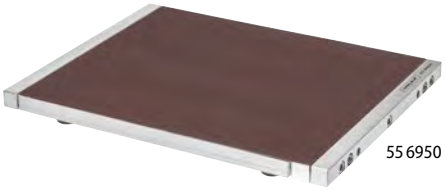
55 7900_25

suitable for linishing belt width		mm	13	25
56Z 55 7900	Flexible abrasive belt holder		eShop	eShop

HOLEX Abrasive cloth accessories

Steel backing plate for abrasive cloth 230×280

Very stable heavy steel backing plate with 4 non-slip rubber feet for abrasive paper 230×280 mm. 3 mm adjustment range for non crease holding.



55 6950

				Weight kg
56Z 55 6950	Steel backing plate	230×280 mm	eShop	8

Rubber sanding block

2-piece, black rubber block in handy shape. Rapid insertion and clamping of abrasive cloth by captive metal pins.

Application: For rubbing down and polishing by hand. Resilient, keeps its shape even when used wet.



55 7600

56Z 55 7600	Rubber sanding block		eShop
Length		mm	130
Width		mm	70
Height		mm	33

55

A | Fe,S,Cl <0.1%

AVSM Linishing belts regular Aluminium Oxide

Universal linishing belt with **Aluminium Oxide(A).** The grinding medium underlay is optimally designed to the grit and type of linishing belt.

55 8010–8012 – 40 grit - X-fabric (robust). 60 to 180 grit - T-fabric (robust-flexible) with **special flexibility.** Ideal for use on hand-held grinding machines.

55 8015–8140 – Robust X-fabric for **high material removal rate** on stationary grinding machines.

Application: For universal use on all popular materials: **steel,** non-ferrous metals, cast iron, **aluminium alloys, wood.**

Note: Other grit sizes, qualities, and dimensions are available on request in line with the manufacturer’s minimum order quantities. Unless specified otherwise on the order, belts will be supplied with standard joints. See No. 568526ff for spare linishing belts for burnishing machines.



55 8010 – 8012

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8010–55 8140	**35-40**	**32-38**	20-25	32-38				18-30	10-20	30-45	**35-45**	**10-30**	**23-26**					●

KK711 linishing belts regular Aluminium Oxide (A)

Grit			40	60	80	120	180	
56V 55 8011	Aluminium Oxide (A) linishing belt **KK711T**	10×330 mm	eShop	eShop	eShop	eShop	eShop	100
56V 55 8012		20×520 mm	eShop	eShop	eShop	eShop	eShop	20
56V 55 8010		13×610 mm	eShop	eShop	eShop	eShop	eShop	100

Grit			40	60	80	120	180	
56V 55 8015	Aluminium Oxide (A) linishing belt **KK711X**	75×533 mm	eShop	eShop	eShop	eShop	–	10
56V 55 8020		100×620 mm	eShop	eShop	eShop	eShop	–	10
56V 55 8030		100×950 mm	eShop	eShop	eShop	eShop	–	10
56V 55 8035		50×1000 mm	eShop	eShop	eShop ■	eShop	–	10
56V 55 8040		100×1000 mm	eShop	eShop	eShop	eShop	eShop	10
56V 55 8050		120×1500 mm	eShop	eShop	eShop	eShop	–	10
56V 55 8060		150×1500 mm	eShop	eShop	eShop	eShop	–	10
56V 55 8100		50×2000 mm	eShop	eShop	eShop	eShop	–	10
56V 55 8110		75×2000 mm	eShop	eShop	eShop	eShop	eShop	10
56V 55 8130		150×2000 mm	eShop	eShop	eShop	eShop	eShop	10
56V 55 8140		75×2500 mm	eShop	eShop	eShop	eShop	–	10



55 8015 – 8140

ZA | Fe,S,Cl <0.1%

VSM Linishing belts Zirconium Aluminium Oxide

High-performance linishing belt with **Zirconium Aluminium Oxide (ZA)** for a high removal rate. **The continuous self-sharpening characteristics** of Zirconium Aluminium Oxide permit **longer belt life** at **higher removal rates** and a more consistent surface quality compared to Aluminium Oxide.

55 8250/8315/8205/8317/8305/8310/8330 – X-fabric (sturdy) for high removal rates on stationary machines.

55 8207–8210/8220/8223/8252/8255/8256/8257/8259/8260/8304 – T-fabric (sturdy and flexible) with **special flexibility** for working in tight radii with hand-held machines.

Application: For use on all **steels and steel alloys, cast iron,** and also non-ferrous metals.

Note: Other grit sizes, qualities, and dimensions are available on request in line with the manufacturer's minimum order quantities. Unless specified otherwise on the order, belts will be supplied with standard joints. See No. 568526ff for spare linishing belts for burnishing machines.

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8205–55 8330	35-40	32-38	20-25	32-38	25-30	20-25		18-30	10-20	30-45			23-26					●

ZK713 linishing belts Zirconium Aluminium Oxide (ZA)

Grit			40	60	80	120	
56V 55 8220	Linishing belt zirconium aluminium oxide (ZA) **ZK713T**	10×330 mm	eShop	eShop	eShop	eShop	100
56V 55 8223		15×330 mm	eShop	eShop	eShop	eShop	100
56V 55 8252		19×457 mm	eShop	eShop	eShop	eShop	100
56V 55 8255		6×520 mm	eShop	eShop	eShop	eShop	100
56V 55 8256		12×520 mm	eShop	eShop	eShop	eShop	100
56V 55 8257		20×520 mm	eShop	eShop	eShop	eShop	20
56V 55 8259		9×533 mm	eShop	eShop	eShop	eShop	100
56V 55 8260		30×533 mm	eShop	eShop	eShop	eShop	20
56V 55 8207		6×610 mm	eShop	eShop	eShop	eShop	100
56V 55 8210		13×610 mm	eShop	eShop	eShop	eShop	100
56V 55 8304		40×760 mm	eShop	eShop	eShop	eShop	10



55 8205

Grit			40	60	80	120	
56V 55 8205	Linishing belt zirconium aluminium oxide (ZA) **ZK713X**	13×305 mm	eShop	eShop	eShop	eShop	100
56V 55 8250		13×457 mm	eShop	eShop	eShop	eShop	100
56V 55 8315	Linishing belt zirconium aluminium oxide (ZA) **ZK713X**	100×950 mm	eShop	eShop	eShop	eShop	10
56V 55 8317		100×1000 mm	eShop	eShop	eShop	eShop	10
56V 55 8305		50×2000 mm	eShop	eShop	eShop	eShop	10
56V 55 8310		75×2000 mm	eShop	eShop	eShop	eShop	10
56V 55 8330		150×2000 mm	eShop	eShop	eShop	eShop	10



55 8330

Linishing belts for every requirement and in any dimensions



Are you unable to find your desired size of linishing belt in our catalogue range?
Then simply get in touch with us.
We will find the right solution for you!

CER | Fe,S,Cl <0.1%

Ceramic grit linishing belts

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8380–55 8382/ 8423–55 8428–55 8444	**35-40**	**32-38**	**20-25**	**32-38**	**25-30**	**20-25**		**18-30**	10-20	**30-45**	**35-45**					●		●
55 8397–55 8414/ 8430/8511–55 8513	35-40	**32-38**	**20-25**	**32-38**	**25-30**	**20-25**		**18-30**	10-20	**30-45**	35-45					●	○	●
55 8448–55 8458	35-40	**32-38**	**20-25**	**32-38**	**25-30**	**20-25**		**18-30**		**30-45**							○	●

Cubitron™ II linishing belt 947A with precisely formed ceramic grit and aluminium oxide on a lightweight X fabric backing fabric. Flexible linishing belt for demanding abrasive work on **hand-held machines** and **long-belt machines.** Cool cutting thanks to grinding aids.



55 8423–8444

Grit				40	60	80	120	
S3S 55 8423	3M	Linishing belt **Cubitron™ II 947A**	13×305 mm	eShop	eShop	eShop	eShop	23
S3S 55 8425			10×330 mm	eShop	eShop	eShop	eShop	100
S3S 55 8428			13×457 mm	eShop	eShop	eShop	eShop	100
S3S 55 8432			12×520 mm	eShop	eShop	eShop	eShop	25
S3S 55 8434			20×520 mm	eShop	eShop	eShop	eShop	100
S3S 55 8436			30×533 mm	eShop	eShop	eShop	eShop	10
S3S 55 8440			13×610 mm	eShop	eShop	eShop	eShop	100
S3S 55 8442			40×815 mm	eShop	eShop	eShop	eShop	8
S3S 55 8444			50×1000 mm	eShop	eShop	eShop	eShop	6

Actirox AK890Y linishing belt with geometrically shaped ceramic grit **with very high and aggressive grinding performance.** The active grinding layer **(TOP SIZE)** ensures cool grinding and an outstanding working life. Sturdy Y-polyester backing for use on **stationary grinding machines.**

Application: For grinding all steels, particularly suitable for **stainless steel and superalloys.**



55 8381

Grit				36	
S6V 55 8380	VSM	Actirox linishing belt **AK890Y (CER)**	50×2000 mm	eShop	10
S6V 55 8381			75×2000 mm	eShop	10
S6V 55 8382			150×2000 mm	eShop	10

Cubitron™ II 784F linishing belt with precision-shaped ceramic grit and carborundum on a stable YF polyester backing (P36 – P80) or a semi-flexible XF polyester backing (P120 – P180). For **cost-effective use for demanding abrasive work** on stationary linishing machines. Cool cutting thanks to grinding aids.



55 8511–8513

Grit				36	60	80	120	180	
S3S 55 8511	3M	Linishing belt **Cubitron™ II 784F**	50×2000 mm	eShop	eShop	eShop	eShop	eShop	6
S3S 55 8512			75×2000 mm	eShop	eShop	eShop	eShop	eShop	4
S3S 55 8513			150×2000 mm	eShop	eShop	eShop	eShop	eShop	2

Cubitron™ II linishing belt 984F with pure precision-shaped ceramic grit on stable YF polyester backing. **High-performance linishing belt for preliminary linishing** on stationary linishing machines. Cool cutting thanks to grinding aids.



55 8452–8458

Grit				36	60	80	
S3S 55 8452	3M	Linishing belt **Cubitron™ II 984F**	50×2000 mm	eShop	eShop	eShop	30
S3S 55 8457			75×2000 mm	eShop	eShop	eShop	20
S3S 55 8458			150×2000 mm	eShop	eShop	eShop	10
S3S 55 8448			50×3500 mm	eShop	eShop	eShop	30

You can find GRIT linishing belts in our eShop.

XK870 linishing belt with self-sharpening **ceramic grit (CER)** for very high performance and long service life. The active abrasive layer **(TOP Size)** ensures cool abrasion and increases the material removal rate.

55 8408 – F-fabric (flexible) for **contour grinding with pipework belt linishers.**

55 8397–8402 – T-fabric (robust-flexible) for use on **hand-held machines.**

55 8409–8430 – X-fabric (robust) for linishing work on **stationary linishing machines** with high contact forces.

Application: For grinding all steels, particularly well suited to difficult to machine materials such as **stainless steel, nickel alloys, chromium,** titanium, aluminium.



55 8397–84514



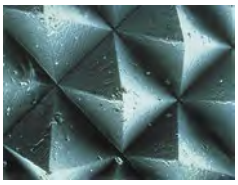
55 8409–8430

Grit				24	36	40	60	80	120	
56V 55 8397	VSM	Linishing belt ceramic grit **XK870T**	6×305 mm	–	–	–	eShop	eShop	eShop	100
56V 55 8404			13×305 mm	–	–	eShop	eShop	eShop	eShop	100
56V 55 8407			10×330 mm	–	–	eShop	eShop	eShop	eShop	100
56V 55 8412			13×457 mm	–	–	eShop	eShop	eShop	eShop	100
56V 55 8398			6×520 mm	–	–	–	eShop	eShop	eShop	100
56V 55 8401			20×520 mm	–	–	eShop	eShop	eShop	eShop	20
56V 55 8414			9×533 mm	–	–	–	eShop	eShop	eShop	100
56V 55 8399			6×610 mm	–	–	–	eShop	eShop	eShop	100
56V 55 8402			13×610 mm	–	–	eShop	eShop	eShop	eShop	100
56V 55 8408		Linishing belt ceramic grit **XK870F**	40×760 mm	–	–	–	eShop	eShop	eShop	20
56V 55 8409		Linishing belt ceramic grit **XK870X**	50×2000 mm	–	eShop	eShop	eShop	eShop	eShop	10
56V 55 8410			75×2000 mm	eShop	eShop	eShop	eShop	eShop	eShop	10
56V 55 8430			150×2000 mm	eShop	eShop	eShop	eShop	eShop	eShop	10

55

A | Fe,S,Cl <0.1%

3M Linishing belts 237AA Trizact



The **pyramid-shaped grit (A)** is based on an exactly aligned three-dimensional structure of very small Aluminium Oxide mineral particles. During the abrasive process new layers of grit particles are continuously exposed – right until the backing fabric (X fabric) is reached.

Application: For smoothing and finishing. For **absolutely consistent fine abrasive results** on all steels, chrome nickel steels, cobalt, nickel, and titanium alloys.

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8460–55 8475		32-38	20-25	32-38	25-30	20-25		18-30	10-20	30-45								●

Grit				120	180	280	400	600	
53M 55 8468	Linishing belt (A) **237AA Trizact™**		13×305 mm	eShop	eShop	eShop	eShop	eShop	23
53M 55 8460			10×330 mm	eShop	eShop	eShop	eShop	eShop	30
53M 55 8462			13×457 mm	eShop	eShop	eShop	eShop	eShop	25
53M 55 8467			30×533 mm	eShop	eShop	eShop	eShop	eShop	10
53M 55 8461			13×610 mm	eShop	eShop	eShop	eShop	eShop	100
53M 55 8466			40×760 mm	eShop	eShop	eShop	eShop	eShop	8
53M 55 8465			40×815 mm	eShop	eShop	eShop	eShop	eShop	30
53M 55 8470			50×2000 mm	eShop	eShop	eShop	eShop	eShop	20
53M 55 8471			75×2000 mm	eShop	eShop	eShop	eShop	eShop	20
53M 55 8475			150×2000 mm	eShop	eShop	eShop	eShop	eShop	10
3M grit designation				A160	A100	A65	A45	A30	



55 8460–8467



55 8470–8467 75

osborn Grinding grease for aluminium grinding

Solid grinding grease in homogeneous bar form. **Prevents smearing** of the linishing belt when grinding aluminium and **reduces the temperature** of the grinding process for all materials.

Application: For application to the linishing belt.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8190	●	●	●	●	○	○		○	○	○	●							

Suitable for materials		ALU
56Z 55 8190	Grinding grease bar **Unipol®**	eShop
Suitable for materials		Aluminium
Weight	g	600



55 8190

A | Fe,S,Cl <0.1%

Fleece linishing belts

Synthetic nylon non-woven fabric with synthetic resin bonded abrasive grit, long service life, **consistent surface finish, low heat generation.**

55 8485/8492/8490/8494/8495/8497/8498/8499/8500/8503/8504 – Flexible fleece belt for use on hand-held machines.

55 8506–8510 – Sturdy fleece belt with low belt stretch for very heavy duties.

Application:

55 8485 – For deburring, matting and finishing. The **low-stretch fabric backing** is particularly suitable for heavier loadings on pneumatic tools.

55 8481–8510 – For rubbing down rough ground or brushed surfaces, for consistent and reproduzible results. Also suitable for removing rust film, light soiling, and discolouration.

Suitable for/ v_c [m/s]	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8481–55 8484–55 8510	15-20	10	10	10	10	10		10	10	10	10	10	10		10	10		●
55 8485	**20-25**	20	20	20	20	20		20	20	20	20	20	20		20	20		●

DF-BL / SC-BS / SC-BL fleece linishing belts

Grit equivalent				100	180	240	280	
53M 55 8485	3M	Fleece linishing belt (A) **DF-BL**	13×305 mm	eShop	eShop	eShop	–	23
53M 55 8492	3M	Fleece linishing belt (A) **SC-BS**	10×330 mm	eShop	eShop	–	eShop	30
53M 55 8490	3M		13×457 mm	eShop	eShop	–	eShop	25
53M 55 8494	3M		6×520 mm	eShop	eShop	–	eShop	25
53M 55 8495	3M		20×520 mm	eShop	eShop	–	eShop	10
53M 55 8497	3M		9×533 mm	eShop	eShop	–	eShop	33
53M 55 8498	3M		30×533 mm	eShop	eShop	–	eShop	10
53M 55 8499	3M		6×610 mm	eShop	eShop	–	eShop	25
53M 55 8500	3M		13×610 mm	eShop	eShop	–	eShop	25
53M 55 8503	3M		40×760 mm	eShop	eShop	–	eShop	8
53M 55 8504	3M		40×815 mm	eShop	eShop	–	eShop	10
53M 55 8510	3M	Fleece linishing belt (A) **SC-BL**	100×1000 mm	eShop	eShop	–	eShop	6
53M 55 8506	3M		50×2000 mm	eShop	eShop	–	eShop	6
53M 55 8507	3M		75×2000 mm	eShop	eShop	–	eShop	6
53M 55 8509	3M		150×2000 mm	eShop	eShop	–	eShop	3
Grit designation				coarse	medium	fine	very fine	
Version				A coarse	A medium	A fine	A very fine	
Colour				brown	red	green	blue	

Grit equivalent				100	180	280	
52E 55 8481	HOLEX	Fleece linishing belt (A)	20×520 mm	eShop	eShop	eShop	10
52E 55 8482	HOLEX		30×533 mm	eShop	eShop	eShop	5
52E 55 8484	HOLEX		13×610 mm	eShop	eShop	eShop	10
52E 55 8488	HOLEX		75×2000 mm	eShop	eShop	eShop	5
Grit designation				coarse	medium	very fine	
Version				A coarse	A medium	A very fine	
Colour				brown	red	blue	


55 8495_280



55 8485_100


55 8509_180


55 8482_100


55 8488_100

SiC

Set of hones, 10 pieces

Application: For **deburring, sharpening** and **honing** tools and tool cutters. **Carbide, non-ferrous metal,** glass, ceramic, porcelain.

Supplied with: 558615 150×16M, 558625 100×10G / 200×20G, 558635 100×10M / 150×16M / 150×16G / 150×16F, 558655 100×10F / 150×16F / 200×20M.

Note: **Preferably use with oil, paraffin or water.**

Number of hones		10
56Z 55 8811	Set of hones, 10 pieces, silicon carbide, in a plastic box	eShop


55 8811

Garant Grinding oil without hazard labels

The safe and flexible grinding oil **for efficient working with grinding files and bench stones** to achieve optimal surfaces.

- Prevents rapid clogging.
- Improves cutting ability.
- Cleans and cools.
- Pleasant smell – petroleum/silicone-free.

Applications: can be used manually and mechanically (small grinding systems).
Ideal for machining moulds or sharpening blades.



55 8570

Contents	ml	500
51E 55 8570	GARANT GreenPlus grinding oil	–
Version		Spray bottle
Contents	l	0.5

A

Garant Blade sharpening stone set

Blade sharpening stone set for coarse and fine grinding of high-quality blades.
Optimally matched grit size sequence for perfect grinding results and gentle grinding.

Content: One each blade sharpening stone in 400/800 grit (coarse grinding) and 1000/6000 grit (fine grinding) in storage boxes made of beech wood.

Note: **Do not use dry, use with water or paraffin.**


55 8890

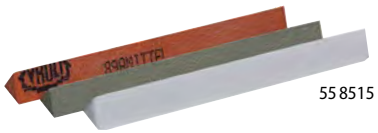


Type		SET	Length mm	Width mm	Height mm
56Z 55 8890	Blade sharpening stone set aluminium oxide (A) **2 pieces**	eShop	200	60	20

Hones (dressing sticks)

Application: For **deburring, sharpening, truing** and **chamfering** of tools and tool cutters.
For re-working bores, surfaces and edges in mould making.
Also for improving the surface for stock removal, finishing, and polishing.

Note: **Preferably use with oil, paraffin or water.**



55 8515

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8515–55 8565/ 8805	●	●	●	●	○	○		○	○	○	○	○					●	○
55 8615–55 8665– 55 8809				●	●	●	●	●	●	●	●	●		○			●	○

Aluminium Oxide (pink, orange, white)

A

Application: For **steel** (hardened) and alloys with high tensile strengths.
The toughness of this material gives it **edge strength** and good **cutting performance.**



55 8515

Length×Width (mm) fineness	53Y 55 8515 three- square	53Y 55 8525 square	53Y 55 8535 round	53Y 55 8545 half round	53Y 55 8555 flat	53Y 55 8565 Blade		Grit	Colour
	TYROLIT Hone - Aluminium Oxide								
100×6M	eShop	–	–	–	eShop	–	10	180	pink
100×6F	eShop	eShop	–	–	–	–	10	320	orange
100×8M	eShop	eShop	eShop	–	–	–	10	180	pink
100×8F	eShop	–	eShop	–	–	–	10	320	orange
100×10G	eShop	eShop	–	–	eShop	–	10	80	pink
100×10M	eShop	eShop	eShop	eShop	eShop	–	10	180	pink
100×10F	eShop	eShop	eShop	eShop	eShop	–	10	320	orange
100×10P	eShop	–	–	–	–	–	10	500	white
100×13G	eShop	–	–	–	–	–	10	80	pink
100×13M	eShop	eShop	–	eShop	–	–	10	180	pink
100×13F	eShop	eShop	–	–	–	–	10	320	orange
150×16G	eShop	eShop	–	–	–	–	10	80	pink
150×16M	eShop	eShop	–	–	eShop	–	10	180	pink
150×16F	eShop	eShop	–	–	eShop	–	10	320	orange
150×16P	eShop	–	–	–	–	–	10	500	white
100×20F	–	–	–	–	eShop	–	10	320	orange
100×25M	–	–	–	–	–	eShop	10	180	pink
100×25F	–	–	–	–	–	eShop	10	320	orange

Silicon Carbide SiC (green)

SiC



55 8615

Application: For **carbide, non-ferrous metal,** glass, ceramic, porcelain.
A material with **high hardness** and exceptional **self-sharpening properties.**

Length×Width (mm) fineness	56Z 55 8615	56Z 55 8625	56Z 55 8635	56Z 55 8645	56Z 55 8655	56Z 55 8665		Grit	Colour
	Hone – silicon carbide (green)								
	three- square	square	round	half round	flat	Blade			
100×6M	eShop	–	–	–	eShop	–	10	180	green
100×6F	eShop	–	–	–	eShop	–	10	320	green
100×10G	–	eShop	–	–	–	–	10	100	green
100×10M	eShop	eShop	eShop	eShop	eShop	–	10	180	green
100×10F	eShop	eShop	eShop	–	eShop	–	10	320	green
100×25F	–	–	–	–	–	eShop	10	320	green
150×16G	eShop	–	eShop	–	–	–	10	100	green
150×16M	eShop	eShop	eShop	–	eShop	–	10	180	green
150×16F	eShop	eShop	eShop	–	eShop	–	10	320	green
200×20G	–	eShop	–	–	–	–	10	100	green
150×16P	eShop	–	–	–	–	–	10	500	green
200×20M	–	–	–	–	eShop	–	10	180	green
200×25G	–	–	–	–	eShop	–	10	100	green

Set of hones, 5 pieces

A SiC

Composed of frequently used hones from coarse to fine.

Supplied with:

55 8805 – 1 piece each three-square hones No. 558515 size 100×10 G / M / F / P and 1 round hone No. 558535 size 100×10 M.

55 8807 – 1 piece each three-square hones No. 558615 size 100×10 M / F / P and 1 round hone No. 558635 size 100×10 M / F.

55 8809 – 1 hone each 100×10M three-square, square, round, half-round, flat, knife.



55 8805

Number of hones			5
53Y 55 8805	TYROLIT	Set of hones, 5 pieces, Aluminium Oxide, in a plastic box	eShop ■
56Z 55 8807		Set of hones, 5 pieces, silicon carbide, in a plastic box	eShop
56Z 55 8809			eShop

Very fine honing tools original Arkansas

Natural stone (original-Arkansas) of very fine grit quartzite; very strong edges.
For the finest surfaces and burr-free grinding. Grit 5000 (pre-grinding), grit 8000 (polishing).

Note: Low dose of oil increases tool life and edge sharpness.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8680–55 8830	●	●	●	●	●	●	●	●	●	●	○	○				●	●	○

Length× Width	56Z 55 8680	56Z 55 8682	56Z 55 8684
	Hone – original Arkansas (grey), grit 5000		
mm	3- square	square	round
100×10	eShop	eShop	eShop



55 8680



55 8710

Length× Width	56Z 55 8710	56Z 55 8720	56Z 55 8730	56Z 55 8740	56Z 55 8750	56Z 55 8760	56Z 55 8765	
	Hone – original Arkansas (white), grit 8000							
mm	three- square	square	round	half round	flat	knife	gouge	
100×6	eShop	eShop	eShop	–	eShop	–	–	10
100×10	eShop	eShop	eShop	eShop	–	–	–	10
100×13	–	eShop	–	–	–	–	–	10
100×25	–	–	–	–	–	eShop	–	10
100×40	–	–	–	–	–	–	eShop	6

Application: For **deburring, sharpening, truing** and **chamfering** of tools and tool cutters.
For re-working bores, surfaces and edges in mould making.
Also for improving the surface for stock removal, finishing, and polishing.
Best used with oil, paraffin or water.



55 8830

Length×Width		mm	100×40	150×50
56Z 55 8827	Bench stone, original Arkansas (grey), grit 5000 in a wooden box		eShop	–
56Z 55 8830	Bench stone original Arkansas (white), grit 8000 in a wooden box		eShop	eShop
Height (55 8830)		mm	12	

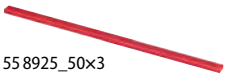
KYOCERA Degussit® sintered ruby fine abrasive tools of oxide ceramic

The exceptionally high hardness of highly sintered Aluminium Oxide ceramic, free of binding agents, gives the fine abrasive tools an excellent edge and profile stability (synthetic ruby) for an outstanding surface quality.

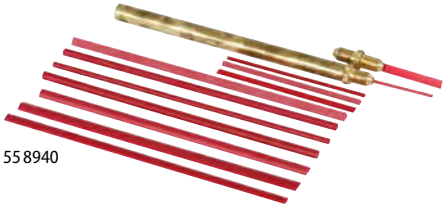
Application: For precision work in tool and mould making, in precision mechanical manufacture, optical and glass industry, porcelain manufacture etc. For applying chamfers, for notching, and for changes of shape.

Length×Width	53D 55 8905	53D 55 8910	53D 55 8915	53D 55 8920	53D 55 8925	
	Degussit® oxide ceramic micro-file					
mm	three- square	square	round	barrette	flat	
50×1	–	eShop	eShop	–	–	20
50×2	eShop	–	–	–	–	20
50×3	–	–	–	–	eShop	20
100×2	–	eShop	eShop	–	–	20
100×3	eShop	–	eShop	–	–	20
100×5	–	–	–	eShop	–	20


55 8915_100×3


55 8925_50×3

Supplied with: Degussit® micro file set with 11 files No. 558905 – 558925 and shape half-round, form elliptical, 1 holder and 2 mounting heads.


55 8940

53D 55 8940	Degussit® oxide ceramic micro file set, 12 pieces	eShop

Sintered ruby fine abrasive **files** in grit grades
Size 100×6M; 100×10M; 120×13M – **medium (M)** (Ra approx. 10 µ, equivalent to about 600 grit),
Size 100×6F; 100×10F; 120×13F – **fine (F)** (Ra approx. 1 µ, equivalent to about 2000 grit).


55 8950


55 8955

Length×width (grit designation)	mm	100×6M	100×6F	100×10M	100×10F	120×13M	120×13F
53D 55 8950 Degussit oxide ceramic fine abrasive file	three-square	eShop	eShop	eShop	eShop	eShop	eShop
53D 55 8955	square	eShop	eShop	eShop	eShop	eShop	eShop
Grit		600	2000	600	2000	600	2000

Sintered ruby fine-cut **bench stones** in grit grades
55 8980 – **medium (M)** (Ra approx. 10 µ, equivalent to about 600 grit),
55 8985 – **fine (F)** (Ra approx. 1 µ, equivalent to about 2000 grit).


55 8985

Length×Width	mm	100×25	150×25
53D 55 8980 Degussit oxide ceramic bench stone **medium (M)**		eShop	eShop
53D 55 8985 Degussit oxide ceramic bench stone **fine (F)**		eShop	eShop
Height	mm	10	15

Garant Felt polishing points

Felt polishing points, medium-hard.

Application: For polishing work, e.g. in toolmaking.


55 2035_10×150

Width × Length	mm	6×150	10×150	
51E 55 2035 Felt polishing point, hard		eShop	eShop	50
51E 55 2036 Felt polishing point, medium-hard		eShop	eShop	50
Shape description		square		
Length	mm	150		
Width	mm	6	10	
Height	mm	6	10	

Hand lapper, boron carbide, Arkansas stone (white)

Grinding body 35×14×5 mm. Overall length 150 mm.

Size 8000 – Very hard natural stone without bonding agents (original Arkansas) of very fine grit quartzite; very strong edges.
Size 220; 400 – Boron carbide body with strong edges and surfaces.

Application:

Size 8000 – For honing and final polishing of blades.
Size 220; 400 – For sharpening, honing, breaking, and rounding carbide edges on turning tools, reamers, milling cutters, drills etc. Also for fine detail lapping of very hard components.


55 8812_220


55 8812_400


55 8812_8000

Grit		220	400	8000
53D 55 8812 Hand lapper	35×14×5 mm	eShop	eShop	eShop
Grinding media		Boron carbide	Boron carbide	Arkansas quartzite
Grit designation		medium	fine	extra fine

TYROLIT Silicon carbide bench stone

Ceramic-bonded combi bench stone made of silicon carbide in medium hard bonding. Ergonomic shape for perfect handling. Lower part SiC 120 grit (coarse); upper part SiC 320 grit (fine).

Application: Ideally suited to removing unevenness (e.g. corrosion) on the machine table or on machine vices. Also suitable for deburring, finish grinding and rounding edges.


55 8845

Diameter		mm	100
53Y 55 8845	Bench stone for carbide and cast iron Silicon carbide (SiC) **coarse / fine**		eShop
Height		mm	40

Bench stones Aluminium Oxide / Silicon Carbide

Ceramic bonded combination oilstones, hardness O/ P. One side coarse for roughing, the other side fine for finishing.

55 8855 – **Special Aluminium Oxide** 180 grit (medium) with **long working life.** Other side precision abrasive, 500 grit (very fine), very free cutting, **high surface quality.**

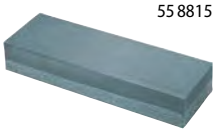
55 8815/8865 – **Aluminium Oxide** in medium hard bonding. Lower part Aluminium Oxide (A) 100 grit (coarse); upper part electro-bonded Aluminium Oxide 280 / 320 grit (fine).

55 8825/8875 – **Silicon carbide** in medium hard bonding. Lower part SiC 280 / 320 grit (fine); upper part SiC 100 grit (coarse).

Application: For deburring, finish smoothing of irregularities, rounding of edges.

Note:
55 8865/8875 – Equalised bench stones additionally dressed for a perfectly flat surface.


55 8815


55 8825


55 8855

Length×Width		mm	100×25	125×50	150×50	200×50
56Z 55 8815	Bench stone for steel Aluminium Oxide (A) **coarse / fine**		–	eShop ■	eShop ■	eShop ■
56Z 55 8825	Bench stone for carbide and cast iron Silicon carbide (SiC) **coarse / fine**		eShop ■	eShop ■	eShop ■	eShop ■
56Z 55 8855	Bench stone for steel, special carborundum **medium / very fine**		eShop ■	eShop ■	–	–
56Z 55 8865	Bench stone for steel Aluminium Oxide (A), equalised **coarse / fine**		–	–	eShop	eShop
56Z 55 8875	Bench stone for carbide and cast iron Silicon carbide (SiC), equalised **coarse / fine**		–	–	eShop ■	eShop ■
Height		mm	15	20	25	25

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 8815/8855/8865	●	●	●	●	○	○		○	○	○	○	○					●	○
55 8825/8875				●	●	●	●	●	●	●	●	●		○			●	○

Diamond wet stones

Evenly distributed diamond coating, bonded in a layer of nickel. **Virtually unlimited life!**

Application: **For sharpening and honing** tools for metal and woodworking. Suitable for steel, HSS, and carbide. For small or pointed tools use the side without holes in the face.
Not suitable for filing.

55 9000 – Diamond wet stone with large abrasive area in a wooden case.

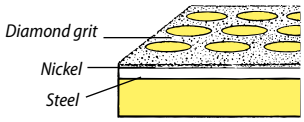
Size D25 – For fine surfaces for finish grinding.

Size D46 – For coarser sharpening.

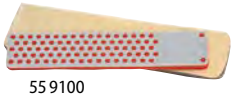
55 9100 – Handy size; very suitable for honing sharp edges of carbide cutters.

Note: **Do not use dry, use with water or paraffin.**






55 9000


55 9100

Abrasive media code / grit µm		D25	D46	Length mm	Width mm	Height mm
56Z 55 9000	Diamond wet stone in a wooden case	eShop	eShop	150	52	16
56Z 55 9100	Diamond wet stone in a leather case	eShop	eShop	115	25	3
Grit designation		fine	medium / coarse			

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 9000/9100	●	●	●	●	●	●	●	●	●	●	●	●		●		●	●	

Rotating abrasive discs – General Information

For hand-held use on angle grinders

Here the abrasive media used (Aluminium Oxide or Silicon Carbide, mostly in combination of different grit sizes) are bonded in a phenolic resin.
Depending on the type of resin bonding (disc hardness), the quality of the abrasive medium and the type of glass fibre reinforcing fabric, the discs are intended for **different applications of grinding processes, material groups, and performance classes**.

Material groups:

- **Steel / cast iron** with very wear-resistant bonding systems.
- **Special types for stainless steel** with very high cutting performance, also suitable for steel.
  Fe, S, Cl content < 0.1 % (even "2 in 1" types) which prevents oxidation.
- **Non-ferrous metals / aluminium** with "soft" bonding system (prevents smearing).

Specification:

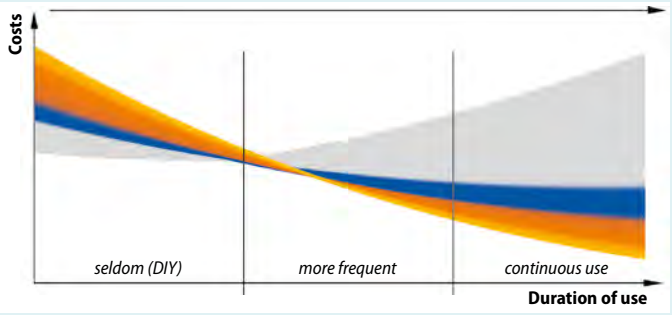
A60R-BFXA (example):

A	Abrasive medium (A standard aluminium oxide, ZA zirconium aluminium oxide, CER ceramic grit)
60	Grit size in mesh (24, 30, 36, 46, 60, 80, 120)
R	Bonding hardness (N, O, P, Q, R, S, T). N = soft; T = very hard.
B	Type of binding (B Bakelite artificial resin)
F	Fibre reinforcement
X	Manufacturer's internal designation
A	External fibre reinforcement

Safety at work:

- Observe the markings and limitations of the tool; do not use cutting discs for roughing.
- Wear ear defenders, eye and body protection.
- Never exceed the indicated running speed (rpm) or maximum cutting speed (m/s).
- Never use grinding tools which are unmarked.
- Destroy faulty grinding tools immediately.

Overall cost analysis for grinding



Garant TYROLIT PFERD 3M HOLEX

Performance classes:

- Premium quality
- Industrial quality
- "DIY quality"

Safe working:

All abrasive materials supplied by the Hoffmann Group are certified to:

oSa®

Association for safety and quality:

The oSa mark warrants fully-inspected manufacture and fulfilment of the strictest grinding tool safety requirements in the world, together with 100% traceability.

Rough grinding discs

- Grit, bonding, abrasive additives as well as reinforcement of the rough grinding discs are **optimised for maximum metal removal rate and working life in their respective applications.**
- Rough grinding discs, depressed centres (shapes 27, 28, 29).
- Grinding angle 20° to 30°.
- For use with electric and pneumatic angle grinders with maximum 80 m/s circumferential speed for grinding welds, surfaces, and edges.



Disc Ø mm	100	110×20	115	125	150	178	230
Maximum speed rpm	15 300	8600	13 300	12 200	10 200	8600	6600

CER | Fe,S,Cl <0.1% | 22.23mm | 20-30° | S/STL | Steel | 80 m/s

Garant GARANT Master Uni rough grinding discs, ceramic grit

Self-sharpening **ceramic grit (CER)** and the specially matched **high-performance binding system** permit **grinding performance that is several times better, with extremely cool grinding** compared to conventional roughing discs (A).

- Very high productivity due to **very fast removal of material.**
- Optimum balance between **extremely soft metal removal behaviour** with very low application force and **very long service life**
- Ideal for grinding hard surfaces **made of steel and INOX** such as edge grinding, surface grinding or removing weld seams.

Specification: CER24Q-BF.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 0007	○	●	●	●	●	●		●	●	○	○	○				○		●



56 0007_125×7

Disc Ø×disc width	mm	115×7	125×7	
5IM 56 0007	GARANT Master Uni rough grinding disc	eShop	eShop	10

A	Fe,S,Cl <0.1%	22.23mm	20-30°	S/STL	Steel	80 m/s

Garant Rough grinding discs Universal

For **universal use** on **stainless steel, steel** and cast iron.

56 0011 – Quick disc changing without using tools using the X-LOCK System.

Specification:

56 0010 – **28-A30R-BFX.**

56 0011 – **A30R-BF.**

Note:

56 0011 – X-LOCK roughing discs are downward compatible and can also be used on conventional angle grinders.



56 0010



56 0011

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 0010/0011	○	●	●	●	●	●		●	●	○	○	○				○		●

Disc ∅×disc width		mm	115×7	125×7	178×7	230×7	
51M 56 0010	Rough grinding disc **Universal**		eShop	eShop	eShop	eShop	10
51M 56 0011	X-LOCK rough grinding disc **Universal**		–	eShop	–	–	10

22.23mm	20-30°	80 m/s

TYROLIT Rough grinding discs

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 0100/0110/0600		●	●	●	●	●		○	○	○		○				○		●
56 0150					○	○				●		○						●
56 0300		●	●	●	●	●		●	●	○		○						●
56 0405	●										●							●
56 0910–56 0930	○	●	●	●	●	○		●	○	●	●	●				●		●

Type PREMIUM*** INOX

Special type for linishing **CrNi steels. Best metal removal rates also on steel.**
Specification: A30R-BFX.

Fe,S,Cl <0.1%	S/STL
A	



56 0300

Disc ∅×disc width		mm	115×7	125×7	178×7	230×7	
53T 56 0300	Rough grinding disc **PREMIUM*** **		eShop	eShop	eShop	eShop	10

Type PREMIUM*** 2 in 1

Aggressive rough grinding disc (low hardness grade Q) for **universal use on stainless steel and steel** with high metal removal rate and long service life.

56 0100 – **Specification: A30Q-BFX.**

56 0110 – Aggressive high-performance version with **significantly longer working life.** Well-defined rounded edges permit a pleasant start-up to the grinding operation. Unintentional digging in is avoided.
Specification: A24Q-BFX.

Fe,S,Cl <0.1%	S/STL	Steel
A		



56 0100



56 0110

Disc ∅×disc width		mm	115×4	125×4	178×4	230×4	
53T 56 0100	Rough grinding disc **PREMIUM*** "2 in 1"**		eShop	eShop	eShop	eShop	10

Disc ∅×disc width		mm	115×7	125×7	150×7	178×8	230×8	
53T 56 0110	Rough grinding disc **PREMIUM*** "2 in 1"**		eShop	eShop	eShop	eShop	eShop	10

Type Basic* 2 in 1

General-purpose rough grinding discs for surface and edge grinding of **steel and stainless steel**.
Specification: A30Q-BF.

Fe,S,Cl <0.1%	S/STL	Steel
A		



56 0600

Disc ∅×disc width		mm	115×6	125×6	178×6	230×6	
53T 56 0600	Rough grinding disc **Basic* "2 in 1"**		eShop	eShop	eShop	eShop	10

Type PREMIUM*** Focur GUSS

Special type for **grinding cast iron.** High-quality zirconium aluminium oxide and silicon carbide permit very high metal removal rates at low contact forces, even on **castings with burnt-on residues.**
Specification: ZA24P-BFP.

Cast iron
ZA



56 0150

Disc ∅×disc width		mm	125×7	178×7	230×7	
53T 56 0150	Rough grinding wheel **PREMIUM*** Focur**		eShop	eShop	eShop	10

Type PREMIUM*** ALU

Special type for working **non ferrous metals such as aluminium, brass, bronze etc.**
Specification: A36L-BFX.

Fe,S,Cl <0.1% | ALU
Non-ferrous Metals | A

Disc ∅×disc width		mm	115×7	125×7	178×7	230×7	
53T 56 0405	Rough grinding disc **PREMIUM*** **		eShop	eShop	eShop	eShop	10



56 0405

Type RONDELLER® PREMIUM*** 2 in 1

The patented grinding disc with high flexibility, cool grinding, very good chip removal, **smooth running** and **low noise emission.**

Application: **Universal** for **steel, INOX (VA), cast iron, non–ferrous metals and thermo set plastics,** for **surface grinding** and for working **sheet metal parts and welds.**

Non-ferrous Metals | Cast iron | Steel | S/STL | Fe,S,Cl <0.1%
A

Grit			24	36	60	
53T 56 0910	Rough grinding disc **PREMIUM*** RONDELLER®**	115 mm ∅	eShop	eShop ■	eShop	25
53T 56 0920		125 mm ∅	eShop	eShop	eShop	25
53T 56 0930		178 mm ∅	eShop	eShop	–	25



56 0910

A | 22.23mm | 20-30° | 80 m/s

PFERD Rough grinding discs SG-INOX/STEEL

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 0420		●	●	●	●	●		●	●	○		○						●
56 0430		●	●	●	●	●				○								●

Soft rough grinding disc (hardness N) of the **SG for INOX high performance range** with very high metal removal rate and long service life.
Specification: A30N-SG-INOX.

Fe,S,Cl <0.1%
S/STL

Disc ∅×disc width		mm	115×7	125×7	178×7	230×7	
55S 56 0420	Rough grinding disc **SG-INOX**		eShop	eShop	eShop	eShop	10



56 0420

Hard rough grinding disc (hardness R) of the **SG for steel high performance range** with very high metal removal rate and very long service life.
Specification: A24R-SG-STEEL.

Steel

Disc ∅×disc width		mm	115×4	115×7	125×4	125×7	150×4	178×7	230×7	
55S 56 0430	Rough grinding disc **SG-STEEL**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	10



56 0430

CER | Fe,S,Cl <0.1% | 22.23mm | 20-30° | S/STL | Steel | 80 m/s

3M Rough grinding discs

Rough grinding disc with innovative **Cubitron™ 3 precision ceramic grit for stainless steel and steel.** Very high metal removal rate and maximum tool life. Low contact pressure for non-tiring working.

Application:

56 0445 – For the processing of demanding grinding applications, e.g. machining of welding seams. Suitable for use on stainless steel, steel and aerospace alloys.

Specification: A36R-BF

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 0445/0446		●	●	●	●	●		●	●	○		○						●

Type Cubitron™ 3 ceramic grit

Disc ∅ × disc width		mm	115×7	125×4	125×7	150×7	178×4	178×7	230×4	230×7	
53M 56 0445	Rough grinding disc **Cubitron™ 3**		eShop	–	eShop	eShop	–	eShop	–	eShop	10
53M 56 0446	Rough grinding disc **Cubitron™ 3 CUT AND GRIND**		–	eShop	–	–	eShop	–	eShop	–	10

90°



56 0445

A	Fe,S,Cl <0.1%	22.23mm	20-30°	S/STL	Steel	80 m/s

HOLEX Rough grinding discs

Rough grinding disc for **steel and stainless steel** with **long working life** and high metal removal rate.
Specification: A30Q-BF.



56 0500

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 0500	○	●	●	●	●	○		○	○	○	○	○						●

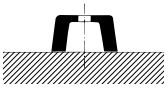
Disc ∅×disc width	mm	115×6	125×6	150×6	178×8	230×8	
52M **56 0500**	Rough grinding disc **"2 in 1"**	eShop ■	eShop	eShop	eShop	eShop	10

A	22.23mm	Steel	Cast iron	50 m/s

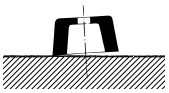
TYROLIT Tapered cup grinding wheel

Tapered cup wheel, synthetic resin bonded. Cup height 55 mm; bore ∅ 22.23 mm;
maximum speed 8600 rpm.
Specification: A3604B84; shape: 11BT.

Application: For low noise rough grinding with high removal rate, preferably surface grinding with electric and pneumatic angle grinders (special safety protection necessary).



Surface grinding



Weld dressing



56 4900

Disc ∅×Wall thickness	mm	110×20	
53T **56 4900**	Tapered cup grinding wheel **PREMIUM*** **	eShop	2

Cutting discs

- Grit, bonding, abrasive additives as well as reinforcement of the cut-off discs are **optimised for maximum cutting performance and working life in their respective applications.**
- Narrow cutting discs (0.8 mm / 1.0 mm / 1.6 mm) specially suited for quick burr-free cutting with low thermal stress. On older angle grinders please ensure discs are precisely centred.
- Cutting discs from 2.0 mm disc thickness exhibit increased lateral stability, stiffness and service life.
- Cutting discs flat (shape 41) or with depressed centre (shape 42).
- For freehand cutting using electric and pneumatic angle grinders with maximum 80 m/s peripheral cutting speed V_c. For stainless steel, use cutting discs at reduced speed.



Disc ∅ mm	50	63	75	100	115	125	150	178	230
Maximum speed rpm	30 500	24 300	20 300	15 300	13 300	12 200	10 200	8600	6600

CER	Fe,S,Cl <0.1%		22.23mm	90°	S/STL	Steel	80 m/s

Garant GARANT Master Uni cutting discs INOX, steel

Self-sharpening **ceramic grit (CER)** and the newly developed **high-performance bonding system** permit **grinding performance that is many times better, long-lasting aggressive performance and extremely cool grinding** compared to conventional cutting discs (A).

- Very high productivity thanks to **very quick separating cuts.**
- Optimum balance between **extremely soft cutting behaviour** with very low application force and **very long service life.**
- **Specification: CER60Q-BF.**



56 3240

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3240	○	●	●	●	●	●		●	●	○	○	○				○		●

Disc ∅	mm	115	125	
51M **56 3240**	GARANT Master Uni cutting disc **EXTRA THIN, steel, INOX**	eShop	eShop	25
Shape description		flat		
Disc thickness	mm	1		

A | Fe,S,Cl <0.1% | 22.23mm | 90° | S/STL | 80 m/s

Garant Cutting discs INOX

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3272–56 3277	○	●	●	●	●	●		●	●	○	○	○				○		●

Special type for **stainless steel.**
New **high-performance version** using state of the art technology with significant productivity advantages and excellent cutting qualities. **Increased cutting performance** due to rough free-grinding side faces; **improved service life.**
The thinness of the disc allows **very quick** cutting **with low force and optimum time saving. Clean cut edges, virtually no burrs.**

56 3273 – Quick disc changing without using tools using the X-LOCK System.

Specification:

Size 115; 125 – **A60R-BF.**
Size 178; 230 – **A46-BF.**


56 3272

X-LOCK


56 3273

Disc ∅		mm	115	125	178	230	
51M 56 3272	Cutting disc, high-performance version **EXTRA THIN, STAINLESS STEEL**		eShop ■	eShop ■	eShop	eShop	25
51M 56 3273	Cutting disc, X-LOCK high-performance version **EXTRA THIN, STAINLESS STEEL**		eShop	eShop	–	–	25
Shape description			flat				
Disc thickness		mm	1	1	1.6	1.9	

Thin version for quick and cost-effective cutting, with a long service life.

Specification: **A46R-BF.**


56 3277

Disc ∅		mm	115	125	
51M 56 3277	Cutting disc, high-performance version **THIN**		eShop	eShop	25
Shape description			flat		
Disc thickness		mm	1.6		

A | 22.23mm | 90° | Steel | 80 m/s

Garant Cutting discs steel

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3262		●	●	●	●	●				○		○						●

New **high-performance version** using state of the art technology with significant productivity advantages and excellent cutting qualities. **Increased cutting performance** due to rough free-grinding side faces; **improved service life.** The thinness of the disc allows **very quick** cutting **with low force and optimum time saving. Clean cut edges, virtually no burrs.**

Specification:

Size 115; 125 – **A60S-BF.**
Size 178; 230 – **A46S-BF.**


56 3262

Disc ∅		mm	115	125	178	230	
51M 56 3262	Cutting disc, high-performance version **EXTRA THIN, steel**		eShop	eShop	eShop	eShop	25
Shape description			flat				
Disc thickness		mm	1	1	1.6	1.9	

A | Fe,S,Cl <0.1% | 22.23mm | 90° | S/STL | 80 m/s

TYROLIT Cutting discs PREMIUM*** /BASIC* INOX

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3111–56 3165/ 3650	○	●	●	●	●	●		●	●	○	○	○				○		●
56 3300		●	●	●	●	●		●	●	○								●

Super thin cutting disc 0.8 mm for very quick cutting **in thin-walled material** (such as vehicle bodywork). Very low burr formation, very low thermal stress.

Specification:

56 3111 – **A60R-BFXA.**
56 3116 – **A60R-BFP.**


56 3116

Disc ∅		mm	115	125	
53T 56 3111	Cutting disc **PREMIUM*** SUPER THIN**		eShop	eShop	25
53T 56 3116			eShop	eShop	25
Shape description (56 3111)			depressed centre		
Shape description (56 3116)			flat		
Disc thickness		mm	0.8		

The thinness of the disc allows **very quick cutting with low force** and optimum time saving. **Clean cut edges, virtually no burrs.** Very long life **high performance cutting disc** of the latest generation, comfortable handling due to rough free-grinding side faces.

Specification:

Size 115; 125 – **A60R-BFP.**

Size 178; 230 – **A46R-BFP.**

Disc ∅		mm	115	125	178	230	
53T **56 3165**	Cutting disc, high-performance version **PREMIUM*** EXTRA THIN**		eShop	eShop	eShop	eShop	25
Shape description			flat				
Disc thickness		mm	1	1	1.6	1.9	



56 3165

Special type with high lateral stability and long service life, for cutting **CrNi steels;** best performance also in steel.

Specification: **A30R-BFXA.**

Disc ∅		mm	115	125	178	230	
53T **56 3300**	Cutting disc **PREMIUM***		eShop	eShop	eShop	eShop	25
Shape description			depressed centre	depressed centre	flat	flat	
Disc thickness		mm	2	2	2.5	2.5	



56 3300

General-purpose cutting discs for occasionally cutting off sections, pipes etc.

Specification:

Size 115; 125 – **A60BF.**

Size 178; 230 – **A46BF.**

Disc ∅		mm	115	125	178	230	
53T **56 3650**	Cutting disc **Basic* EXTRA THIN**		eShop	eShop	eShop	eShop	25
Shape description			flat				
Disc thickness		mm	1	1	1.6	1.9	



56 3650

A	Fe,S,Cl <0.1%	22.23mm	90°	S/STL	Steel	80 m/s

Cutting discs PREMIUM*** /BASIC* INOX, steel

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3200/3600		●	●	●	●	●		○	○	○		○						●

Aggressive cutting disc (low hardness grade Q) for **universal use on stainless steel and steel** with long service life and high stability.

Specification: **A30Q-BFXA.**

Disc ∅		mm	115	125	150	178	230	
53T **56 3200**	Cutting disc **PREMIUM***		eShop	eShop	eShop	eShop	eShop	25
Shape description			depressed centre	flat	flat	flat	flat	
Disc thickness		mm	2.5					



56 3200

General-purpose cutting discs for cutting off sections, pipes etc.

Size 115; 125 – **Specification A46BF; 2 in 1**

Size 178; 230 – **Specification A30BF; 2 in 1**

Disc ∅		mm	115	125	178	230	
53T **56 3600**	Cutting disc **Basic* 2 in 1**		eShop	eShop	eShop	eShop	25
Shape description			flat				
Disc thickness		mm	1.6	1.6	3	2	



56 3600

A | 22.23mm | 90° | Steel | 80 m/s

TYROLIT Cutting discs PREMIUM*** steel

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3250		●	●	●	●	●				○								●

High-performance hard cutting disc with very long service life, specially for sheet steel, steel profiles and tubes.
Specification: **A30S-BFXA.**

Disc ∅	mm	115	125	178	230	
53T **56 3250**	Cutting disc **PREMIUM***	eShop	eShop	eShop	eShop	25
Shape description		depressed centre	flat	flat	flat	
Disc thickness	mm	2.5	2	2.5	2.5	


56 3250

A | Fe,S,Cl <0.1% | 22.23mm | 90° | ALU | Non-ferrous Metals | 80 m/s

TYROLIT Cutting discs PREMIUM*** aluminium

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3406	●										●							●

Special type for cutting **non-ferrous metals such as aluminium, brass, bronze etc.**
Specification:
Size 115; 125 – **A60N-BFP.**
Size 178; 230 – **A30N-BFXA.**

Disc ∅	mm	115	125	178	230	
53T **56 3406**	Cutting disc **PREMIUM*** EXTRA THIN**	eShop	eShop	eShop	eShop	25
Shape description		flat				
Disc thickness	mm	1	1	2	2.5	


56 3406

CER | Fe,S,Cl <0.1% | 22.23mm | 90° | S/STL | Steel | 80 m/s

3M Ceramic grit cutting discs INOX, steel

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3314–56 3325	○	●	●	●	●	●		●	●	○	○	○						●

Type Cubitron™ 3 ceramic grit

Cutting disc with **Cubitron™ 3 precision ceramic grit for stainless steel and steel.**
Extremely high cutting performance and maximum tool life.
Application: For very quick low-burr cutting with low thermal stress and easy ergonomic cut guidance.
Specification: **A60S-BF**

Disc ∅	mm	115	125	
53M **56 3314**	Cutting disc **Cubitron™ 3 EXTRA THIN**	eShop	eShop	25
Shape description		flat		
Disc thickness	mm	1		


56 3314

Cutting disc with **Cubitron™ 3 precision ceramic grit for stainless steel and steel.**
Extremely high cutting performance and maximum tool life.
Application: For very quick low-burr cutting with low thermal stress and easy ergonomic cut guidance.
Specification: A36S-BF

Disc ∅	mm	115	125	230	
53M **56 3319**	Cutting disc **Cubitron™ 3 THIN**	eShop	eShop	eShop	25
Shape description		flat			
Disc thickness	mm	1.6	1.6	2	


56 3319

Type silver ceramic grit

Silver cutting discs with high cutting speeds and long working life. Grit mixture with **precision-shaped ceramic grit.**

Application: For fast, low-burr cutting with low thermal stress.

Specification: **A36R-BF.**

Disc ∅		mm	115	125	
53M 56 3325	Cutting disc **Silver**		eShop	eShop	25
Shape description			flat		
Disc thickness		mm	1		



56 3325

CER | 22.23mm | 90° | Steel | 80 m/s

PFERD SGP ceramic grit cutting discs

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3440		●	●	●	●	●				○								●

Extra thin **high performance cutting disc** for very quick low-burr cutting with low thermal stress and easy ergonomic cut guidance. Very tough, very high cutting performance and outstanding service life.

Specification: **A60Q-CERAMIC SGP STEEL.**

Disc ∅		mm	115	125	
55T 56 3440	Cutting disc **SGP STEEL EXTRA THIN**		eShop	eShop	25
Shape description			flat		
Disc thickness		mm	1		



56 3440

A | Fe,S,Cl <0.1% | 22.23mm | 90° | S/STL | Steel | 80 m/s

PFERD Cutting discs SGP / SG / PSF STEELOX

Extra thin cutting disc for very quick low-burr cutting with low thermal stress and easy ergonomic cut guidance.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3420–56 3435	○	●	●	●	●	●		●	●	○	○	○				○		●

Very tough **SGP special high-performance range** with very high cutting performance and outstanding service life (hardness S).

Specification:

Size 115; 125 – **A60S-SGP-STEELOX.**

Size 178; 230 – **A46S-SGP-STEELOX.**

Disc ∅		mm	115	125	178	230	
55T 56 3420	Cutting disc **SGP STEELOX EXTRA THIN**		eShop	eShop	eShop	eShop	25
Shape description			flat				
Disc thickness		mm	1	1	1.6	1.9	



56 3420

High-performance cutting disc **SG high-performance range** with very high cutting performance and long service life (hardness R).

Specification:

Size 115; 125 – **A60R-SG-STEELOX.**

Size 178; 230 – **A46R-SG-STEELOX.**

Disc ∅		mm	115	125	178	230	
55T 56 3430	Cutting disc **SG STEELOX EXTRA THIN**		eShop	eShop	eShop	eShop	25
Shape description			flat				
Disc thickness		mm	1	1	1.6	1.9	



56 3430

General-purpose PSF-Line cutting discs for cutting off sections, pipes etc.

Specification:

Size 115; 125 – **A60P-PSF-STEELOX.**

Size 178; 230 – **A46P-PSF-STEELOX.**

Disc ∅		mm	115	125	178	230	
55T 56 3435	Cutting disc **PSF STEELOX EXTRA THIN**		eShop	eShop	eShop	eShop	25
Shape description			flat				
Disc thickness		mm	1	1	1.6	1.9	



56 3435

A	Fe,S,Cl <0.1%		22.23mm	90°	S/STL	80 m/s

HOLEX Pro INOX cutting discs

56 3550 – The thin cutting disc for quick cuts without heavy force.
56 3575 – Narrow version for fast economic cutting.

Specification: **A60P-BF.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3550/3575	○	●	●	●	●	●		●	○	○	○	○						●

Disc ∅	mm	115	125	150	178	230	
52M **56 3550**	HOLEX Pro cutting disc **EXTRA THIN**	eShop ■	eShop ■	eShop ■	eShop	eShop	25
Shape description		flat					
Disc thickness	mm	1	1	1.6	1.6	1.9	
Bore ∅	mm	22.23					



56 3550

Disc ∅	mm	115	125	
52M **56 3575**	HOLEX Pro cutting disc **THIN**	eShop	eShop	25
Shape description		flat		
Disc thickness	mm	1.6		
Bore ∅	mm	22.23		



56 3575

A	Fe,S,Cl <0.1%	90°	S/STL	Steel	80 m/s

Cutting discs INOX, steel

Universal cutting disc for steel and stainless steel.

56 3500 – Easy-cutting and stable.
Size 100 – Bore ∅ 16 mm.

Specification:

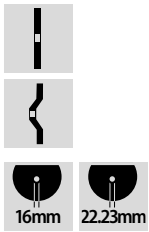
56 3500 – **A30Q-BF.**
56 3505 – **A60R-BF.**



56 3500

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3500/3505		●	●	●	●	○		○	○	○								●

Disc ∅	mm	100	115	125	178	230	
52M **56 3500**	HOLEX Pro cutting disc **"2 in 1"**	eShop	eShop	eShop	eShop	eShop	25
52M **56 3505**	Cutting disc **"2 in 1"**	–	eShop	eShop	–	–	25
Shape description (56 3500)		flat	depressed centre	depressed centre	flat	flat	
Shape description (56 3505)		–	flat	flat	–	–	
Disc thickness (56 3500)	mm	1.6	2	2	2.5	2.5	
Disc thickness (56 3505)	mm	–	1	1	–	–	
Bore ∅	mm	16	22.23	22.23	22.23	22.23	





56 3505

Assortment of grinding media for assembly work

Coordinated assortment for use with angle grinders.

Application: Cutting thin sheet metal and solid material, coarse to fine grinding.

Supplied with:
1 pc. abrasive flap disc long life ZA, grit size 40, No. 565265 40
1 pc. abrasive flap disc long life ZA, grit size 60, No. 565265 60
1 pc. abrasive flap disc long life ZA, grit size 120, No. 565265 120
5 pcs. cutting disc, high-performance version INOX 1.0 mm, No. 563272 125
5 pcs. cutting disc, high-performance version INOX 1.6 mm, No. 563277 125


56 3910

Number of tools		13
51M **56 3910**	Grinding media assortment **Assembly**	eShop


5 pcs. 56 3272_125; pcs. 563277_125


3 pcs. 56 5265

A	Fe,S,Cl <0.1%		22.23mm	90°	20-30°	S/STL	Steel	80 m/s

Cutting discs Cut and Grind PREMIUM*** INOX, steel

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3220		●	●	●	●	●		○	○	○		○						●

Thin **combination grinding disc** with multi-layer structure for high stability, with depth-of-cut protection in the dished area.
Application: For separation and light metal-removal grinding without changing tools.

Disc ∅		mm	115	125	
53T **56 3220**	Combination grinding disc **PREMIUM*** CUT AND GRIND**		eShop	eShop	25
Shape description			depressed centre		
Disc thickness		mm	2		



56 3220

Diamond cutting discs CRP / GRP

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3490												●					●	●

56 3490 – Single-layer **galvanically distributed diamond cutting disc with lateral protective segments.** Very easy cutting due to large chip clearance space. Overall disc width 2.0 mm, steel baseplate 1.0 mm.

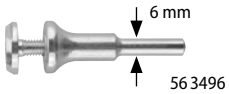
Application:
56 3490 – For cutting, trimming, and parting off fibre-reinforced plastics (CRP / GRP) on angle grinders (size 115 / 125) or straight grinders (size 50 / 75) with mandrel No. 563496.

D	90°
Form 1A1	80 m/s
CRP/ GRP	

Disc ∅		mm	50	75	115	125
55K **56 3490**	Diamond cutting disc		eShop	eShop	eShop	eShop
Grit			D357	D357	D427	D427
Bore ∅		mm	10	10	22.23	22.23

suitable for bore ∅		mm	10	Shank ∅ mm
55K **56 3496**	Clamping mandrel for diamond cutting discs		eShop	6


56 3490



56 3496

Small cutting discs INOX

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 3050–56 3411	○	●	●	●	●	●		●	●	○	○	○				○		●

56 3050 – Extremely thin **small cutting disc** for use with **pneumatic or electric straight grinders,** ideal for use in confined work spaces. For use with mandrel No. 563070.

Specification:
56 3050 – **A60R-BFXA.**

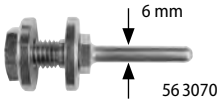
Disc ∅		mm	50	63	75	
53T **56 3050**	Small cutting disc **PREMIUM*** EXTRA THIN**		eShop	eShop	eShop	100
Shape description			flat			
Disc thickness		mm	1			
Bore ∅		mm	6	10	10	

A	S/STL	Fe,S,Cl <0.1%
80 m/s		90°

suitable for bore ∅		mm	6	10	Shank ∅ mm
53T **56 3070**	Clamping mandrel for small cutting disc		eShop	eShop	6



56 3050



56 3070

56 3410/3411 – **Small cutting disc** specially for confined spaces. For use on pneumatic or electric straight grinders. For use with mandrel No. 563415.

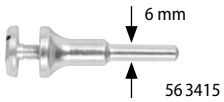
Specification:
56 3410/3411 – **A60P-SG STEELOX.**

Disc ∅		mm	30	50	65	75	
55T **56 3410**	PFERD Small cutting disc 0.8mm **SG SUPER THIN**		–	eShop	eShop	eShop	50
55T **56 3411**	PFERD Small cutting disc 1.1mm **SG EXTRA THIN**		eShop	eShop	eShop	eShop	50
Shape description			flat				
Disc thickness (56 3410)		mm	–	0.8	0.8	0.8	
Disc thickness (56 3411)		mm	1	1.1	1.1	1.1	
Bore ∅		mm	6				

A	90°
Fe,S,Cl <0.1%	S/STL
	80 m/s

suitable for bore ∅		mm	6	Shank ∅ mm
55O **56 3415**	PFERD Clamping mandrel for small cutting disc		eShop	6


56 3410



56 3415

10mm | 90° | 80 m/s

BOSCH Small cutting discs

Thin cutting disc specially for restricted work spaces.

Suitable for: **Cordless small angle grinder** No. 077100.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni
56 3422														●		
56 3423												●	●	○		●

Diamond cutting disc for tiles / ceramic

D

Sintered-on closed diamond cutting edge. Clean cutting.

Application: For cutting off fine stoneware, tiles and marble.

Disc ∅		mm	76
54B	**56 3422**	Diamond cutting disc	eShop
Disc thickness		mm	1.4
Bore ∅		mm	10
Reference body width		mm	1.1



56 3422

Carbide cutting disc for wood / plastic

Steel disc with brazed-on carbide grit on the cutting edge.

Application: For cutting wood, plastic, plasterboard.

Disc ∅		mm	76
54B	**56 3423**	Carbide cutting disc	eShop
Disc thickness		mm	1.8
Bore ∅		mm	10
Reference body width		mm	0.9



56 3423

22.23mm

LUKAS Carbide granulate disc

Steel disc with brazed-on carbide grit. Very long working lives and **extremely high metal removal rates;** medium grit.

Application: Grinding, correcting, trimming GFRP, calcareous sandstone, plaster board, aerated concrete, rubber. Also for smoothing rough formwork edges on exposed concrete.

Note: Not for use on metal. Work with low contact force. Avoid impact loads. Maximum speed 63 m/s (10,500 rpm.)

Disc ∅		mm	115
53L	**56 9610**	Carbide granulate disc	eShop



56 9610

D | 22.23mm

TYROLIT Diamond grinding disc, stone working

Robust thin steel disc with brazed diamond segments, which are bedded in a special material. High **removal rate, extremely long working life** with **low vibration** (clean surfaces), for dry grinding.

Application: For grinding, correcting, smoothing of stone and concrete using angle grinders. Optimum speed 10,000 – 12,000 rpm. Maximum speed 15,000 rpm.

Disc ∅		mm	100	125
53T	**56 9640**	Diamond grinding disc **PREMIUM*** for stone**	eShop	eShop



56 9640



SiC | 22.23mm | 80 m/s

TYROLIT Cutting discs, stone cutting

Universal stone cutting disc (specification: **C30-BF).**

Application: For natural and synthetic stone, refractory stone, and concrete.

Disc ∅		mm	125	230	
53T	**56 9700**	Cutting disc **STANDARD ** for stone**	eShop	eShop	25
Shape description			depressed centre	flat	
Disc thickness		mm	2.5	3	



56 9700

D | 22.23mm | 80 m/s

Diamond cutting discs for wet and dry cutting

Diamond cutting discs for wet and dry cutting. Bore ∅ 22.23 mm.

- High cutting performance of diamonds gives short cutting times.
- Extremely long working life, fewer disc changes.
- Unvarying diameter, always cuts to the full depth.
- Hardly any disc wear, reducing dust generation.

Application: For cutting all common building materials such as concrete (even reinforced), bricks, natural stone, tiles, ceramics, steel etc.

Note:
- Diamond coating already pre-sharpened. **Observe correct direction of rotation!**
- **Other diamond cutting discs on request.**



56 9741

High-performance with **10 or 12 mm coating height.** Suitable for all building materials, long working life, protected against overheating.

Disc ∅		mm	125	230
53T 56 9741	Diamond cutting disc **PREMIUM*** High-performance**		eShop	eShop
Bore ∅		mm	22.23	



56 9736

Maximum performance and working life due to new segment technology with optimised grit distribution. 20 – 30 % faster cutting with **less vibration and clean cut edges.** For **general-purpose use** on concrete, granite, abrasive materials, and reinforced concrete. **Coating height 14 mm.**

Disc ∅		mm	230
53T 56 9736	4 in1 diamond cutting disc **PREMIUM*** Premium**		eShop
Bore ∅		mm	22.23



56 9730

Extremely free-cutting, for short cutting times, reduced load on the machine and clean cuts. Protected against overheating. **Extra thin,** coating thickness **1.2 mm** (∅ 115 / 125) and **1.9 mm** (∅ 180 / 230).

Disc ∅		mm	115	125	180	230
53T 56 9730	Diamond cutting disc **PREMIUM*** Fast Cut**		eShop	eShop	eShop	eShop
Bore ∅		mm	22.23			



56 9750

Tile disc with continuous cutting edge, disc thickness **1.2 mm** (∅ 115) and **1.6 mm** (∅ 230), very free-cutting geometry, 10 mm coating width. Especially for tiles and granite slabs.

Disc ∅		mm	115	230
53T 56 9750	Diamond cutting disc **PREMIUM*** Tiles**		eShop	eShop
Disc thickness		mm	1.2	1.6
Bore ∅		mm	22.23	



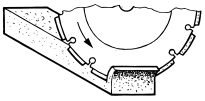
56 9770

Masonry cutting disc, cannot overheat, always replace in pairs.

Disc ∅		mm	125	150
53T 56 9770	Diamond cutting disc **PREMIUM** Masonry cutter**		eShop	eShop
Bore ∅		mm	22.23	

Dressing stick for diamond cutting discs

Application: Cut a thin slice from the end of the dressing stick, working dry. This removes the outer layer of blunt diamonds and uncovers a fresh layer of sharp diamonds.

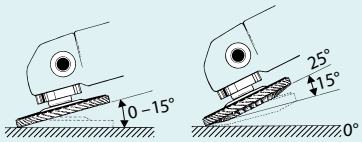




			Length mm	Width mm	Height mm
53Y 56 9780	Dressing stick for diamond cutting discs	eShop	320	55	25

Garant LUKAS 3M PFERD HOLEX Abrasive flap discs overview

Rough grinding discs with abrasive-coated cloth flaps coating (ceramic grit, carborundum, silicon carbide) on backing pads of steel, plastic or glass fibre.
Circumferential speed **ideally 50 - 60 m/s,** max. 80 m/s.
Gentle, cool grinding with high self-sharpening effect (no clogging); low vibration and low force working, low noise level.



Shallow working angle. *Steep working angle.*


flat *dished* *flat-dished* *radial*



Brand	Garant	Garant	LUKAS	LUKAS	LUKAS	LUKAS	3M	PFERD	HOLEX
Designation	–	–	SLTT	V2 Power	V3 Control	SLTflex	Cubitron™ II	CURVE	–
Item number	56 5224 – 56 5239	56 5264 – 56 5279	56 5402 – 56 5422	56 5462 – 56 5482	56 5446	56 6300 / 56 6310	56 5504 / 56 5506	56 6320 – 56 6327	56 5283 – 56 5299
Backing material	Plastic	Glass fibre	Sheet metal	Glass fibre	Glass fibre	Glass fibre	Glass fibre	Glass fibre	Glass fibre
Form									
Abrasive cloth	CER	ZA	CER / ZA	CER / SiC	ZA	ZA	CER	CER / ZA / A	ZA
Best for	S/STL	S/STL / Steel	S/STL / Steel	S/STL / ALU / CRP/GRP	S/STL / Steel	S/STL / Steel	S/STL	S/STL / Steel / ALU	S/STL / Steel
Tool life	●	●	●	●	○	○	●	○	○
Stock removal / performance	●	●	●	●	○	●	●	●	●
Surface grinding	●	●	●	●		●	●	○	●
Edge grinding	●	●	○	●	○	○	○	○	●
Grinding fillet welds	○	○	○	○		●	○	●	○
See-through grinding					●				
Special features	Plastic backing pad, can be reset, cool grinding	Robust, universal	High metal removal rate, patented segment shape	Low-vibration working, patented segment shape	Look-through segments, clear view	Wide segment overlap, M14 mounting thread	Cubitron™ II high performance grit	Radial profile	Universal, affordable

CER | Fe,S,Cl <0.1% | 22.23mm | S/STL | 80 m/s

Garant Abrasive flap discs, CER

- High-quality **self-sharpening ceramic grit (CER)** for maximum abrasive power and **low contact pressure.**
- **Active coating** for cool cutting.
- **Sturdy** poly-cotton mixed fabric for ideal wear characteristics and stability, even when used on edges.
- Ergonomic and **vibration-damping** polyester plastic backing pad (can be reset).
- Best results on high-power angle grinders.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 5224–56 5239	○	●	●	●	●	●		●	●	●	○					●		●

long-life CER with cooling coating

long life - very closely spaced flap strips, for **maximum tool life.**
Application: General purpose abrasive disc operations, surface abrasion, material removal and edge smoothing.

Grit			40	60	80	120	
51M 56 5224	Abrasive flap disc **long life CER, conical**	Ø 115 mm	eShop	eShop	eShop	eShop	10
51M 56 5225		Ø 125 mm	eShop	eShop	eShop	eShop	10
51M 56 5226		Ø 178 mm	eShop	eShop	eShop	–	10


56 5225

speed CER with cooling coating

speed - flat flap strip arrangement, for **high metal removal rate** and long tool life.
Application: Precise chamfering, edge smoothing and surface abrasion.

Grit			40	60	80	120	
51M 56 5234	Abrasive flap disc **speed CER, flat**	Ø 115 mm	eShop	eShop	eShop	eShop	10
51M 56 5235		Ø 125 mm	eShop	eShop	eShop	eShop	10


56 5235

speed+ CER with cooling coating

speed+ - optimised flap strip arrangement, for effectiveness similar to a fibre disc with **highly aggressive characteristics.**
Application: Edge smoothing, material removal.


56 5239

Grit			40	
51M 56 5239	Abrasive flap disc **speed+ CER, flat**	Ø 125 mm	eShop	10

Garant HOLEX The new generation of abrasive flap discs

All important information at a glance



- Suitable for general materials / steel
- Suitable for stainless steels
- Suitable for non-ferrous metals

Performance index

	long life	speed	speed+
Overall material removal	●●●●●●	●●●●●○	●●●○○○
Material removal / time	●●●○○○	●●●●●○	●●●●●●

ZA | Fe,S,Cl <0.1% | 22.23mm | 80 m/s | Steel | S/STL

Garant Abrasive flap discs, ZA

- Premium **zirconium aluminium oxide (ZA)** for maximum abrasive performance.
- **Sturdy** polyester cotton mixed fabric for ideal wear characteristics and stability, even when used on edges.
- Sturdy glass fibre pad for optimum contact pressure.
- Suitable for both **steel and stainless steel**.
- Best results on **low-power and high-power** angle grinders.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 5264–56 5279		●	●	●	●	●		●	○	●						●		●

long life ZA

long life - very closely spaced flap strips, for **maximum tool life.**
56 5279 – Quick disc change without using tools using the X-LOCK System.
Application: General purpose abrasive disc operations, surface abrasion, material removal and edge smoothing.


56 5265



56 5279

Grit			40	60	80	120	
51M 56 5264	Abrasive flap disc **long life ZA, conical**	Ø 115 mm	eShop ■	eShop ■	eShop	eShop	10
51M 56 5265		Ø 125 mm	eShop	eShop	eShop	eShop	10
51M 56 5279	X-LOCK abrasive flap disc **long life ZA, conical**	Ø 125 mm	eShop	eShop	eShop	eShop	10
51M 56 5269	Abrasive flap disc **long life ZA, flat**	Ø 115 mm	eShop	–	–	–	10
51M 56 5270		Ø 125 mm	eShop	–	–	–	10

speed ZA

speed - flat flap strip arrangement, for **high metal removal rate** and long tool life.
Application: Precise chamfering, edge smoothing and surface abrasion.


56 5275

Grit			40	60	80	120	
51M 56 5274	Abrasive flap disc **speed ZA, flat**	Ø 115 mm	eShop	eShop	eShop	eShop	10
51M 56 5275		Ø 125 mm	eShop	eShop	eShop	eShop	10

SiC | Fe,S,Cl <0.1% | 22.23mm | CRP/ GRP | ALU | 80 m/s

Garant Abrasive flap discs, SiC

Particularly coarse **Silicon Carbide grit,** does not clog. Sturdy glass fibre pad for optimum contact pressure.
Application: Edge and surface grinding of **aluminium and fibre-reinforced materials.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 5380/5381	●						●		●		●	●						●


56 5381

Grit			40	60	
51M 56 5380	Abrasive flap disc **long life SIC, conical**	Ø 115 mm	eShop	eShop	10
51M 56 5381		Ø 125 mm	eShop	eShop	10

ZA	Fe,S,Cl <0.1%	S/STL	Steel	80 m/s

HOLEX Flap discs

- High-quality **zirconium aluminium oxide (ZA)** for high abrasive performance.
- Glass fibre pad for optimum contact pressure.
- Suitable for both **steel and stainless steel**.
- Best results on **angle grinders of all power classes.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 5283–56 5299		●	●	●	●	●		●	○	○						●		●

long life ZA

long life - very closely spaced flap strips, for **maximum tool life.**
56 5283 Size 40–120 – Bore Ø 16 mm.
Application: General purpose abrasive disc operations, surface abrasion, material removal and edge smoothing.

22.23mm

Grit			40	60	80	120	
52M 56 5283	Abrasive flap disc **long life ZA, conical**	Ø 100 mm	eShop	eShop	eShop	eShop	10
52M 56 5284		Ø 115 mm	eShop ■	eShop ■	eShop ■	eShop ■	10
52M 56 5285		Ø 125 mm	eShop	eShop	eShop	eShop	10
52M 56 5286		Ø 150 mm	eShop	eShop	eShop	–	10
52M 56 5287		Ø 178 mm	eShop	eShop	eShop	eShop	10

16mm


56 5285

speed ZA

speed - flat flap strip arrangement, for **high metal removal rate** and long tool life.
Application: Precise chamfering, edge smoothing and surface abrasion.

22.23mm

Grit			40	60	80	120	
52M 56 5294	Abrasive flap disc **speed ZA, flat**	Ø 115 mm	eShop ■	eShop ■	eShop ■	eShop ■	10
52M 56 5295		Ø 125 mm	eShop	eShop ■	eShop	eShop	10
52M 56 5296		Ø 178 mm	eShop	eShop	eShop	–	10


56 5295

speed+ ZA

speed+ - optimised flap strip arrangement, for effectiveness similar to a fibre disc with **highly aggressive characteristics.**
Application: Edge smoothing, material removal.

22.23mm

Grit			40	
52M 56 5299	Abrasive flap disc **speed+ ZA, flat**	Ø 125 mm	eShop	10


56 5299

CER	Fe,S,Cl <0.1%	22.23mm	S/STL	Steel	80 m/s

3M Ceramic grit abrasive flap discs

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 5495–56 5515		●	●	●	●	●		●	●	●								●

Type Cubitron™ II 969F

Coated with **precisely formed Cubitron™ II** ceramic grit for **maximum metal removal rate and working life**.
Application: Ideal for **quick** and **cool grinding** of difficult-to-machine steels using high-powered angle grinders.

Grit			40	60	80	
53F 56 5495	969F abrasive flap disc Cubitron™ II, glass fibre pad **flat**	Ø 115 mm	eShop	eShop	eShop	10
53F 56 5496		Ø 125 mm	eShop	eShop	eShop	10
53F 56 5503	969F abrasive flap disc Cubitron™ II, glass fibre pad **conical**	Ø 115 mm	eShop	eShop	eShop	10
53F 56 5505		Ø 125 mm	eShop	eShop	eShop	10



56 5505

Type 769F

Coated with **precisely formed** ceramic grit mixture for **high metal removal rate and long working life**.
Application: General grinding work with high-power angle grinders.

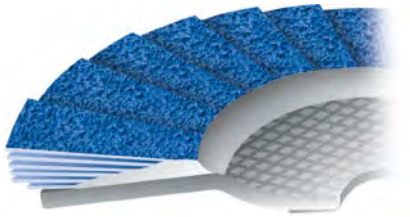
Grit			40	60	80	120	
53F 56 5511	769F abrasive flap disc, glass fibre pad **flat**	Ø 125 mm	eShop	eShop	eShop	eShop	10
53F 56 5515	769F abrasive flap disc, glass fibre pad **conical**	Ø 125 mm	eShop	eShop	eShop	eShop	10


56 5515

Fe,S,Cl <0.1% | 22.23mm | 80 m/s

LUKAS Flap discs iQ series

The patented sickle-shaped strip-form and configuration permit a high coating density for an exceptional metal removal rate and a long tool life.



- *More than 70 % of the abrasive material lies in the outer area of the disc*
- *Up to 6 abrasive layers over one another.*

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 5402/5462		●	●	●	●	○		○	○	○								●
56 5412		○	○	○	○	○		●	○	○								●
56 5422/5482/5484	○	●	●	●	●	●		●	●	●	○							●

SLTT on steel backing plate

Robust backing plate of sheet metal. Quiet, with low vibration.

56 5402 – Pure **Zirconium Aluminium Oxide** on a polyester-cotton mixed fabric. Very aggressive due to the open grit distribution.

56 5412 – Special **zirconium aluminium oxide mixture** with active abrasive coating for cool cutting.

56 5422 – Very high abrasion performance, **ceramic grit** with self-sharpening effect. No glazing or overheating. Highly suitable even for edge grinding.

Application: For **very high material removal rates** and long working life.

CER | S/STL



56 5422

ZA | S/STL | Steel



56 5412

ZA | Steel



56 5402

Grit			40	60	
53L 56 5422	Abrasive flap disc SLTT (CER), flat-dished **for stainless steel**	125 mm Ø	eShop	eShop	10
53L 56 5412	Abrasive flap disc SLTT (ZA-Power), flat-dished **for steel and stainless steels**	125 mm Ø	eShop	eShop	10
53L 56 5402	Abrasive flap disc SLTT (ZA), flat-dished **for steel**	125 mm Ø	eShop	eShop	10

V2 Power on glass fibre backing plate

56 5462 – Pure **Zirconium Aluminium Oxide** on a polyester-cotton mixed fabric. Very aggressive due to the open grit distribution.

56 5482/5484 – Very high abrasion performance, **ceramic grit** with self-sharpening effect. No glazing or overheating. Highly suitable even for edge grinding.

Application: Low-vibration working and long working life.

CER | S/STL



56 5482

ZA | Steel



56 5462

Grit			40	60	
53L 56 5482	Abrasive flap disc V2 Power, (CER), flat-dished **for stainless steel**	125 mm Ø	eShop	eShop	10
53L 56 5484		230 mm Ø	eShop	–	5
53L 56 5462	Abrasive flap disc V2 Power, (ZA), flat-dished **for steel**	125 mm Ø	eShop	eShop	10

ZA | Fe,S,Cl <0.1% | 22.23mm | Steel | 80 m/s

PFERD POLIFAN SGP Strong Steel

Abrasive flap disc for demanding machining.
The patented design with **high coating density** for **high removal rate** and **tool life.**



56 6322

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6322		●	●	●	●	●		○	○	○								●

Grit			40	50	
55P 56 6322	POLIFFAN-STRONG (ZA) abrasive flap disc **for steel**	125 mm Ø	eShop	eShop	10

ZA	Fe,S,Cl <0.1%		22.23mm	S/STL	Steel	80 m/s

Abrasive flap discs, unimpeded view of the workpiece

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 5446		●	●	●	●	○		○	○	○								●

Control clear view abrasive flap discs on glass fibre backing plate

Abrasive flap disc with **field of view**, permitting a view of the workpiece.
Very high coating density and long service life.
Application: Ideal for precision abrasive work.

Grit			40	60	80	
53L 56 5446	Clear view abrasive flap disc SLTR Control, (ZA) **for steel and stainless steels**	Ø 125 mm	eShop	eShop	eShop	10


56 5446

CER	Fe,S,Cl <0.1%	22.23mm	S/STL	Steel	5-15°	80 m/s

Grinding discs Purple Grain

Grinding disc with **self-sharpening ceramic grit (CER)** and integrated glass-fibre-reinforced backing pad.
Aggressive grinding properties characteristic of a fibre disc, combined with the **smooth running** and long working life of an abrasive flap disc.
Application: For use on surfaces and edges.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6314	○	●	●	●	●	●		●	●	●	○							●

Grit			36	
53L 56 6314	Grinding disc (CER) **PG Easy CeramicPS**	Ø 125 mm	eShop	10


56 6314

PFERD CC-GRIND grinding discs

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6360/6367		●	●	●	●	●		○	○	○								●
56 6362/6363	○	●	●	●	●	●		●	●	●	○							●

CER	Fe,S,Cl <0.1%	22.23mm	5-15°	80 m/s

56 6367 – With triangular, precisely formed ceramic grit.
56 6360/6363 – **Aggressive** grinding disc with **integral glass fibre pad.**
56 6360/6362 – **With patented clamping and cooling system.** For use with adapter No. 566365.
56 6362/6367 – **Aggressive** abrasive disc with **integrated glass fibre pad** and **patented clamping system and cooling system.**
Flat use without damaging the workpiece with the clamping nut.
For use with adapter No. 566365.

Steel


56 6360

S/STL


56 6362

Disc Ø		mm	125	
550 56 6360	Grinding disc **CC-GRIND-SOLID SG-Steel**		eShop	10
550 56 6362	Grinding disc **CC-GRIND-SOLID SG-INOX**		eShop	10

NEW


56 6363

Type		mm	125	
550 56 6363	Grinding disc **CC-GRIND-View SGP STEELOX**		eShop	10
550 56 6367	Abrasive disc **CC-GRIND-Robost SGP STEELOX**		eShop	10

NEW


56 6367

Clamping flange kit with cooling slots and special geometry for high air circulation rates.
M14 direct mounting.

for Disc Ø		mm	115/125
550 56 6365	M14 clamping flange for CC-GRIND-SOLID		eShop


56 6365

ZA | Fe,S,Cl <0.1% | 22.23mm | S/STL | Steel | 80 m/s

Garant Flap disc for grinding fillet welds and contours



56 6295

Flap disc with **extra large overlap between strips (10 mm).** High metal removal rate and service life due to the use of high-quality **Zirconium Aluminium Oxide (ZA)** on robust mixed fabric. With active coating for cool cutting.

Application: Ideal for grinding tasks alternating between **surface grinding and contour grinding** and for use in **inaccessible places** such as grinding out of weld fillets.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6290/6295		●	●	●	●	●		●	○	●						○		●

Grit				40	60	80	
51M 56 6290	Special flap disc (ZA) **with overlap between strips**	115 mm Ø		eShop	eShop	eShop	10
51M 56 6295		125 mm Ø		eShop	eShop	eShop	10

Fe,S,Cl <0.1% | 80 m/s

Flap discs for grinding fillet welds and contours

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6300/6310/6320		●	●	●	●	●		○	○	○								●
56 6313/6325	○	●	●	●	●	●		●	●	○	○							●
56 6327	●										●							●

POLIFAN® SGP-CURVE Radial flap discs

22.23mm



Flap disc for highly demanding grinding of fillet welds. The **radial design with special arrangement of the segments** enables optimum application of the abrasive material on the radius. High metal removal rate, service life, and shape stability.

56 6320 – **SGP CURVE STEELOX (ZA)** in 40 grit for high metal removal rates.

56 6325 – **SGP CURVE STEELOX (CER)** in 60 grit for fine surfaces and cool grinding on materials with poor thermal conductivity.

56 6327 – **SGP CURVE-ALU (A)** in 40 grit for aluminium and non-ferrous metals, without clogging and undesirable residues.

Application: **Precise grinding out of weld fillet geometries,** chamfering, deburring.

ZA | Steel

Disc ∅×Width			mm	115×14	115×16	125×14	125×16	
55P 56 6320	PFERD	Abrasive flap disc **POLIFAN-CURVE (ZA) for steel**		eShop	eShop	eShop	eShop	10
55P 56 6325		Abrasive flap disc **for stainless steel, POLIFAN-CURVE (CER)**		eShop	eShop	eShop	eShop	10
55P 56 6327		Abrasive flap disc **for aluminium, POLIFAN-CURVE (A)**		–	eShop	–	eShop	10
Width at radius			mm	11	14	11	14	
for weld fillet radii			mm	> 5	> 8	> 5	> 8	



56 6320

SLTflex pad-less flap discs / radial U-Edge Pro fillet weld grinding disc



56 6313 – **Ceramic grit (CER)** with active upper layer bonding for **heavy duty.**

56 6300–6313 – The **sickle-shaped strips** (patented) are radially linked to a high-strength GRP centre. The **pad-less design** permits an **extremely large overlap between strips**. Very high coating density. M14 threaded mounting, **no clamping nut required.**

56 6300/6310 – **Zirconium Aluminium Oxide (ZA)** with active upper layer bonding for **general-purpose use.**

Application:

56 6300–6313 – For use in **inaccessible places,** contour grinding and for **grinding out of weld fillets.** Large overlap between strips permits **soft cutting.**

ZA



56 6310

Grit				40	60	80	120	
53L 56 6300	LUKAS	Abrasive flap disc SLTflex (ZA), mounting M14	115 mm Ø	eShop	eShop	–	–	10
53L 56 6310			125 mm Ø	eShop	eShop	eShop	eShop	10
53L 56 6313		Abrasive flap disc SLTflex (CER), mounting M14	125 mm Ø	eShop	–	–	–	10

Grit				40	60	80	
53L 56 6315	LUKAS	Compact grinding disc U-Edge Pro (ZA)	Ø 125 mm	eShop	eShop	eShop	5



56 6315

SiC	Fe,S,Cl <0.1%	60 m/s

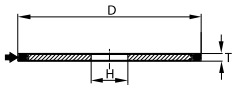
HOLEX Compact fleece abrasive discs for fillet weld preparation

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6986–56 6997	●	●	●	●	●	●		●	●	●		●			●	●		●

Compact disc of compressed fibre fleece for cool grinding without discolouration.

Application: For **dressing, cleaning and finishing** of fillet welds, weld spatter and inaccessible places using angle grinders (Ø 125 mm) or fillet weld grinding machines (Ø 150 mm).







56 6986

Grit equivalent			180	280		maximum speed min^{-1}
52M **56 6986**	Compact disc **D × T × H (mm, see drawing)**	**125×3×22**	eShop	eShop	**10**	10000
52M **56 6996**		**125×6×22**	eShop	eShop	**10**	10000
52M **56 6987**		**150×3×25**	eShop	eShop	**10**	7500
52M **56 6997**		**150×6×25**	eShop	eShop	**5**	7500
Grit designation			medium	fine		
Degree of hardness			medium	soft		
Version			6A medium	3S fine		

A	Fe,S,Cl <0.1%	M14	S/STL	Steel

Flap wheel / rollers M14 for angle grinders

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6350/6352	●	●	●	●	○			●	○	●	●	●	●		○			●
56 6372/6375	●	●	●	●	●		○	●	●	●	●	●	○		●	●		●

Strips arranged in a fan form around the axis of the tool. **M14 direct mounting.** Extremely flexible.

56 6350 – **Abrasive cloth**, regular aluminium oxide (A).

56 6352 – Combination of **abrasive cloth (A) and fleece (A).**

Application: For fine abrasion of convex surfaces.

80 m/s



56 6350

30 m/s



56 6352

Grit				40	60	80	80CRS	120	150FINE	
51M **56 6350**	Garant	Flap wheel M14 **Fabric (A)**	**Ø 125 mm×20 mm**	eShop	eShop	eShop	–	eShop	–	**5**
51M **56 6352**		Flap wheel M14 **Fleece (A) / fabric (A)**	**Ø 125 mm×20 mm**	–	–	–	eShop	–	eShop	**5**

30 m/s

Strips arranged in a fan form around the axis of the tool. **M14 direct mounting.** Combination of **abrasive cloth and fleece.**

Application: Removes scratches, gives a brushed matt effect.



56 6372

Grit equivalent				80CRS	
52M **56 6372**	HOLEX	Flap wheel roller M14 **Fleece/fabric**	**Ø 100 × 50 mm**	eShop	**2**
recommended speed			min^{-1}	2800	
maximum speed			min^{-1}	6000	

30 m/s

Sinusoidal abrasive fleece with regular aluminium oxide (A) without cut edges.

Application: For **matting** and **polishing** without abrupt changes in texture.



56 6375

Grit equivalent				180	280	
52M **56 6375**	HOLEX	Flap wheel roller M14 **Fleece wave form**	**Ø 100 × 50 mm**	eShop	eShop	**2**
recommended speed			min^{-1}	2800		
maximum speed			min^{-1}	6000		

CER	Fe,S,Cl <0.1%	22.23mm	80 m/s

3M Fibre discs (CER)

The precisely formed **high-performance abrasive grit** in 3M™ products consists of defined ceramic triangles optimally arranged on the grinding surface. **Greatly increased removal rate** with very long working life and even finish.
Extremely tear-resistant but very flexible **vulcanised fibre.** Bore diameter 22.23 mm and crossed slots.

Application: Limited to maximum 80 m/s circumferential speed with backing pads No. 566690 / 566692 on angle grinders. The quick-cutting grit permits **comfortable and ergonomic working** without the need to exert great pressure. At the same time the high removal rate of 3M™ fibre discs makes them a real alternative to roughing discs and flap discs.

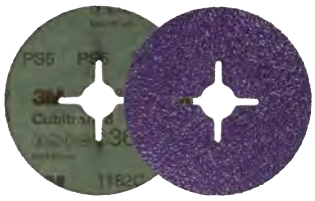
	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6461–56 6463		●	●	●	●	●		○	○	●								●
56 6471–56 6473/ 6480/6485 6490	○	●	●	●	●	●		○	○	●	●							●
56 6474–56 6479/ 6481/6486 6491	●	●	●	●	●	●		●	●	●	●							●

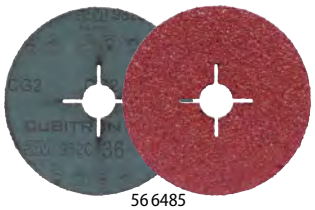
1182C / 982C / 782C fibre discs

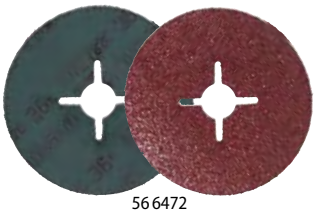
Steel	Cast iron	Non-ferrous Metals

56 6461–6463 – Offers a faster and sustained material removal rate compared to the 3M™ Cubitron™II fibre disc 982C.
56 6471–6473 – High-performance fibre disc with open distribution.
56 6480–6490 – Top type Cubitron™ II. High removal rate.

Application: For the machining of **steel** and non-ferrous metals.


56 6462


56 6485


56 6472

Grit				36	60	80	
NEW 53F 56 6461	Cubitron™ III fibre disc (CER) 1182C	Ø 115 mm		eShop	eShop	eShop	25
NEW 53F 56 6462		Ø 125 mm		eShop	eShop	eShop	25
NEW 53F 56 6463		Ø 178 mm		eShop	eShop	eShop	25
53F 56 6480	Cubitron™ II fibre disc (CER) 982C	Ø 115 mm		eShop	eShop	eShop	25
53F 56 6485		Ø 125 mm		eShop	eShop	eShop	25
53F 56 6490		Ø 178 mm		eShop	eShop	eShop	25
53F 56 6471	Fibre disc (CER) 782C	Ø 115 mm		eShop	eShop	eShop	25
53F 56 6472		Ø 125 mm		eShop	eShop	eShop	25
53F 56 6473		Ø 178 mm		eShop	eShop	eShop	25

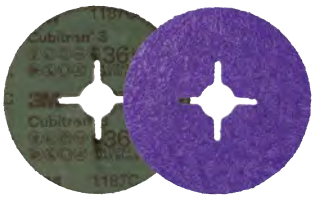
1187C / 987C / 787C fibre discs

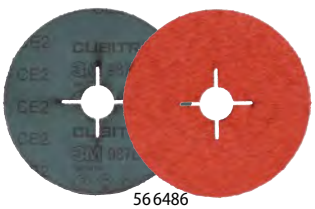
S/STL	ALU

The grinding aid is an additive which ensures cool grinding without discolouration and reduces the need to add lubricants.

56 6474–6476 – Provides a faster and sustained removal rate compared to the 3M™ Cubitron™ II 987C fibre disc.
56 6477–6479 – High-performance fibre disc with open distribution.
56 6481–6491 – Top type Cubitron™ II. Maximum material removal rate.

Application: For the machining of **stainless steel, aluminium,** titanium and nickel alloys.


56 6475


56 6486


56 6478

Grit				36	60	80	120	
NEW 53F 56 6474	Cubitron™ III fibre disc (CER) 1187C	Ø 115 mm		eShop	eShop	eShop	–	25
NEW 53F 56 6475		Ø 125 mm		eShop	eShop	eShop	–	25
NEW 53F 56 6476		Ø 178 mm		eShop	eShop	eShop	–	25
53F 56 6481	Cubitron™ II fibre disc (CER) 987C	Ø 115 mm		eShop	eShop	eShop	–	25
53F 56 6486		Ø 125 mm		eShop	eShop	eShop	–	25
53F 56 6491		Ø 178 mm		eShop	eShop	eShop	–	25
53F 56 6477	Fibre disc (CER) 787C	Ø 115 mm		eShop	eShop	eShop	eShop	25
53F 56 6478		Ø 125 mm		eShop	eShop	eShop	eShop	25
53F 56 6479		Ø 178 mm		eShop	eShop	eShop	eShop	25

CER | Fe,S,Cl <0.1% | 22.23mm | 80 m/s

VSM Fibre discs (CER)

Tear-resistant but very flexible **vulcanised fibre.** Bore diameter 22.23 mm and crossed slots.

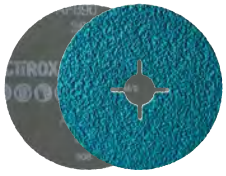
Application: Limited to maximum 80 m/s circumferential speed with backing pads No. 566650 / 6670 on angle grinders.
For **grinding flat and curved surfaces** with a high degree of **flexibility.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6442–56 6444	●	●	●	●	●	●		●	●	●	●							●
56 6447–56 6449/ 6460–56 6660	○	●	●	●	●	●		○	○	●	●							●
56 6456/6556	○	●	●	●	●	○		●	○	○	●							●

High-performance fibre discs Actirox AF 890 (CER)

Top type VSM Actrirox AF 890 fibre discs **with very high and aggressive grinding performance.**
Cool grinding and outstanding tool life.
Grit type: **100% geometrically shaped VSM ceramic grit** with abrasive coating (TOP SIZE).

ALU | S/STL



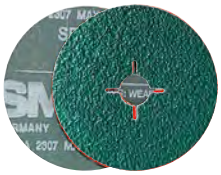
56 6443

Grit			36	60	80	
56V 56 6442	Fibre disc Actirox AF 890 (CER)	Ø 115 mm	eShop	eShop	eShop	50
56V 56 6443		Ø 125 mm	eShop	eShop	eShop	50
56V 56 6444		Ø 180 mm	eShop	eShop	eShop	50

High-performance fibre discs Actirox AF 799 (CER)

Top type VSM Actrirox AF 799 fibre discs **with very high and aggressive grinding performance.**
Cool grinding and outstanding tool life.
Grit type: **100% geometrically shaped VSM ceramic grit**.

Steel | Cast iron | Non-ferrous Metals



56 6448

Grit			36	60	80	
56V 56 6447	Fibre disc Actirox AF 799 (CER)	Ø 115 mm	eShop	eShop	eShop	50
56V 56 6448		Ø 125 mm	eShop	eShop	eShop	50
56V 56 6449		Ø 180 mm	eShop	eShop	eShop	50

High-performance fibre discs XF 870 (CER)

VSM XF 870 fibre disc with **very high and aggressive cutting performance,** also outstanding working life.
Cool grinding. Highly suitable for all steels, high temperature Ni alloys and CrNi steels.
Grit type: **Ceramic grit with cooling, active coating (TOP SIZE).**

S/STL | Steel



56 6460

Grit			24	36	40	50	60	80	120	
56V 56 6460	XF 870 fibre disc (CER)	Ø 115 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56V 56 6560		Ø 125 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56V 56 6660		Ø 180 mm	eShop	eShop	–	–	eShop	eShop	–	50

High-performance fibre discs XF 850 (CER)

VSM XF 850 universal fibre disc with **high and aggressive cutting performance** and long working life.
Cool grinding. Ideal for working alloy steels and aluminium alloys.
Grit type: **Ceramic Zirconium Aluminium Oxide mixed grit with cooling, active coating(TOP SIZE).**

ALU | S/STL



56 6456

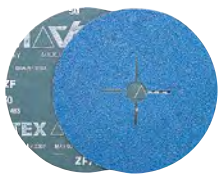
Grit			40	60	80	
56V 56 6456	XF 850 fibre disc (CER)	Ø 115 mm	eShop	eShop	eShop	50
56V 56 6556		Ø 125 mm	eShop	eShop	eShop	50

ZA | Fe,S,Cl <0.1% | 22.23mm | S/STL | Steel | 80 m/s

VSM Fibre discs zirconium aluminium oxide (ZA)

Tear-resistant but very flexible **vulcanised fibre.** Bore diameter 22.23 mm and crossed slots.
VSM ZF 714 fibre disc with **high cutting performance** and long working life. Cool grinding.
Especially for alloy steels, non-ferrous metals, and grey cast iron.
Grit type: **Zirconium Aluminium Oxide (ZA) active coated.**

Application: Limited to maximum 80 m/s circumferential speed with backing pads No. 566650 / 6670 on angle grinders.
For **grinding flat and curved surfaces** with a high degree of **flexibility.**



56 6430

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6430–56 6630		●	●	●	●	●		●	○	●	●							●

Grit			24	36	40	50	60	80	120	
56V 56 6430	ZF 714 fibre disc zirconium aluminium oxide (ZA)	Ø 115 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56V 56 6530		Ø 125 mm	eShop	eShop	eShop	–	eShop	eShop	eShop	50
56V 56 6630		Ø 180 mm	eShop	eShop	eShop	–	eShop	eShop	–	50

A	Fe,S,Cl <0.1%	22.23mm	Steel	80 m/s

Fibre disc, Aluminium Oxide (A)

Tear-resistant but very flexible **vulcanised fibre.** Bore diameter 22.23 mm and crossed slots.

Application: Limited to maximum 80 m/s circumferential speed with backing pads No. 566650 / 566670 on angle grinders.
For **grinding flat and curved surfaces** with a high degree of **flexibility.**

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6400/6500/6600	○	●	●	●	●	○		○	○	○	●	●	●					●
56 6410/6510/6610	○	●	●	●	●			○		○	●	●	●					●

Universal fibre discs KF 708 (A)

VSM KF 708 high-quality universal fibre disc for grinding metals, plastic, wood etc.
Grit type: **Fused aluminium oxide (A).**

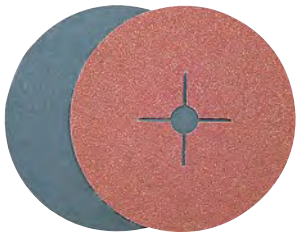


56 6400

Grit				16	24	36	40	50	60	80	100	120	
56V 56 6400	VSM	KF 708 fibre disc fused aluminium oxide (A)	Ø 115 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56V 56 6500			Ø 125 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56V 56 6600			Ø 180 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	50
Manufacturer's designation				VSM KF 708									

Universal fibre discs (A)

HOLEX universal fibre disc for grinding all metals.
Grit type: **Aluminium oxide (A).**



56 6410

Grit				24	36	40	60	80	120	150	
52M 56 6410	HOLEX	Fibre disc Aluminium Oxide (A)	Ø 115 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
52M 56 6510			Ø 125 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
52M 56 6610			Ø 180 mm	eShop	–	eShop	eShop	eShop	–	–	50

Backing pad for fibre discs

Fibre disc backing pad with high temperature resistance.
Special design to enable full exploitation of the performance potential of fibre discs.

Backing pad, hard

80 m/s

Hard, non-deforming fibre disc backing pads.
Contact face **lightly ribbed for optimum grit support** when grinding edges and surfaces.
Special plastic with **very high temperature resistance.**
Ideal for **coarse grinding and roughing work** in 36 to 60 grit.



56 6688



56 6672

External ∅			mm	115	125	180
56V 56 6688	VSM	Fibre disc backing pad TURBO PAD 3 **hard/ribbed**		eShop	eShop	eShop
53M 56 6690	3M	Fibre disc backing pad **hard/ribbed**		eShop	eShop	eShop
52M 56 6672	HOLEX	Backing pad **hard/ribbed**		eShop	eShop	eShop
maximum speed (56 6688, 56 6690)			min^{-1}	13300	12200	8500
maximum speed (56 6672)			min^{-1}	13300	12500	8500

Backing pad, medium hard / flexible

80 m/s

56 6670 – **Medium-hard pad with broad ribs** for better grit support for edge grinding and surface grinding. For **coarser grinding work** in 36 to 60 grits.

56 6692 – Also supplied with 5/8 inch clamping nut.

56 6650/6692 – **Special** resilient plastic backing pad for **flexible contour grinding**. Ideal for 60 grit and finer.

56 6650/6670 – To ISO.



56 6692



56 6670

External ∅			mm	108	115	117	125	172	180
53M 56 6692	3M	Fibre disc backing pad **flexible/smooth**		–	eShop	–	eShop	–	eShop
52M 56 6650	HOLEX	ISO backing pad **flexible/smooth**		eShop	–	eShop	–	eShop	–
52M 56 6670	HOLEX	ISO backing pad **medium hard/ribbed**		eShop	–	eShop	–	eShop	–
suitable for disc ∅			mm	115	115	125	125	180	180
maximum speed			min^{-1}	13300	13300	12500	12500	8500	8500

Fe,S,Cl <0.1% | 22.23mm | 60 m/s

Fleece coarse cleaning / cleaning discs

Cleaning discs with synthetic nylon fleece evenly impregnated with abrasive grit on glass fibre pad.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6700–56 6758	●	●	●	●	●	●		●	●	●	●	●	●		●	●	○	●

Coarse cleaning discs

SiC

Very **coarse non-woven abrasive mesh structure,** will not clog even when used on soft thick coatings.

56 6700 – Medium hard fleece body with very **aggressive grinding characteristics,** for an even finish and long working life. General purpose disc for all rough grinding work, **even for difficult applications** such as removing stubborn scale.

56 6726 – Extremely hard and aggressive fleece body creates a coarse finish with a very high cleaning effectiveness. Very **long working life, even when used on edges.**

Size 125 – With internal M14 thread fro quick installation.

56 6750 – Hard and aggressive fleece body for **general-purpose use** on large areas.

56 6712/6715 – Flexible fleece body, ideal for **grinding convex surfaces.** Creates a soft and even finish, especially suitable for visible surfaces.

Application: For rust removal, paint removal, dressing weld seams and removing surface dirt.

56 6712 – With **glass fibre backing for use with backing pad** No. 566650.

56 6700/6715/6726/6750 – With **glass fibre backing pad for direct clamping** on angle grinders.



56 6700



56 6726



56 6750

Disc ∅				mm	115	125		Degree of hardness	Grit designation
51M 56 6700	Garant	Coarse cleaning disc (SiC)			eShop	eShop	10	medium – hard	very coarse
53M 56 6712	3M	Coarse cleaning disc (SiC) **with glass fibre backing**	CG-DB		eShop	–	10	medium	very coarse
53M 56 6715	3M	Coarse cleaning disc (SiC)	CG-RD		eShop	–	10	medium	very coarse
53M 56 6726	3M	Coarse cleaning disc (SiC)	XT-RD PRO		eShop	eShop	10	very hard	very coarse
52E 56 6750	HOLEX	Coarse cleaning disc (SiC)			eShop	eShop	10	hard	very coarse
Bore ∅				mm	22.23				
recommended speed				min^{-1}	5000 – 7000				
maximum speed				min^{-1}	11000	10000			

Cleaning discs

A

Extremely **tough, densely woven, fine non-woven abrasive mesh structure** with high **flexibility** and cutting performance.

Application: For cleaning and deburring **with a fine surface finish.** With glass fibre backing pad for direct clamping on angle grinders.

Disc ∅			mm	115	125	
51E 56 6757	Garant	Cleaning disc (A)		eShop	–	10
51E 56 6758	Garant	Cleaning disc (A)		–	eShop	10
Grit designation				medium		
Degree of hardness				soft		
Bore ∅			mm	22.23		
recommended speed			min^{-1}	5000 – 7000		
maximum speed			min^{-1}	11000		



56 6758

Fe,S,CI <0.1% | 22.23mm | S/STL

Garant Flap discs for finishing, fleece compact discs

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6330–56 6340–56 7006	●	●	●	●	●	●		●	●	●		●			●	●		●
56 6345	○	●	●	●	●	●		●	●									●

Flap discs, fine grinding

A | 80 m/s

Glass fibre pad covered with abrasive cloth (3M 237AA Trizact™) with fine-structured pyramidal surface of micro-Aluminium Oxide mineral particles.

Application: Specially for **surface finishing** of hard and difficult-to-grind materials such as **stainless steel, titanium, high-alloy steels** etc. Consistently **reproducible finish and long service life** compared to abrasive discs of a similar grit grade. Recommended speed 2100 – 3000 rpm.



56 6345

Grit			120	180	280	400	
51M 56 6345	Flap disc (A) fine grinding	Ø 125 mm	eShop	eShop	eShop	eShop	10

Flap disc, abrasive fleece/fabric combined

A | 80 m/s

Flap disc with a combination of cloth flaps of **abrasive cloth (A)** in 80 grit and **fleece (medium). High metal removal rate** and consistent **surface finish** in a single pass.

Application: TIG weld seam smoothing, surface and contour grinding, deburring work. Recommended speed 6500 rpm.



56 6335

Grit equivalent			80MED	
51M 56 6335	Flap disc **Fleece/fabric**	Ø 125 mm	eShop	2

Fleece flap discs

A | 80 m/s

Fleece flap discs with **flaps of abrasive fleece** on a glass fibre pad.

Application:
- For final finishing of surfaces.
- For removal of colouration, cleaning, and minor tidying up of weld seams.
- For fine grinding of large areas and for finishing.

56 6330 – Recommended speed 5000 – 5800 rpm.
56 6340 – Recommended speed 4600 – 5300 rpm.



56 6340 _180

Grit equivalent			100	180	280	
56Z 56 6330	Flap disc **Fleece**	Ø 115 mm	eShop	eShop	eShop	5
56Z 56 6340		Ø 125 mm	eShop	eShop	eShop	5
Grit designation			coarse	medium	fine	
Colour			brown	red	blue	

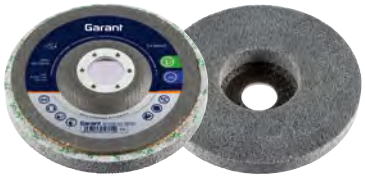
Fleece compact discs

Steel | 60 m/s

Crimped-in fibrous fleece with resin-bonded aluminium oxide grit permits **metal removal and finishing in a single operation.**

Size 180 – **Universal disc** for light deburring work, for polishing out slight scratches and removing colouration.
Size 150 – **Medium hard** version with **increased aggressiveness and edge stability.** For general deburring work, light removal of material by abrasion with fine surface finish.
Size 100 – **Hard** version with coarse grits, very stable edge.

Application: For surface and edge grinding on angle grinders (recommended speed 6000 rpm).



56 7005

Grit equivalent			100	150	180	
51M 56 7005	Fleece compact disc	Ø 115 mm	eShop	eShop	eShop	5
51M 56 7006		Ø 125 mm	eShop	eShop	eShop	5
Grit designation			coarse	medium	fine	
Degree of hardness			hard	medium	soft	
Version			8 A coarse	6 A medium	3 S fine	

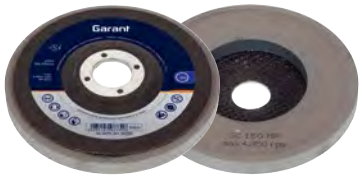
Fe,S,Cl <0.1% | S/STL | Non-ferrous Metals | Steel | 30 m/s

Garant Polishing discs, PU-bonded

Resilient polyurethane discs incorporating SiC grit.

Application: For working on larger surfaces. Successive use of the various grades of grit allows the generation of fine mirror finishes. No polishing paste required.

Size 150 – Ideal for **improving surface finish smoothness** after pre-grinding.
Size 240 – Creates an even **matt finish.**
Size 400 – Slightly **glossy finish**.
Size 800 – Fine **mirror finish**.



56 6970

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6970	●	●	●	●	●	●		●	●	●	●							●

Grit			150	240	400	800	
51M 56 6970	Polishing disc (SiC)	Ø 125 mm	eShop	eShop	eShop	eShop	5
Bore ∅		mm	22.23				

Fe,S,Cl <0.1% | 22.23mm | S/STL | Non-ferrous Metals | 40 m/s

Garant Polishing flap discs (felt)

The **felt strips** (height 20 mm) are edge-mounted on a glass fibre pad and permit great flexibility and cooling during the polishing process.

Application: For **polishing up stainless steel and non-ferrous metals** in combination with polishing paste No. 555740.
For use at reduced working speeds (approx. 1500 rpm).



56 6976

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6976/6977	●	●	●	●	●	●		●	●	●	●							●

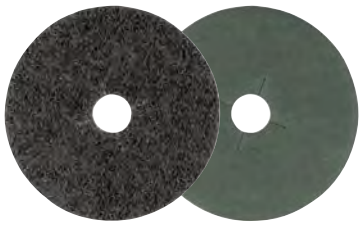
Disc ∅			mm	115	125	
51M 56 6976	Polishing flap disc (felt)	soft		eShop	eShop	2
51M 56 6977		medium		eShop	eShop	2

A | Fe,S,Cl <0.1% | 22.23mm | 50 m/s

Garant Fleece abrasive disc with fibre backing for material removal and deburring

Very **aggressive fleece abrasive disc with high edge stability** thanks to additional fibre backing. This fleece disc can thus be used in conjunction with backing pads for fibre discs such as No. 566650 and 566672.

Application: Ideal for **removal of small weld spatter** and for **coarser cleaning and deburring tasks.** No formation of chatter marks on the surface.


56 6895_80

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6895	●	●	●	●	●	●		●	●	●	●	●	●		●	●		●

Grit equivalent			80	100	180
51E 56 6895	Fleece abrasive disc with fibre backing	Ø 125 mm	eShop	eShop	eShop
Grit designation			very coarse	coarse	medium
Version			A coarse heavy duty	A coarse	A medium
Colour			black	brown	red

Fe,S,Cl <0.1% | 40 m/s

Fleece velour-backed abrasive discs Ø 115 – 178 mm

Fleece velour-backed abrasive discs with through-stitched backing for hook and loop fastener. With removable centre for more precise positioning and attachment of the disc to the backing pad **(approx. 50 % reduction in vibration level with velour-backed abrasive discs No. 566965).**

Application: On angle grinders with hook and loop fastener backing pad No. 566960 or 566965.

Note: See No. **567705ff** onwards for velour-backed abrasive discs for rough abrasion.

Recommended for fleece velour-backed abrasive discs

Suitable for	very good	outstanding
Material removal	56 6902 – 6903	
Deburring		56 6902 – 6903
Cleaning	56 6911 – 6950	56 6902 – 6903
Enhancing		56 6911 – 6950
Finishing		56 6911 – 6950

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 6907–56 6950	●	●	●	●	●	●		●	●	●	●	●	●		●	●	○	●

PN-DH fleece velour-backed abrasive discs for deburring, cleaning and finishing

CER

General-purpose and high performance **nylon fleece** combined **with precisely formed ceramic abrasive grit (CER)** for a high material removal rate and a long working life.

Application: For **finishing, matting, smoothing** with significant reduction in roughness, and for **light cleaning** (such as removal of discolouration) and **deburring tasks.**



56 6908_100 56 6908_180 56 6908_280

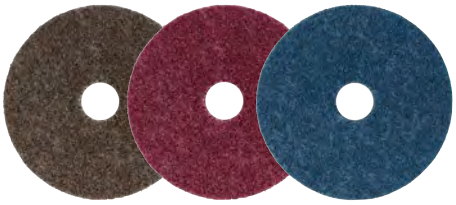
The centre hole core is pre-punched and can be taken out.

Grit equivalent				100	180	280	
53M 56 6907	3M Scotch-Brite™	Fleece velour-backed abrasive disc (CER) **PN-DH**	Ø 115 mm	eShop	eShop	eShop	25
53M 56 6908			Ø 125 mm	eShop	eShop	eShop	25
Grit designation				coarse	medium	fine	
Version				A coarse	A medium	A very fine	
Colour				brown	red	blue	

SL-DH fleece velour-backed abrasive discs for cleaning and finishing

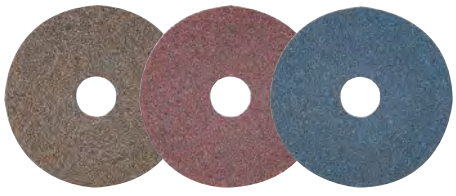
A

Application: For **finishing, matting, smoothing** with significant reduction in roughness, and for **light cleaning** (such as removal of discolouration) and **deburring tasks.**



56 6912_100 56 6912_180 56 6912_280

The centre hole core is pre-punched and can be taken out.



56 6940_100 56 6940_180 56 6940_280

Grit equivalent				100	180	280	
51M 56 6911	Garant	Fleece velour-backed abrasive disc	Ø 115 mm	eShop	eShop	eShop	10
51M 56 6912			Ø 125 mm	eShop	eShop	eShop	10
53M 56 6915	3M Scotch-Brite™	Fleece velour-backed abrasive disc **SC-DH**	Ø 115 mm	eShop	eShop	eShop	20
53M 56 6925			Ø 125 mm	eShop	eShop	eShop	20
53M 56 6935			Ø 178 mm	eShop	eShop	eShop	20
52E 56 6940	HOLEX	Fleece velour-backed abrasive disc	Ø 115 mm	eShop	eShop	eShop	20
52E 56 6950			Ø 125 mm	eShop	eShop	eShop	20
Grit designation				coarse	medium	fine	
Version				A coarse	A medium	A very fine	
Colour				brown	red	blue	

Hook and loop backing pads for fleece velour-backed abrasive discs

Attachment side with double T-hook system, for secure fixing of velour backed fleece abrasive discs.

Suitable for:

56 6960 – For velour-backed abrasive discs **without a centring hole.**

56 6965 – **With centring** for velour-backed abrasive discs No. 566902 – 566950.

Attention: Maximum circumferential speed on angle grinders **with velour grinding discs** 40 m/s.

40 m/s





56 6965



56 6960

External Ø			mm	115	125	178
53M 56 6965	3M	Hook and loop backing pad with **Centring and M 14 thread**		eShop	eShop	eShop
52M 56 6960	HOLEX	Hook and loop backing pad with **Thread M 14**		eShop	eShop	eShop
maximum speed			min^{-1}	12000	11000	6000

Fe,S,Cl <0.1% | 40 m/s



Velour-backed abrasive discs for angle grinders

The **back of the disc is covered with velour loops** which are self-attaching to **hook and loop fastener backing pads**, e.g. No. **567760** . For quick disc changing.

Application: On **angle grinders** / eccentric grinders with hook and loop fastener pads (dust removal not available). Maximum working speed **40 m/s.**

Note: Suitable hand sanding block for hook and loop grinding discs see No. 567857 size 125 and Gr.150. See No. 566902 – 566950 for velour abrasive discs. For mini grinding systems ∅ 50 mm and ∅ 75 mm, see No. 554005 onwards.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 7510–56 7512	●	●	●	●	●	●		●	●	●	●	○			○			●
56 7520–56 7522	○	●	●	●	●	●		●	●	●								●
56 7605–56 7625	●	●	●	●	●	●		○	○	●	●	○	●		○			●
56 7705/7715/7725	○	●	●	●	●	○		○	○	○	●	●	●		●	●		●
56 7724/7726		●	●	●	●	●		●	●	●								●

Velour-backed abrasive discs on paper backing, Aluminium Oxide (A)

A

Abrasive paper thickness 540 FK (F paper, 40 to 180 grit) to paper thickness 544 C3K (240 – 400 grit, stearate coated) with **high strength and dense distribution.**
High removal rates due to specially treated abrasive grit **(A).**

Application: **General purpose** for grinding metal, non-ferrous metals, varnish, paint, wood, and plastic.



56 7705

Grit				40	60	80	120	180	240	320	400	
56Z 56 7705	STARCKE	Paper velour-backed abrasive disc (A)	∅ 115 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56Z 56 7715			∅ 125 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56Z 56 7725			∅ 150 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50

Velour-backed abrasive discs on cloth backing, Zirconium Aluminium Oxide (ZA)

ZA

Extremely robust 341XK velour-backed abrasive disc, on **reinforced tear-resistant cotton fabric backing.** Newly developed bonding system with Zirconium Aluminium Oxide **(ZA).**

Application: Versatile application in **coarse and fine grinding of metals.**



56 7605

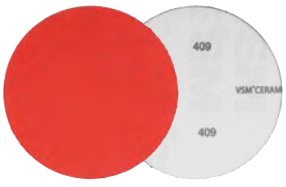
Grit				24	40	60	80	120	
56Z 56 7605	STARCKE	Fabric velour-backed abrasive disc (ZA)	∅ 115 mm	eShop	eShop	eShop	eShop	eShop	50
56Z 56 7615			∅ 125 mm	eShop	eShop	eShop	eShop	eShop	50
56Z 56 7625			∅ 150 mm	eShop	eShop	eShop	eShop	eShop	50

Velour-backed abrasive discs on cloth backing, ceramic grit (CER)

CER

Velour-backed abrasive discs XK870K with sturdy **polyester fabric.** The **self-sharpening ceramic grit** with MIT active grinding layer (TOP Size) (**TOP Size**) ensures a cool and aggressive cut.

Application: For grinding all steels, particularly well suited to difficult to machine materials such as **stainless steel, nickel alloys, chromium, titanium.**



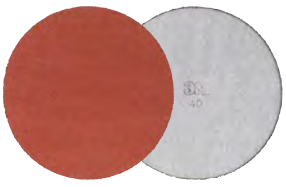
56 7510

Grit				60	80	120	
56V 56 7510	VSM	Fabric velour-backed abrasive disc (CER)	115 mm ∅	eShop	eShop	eShop	50
56V 56 7511			125 mm ∅	eShop	eShop	eShop	50
56V 56 7512			∅ 150 mm	eShop	eShop	eShop	50

CER

Hook and loop abrasive discs with precisely formed **Cubitron™II** ceramic grit (self-sharpening) and strong X-fabric. **Very high metal removal rate** and **long working life.**

Application: For grinding all steels, particularly well suited to difficult to machine materials such as **stainless steel, nickel alloys, chromium, titanium.**



56 7520

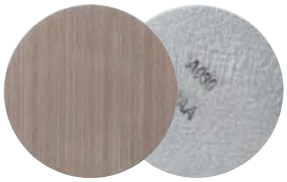
Grit				40	60	80	120	
53M 56 7520	3M	Velour-backed abrasive disc Cubitron™II 947A	∅ 115 mm	eShop	eShop	eShop	eShop	25
53M 56 7521			∅ 125 mm	eShop	eShop	eShop	eShop	25
53M 56 7522			∅ 150 mm	eShop	eShop	eShop	eShop	25

Velour-backed abrasive discs on cloth backing, aluminium oxide (A), 237AA Trizact™

A

237AA Trizact™ with fine-structured pyramidal surface of micro-Aluminium Oxide mineral particles (A).

Application: For a **fine and uniform surface finish** all steels, stainless steels, brass and titanium alloys. Specially for contour grinding and preparation for polishing.



56 7721

Grit				120	180	280	400	600	
51E 56 7724	3M	Velour-backed abrasive disc **237AA (A)**	**Ø 115 mm**	eShop	eShop	eShop	eShop	eShop	**10**
53M 56 7726			**Ø 125 mm**	eShop	eShop	eShop	eShop	eShop	**10**
3M grit designation				A160	A100	A65	A45	A30	

40 m/s

Polishing discs (felt)

Felt discs for **polishing pre-ground surfaces** in conjunction with polishing pastes No. 555740 and 552420 UNI. The printed side is for mounting on the backing pad.

56 7721/7722 – Made of pure sheep's wool. For faster polishing results and lower hologram formation compared to synthetic fibre products.

Application: Suitable for polishing paints and metals.



Natural product made from pure sheep's wool



56 7721

Disc Ø mm			21	32	115	127	150		recommended speed min^{-1}
51M 56 7721	Garant	Velour-backed polishing pad **hard**	–	–	eShop	eShop	eShop	**25**	1500 – 1700
51M 56 7722		Velour-backed polishing pad **soft**	eShop	eShop	eShop	eShop	eShop	**25**	1500 – 1700
53M 56 7727	3M	Velour-backed polishing pad **hard**	–	–	–	eShop	–	**50**	1500 – 1700
53M 56 7728		Velour-backed polishing pad **soft**	–	–	–	eShop	–	**50**	1500 – 1700

80 m/s

HOLEX Hook and loop backing pad for angle grinders

Attachment side with hook and loop fasteners, for secure fixing of velour loops when using velour-backed abrasive discs.

56 7760 – Stable **backing pad** for general grinding work.

56 7762 – **Polishing pad** with flexible intermediate layer. Increasing flexibility in the outer area due to the dished edges.

Application: **M14 thread** for direct mounting on angle grinders, maximum speed **40 m/s.**

Note: Hook and loop backing pad **not** suitable for fleece velour-backed abrasive discs No.566902 – 566950.



56 7760



56 7762

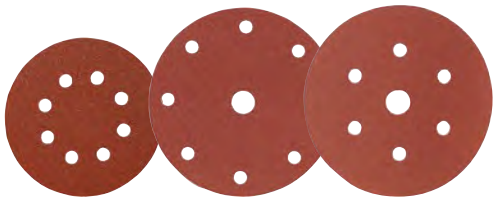
External Ø mm		115	125	150
52M 56 7760	Hook and loop backing pad, **M14**	eShop	eShop	eShop
52M 56 7762	Hook and loop polishing pad, **M14**	eShop	eShop	eShop
Degree of hardness (56 7760)		medium		
Degree of hardness (56 7762)		soft		
Thread		M14		

A | Fe,S,Cl <0.1% | 40 m/s

STARCKE® Velour-backed abrasive discs for orbital sanders

Abrasive paper thickness 540 FK (F-paper, 40 to 180 grit) or thickness 544 C3K (240 – 800 grit, stearate coated) with **high strength and dense distribution.**
High material removal rates due to specially treated abrasive grit **(A).**
The **back of the disc is covered with velour loops which automatically cling on** allowing quick disc change.

Application: **General purpose** for grinding metal, non-ferrous metals, varnish, paint, wood, and plastic.
On **orbital sanders** with hook and loop pads e.g. No. 567885 / 567990. Maximum circumferential speed **40 m/s.**



56 7745 56 7755 56 7775

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 7745–56 7775	○	●	●	●	●	○		○	○		●	●	●		○	●		●

Grit			40	60	80	120	180	240	320	400	600	800	
56Z 56 7745	Paper velour-backed abrasive disc (A) **8 holes**	Ø 125 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56Z 56 7755	Paper velour-backed abrasive disc (A) **8 + 1 holes**	Ø 150 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
56Z 56 7775	Paper velour-backed abrasive disc (A) **6 + 1 holes**	Ø 150 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50

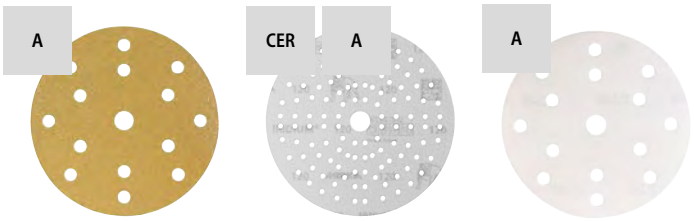
A | Fe,S,Cl <0.1% | 40 m/s

Velour-backed abrasive discs (paper) for orbital sanders

Velour-backed abrasive disc with **paper backing.** Dust-repellent coating prevents premature clogging. The back is covered with hooks and loops.

56 7553 – Velour-backed abrasive disc with open distribution, aluminium oxide (A). Ideally suited to materials that have a high tendency to clogging.
56 7557 – Velour-backed abrasive disc **MIRKA IRIDIUM®** with a mixture of ceramic grit (CER) and aluminium oxide grit (A), dust-repellent coating, high material removal rate and long service life.
56 7790 – Velour-backed abrasive disc with semi-open distribution, aluminium oxide (A).

Application: On **orbital sanders** with hook and loop pads e.g.No. 567990 (dust extraction available). Universal **all-round product** for coarse, intermediate and fine abrasion on all metal and plastic surfaces, paint systems and woods.
56 7557 – Ideal for **soft** and **hard surfaces.**



56 7553 56 7557 56 7790

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 7553–56 7790	●	●	●	●	●	○		●	○		●	●	●		●	●		●

Grit				40	60	80	100	120	150	180	220	240	320	400	500	600	
51M 56 7553	Garant	Velour-backed abrasive disc (A) **15 holes**	Ø 150 mm	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	100
56M 56 7557	MIRKA	Velour-backed abrasive disc (CER) **Multiple holes**	Ø 150 mm	eShop	eShop	eShop	–	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	100
52M 56 7790	HOLEX	Velour-backed abrasive disc (A) **15 holes**	Ø 150 mm	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	100

Roloc™ quick-change system in catalogue section 55



55 4012 55 4008 55 4033 55 4030 55 4056

Velour-backed abrasive discs (film backing) for orbital sanders

Fe,S,Cl <0.1% | 40 m/s

With **stable film backing.** Dust-repellent coating prevents premature clogging.

Advantage:

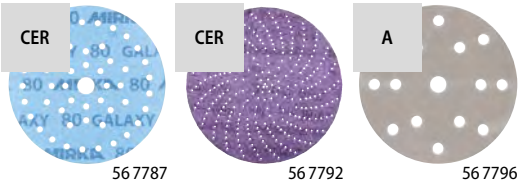
56 7787 – ■ More uniform surface finish due to outstanding grit wear.
■ Improved tear resistance when the edges are stressed.
56 7792–7796 – ■ More uniform surface finish due to outstanding grit support.
■ Improved tear resistance when the edges are stressed.

Application: High-quality aluminium oxide abrasive grit (A) for general coarse, intermediate and finishing use.

56 7787 – High-quality self-sharpening ceramic abrasive grit (CER), open distribution. Universally applicable for coarse, intermediate and finishing use.

56 7796 – High-quality aluminium oxide grit (A), open distribution. For universal applications, coarse, intermediate and finishing.

56 7792–7793 – **Cubitron™ II** precision grit with the advantage of **quicker material removal** and more **consistent surface finish on large areas** (sheet metal work).



56 7787 56 7792 56 7796

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 7787	●	●	●	●	●	○		○	○		●	●	●		●		●	●
56 7792–56 7796	●	●	●	●	●	○		○	○		●	●	●		●	●	●	●

Grit				80	120	180	220	240	320	400	600	800	1000	1200	1500	2000	
56M 56 7787	MIRKA	Velour-backed abrasive disc (CER) Galaxy **Multiple holes**	**Ø 150 mm**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50
53M 56 7792	3M	Velour-backed abrasive disc (CER) Hookit 775L **Multiple holes**	**Ø 150 mm**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	50
53M 56 7793		Velour-backed abrasive disc (CER) Hookit 775L **No holes**	**Ø 150 mm**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	50
52M 56 7796	HOLEX	Velour-backed abrasive disc (A) **15 holes**	**Ø 150 mm**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	50

Garant CaraFin diamond polishing pad

D

Hook and loop fastening **CaraFin foam polishing pad** made from elastic PU material coated with **diamond grit.**
Foam material hardness optimally adapted to polishing stage.
The **effectiveness of the bonded diamond grit is significantly greater** than that achieved by loose diamond grit in polishing pastes.

Application: Very high flexibility and conformity to contours.
Without polishing paste.


56 7896

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 7896/7899	●	●	●	●	●	●		●	●		●	●			●			●

Grit		µm	D151	D64	D20	D10	D1
51G 56 7896	CaraFin diamond polishing pad	**Ø 34 mm**	–	–	eShop	eShop	eShop
51G 56 7899		**Ø 150 mm**	eShop	eShop	eShop	eShop	eShop
Polishing stage			Pre-polishing	Polishing	Final polishing	Final polishing	High mirror finish
Colour			pink	pink	yellow	orange	black



MIRKA ABRALON™ discs for finish grinding

SiC | Fe,S,Cl <0.1% | 40 m/s

The ABRALON™ patented finishing system comprises a woven mesh with silicon carbide coating on a thin foam pad.
The advantages are:

- The grinding mesh enables water and air to **circulate freely**, the **grinding dust is effectively removed.**
- **High effectiveness** – reduced working time and longer working life.

Application: For manual and mechanised **dry and wet grinding** of contours, shapes, metals **with high demands on the surface finish** and for the preparation for polishing.



56 7901

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 7900–56 7902	●		●	●	●	●		●	●			●		○	●	○	●	○

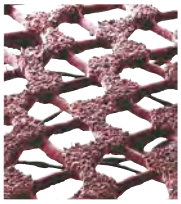
Grit			180	360	500	1000	2000	3000	4000	
56M 56 7902	ABRALON™ disc	**Ø 34 mm**	–	eShop	eShop	eShop	eShop	–	eShop	10
56M 56 7901		**Ø 77 mm**	–	–	eShop	eShop	eShop	eShop	eShop	20
56M 56 7900		**Ø 150 mm**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	20

Fe,S,Cl <0.1%

Velour-backed abrasive discs, mesh structure for dust-free grinding

Velour-backed abrasive discs consisting of a **mesh structure** of polyamide fabric containing thousands of holes and coated with abrasive grit.

Advantage:
- **Dust–free grinding:** very low impact on workplace and environment.
- No clogging of the grinding wheel (surface defects and dust balls are avoided).
- Guaranteed **improved surface finishes** with less grinding media consumption.
- **High effectiveness** – the removal rate increases by several orders of magnitude depending on the surface.



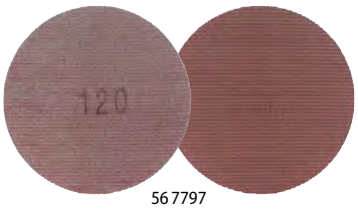
	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 7797–56 7845	●	○									●	●	●		●			●
ABRANET® ACE ABRANET® ACE HD	●	●	●	●	●						●	●	●		●			●

Velour-backed abrasive discs and strips

A | 40 m/s

Application: Grinding of paints, fillers primers, (fibre-reinforced) plastics, non-ferrous metals and aluminium alloys, furniture components.

Grit				80	120	180	240	320	400	
51M 56 7797	Garant	Velour-backed abrasive disc **Mesh structure**	Ø 150 mm	eShop	eShop	eShop	eShop	eShop	eShop	50
56M 56 7803	MIRKA	Velour-backed abrasive disc **ABRANET®**	Ø 34 mm	eShop	eShop	eShop	eShop	eShop	eShop	50
56M 56 7801			Ø 77 mm	eShop	eShop	eShop	eShop	–	–	50
56M 56 7802			Ø 125 mm	eShop	eShop	eShop	eShop	eShop	eShop	50
56M 56 7800			Ø 150 mm	eShop	eShop	eShop	eShop	eShop	eShop	50

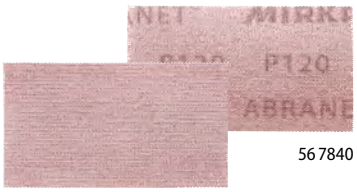


56 7797

A

Application: ABRANET® hook and loop strip for use on orbital sanders or for use on the hand sanding block No. 567856.
Grinding of paints, fillers primers, (fibre-reinforced) plastics, non-ferrous metals and aluminium alloys, furniture components.

Grit				80	120	180	240	320	400	
56M 56 7840	MIRKA	Velour-backed abrasive strip **ABRANET®**	70×125 mm	eShop	eShop	eShop	eShop	eShop	eShop	50
56M 56 7845			81×133 mm	eShop	eShop	eShop	eShop	eShop	eShop	50



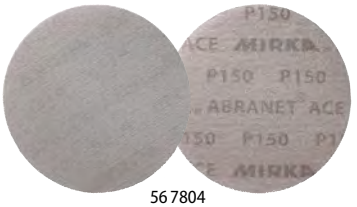
56 7840

ABRANET® ACE velour-backed abrasive discs

CER | 40 m/s

ABRANET® ACE with optimised grinding mesh and **ceramic grit (CER)** offers outstanding abrasion performance and **increased working life.**

Application: Ideal for applications on **very hard materials** such as UV paints, primers, hardwoods, and well suited to use on steel materials.



56 7804

Grit				80	120	180	240	320	400	600	800	1000	
56M 56 7804	MIRKA	Velour-backed abrasive disc **ABRANET® ACE**	Ø 150 mm	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	50

ABRANET® ACE HD velour-backed abrasive discs

CER | 40 m/s

Advantage: **ABRANET® ACE HD** with reinforced extremely tear-resistant network structure (edge) and ceramic grit (CER). Extraordinarily high material removal rate.

Application: For extremely high performance applications such as **removal by abrasion** of **composite materials, aluminium,** etc.



56 7805

Grit				40	60	80	120	
56M 56 7805	MIRKA	Velour-backed abrasive disc **ABRANET® ACE HD**	Ø 150 mm	eShop	eShop	eShop	eShop	25

Hand sanding blocks and hand pads

Made of resilient foam rubber, **quick sheet change** by means of hook and loop fastening.

Application: For rubbing down surfaces and contours by hand.
No slipping of the abrasive paper.
For velour-backed abrasive strip No. 567840.


56 7856

suitable for sanding sheet W×L		mm	70×125
56M 56 7856	Hand sanding block with hook and loop fastening		eShop
Length		mm	125
Width		mm	70
Height		mm	45

Made of resilient foam rubber, **quick sheet change** by means of hook and loop fastening.
Very easy to use, shaped finger grips.

Application: For rubbing down surfaces and contours by hand. No slipping of the abrasive paper.
For velour-backed abrasive discs ∅ 125mm and ∅ 150mm.


56 7857

suitable for disc ∅		mm	125	150
56Z 56 7857	Hand sanding block with hook and loop fastening		eShop	eShop
Length		mm	125	150
Width		mm	81	88
Height		mm	51	

Hand pad

Highly flexible hand pad with hook-and-loop fastening and adjustable strap for perfect fit on the hand.

Application: For hook-and-loop fastener disc ∅ 150 mm.


56 7859

suitable for disc ∅		mm	150
56M 56 7859	MIRKA Hand pad with hook-and-loop fastening		eShop
Height		mm	6

Grinding and cutting – comprehensive abrasive solutions from a single source.






Hook and loop backing pad

56 7865 – Multi-hole backing pads with **innovative extraction system** (integral ducts) and flat design for use on orbital sanders.
56 7867 – Protective pad, suitable for PU hook and loop backing pads, extends the service life of the pads.

Suitable for:
56 7865 – All velour-backed abrasive discs with standard hole pattern and ABRANET.
56 7867 – Discs with 6-hole, 6+1-hole, 9-hole, 15-hole and ABRANET.



56 7865


56 7867

External ∅			mm	150
51M 56 7865	Garant	PU backing pad **Multiple holes**		eShop
51M 56 7867	Garant	Protective pad set **5-piece**		eShop
Number of soft pads (56 7867)				5


56 7892

56 7885 Size 77 – PU backing pads with **1/4 inch mounting** and **6-hole** perforation.
Size 125 – ABRANET backing pad with **5/16 inch holder.**
Size 150 – ABRANET Unipad backing pads with **5/16 inch** or **M8 mounting** and **multiple holes** for uniform dust extraction.
56 7886 – Soft overlay for backing pads No. 567885 with extraction, ideal for contour grinding.
56 7892/7893 – Backing pad for abrasive discs Ø 32–34 mm. Suitable for AROS_B. Mount for **quick-change system, external thread.**

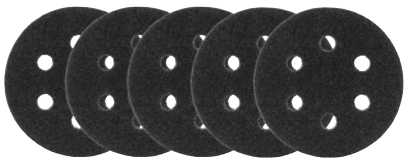
Suitable for:
Size 77 – Suitable for discs with extraction holes: 6; ABRANET.
Size 125 – Discs with holes: 8; 9; 17; ABRANET.
Size 150 – Suitable for discs with extraction holes: 6; 6+1; 8; 8+1; 15; 21; ABRANET.



56 7885_150



56 7885_125


56 7886_77

Outer ∅			mm	32	77	125	150
56M 56 7892	MIRKA	PU hook and loop backing pad soft **10 pieces**		eShop	–	–	–
56M 56 7893	MIRKA	PU hook and loop backing pad hard **5 pieces**		eShop	–	–	–
56M 56 7885	MIRKA	PU hook and loop backing pad		–	eShop	eShop	eShop
56M 56 7886	MIRKA	Pack of soft overlays		–	eShop	eShop	eShop
Number of soft pads (56 7886)				–	5	5	5

Multi-hole backing pad with glass-fibre backing pad and medium hard polyurethane foam. With **5/16 inch / M8 mount.**

Suitable for:
Size 150 – Suitable for discs with extraction holes: 6; 6+1; 8; 8+1; 15; 21; ABRANET.



56 7887

Outer ∅			mm	150
52M 56 7887	HOLEX	PU hook and loop backing pad **Multiple holes**		eShop

Fe,S,Cl <0.1%

Match and Finish System – Mini-belts for burnishing machines

Application: For use on surface grinding and burnishing machines with backing rollers No. 568570 – 568577 (mounting bore Ø 19 mm). Maximum speed 5000 rpm.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 8531/8532	●	●	●	●	●	●		●	○	●	○							●
56 8534/8535	○		●	●	●	○		●	○	○	○							●
56 8537/8538	○		●	●	●	●		●	●		○				●			●
56 8558/8561	●	●	●	●	●			●	●	●	●	○	●		●	●		●

Mini-linishing belts for pre-grinding

CER

Premium linishing belt with precisely formed **Cubitron™ II** ceramic grit (self-sharpening). With grinding aids for even cooler grinding.

56 8531 – Mini linishing belts **Ø 90×100 mm** (289×100 mm).

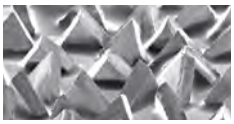
56 8532 – Mini linishing belts **Ø 100×100 mm** (314×100 mm).

Application: Clear step forward in performance on **materials that are difficult to machine** such as stainless steel, nickel alloys, chrome alloys and aluminium.



56 8532

Grit				40	60	80	120	
53M 56 8531	3M	Mini-linishing belt Ø 90×100 mm	947A	eShop	eShop	eShop	eShop	10
53M 56 8532	3M	Mini-linishing belt Ø 100×100 mm	947A	eShop	eShop	eShop	eShop	10



Cubitron™ II abrasive grit

Mini-linishing belts for finish grinding

A

Defined blocks pressed in as abrasive grit. High grit density for very long working life. **No clogging** due to defined channels. **Consistent surface quality** over the entire grinding process, even on thin sheets.

56 8534 – Mini linishing belts **Ø 90×100 mm** (289×100 mm).

56 8535 – Mini linishing belts **Ø 100×100 mm** (314×100 mm).



56 8535

Grit				80	120	280	
53M 56 8534	3M	Mini-linishing belt Ø 90×100 mm	337DC	eShop	eShop	eShop	10
53M 56 8535	3M	Mini-linishing belt Ø 100×100 mm	337DC	eShop	eShop	eShop	10
3M grit designation				A300	A160	A065	



A

The fine-structured pyramidal surface guarantees the **best finish and very long working life.** Particularly suitable for the intermediate grinding of stainless steel sheets.

56 8537 – Mini linishing belts **Ø 90×100 mm** (289×100 mm).

56 8538 – Mini linishing belts **Ø 100×100 mm** (314×100 mm).



56 8538



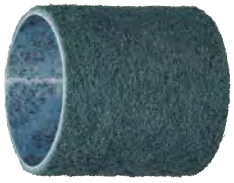
Grit				120	180	240	280	600	
53M 56 8537	3M	Mini-linishing belt Ø 90×100 mm	237AA	eShop	eShop	eShop	eShop	eShop	10
53M 56 8538	3M	Mini-linishing belt Ø 100×100 mm	237AA	eShop	eShop	eShop	eShop	eShop	10
3M grit designation				A160	A100	A080	A065	A030	

Mini-linishing belts with non-woven abrasive mesh, for matting

Fleece mini-linishing belts for blending in, matting and finishing.
With film backing, for light-duty use on all backing rollers.

56 8558 – Mini linishing belts **Ø 100×100 mm** (314×100 mm).

56 8561 – Mini linishing belts **Ø 90×100 mm** (289×100 mm).



56 8558

Grit equivalent				100	180	280	
51M 56 8558	Garant	Mini-linishing belt Ø 100×100 mm		eShop	eShop	eShop	10
53M 56 8561	3M	Mini-linishing belt Ø 90×100 mm	SC-BF	eShop	eShop	eShop	5
Version				A coarse	A medium	A very fine	
Colour				brown	red	blue	



56 8561

Garant Backing rollers for mini-linishing belts

Mounting bore ∅ 19 mm with double keyway.

56 8570 – Resilient backing roller with multiple segments to allow linishing belts to be changed particularly easily. Size 2IN1 replaces the versions hard and soft usually available in the market.

56 8575/8577 – Pneumatic version, the degree of hardness can be set individually. Adapter for bike pumps included.

Application: To take mini-linishing belts No. 568531 – 568561.



56 8570

Type		2IN1	AIR
51M 56 8570	Backing roller ∅ 90×100 mm	eShop	–
56S 56 8575		–	eShop
56S 56 8577	Backing roller ∅ 100×100 mm	–	eShop
Type		expanding	pneumatic
Colour		black	



56 8577

LESSMANN® THE GERMAN BRUSH COMPANY Burnishing brushes

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 8435/8436	●	●	●	●	○			●	○	●	●	●	●		○			●

Dimension **∅ 100×70 mm,** bore ∅ 19 mm with double spline.

56 8435 – Waved **stainless steel wire** with **high resistance** to corrosion, acids, alkalis and high temperatures. Ideal for burnishing stainless steel sheets.

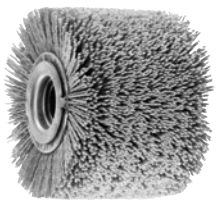
56 8436 – Nylon bristles incorporating 80 grit **silicon carbide. Extremely flexible and versatile.** Extremely flexible and versatile. Especially suitable for deburring, cleaning, and roughing profiled surfaces.

Application: On burnishing machines with spacer ring pack No. 568439.



56 8435

SiC



56 8436

57L 56 8435	Burnishing brush **Stainless steel wire 0.20 mm**	**∅ 100 × 70 mm**	eShop
57L 56 8436	Burnishing brush **Abrasive nylon 1.2 mm, SiC 80**	**∅ 100 × 70 mm**	eShop

A | Fe,S,Cl <0.1%

Rollers for burnishing machines – coarse cleaning fleece

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 8470/8476	●	●	●	●	●			●	●	●	●	●	●		●	●		●

Standard dimensions **∅ 100×100 mm.** Mounting bore ∅ 19 mm with multiple splines.
Coarse cleaning fleece, aggressive, with a long working life.

Application: Quick removal of scale, rust, colouration and paint residues. Uniform surface finish. **Long working life.**



56 8470

Grit equivalent				CRS
53M 56 8470	3M Scotch-Brite™	Flap wheel roller, fleece (coarse)	**∅ 100 × 100 mm**	eShop
52M 56 8476	HOLEX		**∅ 100 × 100 mm**	eShop
recommended speed			min^{-1}	2800

Fe,S,Cl <0.1%

Roller for burnishing machines – abrasive fabric

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 8463	○	●	●	●	●	●		●	●	○	○							●
56 8464–56 8466	●	●	●	●	○			●	○	●	●	●	●		○			●

Flap strips of abrasive cloth around the shank of the flap brush. Standard size **Ø 100×100 mm** or narrow version **Ø 100×50 mm** for grinding smaller areas. Mounting bore Ø 19 mm with multiple splines.

56 8466 – Abrasive cloth slit.

Application:

56 8463 – **Ceramic grit (CER)** ideal for working on stainless steels and nickel alloys. High removal rate and cool cut.

56 8466 – For **gentle longitudinal strokes** even on slightly convex surfaces, particularly versatile.

56 8464/8465 – For **removing rust, scale, burrs** and for longitudinal strokes.

Note: For matching the width of narrow rollers Ø 100×50 mm use the spacer ring pack No. 568439.

CER



56 8463

A



56 8464

A



56 8466

Grit				60	80	120	
51M 56 8463	Garant	Abrasive flap wheel roller, fabric (CER)	Ø 100 × 100 mm	eShop	eShop	–	1
52E 56 8464	HOLEX	Abrasive flap wheel roller, fabric (A)	Ø 100 × 50 mm	eShop	eShop	eShop	2
52E 56 8465	HOLEX	Abrasive flap wheel roller, fabric (A)	Ø 100 × 100 mm	eShop	eShop	eShop	1
52E 56 8466	HOLEX	Abrasive flap wheel roller, fabric, slit (A)	Ø 100 × 100 mm	eShop	eShop	eShop	1
Grinding media backing				Fabric			
recommended speed			min⁻¹	3700			

56

Fe,S,Cl <0.1%

Rollers for burnishing machines – fleece-fabric / fleece

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 8471–56 8480	●	●	●	●	●	○		●	●	●	●	●			○			●

Flap wheel rollers combined abrasive fleece/fabric

Combination of **abrasive fabric and fleece.**

56 8471 – Especially wear-resistant and fine-structured fleece with Zirconium Aluminium Oxide (ZA). **Ideal for use on stainless steel.**

56 8472/8473 – Standard size **Ø 100×100 mm** or narrow version **Ø 100×50 mm** for grinding smaller areas. Mounting bore Ø 19 mm with multiple splines.

Application:

56 8472/8473 – Finish similar to 80 / 120 grit flap strips, can also be used for **removing scratches** or for **applying a matt strip finish**.

ZA



56 8471_150FINE

A



56 8472_80CRS

56 8473_80CRS

Grit equivalent				80CRS	150FINE	
51M 56 8471	Garant	Flap wheel roller, fleece (ZA) / fabric (ZA)	Ø 100 × 100 mm	–	eShop	1
52E 56 8472	HOLEX	Flap wheel roller, fleece (A) / fabric (A)	Ø 100 × 50 mm	eShop	–	2
52E 56 8473	HOLEX	Flap wheel roller, fleece (A) / fabric (A)	Ø 100 × 100 mm	eShop	–	1
recommended speed			min⁻¹	2800		

Flap wheel rollers fleece

Standard size **Ø 100×100 mm** or narrow version **Ø 100×50 mm** for grinding smaller areas. Mounting bore Ø 19 mm with multiple splines.

56 8474/8475 – Fleece impregnated with Aluminium Oxide (A).

Application:

Size 100 – Quick **cleaning** and **smoothing** of surfaces.

Size 180; 280 – Fine fleece **for light cleaning work** and **a uniform surface finish.**

ZA



56 8477_280

A



56 8474_180

56 8475_280

Grit equivalent				100	180	280	
51M 56 8477	Garant	Abrasive flap wheel roller, fleece (ZA)	Ø 100 × 100 mm	eShop	eShop	eShop	1
52E 56 8474	HOLEX	Abrasive flap wheel roller, fleece (A)	Ø 100 × 50 mm	eShop	eShop	eShop	2
52E 56 8475	HOLEX	Abrasive flap wheel roller, fleece (A)	Ø 100 × 100 mm	eShop	eShop	eShop	1
Grinding media backing				Cleaning non-woven abrasive mesh			
recommended speed			min⁻¹	2800			

Sinusoidal flap wheel rollers fleece

Standard size **Ø 100×100 mm** or narrow version **Ø 100×50 mm** for grinding smaller areas. Mounting bore ∅ 19 mm with multiple splines.
Sinusoidal abrasive fleece without cut edges.
Size 100; 180 – Impregnated with Aluminium Oxide (A).
Size 400 – Impregnated with silicon carbide (SiC).
Application: For **matting** and **polishing** without abrupt changes in texture.


56 8479


56 8480

Grit equivalent			100	180	400	
52E 56 8479	HOLEX Flap wheel roller fleece sinusoidal	Ø 100 × 50 mm	eShop	eShop	eShop	2
52E 56 8480		Ø 100 × 100 mm	eShop	eShop	eShop	1
recommended speed		min⁻¹	2800			

Abrasive roller – PU bonding

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 8485	●	●	●	●	●	○	○	●	●	●	●	●						●

Resilient polyurethane (PU) roller incorporating SiC grit. Dimension **Ø 100×100 mm,** bore ∅ 19 mm with double spline.
Application: For buffing out scratches, cleaning up weld seams. Creates a **lustrous longitudinal finish.** Very long service life, stable edge.

SiC


56 8485

Grit			24	46	80	150	recommended speed min⁻¹
53L 56 8485	Fine abrasive roller (SiC)	Ø 100 × 100 mm	eShop	eShop	eShop	eShop	900 – 1200
Bonding hardness description			medium	soft	medium	medium	

Polishing rollers – felt

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 8495	●	●	●	●	●	●		●	●	●		●						●

Felt arranged in a fan-form. Dimension **Ø 100×100 mm,** bore ∅ 19 mm with multiple splines.
Application: Large-area polishing work with enhanced flexibility and conformity to contours. Successive use of medium-hard and soft grades allows creation of a **top-class mirror finish**.

Note: Felt fan-form polishing rollers must be used in conjunction **with grinding and polishing pastes** such as No. 552250 / 555740.


56 8495

Type			MED	SOFT	recommended speed min⁻¹
51M 56 8495	Polishing roller (felt)	Ø 100 × 100 mm	eShop	eShop	1900
Degree of hardness			medium	soft	

SiC

Polishing discs, PU-bonded

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
55 2012–55 2016	●	●	●	●	●	●		●	●	●	●					●		●

Highly resilient polyurethane discs incorporating SiC grit.
Application: For improving the surface quality, creating effects and light deburring work. The soft resilient PU bonding permits adaptability to the workpiece.

Note: Other dimensions and grits available on request.

Disc ∅×width		mm	60×6	100×20	150×20
51G 55 2012	Polishing disc, 80 grit (SiC)		eShop	eShop	eShop
51G 55 2014	Polishing disc, 150 grit (SiC)		eShop	eShop	eShop
51G 55 2016	Polishing disc, 400 grit (SiC)		–	eShop	–
Bore ∅		mm	6	25	25
maximum speed		min⁻¹	6360	3820	2550


55 2012_60×6


55 2012_100×20

SiC

Compact fleece bench grinding wheels for finishing

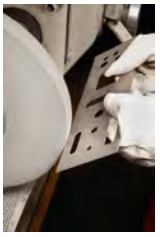
Fleece compact discs create a **reproducible finish,** since fresh grinding grit is continually being exposed. **No change in the workpiece geometry, no grinding groove formation, long working life.**

	Al Mg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
56 8731–56 8742	●	●	●	●	●	●		●	●	●	●	●	○		●	●		●

Deburring wheels for bench grinders

Application:

56 8731 – On **bench grinders** or portable grinders with mandrel No. 556380 size 1–2 and reducer flange No. 568782. Suitable grinding wheel dresser No. 568785.
Deburring wheel made of wound fibre fleece. **For cleaning off larger burrs** on pressed parts, for **rounding** hollows and edges without creating secondary burrs.





56 8731

Disc ∅×Width×Bore ∅			mm	152×25×25	152×25×32	175×25×32	203×25×51	203×25×76	203×51×76	
53M 56 8731	3M Scotch-Brite™	Compact deburring wheel (SiC)	DB-WL	eShop	–	–	eShop	eShop	eShop	1
52M 56 8733	HOLEX	Compact deburring wheel (SiC)		eShop	eShop	eShop	eShop	eShop	eShop	1
Grit designation				fine						
Degree of hardness				extra hard						
Width			mm	25	25	25	25	25	51	
Bore ∅			mm	25	32	32	51	76	76	
Version				9S fine						

Bench grinder finishing wheels

Application: On **bench grinders** or portable grinders with mandrel No. 556380 size 1–2 and reducer flange No. 568782. Suitable grinding wheel dresser No. 568785.
Finishing disc made of wound fibre fleece. Creates a **fine, glossy finish,** for example, for manufacturing hydraulic cylinders, turbine blades, cutlery etc.



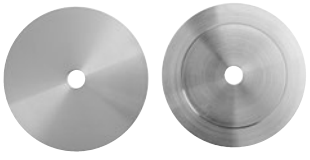


56 8741

Disc ∅×Width×Bore ∅			mm	152×25×25	152×25×32	175×25×32	203×25×51	203×51×76
53M 56 8741	3M Scotch-Brite™	Compact finishing wheel (SiC)	FS-WL	eShop	–	–	eShop	eShop
52M 56 8742	HOLEX	Compact finishing wheel (SiC)		eShop	eShop	eShop	eShop	eShop
Grit designation				fine				
Degree of hardness				medium				
Width			mm	25	25	25	25	51
Bore ∅			mm	25	32	32	51	76
Version				6S fine				

Accessories for fleece compact bench grinding wheels

Pair of aluminium reducer flanges 13 mm ∅, for boring out.



56 8782

suitable for bore ∅		mm	25	76
56Z 56 8782	Pair of aluminium flanges		eShop	eShop

Galvanically distributed **diamond hand dresser** with ergonomic 2-component handle.
Application: For dressing and profiling fleece compact wheels.



56 8785

Dimensions		mm	70×20
51G 56 8785	Garant Diamond hand dresser		eShop
Dresser medium			Diamond-coated
Overall length		mm	270

LESSMANN® THE GERMAN BRUSH COMPANY **Technical brushes**

Wire material

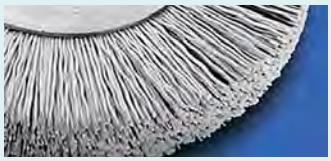
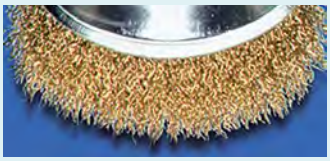
Steel wire / brass-coated steel wire with high tensile and flexural strength.

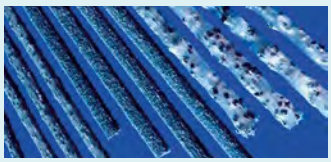
High-strength stainless steel wire (INOX) with high resistance to corrosion, acids, alkalis, and high temperatures.

Micro-abrasive polyamide bristles, incorporating abrasive Aluminium Oxide (A) or Silicon Carbide (SiC) grit.

Brass wire for machining non-ferrous metals and natural materials.



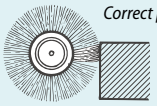



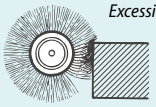


Instructions for use – optimising the brushing results

Correct working method



Wrong working method



Action	Circumferential speed	Brush ∅	Wire thickness	Bristle length
Increasing the brushing effect	↗	↗	↗	↗
Reducing the brushing effect	↘	↘	↘	↘
Brush retains burrs	↘		↗	↘

Note

Only the tips of the bristles act on the workpiece. Excessive contact pressure does not improve the result, but increases the required drive power and reduces the working life of the brush.

Recommended circumferential speeds for brushing jobs								
	Circumferential speed in m/s							
Applications	15	20	25	30	35	40	45	50
Deburring			25 – 35					
Cleaning welded joints					35 – 45			
Removing scale					35 – 45			
Polishing				30 – 40				
Processing plastics	15 – 25							



Weld seam dressing
Knotted wheel and cup brushes, highly aggressive.



Removing discolouration
Wheel brushes with shank, with waved stainless steel wire.



Brush access to restricted places
Knotted end brush opens due to centrifugal force.



Deburring
Wheel brushes with waved wire.



Rust removal, paint removal
Cup brushes for use on surfaces.



Cleaning, deburring, blending, finishing
Abrasive bristles for very fine surface finishes.

Wheel brushes

Multi-row – made of steel wire / stainless steel wire / brass wire / abrasive bristles

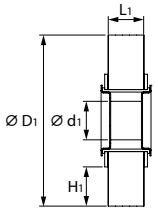
Waved wire firmly crimped into the steel body. **High density,** high concentricity, and good wear resistance. Adaptable to various different mounting bores by use of **interchangeable reducing rings** (supplied).

Size 250×30; 300×35 – Bore with double spline.

Application: Use on bench grinder or polishing machines, or on machines with flexible drive heads.

57 0100–0200/0170–0220 – For roughening, cleaning, removing rust, and scale etc.

57 1050/0170 – **For brass, copper, light alloys, etc.** For polishing, fine brushing etc.




Stainless steel wire


Steel wire

Brush ∅ D_1 × bristle width L_1		mm	80×22	100×20	120×30	125×23
57L 57 0100	LESSMANN® THE GERMAN BRUSH COMPANY	Wire wheel brush **Steel wire 0.30 / 0.35 mm**	–	eShop	–	eShop
57H 57 0120	HOLEX	Wire wheel brush **Steel wire 0.30 mm**	–	eShop	–	eShop
57L 57 0200	LESSMANN® THE GERMAN BRUSH COMPANY	Wire wheel brush (green) **Stainless steel wire 0.30 mm**	–	eShop	–	eShop
57L 57 1050		Wire wheel brush **Brass wire 0.15 mm.**	eShop	–	eShop	–
57H 57 0170	HOLEX		–	–	eShop	–
Brush width		mm	24	19	25	20
Bore ∅ d_1		mm	20	30	30	40
Reducing ring ∅		mm	8	12 / 12.7 / 16 / 20 / 22.2 / 25.4	12 / 12.7 / 16 / 20 / 22.2 / 25.4	12.7/16/ 20/22.2/ 25.4/32
Length of brush section H_1		mm	20	23	33	27
maximum speed		min^{-1}	10000	8000	6000	6000


Reducing ring set


Brass wire

Brush ∅ D_1× bristle width L_1			mm	150×22	150×30	178×23	178×32	200×25	200×38	250×30	300×35
57L	57 0100	LESSMANN	Wire wheel brush **Steel wire 0.30 / 0.35 mm**	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop
57H	57 0120	HOLEX	Wire wheel brush **Steel wire 0.30 mm**	–	–	–	–	–	–	eShop	–
57L	57 0200	LESSMANN	Wire wheel brush (green) **Stainless steel wire 0.30 mm**	eShop	eShop	eShop	eShop	–	eShop	–	–
57L	57 0150	LESSMANN	Wire wheel brush **Steel wire 0.20 mm**	eShop	eShop	eShop	eShop	–	–	–	–
57H	57 0220	HOLEX	Wire wheel brush (green) **Stainless steel wire 0.30 mm**	–	–	–	–	–	eShop	–	–
NEW 57L	57 0250	LESSMANN	Wire wheel brush **Brass wire 0.20 mm.**	eShop	–	–	–	eShop	–	–	–
Brush width			mm	20	26	22	29	22	29	25	26
Bore ∅ d_1 (57 0100, 57 0120, 57 0200, 57 0150, 57 0250)			mm	40	40	50	50	50	50	50.8	50.8
Bore ∅ d_1 (57 0220)			mm	–	–	–	–	–	50.8	–	–
Bore ∅ can be opened up to (57 0100, 57 0120)			mm	–	–	–	–	–	–	80	100
Reducing ring ∅			mm	12.7 / 16 / 20 / 22.2 / 25.4 / 32	12.7/16/ 20/22.2/ 25.4/32	12.7 / 16 / 20 / 22.2 / 25.4 / 32	12.7/16/ 20/22.2/ 25.4/32	12.7 / 16 / 20 / 22.2 / 25.4 / 32	12.7 / 16 / 20 / 22.2 / 25.4 / 32	12/12.7/16/ 20/22.2/ 25.4/30	30
Length of brush section H_1			mm	33	33	37	37	47.5	48	50	60
maximum speed			min^{-1}	6000	6000	6000	6000	6000	6000	3600	3000

Single-row – of steel wire / stainless steel wire / abrasive bristles

Single-row brush with waved brush material.

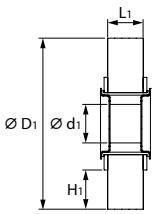
Application: For roughening, cleaning, removing rust, and scale etc.
Single-row brushes can be mounted alongside each other **to form various effective brushing widths**.
For individual use on grinding machines.



57 0300



57 0310





57 0320

Brush ∅ D_1× brush width			mm	100×12	150×14	200×16	250×16
57L	57 0300	LESSMANN	Single-row wheel brush **Steel wire 0.30 mm**	eShop	eShop	eShop	–
57H	57 0305	HOLEX		eShop	–	–	–
57L	57 0310	LESSMANN	Single-row wheel brush **Stainless steel wire 0.30 mm**	eShop	eShop	eShop	–
57H	57 0315	HOLEX		eShop	–	eShop	–
57L	57 0320		Single-row wheel brush **micro-abrasive 0.6 mm, SiC 120**	eShop	eShop	eShop	eShop
57L	57 0322	LESSMANN	Single-row wheel brush **micro-abrasive 0.6 mm, SiC 320**	eShop	eShop	eShop	eShop
57L	57 0324		Single-row wheel brush **Ceramic grit 0.2 mm, K120**	eShop	eShop	eShop	eShop
Bore ∅ d_1			mm	12	12	16	16
Bore ∅ can be opened up to			mm	20	30	80	100
				21	32	33	57
maximum speed			min^{-1}	8000	6000	6000	6000

SiC



NEW

Single-row of steel wire, knotted

Straight wheel brush with smooth steel wire 0.50mm, **knotted** and firmly crimped into the steel body.
Left knotted, reliably avoids premature unwinding.
Very aggressive brushing effect with high wear resistance.

Application: For heavy brush work such as descaling, removing rust, removing paint, roughening, cleaning metal parts, also for cleaning formwork boards.
For stationary use.



57 0325

Brush ∅ D_1× bristle width L_1			mm	250×15
57L	57 0325	LESSMANN	Single-row wheel brush, knotted **Steel wire 0.50 mm**	eShop
Bore ∅ d_1			mm	51
Length of brush section H_1			mm	42
Number of twisted knots				52
maximum speed			min^{-1}	5000

Wheel brushes for clearing the chip chamber for power saws - steel wire / nylon bristles

57 0330 – **Brass-coated** waved **steel wire** with high tensile strength **for strongly adhering chips.**
57 0335 – Waved **nylon bristles with no abrasive additive.**

Application: For use on circular saws and bandsaws for **clearing the chip chamber** and preventing edge build-up.


57 0330_80×18


57 0335_100×12

Brush ∅ D_1× bristle width L_1		mm	80×18	100×12
57L 57 0330	LESSMANN®	Wheel brush **Steel wire 0.25 mm**	eShop	–
57L 57 0335	LESSMANN®	Wheel brush **Nylon bristles 0.50 mm**	–	eShop
Bore ∅ d_1		mm	6	12
Bore ∅ can be opened up to		mm	–	20
Length of brush section H_1		mm	27	21
maximum speed		min^{-1}	15000	8000

Deburring wheel brushes for deburring machines

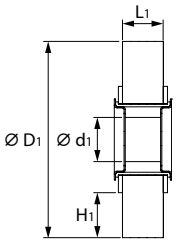
Bore diameter 50.8 mm with double keyway 13×7. Other bore diameters available.

57 0510 – Waved high-tensile **stainless steel wire**.
57 0520 – Waved high-tensile **abrasive nylon bristles.**
57 0490–0505 – Waved high-tensile **steel wire.**

Application: For all popular bench deburring machines.
Particularly long working life due to special wire.

57 0505 – Keyway 13.5×7.6.
57 0520 – Flexible abrasive bristles for even deburring and rounding of corners and surface preparation.
57 0490–0510 – Ideally suited for economical deburring of flat strips, profiles, pipes, fittings, plastic parts, and the like.


57 0500
Steel wire




57 0520
Abrasive bristles

SiC

Brush ∅ D_1× bristle width L_1		mm	250×60
57L 57 0490	LESSMANN®	Deburring wheel brush **Steel wire 0.20 mm**	eShop
57L 57 0500	LESSMANN®	Deburring wheel brush **Steel wire 0.35 mm**	eShop
57H 57 0505	HOLEX		eShop
57L 57 0510	LESSMANN®	Deburring wheel brush **Stainless steel wire 0.35 mm**	eShop
57L 57 0520	LESSMANN®	Deburring wheel brush **micro-abrasive 1.1 mm, SiC 120**	eShop
Brush width		mm	58
Length of brush section H_1		mm	50
maximum speed		min^{-1}	3600

LESSMANN® Pipeline brushes

57 1400 – Smooth, special wire 0.50 mm, slim form, **knotted** and securely crimped into the steel body. Long working life and smooth running.
57 1410 – Smooth, stainless steel wire 0.50 mm, slim form, **knotted** and securely crimped into the steel body. Long working life and smooth running.

Application: Specially for preparing **U and V weld joints**, which are frequently required for joining pipes.


57 1400 _178×22

Brush ∅ D_1× bore ∅ d_1		mm	115×22	125×22	178×22
57L 57 1400		Slim wheel brush **straight, steel wire 0.50 mm**	eShop	eShop	eShop
57L 57 1410		Slim wheel brush **straight, stainless steel wire 0.50 mm**	eShop	eShop	–
Bristle width L_1		mm		6	
Length of brush section H_1		mm	22	26	30
Number of twisted knots			32	40	56
maximum speed		min^{-1}	15000	15000	12500

Wheel brushes, knotted

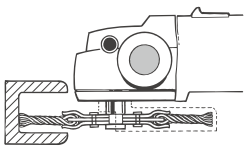
Straight round brush with smooth wire 0.50 mm, **knotted** and firmly crimped into the steel body.
Very aggressive brushing effect with high wear resistance.

Application: For heavy brush work, e.g. descaling, removing rust, removing paint, roughening, cleaning metal parts, also for cleaning formwork boards.

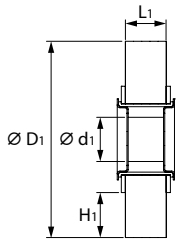
57 1200/1203/1250 – **Left knotted,** reliably avoids premature unwinding.

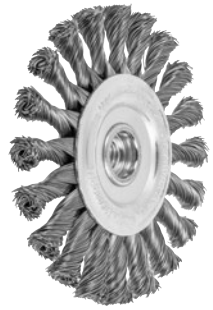
57 1200 Size 115XM14; 125XM14; 178XM14/1203 Size 115XM14; 125XM14/1205 Size 125XM14/1207 Size 125XM14/1250 Size 125XM14/1253 Size 125XM14 – With **internal thread M14,** for direct mounting **on angle grinders.**

57 1205/1207/1255 – **Right-left knotted** for increased aggressiveness for heavy-duty brushing work. Very suitable for use at corners and edges, with a smooth action.

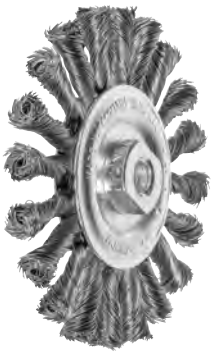


Straight wheel brush.





57 1200 125×M14
Straight wheel brush.



57 1205_125×M14
Right-left knotted



57 1250_125×M14

Brush Ø D_1× bore Ø d_1 / thread M			mm	115XM14	115×22	125XM14	178XM14	178×22	200×22
57L 57 1200	LESSMANN	Wheel brush **Steel wire 0.50 mm**		eShop	eShop	eShop	eShop	eShop	eShop
57H 57 1203	HOLEX			eShop	eShop	eShop	–	eShop	–
57L 57 1205	LESSMANN	Wheel brush **Right-left knotted, steel wire 0.50 mm**		–	eShop	eShop	–	–	–
57H 57 1207	HOLEX			–	eShop	eShop	–	–	–
57L 57 1250	LESSMANN	Wheel brush **Stainless steel wire 0.50 mm**		–	eShop	eShop	–	eShop	–
57H 57 1253	HOLEX			–	eShop	eShop	–	–	–
57L 57 1255	LESSMANN	Wheel brush **Right-left knotted, stainless steel wire 0.50 mm**		–	eShop	–	–	–	–
Bristle width L_1			mm	14					
Length of brush section H_1 (57 1200, 57 1203, 57 1205, 57 1207, 57 1253, 57 1255)			mm	24	24	29	38	38	41
Length of brush section H_1 (57 1250)			mm	–	24	–	–	38	–
Number of twisted knots (57 1200, 57 1205, 57 1207, 57 1253, 57 1255)				20	20	20	32	32	36
Number of twisted knots (57 1203)				20	20	20	–	38	–
Number of twisted knots (57 1250)				–	20	–	–	32	–
maximum speed (57 1200, 57 1203, 57 1205, 57 1207, 57 1253, 57 1255)			min^{-1}	12500	12500	12500	12500	12500	9000
maximum speed (57 1250)			min^{-1}	–	12500	–	–	12500	–

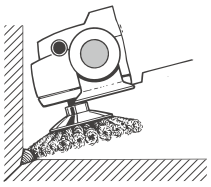
Bevel brushes, knotted

Dished **bevel brush** with smooth wire 0.50 mm, **knotted** and firmly crimped into the steel body.
Very aggressive brushing effect with high wear resistance.

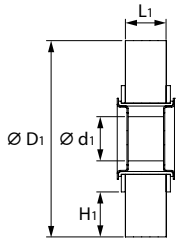
Application: Ideal for working where access is difficult and for heavy brush work, e.g. descaling, removing rust, removing paint, roughening, cleaning metal parts, also for cleaning formwork boards.
With **internal thread M14,** for direct mounting **on angle grinders.**

57 1300/1303/1350/1353 – **Left knotted,** reliably avoids premature unwinding.

57 1305/1308/1355 – **Right-left knotted** for increased aggressiveness for heavy-duty brushing work. Very suitable for use at corners and edges, with a smooth action.



Dished conical brush





57 1305_115×M14
Right-left knotted



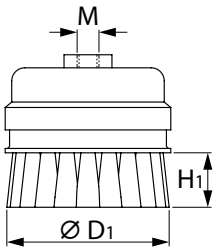
57 1350_115×M14

Brush Ø D_1× thread M			mm	100XM14	115XM14	125XM14
57L 57 1300	LESSMANN	Dished bevel brush **Steel wire 0.50 mm**		eShop	eShop	eShop
57H 57 1303	HOLEX			–	–	eShop
57L 57 1305	LESSMANN	Dished bevel brush **Right-left knotted, steel wire 0.50 mm**		–	eShop	–
57H 57 1308	HOLEX			–	eShop	–
57L 57 1350	LESSMANN	Dished bevel brush **Stainless steel wire 0.50 mm**		–	eShop	eShop
57H 57 1353	HOLEX			–	eShop	eShop
57L 57 1355	LESSMANN	Dished bevel brush **Right-left knotted, stainless steel wire 0.50 mm**		–	eShop	–
Bristle width L_1			mm		12	
Length of brush section H_1 (57 1300, 57 1305, 57 1308, 57 1355)			mm	20	24	–
Length of brush section H_1 (57 1350, 57 1353)			mm	–	24	29
Number of twisted knots (57 1300, 57 1305, 57 1308, 57 1355)				18	20	–
Number of twisted knots (57 1350, 57 1353)				–	20	20
maximum speed (57 1300, 57 1305, 57 1308, 57 1355)			min^{-1}	12500	12500	–
maximum speed (57 1303, 57 1350, 57 1353)			min^{-1}	–	12500	12500

Cup brushes

Waved wire firmly crimped into the steel body. For use on angle grinders and on stationary machines.
With **M14 internal thread.**

Application: Very well suited for brushing surfaces, deburring, removing rust, polishing, removing paint, primer, varnish, scale etc.





57 3200

Brush Ø D_1			mm	60	80	100
57L 57 3000	LESSMANN	Cup brush **Steel wire 0.35 mm**		eShop	eShop	eShop
57H 57 3005	HOLEX			eShop	eShop	eShop
57L 57 3200	LESSMANN	Cup brush **Stainless steel wire 0.30 mm**		eShop	eShop	eShop
57H 57 3205	HOLEX			eShop	eShop	–
57L 57 3300	LESSMANN	Cup brush **Brass-coated steel wire 0.30 mm**		eShop	–	eShop
Brush Ø D_1			mm	65	85	100
Length of brush section H_1			mm	20	25	30
maximum speed			min^{-1}	12000	8500	8500



57 3300

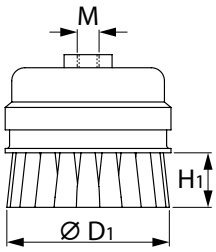
Cup brushes, knotted

Smooth steel wire, **knotted** and firmly crimped into the steel body. **Very aggressive brushing effect with high wear resistance.**

57 2100 Size 80XM14; 100XM14; 125XM14/2103 Size 125XM14/2200 Size 80XM14 – With **safety support ring**, after removal other bristle heights are available.

57 2105/2108/2205 – **Rright-left knotted** for increased aggressiveness for heavy-duty brushing work. Very suitable for use at corners and edges, with a smooth action.

Application: Specially to accept angle grinders.
With **M14 internal thread.**





57 2100_90×M14

Brush Ø D_1× thread M			mm	65XM14	80XM14	90XM14	100XM14	125XM14
57L 57 2000	LESSMANN	Cup brush **Steel wire 0.35 mm**		eShop	–	–	–	–
57H 57 2050	HOLEX			eShop	–	–	–	–
57L 57 2100	LESSMANN	Cup brush **Steel wire 0.50 mm**		eShop	eShop	eShop	eShop	eShop
57H 57 2103	HOLEX			eShop	–	eShop	–	eShop
57L 57 2105	LESSMANN	Cup brush **Right-left knotted, steel wire 0.50 mm**		eShop	–	–	–	–
57H 57 2108	HOLEX			eShop	–	–	–	–
57L 57 2210		Cup brush **Stainless steel wire 0.35 mm**		eShop	–	–	–	–
57L 57 2200	LESSMANN	Cup brush **Stainless steel wire 0.50 mm**		eShop	eShop	–	–	–
57L 57 2205		Cup brush **Right-left knotted, stainless steel wire 0.50 mm**		eShop	–	–	–	–
Brush Ø D_1			mm	65	80	90	100	125
Length of brush section H_1			mm	20	25 + 15	22	23 + 12.5	25 + 15
Safety support ring				no	yes	no	yes	yes
maximum speed			min^{-1}	12500	9000	11500	8500	6500



57 2205_65×M14

Special cleaning brushes

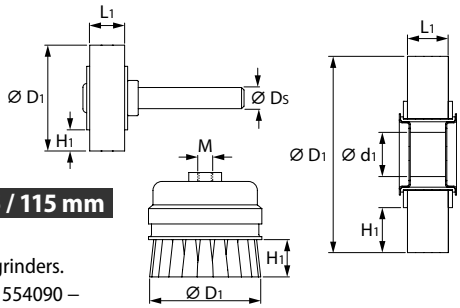
CER

Cast special cleaning brushes are homogeneous grinding bodies with a mixture of precision-formed ceramic grit and Aluminium Oxide, and an **exceptionally long working life. Extremely flexible and versatile.**

Application: **On virtually all materials, with the highest possible safety.** Removal of rust, remains of adhesive, paint, light scratches and burrs. For smoothing, finishing, polishing, cleaning, and deburring.







Qdisc RA — Ø 50 / 75 / 115 mm

Application:

57 3531 – With integral **M14 mounting**, no further accessories required for direct mounting on angle grinders.

57 3511/3516 – For use on straight die grinders and small angle grinders with quick-change backing pad No. 554090 – 554094 (mandrel Ø 6 mm or M14 mounting).

Grit			50	80	120	
53M 57 3511	TYROLIT	Special cleaning brush quick-change system Ø 50 mm	eShop	eShop	eShop	10
53M 57 3516	TYROLIT	Special cleaning brush quick-change system Ø 75 mm	eShop	eShop	eShop	10
53M 57 3531	TYROLIT	Special cleaning brush quick-change system Ø 115 mm	eShop	eShop	eShop	5
Colour			green	yellow	white	
maximum speed (57 3511)		min^{-1}	25000			
maximum speed (57 3516)		min^{-1}	18000			
maximum speed (57 3531)		min^{-1}	12000			


57 3511_80


57 3516_120

M14 direct mounting


57 3531_50

Bristle Brush RB-ZB / BB-ZS / BB-ZB — Ø 25 / 50 / 76 / 150 mm

The **radial** bristle brush consists of individual segments (approx. 1.6 mm wide).

57 3545 – Removable mandrel **(shank Ø 3 mm)**. Segments can be combined to make up any desired brush width.

57 3565 – With oblique bristles (type A) for **powerful performance.**

57 3545–3555 – With curved bristles (type C) for use on **profiled surfaces.**

57 3547/3550 – Mandrel **(shank Ø 6 mm)** with cast segments.

Application: Ensure the correct direction of rotation.

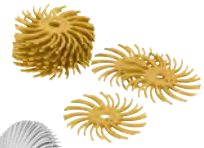
57 3545–3550 – Requires no accessories for use on straight grinders or flexible shafts.

57 3555/3565 – **Bore Ø 25.4 mm,** with reducer rings Ø 22.23 / 19 / 15.6 / 12.7 mm supplied. Extendable to any width with adaptor No. 573580. For use on double grinding machines or on straight grinders on flexible shafts with mandrel No. 556380 size 1.

Supplied with:

57 3545 – 24 individual segments (approx. 1.6 mm wide) **including mandrel** with shank Ø 3 mm.


57 3545_80
Pack of 24




57 3550_120

Grit				36	50	80	120	220
53M 57 3545	3M Scotch-Brite™	Bristle-Brush type C Ø 25 mm **Set 24 pieces, shank Ø 3 mm.**	RB-ZB	eShop	eShop	eShop	eShop	–
53M 57 3547	3M Scotch-Brite™	Bristle-Brush type C Ø 50 mm **Shank Ø 6 mm**	BB-ZS	–	–	eShop	eShop	eShop
53M 57 3550	3M Scotch-Brite™	Bristle-Brush type C Ø 76 mm **Shank Ø 6 mm**	BB-ZS	–	–	eShop	eShop	eShop
53M 57 3555	3M Scotch-Brite™	Bristle-Brush type C Ø 150 mm	BB-ZB	–	–	eShop	eShop	eShop
53M 57 3565	3M Scotch-Brite™	Bristle-Brush type A Ø 150 mm	BB-ZB	eShop	eShop	eShop	–	–
Brush Ø D_1 (57 3545)			mm	25	25	25	25	–
Brush Ø D_1 (57 3547)			mm	–	–	50	50	50
Brush Ø D_1 (57 3550)			mm	–	–	76	76	76
Brush width (57 3545)			mm	1.6 – 10	1.6 – 10	1.6 – 10	1.6 – 10	–
Brush width (57 3547, 57 3550)			mm	–	–	10	10	10
Brush width (57 3555, 57 3565)			mm			12		
Colour				brown	green	yellow	white	red
maximum speed (57 3545)			min^{-1}	35000	35000	35000	35000	–
maximum speed (57 3547)			min^{-1}	–	–	15000	15000	15000
maximum speed (57 3550)			min^{-1}	–	–	10000	10000	10000
maximum speed (57 3555, 57 3565)			min^{-1}			6000		


57 3555_80
curved bristles


57 3565_50
angled bristles

Accessories for radial Bristle Brush Ø 150 mm

Suitable for: Radial bristle brush No. 573555, No. 573565.

Application: For joining together several bristle brushes. Adapter width 12.7 mm, bore Ø 25.4 mm.

53M 57 3580	Extension adapter set, 4 pieces	eShop

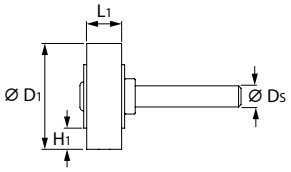

57 3580

Wheel brushes with shank

Application: For portable grinders, on flexible drive machines or drills for brushing surfaces.
High speeds improve the brush performance.

Wheel brushes with shank, steel wire / brass-coated steel wire

Waved special high quality wire, **shank Ø 6 mm.**
57 4300/4325 – The high-tensile steel wire is coated with a thin layer of brass.
Application: For removal of rust and scale, and for cleaning




57 4000

Brush Ø D_1 × bristle width L_1		mm	30×6	40×10	50×10	50×15	60×15	70×10	70×16	80×18
57L	57 4000	LESSMANN	Wheel brush with shank **Steel wire 0.30 mm**	eShop	eShop	–	eShop	eShop	–	eShop	eShop
57H	57 4050	HOLEX		eShop	eShop	–	eShop	eShop	–	eShop	eShop
57L	57 4100	LESSMANN	Wheel brush with shank **Steel wire 0.20 mm**	eShop	eShop	–	eShop	eShop	–	eShop	eShop
57H	57 4150	HOLEX		eShop	eShop	–	eShop	eShop	–	eShop	eShop
57L	57 4300	LESSMANN	Wheel brush with shank **Brass-coated steel wire 0.25 mm**	–	–	eShop	–	–	eShop	–	–
57H	57 4325	HOLEX		–	–	eShop	–	–	eShop	–	–
Brush Ø D_1		mm		30	40	50	50	60	70	70	80
Bristle width L_1		mm		6	10	10	15	15	9	14	13
Length of brush section H_1		mm		6	9	12	12	17	19	19	20
maximum speed		min^{-1}		20000	18000	15000	15000	15000	15000	15000	15000

Wheel brushes with shank, stainless steel wire

Waved special high quality wire, **shank Ø 6 mm.**
57 4255 – All components of stainless steel.
Application: For removal of rust and scale, and for cleaning


57 4250

Brush Ø D_1 × bristle width L_1		mm	30×6	50×10	50×15	60×15	70×10	70×16	80×12	80×18
57L	57 4200	LESSMANN	Wheel brush with shank **Stainless steel wire 0.30 mm**	–	–	eShop	eShop	eShop	eShop	–	eShop
57H	57 4225	HOLEX		–	–	eShop	eShop	eShop	eShop	–	eShop
57L	57 4250	LESSMANN	Wheel brush with shank **Stainless steel wire 0.20 mm**	eShop	eShop	eShop	eShop	eShop	–	eShop	–
57H	57 4253	HOLEX		eShop	eShop	eShop	eShop	eShop	–	eShop	–
57L	57 4255	LESSMANN	Wheel brush with shank **Stainless steel complete 0.20 mm**	–	–	eShop	–	–	eShop	–	–
Brush Ø D_1 (57 4200, 57 4250, 57 4253, 57 4255)		mm		30	50	50	60	70	70	80	80
Brush Ø D_1 (57 4225)		mm		–	–	50	–	70	70	–	80
Brush width (57 4200, 57 4225, 57 4250, 57 4253)		mm		–	–	–	–	–	–	12	18
Bristle width L_1 (57 4200, 57 4225, 57 4250, 57 4253)		mm		6	10	15	15	10	13	9	18
Bristle width L_1 (57 4255)		mm		–	–	15	–	–	18	–	–
Length of brush section H_1 (57 4200, 57 4250, 57 4253, 57 4255)		mm		6	12	12	17	19	19	20	20
Length of brush section H_1 (57 4225)		mm		–	–	12	–	19	19	–	20
maximum speed (57 4200, 57 4250, 57 4253, 57 4255)		min^{-1}		20000	15000	15000	15000	15000	15000	15000	15000
maximum speed (57 4225)		min^{-1}		–	–	15000	–	15000	15000	–	15000

Wheel brushes with shank, brass wire

Waved special high quality wire, **shank Ø 6 mm.**
Application: For heavy-duty deburring and brushing of non-ferrous metals

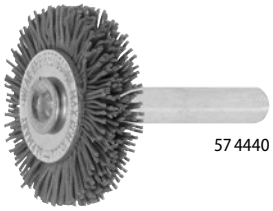

57 4350

Brush Ø D_1 × bristle width L_1		mm	30×6	40×10	60×15	70×10	70×16
57L	57 4350	LESSMANN	Wheel brush with shank **Brass wire 0.20 mm.**	eShop	eShop	eShop	eShop	eShop
57H	57 4360	HOLEX		eShop	eShop	eShop	eShop	eShop
Brush Ø D_1		mm		30	40	60	70	70
Bristle width L_1 (57 4350)		mm		6	10	15	8	12
Bristle width L_1 (57 4360)		mm		6	10	15	11	16
Length of brush section H_1		mm		6	9	17	19	19
maximum speed		min^{-1}		20000	18000	15000	15000	15000

Wheel brushes with shank, abrasive nylon, micro-abrasive

Abrasive nylon strands with silicon carbide, crimped into steel sleeve; **shank Ø 6 mm.**

Application: Wet and dry fine rubbing down of aluminium, steel, stainless steel and plastics. Maximum operating temperature 80 °C.

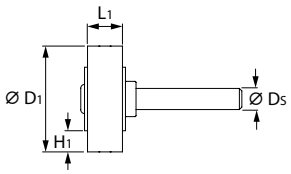

57 4440

Brush Ø D_1 × bristle width L_1			mm	30×6	50×10	70×10
57L 57 4440	LESSMANN	Wheel brush with shank **micro-abrasive SiC 120 grit**		eShop	eShop	eShop
57H 57 4445	HOLEX			–	eShop	eShop
57L 57 4450	LESSMANN	Wheel brush with shank **micro-abrasive SiC 320 grit**		eShop	eShop	eShop
57H 57 4455	HOLEX			–	eShop	eShop
57L 57 4460	LESSMANN	Wheel brush with shank **waved, micro-abrasive, ceramic grit K120**		–	eShop	eShop
57L 57 4462	LESSMANN	Wheel brush with shank **waved, micro-abrasive, ceramic grit K320**		–	eShop	eShop
Brush Ø D_1			mm	30	50	70
Length of brush section H_1			mm	6	12	20
recommended speed			min^{-1}	6000	6000	4000
maximum speed			min^{-1}		15000	

Wheel brushes with shank, knotted

Knotted steel wire, **shank Ø 6 mm.**

Application: Very aggressive brushing effect with high wear resistance. For removal of rust, scale and burrs.




57 4400

Type				75×10
57L 57 4400	LESSMANN	Wheel brush with shank **knotted steel wire 0.50 mm**		eShop
57L 57 4405	LESSMANN	Wheel brush with shank **knotted stainless steel wire 0.50 mm**		eShop
57H 57 4410	HOLEX	Wheel brush with shank **knotted, steel wire 0.50 mm**		eShop
Brush Ø D_1			mm	75
Bristle width L_1			mm	12
Length of brush section H_1			mm	15
Number of twisted knots				18
maximum speed			min^{-1}	25000

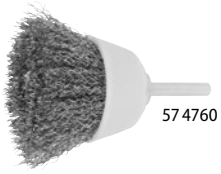
Surface brushes with shank

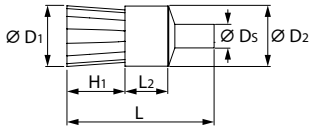
Area brushes with **shank Ø 6 mm.**

57 4760/4765 – For **brushing stainless steel. Plastic cup** acts as start-up protection and prevents corrosion due to introduction of foreign materials.

Application: In straight die grinders, flexible shafts or on stationary machines. For cleaning and deburring small to medium-sized areas.


57 4750


57 4760




57 4770

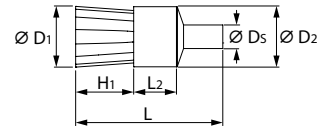
Brush Ø D_1			mm	40	50	60
57L 57 4750	LESSMANN	Surface brush **Steel wire 0.30 mm**		eShop	eShop	eShop
57H 57 4755	HOLEX			eShop	–	eShop
57L 57 4760	LESSMANN	Surface brush, plastic cup **Stainless steel wire 0.30 mm**		–	eShop	–
57H 57 4765	HOLEX			–	eShop	–
57L 57 4770	LESSMANN	Surface brush **Brass wire 0.20 mm.**		–	eShop	–
57H 57 4775	HOLEX			–	eShop	–
Brush Ø D_1			mm	40	50	60
Length of brush section H_1 (57 4750, 57 4755, 57 4760, 57 4765)			mm	20	28	25
Length of brush section H_1 (57 4770, 57 4775)			mm	–	20	–
maximum speed			min^{-1}	10500	10500	8000

End brushes

Waved special high quality wire, crimped into steel ferrule, **shank Ø 6 mm.**

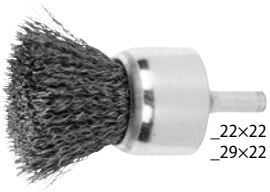
57 4650 – All components of stainless steel.

Application: For straight die grinders, on flexible drive machines and drills. For cleaning and deburring at inaccessible places.




_10×80


_10×20

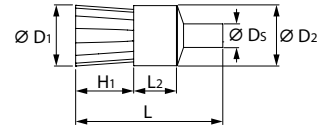

_22×22
_29×22

Type			10×80	10×20	22×22	29×22
57L 57 4500	LESSMANN	End brush **Steel wire 0.30 mm**	eShop	eShop	eShop	eShop
57H 57 4550	HOLEX		eShop	eShop	eShop	–
57L 57 4600		End brush **Stainless steel wire 0.30 mm**	eShop	eShop	eShop	eShop
57L 57 4650	LESSMANN	End brush **Stainless steel complete 0.30 mm**	–	eShop	eShop	–
57L 57 4700		End brush **Brass-coated steel wire 0.25 mm**	–	–	eShop	–
Brush Ø D_1		mm	12	12	23	30
Overall length L (57 4500, 57 4600, 57 4650, 57 4700)		mm	120	60	68	68
Overall length L (57 4550)		mm	120	67	80	–
Clamp Ø D_2		mm	10	10	22	29
Clamp length L_2		mm	80	20	22	22
Length of brush section H_1		mm	20	20	25	25
maximum speed (57 4500, 57 4600, 57 4650, 57 4700)		min^{-1}	15000	20000	18000	18000
maximum speed (57 4550)		min^{-1}	10000	20000	18000	–

LESSMANN® End brushes, pointed

Brush head of waved wire, pointed at a **25° angle. Shank Ø 6 mm.**

Application: In straight die grinders or flexible shafts. **For working in corners and recesses.**




57 4790

Brush Ø D_1		mm	12
57L 57 4790	End brush **pointed, steel wire 0.30 mm**		eShop
57L 57 4795	End brush **pointed, stainless steel wire 0.30 mm**		eShop
Length of brush section H_1		mm	20
maximum speed		min^{-1}	20000

End brushes, knotted

Smooth, knotted wire, crimped into steel ferrule, **shank Ø 6 mm,** even density, extremely wear-resistant.

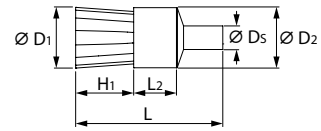
57 4900 – Stainless wire quality 1.4401 (AISI 316). Carrier body with plastic sheathing for machining stainless steel.

Application: For deburring, removing paint, and for all moderate to heavy brushing jobs.

Size 6×0,35 – Single-plait end brush for pin-point work.

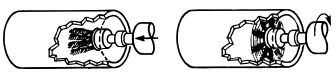
57 4800 Size 19×0,35–28×0,50/4850 Size 19×0,35–28×0,50/4900 Size 19×0,15–28×0,50 –

As speed increases the brush opens, this allows it to be introduced even into tight spaces, e.g. when brushing the inside of casings.




57 4900


57 4800



Brush Ø D_1× bristle thickness		mm	6×0,35	19×0,15	19×0,35	22×0,25	22×0,35	28×0,25	28×0,35	28×0,50
57L 57 4800	LESSMANN	Knotted end brush **Steel wire**	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop
57H 57 4850	HOLEX		–	–	eShop	eShop	eShop	–	eShop	eShop
57L 57 4900	LESSMANN	Knotted end brush **Stainless steel wire**	eShop	eShop	eShop	eShop	–	–	eShop	eShop
Brush Ø D_1		mm	6	19	19	22	22	28	28	28
Length of brush section H_1		mm	25	28	28	28	28	28	28	28
Number of twisted knots (57 4800, 57 4900)			1	6	6	8	8	12	12	12
Number of twisted knots (57 4850)			–	–	6	6	6	–	12	12
maximum speed		min^{-1}	4500	20000	20000	20000	20000	20000	20000	20000

LESSMANN® Miniature cup brushes / wheel brushes / end brushes

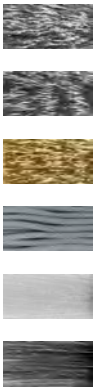
Shank Ø 3 mm.

57 4929/4939/4949 – Low static electrical charges.

Application: Machining of precision workpieces, small surface areas and where access is difficult.

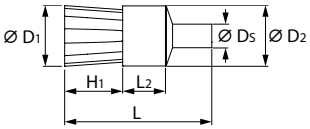


Brush Ø D_1		mm	15	18		typical application
57L 57 4920	Miniature cup brush **Steel wire 0.10 mm**		eShop	eShop	10	Cleaning, deburring
57L 57 4922	Miniature cup brush **Stainless steel wire 0.10 mm**		eShop	eShop	10	Cleaning, deburring
57L 57 4924	Miniature cup brush **Brass wire 0.10 mm.**		eShop	eShop	10	Cleaning, deburring
57L 57 4926	Miniature cup brush **micro-abrasive SiC 500 grit**		–	eShop	10	Finish grinding
57L 57 4928	Miniature cup brush **Nylon 0.15 mm**		eShop	–	10	Cleaning
57L 57 4929	Miniature cup brush **Natural bristles (black)**		eShop	–	10	Polishing (paste)
Length of brush section H_1		mm	5	6		
maximum speed		min^{-1}	15000			

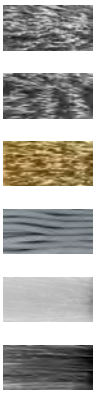


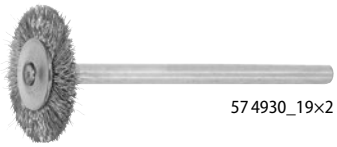


57 4920_15

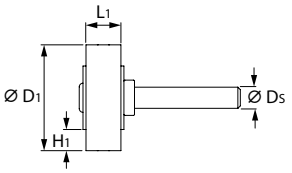


Brush Ø D_1× brush width		mm	19×2	22×2		typical application
57L 57 4930	Miniature wheel brush **Steel wire 0.10 mm**		eShop	eShop	10	Cleaning, deburring
57L 57 4932	Miniature wheel brush **Stainless steel wire 0.10 mm**		eShop	eShop	10	Cleaning, deburring
57L 57 4934	Miniature wheel brush **Brass wire 0.10 mm.**		eShop	eShop	10	Cleaning, deburring
57L 57 4936	Miniature wheel brush **micro-abrasive SiC 500 grit**		–	eShop	10	Finish grinding
57L 57 4938	Miniature wheel brush **Nylon 0.15 mm**		–	eShop	1	Cleaning
57L 57 4939	Miniature wheel brush **Natural bristles (black)**		–	eShop	1	Polishing (paste)
Length of brush section H_1		mm	5	6		
maximum speed		min^{-1}	12000	10000		

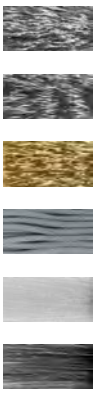




57 4930_19×2

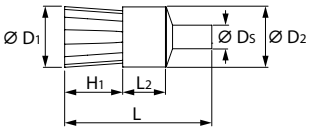


Brush Ø D_1		mm	5		typical application
57L 57 4940	Miniature end brush **Steel wire 0.10 mm**		eShop	10	Cleaning, deburring
57L 57 4942	Miniature end brush **Stainless steel wire 0.10 mm**		eShop	10	Cleaning, deburring
57L 57 4944	Miniature end brush **Brass wire 0.10 mm.**		eShop	10	Cleaning, deburring
57L 57 4946	Miniature end brush **micro-abrasive SiC 500 grit**		eShop	10	Finish grinding
57L 57 4948	Miniature end brush **Nylon 0.15 mm**		eShop	10	Cleaning
57L 57 4949	Miniature end brush **Natural bristles (black)**		eShop	10	Polishing (paste)
Length of brush section H_1		mm	8		
maximum speed		min^{-1}	5000		





57 4940_5

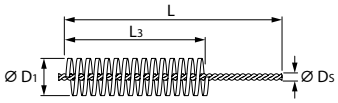


LESSMANN® Tube brushes with shank, abrasive nylon, micro-abrasive



Internal brushes with galvanised twisted wire core and plain helix of bristles.

Application: **Abrasive nylon brushes** work at both the tips and the sides of the bristles. The continued exposure of new abrasive material ensures an **even abrasive effect.** For **deburring** (cross) bores, O-ring recesses, and for **cleaning** and **polishing** nozzles and small hydraulic bores.



Tube brushes with shank, Aluminium Oxide grit

Fine aluminium oxide bristles **(A)** in **600 grit,** bristle ∅ **0.30 mm,** overall length 125 mm, brush section length 25 mm.



57 4470

Brush ∅ D_1	mm	3,2	4,2	4,8	5,5	6,6	8,2	9,8	11,5	13
57L 57 4470	Tube brush micro-abrasive **(A) 600 grit**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length L_3	mm	25								

Tube brushes with shank, Silicon Carbide grit

Fine silicon carbide bristles **(SiC)** in **1000grit,** brush ∅ **0.25mm,** overall length 100mm.



57 4476

Brush ∅ D_1	mm	1,2	1,9	2,2	2,6	3,2	4,2	5,5
57L 57 4476	Tube brush micro-abrasive **(SiC) 1000 grit**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length L_3	mm	12	18	18	25	25	25	25

Strong silicon carbide bristles **(SiC)** in **120 grit and 320 grit,** bristle ∅ **0.60mm,** overall length 125mm.



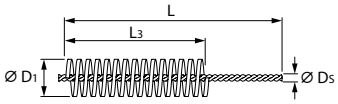
57 4475

Brush ∅ D_1	mm	6	8	10	13	16	20	25	32
57L 57 4475	Tube brush micro-abrasive **(SiC) 120 grit**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
57L 57 4477	Tube brush micro-abrasive **(SiC) 320 grit**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length L_3	mm	65							

LESSMANN® Tube brushes with shank, fine

Internal brushes with galvanised twisted wire core and plain helix of bristles.
Fine wire quality, overall length 90 mm, brush section length 25 mm.

Application: Full bristles right to the end of the brush, **ideal for blind holes.**



Brush ∅ D_1	mm	10	13	16	20	25	32
57L 57 4480	Tube brush **Steel wire 0.12 mm**	eShop	eShop	eShop	–	–	eShop
57L 57 4485	Tube brush **Steel wire 0.20 mm**	–	–	–	eShop	eShop	eShop
57L 57 4487	Tube brush **Stainless steel wire 0.12 mm**	eShop	eShop	eShop	–	–	–
57L 57 4488	Tube brush **Stainless steel wire 0.20 mm**	–	–	–	eShop	eShop	–
57L 57 4498	Tube brush **Brass wire 0.15 mm.**	eShop	eShop	eShop	–	–	–
57L 57 4499	Tube brush **Brass wire 0.20 mm.**	–	–	–	eShop	eShop	–
Working length L_3	mm	25					



57 4480

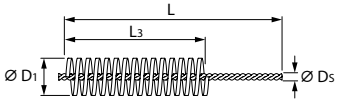


57 4498

LESSMANN® Fitting brushes

Internal brushes with galvanised twisted wire core and plain helix of bristles.
Ergonomic plastic handle. Bristles made of **stainless steel wire.** Brush is oversize so as to be effective within the stated size of pipe.

Application: For cleaning pipe ends during plumbing work before soldering and for deburring holes.



suitable for pipe internal ∅	mm	15	18	22	28
57L 57 8100	Fitting brush **waved stainless steel wire**	eShop	eShop	eShop	eShop

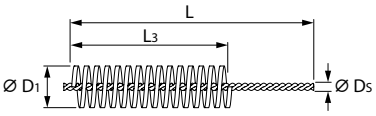


57 8100

LESSMANN® THE GERMAN BRUSH COMPANY Hole cleaning brushes / cylinder brushes

Overall length 300 mm, brush section length 100 mm.

Application: For **manual cleaning** and **deburring** of pipes, bores etc.



Hole cleaning brushes with eye

57 8200 – Helical brush section of waved steel wire.
57 8300 – Helical brush section of waved brass wire.
57 8400 – Helical brush section of nylon bristles.



Brush Ø D_1	mm	3	4	5	6	8	10	12	15	16	20	25	30	32	40	50
57L 57 8200	Cylinder brush **Steel wire**	eShop	eShop	eShop	eShop	eShop	eShop	eShop ■	eShop ■	–	eShop	eShop	eShop	–	eShop	eShop
57L 57 8300	Cylinder brush **Brass wire**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	–	–	eShop	eShop
57L 57 8400	Cylinder brush **Nylon**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop
Working length L_3	mm	100														

Hole cleaning brushes with wooden handle

Helical brush section of waved steel wire.
With wooden handle for comfortable working.



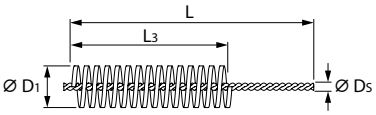
Brush Ø D_1	mm	10	15	25
57L 57 8600	Hole cleaning brush **Steel wire**	eShop	eShop	eShop
Working length L_3	mm	100		

LESSMANN® THE GERMAN BRUSH COMPANY Tube brushes with external thread

Tube brushes with metric M6 thread nipple

Internal brushes with galvanised twisted wire core and plain helix of bristles. Bristles of waved wire, overall length 115 mm. Bristle length 80 mm long with crimped-on M6 threaded nipple.

Application: For cleaning pipes, gratings, sleeves, heat exchangers, and cylinders. For use in machines (only clockwise rotation), use thread adapter No. 577990.







Brush Ø	mm	8	10	12	15	16	20
57L 57 7980	Tube brush **Waved steel wire 0.15 mm**	eShop	eShop	eShop	eShop	eShop	eShop
57L 57 7985	Tube brush **Waved brass wire 0.15 mm**	eShop	eShop	eShop	eShop	eShop	eShop



Thread		M6
57L 57 7990	M6 thread adapter, internal thread **Shank Ø 6 mm**	eShop

With M6 internal thread, external thread, overall length 200 mm.



Thread		M6
57L 57 7993	Extension for tube brushes with M6 threaded nipple	eShop

Thread		M6
57L 57 7995	Plastic handle for tube brushes with M6 threaded nipple	eShop



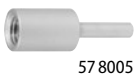
Tube brushes with Whitworth thread nipple

Internal brushes with galvanised twisted wire core and plain helix of bristles. Bristles of smooth steel wire, overall length 160 mm. Brush section 100 mm long with crimped-on 1/2 inch Whitworth thread nipple.

Application: For cleaning pipes, gratings, sleeves, heat exchangers, and cylinders.
For use in machines (only clockwise rotation), use thread adapter No. 578005.



Brush Ø	mm	30	35	38	50	63	75	100
57L 57 8000	Tube brush **Smooth steel wire**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Suitable for: Pipe inside Ø [inches]		1.1/4 inch	1.1/2 inch	1.1/2 inch	2 inch	2.1/2 inch	3 inch	4 inch



57L 57 8005	Thread adapter for tube brush No. 578000 **Shank Ø 6 mm**	eShop

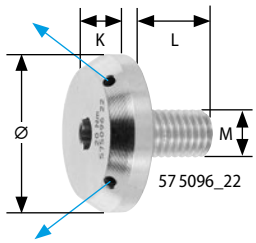
With 1/2 inch Whitworth internal, external threads. Overall length 1000 mm.



57L 57 8010	Extension for tube brush No. 578000	eShop

Garant Accessories for wheel brushes and disc brushes

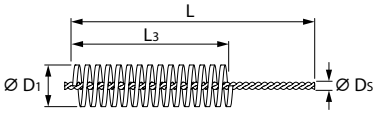
Tightening screw (galvanised) with hex socket. **With through coolant holes.**
Application: For clamping GARANT round and disc brushes. **Check the torque.**



for mandrel Ø	mm	16	22	27	32
53D 57 5096	Tightening screw **with internal cooling**	eShop	eShop	eShop	eShop
Thread M		M8	M10	M12	M16
Head Ø	mm	20	32	50	56
Head thickness K	mm	13	8.5	8.5	9.5
Width across flats	mm	6	6	8	8
recommended tightening torque	Nm	15	20	25	30

SiC

Interior brushes



Self-centring interior brush with flexible bristles carrying **silicon carbide spheres.** Overall length 200 mm.
Application: For **chamfering, finishing of surfaces** and **honing.** Generates **fine evenly ground surface** with high contact area. For use in power drills and fixed drills. Recommended speed 350 – 700 rpm, contact time 20 – 40 seconds.

Note: Do not use dry, use with cutting oil No. 084205.




57 4490

Type		5	6,5	7	8	9	10	11	12	14	16	18	20	22	24
57L 57 4490	Interior brush NOVOFLEX-B **SiC120 grit**	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
57L 57 4495	Interior brush NOVOFLEX-B **SiC180 grit**	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Brush Ø D_1	mm	5.5	7	8	9	10	11	12	13	15.5	18	20	22	25	27
Shank Ø D_s	mm	2.1	2.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.6	4.6	4.6	4.6	5.1
Working length L_3	mm	40	40	50	50	50	60	60	60	60	60	60	70	70	70
suitable for bore Ø	mm	4.1 – 5	6.1 – 6.5	6.1 – 7	7.1 – 8	8.1 – 9	9.1 – 10	10.1 – 11	11.1 – 12	12.1 – 14	14.1 – 16	16.1 – 18	18.1 – 20	20.1 – 22	22.1 – 24

Type		25	27	29	32	35	38	41	45	48	51	54	57	60
57L 57 4490	Interior brush NOVOFLEX-B **SiC120 grit**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
57L 57 4495	Interior brush NOVOFLEX-B **SiC180 grit**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Brush Ø D_1	mm	28	30	32	35	38	41	45	48	51	54	57	60	64
Shank Ø D_s	mm	5.1	5.1	5.1	5.7	5.7	5.7	5.7	5.7	6.5	6.5	6.5	7.3	7.3
Working length L_3	mm	70												
suitable for bore Ø	mm	23 – 25.4	25.1 – 27	27.1 – 29	29.1 – 32	32.1 – 35	35.1 – 38	38.1 – 41	41.1 – 45	45.1 – 48	48.1 – 51	51.1 – 54	54.1 – 57	57.1 – 60

LESSMANN® THE GERMAN BRUSH COMPANY Wire hand brushes

Curved wooden body with two holes for hanging. Length of brush section 140 mm, wire length 25 mm, overall length approx. 290 mm.


57 5000


57 5100


57 5200

Number of rows of bristles		2	3	4	5	6
57L 57 5000	Wire hand brush **Smooth steel wire 0.35 mm**	eShop	eShop	eShop	eShop	eShop
57L 57 5100	Wire hand brush **Waved brass wire 0.25 mm**	eShop	eShop	eShop	eShop	eShop
57L 57 5200	Wire hand brush **Stainless steel wire waved 0.35 mm**	eShop	eShop	eShop	eShop	–
Base body width	mm	22	30	35	40	45

Very robust hand brush similar to No. 575000, with 4 wire rows. Length of brush section 150 mm, wire length 32 mm, overall length approx. 310 mm.

57L 57 5400	Wire hand brush **Smooth steel wire 0.35 mm**	eShop ■


57 5400

Hand brush with **extra long** plastic handle. Length of brush section 77mm, wire length 10 mm, overall length 450 mm.

Number of rows of bristles		4
57L 57 5420	Wire hand brush, extra long **Waved brass wire 0.35 mm**	eShop
Base body width	mm	22


57 5420

Hand brush with 4 wire rows and **scraper.** Length of brush section 130 mm, wire length 25 mm, overall length approx. 290 mm.

Application: For removing heavy dirt.

57L 57 5450	Wire hand brush with scraper **Smooth steel wire 0.35 mm**	eShop


57 5450

Hand scratch brush with 3 wire rows in a Vee arrangement tapering to a point.

57 5560 – With plastic body, for use in areas with increased hygiene standards. Length of brush section 120 mm, wire length 35 mm, overall length approx. 290 mm.

57 5500/5550 – Curved wooden body with rounded edges and two holes for hanging. Length of brush section 135 mm, wire length 35 mm, overall length approx. 290 mm.

57L 57 5500	Wire rivet brush **Smooth steel wire 0.35 mm**	eShop
57L 57 5550	Wire rivet brush **Stainless steel wire smooth 0.35 mm**	eShop
57L 57 5560	Wire rivet brush with plastic handle **Stainless steel wire smooth 0.35 mm**	eShop


57 5500


57 5550


57 5560

Strong, thin wire brush. 2 bristle rows, wire length 22 mm. Ergonomically designed two-component handle with finger grip and hole for hanging.

Number of rows of bristles		2
57L 57 5600	Universal brake caliper brush **Waved steel wire 0.30 mm**	eShop
57L 57 5610	Universal brake caliper brush **Smooth steel wire 0.35 mm**	eShop
57L 57 5650	Universal hand brush **Stainless steel wire smooth 0.35 mm**	eShop
57L 57 5660	Universal hand brush **Waved brass wire 0.25 mm**	eShop



57 5600

NEW



57 5610



57 5650



57 5660

Hand brush, wire length 25 mm. Ergonomic **plastic body** with a hole for hanging; **foodstuffs approved,** overall length 285 mm.

Number of rows of bristles		3	5
57L 57 5720	Wire hand brush with plastic handle **Stainless steel wire waved 0.35 mm**	eShop	eShop

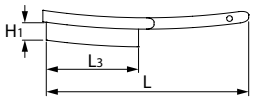

57 5720

LESSMANN® THE GERMAN BRUSH COMPANY File brushes, fine scratch brushes, spark plug brushes

File brushes

Bristles of steel wire.

Application: For cleaning serrated surfaces, such as files or the like.
Size 80×20 – Soft steel wire bristles, specially for **precision files.**




Densely packed bristles.


57 6000_80×20

Bristle length L_3× width L_1	mm	80×20	100×25	115×40
57L 57 6000	File brush	eShop ■	eShop ■	eShop ■
Overall length L	mm	210	210	260
Length of brush section H_1	mm	5	8	8


57 6000_115×40

Fine scratch brushes

Overall length approx. 225 mm, 4 rows, area carrying bristles 110×20 mm, bristle height 20 mm.

Size W – **Beechwood body**
Size P – **Plastic body,** for use in areas with high hygiene requirements.

Application: High density for fine removal of surface blemishes.
57 6605 – For cleaning and applying solvents and cleaning agents.


57 6605_W

Type		W	P
57L 57 6605	Fine scratch brush **Nylon, smooth 0.30 mm**	eShop	eShop
57L 57 6705	Fine scratch brush **Waved brass wire 0.15 mm**	eShop	eShop
57L 57 6805	Fine scratch brush **Stainless steel wire waved 0.15 mm**	eShop	eShop


57 6705_W


57 6805_P

Spark plug brushes

Beechwood body; length 150 mm, 3 rows, area carrying bristles 40×15 mm, bristle height 15 mm.


57 7010_W

Type		W
57L 57 7010	Spark plug brush **Nylon, smooth 0.30 mm**	eShop
57L 57 7020	Spark plug brush **Waved brass wire 0.15 mm**	eShop
57L 57 7030	Spark plug brush **Stainless steel wire waved 0.15 mm**	eShop


57 7020_W


57 7030_W

Hacksaw frame

Hacksaw frame

Hacksaw frame developed based on the **latest ergonomic findings** for non-fatiguing work with maximum cutting rates. **Extremely lightweight, high strength two-component frame** with **anti-slip inserts** for a secure grip. **Blade tension up to 1000 N(100 kP)** is easily achieved using the integral tensioning nut within the handle. Alternative **blade setting at 55°** for flush cutting. Overall length 395 mm.

Supplied with: Supplied with GARANT bi-metal hacksaw blade 1× No. 582500: progressive 18 – 32 tpi.

300 mm



58 0400

51S 58 0400	Garant	Hacksaw frame **with GARANT bimetal blade 18 – 32 TPI progressive**	eShop ■

Hacksaw frame Ergo 325

Unique BAHCO Ergo hacksaw frame with very high blade tension (more than 1000 N/100 kP). Ergonomic design for non-fatiguing working. Very simple **spring-supported blade fastening** for quick blade change and **automatic tensioning.** Alternative blade setting at 55° for flush cutting. Overall length 400 mm.

Supplied with: SANDFLEX® bimetal hacksaw blade No. 582900.



58 0600

58Z 58 0600	BAHCO	Ergo Profi hacksaw frame 325 **with bimetal blade 24 tpi**	eShop

Hacksaw frame 317

Sturdy hacksaw frame **with maximum 750 N (75 kP) blade tension** and comfortable hand grip. Alternative blade setting at 90° for flush cutting. Overall length 425 mm.

Supplied with: SANDFLEX® bimetal hacksaw blade No. 582900.



58 0700

58Z 58 0700	BAHCO	Hacksaw frame 317 **with bimetal blade 24 tpi**	eShop

Hacksaw frame

Sturdy hacksaw frame with die-cast aluminium components. **Very high blade tension** up to 1500 N is easily achieved using the tensioning nut incorporated in the handle. **Alternative blade setting at 40° for flush cutting.** Additional saw blades can be stored in the handle. Overall length 405 mm.

Supplied with: HOLEX bimetal hacksaw blade No. 582970.



58 0750

Blade length		mm	300
52S 58 0750	HOLEX	Hacksaw frame **with bimetal blade 24 teeth**	eShop

Hacksaw frame with all-steel back. Alternative blade setting at 90° for flush cutting. Plastic handle. Overall length 520 mm.

Supplied with: HOLEX bimetal hacksaw blade No. 582970.



58 0800

52S 58 0800	HOLEX	Hacksaw frame with handle **with bimetal blade 24 teeth**	eShop ■

Bahco Mini hacksaw

58 0900 – Sturdy saw blade holder made of injection moulded alloy with simple blade tensioning. Overall length 330 mm.

58 0910 – flexi PUK® saw blade holder made of sturdy injection moulded plastic. Use with or without guide brackets. Saw blade can be clamped in two different positions. Overall length 313 mm.

Application: For comfortable sawing including flush sawing with metal saw blades No. 582500 – 582970, in narrow, inaccessible places.

Supplied with:

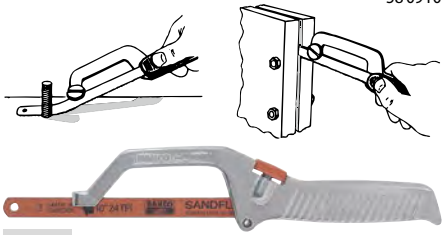
58 0900 – Supplied with SANDFLEX® bimetal hacksaw blade.

58 0910 – Supplied with PUK® bimetal hacksaw blade.



300 mm

58 0910



250 mm

58 0900

Type			300
58Z 58 0910	PUK®	Mini hacksaw for hacksaw blades – **with bimetal blade 24 teeth**	eShop
58Z 58 0900	BAHCO		eShop

300 mm

Hacksaw blades bimetal

High performance hacksaw blade for high cutting rates and long working life.
Made of bimetal = teeth of hardened HSS, back of spring steel with high flexibility. **Unbreakable – Safety at work!**



32 tpi *24 tpi* *Progressive tooth configuration!* 58 2500 *18 tpi*



58 2950

Dimensions: 300×13×0.65 mm.

58 2500 – Made of **bimetal** with **progressive cut 32 – 24 – 18 tpi.** Easy cutting start, no vibration in thin material (32 tpi), high metal removal rate due to coarse pitch(18 tpi), for **universal use** at good cost and with long tool life.

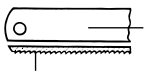
Note: Power saw blades, see No. 171000 / 171150.



With waved cut for teeth protection.

				TPI
51S 58 2500	Garant	Hacksaw blade, single-sided **bimetal, progressive**	eShop ■	10	32 – 24 – 18
51S 58 2950		Hacksaw blade, single-sided **bimetal**	eShop ■	10	24

Bi-metal:



Resilient blade body made of special steel.

Hardened HSS teeth strip (electron beam welded).



Application: For all materials, even high-tensile and stainless steels.

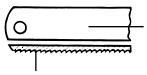
Note: Power saw blades, see No. 171100 / 171250.



With waved cut for teeth protection.

				TPI
58Z 58 2850	BAHCO	Hacksaw blade, single-sided **SANDFLEX®, bimetal**	eShop	1	18
58Z 58 2900			eShop ■	1	24
58Z 58 2920			eShop	1	32

Bi-metal:



Resilient blade body made of special steel.

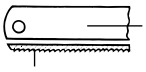
Hardened HSS teeth strip (electron beam welded).



Application: For all materials.

				TPI
52S 58 2970	HOLEX	Hacksaw blade, single-sided **bimetal**	eShop ■	10	24

Bi-metal:



Resilient blade body made of special steel.

Hardened HSS teeth strip (electron beam welded).

300 mm



58 2981

RÖNTGEN BiM hacksaw blade, double-sided

Double-sided hacksaw blade. Bimetal structure = teeth of hardened HSS.

Blade length	mm	300		TPI
58Z 58 2981	Hacksaw blade **double-sided, BiM**	eShop	10	24

300 mm



BAHCO Hacksaw blade for wood

Saw blade with groups of triangular teeth, for all types of wood. Dimension 300×18×1 mm.
Suitable for: Bow saw No. 580950.

58Z 58 2985	Hacksaw blade, single-sided **for wood**	eShop
Blade height	mm	18

Carbide 300 mm



BAHCO Carbide rod saw blade

Wire length 300 mm. Wire ∅ 2.5 mm.

58Z 58 2990	Carbide rod saw blade for tiles, bricks, cast iron etc.	eShop

Garant Mini bow saw with ergonomic handle

Compact bow saw with **ergonomic handle** for **non-fatiguing work** at inaccessible places.
The dynamic form ensures an **ideal distribution of forces** and promotes better control of the saw blade.
Stepless blade tensioning by a knurled nut.

58 1195 – Blade length 150 mm.
58 1196 – Blade length 200 mm.

Supplied with: **General-purpose saw blade** for metal, aluminium, wood and plastic.



58 1195

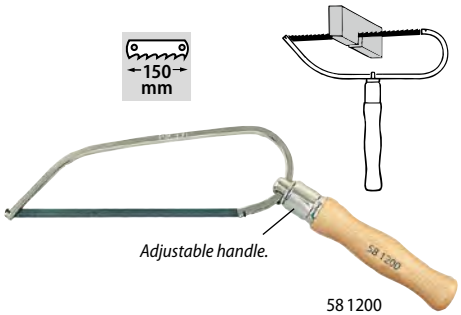

58 1196

			Overall length mm
582 58 1195	Mini bow saw **Ergonomic handle**	eShop	260
582 58 1196		eShop	310

Universal saws with adjustable or fixed handle

58 1200 – **With adjustable natural varnished wooden handle.** Can be clamped at any point on the frame. Frame solid nickel-plated steel square bar.
58 1220 – **With fixed red varnished wooden handle.** Frame bronze-plated steel round bar.
58 1230 – **With fixed ergonomic handle.** Strong frame for high blade tension.
58 1240 – **With fixed, ergonomic handle.** Frame black powder-coated steel round bar.
58 1200–1240 – Small and handy, good cutting performance.

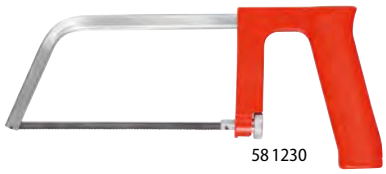
Supplied with:
58 1200–1240 – Including **general-purpose saw blade** for metal, aluminium, wood and plastic. Blade length 150 mm.



58 1200

			Overall length mm
582 58 1200	PUK® General purpose hacksaw "PUK" with general-purpose blade (310) **Adjustable handle**	eShop	310
582 58 1220	General-purpose hacksaw "PUK" with general-purpose blade (310) **Fixed handle**	eShop	290
582 58 1230	General-purpose hacksaw "Puk Vario" with general-purpose blade (310) **Ergonomic handle**	eShop	260
582 58 1240	General-purpose hacksaw "PUK" with general-purpose blade (310) **Ergonomic handle**	eShop	240


58 1220


58 1230


58 1240

			Blade thickness mm	Blade length mm
582 58 1250	PUK® "PUK" saw blade pack, 12 pieces metal (312) **32 TPI**	eShop	0.4	150
582 58 1260	"PUK" saw blade pack, 12 pieces wood (313) **14 TPI**	eShop	0.4	150
582 58 1270	"PUK" saw blade pack, 12 pieces universal (310) **25 TPI**	eShop	0.4	150
582 58 1280	"PUK" saw blade pack, 12 pieces universal (210) **25 TPI**	eShop	0.4	200


58 1270

Universal hacksaw

300 mm

Oval frame made of strong steel tube, with knuckle protection.
Including wood rip cut saw blade and bimetal blade. Has a place in every toolbox.

Application: Universal for sawing wood, metal (see No. 582500 – 582970) and when using the carbide rod saw No. 582990 also tiles, bricks, cast iron etc. Overall length only 300 mm.

Note: Spare saw blades for wood, see No. 582985.


58 0950

582 58 0950	BAHCO SANDFLEX® mini-hacksaw **with 2 saw blades (wood / metal)**	eShop	

BAHCO Mitre box

Mitre box of laminated wood with reinforced walls.
Application: For left- or right-handed sawing at 45°, 90° and 135° angles.

58 1670	Mitre box		eShop
Length		mm	300
Width		mm	104
Height		mm	50


58 1670

Metal fret saw frame with steel tube frame

Sturdy varnished frame made of 13 mm steel tube. Depth of cut 320 mm.
Clamps with wing nuts; varnished wooden handle.

58 1300	Fret saw frame (without saw blade)	eShop


58 1300

Hardened, extra high-strength type; length 130 mm.
Application: For saw cutting metal, wood, and plastic.
Supplied with: Plastic case with 4 of each fret saw blades for wood, cuts 1, 3, 5, 7, 9; 2 fret saw blades for metal, medium cut.

58 1320	Fret saw blade assortment, 22 pieces **for wood / metal in a case**	eShop


58 1320

BAHCO Handsaws

Handsaws Superior

Handsaw with **Ergo®-grip** for optimum force transfer.
The **Superior** saw blades have an additional coating to reduce friction.
The reinforced blade with the unique **NXT tooth profile** (3-stage ground and hardened) and the patented tooth pattern enable an **increase in cutting power of at least 30 % more** than comparable saws.
Application: For dry, hard wood.

Blade length		mm	400	475
58 1500	Superior handsaw		eShop	eShop
TPI			11	9
Blade length		mm	400	475


58 1500

			TPI	Blade length mm
58 1520	Superior tenon saw	eShop	11	350


58 1520

Handsaws / insulation saws / general purpose saws

ProfCut handsaws with handy **2-component handle.**
58 1505 – **GT- toothing** (hardened, 3×ground), for dry, hard wood.
58 1550 – Fine **FT- toothing** (hardened) for plastics, wood and soft metals.

Blade length		mm	375	475	550
58 1505	ProfCut handsaw		eShop	eShop	eShop
TPI			11	9	7
Blade length		mm	375	475	550


58 1505

58 1550	ProfCut universal saw		eShop
TPI			15
Blade length		mm	375


58 1550

Wood compass saw

Saw blade of wood made of high quality original BAHCO Swedish steel with rip cut teeth, precision ground and set – **permanently sharp, hardened tips**. Handy ergonomic 2-component handle.

			TPI	Blade length mm
58 1570	Wood compass saw ProfCut	eShop	7	300

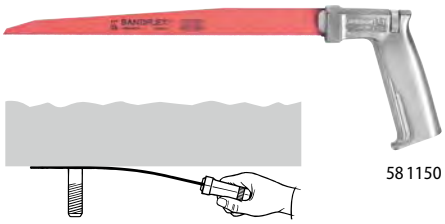

58 1570

BAHCO Compass saw, fine saw

58 1150 – Strong, handy light metal handle. Saw blade can be set to different angles. Overall length 355 mm.

58 1180 – Saw blade for wood and plastic, teeth set and hardened.

58 1160/1170 – Bimetal saw blade for metal, teeth made of HSS, hardened and back made of flexible steel.



58 1150

Flexible bi-metal blade for flush sawing.



58 1160



58 1180

			TPI
58 1150	Compass saw **with bimetal saw blade**	eShop	24
58 1160	SANDFLEX® saw blade for metal **bimetal, 24 TPI**	eShop	
58 1170	SANDFLEX® saw blade for metal **bimetal, 18 TPI**	eShop	
58 1180	SANDFLEX® saw blade for wood and plastic **HCS, 7 TPI**	eShop	

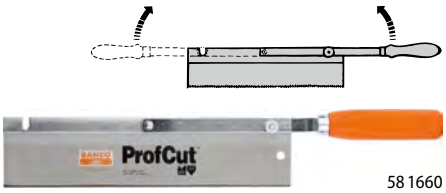
Fine saws for wood and plastic

250 mm

Saw blade for wood and plastic of high-quality special steel with bright reinforced back. Fine teeth, **hardened tips, set and sharpened, 35 mm depth of cut.**

58 1650 – With **fixed,** varnished handle offset to the right.

58 1660 – With **reversible,** offset and varnished handle.



58 1660

Suitable for flush cutting.

			TPI	Blade length mm
58 1650	Dovetail saw, offset **with fixed handle**	eShop	15	250
58 1660	Dovetail saw, offset **with fold-away handle.**	eShop	15	250

BAHCO Folding saw (Laplander)

Permanent **anti-friction coating** reduces friction (lower applied force) and increases protection against rust. Special tooth geometry for fast cutting of **green and dry timber.** Teeth precision ground, set and hardened.

58 1580 – Blade folds away with single-hand safety catch. Ergonomic 2-component handle of resilient easy-grip rubber.



Fold away saw blade for safe transport.

58 1580





58 1585

58 1580	Wood saw **Laplander – Superior –**	eShop	
58 1585	Replacement blade Laplander – Superior –	eShop	
Length when blade folded away (58 1580)	mm		230
Length when blade opened out (58 1580)	mm		405

BAHCO Pull-stroke saw (Japanese saw) with teeth on both sides

With cross-cut teeth on both sides, blade thickness only 0.5 mm.

Application: For fine (17 TPI) and medium-coarse cuts (progressive 6 – 8.5 TPI), flush cuts in all woods.



58 1750

			TPI	Blade length mm
58 1750	Pull-stroke saw, cross ground rigid handle **with teeth on both sides**	eShop	6 – 8.5 / 17	240

Pull-stroke saws (Japanese saws)

GERMAN DESIGN AWARD SPECIAL 2019

Cross-cut saw with **precise positioning of the trapezoidal teeth** and a blade thickness of 0.9 mm.
Tough thin layer coating for low friction and low tendency of sawdust to stick to it.
Impulse-hardened teeth strip with **teeth exactly set** for long maintenance of sharpness and a straight cut.

58 1730 – Compact pull-stroke saw with ergonomic **2-component handle of die-cast aluminium** and hole for hanging up. **Precise detent in 3 steps** for safe working with high clamping force.

Application: Ideally suited for **cutting across the grain.**
Quick and straight cutting with **minimum deployment of force.**



58 1730



Blade length			mm	250	TPI	Blade length mm
58Z 58 1730	Garant	Pull-stroke saw, cross ground		eShop	9	250
58Z 58 1735		Spare saw blade		eShop	9	250

Pull-stroke saw, cross ground, 0.9 mm thick, black coating for easy cutting, avoids sticking.

58 1711 – Type **"Aluminist"**, high quality pull-stroke saw **with folding aluminium handle.**



58 1711



Blade length			mm	240	TPI	Blade length mm
58F 58 1711	TAJIMA	Pull-stroke saw, cross ground **Aluminist**		eShop	9	240
58F 58 1716		Spare saw blade Aluminist		eShop	9	240

Pull-stroke saw, blade thickness 0.7 mm, cross ground with fluorine coating for easy sawing, avoiding resin adhesions.

58 1700 – A new development of the **"Magnum 300" Japanese saw**, with enclosed 2-component handle of die-cast aluminium and an elastomer inlay.



300 mm

58 1700

					TPI	Blade length mm
58F 58 1700	TAJIMA	Pull-stroke saw, cross ground **Magnum 300**		eShop	13	300
58F 58 1705		Spare saw blade Magnum 300		eShop	13	300

Cross ground for clean cuts and high cutting rates. Blade thickness 0.6 mm.

58 1726/1727 – Fluorine coating for easy sawing, avoiding resin adhesions.

Application: For quick narrow cuts in dry wood, plastic, melamine, plasterboard, etc.



58 1720



58 1726

Blade length			mm	265	TPI	Blade length mm
58F 58 1720	TAJIMA	Pull-stroke saw, cross ground		eShop	16	265
58F 58 1725		Spare saw blade		eShop	16	265
58F 58 1726		Pull-stroke saw, cross ground		eShop	16	265
58F 58 1727		Spare saw blade, coated		eShop	16	265

Bow saws (Swedish saws)

Bow made of oval, varnished steel tube with clamping lever. Saw blade made of original Swedish steel.
With hardened tooth tips. Precision ground and exactly set.
Rip-toothed (HZ) 4 teeth before the raker – always sharp.
For all types of wood, particularly green wood.



58 1800_760



Rip-toothed

Blade length		mm	530	760
58Z 58 1800	Bow saw with saw blade **Rip-toothed**		eShop	eShop
58Z 58 1810	Spare saw blade **Rip-toothed**		eShop	eShop
Blade height		mm	18	

Carbide

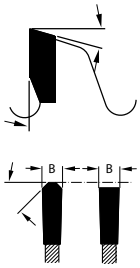
Garant Precision portable and bench circular saw blades, carbide-tipped

Tipped with carbide inserts, precision version with high-strength blade, noise damped. Generously dimensioned carbide teeth allow multiple re-grinding.

Recommended cutting speed:	
Material	**in m/s**
INOX	28 – 31
Steel	28 – 31

Type INOX

Application: **Universal saw blade** for machining **stainless steel** with crosscut and mitre saws. Problem-free cutting off of pipes, sheet metal, profiles and solid material. Suitable for both steel and non-ferrous materials. Not suitable for cast iron. Low-burr, quick cutting without cooling.





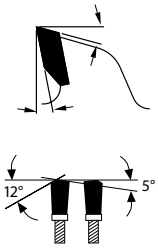
58 4004

Blade ∅ D	51S 58 4004	Bore ∅	Number of teeth	Width of cut B
	Circular saw blade, trapezoidal flat teeth			
mm	**INOX**	mm		mm
305	eShop	25.4	72	2.2
355	eShop	25.4	84	2.4

Type steel

With significantly longer tool life.

Application: For cutting **stainless steel** with tenon saws and mitre saws. Problem-free cutting of mild steel profiles, pipes and plates. Low-burr, quick cutting without cooling.





58 4006

Blade ∅ D	51S 58 4006	Bore ∅	Number of teeth	Width of cut B
	Circular saw blade, double alternating flat teeth with chamfer			
mm	**Steel**	mm		mm
305	eShop	25.4	60	2.2
355	eShop	25.4	72	2.4

BOSCH Portable circular saw blades, carbide-tipped

Circular saw blades for portable circular saws.
Size 165BW – Top Precision Best range for wood.
Size 85; 165SW – Standard range for wood.

Application: For machining wood.



_165BW



_165SW

Blade ∅ D	mm	85	165SW	165BW
54B 58 3950	Circular saw blade, wood, alternating teeth	eShop	eShop	eShop
Bore ∅	mm	15	20	20
Number of teeth		20	12	48
Width of cut B	mm	1.1	1.7	1.8



Garant

Precision portable and bench circular saw blades, carbide-tipped

Carbide

Tipped with carbide inserts, precision version with high-strength blade, noise damped.
Generously dimensioned carbide teeth allow multiple re-grinding.

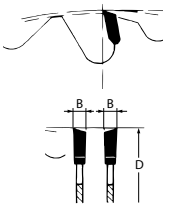
Application: For circular, cross-cut, compound, and mitre saws.

Note: **Further circular saw blades can be found in Group 17.**

Recommended cutting speeds:	
Material	**in m/s**
Softwood	60 – 100
Hardwood, laminated sheets	50 – 80
Plastic, soft	90
Plastic, hard	30 – 60
Building boards (cement-bonded)	10 – 40

Application: Type LWZ for longitudinal and cross cuts in all **natural woods and wooden sheet materials.**

Blade ∅ D	58 4015	Bore ∅	Drive holes number/∅/pitch circle	Number of teeth	Width of cut B
	Circular saw blade, wood, alternating teeth				
mm	**coarse**	mm	mm		mm
250	eShop	30	2/7/42 and 2/9/46 and 2/10/60	24	3.2
300	eShop	30	2/7/42 and 2/9/46 and 2/10/60	28	3.2
315	eShop	30	2/7/42 and 2/9/46 and 2/10/60	28	3.2
350	eShop	30	2/7/42 and 2/9/46 and 2/10/60	32	3.5
400	eShop	30	2/7/42 and 2/9/46 and 2/10/60	36	3.5



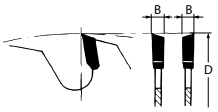


58 4015

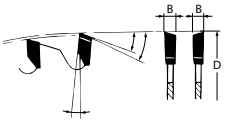
Size 216 – With negative rake.

Application: Type UW for **board materials, veneered or plastic coated on one side,** veneer packs longitudinally, hard paper and hard fabric.

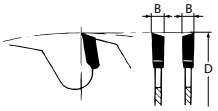
Blade ∅ D	58 4035	Bore ∅	Drive holes number/∅/pitch circle	Number of teeth	Width of cut B
	Circular saw blade, wood, alternating teeth				
mm	**medium**	mm	mm		mm
165	eShop	20	–	24	2
216	eShop	30	2/7/42	48	2.8
250	eShop	30	2/7/42 and 2/9/46 and 2/10/60	40	3.2
300	eShop	30	2/7/42 and 2/9/46 and 2/10/60	48	3.2
315	eShop	30	2/7/42 and 2/9/46 and 2/10/60	48	3.2
400	eShop	30	2/7/42 and 2/9/46 and 2/10/60	60	3.5



58 4035



58 4035_216 / 58 4055_216
With negative rake.





58 4055

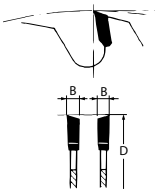
Size 216 – With negative rake.

Application: Type KW for **board materials with facing veneer and plastic covered on both sides as well as surface treated materials** with the highest cut quality requirements.

Blade ∅ D	58 4055	Bore ∅	Drive holes number/∅/pitch circle	Number of teeth	Width of cut B
	Circular saw blade, wood, alternating teeth				
mm	**fine**	mm	mm		mm
216	eShop	30	2/7/42	60	2.8
250	eShop	30	2/7/42 and 2/9/46 and 2/10/60	60	3.2
300	eShop	30	2/7/42 and 2/9/46 and 2/10/60	72	3.2
350	eShop	30	2/7/42 and 2/9/46 and 2/10/60	84	3.5

Application: **Universal** circular saw blade with long tool life and low noise, **unaffected by nails.** For **all wood types** and difficult materials in the building trade, including aluminium sections

Blade ∅ D	58 4075	Bore ∅	Drive holes number/∅/pitch circle	Number of teeth	Width of cut B
	Circular saw blade, wood, alternating teeth				
mm	**universal**	mm	mm		mm
160	eShop	30	–	24	2.8
190	eShop	30	2/7/42	30	2.8
210	eShop	30	–	34	2.8
230	eShop	30	2/7/42 and 2/10/154	34	2.8
250	eShop	30	2/7/42 and 2/9/46 and 2/10/60	42	3
300	eShop	30	2/7/42 and 2/9/46 and 2/10/60	48	3.2
350	eShop	30	2/7/42 and 2/9/46 and 2/10/60	54	3.2



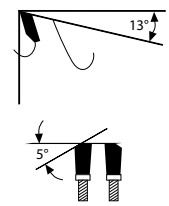


58 4075

Size 136; 160 – **With mounting hole ∅ 20 mm.**

Application: **Universal** circular saw blade for cutting **a wide range of materials** such as **steel flats and angle sections**, aluminium and other non-ferrous metals.
Flat teeth with bevel up to ∅ 250 mm; alternating set with bevel from ∅ 300 mm.

Blade ∅ D	58 4095	Bore ∅	Drive holes number/∅/pitch circle	Number of teeth	Width of cut B
	Circular saw blade, metal, alternating teeth with bevel				
mm	**universal**	mm	mm		mm
136	eShop	20	–	30	1.6
160	eShop	20	2/6/32	42	2
190	eShop	30	2/7/42	48	2.2
216	eShop	30	2/7/42	54	2.2
230	eShop	30	–	54	2.2
250	eShop	30	2/10/60 and 2/11/63 and 2/12/64 and 2/7/42	54	2.2
300	eShop	30	2/10/60 and 2/11/63 and 2/12/64 and 2/7/42	60	2.4
350	eShop	30	2/10/60 and 2/11/63 and 2/12/64 and 2/7/42	80	2.4





58 4095

BOSCH Precision portable and bench circular saw blade, carbide-tipped

Precision saw blade with high-strength, **noise and vibration suppressing blade body.** The tensioning ring incorporated ensure stability of the shape in all temperature ranges. The **coating** prevents adhesions, keeps the saw blade cool and protects it against corrosion. **Precision-ground carbide teeth** ensure a long working life and best quality of cut.

Note:	Further circular saw blades can be found in Group 17.

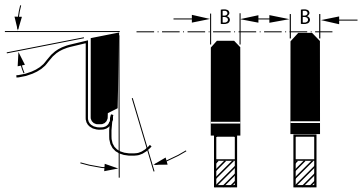
Recommended cutting speeds:	
Material	**in m/s**
Steel	25 – 30
Aluminium	100
Multi-material	100

Type steel

Application: For **machining steel.** Special anchoring of the carbide teeth in the base blade prevents teeth breaking off. Tooth form: Trapezoidal flat teeth (with chamfer), neutral rake angle.

Size 136–210 – For hand-held dry-cutting hacksaws.

Size 305; 355 – For tenon saws and mitre saws.





58 3910

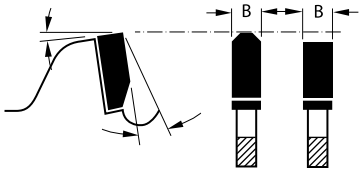
Blade ∅ D	54B	58 3910 Circular saw blade expert for Steel	Bore ∅	Number of teeth	Width of cut B
mm			mm		mm
NEW 136		eShop	20	30	1.5
160		eShop	20	30	2
210		eShop	30	48	2
305		eShop	25.4	60	2.6
355		eShop	25.4	80	2.6

Type aluminium

Application: Precise cutting in **aluminium** and other non-ferrous metals. Tooth form: Trapezoidal flat teeth with negative rake angle for easy and safe working with manual infeed.

Size 136; 165; 190 – For plunge-cut and portable circular saws.

Size 216–305 – For tenon saws and mitre saws, panel saws.



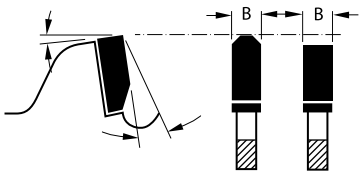


58 3920

Blade ∅ D	54B	58 3920 Circular saw blade expert for Aluminium	Bore ∅	Drive holes number/∅/pitch circle	Number of teeth	Width of cut B
mm			mm	mm		mm
NEW 136		eShop	20	–	48	1.6
165		eShop	20	2/6/32.5	52	2.6
190		eShop	30	2/7/42	56	2.6
216		eShop	30	2/7/42 and 2/9.5/46.5 and 2/9/46 and 2/10/60	64	2.6
254		eShop	30	2/7/42 and 2/9.5/46.5 and 2/9/46 and 2/10/60	80	2.8
305		eShop	30	2/7/42 and 2/9.5/46.5 and 2/9/46 and 2/10/60	96	2.8

Type MultiMaterial

Application: For cutting **various materials** such as laminated boards, epoxy, wood and non-ferrous metals.
Tooth form: Trapezoidal flat teeth, negative rake angle.
For bench circular saws, tenon saws and mitre saws, panel saws.





58 3930

Blade ∅ D	54B	58 3930 Circular saw blade expert for multi-material	Bore ∅	Number of teeth	Width of cut B
mm			mm		mm
216		eShop	30	64	2.4
254		eShop	30	80	2.4
305		eShop	30	96	2.4

Pictograms

Suitability									
Optimised for material	Steel	S/STL	ALU	Cast iron	Metal sand-wich	Wood Metal	Wood	CRP/ GRP	
	General metal applications	Stainless steel	Aluminium	Cast iron	Composite elements, metal and plastic	Wood with metal inclusions	Softwood, hardwood, chipboard	Fibre-reinforced plastics	
	PMMA	PVC PA PS	PP PE	Abrasive	Mineral	Insu-lation	Dry con-struction		
	Polymethylmethac-rylate	Poly vinyl chloride, polyamide, polystyrene	Polypropylene, polyethylene	Cast-iron pipes, stoneware, GRP	Mineral materials such as Corian®, Varicor®	Fibrous insulation, polystyrene	Porous concrete, fibrous cement, plasterboard		
Material thickness	0.5-1.5	2.5-6	<50	<65	<150	<100	3-65	5-50	
	Solid sheet metal thickness in mm	Sheet metal thickness (solid / perforated sheet) in mm	Size of the profile (closed) in mm	Size of the profile (open/closed) in mm	Size (metal sandwich) in mm	Board thickness (wood with metal) in mm	Board thickness (softwood) in mm	Board thickness (hardwood) in mm	
	3-30	<100	<190	2-20	<150	<100			
	Board thickness (wood outer layer) in mm	Board thickness (studded wall materials) in mm	Size (green wood) in mm	Board thickness (plastics) in mm	Size (insulation) in mm	Size (cast-iron pipe) in mm			
Type of cutting									90°
	Straight cutting (fine)	Straight cutting (fast)	Curved cutting (fine)	Curved cutting (fast)	Smooth cut (upwards)	Smooth cut (both directions)	Plunge cutting	Flush cutting	Precise angular cutting

Jigsaw blades for metal.

Jigsaw blades **for metal.** For mounting on a single-cam shank.

58 8400 Size T118AHM – **Carbide teeth strip** for very long service life on stainless steel.

Size T118AF – **Bi-metal saw blade** with long service life, especially when used on perforated plate.

Size T118A–T118AF – **Progressive tooth profile** combines easy start to the cut (no jagging on thin material) and high rate of metal removal.



_T118A



_T118A

Designation	58 8400 Garant	58 8410 Garant	58 8415 HOLEX	Saw blade material	Tooth pitch	Blade length	Number of blades					
	Jigsaw blades set						58 8400 58 8415					
		25 pieces	5 pieces		mm	mm						
T118A	eShop	eShop	eShop	HSS	1.1 – 1.5	92	5	Steel	1-3			_T118A
T118B	eShop	eShop	eShop	HSS	1.9 – 2.3	92	5	Steel	2.5-6			_T118B
T118AF	eShop	eShop	eShop	BiM	1.1 – 1.5	92	5	Steel	1-3			_T118AF
T318A	eShop	eShop	eShop	HSS	1.2	132	5	Steel	1-3	<65		_T318A
T318B	eShop	–	eShop	HSS	2.0	132	5	Steel	2.5-6	<65		_T318B
T118AHM	eShop	–	–	Carbide	1.1	83	3	S/STL	1.5-3			_T118AHM
T127D	eShop	eShop	eShop	HSS	3.0	100	5	ALU	3-15	<30		_T127D

Wood

Jigsaw blades for wood

Jigsaw blades with ground sharp teeth for **precise sawing in wood.** For mounting on a single-cam shank.
58 8420 Size T101BR – **Reverse tooth profile** permits smooth sawing on the upper face.
Size T101AO – **Narrow pointed-tooth saw blade** Ideal for cutting contours on boards laminated on both sides.
Size T144D; T244D – **Progressive toothing** combines easy start to the cut and rapid progress through the material.



_T144D



_T101B

Designation	58 8420 Garant Jigsaw blades set 5 pieces	58 8425 Garant Jigsaw blades set 25 pieces	58 8430 HOLEX Jigsaw blades set 5 pieces	Saw blade material	Tooth pitch mm	Blade length mm					
T101B	eShop	eShop	eShop	HCS	2.7	100	Wood	3-30			_T101B
T101BR	eShop	–	–	HCS	2.5	100	Wood	3-30			_T101BR
T101AO	eShop	–	–	HCS	1.4	83	Wood	1.5-15			_T101AO
T144D	eShop	eShop	eShop	HCS	4 – 5.2	100	Wood	5-50			_T144D
T244D	eShop	–	–	HCS	4 – 5.2	100	Wood	5-50			_T244D

58

BOSCH Jigsaw blades for metal.

Jigsaw blades **for metal.** For mounting on a single-cam shank.
Size T123X – **Progressive tooth profile** combines easy start to the cut (no jagging on thin material) and high rate of metal removal.
Size T118EHM-E – **Carbide teeth strip** for very long service life on stainless steel.
Size T1018AFP – **Extra long saw blade** for precisely angled deep cuts in wood/metal composite materials
Size T321BF; T121GFC; T121AFC; T121BFC; T321AF – **Speed for metal** – longer service life and higher cutting speed in metal thanks to the saw blade thickness relieved towards the rear and optimised tooth geometry (alternating rigid and aggressive teeth).



_T121GFC

Designation	58 8500 Jigsaw blades set	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades					
T321BF	eShop	BiM	2.0	132	5	Steel	2.5-6	<65		_T321BF
T121GFC	eShop	BiM	0.8	92	5	Steel	0.5-1.5			_t121GFC
T121AFC	eShop	BiM	1.2	92	5	Steel	1-3			_T121AFC
T118EOF	eShop	BiM	1.5	83	5	Steel	1.5-4			_T118EOF
T121BFC	eShop	BiM	2.0	92	5	Steel	2.5-6			_T121BFC
T321AF	eShop	BiM	1.2	132	5	Steel	1-3	<65		_T321AF
T123X	eShop	HSS	1.2–2.6	100	5	Steel	1.5-10	<30		_T123X
T118EHM-E	eShop	Carbide	1.4	83	3	S/STL	2-5			_T118EHM-E
T1018AFP	eShop	BiM	1.1	250	3	Metal sandwich	<150		90°	_T1018AFP

BOSCH Jigsaw blades for wood

Jigsaw blades **for wood.** For mounting on a single-cam shank.
Size T144DHM-E – **Carbide-tipped teeth,** very long working life and quick rate of cutting. Suitable for all materials other than steel.
Size T308BFP-E; T101BF – **Bi-metal saw blades** with long service lives, specially for abrasive wood-based materials (hardwoods, coated panels).
Size T345XF; T367XHM – General purpose blade, suitable even for **wood with metal inclusions**.
Size T234X; T345XF – **Progressive tooth profile** combines easy start to the cut and rapid progress through the material.



_T345XF

Designation	54B 58 8520 Jigsaw blades set	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades	
T345XF	eShop	BiM	2.4-5.0	132	5	Wood Metal <65
T234X	eShop	HCS	2.0 – 3.0	117	5	Wood 3-65
T308BP-E	eShop	HCS	2.2	117	5	Wood 5-50 90°
T1044DP	eShop	HCS	4.0	250	3	Wood 5-150 90°
T308BFP-E	eShop	BiM	2.2	117	5	Wood 5-50 90°
T101BF	eShop	BiM	2.7	100	5	Wood 3-30
T144DHM-E	eShop	Carbide	3.5–5.0 16	100	3	Wood 5-50
T367XHM	eShop	Carbide	3.5–5.0	132	3	Wood Metal <65



_T345XF



_T234X



_T308BP-E



_T1044DP



_T308BFP-E



_T101BF



_T144DHM-E



_T367XHM

BOSCH Jigsaw blades for plastics and insulation

Jigsaw blades with optimised tooth geometry for clean cutting **in plastic.** For mounting on a single-cam shank.
Size T102D – For polypropylene **(PP)** and polyethylene **(PE),** no melting and welding back together.
Size T102H – For poly vinyl chloride (**PVC),** polyamide **(PA)** and polystyrene **(PS),** no formation of strip-type chips.
Size T102BF – For poly methyl methacrylate **(PMMA),** clean cut edges and reduced risk of material breakage.
Size T108BHM-E – Carbide teeth strip for very long tool life in hard and abrasive materials such as fibre-reinforced plastics **(CRP, GRP).**
Size T301CHM-E – Carbide teeth strip for very long tool life in mineral materials **(Corian®, Varicor®).**
Size T1013AWP – Wave profile for soft materials such as **insulation,** cardboard, leather, rubber.



_T102D

Designation	54B 58 8525 Jigsaw blades set	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades	
T102D	eShop	HCS	4.0	100	5	PP PE 5-30
T102H	eShop	HCS	2.3	100	5	PVC PA PS 3-30
T102BF	eShop	BiM	1.8	92	5	PMMA 2-20
T108BHM-E	eShop	Carbide	2.2	92	3	CRP/ GRP 2-20
T301CHM-E	eShop	Carbide	3.3	117	3	Mineral 5-65
T1013AWP	eShop	HCS	–	250	3	Insu-lation <150 90°



_T102D



_T102H



_T102BF



_T108BHM



_T301CHM



_T1013AWP

BOSCH Jigsaw blade sets for wood and metal

Pack of most commonly used jigsaw blade types for the respective applications, in a handy reclosable and refillable plastic box. One box to cover practically all applications. For mounting on a single-cam shank.

58 8552 – In a sturdy tough box.

Application:

Size WM – For wood and metal.

58 8551 Size M – For metal.



58 8551_WM



58 8551_M



58 8552_WM

Type		WM	M
54B 58 8551	Jigsaw blades assortment, **10 pieces, general use**	eShop	eShop
54B 58 8552	Jigsaw blades assortment, tough box **40 pieces, general use**	eShop	–
Suitable for materials		Wood / metal	Metal
Content: (58 8551)		2 pcs. each size T119BO; T119B; T111C 1 pc. each size T218A; T118G; T118A; T118B	2 pcs. each size T218A; T118G 3 pcs. each size T118A; T118B
(58 8552)		10 pcs. each size T244D 10 pcs. each size 144D 10 pcs. each size 101B 10 pcs. each size 121AF	–

Sabre saw blades for metal

Sabre saw blades **for metal.**

58 8600 Size 922EHM – **Carbide teeth strip** for very long service life on stainless steel.

Size 1155CHM – **Carbide-tipped teeth,** for carrier blade with very high resilience combined with flexibility.

Note:
58 8600 Size 922EHM; 1155CHM – Reduce the stroke rate, work without blade swing, use coolant.



_922EF



_922EF

Designation	51S 58 8600 Garant	52S 58 8605 HOLEX	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades					
	Sabre saw blades set										
922EF	eShop	eShop	BiM	1.4	150	5	Steel	1.5-4	<100		
1122EF	eShop	eShop	BiM	1.4	225	5	Steel	1.5-4	<175		
922BF	eShop	eShop	BiM	1.8	150	5	Steel	3-8	<100		
1122BF	eShop	eShop	BiM	1.8	225	5	Steel	3-8	<175		
922EHM	eShop	–	Carbide	1.4	150	1	S/STL	2-4	<100		
1155CHM	eShop	–	Carbide	3	225	1	S/STL	4-12	<175		90°

Sabre saw blades for wood

Size 922VF; 1222VF – **Bi-metal** saw blades with Vario tooth pitch for sawing **wood.**

Size 956XHM; 1256XHM – **Carbide-tipped teeth,** very long service life in **wood with metal inclusions** (such as hardened nails). Reduce the stroke rate, work without blade swing.



_922VF



_922VF

Designation	51S 58 8610 Garant	52S 58 8615 HOLEX	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades					
	Sabre saw blades set										
922VF	eShop	eShop	BiM	1.8 + 2.6	150	5	Wood Metal	<100			
1222VF	eShop	eShop	BiM	1.8 + 2.6	300	5	Wood Metal	<250			
956XHM	eShop	–	Carbide	3.2 – 4.3	150	1	Wood Metal	<100			
1256XHM	eShop	–	Carbide	3.2 – 4.3	300	1	Wood Metal	<250			

BOSCH Sabre saw blades for metal

Sabre saw blades **for metal.**
Size 1157CHM-E – **Carbide-tipped teeth,** for carrier blade with very high resilience combined with flexibility.
Size 937HBF–1237HBF – Durable cutting of thick-walled metal pipes and profiles.
Size 930CF– 1157CHM-E – Powerful rough cut. Ideal for rescue work and demolition work.
Size 937BEF; 555CHC-E – **High saw blade** permits precise cutting angle.
Size 955CHC-E; 1155CHC-E; 1255CHC-E; 555CHC-E – Precise straight cuts with maximum tool life in thick steel profiles or cast pipes. Ideal for demolition work.
Size 522EHM-E; 1022EHM-E – **Carbide teeth strip** for very long service life on stainless steel.

Note:
Size 555CHC-E–1157CHM-E – Carbide saw blades: Reduce the stroke rate, work without blade swing, use coolant.

Designation	54B 58 8700 Sabre saw blades set	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades						
123XF	eShop	BiM	1.8 – 3.2	150	5	Steel	1-8	<100			_123XF
1125VF	eShop	BiM	1.8 + 2.6	225	5	Steel	2-10	<175			_1125VF
937HBF	eShop	BiM	1.8 + 2.1 + 2.5	150	5	Steel	4-12	<100			NEW _937HBF
1137HBF	eShop	BiM	1.8 + 2.1 + 2.5	225	5	Steel	4-12	<175			NEW _1137HBF
1237HBF	eShop	BiM	1.8 + 2.1 + 2.5	300	5	Steel	4-12	<250			NEW _1237HBF
930CF	eShop	BiM	2.5 + 3.2	150	5	Steel	4-12	<100			_930CF
1130CF	eShop	BiM	2.5 + 3.2	225	5	Steel	4-12	<175			_1130CF
937BEF	eShop	BiM	1.4 + 1.8	150	5	Steel	3-8	<100		90°	NEW _937BEF
555CHC-E	eShop	Carbide	3	100	1	Steel	4-12	<50		90°	_555CHC-E
955CHC-E	eShop	Carbide	3	150	1	Steel	4-12	<100			_955CHC-E
1155CHC-E	eShop	Carbide	3	225	1	Steel	4-12	<175			_1155CHC-E
1255CHC-E	eShop	Carbide	3	300	1	Steel	4-12	<250			_1255CHC-E
522EHM-E	eShop	Carbide	1.4	115	1	S/STL	2-4	<50			_522EHM-E
1022EHM-E	eShop	Carbide	1.4	200	1	S/STL	2-4	<150			_1022EHM-E
1157CHM-E	eShop	Carbide	3	225	1	S/STL	4-12	<175			_1157CHM-E

BOSCH Sabre saw blades for wood

Sabre saw blades **for wood.**
Size 956DHM-E; 1156XHM-E – **Carbide-tipped teeth,** very long service life in wood with metal inclusions (such as hardened nails). Reduce the stroke rate, work without blade swing.



Designation	54B 58 8710 Sabre saw blades set	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades		
956DHM-E	eShop	Carbide	4.3	150	1	Wood Metal	<100
1156XHM-E	eShop	Carbide	3.2 – 4.3	225	1	Wood Metal	<175
1411DF	eShop	BiM	4.3	300	5	Wood Metal	<250
644D	eShop	HCS	4.3	150	5	Wood	5-100
2345X	eShop	HCS	2.5 – 4.3	200	5	Wood	5-150
1531L	eShop	HCS	5.0	240	5	Wood	<190



_956DHM-E



_1156XHM-E



_1411DF



_644D



_2345X



_1531L

58

BOSCH Sabre saw blades for working on studded walls and fibrous insulation

Size 641HM-E – **Carbide-tipped teeth** for porous concrete, brick (red), fibrous cement and abrasive materials.
Size 1213AWP – **Wave profile** for cutting soft materials such as insulation, cardboard, leather, rubber etc.

Designation	54B 58 8715 Sabre saw blades set	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades		
641HM-E	eShop	Carbide	4.3	150	1	Dry construction	<100
1213AWP	eShop	HCS	–	300	2	Insulation	<250





_641HM-E



_1213AWP

BOSCH Sabre saw blades sets for wood and metal

Pack of most commonly used types of sabre saw blades for the respective applications, in a handy reclosable and refillable tough box™. One box to cover practically all applications.
Application: For wood and metal.


58 8725

NEW


58 8728

Type		WM
54B 58 8725	Sabre saw blades set **Top seller, 20 pieces**	eShop
54B 58 8728	Sabre saw blades set **Demolition, 16 pieces**	eShop
Suitable for materials		Wood / metal
Content: (58 8725)		5 each size 922EF; 922BF; 644D; 922HF
(58 8728)		4 each size 925VF; 1125VF; 610VF; 1210VF

LENOX Sabre saw blades

High resistance due to subsequent compaction of the surface at the cutting edge.

Designation	SBZ 58 8735 Sabre saw blades set	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades						
824R	eShop	BiM	1.06	200	5	Steel	1.5-4	<150			
818R	eShop	BiM	1.4	200	5	Steel	1.5-4	<150			
614R	eShop	BiM	1.8	150	5	Steel	3-8	<100			
650R	eShop	BiM	1.8 + 2.5	150	2	Steel	4-12	<100			
6118R	eShop	BiM	1.4	150	5	S/STL	1.5-4	<100		90°	
6114R	eShop	BiM	1.8	150	5	S/STL	3-8	<100		90°	
12114R	eShop	BiM	1.8	300	5	S/STL	3-8	<175		90°	
810R	eShop	BiM	2.5	200	5	S/STL	4-12	<150			
960R	eShop	BiM	2.5	225	5	Wood Metal		<175			





_824R



_818R



_614R



_650R



_6118R



_6114R



_12114R



_810R



_960R

S/STL	Cast iron	4-12		

LENOX Carbide sabre saw blades

Carbide-tipped Lazer CT™ sabre saw blades guarantee high-performance cutting and long working life.

Application: For cutting stainless steel and cast iron.

Designation	SBZ 58 8745 Sabre saw blades	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades	
6108RCT	eShop	Carbide	3.1	152	1	<150
9108RCT	eShop	Carbide	3.1	229	1	<175



_6108RCT



_9108RCT

LENOX Sabre saw blades set

Pack of most commonly used types of sabre saw blades for the respective applications, in a handy reclosable and refillable plastic box. One box to cover practically all applications.

Application: For metal.

Content: 5 pcs. bi-metal sabre saw blade size 818R
3 pcs. bi-metal sabre saw blade size 618R
3 pcs. bi-metal sabre saw blade size 614R
2 pcs. bi-metal sabre saw blade size 960R

Type		M
SBZ 58 8750	Sabre saw blades set **13 pieces**	eShop
Suitable for materials		Metal

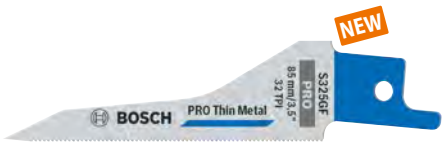


Steel	S/STL	0.5-1.5

BOSCH Sabre saw blade THIN METAL

The PRO Thin Metal S325GF sabre saw blade has been specially developed for cutting very thin metal sheets, such as when working on heating and air conditioning systems. It is equally suitable for cutting non-ferrous metals such as copper sheet and is the ideal choice for heating, ventilation and air conditioning installations.

Application: For working on very thin metal sheets.



58 8755



Designation	54B 58 8755 Sabre saw blades set	Saw blade material	Tooth pitch mm	Blade length mm	Number of blades
S325GF	eShop	HSS	0.8	85	5

BOSCH Hole saw SHEET METAL

This hole saw combines the best features in a compact design: It is durable, accurate and optimised for high-quality work on sheet metal.

Advantage:
- Long tool life when cutting holes in stainless steel.
- Outstanding service life thanks to Bosch Carbide Technology.
- Ground and sharpened fine carbide teeth for strength and precision.

Application: For working on very thin metal sheets.

Note: Power Change Plus quick-clamping adapter and matching centre drill are required. You can find these in our eShop under the following item numbers: Power Change Plus quick-clamping adapter: No. 589795 size 14-152 and No. 589796 size 14-152 Centre drill with ejection spring: No. 589805 size HSS-CO.



58 8760



Diameter mm	54B 58 8760 Carbide hole saw **Power Change Plus**	recommended speed steel min^{-1}	recommended speed INOX min^{-1}
20	eShop	800	600
22	eShop	720	550
25	eShop	640	480
30	eShop	530	400
32	eShop	500	380
40	eShop	400	300
51	eShop	315	235
68	eShop	230	170

BOSCH Bi-metal hole sets Power Change Plus

Bi-metal hole saw set with Power Change Plus system in popular diameters.
With hexagonal drive shank and HSS centre drill; in a plastic case.

Note: Power Change Plus quick-clamping adapter and matching centre drill are required. You can find these in our eShop under the following item numbers: Power Change Plus quick-clamping adapter: No. 589795 size 14-152 and No. 589796 size 14-152 Centre drill with ejection spring: No. 589805 size HSS-CO.



58 9820

Type		19-83	20-76
54B 58 9820	Bi-metal hole saw set **Power Change Plus**	eShop	eShop
Hole saw ∅ mm		19; 25; 38; 44; 68; 83	20; 22; 25; 32; 35; 40; 44; 51; 60; 68; 76
Number of pieces		9	14
Number of mounting shafts		1	
Number of centre drills		2	

LENOX Carbide hole saw set

Carbide-tipped teeth in popular hole saw diameters.

Application: For cutting wood, steel, stainless steel, cast iron and abrasive materials.

Supplied with: Impact-resistant plastic box with solid carbide hole saws, drive shanks and centre drills.



58 9065

Type		19-76
58Z 58 9065	Hole saw set **Carbide**	eShop
Hole saw ∅ mm		19;22;25;29;32;35;38;44;51;65;76
Number of pieces		15
Number of mounting shafts		2
Number of centre drills		2

Hole saws bi-metal

Robust unbreakable construction with variable toothing on flexible special steel body (bimetal). The reinforced stiff base is equipped with thread and drive pin holes (from ∅ 32 mm) for secure mounting on the arbor. The high quality of the HSS teeth, the teeth geometry and the tight manufacturing tolerances guarantee the best cutting performance and tool life.

58 9010 – ■ **Precision ground teeth** – very quick sawing and clean cut edges.

58 9030 – ■ **Variable tooth pitch 4.5 / 5.5 tpi with reinforced teeth (Tough Teeth).**
- ■ Maximum depth of cut for all sizes **40 mm.**
- ■ **Optimised coating** reduces heat development.
- ■ **SPEED SLOT®** – Quick removal of the drill plug by stepped recesses.

58 9010/9050 – ■ **Vario toothing 4/6 tpi for low vibration.**
- ■ Maximum depth of cut for all sizes **38 mm.**

Application: On pillar drills, lathes or hand-held power drills at the appropriate speed. For cutting circular holes from thin-walled to thick-walled material with a flat or convex workpiece surface. Suitable for all materials such as steel, **stainless steel,** brass, copper, cast iron, light metal, wood, plasterboard and plastic panels etc. Use of lubricant will give increased tool life (metals).

58 9030 – Also highly suitable for thin sheet metal bodywork.

Recommendation: The use of cutting oil such as No. 084205 size 0.25 extends the service life and permits more rapid progress through the material.

Note: **Arbors and hole saws are compatible with all commercially available bi-metal hole saws apart from Bosch SDS.**
For drill heads for stone see No. 788000.
For carbide circle cutters for steel see No. 118400, 118500, 119000.



The accessory system:



Hexagon



58 9430
Centre drill

58 9310_30

58 9310_210S



Hole saw, bi-metal size 14 – 30 mm



Hole saw, bi-metal size 32 – 152 mm



58 9010



58 9030



58 9050

Diameter	51S 58 9010 Garant	58Z 58 9030 LENOX	52S 58 9050 HOLEX	recommended speed steel	recommended speed INOX	recommended speed aluminium
	Hole saw, bi-metal					
mm				min^{-1}	min^{-1}	min^{-1}
14	eShop	eShop	–	580	300	900
16	eShop	eShop	–	550	275	825
17	eShop	eShop	–	500	250	750
19	eShop	eShop	eShop	460	230	690
20	eShop	eShop	–	445	220	660
21	eShop	eShop	–	425	210	630
22	eShop	eShop	eShop	390	195	585
24	eShop	eShop	–	370	185	555
25	eShop	eShop	eShop	350	175	525
27	eShop	eShop	–	325	180	480
29	eShop	eShop	–	300	150	450
30	eShop	eShop	eShop	285	145	425
32	eShop	eShop	eShop	275	140	410
33	eShop	eShop	–	260	135	390
35	eShop	eShop	eShop	250	125	375
37	eShop	eShop	–	240	120	360
38	eShop	eShop	eShop	230	115	345
40	eShop	eShop	–	220	110	330
41	eShop	eShop	–	210	105	315
43	eShop	eShop	–	205	100	305
44	eShop	eShop	eShop	195	95	295
46	eShop	eShop	–	190	95	285
48	eShop	eShop	–	180	90	270
51	eShop	eShop	eShop	170	85	255
52	eShop	eShop	–	165	80	245
54	eShop	eShop	–	160	80	240

Diameter	51S 58 9010 Garant	58Z 58 9030 LENOX	52S 58 9050 HOLEX	recommended speed steel	recommended speed INOX	recommended speed aluminium
	Hole saw, bi-metal					
mm				min^{-1}	min^{-1}	min^{-1}
57	eShop	eShop	eShop	150	75	225
60	eShop	eShop	eShop	140	70	220
64	eShop	eShop	eShop	130	65	205
65	eShop	eShop	–	130	65	200
67	eShop	eShop	eShop	130	65	195
68	eShop	eShop	eShop	130	65	190
70	eShop	eShop	–	125	60	185
73	eShop	eShop	–	120	60	180
76	eShop	eShop	eShop	115	55	170
79	eShop	eShop	–	110	55	165
83	eShop	eShop	eShop	105	52	155
86	eShop	eShop	–	100	50	150
89	eShop	eShop	–	95	45	145
92	eShop	eShop	–	95	45	140
95	eShop	eShop	–	90	45	135
102	eShop	eShop	–	85	40	120
105	eShop	eShop	–	80	40	120
108	eShop	eShop	–	80	40	120
111	eShop	eShop	–	75	35	105
114	eShop	eShop	–	75	35	105
121	eShop	eShop	–	70	35	105
127	eShop	eShop	–	65	30	90
140	eShop	eShop	–	60	30	85
152	eShop	eShop	–	60	30	85
168	–	eShop	–	60	30	85
210	–	eShop	–	60	30	85

Hole saw accessories and sets

Hole saw mounting shanks

58 9310 – Standard mounting shank with high clamping force.
58 9313 – Quick-change mounting shank for tool-free change of hole saw and centre drill (pull, turn, snap in).

Supplied with: HSS centre drill.

Note: For clamping on stationary machines with mountings other than hexagonal, select drill chuck No. 342220 size 16/16 and the matching plug-in shank.
For instance, for an MT2 arbor, use plug-in shank No. 342500 size 2/16.


58 9310_30


58 9310_210S


58 9310_210L


58 9313_210S

Type		30	210S	210L
52S 58 9310	HOLEX Shank	eShop	eShop	eShop
58Z 58 9313	LENOX Quick-change mounting shank	eShop	eShop	–
Shank form		Hexagon		
Width across flats shank (58 9310)	mm	11	11	15.4
Width across flats shank (58 9313)	mm	9.5	12.7	–
suitable for hole saw ∅	mm	14 – 30	32 – 210	32 – 210

Quick-change mounting shank assortment for quick change of hole saws without the use of tools. Compatible with all common hole saws. Individual adapters can be reused after the hole saw wears out.

Supplied with: HSS centre drill.

Content: 1 pc. drive shank, 2 pcs. adapter for hole saw ∅ 14 – 30 mm, 3 pcs. adapter for hole saw ∅ 32 – 210 mm.


58 9321

Type		14-210
51S 58 9321	Garant Quick-change mounting shank assortment	eShop
Shank form		hexagon
Width across flats shank	mm	11
suitable for hole saw ∅	mm	14 – 210

Centre drill

58 9430 – **HSS** centre drill for general-purpose use.
58 9432 – **Carbide** centre drill for abrasive materials.

Suitable for: Mounting shank No. 589310.


58 9430


58 9432

Type		6KT	∅ mm	Length mm
58Z 58 9430	Centre drill HSS	eShop	6.35	81
58Z 58 9432	Centre drill carbide-tipped	eShop	6.35	79

Bi-metal hole saw sets

Bi-metal hole saw set with popular hole saw diameters. HSS Vario toothing for smooth cutting and long service life.
58 9710 – With precision rigid foam inlay for secure retention and easy removal of the hole saws. Stackable modular bar.

Supplied with: Impact-resistant plastic box with bi-metal hole saws, mounting shanks and centre drills.


58 9710_19–68


58 9750_19–76


58 9710_16–76


58 9710_19–121


58 9730_19_121

Type		22-68	19-68	19-76	16-76	19-121
51S 58 9710	Garant	–	eShop	–	eShop	eShop
58Z 58 9730	LENOX Hole saw set	–	eShop	–	–	eShop
52S 58 9750	HOLEX	eShop	–	eShop	–	–
Hole saw ∅	mm	22; 30; 35; 44; 51; 68	19; 22; 29; 38; 44; 68	19; 22; 25; 32; 35; 38; 44; 51; 57; 64; 76	16; 19; 22; 25; 29; 32; 35; 38; 44; 51; 68; 76	19; 22; 25; 29; 35; 38; 44; 51; 57; 68; 76; 83; 92; 95; 105; 121
Number of pieces		10	12	15	19	23
Number of mounting shafts				2		
Number of centre drills		2	4	2	5	5

Pictograms

Grinding process		Surface grinding, reciprocating surface grinding		External cylindrical grinding		Bench grinding		
		Internal cylindrical grinding		Profile grinding, tool grinding		Cutting		
Types of abrasive material	**A**	Corundum, aluminium oxide (Al_2O_3)	**SiC**	Silicon carbide	**D**	Diamond	**CBN**	Cubic boron nitride
Grinding wheel form	**Form 1**	Straight form	**Form 5**	Straight form, recessed on one side	**Form 7**	Straight form, recessed on both sides	**Form 6**	Cup form, straight
	Form 41N	Straight form, thin	**Form 1A1R**	Straight form, outer coating	**Form 12A2D**	Dish form	**Form 11V9**	Cup form, tapered

TYROLIT Ceramic bonded surface grinding wheels

High performance surface grinding wheels with high-porosity bonding system for reduced thermal loading and minimal dressing diamond wear.

- **Universally applicable** for reciprocating grinding processes, which significantly reduces the frequency of wheel changes **in daily operation.**
- For use on all commercially available grinding machines for tool and die making and machine tool building, e.g. Jung, ABA, Blohm, Elb, Mägerle, Ziersch & Baltrusch, Geibel & Hotz, Jones & Shipman.
- **Cooling with emulsion is necessary,** ensure good lubrication, especially on long-chipping materials.

Note: Profile surface grinding wheels available on request.

59

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
59 0150–59 0696	○	●	●	●				○		○	○					○	●	
59 1106–59 1666		○	○	●	○	○		○	○	○						○	●	
59 1705–59 1735		○	○	●	●	○		●	○								●	
59 1810	●						○		●	●	●			○			●	

Surface grinding wheels for unalloyed and low alloy unhardened steels

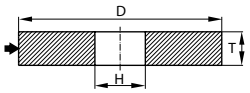
A

Specially treated Aluminium Oxide for grinding **unalloyed and low alloy unhardened steels.**

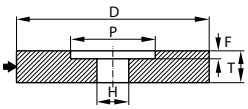
59 0420/0670 – Form 7 with recesses on both sides.
59 0560/0640 – Form 5 with recess on one side.

Application: For rough grinding (roughing).
Specification: F13A46HH11PV

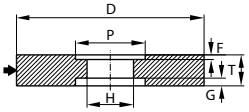
Form 1



Form 5



Form 7



Material	Working speed $v_s = v_c$ (m/s) recommended	maximum	Infeed a_e (mm)		Lateral pass (cutting width in %)	Feed rate v_f (mm/min)
unalloyed/low-alloy unhardened steels	25 – 30	35	Coarse grinding (roughing) fine grinding (finishing)	0.1 – 0.05 0.002 – 0.004	30 – 40 %	10 000 – 20 000
			Spark erosion (without infeed)	1 – 3 passes		
			Depending on the grinding process and type of machine		In relation to the wheel width	Depending on the grinding length and overrun

				Shape	P mm	F mm	G mm
53Y 59 0150	Strato precision surface grinding wheel D×T×H (mm)	200×20×51	eShop	1	–	–	–
53Y 59 0250		225×25×51	eShop	1	–	–	–
53Y 59 0350		250×25×51	eShop	1	–	–	–
53Y 59 0420		300×50×76.2	eShop	7	155	10	10
53Y 59 0520		350×40×127	eShop	1	–	–	–
53Y 59 0540		350×50×127	eShop	1	–	–	–
53Y 59 0560		350×50×127	eShop	5	200	10	–
53Y 59 0620		400×50×127	eShop	1	–	–	–
53Y 59 0640		400×50×127	eShop	5	200	10	–
53Y 59 0670		400×80×127	eShop	7	190	15	15



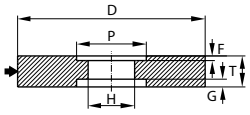
Form 7

Surface grinding wheels with **100 mm wheel thickness** for cost-effective machining of large workpieces.
Form 7 with recesses on both sides.
Specification: SD33A46JJ8PVO3F



59 0692

Form 7





Type			A46	Shape	P mm	F mm	G mm
53Y 59 0692	Precision surface grinding wheel D×T×H (mm)	400×100×127	eShop	7	190	40	10

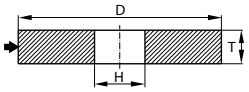
Material	Working speed $v_s = v_c$ (m/s) recommended	maximum	Infeed a_e (mm)		Lateral pass (cutting width in %)	Feed rate v_f (mm/min)
high alloy steels, hardened steels	20 – 25	35	Coarse grinding (roughing) fine grinding (finishing)	0.002 – 0.02 0.001 – 0.002	30 – 40 %	10 000 – 20 000
			Spark erosion (without infeed)	1 – 3 passes		
stainless, high chromium content steels	25 – 30	35	Coarse grinding (roughing) fine grinding (finishing)	0.005 – 0.02 0.001 – 0.003	30 – 40 %	10 000 – 20 000
			Spark erosion	1 – 3 passes		
Aluminium, non-ferrous metals, castings	25 – 30	35	Coarse grinding (roughing) fine grinding (finishing)	0.005 – 0.1 0.001 – 0.003	30 – 40 %	10 000 – 20 000
			Spark erosion	1 – 3 passes		
			Depending on the grinding process and type of machine		In relation to the wheel width	Depending on the grinding length and overrun

Surface grinding wheels for high alloy and hardened steels

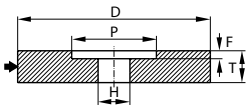
A

Special Aluminium Oxide for grinding **high-alloy hardened steels, case-hardened and tool steels, Stellite and chilled cast iron.** Especially for hard materials, because of better penetration into the material, the specification of 80 grit achieves optimum results.
59 1426/1666 – Form 7 with recesses on both sides.
59 1546/1646 – Form 5 with recess on one side.
Specification: SD78A80II8PVB3F

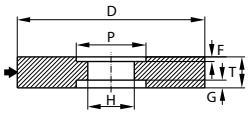
Form 1



Form 5



Form 7



				Shape	P mm	F mm	G mm
53Y 59 1106	Precision surface grinding wheel D×T×H (mm)	200×20×51	eShop	1	–	–	–
53Y 59 1206		225×20×51	eShop	1	–	–	–
53Y 59 1256		225×25×51	eShop	1	–	–	–
53Y 59 1306		250×25×51	eShop	1	–	–	–
53Y 59 1356		250×25×76.2	eShop	1	–	–	–
53Y 59 1426		300×50×76.2	eShop	7	155	10	10
53Y 59 1446		300×50×127	eShop	1	–	–	–
53Y 59 1506		350×40×127	eShop	1	–	–	–
53Y 59 1526		350×50×127	eShop	1	–	–	–
53Y 59 1546		350×50×127	eShop	5	200	10	–
53Y 59 1606		400×40×127	eShop	1	–	–	–
53Y 59 1626		400×50×127	eShop	1	–	–	–
53Y 59 1646		400×50×127	eShop	5	200	10	–
53Y 59 1666		400×80×127	eShop	7	190	15	15


59 1106

Surface grinding wheels for high-alloy hardened steels, HSS and stainless steel

CER

High-performance line with sintered carborundum for **longer working life, freer cutting** and cooler grinding. Particularly suitable for high-alloy hardened steels, stainless steel and high-speed steels with a hardness of 60 HRC. The next higher quality step is offered by the VIB-STAR CBN super-abrasive CBN grinding wheels.

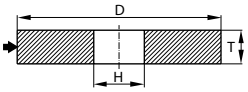
59 1725 – Form 7 with recesses on both sides.

Specification: SD83A60II7PVK8F

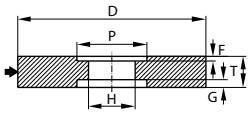
Note:	Suitable also for external cylindrical grinding.



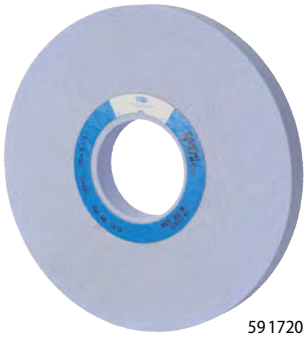
Form 1



Form 7



Type			A60	A80	Shape	P mm	F mm	G mm
53Y 59 1705	Precision surface grinding wheel D×T×H (mm)	200×20×51	eShop	–	1	–	–	–
53Y 59 1710		225×25×51	eShop	–	1	–	–	–
53Y 59 1720		250×25×76.2	eShop	–	1	–	–	–
53Y 59 1725		300×50×76.2	eShop	–	7	155	10	10
53Y 59 1730		350×40×127	eShop	–	1	–	–	–
53Y 59 1735		400×50×127	eShop	eShop	1	–	–	–



59 1720

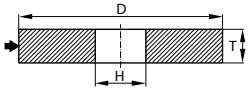
Surface grinding wheels for NF metals, titanium, carbide, cast iron

SiC

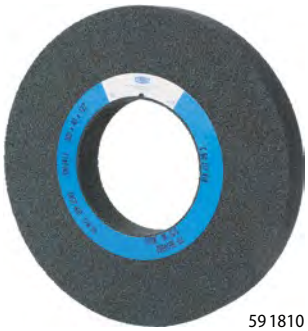
Form 1

Open-pored **silicon carbide** grinding wheel with **low tendency to clog.**
Suitable for grinding aluminium, NF metals, titanium, carbide and cast iron.

Specification: **C60J11V18.**



Type			C60	Shape
53Y 59 1810	Precision surface grinding wheel D×T×H (mm)	300×40×127	eShop	1



59 1810

TYROLIT Expanded precision grinding media range

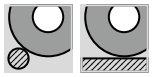


Other sizes and shapes can be found in the extended Tyrolit range.

- Reciprocating surface grinding
- Profile surface grinding
- External cylindrical grinding
- Internal cylindrical grinding
- Bench grinder
- Saw sharpening
- Tool grinding



For special enquiries, you can download the "Data Sheet for Grinding Wheel Recommendation" from "Consulting and support" on our website.



Form 1A1

TYROLIT Synthetic resin-bonded surface and external cylindrical grinding wheels with CBN or diamond

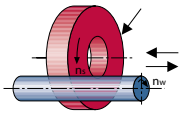
Surface grinding and external cylindrical grinding wheels, **highly developed,** with **super-abrasives** (CBN or diamond) in synthetic resin bonding. The high-strength, **vibration-optimised VIB STAR grinding wheel base body** permits a **high damping** for a smooth, even grinding process with high surface quality.

- **Extreme performance improvement (G-factor)** compared to conventional grinding media.
- **The vibration-damping design of the carrier body significantly increases the working life.**
- **Continuous self-sharpening effect due to even power consumption and avoidance of cyclical sharpening operations.**

Application:

- **General use for all materials from a hardness of about 58 HRC (limit of economic use).**
- **For surface grinding and external cylindrical grinding (straight longitudinal grinding, recess grinding).**
- Can be used on all commercially available grinding machines for tool and die making and machine tool building, e.g. Jung, ABA, Blohm, Elb, Mägerle, Ziersch & Hotz, Jones & Shipman.
- Cooling with emulsion or grinding oil is necessary.
- Superabrasive CBN / diamond grinding wheels are always used **with less than half the wheel width** compared to that for conventional grinding wheels.

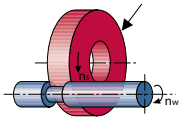
Note: Before initial grinding, these grinding wheels can be dressed on a soft steel block at an infeed of approx. 0.02 mm. Alternatively with a dressing tool No. 599600. Sharpen grinding wheels (opening up the bonding) using sharpening stone No. 599840.



Longitudinal grinding process



External cylindrical grinding process



Recess grinding process



Surface grinding process

Material	Working speed $v_s = v_c$ (m/s)		Workpiece dimensions (mm)	Workpiece rotational speed (rpm)	Infeed a_e (mm)				Lateral pass (longitudinal grinding, surface grinding) %	Feed rate (surface grinding) v_f (mm/min)
	recommended	maximum permissible				Recess grinding a_e (mm/min)	Longitudinal grinding a_e (mm/min)	Surface grinding a_e (mm/min)		
High-alloy, hardened steels, hardened HSS	25 – 30	63	Ø < 25	150 – 300	Initial pass Intermed. pass Finishing pass Spark erosion	1.5 0.5 0.1 5 turns	0.015 0.005 – 0.01 0.002 – 0.005 1 – 2 passes	0.01 – 0.05 0.002 – 0.005 1 – 3 passes	30 – 40 %	10.000 – 20.000
			25 < Ø < 50	80 – 150						
Carbide	15 – 20	63	Ø < 25	150 – 300	Initial pass Intermed. pass Finishing pass Spark erosion	1 0.3 0.1 5 turns	0.01 – 0.015 0.003 – 0.005 0.002 – 0.005 1 – 3 passes	0.005 – 0.02 0.002 – 0.005 1 – 3 passes	30 – 40 %	10.000 – 20.000
			25 < Ø < 50	80 – 150						

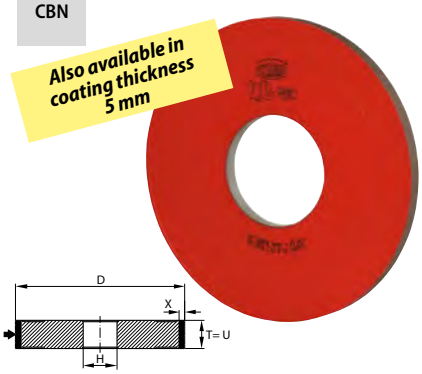
	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
59 2010–59 2035		○	○	●	●	●		○		○							●	
59 2040–59 2065							●		○			○					●	

CBN surface and external cylindrical grinding wheels for workpieces containing iron

CBN grit for high performance grinding of **long-chipping ferrous materials** such as hardened high-alloy chrome steels and HSS tool steels (including powder metallurgy grades) and nickel-based alloys.

Specification: **B126C50B-VIB-STAR HSS**

CBN



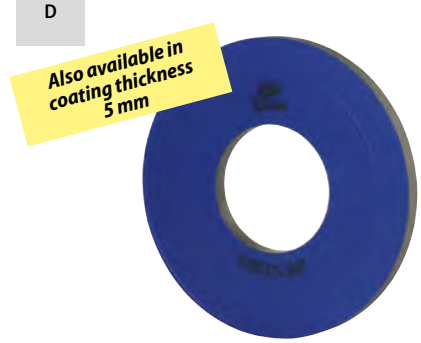
Coating thickness X		mm	3	Shape	U mm	X mm
53Y 59 2010	VIB STAR precision grinding wheel CBN D×T×H (mm) **B126**	200×15×51	eShop	1A1	15	3
53Y 59 2015		225×15×51	eShop	1A1	15	3
53Y 59 2020		300×20×76.2	eShop	1A1	20	3
53Y 59 2025		300×20×127	eShop	1A1	20	3
53Y 59 2030		350×20×127	eShop	1A1	20	3
53Y 59 2035		400×20×127	eShop	1A1	20	3

Diamond surface and external cylindrical grinding wheels for workpieces with zero iron content

Diamond coating for high performance grinding of **short chipping non-ferrous materials** such as carbide, ceramic materials (PCS), hard coatings.

Specification: **D126C75B-VIB-STAR W-Carbide.**

D



Coating thickness X		mm	3	Shape	U mm	X mm
53Y 59 2040	VIB STAR precision grinding wheel DIAMANT D×T×H (mm) **D126**	200×10×51	eShop	1A1	10	3
53Y 59 2045		225×15×51	eShop	1A1	15	3
53Y 59 2050		300×20×76.2	eShop	1A1	20	3
53Y 59 2055		300×20×127	eShop	1A1	20	3
53Y 59 2060		350×20×127	eShop	1A1	20	3
53Y 59 2065		400×20×127	eShop	1A1	20	3



A | Form 1

Ceramic bonded external cylindrical grinding wheels

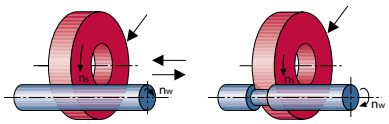
High performance external cylindrical grinding wheels in ceramic bonding. The grinding wheel structure incorporates the optimum match of grit volume and bonding volume; bonding strength and manufacturing process are characterised by:

- **High cutting effectiveness and reduced grinding times with low wear.**
- **Low thermal loading, cool cutting.**
- **Long cycles between dressing operations mean reduced downtime.**

59 4225–4565 – Aluminium oxide for **general purpose** use.
59 4588–4595 – Sintered aluminium oxide for longer working life and better metal removal rate. Particularly suitable for **high alloy steels / HSS.**

Application:
- **For general use in external cylindrical grinding (straight/ oblique longitudinal grinding, recess grinding).**
- For use on all grinding machines generally used for tool and die making, and machine tool building (e.g. Kellenberger, Studer, Schaudt, Tschudin, etc.)
- Cooling with emulsion is necessary, good lubrication on long-chipping materials i s absolutely necessary.





Longitudinal grinding process | *59 4125*

Specification:
59 4225–4565 – **89A 802J5 AV217**
59 4588–4595 – SD83A80II7PVK8F

Note: Suitable also for surface grinding.

59

Material	Working speed $v_s = v_c$ (m/s) recommended	maximum	Workpiece dimensions (mm)	Workpiece speed (rpm)	Infeed a_e (mm)	Recess grinding a_e (mm/min)	Longitudinal grinding a_e (mm/pass)	Lateral pass (longitudinal grinding)
low-alloy and high-alloy steels, hardened	25 – 40	50	Ø 50	120	Initial pass Intermed. pass Finishing pass Spark erosion	2.5 1 0.1 5 turns	0.02 – 0.05 0.01 – 0.005 0.002 1 – 2 passes	30 – 40 %
			Ø 100	60				

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
59 4225–59 4565		●	●	●	●			○		○						●	●	
59 4588–59 4595				●	●	●		○									●	

Type			A80	Shape
53Y 59 4225	Precision external cylindrical grinding wheel D×T×H (mm)	350×32×127	eShop	1
53Y 59 4345		400×40×127	eShop	1
53Y 59 4565		500×60×203.2	eShop	1

Type			A80	Shape
53Y 59 4588	Precision external cylindrical grinding wheel D×T×H (mm)	400×30×127	eShop	1
53Y 59 4590		400×40×127	eShop	1
53Y 59 4592		400×60×127	eShop	1
53Y 59 4593		500×40×203.2	eShop	1
53Y 59 4594		500×50×203.2	eShop	1
53Y 59 4595		500×60×203.2	eShop	1



59 4225 – 59 4565 | 59 4588 – 59 4595



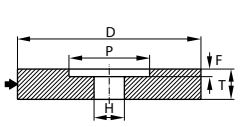
A | Form 5

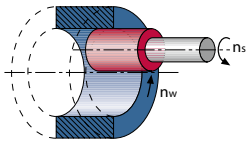
Ceramic bonded internal cylindrical grinding wheels

High performance special electro-bonded Aluminium Oxide internal cylindrical grinding wheels in ceramic bonding.

Application: General use for internal cylindrical grinding, e.g. for grinding through holes, dowel holes.

Specification: **97A802I5V112 Steel universal.**





Material	Working speed $v_s = v_c$ (m/s) recommended	maximum	Workpiece dimensions (mm)	Workpiece speed (rpm)	Oscillation (internal longitudinal grinding) (passes/min)	Infeed a_e (mm)	
low-alloy and high-alloy steels, hardened	50 – 80	80	Ø 25	300	60 – 100 %	Initial pass Intermed. pass Finishing pass Spark erosion	0.02 – 0.05 0.01 – 0.005 0.001 – 0.002 5 passes
			Ø 50	150			

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
59 5023–59 5051		○	○	●	○			○									●	

					Shape	P mm	F mm
53Y 59 5023	Precision internal cylindrical grinding wheel D×T×H (mm)	20×20×6	eShop	25	5	13	7
53Y 59 5024		25×25×10	eShop	10	5	16	10
53Y 59 5034		32×32×10	eShop	10	5	18	16
53Y 59 5043		40×40×13	eShop	10	5	20	20
53Y 59 5051		50×40×16	eShop	10	5	30	13



A | SiC | Form 1 | Form 5

TYROLIT Bench grinding wheels and dressing wheels



Size NK36; NK60; EK60; EK80; SC46; SC80 – **High-quality long-lasting bench grinder wheels** in ceramic bonding. Very low radial and axial run-out, maximum cutting speed 40 m/s. For **general use** on double-ended bench grinding machines for deburring, sharpening and resharpening tools.

Size C800 – **Resiliently bonded honing wheels**, very soft. Maximum working speed 25 m/s.

59 6610 – Shape 5 with single-sided recess 125×20 mm.

Application:

Size EK60; EK80 – For hardened steels and HSS.

Size SC46 – For aluminium and non-ferrous metals.

Size C800 – For sharpening of cutting, polishing, effect grinding and fine deburring work. The clamping flange diameter area must be at least 2/3 of the wheel diameter.

Size SC80 – For sharpening solid carbide and carbide-tipped tools as well as cast iron and tungsten components.

Size NK36; NK60 – For construction steels and low-alloy steels and also grey cast iron.

Supplied with: Reducing ring set for the indicated bores.

Specification:

Size EK60; EK80 – White **electro-bonded aluminium oxide**, hardness grade M

Size SC46 – **Silicon carbide,** green, hardness grade H.

Size C800 – **PU-bonded silicon carbide.**

Size SC80 – Green **silicon carbide**, hardness grade J.

Size NK36; NK60 – **Standard aluminium oxide** grey-blue, hardness grade M.

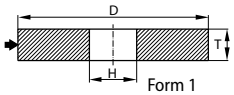
Note: For compact deburring wheels see No. 568725 ff.

Form 5

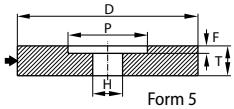




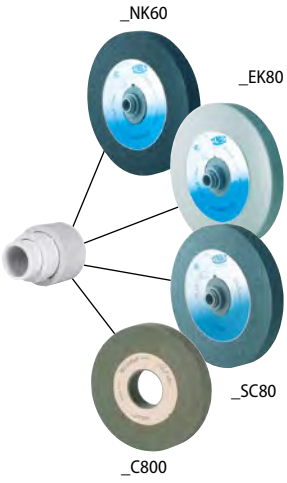
_NK60 _EK60 _SC80 _C800



Form 1



Form 5



	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
C800	○	●	●	●	●	●	●	●	●	○	○	○						●
EK60/EK80	○	○	●	●	●	●		●	○	○	○					●		●
SC46	●										●							●
SC80	○			○	○	○	●	●	○	●	○			●				●
NK36/NK60	○	●	●	●	●			○	○	○	○	○		●		●		●

Type			NK36	NK60	EK60	EK80	SC46	SC80	C800	Reducing ring inner ∅ mm	Shape
53Y 59 6100	Bench grinding wheel D×T×H (mm)	125×20×32	–	–	–	eShop	eShop	eShop	eShop	25; 20; 16	1
53Y 59 6200		150×20×32	eShop	eShop	eShop	eShop	eShop	eShop	eShop	25; 20; 16	1
53Y 59 6220		150×25×51	–	eShop	eShop	eShop	–	eShop	–	32	1
53Y 59 6310		175×25×32	eShop	eShop	eShop	eShop	eShop	eShop	–	25; 20; 16	1
53Y 59 6350		175×25×51	eShop	eShop	eShop	eShop	–	eShop	eShop	32	1
53Y 59 6400		200×25×51	–	eShop	eShop	eShop	eShop	eShop	–	32	1
53Y 59 6410		200×32×51	eShop	eShop	eShop	eShop	–	eShop	–	32	1
53Y 59 6510		250×32×51	eShop	eShop	eShop	eShop	–	eShop	–	32	1
53Y 59 6610		300×40×76	–	eShop	eShop	–	–	eShop	–	51; 40	5
Grit designation			coarse	medium	medium	fine	medium	fine	extra fine		

Reducer ring sets for bench grinding wheels

To reduce the bore ∅ of bench grinding wheels.

for the natural bore of the grinding wheel		mm	32	51	76
53Y 59 6000	Reducing ring set		eShop	eShop	eShop
Reducing ring inner ∅		mm	25; 20; 16	32	51; 40



_32

TYROLIT Cutting discs and laboratory cutting discs

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
59 8500–59 8530		●	●	●	●			●	●			○						●
59 8590–59 8630							●					○		○			●	○
59 8710–59 8740		●	●	●	●	●		●	○	●							●	

Synthetic resin-bonded cutting discs

A | Form 41N

Non-fabric, synthetic resin-bonded Aluminium Oxide abrasive cutting disc for all steels including HSS.

Application:
- **Cutting** on **stationary cutting grinding machines** (without fabric reinforcing, i.e. **not suitable for free-hand cutting).**
- **Working speed 30 m/s, maximum 80 m/s.**

Specification:

59 8500 – **A80N4B68 HSS.**

59 8520/8530 – **A60N5B68 HSS.**

Note: Saw sharpening discs available on request.





59 8530

					Shape
53Y 59 8500	Cutting disc D×T×H (mm)	100×1×20	eShop	10	41N
53Y 59 8520		125×1×20	eShop	10	41N
53Y 59 8530		150×1×20	eShop	10	41N

Synthetic resin-bonded diamond cutting discs

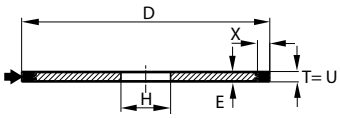
D | Form 1A1R

High performance cutting disc with diamond coating in synthetic resin bonding with very long working life and high cutting performance.

59 8590 – **Specification: D126C75B-Carbide.**

59 8600–8630 – **Specification: D126/D151C100B-Carbide.**

Application:
- **Cutting carbide** on **stationary cutting grinding machines.**
- **Wet cutting is preferred** (working life, temperature, performance).
- Working speed **20–40 m/s.**





59 8630

Type			D126	D151	Shape	U mm	X mm
53Y 59 8590	Diamond cutting disc D×T×H (mm)	75×0.8×20	eShop	–	1A1R	0.8	5
53Y 59 8600		100×1×20	eShop	–	1A1R	1	5
53Y 59 8620		125×1×20	eShop	–	1A1R	1	5
53Y 59 8630		150×1×20	eShop	eShop	1A1R	1	5

Synthetic resin-bonded laboratory cutting discs

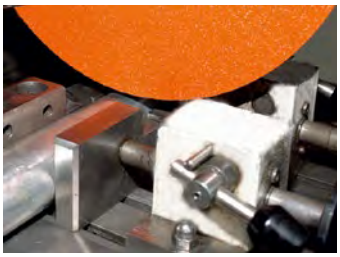
A | Form 41N

SECUR LAB high performance laboratory cutting discs, of non-fabric, synthetic resin-bonded Aluminium Oxide for cutting off smelted steels, all kinds of powdered metallurgy steels, and all ferrous metals of various hardnesses.

Size 60 – Medium-hard cutting disc for material hardnesses of approx. 20 -62 HRC (250 -700 HV). **Specification: A80-BM.**

Size 67 – Soft, extremely quick-cutting disc for material hardnesses of approx. 60 -67 HRC (600 -900 HV). **Specification: A80-BS.**

Application:
- Cutting off metallurgical samples on stationary cutting grinding machines in the laboratory
- Exclusively wet cutting, coolant lubrication is required.
- Working speed **30 m/s, maximum 50 m/s.**
- Excessive pressure will cause the cut to wander.





_60

_67

Type			60	67		Shape
53Y 59 8710	SECUR LAB laboratory cutting disc D×T×H (mm)	230×1.5×32	eShop	–	10	41N
53Y 59 8720		250×1.5×32	eShop	eShop	10	41N
53Y 59 8730		300×2×32	eShop	–	10	41N
53Y 59 8740		350×2.5×32	eShop	–	10	41N

Form 6

A SiC

TYROLIT Ceramic bonded cup grinding wheels for tool sharpening

Tapered-cup grinding wheel with:

Size EK80 – **White electro-bonded Aluminium Oxide. Specification: SD83AII7PVK3F steel, universal.**

Size SK80 – **Sintered aluminium oxide. Specification: 454A801N5V3U5 steel, high alloyed.**

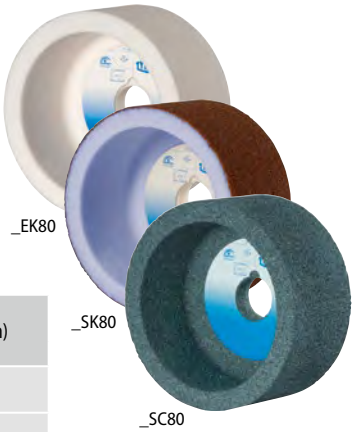
59 7021 Size SC80 – **Green silicon carbide. Specification: C80I5V15-W-Carbide.**

Advantage:

59 7010 Size SK80 – **With all-round synthetic resin impregnation** for increased edge stability.

59 7025 – **With all-round synthetic resin impregnation** for increased edge stability.

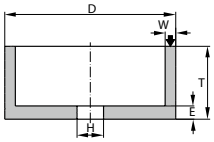
Application: **For sharpening of drills, milling cutters, etc.** Wet cutting with emulsion or cutting oil recommended.



Material	Working speed v_s (m/s) recommended	Working speed v_s (m/s) maximum	Infeed a_e (mm)		Feed rate v_f (mm/min)
high-alloy steels, tool steels, HSS	25 – 30	35	EK80, SK80 grit	0,05 – 0,2	2 000 – 10 000
Carbide	20 – 25	35	SC80 grit	0,005 – 0,05	2 000 – 7 000

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
EK80 -		●	●	●	○			○									●	○
SK80 -		○	○	○	●	●		●									●	○
SC80 -							●			○							●	○

Type			EK80	SK80	SC80	Shape	W mm	E mm
53Y 59 7010	Cup grinding wheel ceramic D×W×H (mm)	80×40×20	eShop	eShop	–	6	6	10
53Y 59 7020		100×50×20	eShop	–	–	6	10	10
53Y 59 7021		100×50×20	–	–	eShop	6	10	10
53Y 59 7025		100×50×20	eShop	eShop	–	6	10	10



59

CBN Form 11V9 Form 12A2D Form 12C2F Form 12V9 Form 4BT9

TYROLIT CBN tool grinding wheels - dry grinding

Tool grinding wheels with **CBN grit** in synthetic resin bonding for long service life and consistently high metal removal rates. The sandwich carrier body system of composite aluminium materials ensures high vibration damping and hence smooth grinding with consistent grinding results at high surface quality.

Size B126 – For fine surface quality and good metal removal rates.
Specification: B126C75B AMIGO-HSS.

Size B151 – For medium fine surface quality and very good metal removal rates.
Specification: B151C75B AMIGO-HSS.

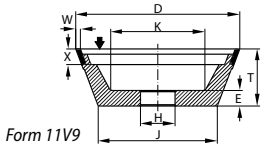
Application: **For tool grinding on all common tool grinding machines.**
For grinding high alloy (HSS) tool steels and case-hardening steels, Stellite.



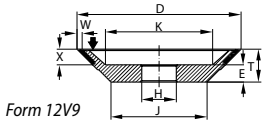
Material	Working speed v_s (m/s) wet	Working speed v_s (m/s) dry	Working speed v_s (m/s) maximum	Infeed a_e (mm)		Feed rate v_f (mm/min)
HSS, high-alloy steels	25 – 40	20 – 25	50	151 – 126 µm grit 91 µm grit	0.009 – 0.02 0.005 – 0.008	20 – 200

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
59 7210–59 7490	○	○	●	●	●												○	●

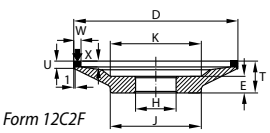
Type			B126	B151	Shape	W mm	X mm	U mm
53Y 59 7210	CBN cup grinding wheel D×T×H (mm)	75×30×20	eShop	–	11V9	2	10	–
53Y 59 7220		100×35×20	eShop	eShop	11V9	2	10	–
53Y 59 7240		100×35×20	eShop	–	11V9	3	10	–
53Y 59 7260		125×40×20	eShop	–	11V9	2	10	–
53Y 59 7310		75×20×20	(eShop)	–	12V9	2	6	–
53Y 59 7320		100×20×20	eShop	–	12V9	2	10	–
53Y 59 7360		125×25×20	eShop	–	12V9	2	10	–
53Y 59 7410	CBN dished grinding wheel D×T×H (mm)	100×21×20	eShop	–	12C2F	5	4	5
53Y 59 7440		125×23×20	–	eShop	12C2F	5	4	5
53Y 59 7430		150×25×20	(eShop)	–	12A2D	10	3	–
53Y 59 7460		100×10×20	(eShop)	–	4BT9	10	1	–



Form 11V9



Form 12V9



Form 12C2F

TYROLIT Diamond tool grinding wheels

D

Material	Working speed v_s (m/s)			Infeed a_e (mm)		Feed rate v_f (mm/min)
	wet	dry	maximum			
Carbide	20 – 30	15 – 20	50	Grain size 181 – 91 µm grain size 64 – 54 µm	0.009 – 0.02 0.005 – 0.008	20 – 200

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
59 7510–59 7910							●					○					○	●
59 7952–59 7956							●					○					●	

Synthetic resin bonding – dry grinding



Cup grinding wheels and dished grinding wheels with diamond abrasive coating.

Size D64 – Fine-grained for the best surface quality and good metal removal rates.
Specification: D64C50B DIAGO W-Carbide.

Size D126 – General-purpose grit for medium to fine surface quality and very good metal removal rates.
Specification: D126C75B DIAGO W-Carbide.

59 7520 Size D181 – Coarse-grained for the best metal removal rates.
Specification: D181C75B DIAGO W-Carbide.

Size D91 – General-purpose grit for medium to fine surface quality and very good metal removal rates.
Specification: D91C75B DIAGO W-Carbide.

59 7750 Size D151 – Coarse-grained for the best metal removal rates.
Specification: D151C75B DIAGO W-Carbide.

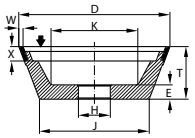
Application: **For general use on all common tool grinding machines.**
For grinding **carbide tools and short chipping non-ferrous materials.**
Very well suited to dry grinding, but can also be used for wet grinding.



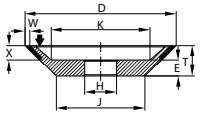
59 7610 59 7700 59 7750

Type			D64	D91	D126	D151	D181	Shape	W mm	X mm
53Y 59 7510	Diamond cup grinding wheel D×T×H (mm)	75×30×20	eShop	–	eShop	–	–	11V9	2	10
53Y 59 7520		100×35×20	eShop	–	eShop	–	eShop	11V9	2	10
53Y 59 7540		100×35×20	eShop	–	eShop	–	–	11V9	3	10
53Y 59 7560		125×40×20	–	–	eShop	–	–	11V9	3	10
53Y 59 7610		75×20×20	eShop	–	eShop	–	–	12V9	2	6
53Y 59 7620		100×20×20	–	eShop	eShop	–	–	12V9	2	10
53Y 59 7700	Diamond dished grinding wheel D×T×H (mm)	100×25×20	eShop	–	eShop	–	–	12A2D	6	2
53Y 59 7710		100×25×20	–	–	eShop	–	–	12A2D	12	3
53Y 59 7720		125×25×20	–	–	eShop	–	–	12A2D	10	3
53Y 59 7730		150×25×20	–	–	eShop	–	–	12A2D	10	3
53Y 59 7750		125×23×20	(eShop)	–	eShop	eShop	–	12A2F	5	4
53Y 59 7760		100×10×20	–	eShop	–	–	–	4BT9	10	1
53Y 59 7810		125×10×20	(eShop)	–	–	–	–	4A2	5	2
53Y 59 7820		150×12×20	eShop	–	–	–	–	4A2	5	2
53Y 59 7910		100×10×20	–	–	eShop	–	–	1A1	10	3

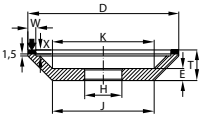
Form 11V9



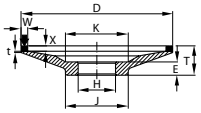
Form 12V9



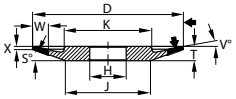
Form 12A2D



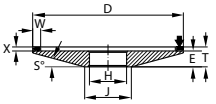
Form 12A2F



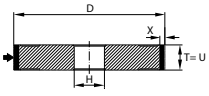
Form 4BT9



Form 4A2



Form 1A1



Metal bonding – wet grinding

High-performance cup grinding wheels with diamond grit in metal bonding, giving increased strength and optimised binding of the diamond grit.
The optimum combination of grit and binding agent reduces the cutting forces, permitting **very high grinding performance** and **feed rates.**
Very high edge stability improves the **profile accuracy** even at high feed rates and **extends the dressing intervals** at constant surface finishes.
Specification: D64BXP-P STARTEC XP-P.

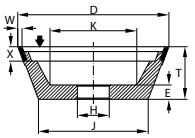
Application: High-performance grinding (slot grinding) of rotating solid carbide cutting tools.
For wet grinding with oil (recommended) or emulsion/water.



59 7952

Type			D64	Shape	W mm	X mm
53Y 59 7952	Diamond cup grinding wheel STARTEC XP-P D×T×H (mm)	75×30×20	(eShop)	11V9	3	10
53Y 59 7954		100×35×20	eShop	11V9	3	10
53Y 59 7956		125×40×20	eShop	11V9	3	10

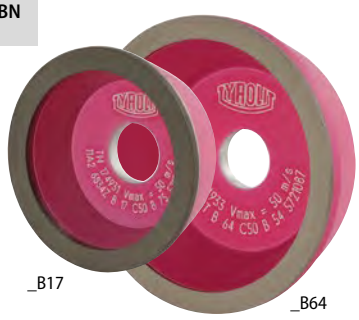
Form 11V9

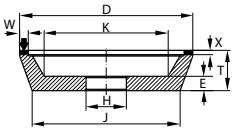


Form 11A2

D CBN

TYROLIT Diamond or CBN combination cup grinding wheel for Deckel S0/S0E





Form 11A2

Cup grinding wheels with CBN or diamond abrasive coating.

Application: **For cost-effective initial and finish grinding** of HSS and carbide styluses without changing the wheel, for Deckel S0 / S0E.
Can be used in pairs with No. 597111 / 597112 or 597121 / 597122.

59 7111/7112 – Diamond coating for high performance grinding of short-chipping materials with no ferrous content such as carbide, polycrystalline (PCD) tool materials, ceramic materials (PCS).
Specification D15C50B, D64C50B W-Carbide.

59 7121/7122 – CBN coating for high performance grinding of long-chipping ferrous materials such as hardened chrome steels and HSS tool steels (including powder metallurgy grades) and nickel-based alloys.
Specification: B17C50B, B64C50B HSS.

	AlMg	< 900 N	< 1400 N	< 55 HRC	< 60 HRC	< 67 HRC	Carbide	INOX	Ti	GG(G)	CuZn	Plastics & GRP	Wood	Stone	Varnish	Uni		
59 7111/7112							●					○						●
59 7121/7122	○	○	●	●	●													●

Type			D15	D64	B17	B64	Shape	W mm	X mm
53Y 59 7111	Combination diamond cup grinding wheel for Deckel S0 / S0E D×T×H (mm)	75×26×20	eShop	–	–	–	11A2	8	2
53Y 59 7112		100×30×20	–	eShop	–	–	11A2	8	2
53Y 59 7121	Combination CBN cup grinding wheel f or Deckel S0 / S0E D×T×H (mm)	75×26×20	–	–	eShop	–	11A2	8	3
53Y 59 7122		100×30×20	–	–	–	eShop	11A2	8	2

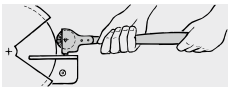
59

TYROLIT Grinding wheel dresser

Grinding wheel dresser with wooden handle

D


59 9100_DIA



Strong, handy wooden handle. A sturdy metal cage prevents grinding grit and sparks from flying out.

Size DIA – Very high wear resistance, with fixed diamond dressing segments.

Size STEEL – SIEVERT grinding wheel dressers with U-shape profile toothed discs made of Swedish steel, hardened and particularly wear-resistant.

Application: **For coarse dressing and sharpening of grinding wheels.**

Type			DIA	STEEL
53Y 59 9100	Grinding wheel dresser		eShop	eShop
Dresser medium			Diamond segment	Steel roller
Overall length		mm	420	435
for grinding wheel ∅		mm	250 – 600	250 – 500


59 9100_STEEL

Replacement dressing set for grinding wheel dresser with wooden handle.

Suitable for:

Size DIA – Diamond grinding wheel dresser No. 599100 DIA.

Size STEEL – Steel grinding wheel dresser No. 599100 STEEL.

D


59 9110_DIA


59 9110_STEEL

Type			DIA	STEEL
53Y 59 9110	Replacement dressing set		eShop	eShop
Roll ∅		mm	–	55
Roller width		mm	–	24
Segment height		mm	5	–
Segment length		mm	5	–
Segment width		mm	24	–

Diamond grinding wheel dresser

D

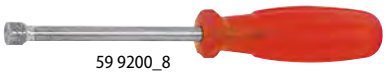
Brazed-on high-quality multi-grit diamond multi-grit dresser with long service life, comfortable plastic handle.

Size 8 – **Round shape.**

Size 40×5 – **Hammer shape,** dressing the circumferential face.

Size 40×5P – **P-shape,** dressing the end face.

Application: For precise dressing and profiling of ceramic grinding wheels.


59 9200_8

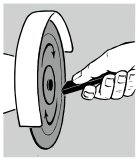

59 9200_40×5


59 9200_40×5P

Dimensions		mm	8	40×5	40×5P
53Y 59 9200	Diamond grinding wheel dresser with handle		eShop	eShop	eShop
Overall length		mm	218	220	215
Diamond weight		ct	2.5	3.5	3.5

Grinding wheel dresser

Boron carbide grinding wheel dresser



Dressing stone of pure sintered **boron carbide (without binding agent),** the hardest material after diamond.

Application: For economical dressing, sharpening, and profiling of **grinding wheels. Use only the edges for dressing, never the full face!**

53D 59 9450	Boron carbide grinding wheel dresser (without holder)		eShop
Length		mm	75
Width		mm	12
Height		mm	6
suitable for grinding wheels up to ∅		mm	300
suitable for grinding wheels up to hardness			M (medium)



59 9450

Suitable for: Boron carbide grinding wheel dresser No. 599450.

Application: Holder with wooden handle and clamping device.

53D 59 9460	Holder with wooden handle for boron carbide dresser		eShop
Overall length		mm	230



59 9460

Grinding wheel dressing stick / stone

SiC

Coarse grit hard silicon carbide in a metal sleeve; with handy wooden handle.



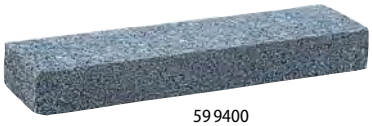
59 9420

53Y 59 9420	TYROLIT Grinding wheel dressing stick		eShop
Rod ∅		mm	17
Overall length		mm	290

SiC

Rectangular, coarse grit block (SiC24).

Application: For grinding wheels, but also for coarse grinding of steel, granite, marble, and synthetic stone.



59 9400

53Y 59 9400	TYROLIT Grinding wheel dressing stone		eShop
Length		mm	200
Width		mm	50
Height		mm	25

TYROLIT Sharpening stone for CBN and diamond grinding wheels

A

Roughening and sharpening stones of homogeneous structures; various sizes.
Aluminium Oxide sharpening stone in **ceramic bonding (standard application).**

Application:
- **Sharpening (recreating the grit projections) of diamond and CBN grinding wheels** after dressing or during the grinding process. The bonding is cut back and the sharp diamond and CBN grit particles are made available again.
- Use **manually** or **stationary** on grinding machines with **radial in-feed.**
- Sharpening wet is recommended.

Note: Store sharpening stones preferably wet.



_EK240



_EK600

Grit type and grit		EK240	EK600	Length mm	Width mm	Height mm
53Y 59 9800	Sharpening stone for CBN and diamond grinding wheels	–	eShop	100	25	13
53Y 59 9820		eShop	–	200	25	13
53Y 59 9840		eShop	eShop	200	50	25
Specification		A240V	A600V			
for grinding wheel grit range	µm	46 – 126	< 46			

TYROLIT Precision grinding media range

The precision grinding range of Group 59 has been complemented by a **significantly extended precision grinding range** stocked by our supplier TYROLIT.

Discover more TYROLIT grinding tools for precision machining at www.tyrolit.com

The benefits for you:
- Approx. 1400 items in stock.
- Short delivery time.
- Small order quantities acceptable (single wheels or pack quantity).
- Well-proven simple and reliable processing by the Hoffmann Group.



D

TYROLIT Diamond grinding wheel dresser

Diamond grinding wheel dresser with plain, MT0 or MT1 arbor

Standard dressing tool for all machines with suitable holders. The dressers are intended to be **disposable** and should be renewed completely on reaching their wear limit. (They cannot be replaced in the holder.)

Size 0,4–1,5 – Disposable **single grit** diamond dresser.
Size 2,4 – Disposable **multi-grit** dresser with several individual diamonds.
59 9710/9720 – With spanner flats for each removal.

Application: For precision dressing and sharpening of grinding wheels to (re)create a defined condition of the grinding tool (axial and radial run-out, surface structure, grinding behaviour). For one-off and short series manufacture. Ensure sufficient flow of cooling lubrication. Short clamping distances (free length < 2×D) avoid vibration problems.

Size 0,4–1,5 – For straight, **slightly concave, and convex** grinding wheel profiles for external cylindrical grinding, surface grinding, **internal cylindrical grinding and profile grinding in the absence of sharp points.** Take care to mount the device in the correct position (inclination 3° to 15° to the grinding centre for both axial directions). So that the dresser wheel wears evenly, turn it 90° in the holder at regular intervals.

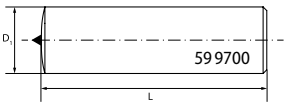
Size 2,4 – For **straight** grinding wheel profiles for surface and external cylindrical grinding.

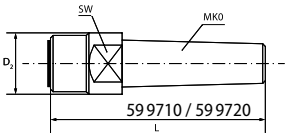


_0,4; _0,7; _1,5 *Single grit*



_2,4 *Multi-grit*





Diamond weight		ct	0,4	0,7	1,5	2,4
53Y 59 9700	Diamond dresser **cylindrical**		eShop	eShop	eShop	eShop
53Y 59 9710	Diamond dresser **with MT0 arbor**		eShop	eShop	eShop	eShop
53Y 59 9720	Diamond dresser **with MT1 arbor**		eShop	eShop	eShop	eShop
Dresser type			Single grit	Single grit	Single grit	Multi-grit
Ø D_1 (59 9700)		mm	8	10	10	10
Ø D_2 (59 9710)		mm	9.3	9.3	14	14
Ø D_2 (59 9720)		mm	12.4	12.4	12.4	14
L (59 9700)		mm	80	70	70	60
L (59 9710)		mm	31.5	31.5	42	42
L (59 9720)		mm	49	49	49	57
for grinding wheel sizes		mm	Ø125×30–Ø250×15	Ø250×50–Ø400×35	Ø400×100–Ø800×50	maximum Ø500

Diamond dressing tools

Disposable dressing tool, laterally sintered.

Size B115 – Coating length 15 mm, coating width 10 mm, coating thickness 1.15 mm.
Size C180 – Coating length 10 mm, coating width 20 mm, coating thickness 1.8 mm.

Application: For straight and simple grinding wheel profiles or cylindrical and surface grinding machines.



59 9760



Type		B115	C180
53Y 59 9760	Grit dressing tool L×W×H 33×10.5×5 mm	eShop	–
53Y 59 9770	Needle point dressing tool L×W×H 28×20.5×5 mm	–	eShop

TYROLIT Grinding wheel dressing device

Dressing device for **mounting on the support slides** of the grinding machine. The dressing device is fitted with a rotating **silicon carbide grinding wheel.** The dressing operation is performed using the **centrifugal force braking effect.**

Application: Dressing of **diamond and CBN grinding wheels.**
Subsequent sharpening using a roughening stone; use dry.

Note: Dressing wheel, clamping nut and washer are not included.

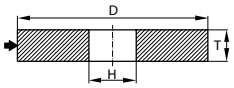


59 9600

53Y 59 9600	Dressing device AV500	(eShop)

Size SC70 – Black silicon carbide.
Size SC120 – Green silicon carbide.

Suitable for: **Dressing device AV500** No. 599600.



Form 1

Type			SC70	SC120
53Y 59 9650	Dressing wheel for AV 500 dressing device		eShop	eShop
Specification			1C70M5V15	C120J5V15
D		mm	75	
T		mm	25	20
H		mm	12.7	
for grinding wheel grit range		µm	181-91	≤91
for grinding wheel sizes		mm	Ø ≥ 200; width ≥ 20	Universal

SiC



59 9650_SC70



59 9650_SC120

6 New products – Screwdriving tools

NEW

We use this symbol to tag new items in our catalogue range



Pages **471–742**
HOLEX combination spanner extra long



Page **474**
JOKER 6007 open-ended spanner/ ratchet ring spanner extra-long



Page **493 / 494 / 637 / 644 / 654**
Screwdriver with 2-component SwissGrip Evo handle



Pages **498 – 499**
GARANT hexagon key l-wrench



Page **513**
GARANT c-hook spanner with square/round pin



Page **522**
Socket set



Page **603**
Electronic torque / rotational angle wrench MANOSKOP® 766 DAPTIQ®



Page **612**
Torque wrench with setting scale – automatic triggering



Page **626**
GARANT electronic torque screwdriver HCT



Page **628**
GARANT torque screwdriver



Page **628**
Torque screwdriver



Page **629**
VDE torque screwdriver set



Page **634**
HOLEX torque screwdriver, fixed setting



Page **652**
Kraftform Kompakt VDE 24 all-rounder



Page **652**
GARANT screwdriver set with interchangeable blades



Page **663**
HOLEX watchmaker's screwdriver set



Page **679**
HOLEX set of bits, 108 pieces



Page **689**
HOLEX bit-holding screwdriver with magazine with ratchet and 1/4 inch bits



Page **694**
VDE tool set



Page **694**
XL 2 Trolley electric tool case



Page **711**
PARAMOVER transport system



Page **730**
"CarryLite LMS" small parts case

Fastening tools for screws

The whole tooling catalogue for these brands is available from the Hoffmann Group – just ask us!



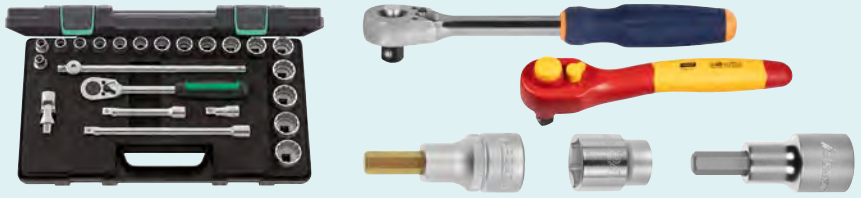
Garant, Stahlwille, Wera, Gedore, Holex — Open ended and ring spanners hexagon and Torx® — 61 — 465 – 482



Garant, PB Swiss Tools, Wera, wiha, Holex — Box spanners, Hexagon keys, Nut spinners, Special and Torx® keys — 62 — 483 – 515



Garant, Stahlwille, Koken, Hazet, Holex — Drive tools and inserts 1/4", 3/8", Socket sets 1/4", 3/8", 1/2" — 63 — 516 – 564



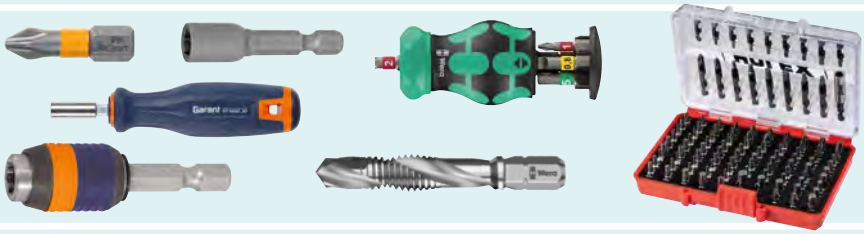
Garant, Stahlwille, Koken, Facom, Holex — Drive tools and inserts 1/2", 3/4", 1", Socket sets 3/4", 1" — 64 — 565 – 581



Garant, Stahlwille, Tohnichi, Norbar, Koken, Holex — Impact wrench sockets, torque wrenches, torque analysers — 65 — 582 – 636



Garant, PB Swiss Tools, Wera, Holex — Screwdrivers, Voltage testers — 66 — 637 – 664



Garant, PB Swiss Tools, Fisch, Wera, Koken, Holex — Impact driver, Bits, Drill bits, Bit ratchets — 67 — 665 – 691



Garant, Knipex, Wera, wiha, Holex — Tool sets — 68 — 692 – 708



Garant, Knipex, Parat, gt, raaco, Holex — Tool bags, Tool cases, Toolboxes, Small parts cases — 69 — 709 – 731

6

Pictograms

Square drive	1/4″ · 3/8″ · 1/2″ · 3/4″ · 1″ · 1 1/2″	Size Square drive
Range from – to	4-32	Socket with internal hexagon profile, AF range 4 – 32 mm.
	8-19	Socket with internal bi-hex profile, AF range 8 – 19 mm.
	4-34	Socket with Surface Drive profile. AF range 4 – 34 mm.
	3-14	Screwdriver bit with external hexagon profile, AF range 3 – 14 mm.
Output drive profile		The Wobble-Fix drive offers the choice between a rigid connection to the socket or an angle of inclination.
	Surface Drive	The Surface Drive profile grips the bolt on the faces and protects the corners. This enables higher torque transmission and prevents slipping.
Insulation	VDE GS	Fully insulated up to 1000 V to DIN EN IEC 60 900 / VDE 0682.
ESD		Identification of **tools compatible with** ESD, which avoid the build-up / discharge of static charges (**ESD E**lectro **S**tatic **D**ischarge). For the handles of these tools, DIN EN 61340-5-1 specifies a discharge resistance between 10^4 – 10^{11} Ohm.
Direction of tightening		Suitable for both right-hand and left-hand tightening (triggers in either direction, or triggers in only one direction but can be pushed through).
		Suitable only for right-hand tightening (triggers in only one direction, cannot be changed over or pushed through).
Measuring accuracy	±1%	Accuracy of the torque displayed value.
	±1°	
	±1%	Accuracy of the rotational angle displayed value.
Test certificate		Certification traceable to national standards.
Data interface	RS232C	RS232C interface
		Bluetooth interface
		ONE-KEY. Wireless device settings, stock management and device reporting using an app via Bluetooth.
		USB interface
	IR	Infra-red interface
	HCT	Compatible with the Hoffmann Group Connected Tools (HCT) app.
Wireless application	HCT	HCT Mobile App
	HCT	HCT Windows app
	HID	Human Interface Device
Plug-in head		Socket for plug-in heads: No. 657582 – 657950.
Calibration	01 Cal · 03 Cal · 04 Cal · 05 Cal	The pictograms indicate the calibration group to which a product is assigned. For prices see Group 4 calibration service.
Torque presetting	06 Cal	Setting to customer-specific torque value. For prices see Group 4 calibration service.
	07 Cal	Setting and calibrating to a customer-specific torque value. For prices see Group 4 calibration service.
Standard	MB 12	Battery circuit system
Hexagon bit Bit holder	C 6,3	Bit with hexagon form C 6.3.
	E 6,3	Bit with hexagon form E 6.3.
	D 6,3 · D 8	Bit-holder form D 6.3 /D 8 for C 6.3 / C 8 bits.
	F 6,3	Bit-holder form F 6.3 for E 6.3 bits.
Angle	118°	118° point angle
	90°	Countersink with 90° point angle.
Threads	M	Metric thread.
	60°	With 60° flank angle.
	ISO 2 6H	Metric ISO threads application class 2 6H = medium tolerance.
	≤1×D	Suitable for through hole threads to depth 1×d.
Tool material / Number of cutting edges	HSS	High performance high-speed steel
	1	1 cutting edge
	3	3 cutting edges
Version Bags and cases	40 kg	Loading capacity.
		Robust, suitable for rough baggage handling at airports.
		Impact resistant
		Stackable
		Tool gripper
		Shaft pockets
	L-BOXX	System case compatible with L-Boxx system.
		With integral NFC and RDIF chip.
Material		Genuine leather
	ALU	Aluminium shells
	ABS	ABS plastic
	HDPE	HDPE shells (blow moulded)
	PP	Polypropylene shells
	X-ABS	2-component plastic X-ABS
	PX-ABS PU-GFK	PX-ABS with fibreglass-reinforced polyurethane foam on the back.
	PC	Polycarbonate
	INOX	Stainless steel
Version for roller cabinets and boxes	40 kg	Drawer load capacity for a distributed load + pull-out drawer
	100%	Full extension drawers
		– Drawers anti-tilt device – Only 1 drawer can be pulled out at a time
		Grid 9×9 37 mm intervals
		One-hand individual drawer release system
	8G 20G	Size of the divider/organisation material in GARANT units.
		– Cylinder lock with 5 pins – Modular barrel – Compatible with integrated locking systems
IP Index of protection	IP 67 · IP X4	See the start of product group 4 for further information on IP indices of protection.

Double open ended spanner

Drop-forged. With close tolerance jaw widths.

61 0600 – With optimised profile shank for specially secure grip and ergonomic working. Exceptional tool life and wear resistance.

61 0100/0120 – With easy-grip fluted shaft. Optimum flexional resistance, good torque transmission.

61 0900/0950 – With oval shank.

Standard: **DIN 3110 / ISO 3318**

Material:

61 0600 – Chrome vanadium steel, non-flaking, matt chrome-plated.

61 0900 – Chrome vanadium steel, phosphated.

61 0950 – Chrome vanadium steel, chrome-plated.

61 0100/0120 – Chrome alloy steel, non-flaking chrome-plated over nickel; smoothed finish.

Non-sparking tools can be found in prouct group 75 (product no. 75 9710 to 75 9738).

Jaw widths	61A 61 0600 Garant	63A 61 0100 STAHLWILLE	62A 61 0900 HOLEX	62A 61 0950 HOLEX	L		$b_{1\,max}$	$b_{2\,max}$	h_{max}
	Double open ended spanner				61 0600 61 0100	61 0900 61 0950			
mm			phosphated	chrome-plated	mm	mm	mm	mm	mm
4×5	eShop	eShop	eShop	eShop	100	103	13	14	3
5,5×7	eShop ■	eShop	eShop	eShop	120	122	15	17	4
6×7	eShop ■	eShop ■	eShop	eShop ■	120	122	16	18	4
7×8	eShop	eShop	eShop	eShop	140	130	18	20	4
8×9	eShop ■	eShop ■	eShop	eShop ■	140	136	20	22	4
8×10	eShop	eShop	eShop	eShop	140	136	20	23	5
10×11	eShop ■	eShop ■	eShop	eShop ■	155	151	24	27	5
10×13	eShop	eShop	eShop	eShop	170	171	26	31	6
11×13	–	eShop	eShop	eShop	170	171	29	31	6
12×13	eShop ■	eShop ■	eShop	eShop ■	170	171	29	31	6
12×14	eShop	eShop	eShop	eShop	170	171	29	32	6
13×14	eShop	eShop	eShop	eShop	190	186	33	35	6
13×15	eShop	eShop	eShop	eShop	190	186	33	35	6
13×17	eShop	eShop	eShop	eShop	205	201	33	39	6
14×15	eShop ■	eShop ■	eShop	eShop	190	186	33	35	6
14×17	eShop	eShop	eShop	eShop	205	201	33	39	6
16×17	eShop ■	eShop ■	eShop	eShop	205	201	36	39	6
16×18	eShop	eShop	eShop	eShop	220	201	36	40	7
17×19	eShop ■	eShop	eShop	eShop	220	220	40	43	7
18×19	eShop ■	eShop	eShop	eShop	220	220	40	43	7
18×21	eShop	eShop	eShop	eShop	235	235	40	47	8
19×22	eShop	eShop	eShop	eShop	235	235	44	49	8
19×24	eShop	–	eShop	eShop	250	245	43	53	8
20×22	eShop	eShop	eShop	eShop	235	235	45	49	8
21×23	eShop	eShop	eShop	eShop	250	245	47	51	8
21×24	eShop	eShop	eShop	eShop	250	245	47	53	8
22×24	eShop ■	eShop	eShop	eShop	250	245	49	53	8
24×26	eShop	eShop	eShop	eShop	270	265	54	58	9
24×27	eShop	eShop	eShop	eShop	280	265	54	60	9
25×28	–	eShop	eShop	eShop	285	274	56	62	9
27×30	eShop	eShop	eShop	eShop	300	274	60	66	10
27×32	eShop	eShop	eShop	eShop	300	299	60	70	10
30×32	eShop	eShop	eShop	eShop	300	299	66	70	10
30×34	eShop	eShop	eShop	eShop	300	302	66	75	10
32×36	eShop	eShop	eShop	eShop	325	325	70	80	10
34×36	–	eShop	eShop	eShop	325	325	75	80	10
36×41	eShop	eShop	eShop	eShop	375	358	80	88	11
41×46	–	eShop	eShop	eShop	425	400	88	95	12



61 0600



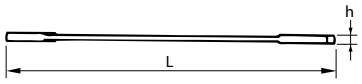
61 0100



61 0900



61 0950



61 0600



61 0600

Type	63A 61 0120 STAHLWILLE	Width across flats 1	Width across flats 2	L	$b_{1\,max}$	$b_{2\,max}$	h_{max}
	Double open ended spanner, inch						
		in	in	mm	mm	mm	mm
1	eShop	1/4	5/16	140	16	18	4
3	eShop	5/16	3/8	140	18	23	4.5
5	eShop	3/8	7/16	155	23	26	4.8
7	eShop	7/16	1/2	170	26	30	5.3
8	eShop	1/2	9/16	190	30	32	5.3
9	eShop	9/16	5/8	205	32	36	5.8
10	eShop	19/32	11/16	205	35	40	5.8
12	eShop	5/8	11/16	205	36	40	5.8
13	eShop	5/8	3/4	220	36	42	6.7
15	eShop	11/16	3/4	220	40	42	6.7
16	eShop	11/16	13/16	235	40	47	7.3
18	eShop	3/4	7/8	235	42	49	7.3
19	eShop	25/32	13/16	235	45	47	7.3
22	eShop	7/8	15/16	250	49	53	7.8
24	eShop	15/16	1	270	53	55	8.3
32	eShop	1.1/8	1.5/16	300	64	75	9.4



61 0120

Double open ended spanner set



61 0610_12

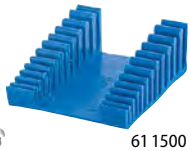
Number of keys	61A 61 0610 Garant	63A 61 1000 STAHLWILLE	62A 61 0910 HOLEX	62A 61 0960 HOLEX	Supplied with: 1 each double open ended spanner No. 610600 / 610100 / 610900 / 610950 / 610120
	Double open ended spanner set				
8	eShop	eShop	eShop	eShop ■	Size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×21; 19×22
10	eShop	eShop	eShop	eShop	Size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×24; 27×30
12	eShop	eShop	eShop	eShop	Size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×23; 24×26; 27×32; 30×34
13	eShop	eShop	eShop	eShop	Size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×23; 24×26; 27×32; 30×34; 36×41
7 ZOLL	–	eShop	–	–	1/4×5/16; 3/8×7/16; 1/2×9/16; 5/8×3/4; 11/16×13/16; 7/8×15/16; 1.1/8×1.5/16 inch in a textile tool roll
11 ZOLL	–	eShop	–	–	1/4×5/16; 3/8×7/16; 1/2×9/16; 9/16×5/8; 19/32×11/16; 5/8×3/4; 11/16×13/16; 3/4×7/8; 25/32×13/16; 7/8×15/16; 1.1/8×1.5/16 inch in a textile tool roll

HOLEX Clip holder for double open ended spanners and combination spanners

Made of plastic, self-clamping.

61 1500 – Suitable only for double open ended spanners.

61 1700 – With closure flap (secure during transport) and flip-up carrying handle. Closure flap easily removable, holder also suitable for wall mounting. **For double open-ended spanners and combination spanners.**



61 1500



61 1500

Application example



61 1700

Application example



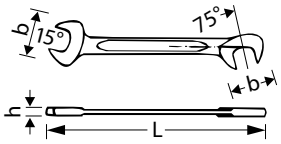
61 1700

for number of sockets		8	9	11	12
62A 61 1500	Plastic clip holder	eShop	–	–	eShop
62A 61 1700	Plastic clip holder with closure flap	–	eShop ■	eShop ■	–
Suitable for: Spanner sizes		6 – 22 mm	6 – 24 mm	6 – 32 mm	6 – 34 mm

61

Small double open ended spanners (electrician's spanner)

With very slim heads. Unequal jaw angles (15° and 75°), same jaw width each end.





61 2200



61 2205

Material:

61 2200 – Chrome alloy steel; non-flaking, chrome-plated over nickel.

61 2205 – Chrome vanadium steel, chrome-plated.

Width across flats	mm	3,2	3,5	4	4,5	5	5,5	6	7	8	9	10	11	12	13	14
63A 61 2200 STAHLWILLE	Small double open ended spanner	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 61 2205 HOLEX		–	–	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L (61 2200)	mm	70	70	70	70	78	78	78	91	96	103	105	116	116	131	131
L (61 2205)	mm	–	–	–	–	–	–	92	107	107	120	120	134	146	160	160
$b_{1\,max}$ (61 2200)	mm	10.5	10.5	10.5	10.5	12.6	12.6	12.6	14.7	16.8	18.9	21	24.2	24.2	28.3	28.3
$b_{1\,max}$ (61 2205)	mm	–	–	–	–	–	–	15.6	19.8	19.8	22.5	22.5	25.5	27.5	27.5	30.5
h_{max} (61 2200)	mm	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3
h_{max} (61 2205)	mm	–	–	–	–	–	–	4	4.6	4.6	5	5	5.8	6	6	6.3

Small double open ended spanner set

Material:

61 2400 – Chrome alloy steel; non-flaking, chrome-plated over nickel.



61 2400_10



61 2405_9

Number of keys	63A 61 2400 STAHLWILLE	62A 61 2405 HOLEX	Supplied with: 1 each small double open ended spanner No. 612200 / 612205
	Small double open ended spanner set		
7	eShop	–	Size 4; 4.5; 5; 5.5; 6; 7; 8
9	–	eShop	Size 6; 7; 8; 9; 10; 11; 12; 13; 14 in a textile tool roll
10	eShop	–	Size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11
13	eShop	–	Size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14
15 T	eShop ■	–	Size 3.2; 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 in a textile tool roll
9 ZOLL	eShop	–	5/32; 3/16; 1/4; 5/16; 11/32; 3/8; 7/16; 1/2; 9/16"



Size 15T= 15-piece set in a practical tool roll. 61 2400_15T

Small double open ended spanner set

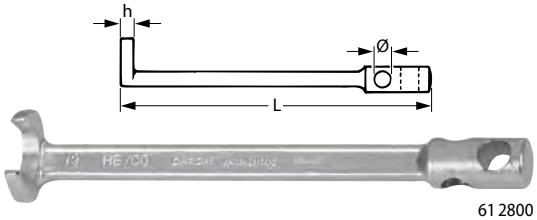
Extra flat spanners (1.5 mm / 2 mm from 7 AF) with unequal jaw widths; in a plastic wallet.
Material: Chrome vanadium steel, laser-profiled, hardened, and nickel-plated.


61 2420

63Q **61 2420**	Small double open ended spanner set 6 pieces	eShop
Supplied with: 1 each small double open ended spanner / AF		3×3.5; 4×4.5; 5×5.5; 6×6.5; 7×8; 9×10 mm

Crowfoot spanner

Drop forged, robust shank and powerful jaw.
Material: Chrome vanadium steel, chrome-plated.
Application: For use where access is difficult.
Note: For suitable tommy bars see No. 621600 – 621800.

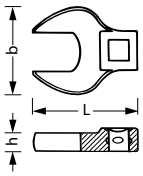


61 2800

Width across flats	mm	13	14	17	19	22	24	27	30	32	36	41
66A **61 2800** Crowfoot spanner		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Spanner length, L	mm	160	160	200	200	200	250	250	250	250	315	315
Head thickness h	mm	5.5	5.5	6	7	8	9	10	11	12	13	14
Bore Ø	mm	8.5	8.5	10.5	12.5	12.5	14.5	14.5	16.5	16.5	19	19

Crowfoot wrench with square drive socket

Drop forged, head with square socket for drive tools such as ratchet, extension etc.
Material: Chrome alloy steel, chrome-plated, round finish surface (no sharp edges).
Note: For suitable drive tools see No. 632000 – 641350 and 655230 – 657766.




61 2900


61 2920

Width across flats	mm	13	14	15	17	19	22	24	27	30
63A **61 2900** Crowfoot wrench **Jaw design**		eShop	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop
Length L	mm	34.3	37.7	37.7	42.5	42.5	44.5	44.5	47	50
Head width b	mm	25.4	30	30	38	38	41	41	45	50
Head thickness h	mm	6.3	6.3	6.3	6.3	6.3	6.3	6.3	8	8
Square drive	in					3/8				

Width across flats	mm	12	14	16	17	18	19	21	22	24	27	30	32	36	46
63A **61 2920** Crowfoot wrench **Open ring form**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Length L	mm	30.8	31.7	36.1	39.2	40.8	40.5	42.8	45.3	47.3	52.8	63	62.5	66.5	77.7
Head width b	mm	20.6	22.2	24.6	27.3	29	29	31.3	33.5	35.7	40	48	48	51.9	64.2
Head thickness h	mm	14	14	17.5	17.5	18.5	18.5	18.5	19	19.5	21.4	22.5	22.5	24	26
Square drive	in	1/4	1/4	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	1/2	1/2	1/2	1/2

Special extension

3/8″

Cranked with 3/8 inch square drive. Chrome alloy steel, chrome-plated, round finish surface.
Suitable for: Crowfoot wrench No. 612900 / 612920 (not No. 612920 size 12, 14 and 30 – 46).

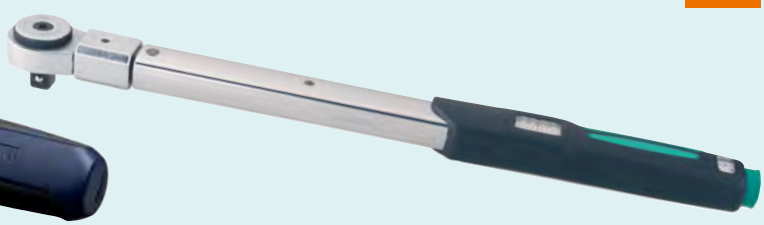

61 2950



63A **61 2950**	Special extension 3/8 inch	eShop
overall length	mm	150

For torque wrenches see Group 65


65 5010

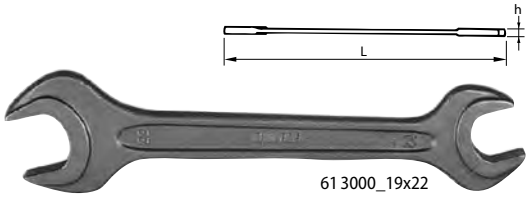

65 7090

HOLEX Double open ended spanner

Drop forged, jaw angle 15°, strong shaft.

Standard: **DIN 895**

Material: Special steel (strength 1200 – 1400 N/mm²). Black oxidised finish.



Widths across flats mm	62A 61 3000 Double open ended spanner DIN 895	L mm	h_{max} mm
6×7	eShop	100	3.5
8×9	eShop	110	4
8×10	eShop	120	4.5
9×11	eShop	125	5
10×11	eShop	130	5.5
10×13	eShop	130	5.5
12×13	eShop	140	5.5
12×14	eShop	150	6
13×15	eShop	160	6.5
13×17	eShop	165	7
14×17	eShop	165	7
16×18	eShop	170	7.5
17×19	eShop	180	7.5
19×22	eShop	200	8.5
19×24	eShop	220	9.5
22×24	eShop	230	9.5
24×27	eShop	255	10.5
24×30	eShop	285	11.5
27×32	eShop	285	12.5
30×32	eShop	285	12.5
30×36	eShop	320	13.5
32×36	eShop	320	13.5
36×41	eShop	365	15
41×46	eShop	400	16
46×50	eShop	440	17
50×55	eShop	485	18
55×60	eShop	525	19

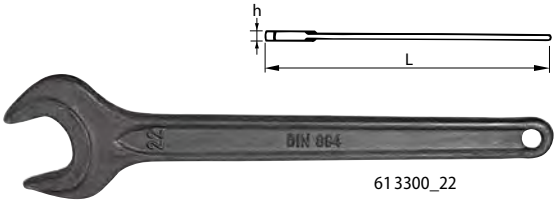
HOLEX Single open ended spanner

Drop forged, jaw angle 15°, strong shaft.

Standard:

Size 6–85 – **DIN 894**

Material: Special steel (strength 1200 – 1400 N/mm²). Black oxidised finish.

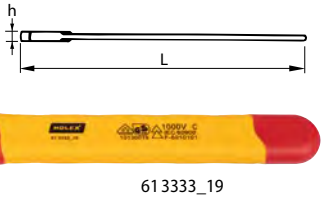


Width across flats mm	62A 61 3300 Single open ended spanner	L mm	h_{max} mm
6	eShop	75	3.5
7	eShop	80	3.5
8	eShop	100	4
9	eShop	105	4.5
10	eShop	110	5
11	eShop	120	5.5
12	eShop	130	5.5
13	eShop	140	6
14	eShop	150	6
15	eShop	160	6
16	eShop	165	6.5
17	eShop	165	6.5
18	eShop	175	6.5
19	eShop	180	7.5
22	eShop	205	8.5
24	eShop	230	9.5
25	eShop	240	10
27	eShop	250	10.5
30	eShop	275	11.5
32	eShop	290	12.5
34	eShop	305	13
36	eShop	320	13.5
41	eShop	360	15
46	eShop	400	16
50	eShop ■	435	17
55	eShop	480	18
60	eShop	520	19
65	eShop	555	20
70	eShop	600	21
75	eShop	640	22
80	eShop	670	23
85	eShop	675	24
90	eShop	720	24
95	eShop	875	26
100	eShop	875	26
110	eShop	1000	28

HOLEX Single open ended spanners fully insulated to VDE

Drop forged, chrome-plated; with **plastic insulation up to 1000 Volt to DIN EN IEC 60900 / VDE0682-201.**

Material: Chrome vanadium steel.



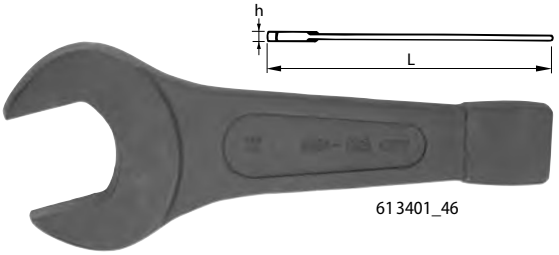
Width across flats mm		8	10	11	13	14	17	19	24	27	30
62A 61 3333	VDE single open ended spanner **fully insulated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	99.5	110	120	140	150	165	180	230	249	284
h_{max}	mm	7.6	8.1	8.6	10.3	10.4	12	12	13.4	14	14.5

HOLEX Open ended slogging spanner

Sturdy design, drop-forged. Tightly toleranced jaw width, jaw angle 15°.

Standard: **DIN 133**

Material: Special steel, surface finish black.



Width across flats mm		27	30	36	41	46	50
62A 61 3401	Open ended slogging spanner	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	175	191	205	229	250	272
h_{max}	mm	15.5	16.5	18.5	19	20.5	21

Width across flats mm		55	60	65	70	75	80
62A 61 3401	Open ended slogging spanner	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	304	316	316	371	380	405
h_{max}	mm	23	24	24	29.5	31.5	34.5

Combination spanner

Drop-forged. With close tolerance jaw width.

Combination spanner, normal version

61 3500–3520 – With easy-grip fluted shaft. Optimum flexional resistance, good torque transmission. Ring end with **AS-Drive** profile. (Sizes 3.2 – 5 with hexagon).

61 3600/3610 – With optimised profile shank for specially secure grip and ergonomic working. Exceptional tool life and wear resistance. Ring end with **HT-Drive** profile.

61 3800/3810 – Particularly suitable where space is tight. The combination of the 7.5° offset for the open jaws and the bi-hexagon geometry for the ring achieves a doubling of the application points. The small working arc of the open jaws allows the bolt head to be gripped every 15° of rotation.

61 3900–3970 – With oval shaft.

Standard: **DIN 3113 A / ISO 3318 / ISO 7738**

Material:

61 3500/3520/3510 – Chrome alloy steel, non-flaking chrome-plated over nickel; smoothed finish.

61 3600/3610 – Chrome vanadium steel, chrome-plated.

61 3800/3810 – Chrome molybdenum steel, matt chrome-plated.

61 3900/3910 – Chrome vanadium steel, phosphated.

61 3950/3970/3960 – Chrome vanadium steel, chrome-plated.

Note:

61 3600/3610 – **HT-Drive** – the particularly close-fitting profile.

Advantage:

- Bolts are gripped on the flanks. – The bolts are protected. – Longer bolt life.
- Larger contact surfaces between bolt and tool. – Secure grip and higher torque transmission.





The small working arc of the open jaws is particularly suitable where space is tight.



61 3600

Ring end AS drive.



61 3500

Ring end AS drive.



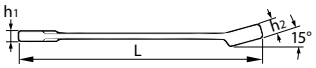
61 3800



61 3900



61 3950



61 3600

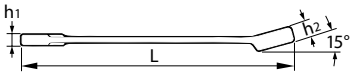
Width across flats	61A 61 3600 Garant	63A 61 3500 STAHLWILLE	63F 61 3800 Wera	62A 61 3900 HOLEX	62A 61 3950 HOLEX	L		$h_{1\,max}$	$h_{2\,max}$
	Combination spanner					61 3600 61 3500 61 3800	61 3900 61 3950		
mm				phosphated	chrome-plated	mm	mm	mm	mm
3,2	–	eShop	–	–	–	75	–	3	3.2
3,5	–	eShop	–	–	–	75	–	3	3.2
4	–	eShop	–	eShop	eShop	85	100	4	6
4,5	–	eShop	–	eShop	eShop	85	100	4	6
5	–	eShop	–	eShop	eShop	95	100	4	6
5,5	eShop ■	eShop ■	eShop	eShop	eShop ■	100	100	4	6
6	eShop ■	eShop ■	eShop	eShop	eShop ■	105	100	4	6
7	eShop ■	eShop ■	eShop	eShop	eShop ■	110	110	4	7
8	eShop ■	eShop ■	eShop	eShop	eShop ■	115	120	4.5	7
9	eShop ■	eShop ■	–	eShop	eShop ■	120	130	4.5	8
10	eShop ■	eShop ■	eShop	eShop	eShop ■	125	140	5	9
11	eShop ■	eShop	eShop	eShop	eShop ■	135	150	5.5	10
12	eShop ■	eShop ■	eShop	eShop	eShop ■	140	160	5.5	10
13	eShop ■	eShop ■	eShop	eShop	eShop ■	160	170	6.5	11
14	eShop ■	eShop ■	eShop	eShop	eShop ■	165	180	6.5	12
15	eShop ■	eShop ■	eShop	eShop	eShop ■	170	190	7	12
16	eShop ■	eShop	eShop	eShop	eShop ■	180	200	8	13
17	eShop ■	eShop ■	eShop	eShop	eShop ■	190	210	8	13
18	eShop ■	eShop ■	eShop	eShop	eShop ■	200	220	9	14
19	eShop ■	eShop ■	eShop	eShop	eShop ■	230	230	9	14
20	eShop ■	eShop	eShop	eShop	eShop ■	230	240	9	14
21	eShop ■	eShop	eShop	eShop	eShop	260	250	10	15
22	eShop ■	eShop	eShop	eShop	eShop ■	260	260	10	15
23	–	eShop	–	eShop	eShop	280	270	10	15
24	eShop ■	eShop ■	eShop	eShop	eShop ■	280	280	12	16
25	–	eShop	–	eShop	eShop	300	290	12	16
27	eShop ■	eShop	eShop	eShop	eShop	300	310	13	18
30	eShop ■	eShop	eShop	eShop	eShop	330	340	14	20
32	eShop ■	eShop	eShop	eShop	eShop	360	360	14	21
34	eShop	eShop	–	eShop	eShop	450	380	14	21
36	eShop	eShop	eShop	eShop	eShop	460	400	15	24
38	–	eShop	–	–	–	480	–	11	19
41	–	eShop	–	eShop	eShop	480	442	17	26
46	–	eShop	–	eShop	eShop	500	492	18	28
50	–	eShop	–	–	–	530	–	14	21
55	–	eShop	–	–	–	560	–	15	22
60	–	eShop	–	–	–	590	–	16	24



61 3520
Ring end AS drive.



61 3970



Width across flats	63A 61 3520 STAHLWILLE	62A 61 3970 HOLEX	L	$h_{1\,max}$	$h_{2\,max}$
	Combination spanner, imperial				
		chrome-plated	61 3520	61 3970		
in			mm	mm	mm	mm
13/64	eShop	–	95	–	3	3.2
7/32	eShop	–	95	–	3	3.2
15/64	eShop	–	95	–	3	3.2
1/4	eShop ■	eShop ■	105	101	4	6
9/32	eShop	–	110	–	3.9	6
5/16	eShop ■	eShop ■	115	121	4.5	7
11/32	eShop	–	120	–	4.5	7
3/8	eShop ■	eShop ■	125	141	5	9
7/16	eShop ■	eShop ■	135	151	5.5	10
1/2	eShop ■	eShop ■	160	171	6.5	11
9/16	eShop ■	eShop ■	165	181	6.5	12
19/32	eShop	–	170	–	5.3	8.5
5/8	eShop ■	eShop ■	180	201	8	13
11/16	eShop ■	eShop ■	200	211	8	13
3/4	eShop ■	eShop ■	230	231	9	14
25/32	eShop	–	235	–	7	13
13/16	eShop ■	eShop ■	260	251	10	15
7/8	eShop ■	eShop ■	260	261	10	15
15/16	eShop ■	eShop ■	280	281	12	16
1	eShop ■	eShop ■	300	291	12	16
1.1/16	eShop	–	300	–	8.4	14.5
1.1/8	eShop	–	330	–	8.9	16
1.1/4	eShop	–	360	–	9.4	16.5
1.5/16	eShop	–	450	–	9.6	17
1.1/2	eShop	–	480	–	11	19



61 3510_12

Number of keys	61A 61 3610 Garant	63A 61 3510 STAHLWILLE	63F 61 3810 Wera	62A 61 3910 HOLEX	62A 61 3960 HOLEX	**Supplied with:** 1 each combination spanner No. 613600 / 613500 / 613800 / 613900 / 613950 / 613520 / 613970
	Combination spanner set					
				phosphated	chrome-plated	
5	–	–	eShop	–	–	Size 8; 10; 13; 17; 19
9	eShop	eShop	–	eShop	eShop	Size 5.5; 7; 8; 10; 13; 16; 17; 18; 19
11	–	–	eShop	–	–	Size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19
12	eShop ■	eShop	–	eShop	eShop	Size 5.5; 7; 8; 10; 13; 16; 17; 18; 19; 21; 22; 24
16	eShop	eShop	–	eShop	eShop	Size 5.5; 7; 8; 10; 13; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34
19	eShop	eShop	–	eShop	eShop ■	Size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24
22	–	–	eShop	–	–	Size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24; 27; 30; 32
23	eShop	eShop	–	eShop	eShop	Size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24; 27; 30; 32; 34
13ZOLL	–	eShop	–	–	eShop ■	1/4; 5/16; 3/8; 7/16; 1/2; 9/16; 5/8; 11/16; 3/4; 13/16; 7/8; 15/16; 1 inch

Combination spanner, long version

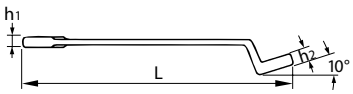
Standard:
61 4600/4200/4610/4210 – **DIN 3113 B / ISO 3318 / ISO 7738**
61 4900/4910 – **DIN 3113 A / ISO 3318 / ISO 7738**

Material:
61 4200/4210 – Chrome alloy steel, non-flaking chrome-plated over nickel; smoothed finish.
61 4600/4610 – Chrome alloy steel; non-flaking chrome-plated, smoothed finish.
61 4900/4910 – Chrome vanadium steel, chrome-plated.



61 4600

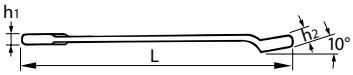
*Ring end deep cranked with **HT-Drive** profile.*





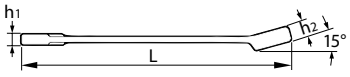
61 4200

Ring end AS drive.





61 4900



Width across flats	61A 61 4600 Garant	63A 61 4200 STAHLWILLE	62A 61 4900 HOLEX	L		$h_{1\,max}$	$h_{2\,max}$
	Combination spanner, long version			61 4600 61 4200	61 4900		
mm				mm	mm	mm	mm
6	–	eShop	eShop	125	128	4.5	6
7	–	eShop	eShop	135	138	5	7
8	eShop	eShop	eShop	145	148	5	7
9	–	eShop	eShop	155	158	5.5	8
10	eShop	eShop	eShop	165	170	5.5	8
11	eShop	eShop	eShop	180	182	6	9
12	eShop	eShop	eShop	180	194	6	9
13	eShop	eShop	eShop	195	206	6.5	10
14	eShop	eShop	eShop	210	218	6.5	10
15	eShop	eShop	eShop	215	230	7	11
16	eShop	eShop	eShop	230	242	8	11
17	eShop	eShop	eShop	240	254	8	12
18	eShop	eShop	eShop	255	266	8.5	12
19	eShop	eShop	eShop	265	278	8.5	13
20	eShop	eShop	eShop	280	290	9	13.1
21	eShop	eShop	eShop	280	302	9.2	13.5
22	eShop	eShop	eShop	300	314	9.5	14.2
24	eShop	eShop	eShop	330	338	10.2	15.7
27	eShop	eShop	eShop	385	386	12	18
30	eShop	eShop	eShop	415	424	13.2	20
32	eShop	eShop	eShop	430	444	14	21
34	eShop	eShop	–	460	–	13	18
36	eShop	eShop	–	480	–	13	19
41	–	eShop	–	560	–	14	20

Number of keys	61A 61 4610 Garant	63A 61 4210 STAHLWILLE	62A 61 4910 HOLEX	**Supplied with:** 1 each combination spanner No. 614600 / 614200 / 614900
	Combination spanner set, long version			
9	eShop	eShop	eShop	Size 10; 13; 16; 17; 18; 19; 21; 22; 24
11	eShop	eShop	eShop	Size 10; 13; 16; 17; 18; 19; 21; 22; 24; 27; 30
14	eShop	eShop	eShop	Size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24
18	eShop	eShop	–	Size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24; 27; 30; 32; 34



61 4210_14

61 4210_14 ring end AS drive.

61

Combination spanner, extra long

Ring end 15° offset. Ergonomic handy hollow shank handle.
Extra long shank for deep access points.
Especially suitable for high-torque high-strength screw fastenings.

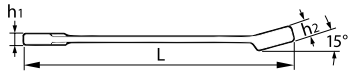
Material: Chrome vanadium steel, chrome-plated.



61 4750



61 4780



Width across flats	mm	7	8	9	10	11	12	13	14	15	16	17	18
63M 61 4750 GEDORE	Combination spanner, extra long version	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 61 4780 HOLEX		–	–	–	eShop	–	–	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	160	170	180	190	200	210	225	235	250	265	280	295
$h_{1\,max}$	mm	4	4.5	4.5	5	5.5	5.5	6	6.5	7	7.5	8.5	8.5
$h_{2\,max}$	mm	6.5	7	7.5	8.5	9	10	10.5	10.8	11.2	11.2	12.2	13.2

Width across flats	mm	19	21	22	24	27	30	32	34	36	41	46
63M 61 4750 GEDORE	Combination spanner, extra long version	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 61 4780 HOLEX		eShop	–	eShop	eShop	–	–	–	–	–	–	–
L	mm	310	340	350	400	450	480	500	520	550	600	640
$h_{1\,max}$	mm	9.5	9.5	11	12	13	14	14	15	15	16	17
$h_{2\,max}$	mm	14.2	14.2	16.2	18.2	20.2	21.2	22.2	23.2	24.2	26	28



61 4760_8



61 4760_12

Number of keys		8	12
63M 61 4760	GEDORE Combination spanner set, extra long version	eShop	eShop
Supplied with: 1 each combination spanner No. 614750		Size 8; 9; 10; 11; 13; 14; 17; 19	Size 10; 11; 12; 13; 14; 17; 19; 22; 24; 27; 30; 32



61 4785_10

Number of spanners		10
62A 61 4785	HOLEX Combination spanner set, extra long version	eShop
Supplied with: 1 each combination spanner No. 614780		Size 10; 13; 14; 15; 16; 17; 18; 19; 22; 24

61

Garant Open ended spanner / ratchet ring spanner

Drop forged. Ring end with especially smooth–running, robust ring ratchet.
Extremely small working arc of 5°.

Material: Chrome vanadium steel, matt chrome-plated.



61 4770



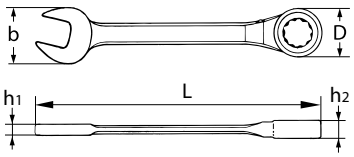
61 4812



61 4816



61 4820



Width across flats	61B 61 4770	61B 61 4812	61B 61 4816	61B 61 4820	L		b		h_1		h_2		∅ D
	Open ended spanner / ratchet ring spanner				61 4770 61 4812 61 4820	61 4816	61 4770	61 4812 61 4816 61 4820	61 4770	61 4812 61 4816 61 4820	61 4770	61 4812 61 4816 61 4820	
		with swivel head	short version	reversible 15° offset									
mm					mm	mm	mm	mm	mm	mm	mm	mm	mm
6	eShop	–	–	eShop	136	–	16.5	18	3.9	5	7.6	7	17.5
7	eShop	–	–	eShop ■	136	–	16.5	18	3.9	5	7.6	7	17.5
8	eShop ■	eShop	eShop	eShop ■	136	88	18	18	4.2	5	7.6	7	17.5
9	eShop ■	eShop	eShop	eShop ■	143	97	21	19.3	4.5	5	7.7	7.6	19
10	eShop ■	eShop	eShop	eShop ■	160	94	22	22	4.8	5.2	7.7	7.7	20.8
11	eShop ■	eShop	eShop	eShop	168	99	26.1	24	4.8	5.3	8.7	8.3	22.5
12	eShop ■	eShop	eShop	eShop	174	105	27.6	25.9	5.3	5.8	9.2	8.7	23.7
13	eShop ■	eShop	eShop	eShop ■	180	107	29	27.1	5.3	6	9.5	9.3	25.5
14	eShop ■	eShop	eShop	eShop ■	193	112	31.1	30.9	5.3	6.6	9.7	9.4	27.3
15	eShop ■	eShop	eShop	eShop ■	200	118	34.7	33.4	5.3	6.9	10.2	10	28.9
16	eShop ■	eShop	eShop	eShop ■	216	122	35.1	34	5.8	7.1	10.7	10.6	30.3
17	eShop ■	eShop	eShop	eShop ■	233	126	37	36.6	5.8	7.9	10.7	10.9	33.3
18	eShop ■	eShop	eShop	eShop ■	239	130	39.5	38.6	6.7	8.1	11.2	11.2	33.4
19	eShop ■	eShop	eShop	eShop ■	250	137	41.6	40.3	6.8	8.5	11.6	11.5	34.5
21	eShop ■	–	–	eShop	286	–	46.7	45.7	7.3	9.6	13.9	13	42
22	eShop ■	–	–	eShop	286	–	47.6	45.7	7.3	9.6	13.9	13	42
24	eShop ■	–	–	eShop	325	–	51.6	50.8	7.8	10.2	14.7	14.5	47.1
27	eShop ■	–	–	eShop	359	–	58.1	55.2	8.4	12.5	15.4	15	52
30	eShop ■	–	–	eShop	425	–	63.1	65	8.9	13.8	16.6	17	60
32	eShop	–	–	eShop	425	–	63.1	65	9.4	13.8	16.6	17	60
36	–	–	–	eShop	482	–	–	76.2	–	16.6	–	19.6	65.5

Width across flats	61B 61 4825	L	b	h_1	h_2	∅ D
	Open ended spanner / ratchet ring spanner set, imperial					
in		mm	mm	mm	mm	mm
1/4	eShop ■	136	17.1	4.3	7	17.3
5/16	eShop ■	136	17.7	4.6	7	17.3
3/8	eShop ■	160	22	5.2	7.7	20.8
7/16	eShop ■	168	24	5.3	8.3	22.5
1/2	eShop ■	180	27.1	6	9.3	25.5
9/16	eShop ■	193	30.9	6.6	9.4	27.3
5/8	eShop ■	216	34	7.1	10.6	30.3
11/16	eShop ■	233	36.6	7.9	10.9	33.3
3/4	eShop ■	250	40.3	8.5	11.5	34.5
1	eShop ■	325	50.8	10.2	14.5	47.1

Supplied with:

Size 4 – 1 each spanner No. 614770 in sizes 10; 13; 17; 19.
61 4775 Size 5 – 1 each spanner No. 614770 in sizes 8; 10; 13; 16; 17.
Size 10 – 1 each spanner No. 614770 in sizes 8; 9; 10; 11; 13; 14; 16; 17; 18; 19.
61 4814 Size 5 – 1 each spanner No. 614812 in sizes 8; 10; 13; 16; 17.
Size 10 – 1 each spanner No. 614812 in sizes 8; 9; 10; 11; 13; 14; 16; 17; 18; 19.
61 4818 Size 5 – 1 each spanner No. 614816 in sizes 8; 10; 13; 16; 17.
Size 10 – 1 each spanner No. 614816 in sizes 8; 9; 10; 11; 13; 14; 16; 17; 18; 19.
61 4830 Size 5 – 1 each spanner No. 614820 in sizes 8; 10; 13; 16; 17.
Size 10 – 1 each spanner No. 614820 in sizes 8; 9; 10; 11; 13; 14; 16; 17; 18; 19.

Note:

61 4775 – Spare tool wallets can be found under No. 614773.
61 4814–4830 – Spare tool wallets can be found under No. 614835 / 614836.



61 4775_4

Number of spanners	61B 61 4775	61B 61 4814	61B 61 4818	61B 61 4830
	Open ended spanner / ratchet ring spanner set, in a tool wallet			
		with swivel head	short version	reversible 15° offset
4	eShop	–	–	–
5	eShop	eShop	eShop	eShop ■
10	eShop ■	eShop	eShop	eShop

61

STAHLWILLE® Open ended spanner / ratchet ring spanner reversible, 15° offset

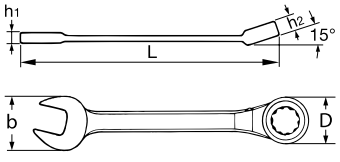
Drop forged. The integrated 72-tooth ratchet allows a working angle of just 5° – for efficient working even in confined spaces.

Material: Chrome alloy steel, chrome-plated.





61 4853



Width across flats	63A 61 4853	L	b	h_1	h_2	∅ D
	Open ended spanner / ratchet ring spanner reversible, 15° offset					
mm		mm	mm	mm	mm	mm
8	eShop	144	17	4.7	7.4	18
9	eShop	150	18.8	5.3	7.4	19.5
10	eShop	158	21.7	5.7	8.4	21
11	eShop	165	23	6.1	8.4	22
12	eShop	173	25.2	6.4	8.4	23.5
13	eShop	182	26.5	6.6	8.4	25
14	eShop	190	29.5	7.3	8.4	26.5
15	eShop	202	31.3	7.5	8.4	28
16	eShop	215	33.4	7.7	10	29
17	eShop	229	36.3	7.9	10	30.5
18	eShop	240	38	8.4	11.5	32
19	eShop	252	39	8.7	11.5	34
21	eShop	275	43.5	9	12.5	38
22	eShop	285	46.5	10	13.5	41
24	eShop	296	48.5	11	13.5	45

Number of tubular socket wrenches		5	12
63A 61 4854	Open ended spanner / ratchet ring spanner set, in a tool roll **reversible, 15° offset**	eShop	eShop
Supplied with: 1 each open ended/ratchet ring spanner No. 614853		Sizes 8; 10; 13; 17; 19	Size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19
Presented in		Tool roll with hook and loop fastening	



61 4854_5

HOLEX Open ended spanner / ratchet ring spanner

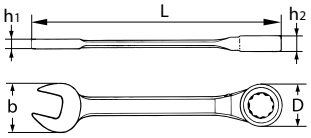
Drop forged. Ring end with especially smooth–running, robust ring ratchet.
Extremely small working arc of 5°.

Material: Chrome vanadium steel, matt chrome-plated.

Width across flats	62A 61 4805	62A 61 4828	L	b	h_1	h_2	∅ D
	Open ended spanner / ratchet ring spanner						
		reversible 15° offset					
mm			mm	mm	mm	mm	mm
6	eShop	–	125	15.4	4.1	6.9	17.4
7	eShop	eShop	135	18.4	4.6	6.9	17.4
8	eShop	eShop	135	18.4	4.6	6.9	17.4
9	eShop	eShop	153	21.9	5	7.6	20.9
10	eShop	eShop	153	21.9	5	7.6	20.9
11	eShop	eShop	166	23.9	5.4	8.2	22.9
12	eShop	eShop	179	27.9	6	9.2	26.4
13	eShop	eShop	179	27.9	6	9.2	26.4
14	eShop	eShop	192	30.4	6.4	9.3	28.4
15	eShop	eShop	207	34.4	6.9	10.5	31.4
16	eShop	eShop	207	34.4	6.9	10.5	31.4
17	eShop	eShop	223	38.4	7.4	10.8	33.4
18	eShop	eShop	223	38.4	7.4	10.8	33.4
19	eShop	eShop	242	41.9	7.7	11.4	35.4
21	eShop	–	273	46.4	9.4	13.7	41.9
22	eShop	–	273	46.4	9.4	13.7	41.9
24	eShop	–	313	51.4	10	14.5	46.9
27	eShop	–	358	56.4	10.8	15.4	52.7
30	eShop	–	403	62.4	11.4	16.6	59.7

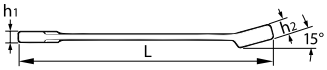


61 4805





61 4828



In a handy textile tool roll.

Supplied with:

Size 4 – 1 each spanner No. 614805 in sizes 10; 13; 17; 19.
61 4815 Size 10 – 1 each spanner No. 614805 in sizes 8; 9; 10; 11; 13; 14; 16; 17; 18; 19.
Size 5 – 1 each spanner No. 614828 in sizes 8; 10; 13; 16; 17.
61 4838 Size 10 – 1 each spanner No. 614828 in sizes 8; 9; 10; 11; 13; 14; 16; 17; 18; 19.

Number of keys	62A 61 4815	62A 61 4838
	Open ended spanner/ ratchet ring spanner set, in a wallet	
		reversible 15° offset
4	eShop	–
5	–	eShop
10	eShop	eShop



61 4815_10



61 4838_10

Wera JOKER 6007 open ended spanner / ratchet ring spanner extra-long

Drop-forged. Ring end with smooth-running sturdy precision ring ratchet (80 teeth) with a particularly small working arc of 4.5°.
The open end has a bi-hexagon profile and a replaceable hardened metal plate, which fulfills a stop function, preventing slippage and allowing a small working arc.

Material: Chrome molybdenum steel, matt chrome-plated.



61 4865_8 – 19

Width across flats	mm	8	10	13	17	19
63F 61 4865	JOKER 6007 open ended spanner / ratchet ring spanner extra-long	eShop	eShop	eShop	eShop	eShop
L	mm	180	209	245	304	334
b	mm	21	24.2	29.4	39	43
h_1	mm	6	6.3	8	9	10
h_2	mm	7	7.2	8.6	10.5	11
∅ D	mm	18	21	26	33.5	36

Number of spanners		5
63F 61 4867	JOKER 6007 open-ended spanner / ratchet ring spanner set extra-long	eShop
Supplied with: 1 each double-ended box spanner No. 614865		Sizes 8; 10; 13; 17; 19



61 4867

Wera JOKER open ended spanner / ratchet ring spanner

Drop forged. Ring end with smooth-running sturdy precision ring ratchet (80 teeth) with a particularly small working arc of 4.5°.
The open end has a bi-hexagon profile and a replaceable hardened metal plate, which fulfils a stop function, preventing slippage and allowing a small working arc.

61 4875/4885 – Ring end 15° offset, reversible.

Material: Chrome molybdenum steel, matt chrome-plated.

JOKER 6004 is available in our product group 81 (article no. 81 3740 and 81 3745).



Handy stop function for secure engagement on nuts and bolts.

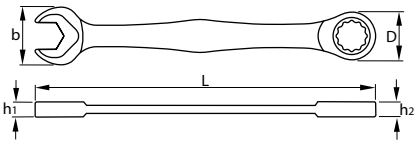


The end stop prevents irritating slipping from the bolt head.



Small working arc, no need to turn the spanner over due to the bi-hex profile.

TAKE IT EASY TOOL FINDER





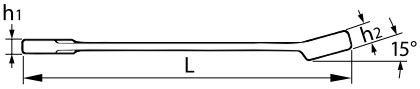
61 4870

Width across flats	mm	8	10	11	12	13	14	15	16	17	18	19
63F **61 4870**	JOKER 6000 open ended spanner / ratchet ring spanner	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	144	159	165	170.7	177	188	200	212	224	235	246
b	mm	20	22	25	26.3	27.3	29.3	32.3	35	37.2	39	42
h_1	mm	5.5	5.5	6.3	6.6	7	7.5	7.8	8.2	8.5	9	9.5
h_2	mm	7	7.2	7.5	8.5	8.5	9.2	9.2	10.5	10.5	11	11
∅ D	mm	18	21	22	25	25	28	28.5	32.7	32.7	33.8	34.8

Width across flats	mm	10	13	17	19
63F **61 4875**	JOKER 6001 Switch open ended spanner / ratchet ring spanner, **reversible, 15° offset**	eShop	eShop	eShop	eShop
L	mm	144	179	225	246
b	mm	20.3	27.3	37	42
h_1	mm	5.5	7	8.5	9.5
h_2	mm	7	8.5	10.5	11
∅ D	mm	18	26	33	34.7



61 4875



Number of keys		4	11
63F **61 4880**	JOKER 6000 open ended spanner / ratchet ring spanner set	eShop	eShop ■
Supplied with: 1 each open ended spanner / ratchet ring spanner No. 614870		Size 10; 13; 17; 19	Size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19



61 4880_4

Number of keys		4
63F **61 4885**	JOKER 6001 Switch open ended spanner / ratchet ring spanner set, **reversible, 15° offset**	eShop
Supplied with: 1 each open ended spanner / ratchet ring spanner No. 614875		Size 10; 13; 17; 19

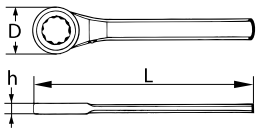


61 4885_4

HOLEX Ratchet single ended ring spanners fully insulated to VDE

Drop-forged, chrome-plated. With **plastic insulation up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**

Material: Chrome vanadium steel.





61 4833

Width across flats	mm	10	11	13	14	17	19	24
62A **61 4833**	Single ended ratchet ring spanner **VDE fully insulated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	135	140	150	160	180	200	260
∅ D	mm	25.9	27.5	31	32.7	32.9	39.7	52.7
h	mm	12.2	13.2	13.8	13.8	15.1	16.1	20.3

Four-way ratchet ring spanner “4 in 1”, reversible

With particularly free-running sturdy ratchet at each end – reversible for left and right hand tightening. The 2 ends have different widths across flats.
Extremely small working arc of 5°.

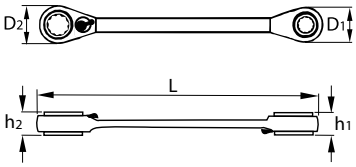
Material: Chrome vanadium steel, matt chrome-plated.



61 4847_16-19

61 4848_10-19

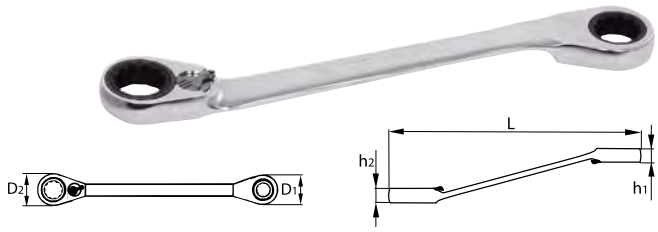
Type		8-13	12-15	9-15	10-19	16-19	21-27
61B 61 4847 Garant	Four-way ratchet ring spanner “4 in 1”	eShop	eShop	–	eShop ■	eShop	eShop
62A 61 4848 HOLEX		–	–	eShop	eShop	–	–
Width across flats 1	mm	8	12	9	10	16	21
Width across flats 2	mm	10	13	11	13	17	22
Width across flats 3	mm	12	14	14	17	18	24
Width across flats 4	mm	13	15	15	19	19	27
L	mm	150	190	180	210	230	275
D_1	mm	20.2	26.5	23	26	31.5	40
D_2	mm	24.8	29.5	30	35	33.5	52
h_1	mm	13.8	17.1	14	15	20.2	26
h_2	mm	16.8	18	16	20	21.9	30



Garant Double ratchet ring spanner, offset, reversible

Drop forged, with particularly free-running sturdy ratchet ring at each end.
Reversible for left- and right-hand tightening. Extremely small working arc of 5°.

Material: Chrome vanadium steel, matt chrome-plated.



Jaw widths	mm	8×9	10×11	12×13	14×15	16×18	17×19
61B 61 4845	Double ratchet ring spanner, 15° offset	eShop	eShop	eShop	eShop	eShop	eShop
Width across flats 1	mm	8	10	12	14	16	17
Width across flats 2	mm	9	11	13	15	18	19
L	mm	128	150	170	190	230	230
D_1	mm	18.2	21.5	24.6	28.3	34.5	34.5
D_2	mm	21.5	23.1	26.5	32.6	35.6	35.6
h_1	mm	7.4	7.6	8.9	9.4	9.9	10.7
h_2	mm	7.4	8.2	9	9.4	11	11.2

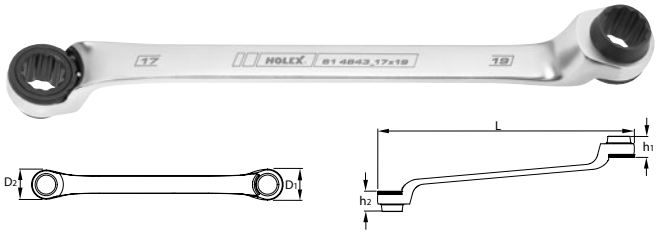
HOLEX Double ratchet ring spanner, deep cranked, reversible

Drop-forged. With close tolerance jaw widths. Reversible for left- and right-hand tightening, plus centre position. With unequal jaw widths, deep cranked.
Extremely small working arc of 5°.

Material: Chrome vanadium steel, matt chrome-plated.



Changeover mechanism.



Widths across flats	mm	10×12	11×13	12×14	13×15	13×17	16×18	17×19	19×22	24×27	30×32
62A 61 4843	Double ratchet ring spanner	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Width across flats 1	mm	10	11	12	13	13	16	17	19	24	30
Width across flats 2	mm	12	13	14	15	17	18	19	22	27	32
L	mm	197	218	218	238	245	258	290	300	330	380
D_1	mm	21.5	24	24	28	28	31	33	35	48	60
D_2	mm	24	28	28	31	33	34	35	48	60	64.5
h_1	mm	16	18	18	20	20	21.5	23	24	30	34
h_2	mm	18	20	20.5	21.5	23	23.5	24	30	34	35

Double-ended ring spanner, deeply cranked

Drop-forged. With close tolerance jaw widths.

61 5000 – With easy-grip fluted shaft. Optimum flexional resistance, good torque transmission. Ring end with **AS-Drive** profile.

61 5600 – With easy-grip profile shaft. Exceptional tool life and wear resistance. Ring ends with **HT-Drive** profile.

61 5900/5950 – With oval shaft.

Standard: **DIN 838 / ISO 3318**

Material:

61 5000 – Chrome vanadium steel, chrome-plated.

61 5600 – Chrome alloy steel; non-flaking chrome-plated, smoothed finish.

61 5900 – Chrome vanadium steel, phosphated.

61 5950 – Chrome vanadium steel, chrome-plated.

Note:

61 5600 – **HT-Drive –** the particularly close-fitting profile.

Advantage

- Bolts are gripped on the flanks.
- The corners are protected.
- Longer bolt life.
- Larger contact surfaces between bolt and tool.
- Secure grip and higher torque transmission.



61 5600
***HT drive** profile*



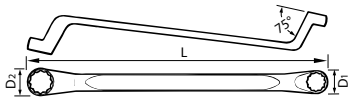
61 5000
***AS-Drive** profile*



61 5900



61 5950



Width across flats	61A 61 5600 Garant	63A 61 5000 STAHLWILLE	62A 61 5900 HOLEX	62A 61 5950 HOLEX	L		$D_{1\,max}$	$D_{2\,max}$
	Double-ended ring spanner, deeply cranked				61 5600 61 5000	61 5900 61 5950		
			phosphated	chrome-plated				
mm					mm	mm	mm	mm
6×7	eShop	eShop	eShop	eShop	165	167	11	12
7×8	eShop	–	eShop	eShop	180	180	12	14
8×9	eShop	eShop	eShop	eShop	180	182	14	15
8×10	eShop	eShop	eShop	eShop	180	182	14	16
10×11	eShop	eShop	eShop	eShop	200	197	16	18
10×13	eShop	eShop	eShop	eShop	220	216	16	21
12×13	eShop	eShop	eShop	eShop	220	216	20	21
12×14	eShop	–	eShop	eShop	220	216	20	23
13×14	–	–	eShop	eShop	–	239	22	23
13×15	eShop	–	eShop	eShop	245	239	22	23
13×17	eShop	eShop	eShop	eShop	245	263	22	27
14×15	eShop	eShop	eShop	eShop	245	239	22	23
14×17	eShop	–	eShop	eShop	245	263	22	27
16×17	eShop	eShop	eShop	eShop	255	263	25	27
16×18	eShop	–	eShop	eShop	270	263	25	27
17×19	eShop	eShop	eShop	eShop	270	290	28	29
18×19	eShop	eShop	eShop	eShop	275	290	28	29
18×21	eShop	eShop	–	eShop	300	308	28	32
19×22	eShop	eShop	eShop	eShop	300	318	29	34
19×24	–	–	eShop	eShop	–	325	29	35
20×22	eShop	eShop	eShop	eShop	300	318	31	34
21×23	eShop	eShop	eShop	eShop	315	325	32	35
21×24	eShop	eShop	–	eShop	330	325	32	35
22×24	eShop	eShop	eShop	eShop	330	325	34	37
24×26	eShop	eShop	–	eShop	330	337	36	40
24×27	eShop	eShop	eShop	eShop	330	337	36	40
24×30	–	–	eShop	eShop	–	346	36	44
25×28	–	eShop	eShop	eShop	350	346	36	40
27×30	eShop	eShop	eShop	eShop	360	346	40	44
27×32	eShop	eShop	–	eShop	360	360	40	48
30×32	eShop	eShop	eShop	eShop	365	360	44	48
30×34	eShop	eShop	–	eShop	365	375	44	50
32×36	–	–	eShop	eShop	–	410	48	52
36×41	eShop	eShop	eShop	eShop	440	440	53	60
41×46	–	–	eShop	eShop	–	475	60	67
46×50	–	eShop	–	–	535	–	67	73



61 5500_12

Double-ended ring spanner set, deeply cranked

Number of keys	61A 61 5610 Garant	63A 61 5500 STAHLWILLE	62A 61 5910 HOLEX	62A 61 5960 HOLEX	**Supplied with:** 1 each double ended ring spanner No. 615600 / 615000 / 615900 / 615950
	Double-ended ring spanner set, deeply cranked				
			phosphated	chrome-plated	
8	eShop	eShop	eShop	eShop	6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×21; 19×22
10	eShop	eShop	eShop	eShop	6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×24; 27×30
12	eShop	eShop	eShop	eShop	6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×23; 24×26; 27×32; 30×34
13	eShop	eShop	eShop	eShop	6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×23; 24×26; 27×32; 30×34; 36×41
10ZOLL	–	eShop	–	–	1/4×5/16; 3/8×7/16; 1/2× 9/16; 9/16×5/8; 19/32×11/16; 5/8×3/4; 11/16×13/16; 3/4×7/8; 25/32×13/16; 7/8×15/16 inch

STAHLWILLE® Double-ended ring spanners, shallow cranked

Drop-forged. With close tolerance jaw widths. Thin, flat rings for use in restricted places. With easy-grip fluted shaft. Optimum flexional resistance, good torque transmission. Shallow cranked head at each end. With **AS-Drive** profile.

Standard: **DIN 897 / ISO 3318**

Material: Chrome alloy steel, non-flaking chrome-plated over nickel; smoothed finish.

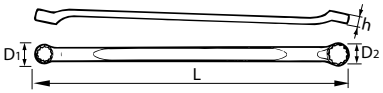
Width across flats mm	63A 61 6500 Double-ended ring spanner, shallow cranked	L mm	$D_{1\,max}$ mm	$D_{2\,max}$ mm	$h_{1\,max}$ mm
6×7	eShop	170	9.5	10.8	7
8×9	eShop	179	12.1	13.3	8
10×11	eShop	188	14.6	15.9	9.5
12×13	eShop	203	17.3	18.6	10.5
14×15	eShop	219	20.1	21.4	11.5
16×17	eShop	248	22.7	24.1	12.5
17×19	eShop	250	24.1	27	13.5
18×19	eShop	251	25.5	27	13.5
20×22	eShop	280	28.5	31.3	14.5
21×23	eShop	328	29.8	32.9	14.5
24×27	eShop	376	34.3	38.6	16

Number of keys	63A 61 6510 Double-ended ring spanner set, shallow cranked	Content: 1 each double-ended ring spanner No. 616500
8	eShop	6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22

AS-Drive profile



61 6500





61 6510

Double-ended ring spanners, straight

Drop-forged. With close tolerance jaw widths.

61 7600 – **STAHLWILLE –** With easy-grip fluted shaft. Optimum flexional resistance, good torque transmission. Thin, flat rings for use in restricted places. With **AS-Drive** profile.

61 7950 – **HOLEX –** With oval shaft.

Standard: **DIN 837 B / ISO 3318**

Material:

61 7600 – **STAHLWILLE –** Chrome alloy steel; non-flaking chrome-plated over nickel; smoothed finish surface.

61 7950 – **HOLEX –** Chrome vanadium steel, chrome-plated.

Width across flats mm	63A 61 7600 STAHLWILLE®	62A 61 7950 HOLEX chrome-plated	L 61 7600 mm	L 61 7950 mm	$D_{1\,max}$ mm	$D_{2\,max}$ mm	$h_{1\,max}$ mm
6×7	eShop	eShop	100	100	10.5	12	4.5
8×9	eShop	eShop	115	115	13.5	15	5.5
8×10	eShop	eShop	115	115	13.5	16	6
10×11	eShop	eShop	130	130	16	17	6
12×13	eShop	eShop	150	144	19	21	6.8
13×17	eShop	eShop	170	165	20.5	25.5	8
14×15	eShop	eShop	165	159	21.5	23	7.5
16×17	eShop	eShop	170	169	24.5	25.5	8
16×18	–	eShop	–	169	24.5	25.5	7.8
17×19	eShop	eShop	185	184	26.5	27.6	8.8
18×19	eShop	eShop	185	184	26.5	27.6	9
18×21	(eShop)	eShop	210	194	26.5	30.5	9.8
19×22	eShop	eShop	210	204	29	32.4	10.8
20×22	eShop	eShop	210	204	29	32.4	10.8
21×24	eShop	eShop	235	228	30.5	34.7	10.8
24×27	eShop	eShop	290	258	35	38.5	11
27×32	eShop	eShop	320	288	38.5	45.5	12.8
30×32	eShop	eShop	325	318	43	48.5	12.8
30×34	eShop	–	325	–	43	48.5	13.8

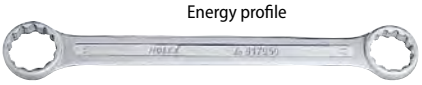
Number of keys	63A 61 7610 STAHLWILLE®	62A 61 7960 HOLEX chrome-plated	Content: 1 each double-ended ring spanner No. 617600 / 617950
8	eShop	eShop	6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×21; 19×22
11	eShop	eShop	6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×24; 27×32; 30×34

AS-Drive profile

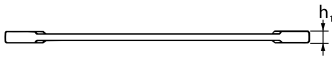


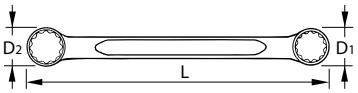
61 7600

Energy profile



61 7950







617610_8

STAHLWILLE® Double-ended crescent ring spanner

Drop forged ring spanner in a crescent shape. Close tolerance jaw widths.
Torsion-resistant fluted shaft. With **AS Drive** profile.

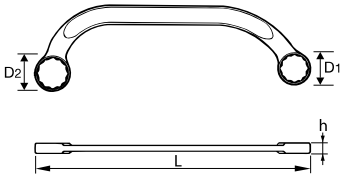
Material: Chrome alloy steel, non-flaking chrome-plated over nickel; smoothed finish surface (no sharp edges).

Application: Specially for working on engine blocks, e.g. fitting carburettors, alternators etc. and everywhere where nuts and bolts are difficult to reach using normal ring spanners.



61 8000

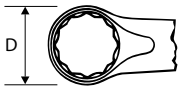
Jaw widths		mm	10×12	11×13	14×17	16×18	19×22
63A 61 8000	Double-ended crescent ring spanner		eShop	eShop	eShop	eShop	eShop
Wrench length		mm	150	150	179	200	225
Ring ∅ D_1		mm	16.5	16.5	21	25.3	28
Ring ∅ D_2		mm	19.5	19.5	24.5	27.5	32
h		mm	6.5	6.5	7.5	8.5	9



Heavy ring spanners, cranked

Drop forged, heavy-duty version, cranked approx. 80°.
Spring loaded locking pin for extension tube No. 618600 / 618610.

Material: Chrome vanadium steel, chrome-plated.





61 8500



61 8510

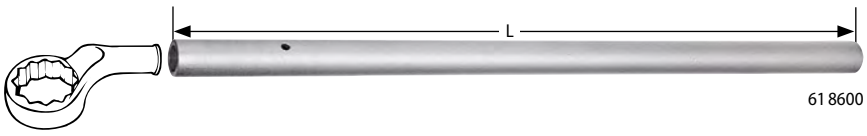
Width across flats		mm	24	27	30	32	36	41	46
66A 61 8500	WALTER Heavy ring spanner (without tube)		eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 61 8510	HOLEX Heavy ring spanner (without tube)		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Wrench length		mm	180	190	200	235	245	265	280
Ring ∅ D (61 8500)		mm	38	41	48	49	55	62	69
Ring ∅ D (61 8510)		mm	36	40	46	48	53	61	68

Width across flats		mm	50	55	60	65	70	75	85
66A 61 8500	WALTER Heavy ring spanner (without tube)		eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
62A 61 8510	HOLEX Heavy ring spanner (without tube)		eShop	eShop	eShop	eShop	–	–	–
Wrench length		mm	290	300	345	355	365	375	385
Ring ∅ D (61 8500)		mm	76	81	90	98	105	110	125
Ring ∅ D (61 8510)		mm	75	81	89	98	–	–	–

Extension tube for heavy ring spanners

Chrome-plated.

Application: For heavy ring spanners No. 618500 / 618510.



61 8600

Length		mm	460	610	760	860
66A 61 8600	WALTER Extension tube		eShop	eShop	eShop	eShop
62A 61 8610	HOLEX Extension tube		eShop	eShop	eShop	eShop
for width across flats		mm	24 – 30	32 – 41	46 – 55	60 – 85
Tube ∅ internal (61 8600)		mm	19	22	25	30
Tube ∅ internal (61 8610)		mm	19	22	25.5	30
Tube ∅ external (61 8600)		mm	25	27	32	38
Tube ∅ external (61 8610)		mm	25	28	31.5	36

HOLEX Single ended ring spanners fully insulated to VDE

Drop forged; chrome-plated; with **plastic insulation up to 1000 Volt to DIN EN IEC 60900 / VDE 0682-201.**

Material: Chrome vanadium steel.



61 8203

Width across flats		mm	8	10	11	13	14	17	19	24	27	30
62A 61 8203	Single ended ring spanner **fully insulated**		eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Wrench length		mm	150	170	180	200	210	220	240	280	290	310

Slogging ring spanners, straight

Drop forged, with short, strong profile shaft and reinforced striking end.

61 9000 – Extremely thin ring, exact tolerance jaw widths for working on bolts in very restricted places. The ring is higher than standard nuts, thus jamming is impossible. Stronger than any bolt.

Standard:

61 9161 – **DIN 7444**

Material:

61 9000 – Chrome alloy steel, painted green.

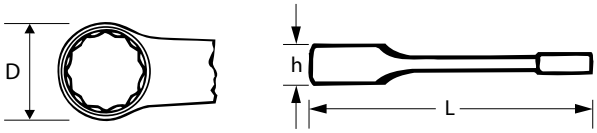
61 9161 – Chrome vanadium steel, phosphated.



61 9000



61 9161



Width across flats	63A	61 9000	62A	61 9161	L		∅ D		h	
		STAHLWILLE		HOLEX						
mm		Slogging ring spanner, straight			61 9000 mm	61 9161 mm	61 9000 mm	61 9161 mm	61 9000 mm	61 9161 mm
24		–		eShop	–	166	–	40.5	–	15
27		–		eShop	–	178	–	42	–	15
30		–		eShop	–	190	–	49	–	17
32		eShop		eShop	195	195	47	51	24	17
34		–		eShop	–	196	–	53	–	17
36		eShop		eShop	195	205	52.4	57.5	26	19
41		eShop		eShop	200	230	59	64.5	29	21
46		eShop		eShop	250	238	65	73	32	22.5
50		eShop		eShop	280	255	70	78	35	24
55		eShop		eShop	300	267	76	85	38	25
60		eShop		eShop	300	276	82.5	92	42	26
65		eShop		eShop	325	295	90.5	102	45	28
70		(eShop)		eShop	355	320	97	108	48	32.5
75		(eShop)		eShop	360	330	103.5	113	51	34
80		(eShop)		eShop	440	362	110	125	57	36.5
85		(eShop)		eShop	440	362	117	128	57	36.5

FACOM Ratchet ring spanner for union nuts

Sturdy shank with split ring, which can be assembled around the hexagon nut. The split ring can be used like a ratchet.

Size 8–11 – With hexagonal ring.

Size 12–30 – With bi-hex.

Application: Predominantly for union nuts on pipework.



61 9300

Width across flats		mm	8	10	11	12	13	14	16	17	18	19	22	24	27	30
63V 61 9300	Ratchet ring spanner		(eShop)	eShop	(eShop)	eShop	eShop	eShop	eShop	eShop	(eShop)	eShop	eShop	eShop	(eShop)	eShop
overall length		mm	139.5	139.5	139.5	139.5	139.5	191	191	191	191	191	233	235	325	325

Double-ended open ring spanner (hydraulic / brake pipe wrench)

Drop forged; with reinforced ring, therefore exceptionally strong; jaw widths to exact tolerances. 10° angled heads.

61 9200 – With easy-grip fluted shaft. Optimum flexural strength, good torque transmission, very light and easy to use. Up to size 12×14 mm with hexagon ring - size 14×17 mm and above with bi-hexagon.

61 9705 – With oval, easy grip shaft, very strong. Up to size 12×14 mm with hexagon ring - size 14×17 mm and above with bi-hexagon.

Standard: **DIN 3118 / ISO 3318**

Material:

61 9200 – Chrome alloy steel; non-flaking, chrome-plated over nickel.

61 9705 – Chrome vanadium steel, chrome-plated.

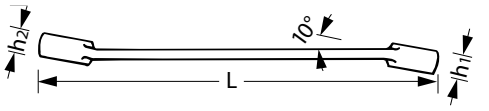


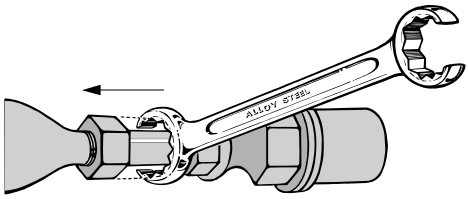
***AS-Drive** profile* 61 9200



61 9705







Width across flats	63A 61 9200 STAHLWILLE	62A 61 9705 HOLEX	L		$D_{1\,max}$		$D_{2\,max}$		$h_{1\,max}$		$h_{2\,max}$	
	Double-ended open ring spanner		61 9200	61 9705	61 9200	61 9705	61 9200	61 9705	61 9200	61 9705	61 9200	61 9705
mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
8×10	eShop	eShop	145	139	17.5	17.8	19.5	19.3	7	6.5	8.5	7.5
9×11	eShop	eShop	155	153	18.5	19.4	21.5	21.4	8.5	8	9	8.5
10×11	eShop	eShop	155	153	19.5	19.4	21.5	21.4	8.5	8	9	8.5
10×12	eShop	eShop	160	153	19.5	19.4	22.5	21.4	8.5	8	9.5	8.5
11×13	eShop	eShop	170	174	21.5	22.8	24	25.3	9	8.5	10	10.5
12×14	eShop	eShop	180	174	24	22.8	26	25.3	9.5	8.5	10.5	10.5
14×17	eShop	eShop	200	195	26	27.4	30	31.4	10.5	11	12	12.5
17×19	eShop	eShop	220	213	30	31.2	33	33.3	12	12	13	13
19×22	eShop	eShop	230	228	33	33.4	37	38.4	13	13	15	14
22×24	eShop	eShop	245	243	37	38.5	40.5	42	15	15	16	16
24×27	eShop	eShop	270	258	40.5	42.4	44.5	46.4	16	16	17.5	17
30×32	eShop	eShop	300	297	48.5	50.4	50.5	52.4	20	19	22	20.5
27×36	eShop	–	300	–	42	–	54	–	16	–	19	–

8-19 5/16-3/4"

HOLEX Push-through insert set

Hexagon push-through inserts with external hexagon drive, precision ratchet with 60 teeth, reversible.

Material: Chrome vanadium steel, matt chrome-plated.

Application: For flexible screwing of nuts on both studs and threaded rods. For right-hand and left-hand threads.



Application example

	62A 61 9500	Push-through insert set, 18 pieces, metric / imperial	eShop ■
Content:			
Metric push-through inserts			8 pcs. size 8; 10; 12; 13; 14; 15; 17; 19 mm
Imperial push-through inserts			8 pcs. size 5/16; 3/8; 7/16; 1/2; 9/16; 5/8; 11/16; 3/4 inch
Through extension			1pc.size 75 mm
Through ratchet			1 pc. / reversible



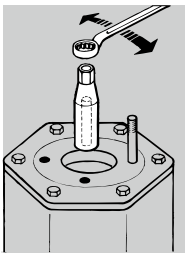
61 9500

HOLEX Stud extractor

Strong steel body with axial through hole.
Three eccentrically placed rollers grip the stud firmly without causing damage.
The unit is placed on the stud and is turned. It automatically clamps and holds the stud.
Steel body size 6 to 12 with 1/2 inch square socket drive.
Size 16 only with spanner flats.

Material: Chrome vanadium steel, chrome-plated surface.

Application: For screwing and unscrewing studs.
For right-hand and left-hand threads.



for stud ∅	mm	6	7	8	10	12	16
62A **61 9600**	Stud extractor	eShop	eShop	eShop	eShop	eShop	eShop
External ∅	mm	24	24	24	28	28	34
Hexagon shoulder (AF)	mm	22					
overall length	mm	65	65	65	75	75	75
for stud ∅	mm	6	7	8	10	12	16
Square socket drive	in	1/2	1/2	1/2	1/2	1/2	–



61 9600

Stud extractor set in a sheet steel case

½″

62A **61 9610**	Stud extractor set, 4 pieces, 6 – 12 mm in a sheet steel case	eShop
Sheet metal case length	mm	220
Sheet metal case width	mm	85
Sheet metal case height	mm	38
Content: 1 each stud extractor No. 619600		Size 6; 8; 10; 12



61 9610

HOLEX Box spanner

Made from thin-walled heat-treatable steel tube, with cross-hole for tommy bar.

Standard: **DIN 896 B**

Material: Heat-treatable steel tube, chrome-plated.



62 0120

Width across flats mm	62C **62 0120** Box spanner	overall length mm	Hole for tommy bar ∅ mm
5,5×7	eShop	110	6.3
6×7	eShop	110	6.3
8×9	eShop	110	6.3
8×10	eShop	120	6.3
10×11	eShop	120	6.3
10×13	eShop	140	8.5
12×13	eShop	140	8.5
13×17	eShop	150	10.5
14×15	eShop	140	8.5
14×17	eShop	150	10.5

Width across flats mm	62C **62 0120** Box spanner	overall length mm	Hole for tommy bar ∅ mm
16×17	eShop	150	10.5
17×19	eShop	160	12.5
18×19	eShop	160	12.5
18×21	eShop	160	12.5
19×22	eShop	170	12.5
20×22	eShop	170	12.5
21×23	eShop	170	14.5
21×24	eShop	170	14.5
22×24	eShop	190	14.5
24×27	eShop	190	14.5

Width across flats mm	62C **62 0120** Box spanner	overall length mm	Hole for tommy bar ∅ mm
25×28	eShop	200	16.5
27×32	eShop	200	16.5
30×32	eShop	200	16.5
30×34	eShop	200	16.5
32×36	eShop	220	18.5
36×41	eShop	220	18.5
41×46	eShop	240	21
46×50	eShop	240	21
50×55	eShop	240	21
55×60	eShop	240	21

Box spanner set

Number of keys		6/1	8/1	11/3
62C **62 0320**	Box spanner set	eShop	eShop	eShop
Number of tommy bars		1	1	3
Packaging		Plastic tool roll		
Supplied with: 1 each box spanner No. 620120		Size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17	Size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×21; 19×22	Size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×24; 27×32; 30×34



62 0320_8/1

HOLEX Double-ended box spanner, forged

Forged, with solid hexagon shaft for use with spanners and cross-hole for tommy bar. Very strong, with deep hexagon sockets for projecting threads.

Standard: Similar to **DIN 896 A.**

Material: Chrome vanadium steel, chrome-plated.



62 0502



- Shank for open-jawed spanner

Width across flats mm	62C 62 0502 Double-ended box spanner	overall length mm	Hole for tommybar ∅ mm	Shaft external hexagon S mm
6×7	eShop	105	4	9
8×9	eShop	110	4	9
10×11	eShop	120	5	11
12×13	eShop	140	5.6	13
14×15	eShop	145	6	14
16×17	eShop	155	7	16

Width across flats mm	62C 62 0502 Double-ended box spanner	overall length mm	Hole for tommybar ∅ mm	Shaft external hexagon S mm
18×19	eShop	165	8	19
20×22	eShop	175	9	20
21×23	eShop	185	10	21
24×26	eShop	195	12	24
24×27	eShop	195	12	24
30×32	eShop	210	14	30

Double-ended box spanner set, forged

Number of pieces		11
62C 62 0602	Double-ended box spanner set	eShop
Content: 1 each double-ended box spanner No. 620502		Size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×23
Tommy bar No. 621600		Size 10×200
Tommy bar No. 621800		Size 175



62 0602

HOLEX Tommy bar for box spanners

Material: Special steel, chrome-plated.

Standard: **DIN 900**

Suitable for: Box spanner No. 620120 / 620500 as well as crowfoot spanner No. 612800.



62 1600

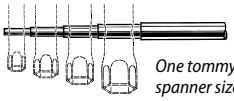
∅×overall length mm	62C 62 1600 Tommy bar, cylindrical	5×125	6×160	8×180	10×200	12×250	14×320	16×400	18×500	20×630
		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ mm		5	6	8	10	12	14	16	18	20

Standard: Similar to **DIN 900 C.**

Application: The stepped shape means that one tommy bar fits several box spanner sizes.



62 1800



One tommy bar for several box spanner sizes.

overall length mm	62C 62 1800 Tommy bar, stepped	175	180	245
		eShop	eShop	eShop
∅ mm		3.5; 4.5; 5.5; 6; 8	6; 8; 10; 12	6; 8; 10; 12; 14

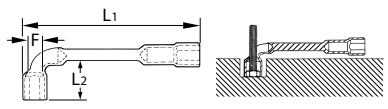
HOLEX Tubular socket wrenches, angled



62 1341

Drop-forged for the most arduous duties with especially close-tolerance jaw widths. Special hollow form, even for nuts on long projecting threads. Same width across flats on both sides. Sizes 6 and 7 hexagon on both sides, from size 8 with hexagon on long arm and bi-hexagon on short arm. Angled at approx. 90 – 95°.

Material: Chrome vanadium steel, chrome-plated.

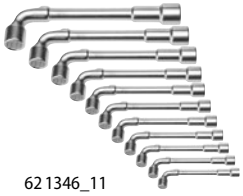


Width across flats mm	62C 62 1341 Tubular socket wrench, angled	6	7	8	9	10	11	12	13	14	15	16	17	18
		eShop	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop
Socket length L_1 mm		105	107	112	120	130	136	145	152	160	170	178	187	195
Socket length L_2 mm		26	26	27	27	29	32	34	36	38	40	44	47	50
Bore ∅ F mm		5	6	6	6	7	8	8	9	9	11	11	11	13

Width across flats mm	62C 62 1341 Tubular socket wrench, angled	19	21	22	24	27	30
		eShop	eShop	eShop	eShop	eShop	eShop
Socket length L_1 mm		205	225	225	248	280	310
Socket length L_2 mm		50	55	55	65	68	76
Bore ∅ F mm		13	15	15	16	19	19

Tubular socket wrench set, angled

Number of tubular socket wrenches		8	11
62C 62 1346	Tubular socket wrench set, angled	eShop	eShop
Content: 1 each tubular socket wrench No. 621341		Size 8; 10; 11; 13; 16; 17; 18; 19	Size 6; 7; 8; 10; 11; 12; 13; 17; 19; 22; 24



62 1346_11

HOLEX Four-way cross box spanner

Made from thin walled heat-treated steel tube with 4 different hexagon width across flats.
Material: Heat-treatable steel tube, chrome-plated.


62 1100

Type			3	5
62C 62 1100	Four-way cross box spanner		eShop	eShop
overall length		mm	110×110	128×129
Width across flats 1		mm	7	11
Width across flats 2		mm	8	13
Width across flats 3		mm	10	14
Width across flats 4		mm	13	17

Wera Hollow shank nut driver with Kraftform handle

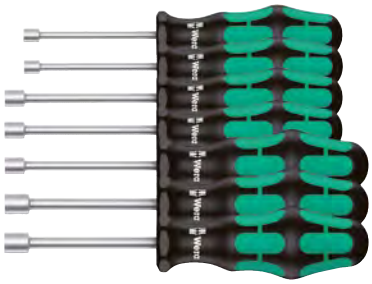
Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm. The shank is a hollow tube, nicromatt chrome-plated. The hollow shank allows nuts to be tightened even where the screw thread projects beyond the nut.


62 2450

Width across flats		mm	5	5,5	6	7	8	10	13
63F 62 2450	Hollow shank nut driver with Kraftform handle		eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length		mm	188	188	188	195	195	202	202
Blade length		mm				90			

Hollow shank nut driver set with Kraftform handle

63F 62 2455	Hollow shank nut driver set with Kraftform handle, 7 pieces	eShop
Content: 1 pc. each No. 622450		Size 5; 5.5; 6; 7; 8; 10; 13


62 2455

Garant Nut spinner with 2-component power grip

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands. **Blade** of chrome vanadium steel. Surface nickel-plated and chrome-plated. **From size 8 with hexagon flats for wrench assistance.**


62 2152_10

Width across flats		mm	5	5,5	6	7	8	9	10	13
61C 62 2152	Nut spinner with 2-component Haptoprene handle		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop ■	eShop
overall length		mm	180	190	195	205	233	253	273	320
Blade length		mm	85	90	90	100	120	140	160	200
Hexagon collar for wrench assistance		mm	–	–	–	–	13	13	13	13

Number of tubular socket wrenches			8
61C 62 2156	Nut spinner set with 2-component Haptoprene handle		eShop
Content: 1 each socket spanner No. 622152			Size 5; 5.5; 6; 7; 8; 9; 10; 13


62 2156

PB SWISS TOOLS Nut spinner with 2-component power handle, suitable for ESD

SwissGrip-power grip with non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. High torques can be exerted even with wet or oily hands. **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated. Tool made of conductive plastic, **suitable for ESDs. From size 8 with hexagon flats for wrench assistance.**


62 2170

Width across flats		mm	5	5,5	6	8	10
63D 62 2170	Nut spinner with 2-component SwissGrip handle **ESD**		eShop	eShop	eShop	eShop	eShop
overall length		mm	180	190	195	230	270
Blade length		mm	85	90	90	120	160
Hexagon collar for wrench assistance		mm	–	–	–	10	10

HOLEX Nut spinner with 2-component plastic handle

Multi-component **power handle** with grip zone optimised for torque and comfort. **Blade** made of chrome vanadium steel, chrome-plated.



62 2201



62 2301



62 2401

	Width across flats	mm	4	4,5	5	5,5	6	7	8	9	10	11	12	13	14	16	17
○ 62C 62 2201	Nut spinner with handle **long**		eShop	eShop	eShop ■	eShop	eShop ■	eShop ■	eShop ■	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop
○ 62C 62 2301	Nut spinner with handle **short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	eShop	–	–	–
○ 62C 62 2401	Nut spinner with handle **flexible**		–	–	eShop	eShop	eShop	eShop	eShop	–	eShop	–	–	–	–	–	–
	overall length (62 2201)	mm	212	212	212	212	212	232	232	232	232	245	245	245	245	245	245
	overall length (62 2301)	mm	152	152	152	152	172	172	172	172	172	–	–	185	–	–	–
	overall length (62 2401)	mm	–	–	231	231	231	251	251	–	289	–	–	–	–	–	–

Nut spinner set with 2-component plastic handle

	Number of keys	6	9	15
○ 62C 62 2211	Nut spinner set with handle **long**	–	eShop	eShop
○ 62C 62 2311	Nut spinner set with handle **short**	–	eShop	–
○ 62C 62 2411	Nut spinner set with handle **flexible**	eShop	–	–
	Content: 1 pc. each No. 622201 (62 2211)	–	Size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10	Size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 16; 17
	1 pc. each No. 622301 (62 2311)	–	Size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10	–
	1 pc. each No. 622401 (62 2411)	Size 5; 5.5; 6; 7; 8; 10	–	–



62 2211_9

Nut spinner with plastic handle, fully insulated to VDE

Handle and blade **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201**. Each of these screwdrivers is individually tested in a water bath for insulation breakdown under high voltage. **Application:** For use at voltages up to 1000 V.

with 2-component Haptoprene power grip, fully insulated

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands. **Blade** of chrome vanadium steel.



62 2492_9

	Width across flats	mm	5,5	6	7	8	9	10	13
○ 61C 62 2492	Garant Nut spinner with 2-component Haptoprene handle **fully insulated**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
	overall length	mm	230	230	230	236	236	236	245
	Blade length	mm	125						

	Number of keys	7
○ 61C 62 2496	Garant Nut spinner set with 2-component Haptoprene handle **fully insulated**	eShop
	Content: 1 pc. each No. 622492	Size 5.5; 6; 7; 8; 9; 10; 13



62 2496_7

with multi-component power grip, fully insulated

Ergonomic multi-component handle with non-roll flats. **Blade** of chrome vanadium steel, burnished. Long design, deep hexagon nut spinner head for projecting threads.

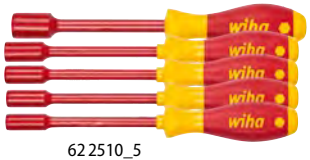
Standard: **DIN 3125**



62 2500_9

	Width across flats	mm	5,5	6	7	8	9	10	11	13	17
○ 63K 62 2500	wiha Nut spinner with handle **VDE fully insulated**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
	overall length	mm	236	236	243	243	243	243	243	243	243

	Number of keys	5	11
○ 63K 62 2510	wiha Nut spinner set **VDE fully insulated**	eShop	eShop
	Content: 1 pc. each No. 622500	7; 8; 9; 10; 13 mm	Size 5.5; 6; 7; 8; 9; 10; 11; 13; 14; 16; 17



62 2510_5

Nut spinner with T-handle

Cleanly formed, deep hexagon spinner head.

62 2552 – Ergonomically shaped T-handle with easy-grip **Haptoprene** surface and an impact-resistant plastic core. Blade of chrome vanadium steel. Surface nickel-plated and chrome-plated.

62 2601 – Ergonomically shaped T-handle with non-allergenic elastomer coating and a core made of particularly tough and impact-resistant polypropylene. Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated.

62 2711–2751 – Impact resistant plastic T-handle. Blade of special vanadium steel, surface matt chrome-plated.

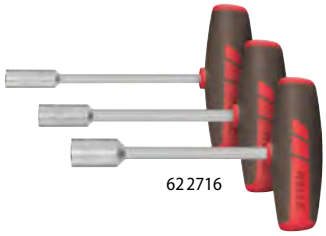


Width across flats			mm	6	7	8	9	10	11	12	13	14	17
61C 62 2552	Garant	Nut spinner with 2-component Haptoprene T-handle, blade length **200 mm**		–	eShop	eShop	–	eShop	eShop	eShop	eShop	–	–
63D 62 2601	PB SWISS TOOLS	Nut spinner with T-handle, blade length **200 mm**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
62C 62 2711		Nut spinner with T-handle, blade length **125 mm**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62C 62 2731	HOLEX	Nut spinner with T-handle, blade length **230 mm**		eShop	eShop	eShop	–	eShop ■	–	–	eShop ■	–	–
62C 62 2751		Nut spinner with T-handle, blade length **350 mm**		–	–	eShop	–	eShop	–	–	eShop	–	–
overall length (62 2552)			mm	–	262	262	–	275	275	275	275	–	–
overall length (62 2601)			mm	262	262	262	275	275	275	275	275	275	–
overall length (62 2711)			mm	157									
overall length (62 2731)			mm	262	262	262	–	262	–	–	262	–	–
overall length (62 2751)			mm	–	–	382	–	382	–	–	382	–	–

Nut spinner set with T-handle

Number of tubular socket wrenches			3
61C 62 2556	Garant	Nut spinner set with 2-component Haptoprene T-handle, blade length **200 mm**	eShop
62C 62 2716	HOLEX	Nut spinner set with T-handle, blade length **125 mm**	eShop
62C 62 2736		Nut spinner set with T-handle, blade length **230 mm**	eShop
Content:			
1 pc. each No. 622552 (62 2556)			Size 8; 10; 13
1 pc. each No. 622711 (62 2716)			Size 8; 10; 13
1 pc. each No. 622731 (62 2736)			Size 8; 10; 13





wiha Nut spinner with T-handle, insulated to VDE

Cleanly formed, deep hexagon spinner head with internal hole for screw threads that project beyond the nut.
Impact-resistant plastic T-handle, blade of chrome vanadium steel, chrome-plated, with sprayed-on protective insulation.
Insulated up to 1000 V, made to DIN EN IEC 60900 / VDE 0682-201.

Width across flats		mm	8	10	13	17
63K 62 2770	Nut spinner with T-handle **VDE insulated**		eShop	eShop	eShop	eShop
overall length		mm	232	262	262	268
Blade length		mm	200	230	230	230



Nut spinner set with T-handle, insulated to VDE

Number of keys		4
63K 62 2775	Nut spinner set with T-handle **VDE insulated**	eShop
Content: 1 pc. each No. 622770		Size 8; 10; 13; 17



Square socket spanner with square drive

Broached square socket, hardened.

Standard: **DIN 248**

Material: Special steel, tempered and burnished.



Width across flats	mm	8	10	12	14	17	19	22
63Q 62 3100	Square socket spanner	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length	mm	160	195	235	270	315	345	385
Head ∅	mm	17	21	24	27	30	35	39

External and internal square keys with T-handle

Shaft hardened, solid inserted T-handle.

62 3200 – With **internal** square.

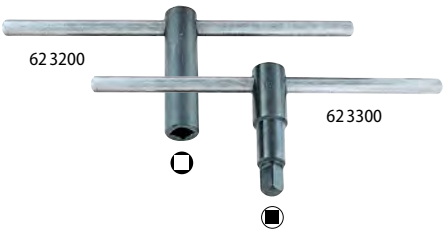
62 3300 – With **external** square.

Standard:

62 3200 – **DIN 904**

62 3300 – **DIN 905**

Material: Special steel, tempered and burnished.



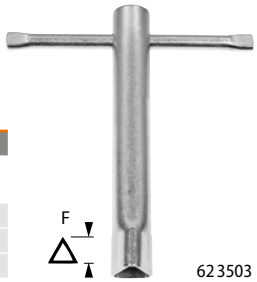
Width across flats	mm	4	5	6	7	8	9	10	11	12	14	17	19
63Q 62 3200	External square key with T-handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop
63Q 62 3300	Internal square key with T-handle	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
Shaft length (62 3200)	mm	60	60	80	80	80	100	100	–	100	120	160	200
Shaft length (62 3300)	mm	–	–	–	80	80	80	100	100	100	120	–	–
Head ∅ (62 3200)	mm	12	12	12	14.6	16	18	20	–	24	28	34	36

Triangular socket key

Precision steel tube, galvanised, with tommy bar.

Standard: **DIN 22417 A**

Application: For triangular head bolts to DIN 22424 and triangular nuts to DIN 22425.



62 3503

for screws		M4	M5	M6	M8	M10	M12	M16
62C 62 3503	Triangular socket key	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shaft length	mm	90	100	112	125	140	160	180
Head height internal size F	mm	6.8	8.3	10.05	12.05	15.05	16.55	20.55
Shank ∅	mm	10	10	12.5	15	19	19	24

Multi-function key TwinKey®

2 four-way wrenches of die-cast zinc with reversible bit (Phillips and slot). The two wrenches are **linked with a magnet** to save space. When separated, two wrenches and the reversible bit are connected with a sturdy stainless steel cord so that they are captive.

Suitable for: Square socket 5; 6–7; 8–9; 10–11 mm,
triangular socket 7–8; 9–10; 11–12 mm,
two-wing ∅ 3–5 mm, half moon 6 mm,
stepped square plug 6; 7; 8; 9 mm, cross-head PH2,
slot-head 1.0×7 mm.

Application: Multi-function wrenches for operating locks in the field of building services (heating and sanitation, air conditioning and ventilation, electrical systems), gas and water supplies, and security systems.

- 5; 6–7; 8 – 9; 10–11 mm
- 7-8; 9-10; 11-12 mm
- ∅ 3–5 mm
- 6; 7; 8; 9 mm
- 6 mm
- 1/4"
- PH2
- 1.0×7 mm


62 3550



64D 62 3550	TwinKey® multi-function key	eShop
overall length	mm	95

Control cabinet key

Four-way wrench of die-cast zinc with plastic adapter and exchangeable bit (Phillips and slot-head).

Suitable for: Square socket 5; 6; 8 mm,
triangular socket 7; 9 mm,
two-wing ∅ 3–5 mm,
cross-head PH2,
slot-head 1.0×7 mm.

Application: For control cabinets, shut-off valves, and mains switchboards.

- 5; 6; 8 mm
- 7; 9 mm
- ∅ 3–5 mm
- 1/4"
- PH2
- 1.0×7 mm


62 3600

Type		1	2
64D 62 3600	Control cabinet key	eShop ■	eShop
overall length	mm	76	44

Universal Key for all standard control cabinets

Handy and compact universal control cabinet key made from metal-substitute high-performance polymer. Bit holder with magnet for securely holding 1/4-inch bits.

Suitable for: Square socket 5; 6; 8 mm, triangular socket 9 mm, two-wing Ø 3 – 5 mm, cross-head PH2, slot-head 1×6.25 mm, mixing nozzles M24×1, M22×1.

Application: For control cabinets, shut-off valves, and mains switchboards.

5; 6; 8 mm
9 mm
Ø 3–5 mm
PH2
1.2×7 mm



62 3605_1

Type		1
63D 62 3605	Universal Key for all standard control cabinets	eShop ■
overall length	mm	73

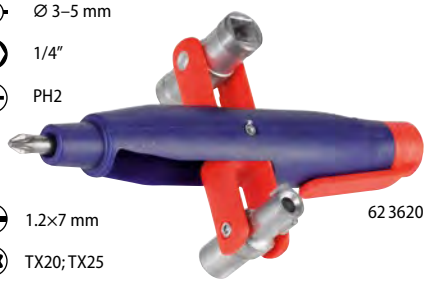
Pocket control cabinet key

Handy control cabinet key, fits in your pocket. The key arm swings out to offer 4 different key profiles; body of plastic, zinc die-cast functional parts.

Suitable for: Square 5; 6; 8 mm, triangular socket 9 mm, two-wing Ø 3–5 mm, bit holder 1/4 inch with magnet, cross-head PH2, slot-head 1.2×7 mm and for Torx® TX20 and TX25.

Application: For control cabinets, shut-off valves, and mains switchboards.

5; 6; 8 mm
9 mm
Ø 3–5 mm
1/4"
PH2
1.2×7 mm
TX20; TX25


62 3620

64D 62 3620	Pocket control cabinet key	eShop
overall length	mm	145

62

Universal JointKey Quadro

Handy universal wrench with die-cast zinc swivel inserts. Swing arms and connectors of plastic. A total of eight different lock heads can be fitted in position (for a total of 10 different locks). For use either as a T-handle or as a compact retracted variant. The 1/4 inch socket drive permits easy fitting and retention of 1/4 inch sockets.

Suitable for: Square 5; 6-7; 8-9 mm, 1/4 inch socket drive, 1/4 inch bit holder, triangular 5-6; 6-7; 8-9 mm, two-wing Ø 3-5 mm.

Application: For heating, air conditioning, sanitation, and building services.

5; 6–7; 8–9 mm
5–6; 6–7; 8–9 mm
Ø 3–5 mm
1/4"


62 3625

Type		1
64D 62 3625	Universal JointKey Quadro	eShop
overall length	mm	130

L-wrench for TORX screw

L-shank; through hardened (hard and tough).

Material:

62 4800 – PB Swiss Tools special alloy, surface nickel-plated and chrome-plated. Black tip.
62 4850 – PB Swiss Tools special alloy, surface nickel-plated, chrome-plated and powder-coated for quick location using clear "Rainbow" colour coding. Black tip.
62 4853 – Chrome vanadium steel, phosphated.


62 4800



PB Swiss Tools colour coding for sizes
62 4850


62 4853



Torx® profile			TX6	TX7	TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40	TX45	TX50
63D 62 4800	PB SWISS TOOLS	Torx® key L-wrench **chrome-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63D 62 4850	PB SWISS TOOLS	Torx® key L-wrench **powder-coated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–
62B 62 4853	HOLEX	Torx® key L-wrench **phosphated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	–
Stock length (62 4800, 62 4850)		mm	55×18	58×19	63×20	66×20	71×22	76×24	81×25	88×27	96×29	104×31	114×34	125×37	138×42
Stock length (62 4853)		mm	42×16	48×16	48×16	48×16	51×17	54×18	57×19	60×20	–	70×24	76×26	83×29	–

L-wrench set, for Torx® screws

Material:

62 4810 – PB Swiss Tools special alloy, surface nickel-plated and chrome-plated. Black tip.

62 4860 – PB Swiss Tools special alloy, surface nickel-plated, chrome-plated and powder-coated for quick location using clear "Rainbow" colour coding. Black tip.



62 4810_10



62 4810_8



62 4810_12



62 4860_8

Number of screwdrivers		8	10	12
63D 62 4810	Torx® key L-wrench set **chrome-plated**	eShop	eShop	eShop
63D 62 4860	Torx® key L-wrench set **powder-coated**	eShop ■	–	–
Supplied with: 1 each L-wrench No. 624800 (62 4810)		TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25	TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40	TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45
1 each L-wrench No. 624850 (62 4860)		TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25	–	–
Presented in		Plastic clip	Fabric wallet	Plastic clip

Material: Chrome vanadium steel, galvanised finish.



62 4820

Number of screwdrivers		8H
63K 62 4820	Screwdriver set for Torx®	eShop
Supplied with: 1 each screwdriver		TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Presented in		Fold-away handle

Material: Chrome vanadium steel, phosphated.



62 4857

Number of screwdrivers		8
62B 62 4857	Torx® key L-wrench set **phosphated**	eShop
Supplied with: 1 each L-wrench No. 624853		TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25
Presented in		Plastic clip

L-wrenches with ball point for Torx® screws

L-shank; through hardened (hard and tough).
Long shank with ball point, can be used at angles up to 25°.

Material: Chrome vanadium steel, chrome-plated. Black tips.





62 4915

Torx® profile		TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40
62B 62 4915	Torx® key L-wrench **with ball point**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length	mm	64×16	73×17	83×17	94×18	96×18	106×20	119×24	132×26



62 4921_8

Number of screwdrivers		8
62B 62 4921	Torx® key L-wrench set **with ball point**	eShop
Supplied with: 1 each L-wrench No. 624915		TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Presented in		Plastic clip

Wera L-wrenches with retainer function for Torx® screws

The tapered Torx® HF profile on the long handle reliably retains all Torx® screws.
L-shank; through hardened (hard and tough).

Material: Chrome vanadium steel, manganese phosphated.

Advantage: Ideal for starting and tightening Torx® screws where access is difficult.



62 4940

Torx® profile		TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40
63F 62 4940	Torx® key L-wrench **with retainer function**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length mm		76×16	80×16	86×17	90×18	96×19	104×21	112×22	122×24	132×27

Number of screwdrivers		9
63F 62 4944	Torx® key L-wrench set **with retainer function**	eShop
Supplied with: 1 each L-wrench No. 624940		TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Presented in		Plastic clip


62 4944

Flip-up plastic clip.

Advantage: "Take it easy" tool finder with colour marking by sizes – **to find the required tool quickly and easily.**



Number of screwdrivers		9
63F 62 4955	Torx® key L-wrench set, long **with retainer function**	eShop
Supplied with: 1 each L-wrench, long		TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Presented in		Plastic clip


62 4955

62

Long L-wrenches – with retainer function for Torx® screws

L-shank; through hardened (hard and tough). Long arm with **MagicSpring® retaining spring** from size TX6, which reliably holds all Torx® screws secure.




62 5020

62 5030

Material:

62 5020 – Chrome vanadium steel, electro-galvanised.
62 5030 – Chrome vanadium steel, manganese phosphated.

Torx® profile		TX5	TX6	TX7	TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40	TX45
61C 62 5020	Garant Torx® key L-wrench, with MagicSpring® retainer function	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63K 62 5030	wiha Torx® key L-wrench, with MagicSpring® retainer function	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length mm		72×13	80×15	88×18	101×20	111×21	121×23	136×27	148×29	163×33	176×36	191×38	210×43	232×50



The **plastic clip** enables easy removal of each individual wrench, without the need to move another one.

Material:

62 5025 – Chrome vanadium steel, electro-galvanised.
62 5035 – Chrome vanadium steel, manganese phosphated.


62 5025

Number of screwdrivers		13
61C 62 5025	Garant Torx® key L-wrench set, with MagicSpring® retainer function	eShop
63K 62 5035	wiha Torx® key L-wrench set, with MagicSpring® retainer function	eShop ■
Supplied with: 1 each L-wrench No. 625020 (62 5025)		TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45
1 each L-wrench No. 625030 (62 5035)		TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45
Presented in		Plastic clip


62 5035

ErgoStar pivot mechanism.

Safety L-wrenches – long with knurling, for Torx® screws

L-shank; through hardened (hard and tough). PB Swiss Tools special steel combining maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated. Black tip.
Advantage: The knurling to ISO 13444 type B increases the grip in wet or oily environments and thus enhances safety.



62 5038

Number of screwdrivers		8
63D 62 5038	Torx® key L-wrench set, with knurling	eShop
Supplied with: 1 each L-wrench No. 625037		TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25
Presented in		Plastic clip

Long L-wrenches – with hole, for Torx® screws

L-shank; through hardened (hard and tough).
Material: PB Swiss Tools special steel combining maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated. Black tip.
Advantage: With **centre hole in the internal Torx® profile** for screws with a tamper-proof pin.


62 5040

Torx® profile		TX6	TX7	TX8	TX9	TX10	TX15	TX20	TX25
63D 62 5040	Torx® key L-wrench, with centre hole	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length	mm	83×18	93×19	103×20	113×20	124×22	139×24	154×25	170×27



62 5045

Number of screwdrivers		8
63D 62 5045	Torx® key L-wrench set, with centre hole	eShop
Supplied with: 1 each L-wrench No. 625040		TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25
Presented in		Plastic clip

Long L-wrenches – with hole, for Torx® screws

L-shank; through hardened (hard and tough). In steel grey.
Material: Chrome vanadium steel.
Advantage: With centre hole in the internal Torx® profile for screws with a tamper-proof pin.


62 5060

Torx® profile		TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40
62B 62 5060	Torx® key L-wrench, with centre hole	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length	mm	111×21	121×23	136×27	148×29	163×33	170×36	178×38	188×43



62 5065

Number of hexagon key L-wrenches		8
62B 62 5065	Torx® key L-wrench set, with centre hole	eShop ■
Supplied with: 1 each L-wrench No. 625060		TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Presented in		Plastic clip

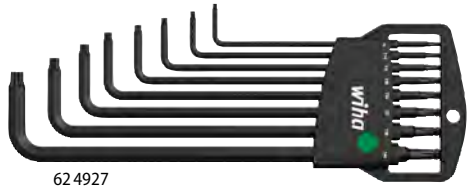
Long L-wrenches with ball point – for Torx® screws

L-shank; through hardened (hard and tough). Long shank with ball point, can be used at angles up to 25°. With extended Torx® profile behind the ball point.
Material: Chrome vanadium steel, manganese phosphated.


62 4925

Torx® profile		TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40
63K 62 4925	Torx® key L-wrench, long **with ball point**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length	mm	111×21	121×23	136×27	148×29	163×33	176×36	191×38	210×43

Number of screwdrivers		8
63K 62 4927	Torx® key L-wrench set, long **with ball point**	eShop
Supplied with: 1 each L-wrench No. 624925		TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Presented in		Plastic clip



62 4927

Screwdrivers with T-handle for Torx® screws

62 5152 – Ergonomically shaped T-handle with easy-grip **Haptoprene** surface and an impact-resistant plastic core. Blade of chrome vanadium steel. Surface nickel-plated and chrome-plated, black tip. Size TX20 – TX40 with side drive.

62 5173 – Ergonomic 2-component T-handle with finger grip hollows and pleasant feel for high transmission of force and non-fatiguing work. With side drive and holding function on the long arm for secure holding of the screw on the tool. Blade surface matt chrome-plated.

62 5201 – Ergonomically shaped T-handle with non-allergenic elastomer coating and a core made of particularly tough and impact-resistant polypropylene. Blade of PB Swiss Tools special alloy combining maximum hardness and exceptional toughness. Chrome plated surface, black tip.

62 5221/5231 – Impact resistant plastic T-handle. Blade of vanadium special steel, matt chrome-plated, black tips.



62 5152_TX20-TX30



62 5221_TX9–TX40



62 5152_TX6-TX15



62 5201_TX10



62 5221_TX6–TX8



62 5173_TX20

Torx® profile			TX6	TX7	TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40	TX45	TX50
61C 62 5152	Garant	Screwdriver for Torx®, with 2-component Haptoprene T-handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–	–
63D 62 5201	PB SWISS TOOLS	Screwdriver for Torx®, with T-handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–
63F 62 5173	Wera	Screwdriver for Torx®, with T-handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	–
62C 62 5221	HOLEX	Screwdriver for Torx®, short, with T-handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop
62C 62 5231	HOLEX	Screwdriver for Torx®, long, with T-handle	–	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length (62 5152)		mm	100	100	100	100	100	100	125	125	–	125	170	–	–
Blade length (62 5201)		mm	60	60	60	60	60	60	80	80	–	–	–	–	–
Blade length (62 5173)		mm	100	100	100	100	100	100	100	100	–	200	200	200	–
Blade length (62 5221)		mm	35	35	40	100	100	100	100	100	100	100	100	150	150
Blade length (62 5231)		mm	–	–	–	–	–	200	200	200	200	200	200	250	250
overall length (62 5152)		mm	146	146	146	146	146	146	187	187	–	187	245	–	–
overall length (62 5201)		mm	105	105	105	105	105	105	117	117	–	–	–	–	–
overall length (62 5173)		mm	132	132	132	132	132	132	132	132	–	248	248	248	–
overall length (62 5221)		mm	70	70	75	119	119	125	125	125	132	132	132	182	182
overall length (62 5231)		mm	–	–	–	–	–	225	225	225	232	232	232	282	282

Note:

62 5166 – **GARANT easyFix holders** can also be inserted into **GARANT perforated panels** and used flexibly on **GARANT ladders** with **GARANT easyFix mountings**.

Number of screwdrivers			8
61C 62 5166	Garant	Screwdriver set for Torx®, with Haptoprene T-handle, in an easyFix sheet metal stand **8 pieces**	eShop
Supplied with: 1 each screwdriver No. 625152			TX8; TX9; TX10; TX15; TX20; TX25; TX30; TX40

Number of hexagon key L-wrenches			6
63D 62 5211	PB SWISS TOOLS	Screwdriver set for Torx®, with T-handle **6 pieces**	eShop
Supplied with: 1 each screwdriver No. 625201			TX8; TX9; TX10; TX15; TX20; TX25

Number of screwdrivers			7
63F 62 5183	Wera	Screwdriver set for Torx®, with T-handle, in a metal rack **7 pieces**	eShop
Supplied with: 1 each screwdriver No. 625173			TX10; TX15; TX20; TX25; TX30; TX40; TX45

Number of screwdrivers			7
62C 62 5241	HOLEX	Screwdriver set for Torx®, with T-handle, in a sheet metal stand **7 pieces**	eShop
Supplied with: 1 pc. each screwdriver No. 625221			TX10; TX15; TX20; TX25; TX30
1 pc. each screwdriver No. 625231			TX40; TX50



62 5211_6



62 5166_8



62 5241_7



62 5183_7

Garant Screwdriver with 2-component Haptoprene handle, for Torx® screws with hole

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core.
The special surface structure allows transmission of high torques, even with wet or oily hands.
Blade of chrome vanadium steel. Surface nickel-plated and chrome-plated, black tip.
From size TX30 with hexagon flats for wrench assistance.
Advantage: With **centre hole in the internal Torx® profile** for screws with tamper-proof pin.



62 5332_TX25

Torx® profile		TX6	TX7	TX8	TX9	TX10	TX10/200	TX15	TX15/200
61C 62 5332	Screwdriver for Torx® with 2-component Haptoprene handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	60	60	60	60	70	200	80	200
overall length	mm	142	142	142	142	160	290	175	295

Torx® profile		TX20	TX20/250	TX25	TX25/250	TX30	TX40
61C 62 5332	Screwdriver for Torx® with 2-component Haptoprene handle	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	100	250	120	250	130	140
overall length	mm	200	350	225	355	241	260

Number of screwdrivers		7	9
61C 62 5336	Screwdriver set for Torx®, with 2-component Haptoprene handle	eShop	eShop
Content: 1 each screwdriver No. 625332		TX6; TX7; TX8; TX9; TX10; TX15; TX20	TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX30



62 5336_7

Screwdrivers, for Torx® screws

62 5400 – **"multicraft" power grip**; exceptionally good grip, even with oily hands. Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip. From size TX27 with hexagon flats for wrench assistance.

62 5406 – **SwissGrip Evo power grip** allows transmission of the required torque with no problems, even with wet or oily hands. Work without getting tired thanks to modified circular shape. High-tech 3-component materials improve the chemical and mechanical resistance. Handle with "Rainbow" colour coding for finding the correct drive size quickly.

62 5420 – **SwissGrip-power grip** with non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. High torques can be exerted even with wet or oily hands. Tool handle made of conductive plastic, **suitable for ESDs.**

62 5500 – **Kraftform handle** with integral soft zones. Blade of high quality tool steel, surface matt chrome-plated, black tips.

62 5701 – **Multi-component power grip** with grip zone optimised for torque and comfort. Blade of high quality tool steel, surface matt chrome- plated, ChromTop tip.

62 5406/5420 – **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip.



62 5400



62 5406_TX9



62 5420



62 5500



62 5701

Torx® profile		TX5	TX6	TX7	TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40	TX45	TX50
63D 62 5400	Screwdriver for Torx®	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63D 62 5406	PB SWISS TOOLS Screwdriver for Torx®	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–
63D 62 5420	PB SWISS TOOLS Screwdriver for Torx® ESD	–	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–	–	–	–
63F 62 5500	Wera Screwdriver for Torx®	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
62C 62 5701	HOLEX Screwdriver for Torx®	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
Blade length (62 5400, 62 5406, 62 5420)	mm	–	50	50	60	60	70	80	100	120	125	130	140	145	150
Blade length (62 5500, 62 5701)	mm	60	60	60	60	60	80	80	100	100	115	115	130	–	–
overall length (62 5400)	mm	–	110	110	150	155	165	180	205	225	230	240	260	265	270
overall length (62 5406, 62 5420)	mm	–	127	127	140	140	160	175	200	225	–	–	–	–	–
overall length (62 5500)	mm	130	130	130	141	141	161	178	198	205	220	220	242	–	–
overall length (62 5701)	mm	–	147	147	147	147	167	187	207	207	222	235	250	–	–

62 5410 – **"multicraft" power grip**; exceptionally good grip, even with oily hands. Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip. From size TX27 with hexagon flats for wrench assistance.

62 5416 – **SwissGrip-power grip** with non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. High torques can be exerted even with wet or oily hands. **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip. Handle with "Rainbow" colour coding for finding the correct drive size quickly.

62 5550 – **Kraftform handle** with integral soft zones. Blade of high quality tool steel, surface matt chrome-plated, black tips.

62 5751 – **Multi-component power grip** with grip zone optimised for torque and comfort. Blade of high quality tool steel, surface matt chrome- plated, ChromTop tip.

Supplied with:

62 5416 – With wall bracket.



62 5410_5



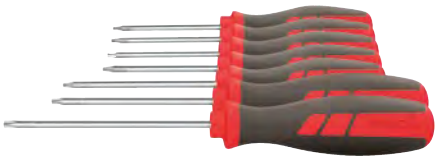
62 5416_6

Number of screwdrivers		5	8	10
63D 62 5410	PB SWISS TOOLS Screwdriver set for Torx®	eShop	eShop	eShop
Content: 1 each screwdriver No. 625400		TX8; TX9; TX10; TX15; TX20	TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25	TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45; TX50

Number of screwdrivers		6
63D 62 5416	PB SWISS TOOLS Screwdriver set for Torx®	eShop
Content: 1 each screwdriver No. 625406		TX8; TX9; TX10; TX15; TX20; TX25


62 5550_7

Number of screwdrivers		7	11	13
63F 62 5550	Wera Screwdriver set for Torx®	eShop	eShop	eShop
Content: 1 each screwdriver No. 625500		TX6; TX7; TX8; TX9; TX10; TX15; TX20	TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30	TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45


62 5751_7

Number of screwdrivers		7	10
62C 62 5751	HOLEX Screwdriver set for Torx®	eShop	eShop
Content: 1 pc. each screwdriver No. 625701		TX6; TX7; TX8; TX9; TX10; TX15; TX20	TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30

Wera Screwdrivers with retainer function, for Torx® screws

Kraftform handle with integral soft zones. Blade of high-quality tool steel, surface matt chrome-plated, tips chemically nickel plated. The tapered Torx® HF profile reliably retains all Torx® screws.


62 5510

Torx® profile		TX8	TX9	TX10	TX15	TX20	TX25	TX30
63F 62 5510	Screwdriver for Torx® **with retainer function**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	60	60	80	80	100	100	115
overall length	mm	141	141	161	178	198	205	220

HOLDING FUNCTION

Number of screwdrivers		5	7
63F 62 5570	Screwdriver set for Torx® **with retainer function**	eShop	eShop
Content: 1 each screwdriver No. 625510		TX8; TX10; TX15; TX20; TX25	TX8; TX9; TX10; TX15; TX20; TX25; TX30

HOLDING FUNCTION


62 5570_7


62 5590_TX25

Torx® profile		TX20	TX25	TX27	TX30
63F 62 5590	Screwdriver for Torx®, long **with retainer function**	eShop	eShop	eShop	eShop
Blade length	mm	300			
overall length	mm	398	405	405	405

HOLDING FUNCTION

Electrician's screwdriver for Torx® screws

Handle and blade **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.** Each screwdriver is individually tested in a water bath for insulation breakdown under high voltage

Application: For use at voltages up to 1000 V.

with 2-component Haptoprene power grip, fully insulated

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface. **Blade** of chrome vanadium steel. With **SLIM blade** = reduced blade diameter/and insulation diameter for deep-set screw and spring elements **(insulation Ø = blade Ø).**



62 5792_TX20



Insulation Ø = blade Ø

Torx® profile		TX15	TX20	TX25
61C 62 5792	Garant — Electrician's screwdriver for Torx®, with 2-component Haptoprene handle **SLIM blade, VDE fully insulated**	eShop	eShop	eShop
Blade length	mm	80	80	125
overall length	mm	180	180	230

Number of screwdrivers		3
61C 62 5796	Garant — Electrician's screwdriver set for Torx®, with 2-component Haptoprene handle **SLIM blade, VDE fully insulated**	eShop
Content: 1 pc. each screwdriver No. 625792		TX15; TX20; TX25



62 5796

with Classic 2-component handle, fully insulated

Power grip with easy-to-hold, non-slip elastomer coating and a core of particularly tough, impact-resistant polypropylene. **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.



62 5754

Torx® profile		TX8	TX9	TX10	TX15	TX20	TX25	TX30
63D 62 5754	PB SWISS TOOLS — Electrician's screwdriver for Torx®, Classic **VDE fully insulated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	60	70	70	80	100	125	130
overall length	mm	150	165	165	175	205	230	250

Number of screwdrivers		7
63D 62 5756	PB SWISS TOOLS — Electrician's screwdriver set for Torx®, Classic **VDE fully insulated**	eShop
Content: 1 each screwdriver No. 625754		Size TX8; TX9; TX10; TX15; TX20; TX25; TX30



62 5756

with multi-component power grip, fully insulated

Multi-component power handle with grip zone optimised for torque and comfort. **Blade** of high-alloy tool steel.

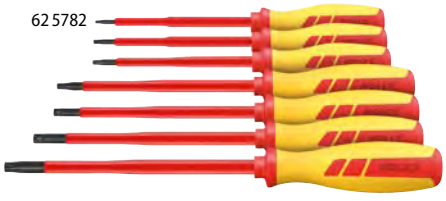


62 5780

Torx® profile		TX8	TX9	TX10	TX15	TX20	TX25	TX30
62C 62 5780	HOLEX — Electrician's screwdriver for Torx®, **VDE fully insulated**	eShop	eShop	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Blade length	mm	60	60	60	80	80	80	100
overall length	mm	147	147	147	187	187	187	220

Number of screwdrivers		7
62C 62 5782	HOLEX — Electrician's screwdriver set for Torx® **VDE fully insulated**	eShop
Content: 1 pc. each L-wrench No. 625780		Size TX8; TX9; TX10; TX15; TX20; TX25; TX30

62 5782



Wera Screwdriver with stainless steel blade "Stainless", for Torx® screws

Kraftform handle made of impact resistant plastic with integral soft zones facilitates torque transmission and thus protects hand and arm. Blade of stainless steel.

S/STL



62 5785

Torx® profile		TX8	TX9	TX10	TX15	TX20	TX25	TX30
63F 62 5785	"Stainless" screwdriver for Torx®, with stainless steel blade	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	60	60	80	80	100	100	115
overall length	mm	141	141	161	178	198	205	220

Electronics screwdrivers for Torx® screws

Ergonomic multi-component handle with rotating cap.
62 5760–5767 – Additionally with a handy stand / wall rack.
62 5760/5770/5772 – **Blade** of high-quality tool steel, surface matt chrome-plated, black tip.
62 5760/5770 – **From TX7 Torx® profile with hole** for screws with and without a tamper-proof pin.
62 5765/5767/5775/5777 – **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip.
62 5767/5772/5777 – Tool handle made of conductive plastic, **suitable for ESDs.**
62 5775/5777 – **From TX6 Torx® profile with hole** for screws with and without a tamper-proof pin.
Application: For precise, efficient screw driving operations for electronics applications. Also ideal for all sensitive setting and adjustment work.


62 5775


62 5777


62 5770


62 5772

Torx® profile			TX3	TX4	TX5	TX6	TX7	TX8	TX9	TX10	TX15	TX20
63D 62 5775	PB SWISS TOOLS	Electronics screwdriver for Torx®	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
63D 62 5777	PB SWISS TOOLS	Electronics screwdriver for Torx® **ESD**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
63F 62 5770	Wera	Electronics screwdriver for Torx® **Kraftform Micro**	–	–	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop
63H 62 5772	Wera	Electronics screwdriver for Torx® **Kraftform Micro, ESD**	–	eShop	eShop	eShop	–	–	–	–	–	–
Blade length (62 5775, 62 5777) mm			40	40	50	50	50	60	60	70	80	–
Blade length (62 5770, 62 5772) mm			–	40	40	40	60	60	60	60	60	60
overall length (62 5775, 62 5777) mm			133	133	143	143	143	153	153	163	173	–
overall length (62 5770, 62 5772) mm			–	137	137	137	157	157	157	157	157	157

Number of screwdrivers			6
63D 62 5765	PB SWISS TOOLS	Electronics screwdriver set for Torx®	eShop
63D 62 5767	PB SWISS TOOLS	Electronics screwdriver set for Torx® **ESD**	eShop
63F 62 5760	Wera	Electronics screwdriver set for Torx® **Kraftform Micro**	eShop
Content: 1 each screwdriver No. 625775 (62 5765)			Size TX5; TX6; TX7; TX8; TX9; TX10
1 each screwdriver No. 625777 (62 5767)			Size TX5; TX6; TX7; TX8; TX9; TX10
1 each screwdriver No. 625770 (62 5760)			Size TX5; TX6; TX7; TX8; TX9; TX10


62 5765
62 5767
62 5760

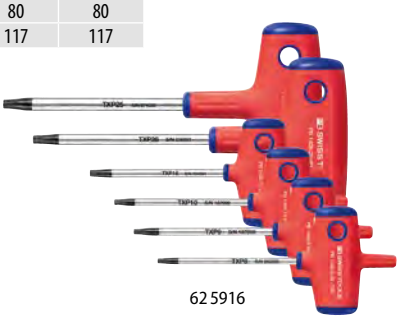
Screwdrivers with T-handle for Torx Plus® screws

Ergonomically shaped T-handle with non-allergenic elastomer coating and a core made of particularly tough and impact-resistant polypropylene. **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip.


62 5911_9IP

Torx Plus® profile			7IP	8IP	9IP	10IP	15IP	20IP	25IP
63D 62 5911		Screwdriver for Torx Plus®, with T-handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length mm			60	60	60	60	60	80	80
overall length mm			105	105	105	105	105	117	117

Number of hexagon key L-wrenches			6
63D 62 5916		Screwdriver set for Torx Plus®, with T-handle **6 pieces**	eShop
Content: 1 each screwdriver No. 625911			Size 8IP; 9IP; 10IP; 15IP; 20IP; 25IP


62 5916

Garant Screwdriver with wing handle for Torx Plus® screws

Wing handle (single sided) with non-slip **Haptoprene** surface and an impact-resistant plastic core.
Blades of chromium vanadium steel, surface nickel plated and chrome-plated, tips black.



62 5922_10IP

Torx Plus® profile		5IP	6IP	7IP	8IP	9IP	10IP	15IP	20IP
61C 62 5922	Screwdriver for Torx Plus®, with 2-component wing handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	40							
overall length	mm	83							

Number of screwdrivers		7
61C 62 5926	Screwdriver set for Torx Plus®, with 2-component wing handle	eShop
Content: 1 each screwdriver No. 625922		Size 6IP; 7IP; 8IP; 9IP; 10IP; 15IP; 20IP



62 5926

Garant Screwdriver with 2-component Haptoprene handle, for Torx Plus® screws

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core.
The special surface structure allows transmission of high torques, even with wet or oily hands.
Blade of chrome vanadium steel.
Surface nickel-plated and chrome-plated, black tip.



62 5942_15IP

Torx Plus® profile		6IP	7IP	8IP	9IP	10IP	15IP	20IP	25IP
61C 62 5942	Screwdriver for Torx Plus®, with 2-component Haptoprene handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	60	60	60	60	70	80	100	120
overall length	mm	145	145	145	145	160	175	200	225

Number of screwdrivers		6	8
61C 62 5946	Screwdriver set for Torx Plus®, with 2-component Haptoprene handle	eShop	eShop
Content: 1 each screwdriver No. 625942		Size 6IP; 7IP; 8IP; 9IP; 10IP; 15IP	Size 6IP; 7IP; 8IP; 9IP; 10IP; 15IP; 20IP; 25IP


62 5946_8

Wera Screwdrivers with Kraftform handle, for Torx Plus® screws

Kraftform handle made of impact resistant plastic with integral soft zones.
Blade made of high quality tool steel.
Surface matt chrome-plated, black tips.



62 5960

Torx Plus® profile		5IP	6IP	7IP	8IP	9IP	10IP	15IP	20IP	25IP	30IP
63F 62 5960	Screwdriver for Torx Plus®	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	60	60	60	60	60	80	80	100	100	115
overall length	mm	130	130	130	130	141	161	178	198	205	220

Number of screwdrivers		9
63F 62 5965	Screwdriver set for Torx Plus®	eShop
Content: 1 each screwdriver No. 625960		Size 6IP; 7IP; 8IP; 9IP; 10IP; 15IP; 20IP; 25IP; 30IP



62 5965

Hexagon key L-wrenches

62 6031 – Chrome vanadium steel, through hardened (toughened), surface chrome-plated. Hex-Plus from size 2 to 12 mm.
62 6034 – L-form shaft; optimum blade stock lengths. PB Swiss Tools special steel combining maximum hardness with exceptional toughness.
Surface nickel-plated, chrome-plated and powder-coated for quick location using clear "Rainbow" colour coding.
62 6037 – Nickel-plated.
62 6037/6038 – L-form shaft to DIN 911/DIN ISO 2936. Chromium-Vanadium steel, end faces squared and chamfered.
62 6038 – Surface phosphated.


Hex-Plus / standard hex


Reduced notch effect and protection of the profile.



62 6031


62 6034


62 6037


62 6038

Hexagon		mm	0,7	0,9	1,3	1,5	2	2,5	3	3,5	4	4,5	5	6	7
61C 62 6031	Garant	Hexagon key L-wrench **chrome-plated**	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop	eShop
63D 62 6034	PB SWISS TOOLS	Hexagon key L-wrench **powder-coated**	–	–	–	eShop	eShop	eShop	eShop	–	eShop	–	eShop	eShop	–
62B 62 6037	HOLEX	Hexagon key L-wrench **nickel-plated**	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62B 62 6038	HOLEX	Hexagon key L-wrench **phosphated**	eShop	eShop	eShop	eShop	eShop	eShop ■	eShop	–	eShop ■	–	eShop	eShop	eShop
Stock length (62 6031)		mm	–	–	–	45×14	50×16	56×18	63×20	–	70×25	–	80×28	90×32	95×34
Stock length (62 6034)		mm	–	–	–	52×16	58×18	66×21	74×23	–	84×26	–	95×30	106×34	–
Stock length (62 6037, 62 6038)		mm	33×7	33×11	41×13	46.5×15.5	52×18	58.5×20.5	66×23	69.5×25.5	74×29	80×30.5	85×33	96×38	102×41

Hexagon		mm	8	9	10	11	12	14	17	19	22	24	27	32
61C 62 6031	Garant	Hexagon key L-wrench **chrome-plated**	eShop	–	eShop	–	eShop	eShop	–	–	–	–	–	–
63D 62 6034	PB SWISS TOOLS	Hexagon key L-wrench **powder-coated**	eShop	–	eShop	–	–	–	–	–	–	–	–	–
62B 62 6037	HOLEX	Hexagon key L-wrench **nickel-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62B 62 6038	HOLEX	Hexagon key L-wrench **phosphated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length (62 6031)		mm	100×36	–	112×40	–	125×45	140×56	–	–	–	–	–	–
Stock length (62 6034)		mm	120×40	–	135×46	–	–	–	–	–	–	–	–	–
Stock length (62 6037, 62 6038)		mm	108×44	114×47	122×50	129×53	137×57	154×70	177×80	199×89	222×102	248×114	277×127	347×157

HOLEX Hexagon key L-wrenches with pin for Ribe CS screws


62 6070

L-form hexagon shank, through hardened (toughened), with centring pins at each end, suitable for screws to **DIN 6912** (Ribe CS).

Standard: Similar to **DIN 6911.**

Material: Chrome vanadium steel, surface **nickel-plated.**

Hexagon		mm	3	4	5	6	8	10	12	14	17
62B 62 6070	Hexagon key L-wrench, **with pin**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length		mm	20×63	25×71	28×80	32×90	36×100	40×112	45×125	55×140	60×160
Pin ∅		mm	2	2.5	3	4	5	6	7	8	10

Number of screwdrivers		5
62B 62 6073	Hexagon key L-wrench set, **with pin**	eShop ■
Supplied with: 1 each screwdriver No. 626070		Size 3; 4; 5; 6; 8
Storage in		Plastic clip


62 6073

Hexagon key L-wrench set

Number of screwdrivers			9
61C 62 6041	Garant	Hexagon key L-wrench set **chrome-plated**	eShop
Supplied with: 1 each L-wrench No. 626031			Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Presented in			Plastic clip



62 6041_9

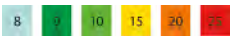
Number of screwdrivers			5	7
63D 62 6040	PB SWISS TOOLS	Hexagon key L-wrench set **chrome-plated**	eShop ■	eShop
Supplied with: 1 each L-wrench No. 626030, chrome-plated (size 0.7 and 0.9 burnished)			Size 0.7; 0.9; 1.3; 1.5; 2	Size 0.9; 1.30; 1.5; 2; 2.5; 3; 4
Storage in			Plastic clip	


62 6040_7

Number of screwdrivers			6	7	9
63D 62 6050	PB SWISS TOOLS	Hexagon key L-wrench set **powder-coated**	eShop	eShop	eShop ■
Supplied with: 1 each L-wrench No. 626034, powder-coated			Size 1.5; 2; 2.5; 3; 4; 5	Sizes 1.5; 2; 2.5; 3; 4; 5; 6	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in			Plastic clip		



62 6050_9



PB Swiss Tools colour coding for sizes

Number of screwdrivers			6	7	8	9
62B 62 6072	HOLEX	Hexagon key L-wrench set **nickel-plated**	eShop	eShop	eShop	eShop ■
Supplied with: 1 each L-wrench No. 626037			Size 1.5; 2; 2.5; 3; 4; 5	Size 2; 2.5; 3; 4; 5; 6; 8	Size 2; 2.5; 3; 4; 5; 6; 8; 10	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in			Plastic clip			



62 6072_6

Number of screwdrivers			9
62B 62 6077	HOLEX	Hexagon key L-wrench set **phosphated**	eShop
Supplied with: 1 each L-wrench No. 626038			Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in			Plastic clip



62 6077_9

Hexagon key L-wrenches in **inch sizes**

Number of screwdrivers			13
62B 62 6078	HOLEX	Hexagon key L-wrench set **nickel-plated**	eShop ■
Supplied with: 1 each L-wrench			Size 1/20; 1/16; 5/64; 3/32; 7/64; 1/8; 9/64; 5/32; 3/16; 7/32; 1/4; 5/16; 3/8
Storage in			Plastic clip



62 6078_13

Compact screwdriver set

62 6061 – PocketTool with 9 screwdriving tools and two tyre levers of glass-fibre-reinforced plastic. A compact companion for on the road (101 mm long and only 91 g).
62 6062 – Handy fold–away handle made of fibre–reinforced plastic, **with extraction button.**
62 6067 – Fold-away handle of painted sheet steel.


62 6061

Number of screwdrivers		9
63D 62 6061	PB SWISS TOOLS BikeTool screwdriver set in plastic holder	eShop
Content: 1 hexagon key L-wrench		5 mm
1 bit each for hex socket		No. 675290 size 2; 2.5; 3; 4; 6
1 bit for slot-head		No. 675300 size 5.5
1 bit for Phillips		No. 675281 size 2/25
1 bit for internal Torx®		No. 675295 size TX25
1 adapter with magnet		Hex socket 5 mm – bit holder C 6.3



Number of screwdrivers		9	7/6	7/8
63K 62 6062	wiha Hexagon key / screwdriver set in fold-away handle	eShop	eShop	eShop
Content: 1 each screwdriver for hex socket		3; 4; 5; 6 mm	1.5; 2; 2.5; 3; 4; 5; 6 mm	2; 2.5; 3; 4; 5; 6; 8 mm
1 screwdriver for slot-head		4.5×0.6 mm	–	–
1 screwdriver for Phillips		PH2	–	–
1 each screwdriver for Torx®		TX10; TX15; TX20	–	–


62 6062 _9


62 6062_7/8

Number of screwdrivers		9KOMBI
63Q 62 6067	AMF Hexagon key / screwdriver set in fold-away handle	eShop
Content: 1 each screwdriver for hex socket		1.5; 2; 2.5; 3; 4; 5; 6 mm
1 screwdriver for slot-head		7 mm
1 screwdriver for Phillips		PH1
4 hexagon keys DIN 659		7; 8; 10; 13 mm


62 6067_9KOMBI

PB SWISS TOOLS Hexagon key L-wrenches with ball point and short arm

Angled shank, ball point can be applied up to an angle of 30°. PB Swiss Tools special steel combining maximum hardness with exceptional toughness.
Surface nickel-plated and chrome-plated.

Application: Thanks to the short arm and the angle of 100°, can reach even into places where access is difficult.



62 6068



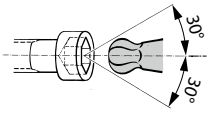
Hexagon	mm	1,5	2	2,5	3	4	5	6	8	10
63D 62 6068	Hexagon key L-wrench, short arm, with ball point **chrome-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length	mm	55×6	60×7	67×9	74×11	84×13	95×16	106×19	120×24	135×28

Number of screwdrivers		9
63D 62 6069	Hexagon key L-wrench set, short arm, with ball point **chrome-plated**	eShop ■
Supplied with: 1 each L-wrench No. 626068		Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in		Plastic clip


62 6069

Hexagon key L-wrenches with ball point

L-form shaft; optimum blade stock lengths. With ball point, can be used up to an angle of 30°.



Hex Plus



62 6082

62 6063 – PB Swiss Tools special alloy combining maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated.

62 6064 – PB Swiss Tools special alloy combining maximum hardness with exceptional toughness. Surface nickel-plated, chrome-plated and **powder-coated** for quick location using clear "Rainbow" colour coding.

62 6082 – Chrome vanadium steel, through hardened (toughened), surface chrome-plated.



62 6063



62 6064



PB Swiss Tools colour coding for sizes

Hexagon		mm	1,5	2	2,5	3	4	5	6	8	10
61C 62 6082	Garant	Hexagon key L-wrench, with ball point **chrome-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63D 62 6063			eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63D 62 6064	PB Swiss Tools	Hexagon key L-wrench, with ball point **powder-coated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length (62 6082)		mm	50×14	56×16	63×18	71×20	80×22	90×25	100×28	112×32	125×36
Stock length (62 6063, 62 6064)		mm	52×16	58×18	66×21	74×23	84×26	95×30	106×34	120×40	135×46

62

62 6065 – PB Swiss Tools special alloy combining maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated.

62 6084 – Chrome vanadium steel, through hardened (toughened), surface chrome-plated. The plastic clip enables easy removal of each individual wrench, without the need to move another one.

Hex Plus



62 6084

Number of hexagon key L-wrenches			8	9
61C 62 6084	Garant	Hexagon key L-wrench set, with ball point **chrome-plated**	–	eShop
63D 62 6065	PB Swiss Tools		eShop ■	eShop ■
Supplied with: 1 each L-wrench No. 626082 (62 6084)			–	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
1 each L-wrench No. 626063 (62 6065)			Size 1.5; 2; 2.5; 3; 4; 5; 6; 8	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Presented in a			Plastic clip	



62 6065_9

PB Swiss Tools special alloy combining maximum hardness with exceptional toughness. Surface nickel-plated, chrome-plated and **powder-coated** for quick location using clear "Rainbow" colour coding.

Number of screwdrivers			6	7	9
63D 62 6066	PB Swiss Tools	Hexagon key L-wrench set, with ball point **powder-coated**	eShop	eShop	eShop ■
Supplied with: 1 each L-wrench No. 626064			Size 1.5; 2; 2.5; 3; 4; 5	Sizes 1.5; 2; 2.5; 3; 4; 5; 6	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in			Plastic clip		





62 6066

PB Swiss Tools colour coding for sizes

Garant Hexagon key L-wrenches long, with retainer ball

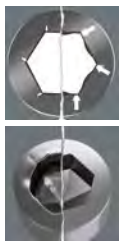
The spring-loaded retainer ball made of high quality steel keeps the screws very secure in all positions. This retention function makes the screwdriver the ideal tool, particularly when screws have to be inserted and tightened horizontally, at an upward or downward angle or into deep blind holes.

Material: Chrome vanadium steel, through hardened (toughened), surface chrome-plated.



62 6087

Standard 6-k / HexPlus



Hex Plus

Reduced notch effect and protection of the profile.

Hexagon	mm	3	4	5	6	8	10
61C 62 6087 Hexagon key L-wrench, with retainer ball **chrome-plated**		eShop	eShop	eShop	eShop	eShop	eShop
Stock length	mm	126×20	140×25	160×28	180×32	200×36	219×40

The **plastic clip** enables easy removal of each individual wrench, without the need to move another one.



closed

62 6089



open

Number of screwdrivers	9
61C 62 6089 Hexagon key L-wrench set, with retainer ball **chrome-plated**	eShop
Supplied with: 1 each L-wrench No. 626087 – from size 3 mm with retainer ball	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in	Plastic clip

Hexagon key L-wrenches long

L-form shaft to DIN ISO 2936 L, end faces squared and chamfered. Chrome vanadium steel, through hardened (toughened).

62 6090/6095 – PB Swiss Tools special alloy, surface nickel-plated and chrome-plated.
62 6105/6106 – Nickel-plated.
62 6125/6126 – Surface manganese phosphated.



62 6090

62 6105

62 6125

Hexagon	mm	1,5	2	2,5	3	4	5	6	7	8	9	10	12	14	17	19
63D 62 6090 PB Swiss Tools Hexagon key L-wrench, long **chrome-plated**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	–
62B 62 6105 Holex Hexagon key L-wrench, long **nickel-plated**		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop	eShop	eShop ■	eShop	eShop ■	eShop ■	eShop ■	eShop	eShop
62B 62 6125 Holex Hexagon key L-wrench, long **phosphated**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop	–	–	–
Stock length (62 6090)	mm	82×16	92×18	113×21	128×23	154×26	170×30	191×34	199×37	208×40	–	230×46	252×52	279×59	307×67	–
Stock length (62 6105)	mm	92×16	102×18	115×21	129×23	144×29	165×33	186×38	197×41	208×44	219×47	234×50	262×57	294×70	337×80	379×89
Stock length (62 6125)	mm	92×16	102×18	115×21	129×23	144×29	165×33	186×38	197×41	208×44	–	234×50	262×57	–	–	–

Number of L-wrenches	9
63D 62 6095 PB Swiss Tools Hexagon key L-wrench set **chrome-plated**	eShop ■
Content: 1 each L-wrench No. 626090	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in	Plastic clip



62 6095

Number of L-wrenches	8	9	11
62B 62 6106 Holex Hexagon key L-wrench set **nickel-plated**	eShop	eShop	eShop
Content: 1 each L-wrench No. 626105	Size 2; 2.5; 3; 4; 5; 6; 8; 10	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10	Size 1.5; 2; 2.5; 3; 4; 5; 6; 7; 8; 9; 10
Stored in	Plastic clip		



62 6106_9

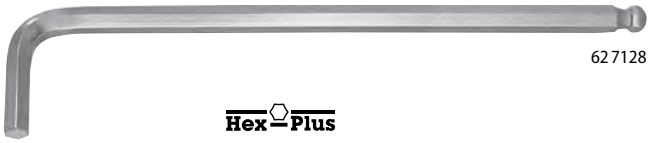
Number of L-wrenches	9
62B 62 6126 Holex Hexagon key L-wrench set **phosphated**	eShop
Content: 1 each L-wrench No. 626125	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in	Plastic clip



62 6126

Hexagon key L-wrenches, long with ball point and retention function

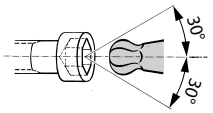
The **spring-loaded retainer ball**, made of high quality steel, retains screws very securely in all positions even when the screw is at an angle. This retention function makes the screwdriver the ideal tool, particularly when screws have to be inserted and tightened horizontally, at an upward or downward angle or into deep blind holes.



62 7128

Material: Chrome vanadium steel, through hardened (toughened), surface chrome-plated.

Hexagon		mm	3	4	5	6	8	10
61C 62 7128	Garant	Hexagon key L-wrench, with retainer ball **chrome-plated**	eShop	eShop	eShop	eShop	eShop	eShop
Stock length		mm	126×20	140×25	160×28	180×32	200×36	219×40





The **plastic clip** premits easy removal of every individual key, without having to move another one.
Material: Chrome vanadium steel, through hardened (toughened), surface chrome-plated.

Number of screwdrivers			9
61C 62 7132	Garant	Hexagon key L-wrench set, with retainer ball **chrome-plated**	eShop ■
Content: 1 each L-wrench No. 627128 – from size 3 mm with retainer ball			Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in			Plastic clip



closed 62 7132



open 62 7132

The **plastic clip** premits easy removal of every individual key, without having to move another one.
Material: Chrome vanadium steel, through hardened (toughened), BlackLaser surface.
Advantage: "Take it easy" tool finder with colour marking by sizes – **to find the required tool quickly and easily.**

Number of screwdrivers			9
63F 62 7133	Wera	Hexagon key L-wrench set, with retainer ball **Multi-colour plastic sheathed, Hex-Plus**	eShop ■
Content: 1 each L-wrench – from 3 mm with retainer ball			Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Presented in a			Plastic clip

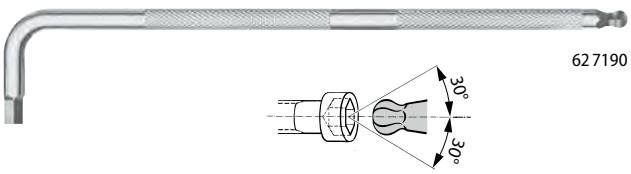




62 7133

PB SWISS TOOLS Safety hexagon key L-wrench, long, with knurling and ball point

L-form shaft; ball point can be applied up to an angle of 30°.
PB Swiss Tools special steel combining maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated.
Advantage: The knurling to ISO 13444 type B increases the grip in wet or oily environments and thus enhances safety.



62 7190

Hexagon		mm	1,5	2	2,5	3	4	5	6	8	10
63D 62 7190	Hexagon key L-wrench, long **with knurling**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length		mm	92×17	103×19	115×21	130×24	145×27	166×31	187×35	208×43	234×49.5

Number of screwdrivers			7	9
63D 62 7191	Hexagon key L-wrench set, long **with knurling**		eShop	eShop
Content: 1 each L-wrench No. 627190			Sizes 1.5; 2; 2.5; 3; 4; 5; 6	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Stored in			Plastic clip	



62 7191_9

Hexagon key L-wrenches long, with ball point

L-form shaft; ball point can be applied up to an angle of **30°**.

62 7140 – PB Swiss Tools special steel combining maximum hardness with exceptional toughness. Surface nickel-plated, chrome-plated and **powder-coated.** Edges slightly chamfered.

62 7150 – PB Swiss Tools special steel combining maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated**.** Edges slightly chamfered.

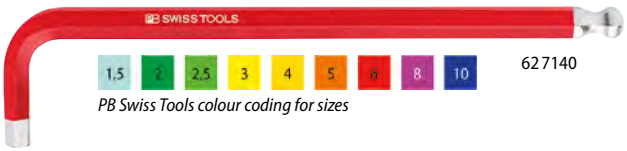
62 7200 – Chrome vanadium steel, through hardened (toughened). **Hex-plus profile** prevents deformation of the screw head and transmits more torque, chrome-plated.

62 7320 – Stainless steel, vacuum ice-hardened, **Hex-plus profile** prevents deformation of the screw head and transmits more torque.

62 7323 – Chrome vanadium steel, through hardened (toughened), nickel plated.

62 7325 – Chrome vanadium steel, through hardened (toughened), surface phosphated.





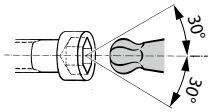
PB Swiss Tools colour coding for sizes











Hexagon		mm	1,5	2	2,5	3	4	5	6	8	10	12	14	17
63D 62 7150	PB SWISS TOOLS	Hexagon key L-wrench, long **chrome-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63D 62 7140	PB SWISS TOOLS	Hexagon key L-wrench, long **powder-coated**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop	–	–	–
63F 62 7200	Wera	Hexagon key L-wrench, long **chrome-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
63F 62 7320	Wera	Hexagon key L-wrench, long **Stainless steel (INOX)**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
62B 62 7323	HOLEX	Hexagon key L-wrench, long **nickel-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
62B 62 7325	HOLEX	Hexagon key L-wrench, long **phosphated**	eShop	eShop ■	eShop	eShop	eShop ■	eShop ■	eShop	eShop	eShop	–	–	–
Stock length (62 7150, 62 7140)		mm	82×16	92×18	113×21	128×23	154×26	170×30	191×34	208×40	230×46	252×52	279×59	307×67
Stock length (62 7200)		mm	90×14	100×16	112×18	126×20	140×25	160×28	180×32	200×36	219×40	–	–	–
Stock length (62 7320)		mm	90×14	101×16	112×19	123×21	137×24	154×27	172×31	195×37	224×42	–	–	–
Stock length (62 7323, 62 7325)		mm	91.5×15.5	102×18	114.5×20.5	129×23	144×29	165×33	186×38	208×44	234×50	–	–	–

Hexagon key L-wrenches in inch sizes

PB Swiss Tools special steel combining maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated (sizes 1/20 burnished)**.** Edges slightly chamfered.



Hexagon		in	1/20	1/16	5/64	3/32	7/64	1/8	9/64	5/32	3/16	7/32	1/4	5/16	3/8
63D 62 7170	PB SWISS TOOLS	Hexagon key L-wrench, long **chrome-plated**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Stock length		mm	71×13	82×17	92×18	99×19	108×21	118×22	129×24	136×26	150×29	168×32	186×35	208×40	230×45

Hexagon key L-wrench set long, with ball point

Number of screwdrivers		6	7	9
63D 62 7141	PB SWISS TOOLS Hexagon key L-wrench set, long **powder-coated**	eShop	eShop	eShop ■
Content: 1 each L-wrench No. 627140		Size 1.5; 2; 2.5; 3; 4; 5	Sizes 1.5; 2; 2.5; 3; 4; 5; 6	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Presented in		Plastic clip		



62 7141_9

Number of screwdrivers		6	8	9
63D 62 7330	PB SWISS TOOLS Hexagon key L-wrench set **chrome-plated**	eShop	eShop	eShop ■
Content: 1 each L-wrench No. 627150		Size 1.5; 2; 2.5; 3; 4; 5	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Presented in		Plastic clip		



62 7330_9

Number of screwdrivers		12Z
63D 62 7331	PB SWISS TOOLS Hexagon key L-wrench set **imperial dimensions, chrome plated**	eShop ■
Content: 1 each L-wrench No. 627170		Size 1/20; 1/16; 5/64; 3/32; 7/64; 1/8; 9/64; 5/32; 3/16; 7/32; 1/4; 5/16
Storage in		Plastic clip



62 7331

Hex Plus



Reduced notch effect and protection of the profile.



Standard hexagon / HexPlus

TAKE IT EASY TOOL FINDER

Flip-up plastic clip

Number of screwdrivers		9
63F 62 7216	Wera Hexagon key L-wrench set, BlackLaser surface **Multi-colour plastic sheathed, Hex-Plus**	eShop ■
Content: 1 each L-wrench		1.5; 2; 2.5; 3; 4; 5; 6; 8; 10 mm
Presented in		Plastic clip



Hex Plus 62 7216

Flip-up plastic clip.

Number of screwdrivers		7	9
63F 62 7210	Wera Hexagon key L-wrench set **Hex-plus chrome-plated**	eShop	eShop ■
Content: 1 each L-wrench No. 627200		Sizes 1.5; 2; 2.5; 3; 4; 5; 6	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Presented in		Plastic clip	



Hex Plus 62 7210 _9

S/STL

Flip-up plastic clip.

TAKE IT EASY TOOL FINDER

Number of screwdrivers		9
63F 62 7351	Wera Hexagon key L-wrench set **Stainless steel, multi-colour plastic sheathed, Hex-Plus**	eShop ■
Content: 1 each L-wrench		Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10 mm
Presented in a		Plastic clip



Hex Plus 62 7351

S/STL

Flip-up plastic clip.

Number of screwdrivers		9
63F 62 7350	Wera Hexagon key L-wrench set **Stainless steel, Hex-Plus**	eShop ■
Content: 1 each L-wrench No. 627320		Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Presented in		Plastic clip



Hex Plus 62 7350

62

Number of screwdrivers		9
62B 62 7225	HOLEX Hexagon key L-wrench set **nickel-plated**	eShop ■
Content: 1 each L-wrench No. 627323		Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Stored in		Plastic clip



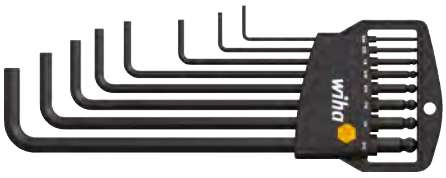
62 7225

Number of screwdrivers		9
62B 62 7327	HOLEX Hexagon key L-wrench set **phosphated**	eShop ■
Content: 1 each L-wrench No. 627325		Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Stored in		Plastic clip



62 7327

Number of screwdrivers		8
63K 62 7315	wiha Hexagon key L-wrench set **imperial dimensions, phosphated**	eShop
Content: 1 each L-wrench		5/64; 3/32; 1/8; 5/32; 3/16; 7/32; 1/4; 5/16 inch
Presented in		Plastic clip



62 7315

PB SWISS TOOLS Hexagon key L-wrench long, with ball point and short arm

L-form shaft, ball point can be applied up to an angle of 30°.
PB Swiss Tools special steel combining maximum hardness with exceptional toughness.

Application: Thanks to the short arm and the angle of 100°, can reach even into places where access is difficult.

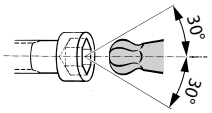


62 7370



62 7372

62 7370 – Surface nickel-plated and chrome-plated.
62 7372 – Surface nickel-plated, chrome-plated and **powder-coated** for quick location using clear "Rainbow" colour coding.





Hexagon mm		1,5	2	2,5	3	4	5	6	8	10
63D 62 7370	Hexagon key L-wrench, long and short arm, with ball point **chrome-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63D 62 7372	Hexagon key L-wrench, long and short arm, with ball point **powder-coated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length mm		82×6	92×7	113×9	128×11	154×13	170×16	191×19	208×24	230×28

62 7375 – Surface nickel-plated and chrome-plated.
62 7377 – Surface nickel-plated, chrome-plated and **powder-coated** for quick location using clear "Rainbow" colour coding.

Number of screwdrivers		9
63D 62 7375	Hexagon key L-wrench set, long and short arm, with ball point **chrome-plated**	eShop ■
63D 62 7377	Hexagon key L-wrench set, long and short arm, with ball point **powder-coated**	eShop ■
Content: 1 each L-wrench No. 627370 / 627372		Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Packaging		Plastic clip



62 7375



62 7377

Hexagon key L-wrench 90° – 100°, long, with ball point and short arm

Extra-short arm with flexible angle (90°– 100°), ball point can be inclined at an angle up to 30°. PB Swiss Tools special steel combining maximum hardness with exceptional toughness.

Size 1,5; 2 – Only with 90° angle.

Material:

62 7381/7386 – Surface nickel-plated and chrome-plated.

62 7382/7387 – Surface nickel-plated, chrome-plated and **powder-coated** for quick location using clear "Rainbow" colour coding.

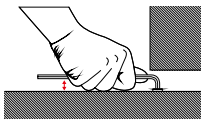
Advantage: Flexible angle at the short arm (90°– 100°).
90° for insertion: Even places that are very difficult to access can easily be reached.
100°for working: The free space for the hand ensures pleasant and safe working.

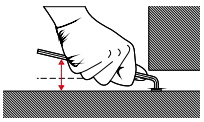

62 7381

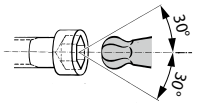


62 7382

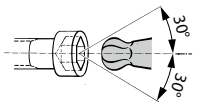
Short arm for screws where access is difficult:


90° for insertion.

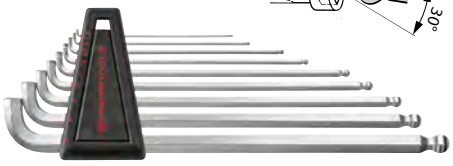

100° for working.



Hexagon	mm	1,5	2	2,5	3	4	5	6	8	10
63D 62 7381	Hexagon key L-wrench 90°– 100°, long, with ball point and short arm **chrome-plated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63D 62 7382	Hexagon key L-wrench 90°– 100°, long, with ball point and short arm **powder-coated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Stock length	mm	82×6	92×7	113×9	128×11	154×13	170×16	191×19	208×24	230×28



Number of hexagon key L-wrenches		9
63D 62 7386	Hexagon key L-wrench set 90°– 100°, long, with ball point and short arm **chrome-plated**	eShop
63D 62 7387	Hexagon key L-wrench set 90°– 100°, long, with ball point and short arm **powder-coated**	eShop ■
Supplied with: 1 each L-wrench No. 627381 (62 7386)		Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
1 each L-wrench with T-handle No. 627382 (62 7387)		Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10
Storage in		Plastic clip

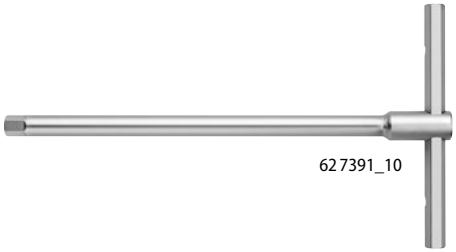

62 7386


62 7387

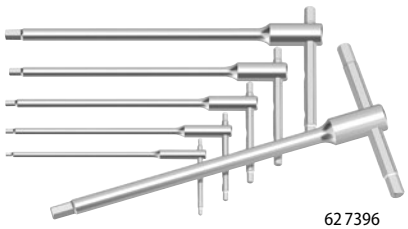
3-way hexagon wrenches with sliding T-handle

Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.

Advantage: Ideal for high torque screw connections where access is difficult.


62 7391_10

Hexagon	mm	2	2,5	3	3,5	4	4,5	5	6	7	8	9	10	12	14
63D 62 7391	3-way hexagon wrench	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length	mm	125	140	155	165	175	185	195	215	230	245	260	270	300	330
Sliding handle length	mm	55	60	65	70	75	80	85	100	105	115	125	135	155	180


62 7396

Number of screwdrivers		5	6
63D 62 7396	3-way hexagon wrench set	eShop	eShop
Supplied with: 1 each hexagon screwdriver No. 627391		Size 2.5; 3; 4; 5; 6	Size 3; 4; 5; 6; 8; 10

Hexagon screwdrivers with T-handle

62 7485 – Comfortable multi-component plastic T-handle. Blade made of chrome vanadium steel, chrome-plated. With side drive.

62 7446/7448 – Ergonomic 2-component T-handle with finger grip hollows and pleasant feel for high transmission of force and non-fatiguing work. With side drive. Blade surface matt chrome-plated. Sizes 3 – 10 with holding function on the long arm for secure holding of the screw on the tool.

62 7447/7449 – Ergonomically shaped T-handle with non-allergenic elastomer coating and a core made of particularly tough and impact-resistant polypropylene. Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional elasticity. Surface chrome-plated. Size 4 – 10 with side drive.

62 7481–7483/7487 – Comfortable multi-component plastic T-handle. Blade made of chrome vanadium steel, chrome-plated.

62 7484/7486 – Comfortable multi-component plastic T-handle. Blade made of chrome vanadium steel, chrome-plated. With side drive. Ball head on the long side.

62 7702/7706 – Ergonomically shaped T-handle with easy-grip **Haptoprene** surface and an impact-resistant plastic core. Blade of chrome vanadium steel. Surface nickel-plated and chrome-plated. Size 4 – 10 with side drive.

62 7712/7716 – Ergonomically shaped T-handle with easy-grip **Haptoprene** surface and an impact-resistant plastic core. Blade of chrome vanadium steel. Surface nickel-plated and chrome-plated. With ball head on the long side. Size 4 – 10 with side drive.

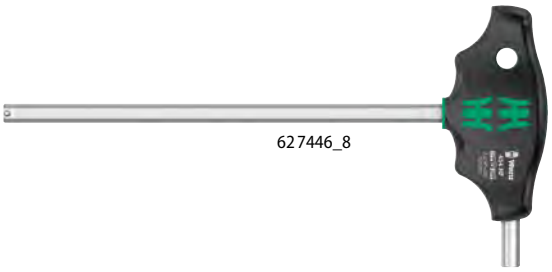




HOLEX hexagon screwdrivers incl. imperial sizes are available from our eShop (No. 62 7581, 62 7584 62 7585).







Hexagon		mm	2	2,5	3	4	5	6	8	10	12
61C 62 7702	Garant	Hexagon screwdriver, with T-handle	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	–
61C 62 7712	Garant	Hexagon screwdriver, with T-handle **and ball point**	–	–	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	–
63D 62 7447	PB SWISS TOOLS	Hexagon screwdriver, with T-handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
63F 62 7446	Wera		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
62C 62 7481			eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	–	–
62C 62 7482		Hexagon screwdriver, long, with T-handle	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62C 62 7483	HOLEX	Hexagon screwdriver, extra long, with T-handle	–	–	–	eShop	eShop ■	eShop	eShop	eShop	–
62C 62 7484		Hexagon screwdriver, with T-handle **and ball point**	–	–	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	–
62C 62 7485		Hexagon screwdriver, with T-handle	–	–	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop	–
Blade length (62 7702, 62 7712)		mm	100	100	100	125	125	125	125	170	–
Blade length (62 7447)		mm	60	60	100	150	150	150	150	200	–
Blade length (62 7446)		mm	100	100	100	100	150	150	200	200	–
Blade length (62 7481)		mm	100	100	150	150	150	150	150	–	–
Blade length (62 7482)		mm	–	–	200	200	200	200	200	200	200
Blade length (62 7483)		mm	–	–	–	350	350	350	350	350	–
Blade length (62 7484, 62 7485)		mm	–	–	150	150	150	150	200	200	–
overall length (62 7702, 62 7712)		mm	146	146	146	187	187	200	200	245	–
overall length (62 7447)		mm	105	105	145	187	187	200	200	245	–
overall length (62 7446)		mm	132	132	137	137	198	198	245	247	–
overall length (62 7481)		mm	119	119	169	175	182	182	182	–	–
overall length (62 7482)		mm	–	–	219	225	232	232	232	235	235
overall length (62 7483)		mm	–	–	–	375	382	382	382	385	–
overall length (62 7484, 62 7485)		mm	–	–	175	175	182	182	232	235	–

Number of screwdrivers		8
61C 62 7706	Garant Hexagon screwdriver set **chrome-plated**	eShop
Storage in		Easy-Fix stand
Supplied with: 1 each screwdriver No. 627702		Size 2; 2.5; 3; 4; 5; 6; 8; 10

Number of screwdrivers		6
61C 62 7716	Garant Hexagon screwdriver set **with ball point, chrome-plated**	eShop
Storage in		Easy-Fix stand
Supplied with: 1 each screwdriver No. 627712		Size 3; 4; 5; 6; 8; 10

Number of screwdrivers		6
63D 62 7449	PB SWISS TOOLS Hexagon screwdriver set **chrome-plated**	eShop
Supplied with: 1 each screwdriver No. 627447		Size 3; 4; 5; 6; 8; 10

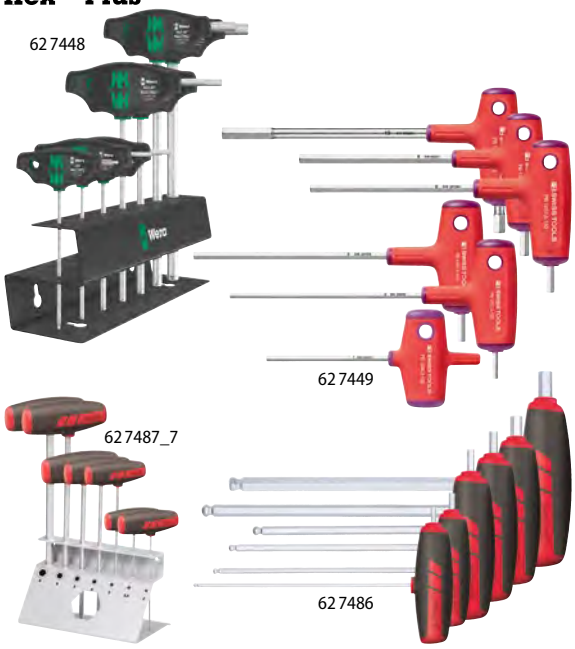
Number of screwdrivers		7
63F 62 7448	Wera Hexagon screwdriver set **chrome-plated**	eShop
Storage in		sheet metal stand
Supplied with: 1 each screwdriver No. 627446		Size 2.5; 3; 4; 5; 6; 8; 10

Number of screwdrivers		6
62C 62 7486	HOLEX Hexagon screwdriver set **with ball point, chrome-plated**	eShop ■
Supplied with: 1 pc. each screwdriver No. 627484		Size 3; 4; 5; 6; 8; 10

Number of screwdrivers		6	7
62C 62 7487	HOLEX Hexagon screwdriver set **chrome-plated**	eShop	eShop
Storage in		–	Sheet metal stand
Supplied with: 1 pc. each screwdriver No. 627481		Size 2.5; 3; 4; 5	Size 2; 2.5; 3; 4; 5
1 pc. each screwdriver No. 627482		Size 6; 8	



Hex-Plus



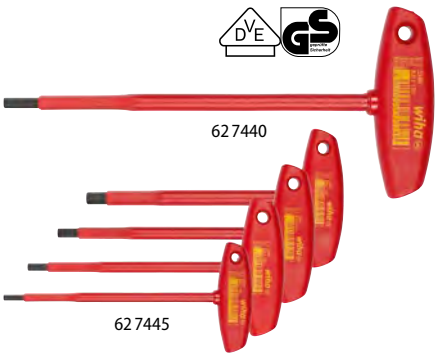
62

wiha Hexagon screwdriver with T-handle, fully insulated

Impact resistant plastic T-handle, blade of chrome vanadium steel, burnished, with sprayed-on protective insulation.
Insulated up to 1000 V, made to DIN EN IEC 60900 / VDE 0682-201.

Hexagon	mm	4	5	6	8
63K 62 7440 Hexagon screwdriver, with T-handle **VDE fully insulated**		eShop	eShop	eShop	eShop
Blade length	mm	150			
overall length	mm	176	182	182	182

Number of screwdrivers		4
63K 62 7445	Hexagon screwdriver set, with T-handle **VDE fully insulated**	eShop
Supplied with: 1 each screwdriver No. 627440		Size 4; 5; 6; 8



HOLEX Tri-square L-wrench set / spline L-wrench set

L-shank; through hardened (hard and tough). Chrome vanadium steel, surface nickel-plated.
62 7535 – **For XZN screws.**
62 7565 – **For spline socket head screws (Ribe CV).**

Number of screwdrivers		8
62B 62 7535	Tri-square L-wrench set	eShop
Supplied with: 1 each tri-square L-wrench		Size M4; M5; M6; M8; M10; M12; M14; M16
Packaging		Wallet

Number of screwdrivers		8
62B 62 7565	Spline L-wrench set	eShop
Supplied with: 1 each spline L-wrench		Size M4; M5; M6; M8; M10; M12; M14; M16
Packaging		Wallet


62 7535


62 7565

Hexagon screwdriver with 2-component power grip

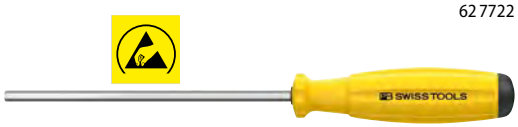
62 7630 – **SwissGrip-power grip** with non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. High torques can be exerted even with wet or oily hands.
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated.
Tool handle made of conductive plastic, **suitable for ESDs.**

62 7500–7504 – **Multi-component power grip**. Impact resistant plastic core with torque and comfort optimised grip zone. Chromium vanadium steel, through hardened (toughened) hexagon blade, surface chrome-plated.

62 7722/7726 – Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands.
Blade of chrome vanadium steel. Surface nickel-plated and chrome-plated.



62 7722



62 7630


62 7500


62 7501

Hexagon			mm	1,27	1,5	2	2,5	3	4	5	6	8	10
61C 62 7722	Garant	Hexagon screwdriver, straight, with 2-component Haptoprene handle		–	–	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop
63D 62 7630	PB SWISS TOOLS	Hexagon screwdriver, with 2-component Swiss-Grip handle **ESD**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
62C 62 7500	HOLEX	Hexagon screwdriver, straight, with power grip		–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
62C 62 7501	HOLEX	Hexagon screwdriver, offset, with power grip		–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop
Blade length (62 7722, 62 7630)			mm	50	70	80	90	100	120	140	160	180	200
Blade length (62 7500)			mm	–	–	60	75	75	75	75	100	100	–
Blade length (62 7501)			mm	–	–	–	–	35	40	45	50	60	75
overall length (62 7722)			mm	–	–	162	172	190	220	245	271	300	320
overall length (62 7630)			mm	127	147	157	170	190	220	245	–	–	–
overall length (62 7500)			mm	–	–	147	162	162	182	182	207	220	–
overall length (62 7501)			mm	–	–	–	–	122	127	152	157	180	195

Hexagon			in	5/64	3/32	7/64	1/8	9/64	5/32
62C 62 7502	HOLEX	Hexagon screwdriver, straight, with power grip **imperial**		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Blade length			mm	60	75	75	75	75	75
overall length			mm	147	162	162	162	182	182

Hexagon			in	3/16	7/32	1/4	5/16	3/8
62C 62 7502	HOLEX	Hexagon screwdriver, straight, with power grip **imperial**		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Blade length			mm	75	75	100	100	100
overall length			mm	183	183	207	220	220

Number of screwdrivers			7
61C 62 7726	Garant	Hexagon screwdriver set, straight, with power grip	eShop ■
Content: 1 each hexagon screwdriver No. 627722			Size 2; 2.5; 3; 4; 5; 6; 8


62 7726

Number of screwdrivers			7
62C 62 7503	HOLEX	Hexagon screwdriver set, straight, with power grip	eShop
Supplied with: 1 each hexagon screwdriver No. 627500			Size 2; 2.5; 3; 4; 5; 6; 8


62 7503

Number of screwdrivers			6
62C 62 7504	HOLEX	Hexagon screwdriver set, offset, with power grip	eShop
Supplied with: 1 each hexagon screwdriver No. 627501			Size 3; 4; 5; 6; 8; 10


62 7504

Hexagon electronics screwdriver

Ergonomically configured multi-component handle with smooth-running **rotating cap** (for fingertip pressure during precision work). Optimally shaped **quick turning zone** for fast, efficient screwdriving and **power zone** for transferring higher torques.

62 7470/7475 – Blades of high-quality tool steel, surface matt chrome-plated, black tip.
Hex-plus profile prevents deformation of the screw head and transmits more torque.

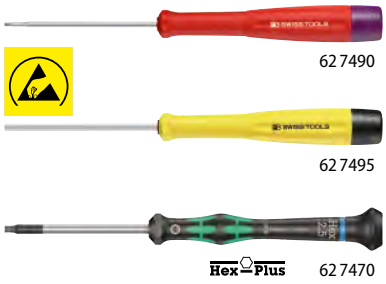
62 7490–7499 – **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Very high accuracy of the blades. Surface nickel-plated and chrome-plated.

62 7495/7499 – Tool handle made of conductive plastic, **suitable for ESDs.**

Application: For precise, efficient screw driving operations for electronics applications. Also ideal for all sensitive setting and adjustment work.

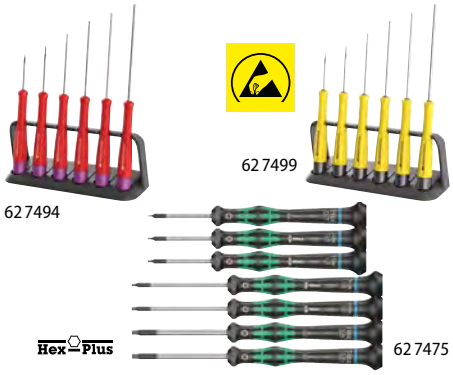
Supplied with:

62 7494/7499 – Practical stand / wall rack.



Hexagon			mm	0,7	0,71	0,89	0,9	1,27	1,3	1,5	2	2,5	3
63D 62 7490	PB SWISS TOOLS	Hexagon electronics screwdriver		–	eShop	eShop	–	eShop	–	eShop	eShop	eShop	eShop
63D 62 7495	PB SWISS TOOLS	Hexagon electronics screwdriver **ESD**		–	eShop	eShop	–	eShop	–	eShop	eShop	eShop	eShop
63F 62 7470	Wera	Hexagon electronics screwdriver **Kraftform Micro**		eShop	–	–	eShop	–	eShop	eShop	eShop	eShop	eShop
Blade length (62 7490, 62 7495)			mm	–	40	40	–	50	–	65	80	90	100
Blade length (62 7470)			mm	40	–	–	40	–	40	60	60	60	60
overall length (62 7490, 62 7495)			mm	–	133	133	–	143	–	158	173	183	191
overall length (62 7470)			mm	137	–	–	137	–	137	157	157	157	157

Number of screwdrivers			6	7
63D 62 7494	PB SWISS TOOLS	Hexagon electronics screwdriver set	eShop	–
63D 62 7499	PB SWISS TOOLS	Hexagon electronics screwdriver set **ESD**	eShop	–
63F 62 7475	Wera	Hexagon electronics screwdriver set **Kraftform Micro**	–	eShop
Supplied with: 1 each electronics screwdriver No. 627490 (62 7494)			Size 0.89; 1.27; 1.5; 2; 2.5; 3	–
1 each electronics screwdriver No. 627495 (62 7499)			Size 0.89; 1.27; 1.5; 2; 2.5; 3	–
1 each electronics screwdriver No. 627470 (62 7475)			–	Size 0.7; 0.9; 1.3; 1.5; 2; 2.5; 3



62

Hexagon ball point screwdrivers

Straight hexagonal shank with ball point.

62 7620 – **"Multicraft" power grip** of impact resistant plastic (cadmium free), particularly easy grip, even with oily hands. **Blade** of PB Swiss Tools special alloy combining maximum hardness and exceptional toughness, surface nickel-plated and chrome-plated.

62 7633 – **SwissGrip-power grip** with non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. High torques can be exerted even with wet or oily hands.
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated.
Tool handle made of conductive plastic, **suitable for ESDs.**

62 7742/7746 – Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands. **Blade** of chrome vanadium steel. Surface nickel-plated and chrome-plated.

62 7400/7410 – **Kraftform handle** made of impact-resistant plastic with integral soft zones. Blade of high quality tool steel, surface matt chrome-plated, black tips.

62 7511/7512 – **Multi-component power grip**. Impact-resistant core with torque and comfort optimised grip zone. Blade of chrome vanadium steel, surface chrome-plated.



Hexagon			mm	1,27	1,5	2	2,5	3	4	5	6	8	10	12
61C 62 7742	Garant	Hexagon ball-point screwdriver, with 2-component Haptoprene handle		–	–	–	–	eShop	eShop ■	eShop	eShop	eShop	–	–
63D 62 7620	PB SWISS TOOLS	Hexagon ball point screwdriver, with "multicraft" power grip		–	–	–	–	–	eShop	eShop	eShop	eShop	–	–
63D 62 7633	PB SWISS TOOLS	Hexagon ball-point screwdriver, with 2-component SwissGrip handle **ESD**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–
63F 62 7400	Wera	Hexagon ball point screwdriver, with Kraftform handle		–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62C 62 7511	HOLEX	Hexagon ball point screwdriver, with power grip		–	–	–	eShop ■	eShop ■	eShop	eShop	eShop	eShop	–	–
Blade length (62 7742, 62 7620, 62 7633)			mm	50	70	80	90	100	120	140	160	180	–	–
Blade length (62 7400, 62 7511)			mm	–	60	80	100	100	100	100	125	150	150	150
overall length (62 7742)			mm	–	–	–	–	185	210	235	260	295	–	–
overall length (62 7620)			mm	–	–	–	–	–	215	240	265	300	–	–
overall length (62 7633)			mm	127	147	157	167	180	210	235	–	–	–	–
overall length (62 7400)			mm	–	89	169	181	181	198	205	230	262	262	267
overall length (62 7511)			mm	–	–	–	187	187	207	207	232	257	–	–

Number of screwdrivers			5
61C 62 7746	Garant	Hexagon ball-point screwdriver set, with 2-component Haptoprene handle	eShop ■
Supplied with: 1 each hexagon ball-point screwdriver No. 627742			Sizes 3; 4; 5; 6; 8



62 7746

Number of screwdrivers			5	8	10
63F 62 7410	Wera	Hexagon ball-point screwdriver set, with Kraftform handle	eShop	eShop	eShop
Supplied with: 1 each hexagon ball-point screwdriver No. 627400			Size 3; 4; 5; 6; 8	Size 2.5; 3; 4; 5; 6; 8; 10; 12	Size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10; 12



62 7410_10

Number of screwdrivers			5
62C 62 7512	HOLEX	Hexagon ball-point screwdriver set, with power grip	eShop
Supplied with: 1 each hexagon ball-point screwdriver No. 627511			Size 3; 4; 5; 6; 8



62 7512

62

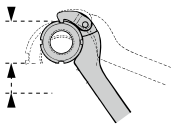
Adjustable C–hook / pin spanner

Adjustable C-hook spanner with square pin.

62 7990 – Nirosta stainless steel.

62 8000 – Special steel, drive head ground, hardened and nickel-plated.

Application: For slotted nuts to DIN 1804 and roller bearing slotted nuts to DIN 981.



S/STL



62 7990

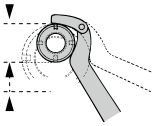


62 8000

for external nut ∅	mm	20-35	35-60	60-90	90-155	155-230
63Q 62 7990	Stainless steel adjustable C-hook (pin) spanner **with square pin**	eShop	eShop	eShop	eShop	eShop
63Q 62 8000	Adjustable C-hook (pin) spanner **with square pin**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
overall length	mm	165	210	280	335	460

Adjustable C-hook (pin) spanner.
Special steel, drive head ground, hardened and burnished.

Application: For capstan nuts to DIN 1816.





62 8100

largest ∅ / pin ∅	mm	22/2,5	35/3	60/4	90/5	90/6	155/6	155/8	230/8	230/10
63Q 62 8100	Adjustable C-hook (pin) spanner **with pin**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length	mm	135	165	205	280	280	335	335	460	460

C-hook/pin spanner

Special steel, drop-forged, hardened and phosphated.

62 8405 – Hook spanner with square pin to DIN 1810 A.
62 8505 – Hook spanner with round pin to DIN 1810 B.

Application:

62 8405 – For slotted nuts to DIN 1804 and roller bearing slotted nuts to DIN 981.
62 8505 – For DIN 1816 capstan nuts.



62 8405



62 8505

for external nut ∅		mm	12/14	16/20	25/28	30/32	34/36	40/42	45/50	52/55	58/62	68/75
61C 62 8405	Garant	C-hook/pin spanner **with square pin**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
61C 62 8505	Garant	C-hook/pin spanner **with pin**	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length		mm	110	110	136	136	170	170	206	206	240	240
Pin ∅ (62 8505)		mm	–	–	3	4	4	4	5	5	5	6

for external nut ∅		mm	80/90	95/100	110/115	120/130	135/145	155/165	180/195	205/220
61C 62 8405	Garant	C-hook/pin spanner **with square pin**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
61C 62 8505	Garant	C-hook/pin spanner **with pin**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
overall length		mm	280	280	335	335	385	385	470	470
Pin ∅ (62 8505)		mm	6	8	8	8	8	8	10	–

Adjustable C-hook spanner

Hook spanner with square pin. Special steel, hardened and burnished.

62 8520 – With square socket 1/2 inch or 3/4 inch (sizes 95 – 165) for use with a torque wrench (from No. 655500).

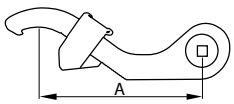
Application: For slotted nuts to DIN 1804 and roller bearing slotted nuts to DIN 981.



62 8510



62 8520



for external nut ∅		mm	20-42	45-90	95-165
63Q 62 8510	AMF	Adjustable C-hook spanner **with square pin**	eShop ■	eShop ■	eShop ■
63Q 62 8520	AMF	Adjustable C-hook spanner, for torque wrench **with square pin**	eShop ■	eShop ■	eShop
overall length (62 8510)		mm	180	250	335
overall length (62 8520)		mm	135	192	298
effective length A (62 8520)		mm	100	150	220

AMF Adjustable caliper pin wrench

62 8620 – Stainless steel, stainless, with fixed pin.
62 8600/8610 – Special steel, drive head ground, hardened and burnished; with fixed pins.

Application: For twin hole nuts.

Note: Pin ∅ = pin nominal ∅ - 0.1 mm. Tolerance zone h12.

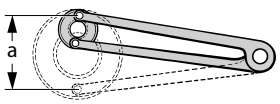


62 8600

S/STL



62 8620





62 8610

Pin nominal ∅		mm	1,5	2	2,5	3	4	5	6	8	10	12
63Q 62 8600		Adjustable caliper pin wrench **flat**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63Q 62 8620		Adjustable caliper pin wrench **straight, stainless steel**	–	–	–	eShop	eShop	–	–	–	–	–
63Q 62 8610		Adjustable caliper pin wrench **cranked**	–	–	–	eShop	eShop	eShop	eShop	–	–	–
L (62 8600, 62 8620)		mm	115	115	115	160	160	215	215	215	260	260
L (62 8610)		mm	–	–	–	153	153	205	205	–	–	–
Pin spacing adjustable a (62 8600, 62 8620)		mm	7 – 40	7 – 40	7 – 40	11 – 60	11 – 60	14 – 100	14 – 100	14 – 100	22 – 125	22 – 125
Pin spacing adjustable a (62 8610)		mm	–	–	–	11 – 60	11 – 60	14 – 90	14 – 90	–	–	–

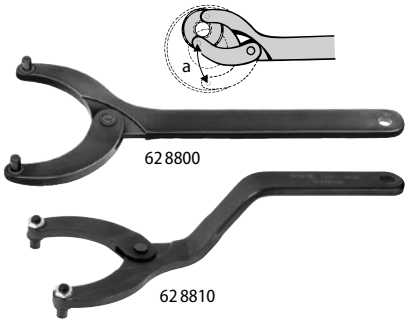
Hinged pin wrenches adjustable

Special steel, drive head ground, annealed and burnished.

62 8800 – With fixed pins.
62 8810 – Cranked, with interchangeable pins.
62 8820 – With square drive for use with a torque wrench. With interchangeable pins.

Application: For twin hole nuts.

Note: Pin Ø = pin nominal Ø - 0.1 mm; tolerance field h12.



largest Ø / pin nominal Ø	mm	40/3	40/4	80/4	80/5	80/6	125/6	125/7	125/8	200/8	200/10
63Q 62 8800 Hinged pin wrench **straight**		eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63Q 62 8810 Hinged pin wrench **offset**		eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	–	–
overall length (62 8800)	mm	150	150	220	220	220	295	295	295	405	405
overall length (62 8810)	mm	158	158	215	215	215	290	–	290	–	–
Pin spacing adjustable a	mm	18 – 40	18 – 40	40 – 80	40 – 80	40 – 80	80 – 125	80 – 125	80 – 125	125 – 200	125 – 200
Pin thread (62 8810)		M4	M4	M6	M6	M6	M6	–	M6	–	–

largest Ø / pin nominal Ø	mm	40/4	80/5	80/6	125/6	125/8
63Q 62 8820 Hinged pin wrench **for torque wrenches**		eShop	eShop	eShop	eShop	eShop
overall length	mm	120	180	180	250	250
Pin spacing adjustable a	mm	18 – 40	40 – 80	40 – 80	80 – 125	80 – 125
Square drive	in	1/2	3/4	3/4	3/4	3/4
Pin thread		M4	M6	M6	M6	M6


62 8820

Sorting box with loose pins

2 pins each with Ø 4; 5; 6; 7 and 8 mm. Incl. 10 M6 nuts in a clear plastic sorting box.

Suitable for: Articulated pin wrench No. 628810 from size 80/4 to 125/8 and No. 628820 from size 80/5 to 125/8.

Material: Special steel, hardened and burnished.

Note: Pin Ø = pin nominal Ø - 0.1 mm; tolerance field h12.

63Q 62 8850	Sorting box, 20 pieces, with loose pins and nuts.	eShop


62 8850

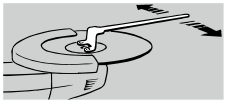
Pin wrenches for angle grinders

Special steel galvanised, pins welded on. Pin spacing 35 mm, pin Ø 5 mm.

62 8900 – Crank height 50 mm.

Application: For DIN 44716 flange nuts for angle grinders.


62 8900
62 8950



63Q 62 8900 Pin wrench **cranked**		eShop
63Q 62 8950 Pin wrench **straight**		eShop
overall length (62 8900)	mm	200
overall length (62 8950)	mm	180

Reversible universal ratchet for ring inserts

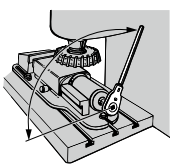
Reversible using the lever on the ratchet head for clockwise / anticlockwise working or locked position. All drive parts hardened. Handle made of precision steel tube. The exchangeable square inserts are securely held in place by the housing cover.

Material: Special steel, surface burnished, handle bright finished.





Type		0	1	2	3	4
66C 62 9400 Universal ratchet (without insert)		eShop	eShop	eShop	eShop	eShop
Ratchet head width	mm	29.5	36.7	45	56	70
Ratchet head height	mm	10	15.9	20	25.8	32
overall length	mm	170	195	245	330	415
rated torque	Nm	100	130	180	400	500



Universal ratchet with square insert for use as vice tightening lever.

Square drive ring insert

Material: Special steel, through hardened.



Type - square		0-3,4	0-4,9	0-5,5	0-6,2	0-7	0-8	0-9	0-11
66C 62 9600	Square drive insert	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Suitable for: Ratchet No. 629400		Size 0							

Type - square		1-7	1-8	1-9	1-10	1-11	1-12	1-14	2-12	2-14,5	2-16	2-17
66C 62 9600	Square drive insert	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Suitable for: Ratchet No. 629400		Size 1	Size 1	Size 1	Size 1	Size 1	Size 1	Size 1	Size 2	Size 2	Size 2	Size 2

Type - square		3-18	3-20	3-22	4-22	4-24	4-30
66C 62 9600	Square drive insert	eShop	eShop	eShop	eShop	eShop	eShop
Suitable for: Ratchet No. 629400		Size 3	Size 3	Size 3	Size 4	Size 4	Size 4

Universal ratchet set

Supplied with: 1 ratchet size 0 with 8 inserts and 1 screwdriver in a steel case with moulded plastic insert.



62 9410

Type		OK
66C 62 9410	Universal ratchet, complete **with square drive inserts**	eShop
Content: 1 universal ratchet No. 629400		Size 0
1 each square drive insert No. 629600		Size 0-3.4; 0-4.9; 0-5.5; 0-6.2; 0-7; 0-8; 0-9; 0-11

¼″ ⅜″ 4-22 3-8

STAHLWILLE® Socket set 1/4 + 3/8 inch square drive

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

Material: Chrome alloy steel, chrome-plated.

Application: For external hexagon screws / nuts with thread M2 – M14.
For spark plugs 16 mm.
For slot-head screws with thread M1.6 – M5.
For Phillips screws with thread M2 – M6.
For hexagon socket head screws with thread M4 – M10.



63 0006

		63A 63 0006
		Socket set, 1/4; 3/8 inch square drive **48 pieces**
		eShop
Length	mm	413
Width	mm	230
Height	mm	57
Supplied with:		
1/4 inch hexagon socket set		8 pcs. No. 631000 size 4; 4.5; 5; 5.5; 6; 7; 8; 9
3/8 inch hexagon socket set		12 pcs. No. 637200 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22
3/8 inch spark plug socket		1 pc. No. 637310 size 16
BITS for Phillips C 6.3		3 pcs. No. 675310 size 1/25; 2/25; 3/25
Bits for Pozidriv, C 6.3		1 pc. No. 675320 size 2/25
Bits for slot-head, C 6.3		6 pcs. No. 675250 size 3; 3.5; 4; 5.5; 6.5; 8
Bits for hex socket, C 6.3		5 pcs. No. 675240 size 3; 4; 5; 6; 8
Bit adapter		2 pcs. similar to No. 676800 size 4/4; 8/4
3/8 inch adaptor		1 pc. No. 649505 size 3
3/8 inch tommy-bar		1 pc. No. 635700 size 165
1/4 inch spinner handle		1 pc. No. 632800 size 150
1/4 inch extension		1 pc. No. 632400 size 150
3/8 inch extensions		2 pcs. No. 63 5400 size 75; 240 mm
1/4 inch universal joint		1 pc. No. 633500 size 1/4
3/8 inch universal joint		1 pc. No. 636200 size 3/8
1/4 inch ratchet		1 pc. No. 632000 size 1/4
3/8 inch ratchet		1 pc. No. 635000 size 3/8
Presented in		ABS plastic box

Socket set 1/4 + 1/2 inch square drive

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

63 0012 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material:

63 0012 – Chrome vanadium steel, chrome-plated.

63 0016 – Chrome alloy steel, chrome-plated.

Application: For external hexagon screws / nuts with thread M2 – M20.
For hexagon socket head screws with thread M4 – M18.

Type		61A 63 0012 Garant	63A 63 0016 STAHLWILLE
		Socket set 1/4; 1/2 inch square drive	
		38 pieces	
6		eShop	eShop
Length	mm	510	454
Width	mm	294	253
Height	mm	61	64
Supplied with:			
1/4 inch hexagon socket set		9 pcs. No. 631029 size 4; 5; 5.5; 6; 7; 8; 9; 10; 11	9 pcs. No. 631000 size 4; 5; 5.5; 6; 7; 8; 9; 10; 11
1/2 inch hexagon socket set		10 pcs. No. 642229 size 13; 16; 17; 18; 19; 21; 22; 24; 27; 30	10 pcs. No. 642200 size 13; 16; 17; 18; 19; 21; 22; 24; 27; 30
1/4 inch hexagon screwdriver bits		3 pcs. No. 631729 size 3; 4; 5	3 pcs. No. 631700 size 3; 4; 5
1/2 inch hexagon screwdriver bits		5 pcs. No. 643229 size 6; 8; 10; 12; 14	5 pcs. No. 643200 size 6; 8; 10; 12; 14
1/4 inch tommy-bar		1 pc. No. 633029 size 116	1 pc. No. 633000 size 116
1/2 inch tommy-bar		1 pc. No. 641329 size 295	1 pc. No. 641300 size 300
1/4 inch spinner handle		1 pc. No. 632829 size 1/4	1 pc. No. 632800 size 150
1/4 inch extensions		2 pcs. No. 632429 size 50; 150	2 pcs. No. 632400 size 50; 150
1/2 inch extensions		2 pcs. No. 641029 size 130; 255	2 pcs. No. 641000 size 130; 255
1/4 inch universal joint		1 pc. No. 633529 size 1/4	1 pc. No. 633500 size 1/4
1/2 inch universal joint		1 pc. No. 641629 size 1/2	1 pc. No. 641600 size 1/2
1/4 inch ratchet		1 pc. No. 632025 size 1/4	1 pc. No. 632000 size 1/4
1/2 inch ratchet		1 pc. No. 640025 size 1/2	1 pc. No. 640100 size 1/2
Storage in		ABS plastic box	

1/4″ 1/2″ 4-30 3-14 8G 20G



63 0012

1/4″ 1/2″ 4-30 3-14



63 0016

The sets 63 0012 and 63 0023 each offer space for 4 pcs. small parts storage bin No. 95 1251 size 2×3/1 or 2 pcs. 95 1251 size 2×6/1 (not included in the scope of supply).

Drives / accessories to **DIN 3122 / 3123**; **sockets** to **DIN 3124**. Internal / external square drives to **DIN 3120**.
All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material: Chrome vanadium steel, chrome-plated.

Application: For external hexagon screws / nuts with thread M4 – M20 and for hexagon socket head screws with thread M4 – M18.
For Pozidriv and Phillips screws with threads M2 – M6, slot-head screws with thread M2.5 – M5, for internal Torx® screws with thread M3 – M8 and for Trisquare screws with thread M4 – M8.

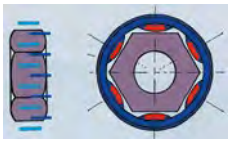
Type		61A 63 0023 Garant
		Socket set 1/4; 1/2 inch square drive
		65 pieces
SD		eShop
Length	mm	510
Width	mm	294
Height	mm	61
Supplied with:		
1/4 inch hexagon sockets, SurfaceDrive		13 pcs. No. 631225 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14
1/2 inch hexagon sockets, Surface Drive		12 pcs. No. 642325 size 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34
1/2 inch hexagon screwdriver bits		4 pcs. No. 643229 size 6; 8; 10; 14
1/4 inch hexagon BITS C 6.3		4 pcs. similar to No. 675240 size 3; 4; 5; 6
1/4 inch BITS for Phillips C 6.3		3 pcs. similar to No. 675310 size 1/25; 2/25; 3/25
1/4 inch Pozidriv BITS C 6.3		3 pcs. similar to No. 675320 size 1/25; 2/25; 3/25
1/4 inch slot-head BITS C 6.3		3 pcs. similar to No. 675250 size 3.5×0.6; 5.5×0.8; 8×1.2
1/4 inch BITS for Torx® C 6.3		6 pcs. similar to No. 675340 size TX10; TX15; TX20; TX25; TX30; TX40
1/4 inch tri-square BITS C 6.3		4 pcs. similar to No. 675565 size M4; M5; M6; M8
1/4 inch tommy-bar		1 pc. No. 633029 size 116
1/4 inch spinner handle		1 pc. No. 632829 size 1/4
1/4 inch "Wobble-Fix" extensions		2 pcs. No. 632519 size 50; 100
1/2 inch extensions "Wobble-Fix"		1 pc. No. 641129 size 125
1/4 inch universal joint		1 pc. No. 633529 size 1/4
1/2 inch universal joint		1 pc. No. 641629 size 1/2
1/4 inch ratchet		1 pc. No. 632025 size 1/4 with ejector
1/2 inch ratchet		1 pc. No. 640025 size 1/2 with ejector
1/4 inch adapter E 6.3		1 pc. similar to No. 675020 6.3K for 1/4 inch BITS C 6.3
1/4 inch converter		1 pc. similar to No. 650005 size 2 hexagon coupling 1/4 inch E 6.3 – external square 1/4 inch
1/2 inch converter		1 pc. similar to No. 650005 size 5 hexagon coupling 7/16 inch E 11.2 – external square 1/2 inch
1/4 inch bit adapter		1 pc. similar to No. 676800 square socket 1/4 inch – bit holder 1/4 inch
Presented in		ABS plastic box

1/4″ 1/2″ 4-34 6-14 Surface Drive 8G 20G



63 0023

inches



mm

Material: Chrome alloy steel, chrome-plated.
Application: For external hexagon screws / nuts with thread M2 – M20.
For hexagon socket head screws with thread M4 – M18.
For external Torx® with thread M3 – M14. For internal Torx® with thread M2.5 – M14.

		63A 63 0021 STAHLWILLE® Socket set 1/4; 1/2 inch square drive 63 pieces
		eShop
Length	mm	481
Width	mm	288
Height	mm	82
Supplied with:		
1/4 inch hexagon socket set		9 pcs. No. 631000 size 4; 5; 5.5; 6; 7; 8; 9; 10; 11
1/2 inch hexagon socket set		10 pcs. No. 642200 size 13; 16; 17; 18; 19; 21; 22; 24; 27; 30
1/4 inch sockets for Torx®		5 pcs. No. 631500 size E4; E5; E6; E7; E8
1/2 inch sockets for Torx®		7 pcs. No. 642700 size E10; E12; E14; E16; E18; E20; E24
1/4 inch hexagon screwdriver bits		3 pcs. No. 631700 size 3; 4; 5
1/2 inch hexagon screwdriver bits		5 pcs. No. 643200 size 6; 8; 10; 12; 14
1/4 inch bits for Torx®		6 pcs. No. 631801 size TX8; TX9; TX10; TX15; TX20; TX25
1/2 inch bits for Torx®		7 pcs. No. 643650 size TX27; TX30; TX40; TX45; TX50; TX55; TX60
1/4 inch tommy-bar		1 pc. No. 633000 size 116
1/2 inch tommy-bar		1 pc. No. 641300 size 300
1/4 inch spinner handle		1 pc. No. 632800 size 150
1/4 inch extensions		2 pcs. No. 632400 size 50; 150
1/2 inch extensions		2 pcs. No. 641000 size 130; 255
1/4 inch universal joint		1 pc. No. 633500 size 1/4
1/2 inch universal joint		1 pc. No. 641600 size 1/2
1/4 inch ratchet		1 pc. No. 632000 size 1/4
1/2 inch ratchet		1 pc. No. 640100 size 1/2
Presented in		ABS plastic box

1/4" 1/2" 4-30 3-14



63 0021

Material: Chrome vanadium steel, chrome-plated.

With extremely robust 1/2 inch ratchet.



63 0028

		63O 63 0028 HAZET Socket set 1/4; 1/2 inch square drive 47 pieces
47		eShop
Length	mm	355
Width	mm	235
Height	mm	65
Supplied with:		
1/4 inch hexagon socket set		9 pcs. size 5; 6; 7; 8; 9; 10; 11; 12; 13 mm
1/2 inch hexagon socket set		13 pcs. size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27 mm
Phillips bits, C 6.3		2 pcs. size 1; 2
Pozidriv bits, C 6.3		2 pcs. size 1; 2
Slot-head bits, C 6.3		3 pcs. size 4; 6; 8
Hexagonal bits, C 6.3		5 pcs. size 2; 3; 4; 5; 6
BITS for Torx® C 6.3		5 pcs. size TX10; TX15; TX20; TX25; TX30
1/4 inch bit adapter		Square socket 1/4 inch – bit holder 1/4 inch
1/4 inch extension		1 pc. size 101.5 mm
1/2 inch extension		2 pcs. size 123; 248 mm
1/4 inch spinner handle		1 pc.
1/4 inch ratchet		1 pc. No. 632060
1/2 inch ratchet		1 pc. No. 640480
Storage in		Plastic case with stand / tray for parts

1/4" 1/2" 5-27 2-6



63 0028

63 0028/63 0036 – Smartcase with stand-up function.



63 0036

		63O 63 0036 HAZET Socket set 1/4; 1/2 inch square drive 30 pieces
35		eShop
Length	mm	355
Width	mm	235
Height	mm	65
Supplied with:		
1/4 inch sockets for Torx®		7 pc. size E5; E6; E7; E8; E10; E11; E12
1/2 inch sockets for Torx®		6 pcs. size E12; E14; E16; E18; E20; E24
1/4 inch screwdriver bits for Torx®, TiN coated		9 pcs. size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
1/2 inch screwdriver bits for Torx®, TiN coated		9 pcs. size TX20; TX25; TX27; TX30; TX40; TX45; TX50; TX55; TX60
1/2 inch screwdriver bits for Torx®, TiN coated, long		4 pcs. size TX30; TX40; TX45; TX50
Presented in a		Plastic case with holder/tray for parts

1/4" 1/2"



63 0036

Number of pieces		62A 63 0038 HOLEX Socket set 1/4; 1/2 inch square drive **43 pieces**
43		eShop
Length	mm	507
Width	mm	227
Height	mm	62
Supplied with: 1/4 inch hexagon socket set		11 pcs. No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 13
1/2 inch bi-hexagon socket set		13 pcs. No. 642120 size 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32
1/4 inch hexagon screwdriver bits		3 pcs. No. 631720 size 3; 4; 5
1/2 inch hexagon screwdriver bits		5 pcs. No. 643220 size 6; 8; 10; 12; 14
1/4 inch tommy-bar		1 pc. similar to No. 633029
1/2 inch tommy-bar		1 pc. No. 641320 size 295
1/4 inch spinner handle		1 pc. No. 632840 size 1/4
1/4 inch extensions		2 pcs. No. 632420 size 50; 150
1/2 inch extensions		2 pcs. No. 641020 size 130; 255
1/4 inch universal joint		1 pc. No. 633520 size 1/4
1/2 inch universal joint		1 pc. No. 641620 size 1/2
1/4 inch ratchet		1 pc. No. 632090 size 1/4
1/2 inch ratchet		1 pc. No. 640190 size 1/2
Storage in		ABS plastic box

1/4″ 1/2″ 4-13 13-32 3-14



63 0038

STAHLWILLE® Socket set 1/ 4+ 3/8 + 1/2 inch square drive

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

Material: Chrome alloy steel, chrome-plated.

Application: For external Torx® screws with thread M3 – M20. For internal Torx® screws with thread M2.5 – M14. For internal Torx® screws with retaining pin with thread M3 – M8.

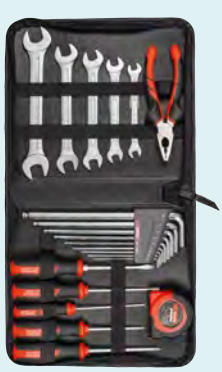
		63A 63 0031 Socket set for Torx®, 1/4; 3/8; 1/2 inch square drive **34 pieces**
		eShop
Length	mm	413
Width	mm	230
Height	mm	57
Supplied with: 1/4 inch sockets for Torx®		3 pcs. No. 631500 size E4; E5; E6
3/8 inch sockets for Torx®		4 pcs. No. 637450 size E7; E8; E10; E12
1/2 inch sockets for Torx®		6 pcs. No. 642700 size E11; E14; E16; E18; E20; E24
1/4 inch bits for Torx®		2 pcs. No. 631801 size TX8; TX9
3/8 inch bits for Torx®		5 pcs. No. 637560 size TX10; TX15; TX20; TX25; TX27
1/2 inch bits for Torx®		6 pcs. No. 643650 size TX30; TX40; TX45; TX50; TX55; TX60
Bits with bore for Torx®, C 6.3		7 pcs. similar to No. 675350 size TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bit adapter		1 pc. similar to No. 676945 size 8/4
Presented in		ABS plastic box

1/4″ 3/8″ 1/2″



63 0031

See product group 68 for tool organiser systems









HOLEX Socket set, imperial

Drives and connecting parts to DIN 3122 / 3123. All parts in plastic cases.
Material: Chrome vanadium steel, chrome-plated.

Number of pieces		62A 63 0046
		Socket set, 1/4 inch square drive, imperial
		27 pieces
27		eShop
Length	mm	280
Width	mm	176
Height	mm	66
Supplied with:		11 pcs. similar to No. 631022 size 5/32; 3/16; 7/32; 1/4; 9/32; 5/16; 11/32; 3/8; 7/16; 1/2; 9/16 inch
○ Sockets single hexagon		
○ Hexagon sockets, long		10 pcs. similar to No. 631417 size 5/32; 3/16; 7/32; 1/4; 9/32; 5/16; 11/32; 3/8; 7/16; 1/2 inch
T-handle		1 pc. similar to No. 633029
Spinner handle		1 pc. similar to No. 632840 size 150
Extensions		2 pcs. similar to No. 632420 size 50; 100
Universal joint		1 pc. similar to No. 633520
Ratchet		1 pc. similar to No. 632090
Storage		ABS plastic box

1/4″ 5/32-9/16"



63 0046

Number of pieces		62A 63 0048
		Socket set, 3/8 inch square drive, imperial
		28 pieces
28		eShop
Length	mm	350
Width	mm	302
Height	mm	84
Supplied with:		12 pc. similar to No. 637100 Size 1/4; 5/16; 11/32; 3/8; 7/16; 1/2; 9/16; 5/8; 11/16; 3/4; 13/16; 7/8 inch
○ Sockets bi-hexagon		
○ Bi-hex sockets, long		9 pcs. similar to No. 637322 size 5/16; 11/32; 3/8; 7/16; 1/2; 9/16; 5/8; 11/16; 3/4 inch
○ Sockets for bi-hexagon spark plugs		2 pcs. similar to No. 637329 size 16; 20.8
Spinner handle		1 pc. similar to No. 635720 size 200
Extensions		2 pcs. similar to No. 635420 size 75; 250
Universal joint		1 pc. similar to No. 636220
Ratchet		1 pc. similar to No. 635090
Storage		ABS plastic box

3/8″ 1/4-7/8"



63 0048

Number of pieces		62A 63 0051
		Socket set, 1/2 inch square drive, imperial
		20 pieces
20		eShop
Length	mm	350
Width	mm	302
Height	mm	84
Supplied with:		15 pc. similar to No. 642122 Size 3/8; 7/16; 1/2; 9/16; 5/8; 11/16; 3/4; 13/16; 7/8; 15/16; 1; 1.1/16; 1.1/8; 1.3/16; 1.1/4 inch
○ Sockets bi-hexagon		
T-handle		1 pc. similar to No. 641320 size 295
Extensions		2 pcs. similar to No. 641020 size 125; 250
Universal joint		1 pc. similar to No. 641620
Ratchet		1 pc. similar to No. 640190
Storage		ABS plastic box

1/2″ 3/8-1 1/4"



63 0051

HAZET Suitable tools from Hazet

More matching Hazet nut drivers and bit sets are available via our e-shop.



Socket set
No. 63 0380
25-piece socket set consisting of drive tool, bits, 1/4 inch nut drivers.



Tool selection in the practical SmartCase
No. 67 6182, size 59
59-piece set consisting of drive tools, bits, 1/4 inch nut drivers and hexagon key L-wrenches.

HOLEX Socket set

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.**
Internal / external square drives to **DIN 3120.**
All parts in plastic cases.
Economy version.
Material: Chrome vanadium steel, chrome-plated.

Number of pieces	46
62A **63 0002** Socket set	eShop ■
Supplied with: 46 pieces – 1/4 inch	13 sockets 1/4 inch, hexagon 4 – 14 mm 1 converter 6 bits for hexagon sockets 3 – 8 mm 3 bits for slot-head 3, 4.5, 7 mm 3 bits for Phillips PH1 – PH3 3 bits for Pozidriv PZ1 – PZ3 7 bits for Torx® TX8; TX10; TX15; TX20; TX25; TX30; TX40 3 hexagon key L-wrenches 1.5; 2.0; 2.5 mm 1 ratchet with ejector 1/4 inch 1 spinner handle 1/4 inch 1 T-handle 1/4 inch 1 flexible extension 1/4 inch 150 mm 1 universal joint 1/4 inch 2 extensions 1/4 inch 50 and 100 mm
Presented in	Plastic case (257×170×52 mm)



63 0002_46

Number of pieces	82
62A **63 0002** Socket set	eShop
Supplied with: 82 pieces – 1/4; 1/2 inch	25 sockets 1/4, 1/2 inch, hexagon 4 – 32 mm 1 converter 1/4 inch hexagon to 1/4 inch square 2 spark plug sockets 1/2 inch 16 and 21 mm 1 bit adapter 1/2 inch for 5/16 inch bits 4 bits for Torx® TX40; TX45; TX50; TX55 4 bits for hexagon sockets 8 mm; 10 mm; 12 mm; 14 mm 3 bits for slot-head 8 mm; 10 mm; 12 mm 2 bits for Phillips PH3; PH4 2 bits for Pozidriv PZ3; PZ4 2 ratchets with ejectors 1/4 inch and 1/2 inch 1 spinner handle 1/4 inch 1 T-handle 1/4 inch 2 universal joints 1/4, 1/2 inch 4 extensions 1/4, 1/2 inch 50; 100; 125; 250 mm 1 flexible extension 1/4 inch 150 mm 1 sliding head 1/2 inch 4 screwdriver bits 1/4 inch for hexagon sockets 3 – 6 mm 6 screwdriver bits 1/4 inch for Torx® TX8; TX10; TX15; TX20; TX25; TX30 3 screwdriver bits 1/4 inch for slot-head 4; 5.5; 7 mm 2 screwdriver bits 1/4 inch for Phillips PH1; PH2 2 screwdriver bits 1/4 inch for Pozidriv PZ1; PZ2 9 combination spanners 8 – 22 mm
Presented in	Plastic case (380×285×85 mm)



63 0002_82

Number of pieces	154
62A **63 0002** Socket set	eShop
Supplied with: 154 pieces – 1/4; 1/2 inch	32 sockets 1/4, 1/2 inch, hexagon 4 – 32 mm 20 deep sockets 1/4, 1/2 inch, hexagon 4 – 24 mm 6 sockets with magnet 5.5 – 13 mm (with hexagon shank E 6.3.) 1 converter E 6.3 hexagon to 1/4 inch square 1 converter E 6.3 hexagon to 1/2 inch square 50-piece 1/4 inch bits set in plastic case 2 ratchets with ejector 1/4 inch and 1/2 inch 1 spinner handle, 1/4 inch 1 T-handle, 1/4 inch 2 universal joints 1/4, 1/2 inch 4 extensions 1/4, 1/2 inch 50, 100, 125, 250 mm 1 sliding head for 1/2 inch extension 9 hexagon L-wrenches with ball point 1.5 – 10 mm 14 combination spanners 8 – 24 mm 5 double-ratchet ring spanners 10 – 19 mm 1 bit adapter for C 6.3 bits / drive 10 mm hexagon 1 adapter 10 mm hexagon to 1/4 inch square with ejector 1 adapter 19 mm hexagon to 1/2 inch square with adapter 1 adjustable spanner 200 mm 1× telescopic magnetic retriever 135 – 635 mm
Presented in	Plastic case (550×420×105 mm)



63 0002_154

Number of pieces		148
62A 63 0002	Socket set	eShop
Supplied with: 148 pieces – 1/4; 3/8; 1/2 inch		30 sockets 1/4, 1/2 inch, hexagon 4 – 32 mm 13 deep sockets 1/4, 1/2 inch, hexagon 6 – 22 mm 13 inserts 1/4, 3/8, 1/2 inch, for Torx® E4 – E22 2 spark plug sockets 1/2 inch 16 + 21 mm 1 adapter, 1/2 – 3/8 inch 1 bit adapter 1/2 inch drive, 5/16 inch hexagon 1 bit adapter 1/4 inch drive, 1/4 inch hexagon 1 converter E 6.3 hexagon to 1/4 inch square 15 bits 5/16 inch (PH3; PH4; PZ3; PZ4; for Torx® TX40 – TX60, for hexagon socket 8; 10; 12 mm, slot-head 8; 10; 12) 32-piece 1/4 inch bits set in plastic case 2 ratchets with ejector 1/4 inch and 1/2 inch 1 spinner handle, 1/4 inch 2 T-handles 1/4, 1/2 inch 2 universal joints 1/4, 1/2 inch 4 extensions 1/4, 1/2 inch 50, 100, 125, 250 mm 3 hexagon L-wrenches 1.5 – 2.5 mm 9 combination spanners 8 – 22 mm 3 slot-head screwdrivers 6×38, 6×100, 8×150 3 screwdrivers for Phillips 1×75, 2×38, 2×100 1 universal blade (retractable) with 2 spare blades 1 vernier calipers 150 mm 1 tape measure 3 m 1 small spirit level 200 mm 1 adjustable spanner 200 mm 1 universal pliers 180 mm 1 side cutter 160 mm 1 snipe nose pliers 160 mm 1 water pump pliers 250 mm 1 hammer 300 g
Presented in		Plastic case (550×420×105 mm)

1/4″ 3/8″ 1/2″ 4-32



63 0002_148

1/4″

Socket set, 1/4 inch, small

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.**
Internal / external square drives to **DIN 3120.**

63 0062/0162 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material:
63 0062/0068/0162/0168 – Chrome vanadium steel, chrome-plated.
63 0066/0166/0190 – Chrome alloy steel, chrome-plated.

Application:
63 0062–0168 – For external hexagon screws / nuts with thread M2 – M8.

1/4″ 4-13 Surface Drive 5G 10G



63 0062

1/4″ 4-13



63 0066

1/4″ 4-13



63 0168

Type		61A 63 0062	63A 63 0066	62A 63 0068
		Garant	STAHLWILLE	HOLEX
		Socket set 1/4 inch square drive **13 pieces**		
SD		eShop	–	–
6		–	eShop	eShop
Length	mm	257	227	257
Width	mm	147	131	149
Height	mm	45	57	47
Supplied with: Sockets single hexagon		9 pcs. No. 631225 size 4; 5; 5.5; 6; 7; 8; 10; 11; 13	9 pcs. No. 631000 size 4; 5; 5.5; 6; 7; 8; 10; 11; 13	9 pcs. No. 631020 size 4; 5; 5.5; 6; 7; 8; 10; 11; 13
Extensions "Wobble-Fix"		2 pcs. size 50, 150 mm	–	–
Extensions		–	2 pcs. No. 632400 size 50; 150	2 pcs. No. 632420 size 50; 150
Universal joint		1 pc. No. 633529 size 1/4	1 pc. No. 633500 size 1/4	1 pc. No. 633520 size 1/4
Ratchet		1 pc. No. 632025 size 1/4	1 pc. No. 632000 size 1/4	1 pc. No. 632090 size 1/4
Storage in		ABS plastic box		

Type	61A 63 0162	63A 63 0166	62A 63 0168
	Garant	STAHLWILLE	HOLEX
	Socket set 1/4 inch square drive		
	19 pieces	**19 pieces**	**17 pieces**
6	eShop	eShop	eShop ■
Length mm	257	227	257
Width mm	147	131	149
Height mm	45	57	47
○ **Supplied with:** Sockets single hexagon	13 pcs. No. 631029 size 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13	13 pcs. No. 631000 size 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13	12 pcs. No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
T-handle	1 pc. No. 633029 size 116	1 pc. No. 633000 size 116	1 pc. similar to No. 633029 size 116
Spinner handle	1 pc. No. 632829 size 146	1 pc. No. 632800 size 150	1 pc. No. 632840 size 150
Extensions	2 pcs. No. 632429 size 50; 150	2 pcs. No. 632400 size 50; 150	1 pc. No. 632420 size 150
Universal joint	1 pc. No. 633529 size 1/4	1 pc. No. 633500 size 1/4	1 pc. No. 633520 size 1/4
Ratchet	1 pc. No. 632025 size 1/4	1 pc. No. 632000 size 1/4	1 pc. No. 632090 size 1/4
Storage in	ABS plastic box		



63 0162



63 0166



63 0168

Type	63A 63 0190
	STAHLWILLE
	Socket set, 1/4 inch square drive
	29 pieces
6	eShop
Length mm	227
Width mm	131
Height mm	57
○ **Supplied with:** Sockets single hexagon	11 pcs. No. 631000 size 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14
◉ Hexagon screwdriver bits	5 pc. 631700 size 3; 4; 5; 6; 8
⊖ Screwdriver bits, slot-head	3 pcs. size 3.5; 5.5; 8 mm
⊕ Screwdriver bits for Phillips	4 pcs. PH1; PH2; PH3; PH4
T-handle	1 pc. No. 633000 size 116
Spinner handle	1 pc. No. 632800 size 150
Extension	2 pcs. No. 632400 size 50; 150
Universal joint	1 pc. No. 633500 size 1/4
Ratchet	1 pc. No. 632000 size 1/4
Presented in	ABS plastic box



63 0190

QuickRelease – Ratchet, extension, universal joint, and pocket fit **securely together to form a unit.**
The combination is quickly and easily released by pressing the button.

Material: Chrome alloy steel, chrome-plated.

Application: For external hexagon screws / nuts with thread M2 – M8 and for hexagon socket head screws with thread M4 – M8.

	63A 63 0291
	STAHLWILLE
	QuickRelease socket set, 1/4 inch square drive
	22 pieces
	eShop
Length mm	227
Width mm	131
Height mm	57
○ **Supplied with:** Socket single hexagon	13 pcs. No. 631000 size 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
◉ Hexagon screwdriver bits	4 pcs. No. 631700 size 3; 4; 5; 6
QR T-handle	1 pc. No. 633050 size 116
QR spinner handle	1 pc. No. 632950 size 150
Extension QR	1 pc. No. 632545 size 150
Universal joint QR	1 pc. No. 633550 size 1/4
Ratchet QR	1 pc. No. 632355 size 1/4
Presented in	ABS plastic box



63 0291



3-6

63 0262 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material:

63 0266 – Chrome alloy steel, chrome-plated.

63 0262/0268 – Chrome vanadium steel, chrome-plated.

Application: For external hexagon screws / nuts with thread M2 – M8 and for hexagon socket head screws with thread M4 – M8.

Type		61A 63 0262 Garant	63A 63 0266 STAHLWILLE	62A 63 0268 HOLEX
		Socket set 1/4 inch square drive		
		22 pieces	22 pieces	21 pieces
6		eShop ■	eShop	eShop
Length	mm	257	227	257
Width	mm	147	131	149
Height	mm	45	57	47
○ **Supplied with:** Sockets single hexagon		13 pcs. No. 631029 size 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13	13 pcs. No. 631000 size 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13	12 pcs. No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
◉ Hexagon screwdriver bits		4 pcs. No. 631729 size 3; 4; 5; 6	4 pcs. No. 631700 size 3; 4; 5; 6	4 pcs. No. 631720 size 3; 4; 5; 6
T-handle		1 pc. No. 633029 size 116	1 pc. No. 633000 size 116	1 pc. similar to No. 633029 size 116
Spinner handle		1 pc. No. 632829 size 146	1 pc. No. 632800 size 150	1 pc. No. 632840 size 150
Extension		1 pc. No. 632429 size 150	1 pc. No. 632400 size 150	1 pc. No. 632420 size 150
Universal joint		1 pc. No. 633529 size 1/4	1 pc. No. 633500 size 1/4	1 pc. No. 633520 size 1/4
Ratchet		1 pc. No. 632025 size 1/4	1 pc. No. 632000 size 1/4	1 pc. No. 632090 size 1/4
Storage in		ABS plastic box		

1/4" 3.5-13 3-6 5G 10G



63 0262

1/4" 3.5-13 3-6



63 0266

1/4" 4-13 3-6



63 0268

4-14

All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Advantage:
- Due to the low height, particularly suitable for use in restricted spaces.
- Up to 50% space saving compared to conventional products.

Application: For external hexagon screws / nuts with thread M2 – M8.

Number of pieces		61A 63 0355 Garant
		Low Profile socket set, 1/4 inch square
		14 pieces
14		eShop
Length	mm	127
Width	mm	85
Height	mm	47
○ **Supplied with:** Sockets single hexagon		13 pcs. size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 mm
Ratchet		1 pc. No. 630357
Storage in		ABS plastic box

1/4" 4-14



63 0355

¼″ | 3.2-14 | 3/16-9/16″

STAHLWILLE® Socket set metric/imperial, 1/4 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.

Application: For hexagon head screws / nuts with thread M1.6 – M8.
For hexagon head screws / nuts with thread up to 3/8 inch (American sizes).

¼″ | 3.2-14 | 3/16-9/16″



63 0661

		63A 63 0661
		Socket set 1/4 inch square drive **33 pieces metric / imperial**
		eShop
Length	mm	322
Width	mm	135
Height	mm	57
○ **Supplied with:** Socket single hexagon		15 pcs. No. 631000 size 3.2; 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14
● Socket single hexagon		10 pcs. No. 631100 size 3/16; 7/32; 1/4; 9/32; 5/16; 11/32; 3/8; 7/16; 1/2; 9/16
T-handle		1 pc. No. 633000 size 116
Spinner handle		1 pc. No. 632800 size 150
Extensions		2 pcs. No. 632400 size 50; 150
Flexible extension		1 pc. No. 632500 size 150
Swivel handle		1 pc.
Universal joint		1 pc. No. 633500 size 1/4
Ratchet		1 pc. No. 632000 size 1/4
Presented in		ABS plastic box

63

¼″

Bit socket set 1/4 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**



63 0883

Material:
63 0883 – Chrome alloy steel, chrome-plated.
63 0917 – Chrome vanadium steel, chrome-plated.

Application: For internal Torx® screws with thread M2.5 – M8.



63 0917

Type	63A 63 0883 STAHLWILLE®	62A 63 0917 HOLEX
	Set of bit sockets for Torx®, 1/4 inch square drive **9 pieces**	
1/4	eShop	eShop
● **Supplied with:** Bits for Torx®	9 pcs. No. 631801 size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40	9 pcs. No. 631813 size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40

Material: Chrome vanadium steel, chrome-plated.

Application:
63 0905 – For hexagon socket head screws with thread M3 – M10.
63 0927 – For Trisquare / XZN screws with thread M5 – M10.



63 0905



63 0927

Type	62A 63 0905 HOLEX	62A 63 0927 HOLEX
	Set of hexagon bit sockets, 1/4 inch square drive **6 pieces**	Set of tri-square bit sockets, 1/4 inch square drive **4 pieces**
1/4	eShop	eShop
● **Supplied with:** Bits for hexagon	6 pcs. No. 631720 size 2.5; 3; 4; 5; 6; 8	–
● Bits for multi-tooth	–	4 pcs. (25 mm long) size M5; M6; M8; M10

1/4″

HOLEX Clip bar for hexagon sockets 1/4 inch

Plastic bar with clips which can be slid into position.
Application: For storage and ready access to 1/4 inch sockets.

62A 63 1900	Clip bar for 1/4 inch sockets	eShop ■
overall length	mm	305
Number of mountings		14


63 1900

1/4″ 3/16-1/2″

STAHLWILLE Socket set imperial, 1/4 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**
Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.
Application: For hexagon head screws / nuts with thread up to 3/8 inch (American sizes).

	63A 63 0561 Socket set 1/4 inch square drive **13 pieces inch sizes**
	eShop
Length mm	227
Width mm	131
Height mm	57
Supplied with: Socket single hexagon	9 pcs. No. 631100 size 3/16; 7/32; 1/4; 9/32; 5/16; 11/32; 3/8; 7/16; 1/2
Extensions	2 pcs. No. 632400 size 50; 150
Universal joint	1 pc. No. 633500 size 1/4
Ratchet	1 pc. No. 632000 size 1/4
Presented in	ABS plastic box

1/4″ 3/16-1/2″


63 0561

Socket set 1/4 inch, large

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.**
Internal / external square drives to **DIN 3120.**

1/4″ 5-13 3-6

Material: Chrome molybdenum steel, matt chrome-plated.
Application: For external hexagon screws / nuts with thread M2 – M8 and for hexagon socket head screws with thread M4 – M8. For Pozidriv and Phillips screws with threads M2 – M6 and internal Torx® screws with thread M3 – M6.
Content: Size S - with reversible ratchet No. 632295. Size P - With push-through square No. 632290.

Type	63F 63 0295 Wera Socket set 1/4 inch square drive **28 pieces**
P	eShop ■
S	eShop
Length mm	204
Width mm	91
Height mm	51
Supplied with: Hexagon sockets	9x; size 5; 5.5; 6; 7; 8; 10; 11; 12; 13 mm
Bits, C 6.3, for hex socket	4 pcs. No. 675240 size 3; 4; 5; 6
Bits, C 6.3, for Phillips	3 pcs. No. 675310 size 1/25; 2/25; 3/25
Bits, C 6.3, for Pozidriv	2 pcs. No. 675320 size 1/25; 2/25
Bits, C 6.3, for internal Torx®	6 pcs. No. 675340 size TX10; TX15; TX20; TX25; TX27; TX30
Extension with quick-rotation sleeve	1x 150 mm
Wobble extension	1x 56 mm
Adapter with quick-change chuck	1 pc. square socket 1/4 inch – bit holder 1/4 inch
Reversible ratchet (size S)	1 pc. No. 632295
Push-through square ratchet (size P)	1 pc. No. 632290
Presented in	Textile wallet with hook and loop fastener

1/4″ 5-13 3-6

TAKE IT EASY TOOL FINDER


63 0295_P


63 0295_S

63

Material:

63 0366 – Chrome alloy steel, chrome-plated.
63 0368 – Chrome vanadium steel, chrome-plated.

Application: For external hexagon screws / nuts with thread M2 – M8 and for hexagon socket head screws with thread M4 – M8. For Phillips screws with thread M2 – M6 and for slot-head screws with thread M2.5 – M5.

1/4″ | 4-13 | 3-6

Type		63A 63 0366 STAHLWILLE	62A 63 0368 HOLEX
		Socket set 1/4 inch square drive	
		30 pieces	**29 pieces**
6		eShop	eShop ■
Length	mm	322	257
Width	mm	134	149
Height	mm	57	47
Supplied with: Socket single hexagon		12 pcs. No. 631000 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13	12 pcs. No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
Hexagon screwdriver bits		4 pcs. No. 631700 size 3; 4; 5; 6	4 pcs. No. 631720 size 3; 4; 5; 6
Bits, C 6.3, for Phillips		3 pcs. No. 675310 size 1; 2; 3	3 pcs. similar to No. 675200 size 1, 2; 3
Bits, C 6.3, for slot-head		4 pcs. No. 675250 size 3.5; 4; 5.5; 8	3 pcs. similar to No. 675250 size 4, 5.5; 8
Holder for bits		1 pc. similar to No. 676800 size 4/4	1 pc. No. 676800 size 4/4
T-handle		1 pc. No. 633000 size 116	1 pc. similar to No. 633029
Spinner handle		1 pc. No. 632800 size 150	1 pc. No. 632840 size 150
Extensions		2 pcs. No. 632400 size 50; 150	1 pc. 75 mm 1 pc. No. 632420 size 150
Universal joint		1 pc. No. 633500 size 1/4	1 pc. No. 633520 size 1/4
Ratchet		1 pc. No. 632000 size 1/4	1 pc. No. 632090 size 1/4
Presented in		ABS plastic box	



63 0366

1/4″ | 4-13 | 3-6



63 0368

1/4″ | 4-14 | 3-6

TiN-coated blades for extremely high bonding strength and resistance to abrasion. With optimised corrosion protection.

Application: For external hexagon screws / nuts with thread M2 – M8 and for hexagon socket head screws with thread M4 – M8. For Pozidriv and Phillips screws with threads M2.5 – M5 and internal Torx® screws with thread M3 – M6.

1/4″ | 4-14 | 3-6



63 0340

		63O 63 0340 HAZET
		Socket set, TiN coated, 1/4 inch square drive
		30 pieces
		eShop
Length	mm	180
Width	mm	150
Height	mm	54
Supplied with: Socket single hexagon		12 pcs. size 4; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 mm
Screwdriver bits hexagon TiN-coated		4 pcs. No. 631733 size 3; 4; 5; 6
Screwdriver bits for internal Torx® TiN-coated		5 pcs. size TX10; TX15; TX20; TX25; TX30
Screwdriver bits for Phillips, TiN-coated		2 pcs. size 1; 2
Screwdriver bits Pozidriv, TiN-coated		2 pcs. size 1; 2
Spinner handle		1 pc.
Extensions		2 pcs. size 55; 147 mm
Universal joint		1 pc.
Ratchet		1 pc.
Presented in		Plastic case with stand / tray for parts



63 0340

Plastic case can be used as a stand with tray for parts.

¼″ | 4-13 | 2.5-8

Material: Chrome vanadium steel, chrome-plated.
Application: For external hexagon screws / nuts with thread M2 – M8 and for hexagon socket head screws with thread M4 – M8.

¼″ | 4-13 | 2.5-8



63 0308

Type		62A 63 0308
		HOLEX Socket set with long sockets and bits, 1/4 inch square drive **35 pieces**
6		eShop
Length	mm	357
Width	mm	174
Height	mm	47
Supplied with:		
○ Hexagon sockets, long		12 pcs. No. 631415 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
○ Sockets single hexagon		12 pcs. No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
◉ Hexagon screwdriver bits		6 pcs. No. 631720 size 2.5; 3; 4; 5; 6; 8
T-handle		1 pc. similar to No. 633029
Spin type speeder		1 pc. No. 632840 size 150
EXTENSION		1 pc. No. 632420 size 150
Universal joint		1 pc. No. 633520 size 1/4
Ratchet		1 pc. No. 632090 size 1/4
Storage in		ABS plastic box

¼″ | 5.5-14 | 3-7

Application: For external hexagon screws / nuts with thread M3 – M8 and for hexagon socket head screws with thread M4 – M8. For Pozidriv and Phillips screws with thread M2 – M6, slot-head screws with thread M3 – M5 and for internal Torx® with thread M3 – M8.

¼″ | 5.5-14 | 3-7



63 0335

		630 63 0335
		HAZET Socket set 1/4 inch square drive **35 pieces**
		eShop
Length	mm	180
Width	mm	150
Height	mm	54
Supplied with:		
○ Hexagon sockets		10 pcs. size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 mm
◉ Bits, C 6.3, for hex socket		5 pcs. size 3; 4; 5; 6; 7 mm
Bits, C 6.3 for internal TORX® with pin		7 pcs. size TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, C 6.3, for Phillips		3pcs. size 1; 2; 3
Bits, C 6.3, for Pozidriv		3pcs. size 1; 2; 3
Bits, C 6.3, for slot-head		3 pcs. size 4.5×0.6; 6.5×1.2; 8×1.2 mm
Holder for bits		1 pc. 1/4 inch square – 1/4 inch bit holder
Extensions		2 pcs. size 55 and 101.5 mm
Ratchet		1pc.
Presented in		Plastic case with stand/tray for parts



Plastic case can be used as a stand with tray for parts.

¼″ | 5-13 | 3-8

63 0855 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material:

63 0855 – Chrome vanadium steel, chrome-plated.

63 0861 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

Application: For external hexagon screws / nuts with thread M2.5 – M8.
For external Torx® with thread M3 – M8.
For hexagon socket head screws with thread M4 – M8.
For internal Torx® with thread M2.5 – M8.

¼″ | 5-13 | 3-8 | 5G 10G

Type		61A 63 0855 Garant	63A 63 0861 STAHLWILLE
		Socket set 1/4 inch square drive	
		38 pieces	36 pieces
6		eShop	eShop
Length	mm	257	322
Width	mm	147	134
Height	mm	45	57
Supplied with:			
Sockets for external hexagon		10 pcs. No. 631029 size 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13	10 pcs. No. 631000 size 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
Sockets for external Torx®		6 pcs. similar to No. 631500 size E4; E5; E6; E7; E8; E10	6 pcs. No. 631500 size E4; E5; E6; E7; E8; E10
Bits, C 6.3, for hex socket		5 pcs. size 3; 4; 5; 6; 8 mm	–
Screwdriver bits for hex socket		–	5 pcs. No. 631710 size 3; 4; 5; 6; 8
Bits, C 6.3, for internal Torx®		10 pcs. size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45	–
Screwdriver bits for internal Torx®		–	9 pcs. No. 631801 size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
T-handle		1 pc. No. 633029 size 116	1 pc. No. 633000 size 116
Spinner handle		1 pc. No. 632829 size 146	1 pc. No. 632800 size 150
Extensions		2 pcs. No. 632429 size 50; 150	2 pcs. No. 632400 size 50; 150
Universal joint		1 pc. No. 633529 size 1/4	1 pc. No. 633500 size 1/4
Ratchet		1 pc. No. 632025 size 1/4	1 pc. No. 632000 size 1/4
Adapter for bits		1 pc.	–
Storage in		ABS plastic box	



63 0855

¼″ | 5-13 | 3-8



63 0861

¼″ | 5-13 | 3-8

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.

Application: For external hexagon screws / nuts with thread M2.5 – M8.
For external Torx® with thread M3 – M8.
For hexagon socket head screws with thread M4 – M8.
For internal Torx® with thread M2.5 – M8.

¼″ | 5-13 | 3-8

Type		63A 63 0345 STAHLWILLE
		Socket set 1/4 inch square drive
		38 pieces
38		eShop
Length	mm	227
Width	mm	131
Height	mm	57
Supplied with:		
Sockets for bi-hexagon		10 pcs. No. 630950 size 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
Sockets for external Torx®		6 pcs. No. 631500 size E4; E5; E6; E7; E8; E10
Screwdriver bits for Phillips		PH1; PH2
Screwdriver bits for hex socket		5 pcs. No. 631710 size 3; 4; 5; 6; 8
Screwdriver bits for internal Torx®		9 pcs. No. 631801 size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
QR T-handle		1 pc. No. 633050 size 116
QR spinner handle		1 pc. No. 632950 size 150
Extensions QR		2 pcs. No. 632545 size 50; 150
Universal joint QR		1 pc. No. 633550 size 1/4
Ratchet QR		1 pc. No. 632355 size 1/4
Storage in		ABS plastic box



63 0345

¼″ | 5.5-14 | 3-7

Application: For external hexagon screws / nuts with thread M3 – M8 and for hexagon socket head screws with thread M4 – M8. For Pozidriv and Phillips screws with thread M2 – M6, slot-head screws with thread M3 – M5 and for internal Torx® with thread M3 – M8.

¼″ | 5.5-14 | 3-7



63 0370

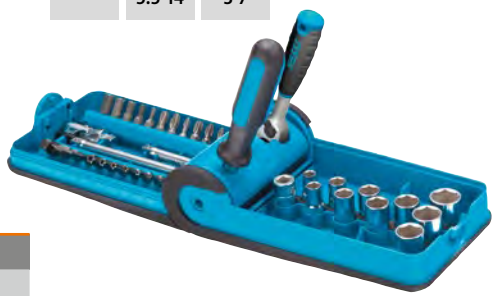
		63V 63 0370 FACOM Socket set 1/4 inch square drive **38 pieces**
		eShop
Length	mm	152
Width	mm	92
Height	mm	48
Supplied with: Sockets for external hexagon		10 pcs. size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 mm
Bits, C 6.3, for hex socket		5 pcs. size 3; 4; 5; 6; 7 mm
Bits, C 6.3 for internal TORX® with pin		7 pcs. size TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, C 6.3, for Phillips		3 pcs. size 1; 2; 3
Bits, C 6.3, for Pozidriv		3 pcs. size 1; 2; 3
Bits, C 6.3, for slot-head		3 pcs. size 4.5×0.6; 6.5×1.2; 8×1.2 mm
Holder for bits		1 pc. 1/4 inch square socket – bit holder 1/4 inch
Converter		1 pc. bit shank E 6.3 – square 1/4 inch
Spinner handle		1 pc.
Extension		2 pcs. size 55, 100 mm
Universal joint		1 pc.
Ratchet		1 pc.
Presented in		Plastic case

63

¼″ | 5.5-14 | 3-7

Application: For external hexagon screws / nuts with thread M3 – M8 and for hexagon socket head screws with thread M4 – M8. For Pozidriv and Phillips screws with thread M2 – M6, slot-head screws with thread M3 – M5 and for internal Torx® with thread M3 – M8.

¼″ | 5.5-14 | 3-7



63 0331



Number of pieces		630 63 0331 HAZET Socket set 1/4 inch square drive **38 pieces**
38		eShop
Length	mm	180
Width	mm	98
Height	mm	52
Supplied with: Sockets for external hexagon		10 pcs. size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 mm
Bits, C 6.3, for hex socket		5 pcs. size 3; 4; 5; 6; 7 mm
Bits, C 6.3 for internal TORX® with pin		7 pcs. size TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, C 6.3, for Phillips		3pcs. size 1; 2; 3
Bits, C 6.3, for Pozidriv		3pcs. size 1; 2; 3
Bits, C 6.3, for slot-head		3 pcs. size 4.5×0.6; 6.5×1.2; 8×1.2 mm
Holder for bits		1 pc. 1/4 inch square socket – bit holder 1/4 inch
Converter		1 pc. bit shank E 6.3 – square 1/4 inch
Spinner handle		1 pc.
Extensions		2 pcs. size 55, 101.5 mm
Universal joint		1 pc.
Ratchet		1 pc. No. 632389 size 1/4
Presented in		Plastic case with non-slip 2-component coating

¼″ | 4-13 | 3-8 | 5G 10G

System box of virtually indestructible ABS plastic with integral hinges and innovative, easy-to-use snap fastener.
All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material: Chrome vanadium steel, chrome-plated.

Application: For external hexagon screws / nuts with thread M2 – M8
and for hexagon socket head screws with thread M4 – M10.
For Pozidriv and Phillips screws with thread M2 – M6, slot-head screws with thread M2 – M4
and for internal Torx® screws with thread M2.5 – M8.

Type	61A 63 0299
	Garant
	Socket set 1/4 inch square drive **39 pieces**
6	eShop
Length mm	257
Width mm	147
Height mm	45
Supplied with: Sockets single hexagon	12 pcs. No. 631029 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13
Bits, C 6.3, for hex socket	5 pcs. similar to No. 675240 size 3; 4; 5; 6; 8
Bits, C 6.3, for Phillips	3 pcs. similar to No. 675310 size 1, 2; 3
Bit, C 6.3, for Pozidriv	1 pc. similar to No. 675320 size 2
Bits, C 6.3, for slot-head	4 pcs. similar to No. 675250 size 3; 4; 5.5; 6.5
Bits, C 6.3, for internal Torx®	8 pcs. similar to No. 675340 size TX8; TX9; TX10; TX15; TX20; TX25; TX30; TX40
Holder for bits	1 pc. similar to No. 676800 size 4/4
Spinner handle	1 pc. No. 632829 size 146
Extensions	2 pcs. No. 632429 size 50; 100
Universal joint	1 pc. No. 633529 size 1/4
Ratchet	1 pc. No. 632025 size 1/4
Storage in	ABS plastic box

¼″ | 4-13 | 3-8 | 5G 10G



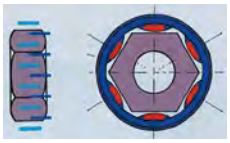
63 0299

63 0325 – The Surface Drive profile works directly on the faces of the nuts and bolts; weaker corners are protected.
Even intermediate sizes (e.g. inch size bolts) and worn bolt heads can be tightened or released using the Surface Drive profile.
The Wobble-Fix extensions allow use at an angle and can be secured by clicking into place.
All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material: Chrome vanadium steel, chrome-plated.

Application: For external hexagon screws / nuts with thread M2 – M8 and for hexagon socket head screws with thread M4 – M10.
For Pozidriv and Phillips screws with thread M2 – M6, slot-head screws with thread M2 – M4
and for internal Torx® screws with thread M2.5 – M8.

inches



mm

Type	61A 63 0325	62A 63 0329
	Garant	HOLEX
	Socket set 1/4 inch square drive	
	41 pieces	**42 pieces**
SD	eShop	–
6	–	eShop
Length mm	257	357
Width mm	147	174
Height mm	45	47
Supplied with: Surface Drive hexagon sockets	13 pcs. No. 631225 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14	–
Sockets single hexagon	–	13 pcs. No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14
Bits, C 6.3, for hex socket	4 pcs. similar to No. 675240 size 3; 4; 5; 6	
Bits, C 6.3, for Phillips	3 pcs. similar to No. 675310 size 1/25; 2/25; 3/25	
Bits, C 6.3, for Pozidriv	3 pcs. similar to No. 675320 size 1/25; 2/25; 3/25	
Bits, C 6.3, for slot-head	3 pcs. similar to No. 675250 size 3.5×0.6; 5.5×0.8; 8×1.2	
Bits, C 6.3, for internal Torx®	6 pcs. similar to No. 675340 size TX10; TX15; TX20; TX25; TX30; TX40	7 pcs. similar to No. 675340 size TX8; TX10; TX15; TX20; TX25; TX30; TX40
T-handle	1 pc. No. 633029 size 116	1 pc. similar to No. 633029 size 116
Spin type speeder	1 pc. 632829 size 146	1 pc. No. 632840 size 150
Extensions	–	2 pcs. No. 632420 size 50; 100
Extensions "Wobble-Fix"	2 pcs. 632519 size 50; 100	–
Universal joint	1 pc. No. 633529 size 1/4	1 pc. No. 633520 size 1/4
Ratchet	1 pc. No. 632025 size 1/4 with ejector	1 pc. No. 632090 size 1/4 with ejector
Adaptor E 6.3	1 pc. similar to No. 675020 size 6.3K for 1/4 inch bits C 6.3	
Converter	1 pc. bit shank E 6.3 – square 1/4 inch	
Bit adapter	1 pc. similar to No. 676800, 1/4 inch square socket – bit holder 1/4 inch	1 pc. No. 676800, 1/4 inch square – bit holder 1/4 inch
Presented in	ABS plastic box	

¼″ | 4-14 | 3-6 | Surface Drive | 5G 10G



63 0325

¼″ | 4-14 | 3-6



63 0329

¼″ | 4-14 | 2-8

42-piece ratchet set in a sturdy textile box.
Freely pivoted ratchet head with 5 defined fixings.
Torx®, Hex-Plus and external hexagon sockets for nuts and bolts.

Number of pieces		42
63F 63 0297	Wera Socket set Zyklop-Speed 1/4 inch **with retainer function**	eShop
Supplied with:		
Hexagon sockets		13 pcs. size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14 mm
Hexagon screwdriver bits		8 pcs. size 2; 2.5; 3; 4; 5; 6; 7; 8 mm
Screwdriver bits for Phillips		3pcs. size 1; 2; 3
Screwdriver bits Pozidriv		3pcs. size 1; 2; 3
Screwdriver bits, slot-head		2 pcs. size 0.8×5.5; 1.2×6.5 mm
Screwdriver bits for internal Torx®		9 pcs. size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Wobbel extension		1 pc. size 56 mm
"flexible-lock" extension		1 pc. size 150 mm
Zyklop Speed ratchet		1 pc. No. 632390
Masonry tool		1 pc. size 14 mm
Presented in		Textile wallet with hook and loop fastener

¼″ | 4-14 | 2-8

TAKE IT EASY TOOL FINDER



63 0297

¼″

Hexagon socket, 1/4 inch, short

Forged from high quality steel, internally bevelled for easy fitting to bolt heads.

Hexagon socket

63 1000 – Optimum grain orientation due to special forging process. Close tolerance width across flats.
No rounding of bolt corners, nuts and bolt heads are protected.
Hardened in an oil bath, stress-relieved and distortion-free for a precision fit.
Rounded surface with **AS Drive** profile.

63 1029 – Close tolerance jaw sizes with **HT drive** profile protect corners of nuts and bolt heads.
Thin walls for access to restricted places.

Standard: **DIN 3124-S**

Material:

63 1000 – HPQ® high performance steel, non-flaking chrome-plated over nickel.

63 1029/1020 – Chrome vanadium steel, chrome-plated.

Note:

63 1029/1020 – GARANT and HOLEX hex sockets also available in imperial sizes (GARANT: No. 631032; HOLEX: No. 631022).

HT drive profile

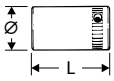


63 1029

AS Drive profile



63 1000





63 1020

Width across flats	mm	3,2	3,5	4	4,5	5	5,5	6	7	8	9	10	11	12	13	14
61A 63 1029 Garant		–	eShop	eShop ■	eShop	eShop ■	eShop	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop
63A 63 1000 STAHLWILLE	Hexagon socket, 1/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 63 1020 HOLEX		–	eShop	eShop	eShop	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop
Ø drive output end (63 1029)	mm	–	6.2	6.8	7.4	8.1	8.7	9.3	10.8	11.9	13.4	14.5	15.9	16.9	18	19.6
Ø drive output end (63 1000)	mm	5.6	6	6.7	7.3	7.9	8.5	9.2	10.7	11.6	12.8	14.3	15.5	16.5	17.8	18.8
Ø drive output end (63 1020)	mm	–	6.2	6.8	7.3	7.9	8.5	9.2	10.5	11.7	13.2	14.4	15.8	16.8	18	19.6
Length (63 1029, 63 1020)	mm	–	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Length (63 1000)	mm	23	23	23	23	23	23	23	23	23	23	23	23	23	23	24

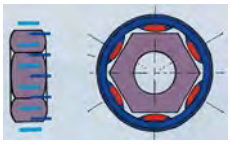
Hexagon Surface Drive socket

Surface Drive

The Surface Drive socket allows a tighter fit and a higher effectiveness.
The pressure works directly on the faces of the nuts and bolts; weaker corners are protected.
Intermediate sizes e.g. in inch (A/F, BSF, BSW) and rounded heads can be tightened or loosened using the Surface Drive. Sockets with hole.
Square drive socket with hole to DIN 3120 D 6.3.

Material: Chrome vanadium steel, chrome-plated.

inches



mm



63 1225

Width across flats	mm	4	4,5	5	5,5	6	7	8	9	10	11	12	13	14
61A 63 1225 Garant Hexagon socket, 1/4 inch **Surface Drive**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
suitable for inches (American sizes)	in	5/32	–	3/16	13/64	7/32; 15/64	17/64	5/16	–	3/8	13/32; 7/16	15/32	1/2	17/32
Ø drive output end	mm	6.8	7.4	8.1	8.7	9.3	10.8	11.9	13.3	14.5	15.9	16.9	18	19.6
Length	mm							24.8						

Hexagon socket with universal joint

Material: Chrome vanadium steel, chrome-plated.



63 1270

Width across flats		mm	8	10	13
○ 63R 63 1270	Koken	Hexagon socket with universal joint, 1/4 inch	eShop	eShop	eShop
∅ drive output end		mm	11.7	14.2	18
Length		mm	34	35	37

Bi-hexagon socket

63 0929 – Close tolerance jaw sizes with **HT drive** profile protect corners of nuts and bolt heads.
Thin walls for access to restricted places.

63 0950 – Optimum grain orientation due to special forging process. Close tolerance width across flats.
No rounding of bolt corners, nuts and bolt heads are protected.
Hardened in an oil bath, stress-relieved and distortion-free for a precision fit.
Rounded surface with **AS Drive** profile.

Standard: **DIN 3124**

Material:

63 0929 – Chrome vanadium steel, chrome-plated.

63 0950 – HPQ® high performance steel, non-flaking chrome-plated over nickel.

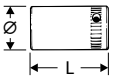
Note:

63 0929 – GARANT and HOLEX bi-hex sockets also available in imperial sizes (GARANT: No. 630932; HOLEX: No. 630962).

HT drive profile



63 0929



AS Drive profile



63 0950

Width across flats		mm	5	5,5	6	7	8	9	10	11	12	13	14
○ 61A 63 0929	Garant	Bi-hexagon socket, 1/4 inch	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
○ 63A 63 0950	STAHLWILLE		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end (63 0929)		mm	–	–	9.3	10.8	11.9	13.4	14.5	15.9	16.9	18	19.6
∅ drive output end (63 0950)		mm	7.9	8.5	9.2	10.7	11.6	12.8	14.3	15.5	16.5	17.8	18.8
Length (63 0929)		mm	–	–	25	25	25	25	25	25	25	25	25
Length (63 0950)		mm	23	23	23	23	23	23	23	23	23	23	24

Bi-hexagon socket, inch sizes

Close tolerance jaw sizes with **HT drive** profile protect corners of nuts and bolt heads.
Thin walls for access to restricted places.

Material: Chrome vanadium steel, chrome-plated.



63 0932

Width across flats		in	1/4	9/32	5/16	11/32	3/8	7/16	1/2	9/16
○ 61A 63 0932	Garant	Bi-hexagon socket, 1/4 inch **imperial version**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
∅ drive output end		mm	9.9	11	11.9	13	14.5	15.9	17.6	19.6
Length		mm	24.8							

Socket for Torx® screws

Material:

63 1500 – HPQ® high performance steel, non-flaking chrome-plated over nickel.

63 1515 – Chrome vanadium steel, chrome-plated.



63 1500



63 1515

Torx® profile			E4	E5	E6	E7	E8	E10
✪ 63A 63 1500	STAHLWILLE	Socket, 1/4 inch for Torx®	eShop	eShop	eShop	eShop	eShop	eShop
✪ 62A 63 1515	HOLEX		eShop	eShop	eShop	eShop	eShop	eShop
A		mm	3.8	4.7	5.7	6.2	7.5	9.4
∅ drive output end (63 1500)		mm	5.6	6.7	8	9.6	10.5	12.7
∅ drive output end (63 1515)		mm	5.4	6.7	7.7	8.3	9.6	11.3
Length (63 1500)		mm	23					
Length (63 1515)		mm	25					

¼″

Hexagon socket, 1/4 inch, deep

Forged from high quality steel, internally bevelled for easy fitting to bolt heads.
Square drive socket with hole to DIN 3120 D 6.3.

Standard: **DIN 3124-L**

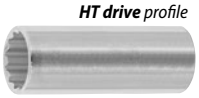
Bi-hexagon socket, deep

Close tolerance jaw sizes with **HT drive** profile protect corners of nuts and bolt heads. Thin walls for access to restricted places.

Material: Chrome vanadium steel, chrome-plated.

Note: GARANT and HOLEX bi-hex sockets, long also available in imperial sizes (GARANT: No. 631442; HOLEX: No. 631452).

***HT drive** profile*



63 1439

Width across flats		mm	6	7	8	9	10	12	13
○ 61A **63 1439**	Garant	Bi-hexagon socket, 1/4 inch **deep**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	9.3	10.8	11.9	13.4	14.5	16.9	18
Length		mm	50						

Hexagon socket, deep

63 1400 – Optimum grain orientation due to special forging process. Close tolerance width across flats. No rounding of bolt corners, nuts and bolt heads are protected. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Rounded surface with **AS Drive** profile.

Material:

63 1400 – HPQ® high performance steel, non-flaking chrome-plated over nickel.
63 1415 – Chrome vanadium steel, chrome-plated.

Note:

63 1415 – HOLEX hex sockets, long also available in imperial sizes (No. 631417).

AS drive profile



63 1400



63 1415

Width across flats		mm	5	5,5	6	7	8	9	10	11	12	13
○ 63A **63 1400**	STAHLWILLE	Hexagon socket, 1/4 inch **deep**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
○ 62A **63 1415**	HOLEX		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end (63 1400)		mm	7.9	8.5	9.2	10.7	11.6	12.8	14.3	15.5	16.5	17.8
Ø drive output end (63 1415)		mm	8.1	8.7	9.3	10.8	11.9	13.4	14.5	15.9	16.9	18
Length		mm	50									

63

¼″

Bit socket, 1/4 inch, short

Forged from high quality steel, internally bevelled for easy fitting to bolt heads.

Hexagon bit socket, for socket head screws

63 1720 – Bit made of hard toughened steel, bright finish.

Standard: **DIN 7422**

Material:

63 1709 – Chrome vanadium steel, satin chromium plated.
63 1710 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
63 1720 – Chrome vanadium steel, chrome-plated.

Note:

63 1720 – HOLEX hexagon bit sockets also available in imperial sizes (No. 631722).



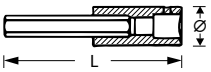
63 1709_4



63 1710



63 1720



Hexagon		mm	2,5	3	4	5	6	8
◉ 61A **63 1709**	Garant	Hexagon bit socket, 1/4 inch **short**	eShop	eShop	eShop	eShop	eShop	eShop
◉ 63A **63 1710**	STAHLWILLE		–	eShop	eShop	eShop	eShop	eShop
◉ 62A **63 1720**	HOLEX		eShop	eShop ■	eShop ■	eShop ■	eShop ■	eShop
Ø drive end (63 1709)		mm	12.5					
Ø drive end (63 1710)		mm	–	11.6	11.6	11.6	11.6	11.6
Ø drive end (63 1720)		mm	13					
Length (63 1709, 63 1720)		mm	36					
Length (63 1710)		mm	–	28	28	28	28	28

Hexagon bit socket, TiN coated, for socket head screws

TiN-coated blades for extremely high bonding strength and resistance to abrasion. With optimised corrosion protection.

Standard: **DIN 7422**
Material: Chrome vanadium steel, TiN coated.
Application: Ideally suited to sustained loads such as series screw fastenings.


63 1733

Hexagon	mm	2,5	3	4	5	6	8
63O 63 1733 HAZET — Hexagon bit socket, TiN coated,1/4 inch **short**		eShop	eShop	eShop	eShop	eShop	eShop
∅ drive end	mm	12					
Length	mm	28					

Bit socket, for slot-head screws

Material:
63 1609 – Chrome vanadium steel, satin chromium plated.
63 1613 – Chrome vanadium steel, chrome-plated.


63 1609_4


63 1613_4

Blade width	mm	3,5	4	5,5	8
61A 63 1609 Garant — Bit socket for slot-head, 1/4 inch		eShop	eShop	eShop	eShop
62A 63 1613 HOLEX — Bit socket for slot-head, 1/4 inch		eShop	eShop	eShop	eShop
∅ drive end (63 1609)	mm	12.5			
∅ drive end (63 1613)	mm	12			
Length (63 1609)	mm	36			
Length (63 1613)	mm	25			
Blade thickness	mm	0.6	0.8	1	1.2

Bit socket, for cross-head screws (Phillips, Pozidriv)

Material:
63 1619 – Chrome vanadium steel, satin chromium plated.
63 1623/1633 – Chrome vanadium steel, chrome-plated.


63 1619_2


63 1623


63 1633

Cross-head size		1	2	3	4
61A 63 1619 Garant — Bit socket for Phillips, 1/4 inch		eShop	eShop	eShop	eShop
62A 63 1623 HOLEX — Bit socket for Phillips, 1/4 inch		eShop	eShop	eShop	eShop
62A 63 1633 HOLEX — Bit socket for Pozidriv, 1/4 inch		eShop	eShop	eShop	eShop
for screw ∅	mm	2.1 – 3	3.1 – 5.2	5.3 – 7.2	7.3 – 12.7
∅ drive end (63 1619)	mm	12.5			
∅ drive end (63 1623, 63 1633)	mm	12			
Length (63 1619)	mm	36			
Length (63 1623, 63 1633)	mm	25			

Bit socket, for Torx® screws

Material:
63 1801 – Chrome alloy steel, chrome-plated.
63 1809 – Chrome vanadium steel, satin chromium plated.
63 1813 – Chrome vanadium steel, chrome-plated.


A 63 1809_TX25 — A 63 1801 — A 63 1813

Torx® profile		TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40
61A 63 1809 Garant — Bit socket for Torx®, 1/4 inch **short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63A 63 1801 STAHLWILLE — Bit socket for Torx®, 1/4 inch **short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 63 1813 HOLEX — Bit socket for Torx®, 1/4 inch **short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
A	mm	2.3	2.5	2.7	3.3	3.8	4.4	5	5.5	6.6
∅ drive end (63 1809)	mm	12.5								
∅ drive end (63 1801)	mm	11.6								
∅ drive end (63 1813)	mm	12								
Length (63 1809)	mm	36								
Length (63 1801)	mm	28								
Length (63 1813)	mm	25								

Bit socket for Torx® screws, TiN coated

TiN-coated blades for extremely high bonding strength and resistance to abrasion. With optimised corrosion protection.

Material: Chrome vanadium steel, TiN coated.
Application: Ideally suited to sustained loads such as series screw fastenings.

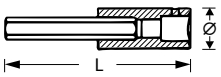

A 63 1833_TX25

Torx® profile		TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40
63O 63 1833 HAZET — Bit socket for Torx®, TiN coated, 1/4 inch **short**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
A	mm	2.3	2.5	2.7	3.3	3.8	4.4	5	5.5	6.6
∅ drive end	mm	12								
Length	mm	28								

¼″

Bit socket, 1/4 inch, long

Forged from high quality steel, internally bevelled for easy fitting to bolt heads.



Bit socket, hexagon, long, for socket head screws

Bit made of hard toughened steel, bright finish.

63 1729/1700 – Square drive socket with hole to DIN 3120 D 6.3.

Standard: **DIN 7422**

Material:

63 1700 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

63 1729/1715 – Chrome vanadium steel, chrome-plated.



63 1729



63 1700



63 1715

Hexagon		mm	2,5	3	4	5	6
61A 63 1729	Garant	Hexagon bit socket, 1/4 inch **long**	eShop ■	eShop	eShop	eShop	eShop
63A 63 1700	STAHLWILLE		–	eShop ■	eShop ■	eShop ■	eShop ■
62A 63 1715	HOLEX		eShop	eShop	eShop	eShop	eShop
Ø drive end (63 1729, 63 1715)		mm			12		
Ø drive end (63 1700)		mm	–	10.7	10.7	10.7	11.6
Length		mm			55		

Bit socket, hexagon, with ball point, long, for socket head screws

63 1739 – Square drive socket with hole to DIN 3120 D 6.3.

Material:

63 1739 – Chrome vanadium steel, satin chromium plated.

63 1743 – Chrome vanadium steel, chrome-plated.



63 1739_3



63 1743

Hexagon		mm	3	4	5	6
61A 63 1739	Garant	Hexagon bit socket, 1/4 inch, with ball point **long**	eShop	eShop	eShop	eShop
62A 63 1743	HOLEX		eShop	eShop	eShop	eShop
Ø drive end (63 1739)		mm		12.5		
Ø drive end (63 1743)		mm		12		
Length		mm		100		

Bit socket, long, for Torx® screws

Material:

63 1769 – Chrome vanadium steel, satin chromium plated.

63 1773 – Chrome vanadium steel, chrome-plated.



63 1769



63 1773

Torx® profile		mm	TX8	TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40
61A 63 1769	Garant	Bit socket for Torx®, 1/4 inch **long**	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop
62A 63 1773	HOLEX		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
A		mm	2.3	2.5	2.7	3.2	3.8	4.4	5	5.5	6.6
Ø drive end (63 1769)		mm	12.5	12.5	12.5	12.5	12.5	12.5	–	12.5	12.5
Ø drive end (63 1773)		mm					12				
Length		mm					100				

¼″

Drive part 1/4 inch

Material selection and special forging method guarantee optimal functioning and long life.

Standard: External square drives to **DIN 3120-A 6.3** with spring ball, square socket drives to **DIN 3120.**

Ratchet reversible

With reversing lever for right-hand and left-hand threads.

Standard: **DIN 3122-D 6.3**

Material:

63 2000 – Chrome alloy steel, chrome-plated.

63 2025/2060/2090 – Chrome vanadium steel, chrome-plated.



63 2025



63 2000



63 2060



63 2090

Type			1/4	overall length mm	No. of teeth
61A 63 2025	Garant	Reversible ratchet, 1/4 inch with ejector	eShop ■	115	36
63A 63 2000	STAHLWILLE	Reversible ratchet, 1/4 inch	eShop	117	22
63O 63 2060	HAZET		eShop	115	20
62A 63 2090	HOLEX	Reversible ratchet, 1/4 inch with ejector	eShop ■	125	36

Reversible flexi-head ratchet with ejector

With reversing lever for right-hand and left-hand threads.

Material: Chrome vanadium steel, chrome-plated.



63 2335

				overall length mm	No. of teeth
63R 63 2335	Koken	Flexi-head ratchet, 1/4 inch with ejector	eShop	161	20

Precision ratchet push-through, with ejector

With captive push-through square for reversible right and left-hand action. With ejector.

Material: Chrome molybdenum steel, matt chrome-plated.



63 2290

				overall length mm	No. of teeth
63F 63 2290	Wera	Precision ratchet "Zyklop Metal" push-through square drive, 1/4 inch with ejector	eShop	141	76

Precision reversible ratchet, with ejector

With reversing lever for right-hand and left-hand threads.
With ejector.

Material: Chrome molybdenum steel, matt chrome-plated.



63 2295

				overall length mm	No. of teeth
63F 63 2295	Wera	Precision ratchet "Zyklop Metal" reversible, 1/4 inch with ejector	eShop	141	72

Precision reversible ratchet, with knurl

With reversing lever for right-hand and left-hand threads. The knurl permits quick screwdriving in restricted situations where there is no room for a ratchet.

Material: Chrome molybdenum steel, matt chrome-plated.



63 2298

Type			1/4	overall length mm	No. of teeth
63F 63 2298	Wera	Precision ratchet "Zyklop Mini 3" reversible, 1/4 inch	eShop	87	60

Reversible precision ratchet

63 2345 – With ejector and reversing lever for right-hand and left-hand threads, working arc 5°.
63 2350 – With reversing lever for right-hand and left-hand threads.
63 2355 – With reversing lever for right-hand and left-hand threads.
63 2389 – With reversing lever for right-hand and left-hand threads, working arc 4°.

Material:
63 2345/2389 – Chrome vanadium steel, chrome-plated.
63 2350/2355 – Chrome alloy steel, chrome-plated.


63 2345


63 2350


QuickRelease 63 2355


63 2389

Type			1/4	overall length mm	No. of teeth
61A **63 2345**	Garant	Reversible precision ratchet, 1/4 inch	eShop	116	72
63A **63 2350**			eShop	118	60
63A **63 2355**	STAHLWILLE	Reversible precision ratchet, 1/4 inch with ejector **QuickRelease**	eShop	117	80
630 **63 2389**	HAZET	Reversible precision ratchet, 1/4 inch	eShop	116	90

Precision reversible ratchet, with swivel head

With ejector and reversing disc for right-hand and left-hand rotation.
Ratchet head can be swivelled with defined engagement positions at 0° (use like a screwdriver) and 75° and 90° positions to either side. Working angle 5°.



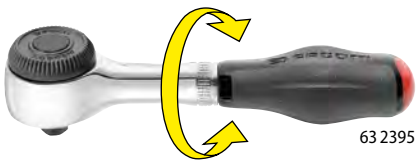
63 2390



				overall length mm	No. of teeth
63F **63 2390**	Wera	Precision ratchet "Zyklop Speed" reversible, 1/4 inch with swivel head and ejector	eShop ■	152	72

Precision ratchet, with twist handle

With ejector and reversing disc for right-hand and left-hand rotation.
For conventional use 6° working arc, for use with the twist handle 0° working angle.
Material: Chrome vanadium steel, chrome-plated.


63 2395

Twist handle

				overall length mm	No. of teeth
63V **63 2395**	FACOM	Reversible precision ratchet, 1/4 inch with twist handle and ejector	eShop	120	60

Tommy-bar with ratchet function

With reversing lever for right-hand and left-hand threads.
With ejector.
Advantage: Quick, sensitive, and powerful working.


63 2382

				overall length mm	No. of teeth
630 **63 2382**	HAZET	Tommy-bar with ratchet, 1/4 inch	eShop	100	20

Spinner handle

With impact-resistant plastic handle.

Standard: **DIN 3122-E 6,3**

Material:

63 2800/2950 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

63 2829/2840 – Chrome vanadium steel, chrome-plated.

Application:

63 2900 – Only for right-hand use up to maximum 5 Nm.

63 2950 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.



63 2829



63 2800



63 2840



Flexible due to spring shaft.

63 2900



QuickRelease

63 2950

overall length			mm	146	150	240
61A 63 2829	Garant	Spinner handle, 1/4 inch		eShop ■	–	–
63A 63 2800	STAHLWILLE			–	eShop	–
62A 63 2840	HOLEX			–	eShop ■	–
63A 63 2900	STAHLWILLE	Spinner handle, 1/4 inch **Flexible shaft**		–	–	eShop
63A 63 2950		Spinner handle, 1/4 inch **QuickRelease**		–	eShop	–

Spinner handle with ratchet action, reversible

Reversible for right and left hand use with integral centre setting (ratchet locked).
24 teeth, 15° working arc.





63 2980

63D 63 2980	PB SWISS TOOLS	Spinner handle, 1/4 inch **Ratchet reversible**		eShop
overall length			mm	158

T-handle

Ergonomically shaped T-handle with easy-grip **Haptoprene** surface and an impact-resistant plastic core.
Blade of chrome vanadium steel.
Surface nickel-plated and chrome-plated.



63 3022

Type			1/4	overall length mm
61A **63 3022**	Garant	Haptoprene T-handle, 1/4 inch	eShop ■	160

T-handle with integral ratchet

Ergonomic 2-component handle with finger grip hollows and pleasant feel for very high transmission of force and non-fatiguing work. For left and right rotation (with change-over lever).
The integrated ratchet with fine toothing (80 teeth / working arc 4.5°) simplifies and accelerates screwdriving, which is further aided by the quick-rotation sleeve, without tedious repositioning.



63 3028


With built-in ratchet and eject function.

Type			1/4	overall length mm	No. of teeth
63F **63 3028**	Wera	T-handle, 1/4 inch **with integral ratchet**	eShop	110	80

T-handle with movable sliding head

With movable sliding head.
Standard: **DIN 3122-A 6.3**
Material:
63 3029 – Chrome vanadium steel, chrome-plated.
63 3000/3050 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
Application:
63 3050 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.


63 3029


63 3000


QuickRelease
63 3050

overall length			mm	116	overall length mm
61A **63 3029**	Garant	T-handle, 1/4 inch		eShop ■	116
63A **63 3000**				eShop	116
63A **63 3050**	STAHLWILLE	T-handle, 1/4 inch **QuickRelease**		eShop	116

¼″

Adaptor, 1/4 inch

Material selection and special forging process guarantee optimal external square drives to DIN 3120 A 6.3 with sprung ball, internal square drives to DIN 3120.

Extension

Standard:
63 2400–2545 – **DIN 3123-B 6.3**
Material:
63 2549 – Drive input and output parts of chrome vanadium steel.
63 2555 – Drive input and output parts of heat treatable steel, Cr-Ni surface.
63 2400/2545 – Chrome alloy steel, chrome-plated.
63 2420/2429 – Chrome vanadium steel, chrome-plated.
Application:
63 2545 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.
63 2549/2555 – Only for right-hand use up to maximum 5 Nm.

overall length mm			50	100	150	254	355
61A 63 2429	Garant	Extension, 1/4 inch	eShop ■	eShop	eShop ■	–	–
63A 63 2400	STAHLWILLE		eShop	eShop	eShop	eShop	–
62A 63 2420	HOLEX		eShop	eShop	eShop ■	–	–
63A 63 2545	STAHLWILLE	Extension, 1/4 inch **QuickRelease**	eShop ■	–	eShop ■	–	eShop
61A 63 2549	Garant	Extension, 1/4 inch **flexible**	–	–	eShop ■	–	–
63A 63 2555	STAHLWILLE		–	–	eShop	–	–

63 2429

63 2400

63 2420

QuickRelease 63 2545

63 2549

Flexible due to spring shaft.

63 2555

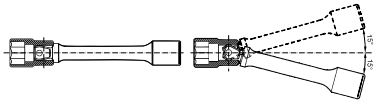
"Wobble-Fix" extensions

Two-stage extension. The wobble type extension clicks into place and allows up to 15° of movement.
Standard: **DIN 3123-B 6.3**
Material: Chrome vanadium steel, chrome-plated.

63 2519

63 2525

overall length mm			50	100
61A 63 2519	Garant	Extension, 1/4 inch **"Wobble-Fix"**	eShop	eShop
63R 63 2525	Koken		eShop	eShop



Universal joint

Standard: **DIN 3123-C 6,3**
Material:
63 3500/3550 – Chrome alloy steel, chrome-plated.
63 3520/3529 – Chrome vanadium steel, chrome-plated.
Application:
63 3550 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.

63 3529

63 3500

63 3520

QuickRelease 63 3550

Type			1/4	overall length mm
61A 63 3529	Garant	Universal joint 1/4 inch	eShop ■	36
63A 63 3500	STAHLWILLE		eShop	37
62A 63 3520	HOLEX		eShop	38
63A 63 3550	STAHLWILLE	Universal joint 1/4 inch **QuickRelease**	eShop ■	45

3/8″

Socket set, 3/8 inch, small

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

For external hexagon and bi-hex

3/8″ | 8-19 | 5G 10G

63 3812 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**
Size 6 – With hexagon sockets No. 637229.
Size 12 – With bi-hexagon sockets No. 637029.
Size 6 – With hexagon sockets No. 637200.
Size 12 – With bi-hexagon sockets No. 637000.

Material:
63 3812 – Chrome vanadium steel, chrome-plated.
63 3816 – Chrome alloy steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M12.



63 3812_6

Type		61A 63 3812 Garant	63A 63 3816 STAHLWILLE
		Socket set 3/8 inch square drive **15 pieces**	
○ 6		eShop	eShop
○ 12		eShop	eShop
Length	mm	257	322
Width	mm	147	134
Height	mm	45	57
Supplied with: Sockets		11 pcs. size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19 mm	11 pcs. size 8; 10; 11; 12; 13; 14;15; 16; 17; 18; 19 mm
Extensions		2 pcs. No. 635429 size 75; 240	2 pcs. No. 63 5400 size 75; 240 mm
Universal joint		1 pc. No. 636229	1 pc. No. 636200
Ratchet		1 pc. No. 635025	1 pc. No. 635000
Storage in		ABS plastic box	

3/8″ | 8-19



63 3816_6

3/8″ | 8-22 | 6G 14G

63 3912 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**
Size 6 – With hexagon sockets No. 637229.
Size 12 – With bi-hexagon sockets No. 637029.
63 3916 Size 6 – With hexagon sockets No. 637200.
Size 12 – With bi-hexagon sockets No. 637000.
63 3918 Size 6 – With hexagon sockets No. 637220.
Size 12 – With bi-hexagon sockets.

Material:
63 3916 – Chrome alloy steel, chrome-plated.
63 3912/3918 – Chrome vanadium steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M14.



63 3912_6

3/8″ | 8-22



63 3916_6

Type		61A 63 3912 Garant	63A 63 3916 STAHLWILLE	62A 63 3918 HOLEX
		Socket set 3/8 inch square drive **19 pieces**		
○ 6		eShop	eShop	eShop
○ 12		eShop	eShop	eShop
Length	mm	357	322	357
Width	mm	176	134	174
Height	mm	45	57	47
Supplied with: Sockets		14 pcs. size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22 mm		
T-handle		1 pc. No. 635729	1 pc. No. 635700	1 pc. No. 635720
Extensions		2 pcs. No. 635429 size 75; 240	2 pcs. No. 63 5400 size 75; 240	2 pcs. No. 635420 size 75; 240
Universal joint		1 pc. No. 636229	1 pc. No. 636200	1 pc. No. 636220
Ratchet		1 pc. No. 635025	1 pc. No. 635000	1 pc. No. 635090
Storage in		ABS plastic box		

3/8″ | 8-22

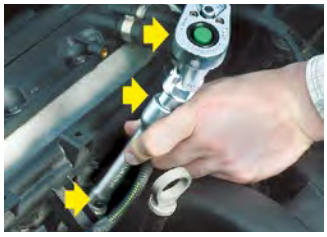


63 3918_6

QuickRelease set in unbreakable ABS plastic box with foam inlay.
Ratchet, extension, universal joint, and socket fit **securely together to form a unit.**
The combination is quickly and easily released by pressing the button.

Material: Chrome alloy steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M14.



	63A	63 3991
		STAHLWILLE QuickRelease socket set, 3/8 inch square drive **19 pieces**
○		eShop
Length	mm	322
Width	mm	134
Height	mm	57
Supplied with: Bi-hexagon sockets		14 pcs. No. 637000 size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22
QR T-handle		1 pc. No. 635750
Extensions QR		2 pcs. No. 635645 size 75; 240
Universal joint QR		1 pc. No. 636250
Ratchet QR		1 pc. No. 635155
Presented in		ABS plastic box

3/8" 8-22



QuickRelease 63 3991

Wera Socket set 3/8 inch, small, VDE insulated

Socket set **fully insulated up to 1000 V** to **DIN EN 60900 / VDE 0682-201.**

Material: Chrome molybdenum steel, matt chrome-plated.

Application: For hexagon head screws / nuts with thread M3.5 – M12.

3/8" 6-19

Type	63F	63 3995
		Socket set, 3/8 inch square drive, VDE insulated **17 pieces**
○ 6		eShop
Length	mm	300
Width	mm	180
Height	mm	60
Supplied with: VDE insulated hexagon sockets		14 pcs. size 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19 mm
VDE insulated extensions		91 mm and 166 mm
VDE insulated ratchet		1 piece
Stored in		Textile wallet with hook and loop fastener



63 3995

Wera Bit socket set 3/8 inch, short, VDE insulated

Bit socket set **fully insulated up to 1000 V** to **DIN EN 60900 / VDE 0682-201.**
Arranged on a sturdy textile belt for attachment to e.g. a wall, shelf, tool trolley or Wera 2go tool transport system by means of enclosed hook and loop strip.

Material: Chrome molybdenum steel, matt chrome-plated.

Application: For hexagon socket head screws M2 – M5.
For internal Torx® screws M4 – M8.

3/8"

With retainer function

Number of pieces	63F	63 3996
		Bit socket set 3/8 inch square drive VDE-insulated **10 pieces**
10		eShop
Length	mm	230
Width	mm	85
Height	mm	80
◉ **Supplied with:** Hexagon screwdriver bits, insulated to VDE		4 pcs. size 4; 5; 6; 8 mm
✱ Screwdriver bits for Torx®, insulated to VDE		6 pcs. size TX20; TX25; TX27; TX30; TX40; TX45
Storage in		Textile belt



63 3996

Hex-Plus

3/8″

Socket set with spark plug socket, 3/8 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.** The Surface Drive profile works directly on the faces of the nuts and bolts; weaker corners are protected. Even intermediate sizes (e.g. inch size bolts) and worn bolt heads can be tightened or released using the Surface Drive profile. The Wobble-Fix extensions allow use at an angle and can be secured by clicking into place.

Material: Chrome vanadium steel, chrome-plated.

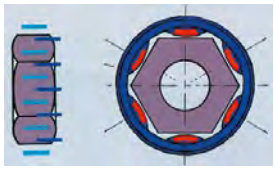
Application: For hexagon head screws / nuts with thread M5 – M14 and 1/4 – 1/2 inch (American inch sizes), for spark plugs 16 and 20.8 mm and for hexagon socket head screws with thread M5 – M12.

Type		61A 63 4025
		Garant
		Socket set 3/8 inch square drive, 30 pieces
SD		eShop
Length	mm	357
Width	mm	176
Height	mm	45
○ **Supplied with:** Surface Drive hexagon sockets		14 pcs. No. 637125 size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22
◉ Spark plug sockets		2 pcs. No. 637329 size 16; 20.8
◌ Screwdriver bits hexagon		5 pcs. No. 637629 size 4; 5; 6; 8; 10
✱ Screwdriver bits for Torx®		3 pcs. similar to No. 637560 size TX25; TX30; TX40
T-handle		1 pc. No. 635729
Extensions "Wobble-Fix"		2 pcs. similar to No. 635635 size 75; 240
Universal joint		1 pc. No. 636229
Ratchet		1 pc. No. 635025
Converter		1 pc. similar to No. 650000 size 3 drive input hexagon 1/4 inch E 6.3 - drive output square 3/8 inch
Presented in		ABS plastic box

8-22 | 4-10 | 3/8″ | Surface Drive | 6G 14G



63 4025



inches

mm

63 4312 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**
Size 6 – With hexagon sockets No. 637229.
Size 12 – With bi-hexagon sockets No. 637029.
63 4316 Size 6 – With hexagon sockets No. 637200.
Size 12 – With bi-hexagon sockets No. 637000.
63 4318 Size 6 – With hexagon sockets No. 637220.
Size 12 – With bi-hexagon sockets.

Material:
63 4316 – Chrome alloy steel, chrome-plated.
63 4312/4318 – Chrome vanadium steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M12, for spark plugs and for hexagon socket head screws with thread M4 – M12.

Type		61A 63 4312	63A 63 4316	62A 63 4318
		Garant	STAHLWILLE	HOLEX
		Socket set 3/8 inch square drive		
		25 pieces	24 pieces	26 pieces
6		eShop	eShop	eShop
12		eShop	eShop	eShop
Length	mm	357	413	357
Width	mm	176	230	174
Height	mm	45	57	47
○ **Supplied with:** Sockets bi-hexagon or single hexagon		11 pcs. size 8; 10; 11; 12; 13; 14;15; 16; 17; 18; 19 mm	11 pcs. size 8; 10; 11; 12; 13; 14;15; 16; 17; 18; 19 mm	12 pcs. size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19 mm
○ Spark plug sockets		2 pcs. No. 637329 size 16; 20.8	1 pc. No. 637310 size 16	2 pcs. similar to No. 637329 size 16; 20.8
◉ Hexagon screwdriver bits		7 pcs. No. 637629 size 3; 4; 5; 6; 7; 8; 10	7 pcs. No. 637600 size 3; 4; 5; 6; 7; 8; 10	7 pcs. No. 637620 size 3; 4; 5; 6; 7; 8; 10
T-handle		1 pc. No. 635729	1 pc. No. 635700	1 pc. No. 635720
Extensions		2 pcs. No. 635429 size 75; 240	2 pcs. No. 63 5400 size 75; 240	2 pcs. No. 635420 size 75; 240
Universal joint		1 pc. No. 636229	1 pc. No. 636200	1 pc. No. 636220
Ratchet		1 pc. No. 635025	1 pc. No. 635000	1 pc. No. 635090
Storage in			ABS plastic box	

3/8″ | 8-19 | 3-10 | 6G 14G



63 4312_6

3/8″ | 8-19 | 3-10



63 4316_6

3/8″ | 8-19 | 3-10



63 4318_6

3/8″ | 7-22 | 1/4-7/8″

STAHLWILLE® Socket set metric/imperial, 3/8 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

Material: Chrome alloy steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M4 – M14, for nuts / bolts with thread up to 9/16 inch (American inch sizes).

		63A 63 4711
		Socket set 3/8 inch square drive **33 pieces metric / imperial**
		eShop
Length	mm	413
Width	mm	230
Height	mm	57
○ **Supplied with:** Bi-hexagon sockets		16 pcs. No. 637000 size 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22
○ Bi-hexagon sockets		12 pcs. No. 637100 size 1/4; 5/16; 11/32; 3/8; 7/16; 1/2; 9/16; 5/8; 11/16; 3/4; 13/16; 7/8
T-handle		1 pc. No. 635700
Extensions		2 pcs. No. 63 5400 size 75; 240 mm
Universal joint		1 pc. No. 636200
Ratchet		1 pc. No. 635000
Presented in		ABS plastic box



63 4711

63

3/8″

HOLEX Bit socket set, 3/8 inch

Material: Chrome vanadium steel, chrome-plated.

Application:

63 4825 – For hexagon socket head screws with thread M4 – M12.
63 4837 – For internal Torx® screws with thread M2.5 – M8.
63 4847 – For Trisquare / XZN screws with thread M5 – M10.



63 4825



63 4837



63 4847

Type	62A 63 4825	62A 63 4837	62A 63 4847
	Set of hexagon bit sockets, 3/8 inch square drive, 7 pieces	Set of bit sockets for Torx®, 3/8 inch square drive, 9 pieces	Set of tri-square bit sockets, 3/8 inch square drive, 4 pieces
3/8	eShop ■	eShop	eShop
◉ **Supplied with:** Hexagon bit sockets	7 pcs. No. 637620 size 3; 4; 5; 6; 7; 8; 10	–	–
✱ Bit sockets for Torx®	–	9 pcs. (48 mm long) size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40	–
◉ Tri-square bit sockets	–	–	4 pcs. (48 mm long) size M5; M6; M8; M10

There's more in it for you!

The entire tooling catalogues for the following brands are available from the Hoffmann Group – just ask for them!



3/8″

Socket set 3/8 inch, large

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

8-19 3-8

Material: Chrome molybdenum steel, matt chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M12 and for hexagon socket head screws with thread M4 – M10. For Phillips and Pozidriv screws with thread M2 – M6 and for internal Torx® screws with thread M3.5 – M8.

Content:

Size P – With push-through square No. 635290.
Size S – With reversible ratchet No. 635295.

Type		63F 63 4120
		Wera Socket set 3/8 inch square drive **29 pieces**
P		eShop
S		eShop ■
Length	mm	262
Width	mm	120
Height	mm	57
Supplied with:		9 pcs.
Socket single hexagon		size 8; 10; 12; 13; 15; 16; 17; 18; 19 mm
Hexagon bit		5 pcs. No. 675240 size 3; 4; 5; 6; 8
BITS for Phillips		3 pcs. No. 675310 size 1/25; 2/25; 3/25
Pozidriv bit		2 pcs. No. 675320 size 1/25; 2/25
BITS for Torx®		6 pcs. No. 675340 size TX15; TX20; TX25; TX27; TX30; TX40
Extension with quick rotation sleeve		1 pc. 200 mm
Wobbel extension		1 pc. 76 mm
Adapter with quick-release holder		1 pc. 3/8 inch square – 1/4 inch hexagon bit holder
Ratchet (size P)		1 pc. No. 635290 with push-through square
Ratchet (size S)		1 pc. No. 635295 with reversible ratchet
Presented in		Textile wallet with hook and loop fastener

TAKE IT EASY TOOL FINDER

3/8″ 8-19 3-8



63 4120

8-19 4-10

63 4799 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material:

63 4799 – Chrome vanadium steel, chrome-plated.
63 4811 – Chrome alloy steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M12, for external Torx® with thread M4 – M12, for socket head screws with thread M5 – M12, for internal Torx® with thread M3 – M8.

Note:

63 4799 – The range offers in addition space for 4 pieces of small parts storage bins No. 951251 size 2×3/1 or 2 pieces of small parts storage bins No. 951251 size 2×6/1 (not included in the scope of supply).

3/8″ 8-19 4-10 8G 20G



63 4799

Type		61A 63 4799	63A 63 4811
		Garant	STAHLWILLE Socket set 3/8 inch square drive **37 pieces**
12		eShop	eShop
Length	mm	510	413
Width	mm	294	230
Height	mm	61	57
Supplied with:			
Bi-hexagon sockets		11 pcs. No. 637029 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19	11 pcs. No. 637000 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19
Sockets for Torx®		7 pcs. size E5; E6; E7; E8; E10; E12; E14	7 pcs. No. 637450 size E5; E6; E7; E8; E10; E12; E14
Screwdriver sockets, hexagon		6 pcs. No. 637629 size 4; 5; 6; 7; 8; 10	6 pcs. No. 637600 size 4; 5; 6; 7; 8; 10
Screwdriver sockets for Torx®		8 pcs. size TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40	8 pcs. No. 637560 size TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
T-handle		1 pc. No. 635729	1 pc. No. 635700
Extensions		2 pcs. No. 635429 size 75; 240	2 pcs. No. 635400 size 75; 240
Universal joint		1 pc. No. 636229	1 pc. No. 636200
Ratchet		1 pc. No. 635025	1 pc. No. 635000
Storage in		ABS plastic box	

3/8″ 8-19 4-10



63 4811

3/8″

Drive part 3/8 inch

Standard: External square drives to **DIN 3120-A 10** with sprung ball, for internal square drives to **DIN 3120-C 10** with grooves.

Suitable for: Manual use.



63 5025

Ratchet reversible

With reversing lever for right-hand and left-hand threads.

Standard: **DIN 3122-D 10**

Material:

63 5000 – Chrome alloy steel, chrome-plated.

63 5025/5060/5090 – Chrome vanadium steel, chrome-plated.



63 5000



63 5060



63 5090

Type			3/8	overall length mm	No. of teeth
61A **63 5025**	Garant	Reversible ratchet, 3/8 inch with ejector	eShop ■	196	38
63A **63 5000**	STAHLWILLE	Reversible ratchet, 3/8 inch	eShop	193	30
63O **63 5060**	HAZET		eShop	200	30
62A **63 5090**	HOLEX	Reversible ratchet, 3/8 inch with ejector	eShop ■	195	38

Reversible precision ratchet

With ejector and reversing lever for right-hand and left-hand threads, working angle 4.5°.

Material: Chrome molybdenum steel, plastic-coated.



63 5296

Type			3/8	overall length mm	No. of teeth
63F **63 5296**	Wera	Precision ratchet "Zyklop Comfort" reversible, 3/8 inch with ejector	eShop ■	230	80



63 5145

63 5145 – With ejector and reversing lever for right-hand and left-hand threads, working arc 5°.

63 5150 – With reversing disc for right-hand and left-hand threads, working arc 6°.

63 5155 – With ejector and reversing lever for right-hand and left-hand rotation, working arc 4.5°.

63 5176 – With reversing lever for right-hand and left-hand threads, working arc 4°.

Material:

63 5145/5176 – Chrome vanadium steel, chrome-plated.

63 5150/5155 – Chrome alloy steel, chrome-plated.



63 5150



QuickRelease

63 5155

Type			3/8	overall length mm	No. of teeth
61A **63 5145**	Garant	Reversible precision ratchet, 3/8 inch	eShop	197	72
63A **63 5150**			eShop	194	60
63A **63 5155**	STAHLWILLE	Reversible precision ratchet, 3/8 inch with ejector **QuickRelease**	eShop	193	80
63O **63 5176**	HAZET	Reversible precision ratchet, 3/8 inch	eShop	200	90



63 5176

Precision reversible ratchet, with swivel head

3/8″

Ratchet head can be swivelled with defined engagement positions at 0° (use like a screwdriver) and 75° and 90° positions to either side.
Working arc 5°, with ejector and reversing plate for right-hand and left-hand threads.
Material: Chrome vanadium steel, chrome-plated.



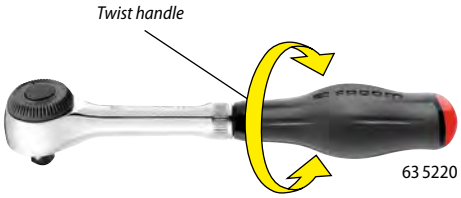
63 5190



			overall length mm	No. of teeth
63F 63 5190	Wera	Precision ratchet "Zyklop Speed" reversible, 3/8 inch with swivel head and ejector	eShop	199	72

Precision ratchet, with twist handle

For conventional use 6° working arc, for use with the **twist handle** 0° working angle.
With ejector and reversing disc for right-hand and left-hand rotation.



63 5220

			overall length mm	No. of teeth
63V 63 5220	FACOM	Reversible precision ratchet 3/8 inch with ejector and twist handle	eShop	235	60

Reversible flexi-head ratchet with ejector

With reversing lever for right-hand and left-hand threads.
Material: Chrome vanadium steel, chrome-plated.


63 5335

			overall length mm	No. of teeth
63R 63 5335	Koken	Flexi-head ratchet, 3/8 inch with ejector	eShop	285	24

T-handle

With movable sliding head.
63 5750 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.
Standard: **DIN 3122-A 10**
Material:
63 5700/5750 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
63 5729/5720 – Chrome vanadium steel, chrome-plated.


63 5729


63 5700


63 5720



63 5750

overall length		mm	165	200
61A 63 5729	Garant		–	eShop ■
63A 63 5700	STAHLWILLE	T-handle, 3/8 inch	eShop	–
62A 63 5720	HOLEX		–	eShop ■
63A 63 5750	STAHLWILLE	T-handle, 3/8 inch **QuickRelease**	eShop	–

Swivel handle

Joint with 180° arc. With 2-component handle.
Standard: **DIN 3122-F 10**
Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.


63 6000

63A 63 6000	STAHLWILLE	Swivel handle, 3/8 inch	eShop
overall length		mm	253.5

3/8″

Adaptor 3/8 inch

Standard:
63 5429–5500 – **DIN 3123-B 10**
Material:
63 5400/5645/5600 –Chrome alloy steel, chrome-plated.
63 5429/5420/5500 –Chrome vanadium steel, chrome-plated.
Advantage:
63 5645 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.
Application:
63 5600 – For right-hand use only; up to 7 Nm.


63 5429


63 5400


63 5420


QuickRelease 63 5645

overall length			mm	40	75	125	150	160	240	250
61A 63 5429	Garant			–	eShop ■	eShop ■	–	–	eShop ■	–
63A 63 5400	STAHLWILLE	Extension, 3/8 inch		eShop	eShop	eShop	–	eShop	eShop	–
62A 63 5420	HOLEX			eShop	eShop ■	eShop ■	eShop	–	–	eShop
63A 63 5645	STAHLWILLE	Extension, 3/8 inch **QuickRelease**		–	eShop	–	–	eShop	eShop	–


63 5500

overall length			mm	305	508	711
63O 63 5500	HAZET	Extension, 3/8 inch **extra long**		eShop	eShop	eShop

overall length			mm	194
63A 63 5600	STAHLWILLE	Extension, 3/8 inch **flexible**		eShop

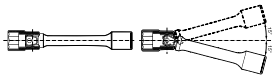

63 5600

"Wobble-Fix" extensions



Two-stage extension. The wobble type extension clicks into place and allows up to 15° of movement.
Material: Chrome vanadium steel, chrome-plated.


63 5635



overall length			mm	75	150	250
63R 63 5635	Koken	Extension, 3/8 inch **"Wobble-Fix"**		eShop	eShop	eShop

Universal joint

Standard: The **QuickRelease** locking system prevents inadvertent release or loss of a tool.
Material:
63 6200/6250 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
63 6229/6220 – Chrome vanadium steel, chrome-plated.
Advantage:
63 6250 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.


63 6229


63 6200

Type			3/8	overall length mm
61A 63 6229	Garant		eShop ■	52
63A 63 6200	STAHLWILLE	Universal joint, 3/8 inch	eShop	46
62A 63 6220	HOLEX		eShop ■	52
63A 63 6250	STAHLWILLE	Universal joint, 3/8 inch **QuickRelease**	eShop	60


63 6220


QuickRelease 63 6250

3/8″

Hexagon socket, 3/8 inch, short

Forged from high quality steel, internally bevelled for easy fitting to bolt heads. Internal square to **DIN 3120.**

Hexagon socket

63 7200 – Optimum grain orientation due to special forging process. Close tolerance sockets with **AS drive** profile protect corners of bolt head. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

63 7229 – Close tolerance jaw sizes with **HT drive** profile protect corners of nuts and bolt heads. **Thin walls** for access to restricted places.

Standard: **DIN 3124**

Material:

63 7200 – HPQ® high performance steel, non-flaking chrome-plated over nickel.

63 7229/7220 – Chrome vanadium steel, chrome-plated.

Note:

63 7229/7220 – GARANT and HOLEX hex sockets also available in imperial sizes (GARANT: No. 637232; HOLEX: No. 637222).

***HT drive** profile*



63 7229

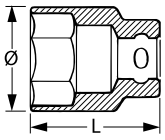
***AS drive** profile*



63 7200



63 7220



Width across flats		mm	7	8	9	10	11	12	13	14
61A 63 7229	Garant		–	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
63A 63 7200	STAHLWILLE®	Hexagon socket, 3/8 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 63 7220	HOLEX		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end (63 7229, 63 7220)		mm	10.9	11.8	13.4	14.6	15.9	17	18.4	19.6
Ø drive output end (63 7200)		mm	10.5	11.7	13	14.3	15.6	16.9	18	19.4
Length (63 7229, 63 7220)		mm	25	25	25	25	25	25	25	27
Length (63 7200)		mm	24	25	25	27	27	28	30	30

Width across flats		mm	15	16	17	18	19	20	21	22
61A 63 7229	Garant		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	–	eShop ■	eShop ■
63A 63 7200	STAHLWILLE®	Hexagon socket, 3/8 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 63 7220	HOLEX		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	–	eShop	eShop
Ø drive output end (63 7229, 63 7220)		mm	20.9	22	23.4	24.5	25.6	–	27.9	29.6
Ø drive output end (63 7200)		mm	20.6	21.7	23	24.2	25.2	26.2	27.7	28.7
Length (63 7229, 63 7220)		mm	27	27	27	27	29	–	29	31
Length (63 7200)		mm	31	31	31	32	32	34	34	35

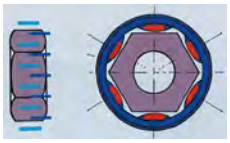
Hexagon Surface Drive socket

Surface Drive

The Surface Drive socket allows a tighter fit and higher effectiveness. The pressure works directly on the faces of the nuts and bolts; weaker corners are protected. Intermediate sizes e.g. in inches (A/F, BSF, BSW) and rounded heads can be tightened or loosened using the Surface Drive.

Material: Chrome vanadium steel, chrome-plated.

inches



mm



63 7125

Width across flats		mm	7	8	9	10	11	12	13	14
61A 63 7125	Garant	Hexagon socket, 3/8 inch **Surface Drive**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Width across flats		in	17/64	5/16	–	3/8	13/32; 7/16	15/32	1/2	17/32
Ø drive output end		mm	10.9	11.8	13.4	14.6	15.9	17	18.4	19.6
Length		mm	25.5	25.5	25.5	25.5	25.5	25.5	25.5	27

Width across flats		mm	15	16	17	18	19	21	22	24
61A 63 7125	Garant	Hexagon socket, 3/8 inch **Surface Drive**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Width across flats		in	9/16; 19/32	5/8	21/32	11/16	3/4	13/16	–	15/16
Ø drive output end		mm	20.9	22	23.4	24.5	25.6	27.9	29.6	32
Length		mm	27	27	27	27	29	29	31	31

Bi-hexagon socket

3/8"

63 7000 – Optimum grain orientation due to special forging process. Close tolerance sockets with **AS drive** profile protect corners of bolt head. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

63 7029 – Close tolerance jaw sizes with **HT drive** profile protect corners of nuts and bolt heads.

Standard: **DIN 3124**

Material:

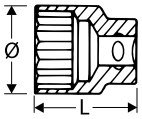
63 7000 – HPQ® high performance steel, non-flaking chrome-plated over nickel.

63 7029 – Chrome vanadium steel, chrome-plated.

***HT drive** profile*



63 7029



Width across flats		mm	7	8	9	10	11	12	13	14
○ 61A 63 7029	Garant	Bi-hexagon socket, 3/8 inch	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
○ 63A 63 7000	STAHLWILLE®	Bi-hexagon socket, 3/8 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end (63 7029)		mm	–	11.8	13.4	14.6	15.9	17	18.4	19.6
Ø drive output end (63 7000)		mm	10.5	11.7	13	14.3	15.6	16.9	18	19.4
Length (63 7029)		mm	–	25.5	25.5	25.5	25.5	25.5	25.5	27
Length (63 7000)		mm	24	25	25	27	27	28	30	30

Width across flats		mm	15	16	17	18	19	20	21	22
○ 61A 63 7029	Garant	Bi-hexagon socket, 3/8 inch	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop
○ 63A 63 7000	STAHLWILLE®	Bi-hexagon socket, 3/8 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end (63 7029)		mm	20.9	22	23.4	24.5	25.6	–	27.9	29.6
Ø drive output end (63 7000)		mm	20.6	21.7	23	24.2	25.2	26.2	27.7	28.7
Length (63 7029)		mm	27	27	27	27	29	–	29	31
Length (63 7000)		mm	31	31	31	32	32	34	34	35

***AS drive** profile*



63 7000

Bi-hexagon socket, inch sizes

Close tolerance jaw sizes with **HT drive** profile protect corners of nuts and bolt heads.

Material: Chrome vanadium steel, chrome-plated.

Width across flats		in	1/4	5/16	11/32	3/8	7/16	1/2	9/16
○ 61A 63 7032	Garant	Bi-hexagon socket, 3/8 inch **imperial version**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end		mm	10.1	11.8	13	14.3	16	18.4	20.2
Length		mm	25.5	25.5	25.5	25.5	25.5	25.5	27

Width across flats		in	5/8	11/16	3/4	13/16	7/8	15/16	1
○ 61A 63 7032	Garant	Bi-hexagon socket, 3/8 inch **imperial version**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end		mm	22	23.9	25.6	27.9	30	32	34
Length		mm	27	27	29	29	31	31	31

***HT drive** profile*



63 7032

Bi-hex socket with universal joint

Optimum grain orientation due to special forging process. Close tolerance sockets with **AS drive** profile protect corners of bolt head. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

Standard: **DIN 3124 L**

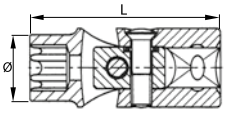
Material: HPQ® high performance steel, non-flaking chrome-plated over nickel.

***AS drive** profile*



63 7400

Width across flats		mm	10	12	13	14	15	16	17	19
○ 63A 63 7400	STAHLWILLE®	Universal joint socket, 3/8 inch	eShop	eShop	(eShop)	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	14.3	16.9	18.3	19.4	20.6	21.8	23	25.5
Length		mm	45.5	48	48	48.5	48.5	51.5	53.5	57



Socket for Torx® screws

Optimum grain orientation due to special forging process. Close tolerance width across flats. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

Material: HPQ® high performance steel, non-flaking chrome-plated over nickel.

Torx® profile			E5	E6	E7	E8	E10	E12	E14
✪ 63A 63 7450	STAHLWILLE®	Socket, 3/8 inch for Torx®	eShop	eShop	eShop	eShop	eShop	eShop	eShop
A		mm	4.7	5.7	6.2	7.5	9.4	11.1	12.9
Ø drive output end		mm	7	8	9	10.5	13	14.9	16.5
Length		mm				28			

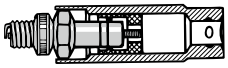


63 7450

Hexagon socket, 3/8 inch, deep

3/8″

Forged from high quality steel, internally bevelled for easy fitting to bolt heads. Internal square to **DIN 3120.**



Rubber retainer 63 7329

Hexagon socket for spark plugs, deep

Size 16; 18 – Hex sockets.
63 7310 – Optimum grain orientation due to special forging process. Close tolerance sockets with **AS drive** profile protect corners of bolt head. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.
Size 14; 16; 20,8 – Bi-hex sockets.
63 7329 – Close tolerance jaw sizes with **HT drive** profile protect corners of nuts and bolt heads. **Thin walls** for access to restricted places.

Material:
63 7310 – HPQ® high performance steel, non-flaking chrome-plated over nickel.
63 7329/7340 – Chrome vanadium steel, chrome-plated.

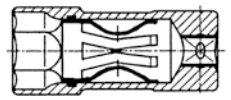


HT drive profile 63 7329



AS drive profile 63 7310_size 18

Width across flats		mm	14	16	18	20,8
○ 61A 63 7329	Garant	Single hexagon socket for spark plugs 3/8 inch	–	eShop	–	eShop
○ 63A 63 7310	STAHLWILLE		–	eShop	eShop	–
○ 63O 63 7340	HAZET		eShop	eShop	–	–
Ø drive output end		mm	18	21.7	24.2	27.2
Length		mm	64	60	65	65
Retention mechanism for spark plugs (63 7329, 63 7310)			–	Rubber retainer	Rubber retainer	Rubber retainer
Retention mechanism for spark plugs (63 7340)			Crown spring	Crown spring	–	–



Crown spring 63 7340



63 7340_size 14

Bi-hex socket, deep

63 7300 – Optimum grain orientation due to special forging process. Close tolerance sockets with **AS drive** profile protect corners of bolt head. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

Standard:
63 7300 – **DIN 3124-L**

Material:
63 7300 – HPQ® high performance steel, non-flaking chrome-plated over nickel.
63 7320 – Chrome vanadium steel, chrome-plated.

HOLEX bi-hex sockets also in imperial sizes are available from our eShop (No. 637322).

63

Width across flats		mm	10	11	12	13	14	15
○ 63A 63 7300	STAHLWILLE	Bi-hexagon socket, 3/8 inch deep	eShop	eShop	eShop	eShop	eShop	eShop
○ 62A 63 7320	HOLEX		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end (63 7300)		mm	14.3	15.6	16.9	18	19.4	20.6
Ø drive output end (63 7320)		mm	14.6	15.9	17	18.4	19.6	20.9
Length (63 7300)		mm	54	54	54	54	60	60
Length (63 7320)		mm	64					

AS drive profile



63 7300

Width across flats		mm	16	17	18	19	21	22
○ 63A 63 7300	STAHLWILLE	Bi-hexagon socket, 3/8 inch deep	eShop	eShop	eShop	eShop ■	eShop	eShop
○ 62A 63 7320	HOLEX		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end (63 7300)		mm	21.7	23	24.2	25.2	27.7	28.7
Ø drive output end (63 7320)		mm	22	23.4	24.5	25.6	27.9	29.6
Length (63 7300)		mm	60	65	65	65	65	65
Length (63 7320)		mm	64					



63 7320

Bit socket, 3/8 inch, short

3/8″

Forged from high quality steel, internally bevelled for easy fitting to bolt heads. Internal square to **DIN 3120.**
Bit made from high-alloy special steel, bright finished.

HOLEX hexagon bit sockets also in imperial sizes are available from our eShop (No. 637622).

Hexagon bit socket, for socket head screws

63 7600 – Optimum grain orientation due to special forging process.
Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

Standard:
63 7629–7620 – **DIN 7422**

Hexagon		mm	3	4	5	6	7	8	10
◉ 61A 63 7629	Garant	Hexagon bit socket, 3/8 inch	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
◉ 63A 63 7600	STAHLWILLE		eShop	eShop	eShop	eShop	eShop	eShop	eShop
◉ 62A 63 7620	HOLEX		eShop	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive end (63 7629, 63 7620)		mm	19						
Ø drive end (63 7600)		mm	17.8						
Length (63 7629, 63 7620)		mm	46						
Length (63 7600)		mm	52						

Hexagon		in	1/8	5/32	3/16	7/32	1/4	5/16	3/8
◉ 61A 63 7632	Garant	Hexagon bit socket, 3/8 inch imperial version	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive end		mm	19						
Length		mm	47	47	47	47	47	50	47



63 7629



63 7600



63 7620



63 7632

Hexagon bit socket, TiN coated, for socket head screws

TiN-coated blades for high bonding strength and resistance to abrasion. With optimised corrosion protection.

Standard: **DIN 7422**

Material: Sleeve of chrome vanadium steel, non-flaking, chrome-plated. Blade of special steel with TiN coating.

Application: Ideally suited to sustained loads such as series screw fastenings.

3/8″



63 7633

Hexagon		mm	3	4	5	6	7	8	10
630 63 7633	HAZET	Hexagon bit socket, 3/8 inch, long **TiN coated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive end		mm	17	17	17	17	19	19	19
Length		mm	43.5						

Bit socket, for Torx® screws

3/8″

63 7560 – Optimum grain orientation due to special forging process.
Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

Standard: **DIN 7422**

Material:

63 7539 – Chrome vanadium steel, satin chromium plated.

63 7560 – Chrome alloy steel, non-flaking, chrome-plated over nickel.



63 7539_TX30

Torx® profile			TX9	TX10	TX15	TX20	TX25	TX27	TX30	TX40	TX45
61A 63 7539	Garant	Bit socket, for Torx®, 3/8 inch **short**	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63A 63 7560	STAHLWILLE		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
A		mm	2.5	2.7	3.3	3.8	4.4	5	5.5	6.6	7.8
∅ drive end (63 7539)		mm	–	–	17.5	17.5	17.5	17.5	17.5	17.5	17.5
∅ drive end (63 7560)		mm	17.8								
Length (63 7539)		mm	–	–	43	43	43	43	43	43	43
Length (63 7560)		mm	49								



63 7560

Bit socket, trisquare

3/8″

Optimum grain orientation due to special forging process. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

Standard: **DIN 7422**



63 7520

for screws			M5	M6	M8	M10
63A 63 7520	STAHLWILLE	Bit socket, trisquare, 3/8 inch, for XZN screws	eShop	eShop	eShop	eShop
∅ drive end		mm	17.8			
Length		mm	52			

Bit socket, 3/8 inch, long

3/8″

Forged from high quality steel, internally bevelled for easy fitting to bolt heads. Internal square to **DIN 3120.**

63 7613 – Bit made from high-alloy special steel, bright finished.

Standard:

63 7613/7609 – **DIN 7422**

Material:

63 7609/7549 – Chrome vanadium steel, satin chromium plated.

63 7613/7553 – Chrome vanadium steel, chrome-plated.

Advantage:

63 7609 – Hexagon screwdriver set with retainer ball, for secure clamping of the inserted screw

Retainer ball for secure clamping.



63 7609_5



63 7613_4



63 7549_TX30



63 7553_TX25

Hexagon		mm	4	5	6	8	10
61A 63 7609	Garant	Hexagon bit socket, 3/8 inch **long, with retainer ball**	eShop	eShop	eShop	eShop	eShop
62A 63 7613	HOLEX	Hexagon bit socket, 3/8 inch **long, with ball point**	eShop	eShop ■	eShop	eShop	eShop
∅ drive end (63 7609)		mm	17.5				
∅ drive end (63 7613)		mm	18				
Length (63 7609)		mm	107	107	107	100	100
Length (63 7613)		mm	100				

Torx® profile			TX15	TX20	TX25	TX30	TX40	TX45	TX50	TX55
61A 63 7549	Garant	Bit socket, for Torx®, 3/8 inch **long**	–	–	eShop	eShop	eShop	eShop	eShop	–
62A 63 7553	HOLEX		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
A		mm	3.3	3.8	4.4	5.5	6.6	7.8	8.8	11.2
∅ drive end (63 7549)		mm	–	–	17.5	17.5	17.5	17.5	17.5	–
∅ drive end (63 7553)		mm	18							
Length (63 7549)		mm	–	–	107	107	107	107	107	–
Length (63 7553)		mm	100							

3/8″

STAHLWILLE® Oil filter claw, 3/8 inch

Standard: **DIN 3120**
Application: For undoing oil filters on cars.


63 7315

63A	**63 7315**	Oil filter claw, 3/8 inch	eShop
	Claw length	mm	50
	overall height	mm	65
	Clamping range	mm	68 – 120

3/8″

HOLEX Clip bar for 3/8 inch hexagon sockets

Plastic bar with clips which can be slid into position.
Application: For storage and ready access to 3/8 inch sockets.


Application example

62A	**63 7590**	Clip bar for 3/8 inch sockets	eShop ■
	overall length	mm	305
	Number of mountings		14

3/8″

HOLEX Drive part / adapter / socket, fully insulated to VDE, 3/8 inch

With plastic insulation **up to 1000 V** to DIN EN IEC 60900 / VDE 0682-201.
Standard: **DIN EN IEC 60900 / VDE 0682-201.**

Note: For working at voltages up to 1000 Volts. In safety areas only **fully insulated** tools (No. 637681 – 637689) may be used in combination.


63 7681

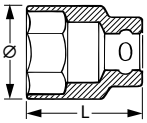

63 7683

Type		3/8	overall length mm
62A **63 7681**	Reversible ratchet, 3/8 inch, with ejector **VDE fully insulated**	eShop	200

Type		3/8	overall length mm
62A **63 7683**	T-handle, 3/8 inch **VDE fully insulated**	eShop ■	200


63 7685

overall length	mm	125	250
62A **63 7685**	Extension, 3/8 inch **VDE fully insulated**	eShop	eShop
overall length	mm	125	250




63 7687

Width across flats	mm	8	10	11	12	13	14	15	16	17	18	19
○ 62A **63 7687**	Hexagon socket, 3/8 inch **VDE fully insulated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop ■	eShop	eShop
∅ drive output end	mm	17	20	21	23	23.5	25	26	27	28.5	30	31
Length	mm	45	45	45	45	45	45	45	45	45	45	47

Standard: **DIN 7422.**

Hexagon	mm	5	6	8
◉ 62A **63 7689**	Hexagon bit socket 3/8 inch **fully insulated**	eShop	eShop	eShop
Uninsulated blade length	mm		16	
Length	mm		75	


63 7689

½″

Socket set, 1/2 inch, small

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

10-24

63 7662 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Material: Chrome vanadium steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M6 – M16.

½″ | 10-24 | 6G 14G



63 7662

Type	61A 63 7662 Garant	62A 63 7668 HOLEX
	Socket set 1/2 inch square drive	
	12 pieces	
6	eShop	eShop
Length mm	357	407
Width mm	176	227
Height mm	52	62
Supplied with: Sockets single hexagon	9 pcs. No. 642229 size 10; 13; 16; 17; 18; 19; 21; 22; 24	9 pcs. No. 642220 size 10; 13; 16; 17; 18; 19; 21; 22; 24
2 extensions	1 pc. each No. 641029 size 130; 255	1 pc. each No. 641020 size 130; 255
1 ratchet	No. 640025	No. 640190
Storage in	ABS plastic box	

½″ | 10-24



63 7668

63

63 7712 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Size 6 – With hexagon sockets No. 642229.

Size 12 – With bi-hexagon sockets No. 642129.

63 7714 Size 6 – With hexagon sockets No. 642200.

Size 12 – With bi-hexagon sockets No. 642100.

63 7718 Size 6 – With hexagon sockets No. 642120.

Size 12 – With bi-hexagon sockets No. 642120.

Material:

63 7714 – Chrome alloy steel, chrome-plated.

63 7712/7718 – Chrome vanadium steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M6 – M22.

Note:

63 7712 – The range offers in addition space for 4 pieces of small parts storage bins No. 951251 size 2×3/1 or 2 pieces of small parts storage bins No. 951251 size 2×6/1 (not included in the scope of supply).

½″ | 10-34 | 8G | 20G



63 7712_12

Type	61A 63 7712 Garant	63A 63 7714 STAHLWILLE	62A 63 7718 HOLEX
	Socket set 1/2 inch square drive		
	16 pieces	15 pieces	16 pieces
6	eShop	eShop	eShop
12	eShop	eShop	eShop
Length mm	510	413	407
Width mm	294	226	227
Height mm	61	64	62
Supplied with: Sockets	13 pcs. size 10; 13; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34 mm	12 pcs. size 10; 13; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32 mm	13 pcs. size 10; 13; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34 mm
2 extensions	No. 641029 size 130; 255	No. 641000 size 130; 255	No. 641020 size 130; 255
1 ratchet	No. 640025	No. 640100	No. 640190
Storage in	ABS plastic box		

½″ | 10-32



63 7714_6

½″ | 10-34



63 7718_12

All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**
Material: Chrome vanadium steel, chrome-plated.
Application: For hexagon socket head screws with thread M5 – M24.

Type	61A	63 7702
		Garant
		Set of bit sockets, hexagon, 1/2 inch square drive
		12 pieces
6		eShop
Length	mm	357
Width	mm	176
Height	mm	52
◉ **Supplied with:** Bit sockets, hexagon		8 pcs. No. 643229 size 4; 5; 6; 8; 10; 12; 14; 17
T-handle		1 pc. No. 641329
Extensions		2 pcs. No. 641029 130; 255
Ratchet		1 pc. No. 640025
Storage in		ABS plastic box

½" | 4-17 | 6G 14G



63 7702

Dustproof **telescopic reversible ratchet**. Extendable from 264 – 397 mm length in 8 stages.
Application: For hexagon head screws / nuts with thread M5 – M32.

Type	63V	63 7716
		FACOM
		Socket set 1/2 inch square drive
		21 pieces
6		eShop
Length	mm	340
Width	mm	180
Height	mm	58
○ **Supplied with:** Socket single hexagon		17 pcs. size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32 mm
Wobble type extension		1 pc. 8°; 130 mm
Extension		1 pc. 250 mm
Universal joint		1 pc.
Ratchet		1 pc.
Presented in		Plastic box with retainer function

½" | 8-32



63 7716

Adjustable length

Sockets with **retainer function** and knurling at the rear end for a good grip when fitting/removing by hand.
Application: For hexagon head screws / nuts with thread M5 – M12.
Content: Ratchet with reversing lever and extension No. 640385.

TAKE IT EASY TOOL FINDER

With retainer function

	63F	63 7945
		Wera
		Socket set 1/2 inch square drive
		13 pieces
		eShop
Length	mm	325
Width	mm	148
Height	mm	73
○ **Supplied with:** Socket single hexagon		10 pcs. size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19 mm
Extension with quick rotation sleeve		1 pc. 250 mm
Ratchet		1 pc. No. 640385 with reversing lever and extension 341 mm
Presented in		Textile wallet with hook and loop fastener

½" | 10-19

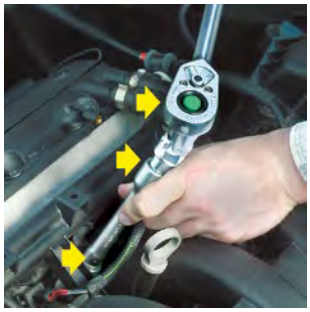


63 7945

QuickRelease set in unbreakable ABS plastic box with foam inlay. Ratchet, extension, universal joint, and socket fit **securely together to form a unit.** The combination is quickly and easily released by pressing the button.

Material: Chrome alloy steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M6 – M22.



***QuickRelease**: Captive, but at the same time quickly released.*

		63A 63 7891
		STAHLWILLE QuickRelease socket set, 1/2 inch square drive **22 pieces**
		eShop
Length	mm	454
Width	mm	253
Height	mm	64
Supplied with: Socket single hexagon		16 pcs. No. 642200 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32
1 T-handle QR		No. 641350
3 extensions QR		No. 641045 size 75; 130; 255
1 universal joint QR		No. 641650
1 ratchet QR		No. 640440
Presented in		ABS plastic box

½″ 10-32



QuickRelease 63 7891

63

63 7812 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay.**

Size 6 – With hexagon sockets No. 642229.

Size 12 – With bi-hexagon sockets No. 642129.

63 7816 Size 6 – With hexagon sockets No. 642200.

Size 12 – With bi-hexagon sockets No. 642100.

63 7818 Size 6 – With hexagon sockets No. 642120.

Size 12 – With bi-hexagon sockets No. 642120.

Material:

63 7816 – Chrome alloy steel, chrome-plated.

63 7812/7818 – Chrome vanadium steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M6 – M22.

Note:

63 7812 – The range offers in addition space for 4 pieces of small parts storage bins No. 951251 size 2×3/1 or 2 pieces of small parts storage bins No. 951251 size 2×6/1 (not included in the scope of supply).

½″ 10-34 8G 20G



63 7812

½″ 10-32



63 7816

Type		61A 63 7812	63A 63 7816	62A 63 7818
		Garant	STAHLWILLE	HOLEX
		Socket set 1/2 inch square drive		
		23 pieces	**22 pieces**	**23 pieces**
6		eShop	eShop	eShop
12		eShop	eShop	eShop ■
Length	mm	510	454	407
Width	mm	294	253	227
Height	mm	61	64	62
Supplied with: Sockets		17 pcs. size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34 mm	16 pcs. size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32 mm	17 pcs. size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34 mm
T-handle		1 pcs 641329	1 pc. 641300	1 pc. 641320
Extensions		3 pcs. No. 641029 size 75; 130; 255	3 pcs. No. 641000 size 75; 130; 255	3 pcs. No. 641020 size 75; 130; 255
Universal joint		1 pc. No. 641629	1 pc. No. 641600	1 pc. No. 641620
Ratchet		1 pc. No. 640025	1 pc. No. 640100	1 pc. No. 640190
Storage in		ABS plastic box		

½″ 10-34



63 7818

½″

Socket set with spark plug socket, 1/2 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

10-30

Material: Chrome vanadium steel, chrome-plated.
Application: For hexagon head screws / nuts with thread M6 – M20 and for spark plugs.

½″ 10-30

Type		62A 63 8168 HOLEX Socket set 1/2 inch square drive 22 pieces
6		eShop
Length	mm	407
Width	mm	227
Height	mm	62
Supplied with: Sockets single hexagon		15 pcs. No. 642220 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30
Spark plug sockets		2 pcs. similar to No. 642450 size 16; 20.8
T-handle		1 pc. No. 641320 size 295
Extensions		2 pcs. No. 641020 size 130; 255
Universal joint		1 pc. No. 641620 size 1/2
Ratchet		1 pc. No. 640190 size 1/2
Storage in		ABS plastic box



63 8168

8-34 4-12

Material: Chrome alloy steel, chrome-plated.
Application: For hexagon head screws / nuts with thread M5 – M22. Spark plugs 16 and 20.8 mm. Hexagon socket head screws with thread M5 – M12.

½″ 8-34 4-12

		63A 63 8561 STAHLWILLE Socket set and combination spanners, 1/2 inch square drive 47 pieces
		eShop
Length	mm	481
Width	mm	288
Height	mm	82
Supplied with: Socket single hexagon		19 pcs. No. 642200 size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34
Spark plug sockets		2 pcs. No. 642450 size 16; 20.8
Bit sockets, hexagon		7 pcs. No. 643200 size 4; 5; 6; 7; 8; 10; 12
T-handle		1 pc. No. 641300 size 300
Extensions		3 pcs. No. 641000 size 75; 130; 255
Universal joint		1 pc. No. 641600 size 1/2
Ratchet		1 pc. No. 640100 size 1/2
Combination spanner		13 pcs. No. 613500 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24
Presented in		ABS plastic box



63 8561

8-34 4-10

Material: Chrome alloy steel, chrome-plated.
Application: For hexagon head screws / nuts with thread M5 – M22. Spark plugs 16 and 20.8 mm. Hexagon socket head screws with thread M5 – M12.

½″ 8-34 4-10



63 8610

		63A 63 8610 STAHLWILLE® Socket set 1/2 inch square drive 50 pieces
		eShop
Length	mm	540
Width	mm	290
Height	mm	53
○ **Supplied with:** Bi-hexagon sockets		23 pcs. No. 642100 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 30; 32; 34
○ Deep sockets, bi-hexagon		7 pcs. No. 642500 size 13; 17; 18; 19; 22; 24; 27
○ Spark plug sockets		2 pcs. No. 642450 size 16; 20.8
○ Sockets with universal joint		6 pcs. No. 642600 size 10; 13; 16; 17; 18; 19
◉ Bit sockets, hexagon		5 pcs. No. 643200 size 4; 5; 6; 8; 10
T-handle		1 pc. No. 641300 size 300
Extensions		3 pcs. No. 641000 size 75; 130; 255
Universal joint		1 pc. No. 641600 size 1/2
Swivel handle		1 pc. No. 641200 size 396
Ratchet		1 pc. No. 640100 size 1/2
Presented in		Sheet steel case

63

½″ 10-34 3/8-1 1/4″

STAHLWILLE® Socket set metric / imperial, 1/2“

½″ 10-34 3/8-1 1/4″

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.**
Internal / external square drives to **DIN 3120.**
Material: Chrome alloy steel, chrome-plated.
Application: For hexagon head screws / nuts with thread M6 – M22.
For hexagon head screws / nuts with thread up to 3/4 inch (American inch size).



63 8810

		63A 63 8810 Socket set metric/imperial, 1/2 inch square drive 45 pieces
		eShop
Length	mm	540
Width	mm	290
Height	mm	53
○ **Supplied with:** Bi-hexagon sockets		22 pcs. No. 642100 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 30; 32; 34
○ Bi-hexagon sockets		17 pcs. No. 642400 size 3/8; 7/16; 1/2; 9/16; 19/32; 5/8; 11/16; 3/4; 25/32; 13/16; 7/8; 15/16; 1; 1.1/16; 1.1/8; 1.3/16; 1.1/4
T-handle		1 pc. No. 641300 size 300
Extensions		3 pcs. No. 641000 size 75; 130; 255
Universal joint		1 pc. No. 641600 size 1/2
Ratchet		1 pc. No. 640100 size 1/2
Presented in		Sheet steel case

½″ 3/8-1 1/4″

STAHLWILLE® Socket set imperial, 1/2 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**
Material: Chrome alloy steel, chrome-plated.
Application: For hexagon head screws / nuts with thread up to 3/4 inch (American sizes).

		63A 63 8711
		Imperial sizes socket set, 1/2 inch square drive **23 pieces**
		eShop
Length	mm	454
Width	mm	253
Height	mm	64
Supplied with: Bi-hexagon sockets		17 pcs. No. 642400 size 3/8; 7/16; 1/2; 9/16; 19/32; 5/8; 11/16; 3/4; 25/32; 13/16; 7/8; 15/16; 1; 1.1/16; 1.1/8; 1.3/16; 1.1/4
T-handle		1 pc. No. 641300 size 300
Extensions		3 pcs. No. 641000 size 50; 130; 255
Universal joint		1 pc. No. 641600 size 1/2
Ratchet		1 pc. No. 640100 size 1/2
Presented in		ABS plastic box

½″ 3/8-1 1/4″



63 8711

½″

Socket set 1/2 inch, large

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** Internal / external square drives to **DIN 3120.**

10-19 5-10

Material: Chrome molybdenum steel, matt chrome-plated.
Application: For hexagon head screws / nuts with thread M6 – M12 and for hexagon socket head screws with thread M6 – M12.

Content:
Size P – With push-through square No. 640390.
Size S – With reversible ratchet No. 640395.

Type		63F 63 7935
		Wera Socket set 1/2 inch square drive **28 pieces**
P		eShop
S		eShop
Length	mm	325
Width	mm	148
Height	mm	73
Supplied with: Socket single hexagon		10 pcs. size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19 mm
Hexagon bits 5/16 inch		4 pcs. No. 675440 size 5; 6; 8; 10
BITS 5/16 inch for Phillips		2 pcs. No. 675400 size 2; 3
BITS 5/16 inch for Torx®		8 pcs. No. 675470 size TX20; TX25; TX27; TX30; TX40; TX45; TX50; TX55
Extension with quick-rotation sleeve		1 pc. 250 mm
Extension Wobble		1 pc. 50 mm
Adapter with quick-change chuck		1 pc. square socket 1/2 inch – bit holder 5/16 inch
Ratchet (size S)		1 pc. No. 640395 with changeover lever
Ratchet (size P)		1 pc. No. 640390 with push-through square
Storage in		Textile wallet with hook and loop fastener

½″ 10-19 5-10 TAKE IT EASY TOOL FINDER



63 7935_P

63 7912 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay**.
Size 6 – With hexagon sockets No. 642229.
Size 12 – With bi-hexagon sockets No. 642129.
63 7916 Size 6 – With hexagon sockets No. 642200.
Size 12 – With bi-hexagon sockets No. 642100.

Material:
63 7912 – Chrome vanadium steel, chrome-plated.
63 7916 – Chrome alloy steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M6 – M22.

Note:
63 7912 – The range offers in addition space for 4 pieces of small parts storage bins No. 951251 size 2×3/1 or 2 pieces of small parts storage bins No. 951251 size 2×6/1 (not included in the scope of supply).

1/2″ | 8-34 | 8G | 20G



63 7912_12

Type		61A 63 7912 Garant	63A 63 7916 STAHLWILLE
		Socket set 1/2 inch square drive	
		29 pieces	28 pieces
○ 6		eShop ■	eShop
○ 12		eShop	eShop
Length	mm	510	454
Width	mm	294	253
Height	mm	61	64
Supplied with: Hexagon socket		23 pcs. size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 26; 27; 28; 30; 32; 34 mm	22 pcs. size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 26; 27; 28; 30; 32 mm
T-handle		1 pc. No. 641329 size 295	1 pc. No. 641300 size 300
Extensions		3 pcs. No. 641029 size 75; 125; 250	3 pcs. No. 641000 size 75; 130; 255
1 each hexagon socket		1 pc. No. 641629 size 1/2	1 pc. No. 641600 size 1/2
Ratchet		1 pc. No. 640025 size 1/2	1 pc. No. 640100 size 1/2
Presented in		ABS plastic box	

1/2″ | 8-34



63 7916_6

4-14

63 8012 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay**.
Size 6 – With hexagon sockets No. 642229.
Size 12 – With bi-hexagon sockets No. 642129.
63 8016 Size 6 – With hexagon sockets No. 642200.
Size 12 – With bi-hexagon sockets No. 642100.
63 8018 – With bi-hexagon sockets No. 642120.

Material:
63 8016 – Chrome alloy steel, chrome-plated.
63 8012/8018 – Chrome vanadium steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M6 – M22 and hexagon socket head screws with thread M5 – M18.

Note:
63 8012 – The range offers in addition space for 4 pieces of small parts storage bins No. 951251 size 2×3/1 or 2 pieces of small parts storage bins No. 951251 size 2×6/1 (not included in the scope of supply).

1/2″ | 8-34 | 8G | 20G | 4-14



63 8012_6

Type		61A 63 8012 Garant	63A 63 8016 STAHLWILLE	62A 63 8018 HOLEX
		Socket set 1/2 inch square drive		
		32 pieces	31 pieces	33 pieces
○ 6		eShop	eShop	–
○ 12		eShop	eShop	eShop
Length	mm	510	454	507
Width	mm	294	253	227
Height	mm	61	64	62
Supplied with: Hexagon socket		18 pcs. size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34 mm	17 pcs. size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32 mm	19 pcs. size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34 mm
◉ Hexagon bit sockets		8 pcs. No. 643229 size 4; 5; 6; 7; 8; 10; 12; 14	8 pcs. No. 643200 size 4; 5; 6; 7; 8; 10; 12; 14	8 pcs. No. 643220 size 4; 5; 6; 7; 8; 10; 12; 14
T-handle		1 pc. 641329 size 295	1 pc. No. 641300 size 300	1 pc. 641320 size 295
Extensions		3 pcs. No. 641029 size 75; 125; 250	3 pcs. No. 641000 75; 130; 255	3 pcs. No. 641020 75; 125; 250
1 each hexagon socket		1 pc. No. 641629 size 1/2	1 pc. No. 641600 size 1/2	1 pc. No. 641620 size 1/2
Ratchet		1 pc. No. 640025 size 1/2	1 pc. No. 640100 size 1/2	1 pc. No. 640190 size 1/2
Presented in		ABS plastic box		

1/2″ | 8-32 | 4-14



63 8016_6

1/2″ | 8-34 | 4-14



63 8018_12

8-34

63 9062 – All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay**.

Material:

63 9062 – Chrome vanadium steel, chrome-plated.

63 9066 – Chrome alloy steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M22 and for internal Torx® with thread M5 – M14.

Note:

63 9062 – The range offers in addition space for 4 pieces of small parts storage bins No. 951251 size 2×3/1 or 2 pieces of small parts storage bins No. 951251 size 2×6/1 (not included in the scope of supply).

½″ | 8-34 | 8G | 20G



63 9062

Type	61A	63 9062	63A	63 9066
		Garant		STAHLWILLE
		Socket set 1/2 inch square drive		
		32 pieces		
6		eShop		eShop
Length	mm	510		454
Width	mm	294		253
Height	mm	61		64
Supplied with: Hexagon sockets		18 pcs. No. 642229 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34		18 pcs. No. 642200 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34
Bit sockets for Torx®		8 pcs. No. 643629 size TX25; TX27; TX30; TX40; TX45; TX50; TX55; TX60		8 pcs. similar to No. 643650 size TX25; TX27; TX30; TX40; TX45; TX50; TX55; TX60
T-handle		1 pc. No. 641329 size 295		1 pc. No. 641300 size 300
Extensions		3 pcs. No. 641029 size 75; 125; 250		3 pcs. No. 641000 size 75; 130; 255
1 each hexagon socket		1 pc. No. 641629 size 1/2		1 pc. No. 641600 size 1/2
Ratchet		1 pc. No. 640025 size 1/2		1 pc. No. 640100 size 1/2
Presented in		ABS plastic box		

½″ | 8-34



63 9066

63

10-32 | 5-14

With hexagon sockets and **TiN-coated** screwdriver bits. TiN-coated blades for high bonding strength and resistance to abrasion. With optimised corrosion protection.

Application: For hexagon head screws / nuts with thread M6 – M22, hexagon socket head screws with thread M6 – M18,
internal Torx® screws with thread M4 – M10.



Plastic case can be used as a stand with tray for parts.

	630	63 7940
		HAZET
		Socket set 1/2 inch square drive
		32 pieces
		eShop
Length	mm	355
Width	mm	235
Height	mm	65
Supplied with: Socket single hexagon		16 pcs. size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32 mm
Hexagon bits, TiN-coated		7 pcs. No. 643233 size 5; 6; 7; 8; 10; 12; 14
Bit sockets for Torx®, TiN-coated		6 pcs. size TX20; TX25; TX30; TX40; TX45; TX50
Extensions		1 pc. size 123 mm
Universal joint		1 pc.
Ratchet		1 pc.
Presented in		Plastic case with stand

½″ | 10-32 | 5-14



63 7940

8-34 | 4-14 | Surface Drive | 8G | 20G

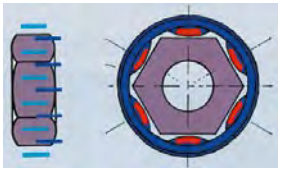
The Surface Drive profile works directly on the faces of the nuts and bolts; weaker corners are protected. Even intermediate sizes (e.g. inch size bolts) and worn bolt heads can be tightened or released using the Surface Drive profile. The Wobble-Fix extensions allow use at an angle and can be secured by clicking into place.
All tools are held securely for easy access in a specially moulded hard-wearing **PUR foam inlay**.

Material: Chrome vanadium steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M22 and 1/4 – 7/8 inch (American inch size) and hexagon socket head screws with thread M5 – M18.

Note: The range offers in addition space for 4 pieces of small parts storage bins No. 951251 size 2×3/1 or 2 pieces of small parts storage bins No. 951251 size 2×6/1 (not included in the scope of supply).

inches



mm

Type	61A 63 8025 Garant Socket set 1/2 inch square drive 35 pieces
SD	eShop
Length mm	510
Width mm	294
Height mm	61
Supplied with:	
Hexagon sockets, Surface Drive	19 pcs. No. 642325 size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34
Hexagon bit sockets	8 pcs. No. 643229 size 4; 5; 6; 7; 8; 10; 12; 14
T-handle	1 pc. No. 641329 size 295
Extensions "Wobble-Fix"	2 pcs. No. 641129 size 125; 250
Universal joint	1 pc. No. 641629 size 1/2
Ratchet	1 pc. No. 640025 size 1/2
Converter	1 pc. similar to No. 650002 size 5 drive input hexagon 7/16 inch E 11.2 - drive output square 1/2 inch
Adapters	2 pcs. similar to No. 649500 drive input square socket 3/8 inch - drive output square 1/2 inch drive input square socket 1/2 inch - drive output square 3/8 inch
Presented in	ABS plastic box

½" | 8-34 | 4-14 | Surface Drive | 8G | 20G



63 8025

8-30 | 5-14

Material: Chrome alloy steel, chrome-plated.

Application: For hexagon head screws / nuts with thread M5 – M20, external Torx® with thread M6 – M20. Hexagon socket head screws with thread M6 – M18, internal Torx® with thread M4 – M14.

	63A 63 9261 STAHLWILLE Socket set 1/2 inch square drive 39 pieces
	eShop
Length mm	481
Width mm	288
Height mm	82
Supplied with:	
Socket single hexagon	12 pcs. No. 642200 size 8; 10; 13; 16; 17; 18; 19; 21; 22; 24; 27; 30
Sockets for Torx®	7 pcs. No. 642700 size E10; E12; E14; E16; E18; E20; E24
Bit sockets, hexagon	6 pcs. No. 643200 size 5; 6; 8; 10; 12; 14
Bit sockets for Torx®	9 pcs. No. 643650 size TX20; TX25; TX27; TX30; TX40; TX45; TX50; TX55; TX60
T-handle	1 pc. No. 641300 size 300
Extensions	2 pcs. No. 641000 size 130; 255
Universal joint	1 pc. No. 641600 size 1/2
Ratchet	1 pc. No. 640100 size 1/2
Presented in	ABS plastic box

½" | 8-30 | 5-14



63 9261

Bit sockets and sockets 1/2 inch

Drive components / connecting parts to **DIN 3122 / 3123;**
sockets to **DIN 3124.**
Internal / external square drives to **DIN 3120.**

Material:
63 9404 – Chrome alloy steel, chrome-plated.
63 9402/9408 – Chrome vanadium steel, chrome-plated.
Application: For hexagon socket head screws with thread M5 – M27.

Number of inserts		61A 63 9402 Garant	63A 63 9404 STAHLWILLE	62A 63 9408 HOLEX
		Set of hexagon bit sockets, 1/2 inch square drive		
		10 pieces		
10		eShop	eShop	eShop
Length	mm	257	227	257
Width	mm	147	131	149
Height	mm	45	57	47
◉ **Supplied with:** Bit sockets, hexagon		10 pcs. No. 643229 size 4; 5; 6; 7; 8; 10; 12; 14; 17; 19	10 pcs. No. 643200 size 4; 5; 6; 7; 8; 10; 12; 14; 17; 19	10 pcs. No. 643220 size 4; 5; 6; 7; 8; 10; 12; 14; 17; 19
Presented in		ABS plastic box		

Material:
63 9504 – Chrome alloy steel, chrome-plated.
63 9501/9528 – Chrome vanadium steel, chrome-plated.
Application: For internal Torx® screws with thread M4 – M14.

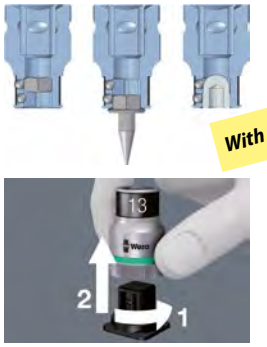
Number of inserts		61A 63 9501 Garant	63A 63 9504 STAHLWILLE	62A 63 9528 HOLEX
		Set of bit sockets, for Torx®, 1/2 inch square drive		
		10 pieces		
10		eShop	eShop	eShop
Length	mm	257	227	257
Width	mm	147	131	149
Height	mm	45	57	47
✸ **Supplied with:** Bit sockets for Torx®		10 pcs. No. 643629 size TX20; TX25; TX27; TX30; 2×TX40; TX45; TX50; TX55; TX60	10 pcs. No. 643650 size TX20; TX25; TX27; TX30; 2×TX40; TX45; TX50; TX55; TX60	10 pcs. No. 643620 size TX20; TX25; TX27; TX30; 2×TX40; TX45; TX50; TX55; TX60
Presented in		ABS plastic box		

Material: Chrome alloy steel, chrome-plated.
Application:
63 9508 – For external Torx® screws with thread M8 – M20.
63 9511 – For Trisquare / XZN screws with thread M6 – M14.

		63A 63 9508 STAHLWILLE	63A 63 9511 STAHLWILLE
		Set of sockets for Torx®, 1/2 inch square drive	Set of bit sockets, tri-square, 1/2 inch square drive
		8 pieces	
		eShop	eShop
Length	mm	227	227
Width	mm	131	131
Height	mm	57	57
✪ ◉ **Supplied with:** Sockets		8 pcs. No. 642700 size E10; E11; E12; E14; E16; E18; E20; E24	5 pcs. No. 642800 (short) size M6; M8; M10; M12; M14 3 pcs. No. 642900 (long) size M8; M10; M12
Presented in		ABS plastic box	

Material: Chrome molybdenum steel, matt chrome-plated.
Application: For hexagon head screws / nuts, hexagon socket with thread M6– M12.

		63F 63 9430 Wera
		Set of hexagon sockets, 1/2 inch square drive
		10 pieces
		eShop
Length	mm	165
Width	mm	140
Height	mm	65
○ **Supplied with:** Socket single hexagon		10 pcs. size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19 mm
Presented in a		Textile wallet with hook and loop fastener







1/2″ | 5G 10G | 4-19


63 9402

4-19


63 9404

4-19


63 9408


63 9501

5G 10G


63 9504


63 9528


63 9508


63 9511

10-19

63 9430

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.
Application:
63 9409 – For hexagon socket head screws with thread M6 – M18.
63 9509 – For internal Torx® screws with thread M6 – M14.

		63A 63 9409	63A 63 9509
		STAHLWILLE	STAHLWILLE
		Set of hexagon bit sockets, 1/2 inch square drive	Set of bit sockets, for Torx®, 1/2 inch square drive
		7 pieces, long	**6 pieces, long**
		eShop	eShop
Length	mm	322	322
Width	mm	135	135
Height	mm	57	57
Supplied with: Bit sockets		7 pcs. size 5; 6; 7; 8; 10; 12; 14 mm	6 pcs. size TX30; TX40; TX45; TX50; TX55; TX60
Presented in		ABS plastic box	

5-14



63 9409



63 9509

Material: Chrome molybdenum steel, matt chrome-plated.
Application:
63 9416 – For hexagon socket head screws with thread M5 – M24.
63 9417 – For hexagon socket head screws with thread M5 – M12.

		63F 63 9416	63F 63 9417
		Wera	Wera
		Set of hexagon bit sockets, 1/2 inch square drive	
		9 pieces	**6 pieces, long**
		eShop	eShop
Length	mm	165	165
Width	mm	140	140
Height	mm	65	65
Supplied with: Bit sockets		9 pcs. size 4; 5; 6; 7; 8; 10; 12; 14; 17 mm	6 pcs. size 4; 5; 6; 7; 8; 10 mm
Presented in a		Textile wallet with hook and loop fastener	

TAKE IT EASY TOOL FINDER

With retainer function

4-17



63 9416

4-10



63 9417

Material: Chrome molybdenum steel, matt chrome-plated.
Application:
63 9516 – For internal Torx® screws with thread M4 – M14.
63 9517 – For internal Torx® screws with thread M4 – M10.

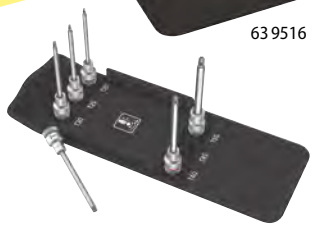
		63F 63 9516	63F 63 9517
		Wera	Wera
		Set of bit sockets, for Torx®, 1/2 inch square drive	
		9 pieces	**6 pieces, long**
		eShop	eShop
Length	mm	165	165
Width	mm	140	140
Height	mm	65	65
Supplied with: Bit sockets		9 pcs. size TX20; TX25; TX27; TX30; TX40; TX45; TX50; TX55; TX60	6 pcs. size TX20; TX25; TX30; TX40; TX45; TX50
Presented in a		Textile wallet with hook and loop fastener	

TAKE IT EASY TOOL FINDER

With retainer function



63 9516



63 9517

TiN-coated blades for extremely high bonding strength and resistance to abrasion.
With optimised corrosion protection.
Material: Sleeve of chrome vanadium steel, non-flaking, chrome-plated.
Blade of special steel with TiN coating.
Application:
63 9406 – For hexagon socket head screws with thread M6 – M24.
63 9506 – For internal Torx® screws with thread M4 – M14.

		630 63 9406	630 63 9506
		HAZET	HAZET
		Set of hexagon bit sockets, TiN-coated, 1/2 inch square drive	Set of bit sockets, for Torx®, TiN-coated, 1/2 inch square drive
		9 pieces	
		eShop	eShop
Length	mm	185	185
Width	mm	153	153
Height	mm	52	52
Supplied with: Bit sockets		9 pcs. No. 643233 size 5; 6; 7; 8; 9; 10; 12; 14; 17	9 pcs. size TX20; TX25; TX27; TX30; TX40; TX45; TX50; TX55; TX60
Presented in		Smart case with stand-up function.	

5-17



63 9406



63 9506

Drive part 1/2 inch

½″

Material selection and special forging method guarantee optimal functioning and long life.
Standard: External square drive to **DIN 3120-A 12.5** with spring ball.

Ratchet reversible

With reversing lever for right-hand and left-hand threads.
Standard: **DIN 3122-D 12.5**
Material:
64 0025/0190/0160 – Chrome vanadium steel, chrome-plated.
64 0100/0200 – Chrome alloy steel, non-flaking, chrome-plated over nickel.


64 0025


64 0100


64 0200


64 0160


64 0190

Type			1/2	overall length mm	No. of teeth
61A 64 0025	Garant	Reversible ratchet, 1/2 inch with ejector	eShop ■	263	40
63A 64 0100	STAHLWILLE	Reversible ratchet, 1/2 inch	eShop	266	36
63A 64 0200	STAHLWILLE	Reversible ratchet, 1/2 inch extra long	eShop	380	36
630 64 0160	HAZET	Reversible ratchet, 1/2 inch	eShop	275	32
62A 64 0190	HOLEX	Reversible ratchet, 1/2 inch with ejector	eShop ■	255	40

Reversible flexi-head ratchet with ejector

With reversing lever for right-hand and left-hand threads.
Standard: **DIN 3122-D 12.5**
Material: Chrome vanadium steel, chrome-plated.


64 0235


64 0237

				overall length mm	No. of teeth
63R 64 0235	Koken	Flexi-head ratchet, 1/2 inch with ejector	eShop	330	24
62A 64 0237	HOLEX		eShop	285	72

Heavy-duty ratchet driver "Koloss" with hammer function

Heavy-duty ratchet driver with forged hammer head and push-through square. Double-release toothing for only 6° working arc. Hollow end to the handle for extension or for spreader and centring mandrel.
Application: 2 tools in one for heavy bolt-tightening / assembly work e. g. in plant installation, shipbuilding, scaffolding, maintenance work etc.
Supplied with: Ratchet with protective elastomer pad and nylon belt strap.
Note: Matching 290 mm extension No. 640260 and spreader and centring mandrel No. 640270.

Extremely robust – for loads up to 600 Nm


64 0250

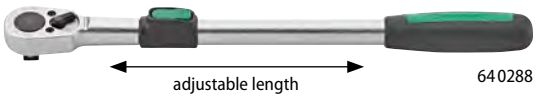

Double-release toothing


Hollow end to the handle

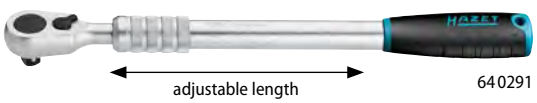
				overall length mm	No. of teeth
63F 64 0250	Wera	Heavy-duty ratchet, 1/2 inch "Koloss" with hammer function	eShop	340	30

Reversible telescopic ratchet

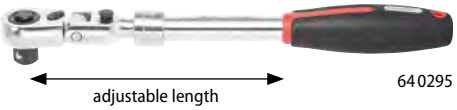
Fixing is performed by the locking ring. With reversing lever for right-hand and left-hand threads.
64 0288 – Convenient, simple and fast adjustment of the lengths using a rocker switch, even one-handed. Five latch steps with extension lengths of 410 mm, 465 mm, 520 mm, 575 mm and 630 mm. Maximum permissible torque 512 Nm.
64 0291 – Steplessly extendable from 414 – 614 mm length. Reversible fine-tooth ratchet with 90 teeth. Maximum permissible torque 1000 Nm.
64 0295 – Extendable from 290 – 430 mm length in 6 stages. **With lockable swivel head and ejector**. Maximum permissible torque 600 Nm.



64 0288



64 0291



64 0295

Type			1/2	overall length mm	No. of teeth
63A 64 0288	STAHLWILLE	Telescopic ratchet, 1/2 inch extendable	eShop	410 – 630	36
630 64 0291	HAZET	Steplessly extendable telescopic precision ratchet 1/2 inch	eShop	414 – 614	90
62A 64 0295	HOLEX	Extendable telescopic precision ratchet, 1/2 inch	eShop	290 – 430	72

Precision ratchet with extension

½″

With reversing lever for right-hand and left-hand threads. With ejector.
Material: Chrome molybdenum steel, matt chrome-plated.
Supplied with: Precision ratchet with extension 290 mm.

				overall length mm	No. of teeth
63F 64 0385	Wera	Precision ratchet, 1/2 inch with ejector, 290 mm extension	eShop	280 – 505	72


64 0385

Precision ratchet push-through, with ejector

With captive push-through square for reversible right and left-hand action. With ejector.
Material: Chrome molybdenum steel, matt chrome-plated.

				overall length mm	No. of teeth
63F 64 0390	Wera	Precision ratchet "Zyklop Metal" push-through square drive 1/2 inch with ejector	eShop	281	76


64 0390

Reversible precision ratchet

With reversing lever for right-hand and left-hand threads. With ejector.
Material: Chrome molybdenum steel, matt chrome-plated.

				overall length mm	No. of teeth
63F 64 0395	Wera	Precision ratchet "Zyklop Metal" reversible, 1/2 inch with ejector	eShop	281	72


64 0395

64 0435 – With ejector and reversing lever for right-hand and left-hand threads, working arc 5°.
64 0440 – With ejector, reversing lever for right-hand and left-hand threads and QuickRelease, working arc 4.5°.
64 0450 – With reversing disc for right-hand and left-hand threads, working arc 6°.
64 0480/0483 – With reversing lever for right-hand and left-hand threads, working arc 4°.
Material:
64 0435/0480/0483 – Chrome vanadium steel, chrome-plated.
64 0450/0440 – Chrome alloy steel, non-flaking, chrome-plated over nickel.


64 0435


QuickRelease 64 0440


64 0450


64 0480

Type			1/2	overall length mm	No. of teeth
61A 64 0435	Garant	Reversible precision ratchet, 1/2 inch with ejector	eShop	264	72
63A 64 0450	STAHLWILLE	Reversible precision ratchet, 1/2 inch	eShop	265	60
63O 64 0480	HAZET		eShop	275	90
63A 64 0440	STAHLWILLE	Reversible precision ratchet, 1/2 inch with ejector **QuickRelease**	eShop	266	80
63O 64 0483	HAZET	Reversible precision ratchet, extra long, 1/2 inch	eShop	415	90

Double load capacity (static and dynamic in relation to DIN)


64 0483

Precision reversible ratchet, with swivel head

Ratchet head can be swivelled with defined engagement positions at 0° (use like a screwdriver) and 75° and 90° positions to either side. Working arc 5°, with ejector and reversing plate for right-hand and left-hand threads.

				overall length mm	No. of teeth
63F 64 0490	Wera	Precision ratchet "Zyklop" reversible, 1/2 inch **with swivel head and ejector**	eShop	277	72


64 0490

Swivel head



Precision ratchet, with twist handle

For conventional use 6° working arc, for use with the swivel handle 0° working angle.
With ejector and reversing disc for right-hand and left-hand rotation.

				overall length mm	No. of teeth
63V 64 0495	FACOM	Reversible precision ratchet, 1/2 inch with twist handle and ejector	eShop	300	60


64 0495

Twist handle

Push-through ratchet

½″

With **push-through square** for reversible right-hand and left-hand action. With 2-component handle.
Material: Chrome vanadium steel, chrome-plated.



64 0520

Type			1/2	overall length mm	No. of teeth
66A 64 0520	HEYCO	Push-through ratchet, 1/2 inch	eShop	270	30

Swivel handle

Joint with 180° arc. With 2-component handle.
Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.


64 1200

overall length		mm	396	468	610
63A 64 1200	STAHLWILLE	Swivel handle, 1/2 inch	eShop	eShop	eShop
overall length		mm	396	468	610

Wheel nut wrench, extendable

Very sturdy design, drop forged. Extendable from 303 – 535 mm.
Material: Chrome vanadium steel, chrome-plated.



64 1220

63O 64 1220	HAZET	Wheel nut wrench extendable, 1/2 inch	eShop
overall length		mm	303 – 535

Crank

Swing radius 105 mm. The QuickRelease locking system prevents inadvertent release or loss of the tool.
With steel handle.
Standard: **DIN 3122-B 12.5**
Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.


QuickRelease 64 1801

Type			1/2
63A 64 1801	STAHLWILLE	Crank, 1/2 inch **QuickRelease**	eShop
overall length		mm	456

T-handle

T-handle with movable sliding head.
64 1350 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.
Standard: **DIN 3122-A 12.5**
Material:
64 1300/1350 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
64 1329/1320 – Chrome vanadium steel, chrome-plated.


64 1329


64 1300


64 1320


QuickRelease 64 1350

overall length		mm	295	300	overall length mm
61A 64 1329	Garant		eShop ■	–	295
63A 64 1300	STAHLWILLE	T-handle, 1/2 inch	–	eShop	300
62A 64 1320	HOLEX		eShop ■	–	295
63A 64 1350	STAHLWILLE	T-handle, 1/2 inch **QuickRelease**	–	eShop	300

½″

Adaptor, 1/2 inch

Material selection and special forging process guarantee optimal functioning and long life.

Standard: External square drive to **DIN 3120-A 12.5** with sprung ball, internal square drive to **DIN 3120-C 12.5** with grooves.

Suitable for: Manual use.

Ratchet attachment, reversible

Reversible, for right-hand and left-hand threads.

Suitable for: For drive components No. 641200 – 641350 and 641800, but also as a ratchet for torque wrenches with rigid 1/2 inch square drive.

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.



64 0800

63A	64 0800	STAHLWILLE Ratchet attachment, 1/2 inch	eShop
overall length		mm	68
No. of teeth			20

Extension

64 1045 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.

64 1029/1000 – Drives and connectors can be assembled "blind" due to chamfered edges on male and female couplings and four snap grooves. With "collar" for totally solid but freely interchangeable fit.

Standard: **DIN 3123-B 12.5**

Material:

64 1000/1045 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

64 1029/1020 – Chrome vanadium steel, chrome-plated.



64 1029



64 1000



64 1020



QuickRelease 64 1045

overall length			mm	50	75	125	130	250	255
61A	64 1029	Garant	Extension, 1/2 inch	eShop	eShop ■	eShop ■	–	eShop ■	–
63A	64 1000	STAHLWILLE		eShop ■	eShop ■	–	eShop ■	–	eShop ■
62A	64 1020	HOLEX		eShop	eShop ■	eShop ■	–	eShop ■	–
63A	64 1045	STAHLWILLE	Extension, 1/2 inch **QuickRelease**	eShop	eShop	–	eShop	–	eShop

"Wobble" extension

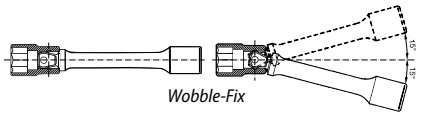
"Blind" interlocking possible due to bevelled edges on male and female coupling. Pivot angle up to 15° available to either side.

64 1129/1135 – Two-stage extension, can be fixed by registration.

Material:

64 1134 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

64 1129/1135 – Chrome vanadium steel, chrome-plated.



Wobble-Fix





64 1129



64 1135



64 1134

overall length			mm	50	75	125	130	250	255
61A	64 1129	Garant	Extension, 1/2 inch **"Wobble-Fix"**	–	eShop	eShop	–	eShop	–
63R	64 1135	Koken		eShop	–	eShop	–	eShop	–
63A	64 1134	STAHLWILLE	Extension, 1/2 inch **"Wobble Drive"**	eShop	eShop	–	eShop	–	eShop

Universal joint

64 1650 – The **QuickRelease** locking system prevents inadvertent release or loss of a tool.

64 1629/1600 – Drives and connectors can be assembled "blind" due to chamfered edges on male and female couplings and four snap grooves.

Standard: **DIN 3123-C 12.5**

Material:

64 1600/1650 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

64 1629/1620 – Chrome vanadium steel, chrome-plated.



64 1629



64 1600



64 1620



QuickRelease 64 1650

Type			1/2	overall length mm
61A	64 1629	Garant	eShop ■	67.5
63A	64 1600	STAHLWILLE Universal joint, 1/2 inch	eShop	71
62A	64 1620	HOLEX	eShop ■	67.5
63A	64 1650	STAHLWILLE Universal joint, 1/2 inch **QuickRelease**	eShop	80

½″

Hexagon socket, 1/2 inch, short

Forged from high quality steel, internally bevelled for easy fitting to bolt heads. Square socket drive with close tolerances for secure fit on the drive attachment. Internal square to **DIN 3120.**

Bi-hexagon socket

64 2100 – Optimum grain orientation due to special forging process. Close tolerance width across flats. No rounding of bolt corners, nuts and bolt heads are protected. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish. **AS drive** profile.

64 2129 – **Close tolerance widths across flats** protects nuts and bolt heads. **Thin walls** for access to restricted places. Bi-hexagon (double hexagon) with **HT Drive** profile that protects the corners of nuts and bolt heads.

Standard: **DIN 3124**

Material:

64 2100 – HPQ® high performance steel, non-flaking chrome-plated over nickel.

64 2120/2129 – Chrome vanadium steel, chrome-plated.

Note:

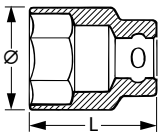
64 2120/2129 – GARANT and HOLEX bi-hex sockets also available in imperial sizes (GARANT: No. 642132; HOLEX: No. 642122).



HT drive profile 64 2129



AS drive *profile* 64 2100





64 2120

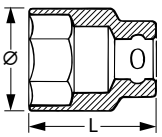
Width across flats	mm	8	9	10	11	12	13	14	15	16	17	18	19	20
61A 64 2129 Garant		eShop	eShop	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63A 64 2100 STAHLWILLE® Bi-hexagon socket, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 64 2120 HOLEX		eShop	–	eShop	eShop	eShop	eShop ■	eShop	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end (64 2129)	mm	12.5	14	15.4	16.6	17.9	19.1	20.4	21.4	22.6	24.1	25.4	26.5	27.8
Ø drive output end (64 2100)	mm	13	13.7	14.5	15.8	17	18.3	19.9	21.2	22.4	24	24.7	26.2	27.2
Ø drive output end (64 2120)	mm	12.5	–	15.4	16.6	17.9	19.1	20.4	21.6	22.9	24.1	25.4	26.5	27.8
Length (64 2129)	mm							38						
Length (64 2100)	mm	38	38	38	38	38	38	38	38	38	38	38	38	42
Length (64 2120)	mm	38	–	38	38	38	38	38	38	38	38	38	39	39

Width across flats	mm	21	22	23	24	25	26	27	28	30	32	34	36
61A 64 2129 Garant		eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	–
63A 64 2100 STAHLWILLE® Bi-hexagon socket, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 64 2120 HOLEX		eShop ■	eShop ■	–	eShop ■	–	–	eShop ■	–	eShop ■	eShop ■	–	eShop
Ø drive output end (64 2129, 64 2120)	mm	28.5	29.9	31.1	32	–	34.5	36	37.5	39.8	42	45	48
Ø drive output end (64 2100)	mm	28.7	29.7	30.7	32	33.2	34.4	36.2	37.4	39.7	42.2	45	48
Length (64 2129)	mm	38	41	41	41	–	44	44	44	44	44	44	–
Length (64 2100)	mm	42	42	42	42	42	42	45	45	45	47	47	52
Length (64 2120)	mm	39	41	–	41	–	–	44	–	44	44	–	50

Bi-hexagon socket, inch sizes

Close tolerance widths across flats protects nuts and bolt heads. **Thin walls** for access to restricted places. Bi-hex **HT drive** profile protects the corners of nuts and bolt heads.

Material: Chrome vanadium steel, chrome-plated.





HT drive *profile* 64 2132

Width across flats	in	3/8	7/16	1/2	9/16	5/8	11/16	3/4
61A 64 2132 Garant Bi-hexagon socket, 1/2 inch		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end	mm	15.4	17.3	19.1	20.6	22.6	24.6	26.5
Length	mm				38			

Width across flats	in	13/16	7/8	15/16	1	1.1/16	1.1/8	1.3/16	1.1/4
61A 64 2132 Garant Bi-hexagon socket, 1/2 inch		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end	mm	28.5	29.9	32	34	36	37.7	40	42
Length	mm	38	41	41	41	44	44	44	44

Hexagon socket

64 2200 – Optimum grain orientation due to special forging process. Close tolerance width across flats. No rounding of bolt corners, nuts and bolt heads are protected. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish. **AS drive** profile.

64 2229 – **Close tolerance widths across flats** protects nuts and bolt heads. **Thin walls** for access to restricted places. Hexagon with **HT drive** profile protects the corners of nuts and bolts.

Standard: **DIN 3124**

Material:

64 2200 – HPQ® high performance steel, non-flaking chrome-plated over nickel.

64 2220/2229 – Chrome vanadium steel, chrome-plated.

Note:

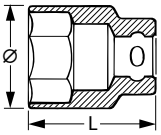
64 2220/2229 – GARANT and HOLEX hex sockets also available in imperial sizes (GARANT: No. 642232; HOLEX: No. 642222).



***HT drive** profile* 64 2229



***AS drive** profile* 64 2200





64 2220

Width across flats	mm	8	9	10	11	12	13	14	15	16	17	18	19
61A 64 2229 Garant		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
63A 64 2200 STAHLWILLE® Hexagon socket, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 64 2220 HOLEX		eShop	–	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop ■	eShop	eShop ■
Ø drive output end (64 2229)	mm	12.5	14	15.4	16.6	17.9	19.1	20.4	21.4	22.6	24.1	25.4	26.5
Ø drive output end (64 2200)	mm	13	13.7	14.5	15.8	17	18.3	19.9	21.2	22.4	24	24.7	26.2
Ø drive output end (64 2220)	mm	12.5	–	15.4	16.6	17.9	19.1	20.4	21.6	22.9	24.1	25.4	26.5
Length	mm	38											

Width across flats	mm	20	21	22	23	24	25	26	27	28	30	32	34	36
61A 64 2229 Garant		eShop ■	eShop ■	eShop ■	eShop	eShop ■	–	eShop	eShop ■	eShop	eShop ■	eShop ■	eShop	–
63A 64 2200 STAHLWILLE® Hexagon socket, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 64 2220 HOLEX		eShop	eShop	eShop ■	–	eShop ■	–	–	eShop	–	eShop ■	eShop	–	eShop
Ø drive output end (64 2229, 64 2220)	mm	27.8	28.5	29.9	31.1	32	–	34.5	36	37.5	39.8	42	45	48
Ø drive output end (64 2200)	mm	27.2	28.7	29.7	30.7	32	33.2	34.4	36.2	37.4	39.7	42.2	45	48
Length (64 2229, 64 2220)	mm	38	38	41	41	41	–	44	44	44	44	44	44	50
Length (64 2200)	mm	42	42	42	42	42	42	42	45	45	45	47	47	52

Hexagon Surface Drive socket

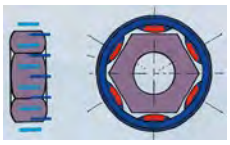
Surface Drive

The **Surface Drive** socket opening allows a tight fit and higher effectiveness. The pressure works directly on the faces of the nuts and bolts; weaker corners are protected. Intermediate sizes e.g. in inches (A/F, BSF, BSW) and rounded heads can be tightened or loosened using the Surface Drive.

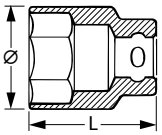
Standard: **DIN 3124**

Material: Chrome vanadium steel, chrome-plated.

inch



mm





64 2325

Width across flats	mm	8	9	10	11	12	13	14	15	16	17
61A 64 2325 Garant Surface Drive hexagon socket, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
suitable for inches (American sizes)	in	5/16	–	3/8	7/16; 13/32	15/32	1/2	17/32	9/16; 19/32	5/8	21/32
Ø drive output end	mm	12.5	14	15.4	16.6	17.9	19.1	20.4	21.4	22.6	24.1
Length	mm	38									

Width across flats	mm	18	19	21	22	24	27	30	32	34	36
61A 64 2325 Garant Surface Drive hexagon socket, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
suitable for inches (American sizes)	in	11/16	3/4	13/16	–	15/16	1.1/16	1.3/16	1,1/4	–	–
Ø drive output end	mm	25.4	26.5	28.5	29.9	32	36	39.8	42	45	48
Length	mm	38	38	38	41	41	44	44	44	44	50

Socket for Torx® screws

Optimum grain orientation due to special forging process. Close tolerance width across flats. No rounding of bolt corners. Nuts and bolt heads are protected. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.





64 2700

Torx® profile		E10	E11	E12	E14	E16	E18	E20	E24
63A 64 2700 STAHLWILLE® Socket, 1/2 inch for Torx®		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
A	mm	9.4	10.1	11.1	12.9	14.7	16.6	18.4	22.1
Ø drive output end	mm	13	14	14.9	16.7	19	21	23.5	27.8
Length	mm	38	38	38	38	38	38	38	41.2

½″

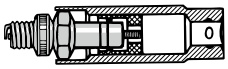
Hexagon socket, 1/2 inch, deep

Forged from high quality steel, internally bevelled for easy fitting to bolt heads. Square socket drive with close tolerances for secure fit on the drive attachment. Internal square to **DIN 3120.**

Bi-hexagon socket for spark plugs

With rubber insert for holding the spark plug.
Optimum grain orientation due to special forging process. Close tolerance width across flats. No rounding of bolt corners, nuts and bolt heads are protected. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish.

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.





***AS drive** profile* 64 2450

Width across flats	mm	16	20,8
○ 63A **64 2450** STAHLWILLE®	Bi-hexagon spark plug socket, 1/2 inch	eShop	eShop
Width across flats	in	5/8	13/16
∅ drive output end	mm	22.4	27.7
Length	mm	83	
Retention mechanism for spark plugs		Rubber retainer	

Bi-hexagon socket, deep

64 2500 – Optimum grain orientation due to special forging process. Close tolerance width across flats. No rounding of bolt corners, nuts and bolt heads are protected. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish. Bi-hexagon with **AS drive** profile.

64 2529 – **Close tolerance widths across flats** protects nuts and bolt heads. **Thin walls** for access to restricted places. Bi-hex **HT drive** profile protects the corners of nuts and bolt heads.

Standard: **DIN 3124-L**

Material:

64 2500 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

64 2529/2520 – Chrome vanadium steel, chrome-plated.

Note:

64 2529/2520 – GARANT and HOLEX bi-hex sockets, long also available in imperial sizes (GARANT: No. 642532; HOLEX: No. 642522).



***HT drive** profile* 64 2529



***AS drive** profile* 64 2500



64 2520

Width across flats	mm	9	10	11	12	13	14	15	16	17	18
○ 61A **64 2529** Garant		–	eShop	–	–	eShop	eShop	eShop	eShop	eShop	eShop
○ 63A **64 2500** STAHLWILLE®	Bi-hexagon socket deep, 1/2 inch	–	eShop	–	–	eShop	eShop	eShop	eShop	eShop	eShop
○ 62A **64 2520** HOLEX		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end (64 2529)	mm	–	15.4	–	–	19.1	20.4	21.3	22.5	24.1	25.4
∅ drive output end (64 2500)	mm	–	14.5	–	–	18.3	19.9	21.2	22.4	24	24.7
∅ drive output end (64 2520)	mm	14	15.4	16.6	17.9	19.1	20.4	21.6	22.9	24.1	25.4
Length (64 2529, 64 2520)	mm	77									
Length (64 2500)	mm	–	83	–	–	83	83	83	83	83	83

Width across flats	mm	19	20	21	22	23	24	27	28	30	32
○ 61A **64 2529** Garant		eShop	–	eShop	eShop	–	eShop	eShop	–	eShop	eShop
○ 63A **64 2500** STAHLWILLE®	Bi-hexagon socket deep, 1/2 inch	eShop	–	eShop	eShop	–	eShop	eShop	–	eShop	eShop
○ 62A **64 2520** HOLEX		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end (64 2529)	mm	26.5	–	28.5	29.9	–	32	36	–	39.8	42
∅ drive output end (64 2500)	mm	26.2	–	28.7	29.7	–	32	36.2	–	39.7	42.4
∅ drive output end (64 2520)	mm	26.6	27.8	28.5	29.9	31.1	32	36	37.5	39.8	42
Length (64 2529, 64 2520)	mm	77									
Length (64 2500)	mm	83	–	83	83	–	83	83	–	83	83

Hexagon socket with universal joint

Optimum grain orientation due to special forging process. Close tolerance width across flats. No rounding of bolt corners, nuts and bolt heads are protected. Hardened in an oil bath, stress-relieved and distortion-free for a precision fit. Smoothed finish. Ring end with **AS drive** profile.

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.



***AS drive** profile* 64 2600

Width across flats	mm	13	16	17	18	19
○ 63A **64 2600** STAHLWILLE®	Hexagon socket with universal joint, 1/2 inch	eShop	eShop	eShop	eShop	eShop
∅ drive output end	mm	18.4	22.4	23.5	25	26.3
Length	mm	70	69	70	70	70

½″

Bit socket, 1/2 inch, short

High quality products made of two parts. Hardened body for receiving and transferring drive energy. Closely toleranced square socket drive for a safe and wobble-free fit on the drive tool. Square socket drive to **DIN 3120**.

Hexagon bit socket, for socket head screws

Standard: **DIN 7422**

Material:

64 3200 – Chrome alloy steel, non-flaking, chrome-plated over nickel. Bit made of hard toughened steel, bright finish.

64 3220 – Chrome vanadium steel, chrome-plated.

64 3229 – Chrome vanadium steel, chrome-plated. Bit made of hard tough material, bright finish.

Note:

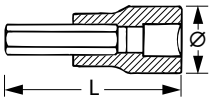
64 3229/3220 – GARANT and HOLEX hexagon bit sockets also available in imperial sizes (GARANT: No. 643232; HOLEX: No. 643222).



64 3229



64 3200





64 3220

Hexagon	mm	4	5	6	7	8	10	11	12	14	17	19
61A 64 3229 Garant		eShop	eShop	eShop ■	eShop	eShop ■	eShop ■	–	eShop ■	eShop ■	eShop ■	eShop ■
63A 64 3200 STAHLWILLE Hexagon bit socket, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 64 3220 HOLEX		eShop	eShop	eShop ■	eShop	eShop ■	eShop ■	–	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive end (64 3229)	mm	22.5	22.5	22.5	22.5	22.5	22.5	–	22.5	25	28	30
Ø drive end (64 3200)	mm	22.7	22.7	22.7	22.7	22.7	22.7	22.7	23.7	23.7	27.5	31
Ø drive end (64 3220)	mm	24	24	24	24	24	24	–	24	24	27	29
Length (64 3229)	mm	60	60	60	60	60	60	–	61	61	61	61
Length (64 3200)	mm						60					
Length (64 3220)	mm	58	58	58	58	58	58	–	60	60	60	60

Hexagon bit socket, TiN coated, for socket head screws

TiN-coated blades for extremely high bonding strength and resistance to abrasion. With optimised corrosion protection.

Standard: **DIN 7422**

Material: Sleeve of chrome vanadium steel, non-flaking, chrome-plated. Blade of special steel with TiN coating.

Application: Ideally suited to sustained loads such as series screw fastenings.



64 3233

Hexagon	mm	4	5	6	7	8	10	12	14	17	19
630 64 3233 HAZET Hexagon bit socket, 1/2 inch **TiN coated**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end	mm	23	23	23	23	23	23	24.6	24.6	28.5	31.5
Length	mm	60									

Hexagon bit socket, inch sizes, for socket head screws

Material: Chrome vanadium steel, chrome-plated. Bit made of hard tough material, bright finish.



64 3232

Hexagon	in	1/4	5/16	3/8	5/8	1/2	9/16	3/4
61A 64 3232 Garant Hexagon bit socket, 1/2 inch **imperial version**		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive end	mm	22.5	22.5	22.5	27	25	25	30
Length	mm	60						

Hexagon bit socket with pin guide, for socket head screws

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel. Bit made of hard toughened steel, bright finish.

Application: For Ribe CS screws to DIN 6912.



64 3400

Hexagon	mm	5	6	8	10	12	14
63A 64 3400 STAHLWILLE Hexagon bit socket with pin guide, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end	mm	22.7	22.7	22.7	22.7	23.7	23.7
Length	mm	60					

Bit socket, for Torx® screws

Material:

64 3629 – Chrome alloy steel, chrome-plated. Bit made of hard tough material, bright finish.
64 3633 – Chrome vanadium steel, chrome-plated.
64 3650 – Chrome alloy steel, non-flaking, chrome-plated over nickel. Bit made of hard toughened steel, bright finish.



64 3629



64 3650



64 3633

Torx® profile		TX20	TX25	TX27	TX30	TX40	TX45	TX50	TX55	TX60	TX70
61A 64 3629 Garant	Bit socket, for Torx®, 1/2 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
63A 64 3650 STAHLWILLE		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 64 3633 HOLEX		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
A	mm	3.8	4.4	5	5.5	6.6	7.8	8.8	11.2	13.2	15.5
Ø drive end (64 3629)	mm	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	–
Ø drive end (64 3650)	mm	22.7	22.7	22.7	22.7	22.7	22.7	22.7	23.7	23.7	27.5
Ø drive end (64 3633)	mm	22	22	22	22	22	22	22	22	22	–
Length (64 3629)	mm	60	60	60	60	60	60	60	60	60	–
Length (64 3650)	mm	55	55	55	55	55	55	55	58	58	60
Length (64 3633)	mm	55	55	55	55	55	55	55	55	55	–

Bit socket

Blade width	mm	12	14	16
63R 64 3600 Koken	Bit socket, for slot-head, 1/2 inch	eShop	eShop	eShop
Ø drive end	mm	23	24	24
Length	mm		60	
Blade thickness	mm	2	2.5	2.5


64 3600

Bit socket, trisquare

Standard: DIN 2324

Material:

64 2800 – Chrome alloy steel, non-flaking, chrome-plated over nickel. Bit made of hard toughened steel, bright finish.
64 2813 – Chrome vanadium steel, chrome-plated.

Application: For XZN screws.


64 2800

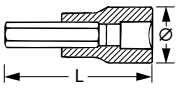

64 2813

for screws		M5	M6	M8	M10	M12	M14	M16
63A 64 2800 STAHLWILLE	Bit socket, trisquare, short, 1/2 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 64 2813 HOLEX		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end (64 2800)	mm	22.7	22.7	22.7	22.7	23.7	23.7	27.5
Ø drive end (64 2813)	mm	22	22	22	22	22	24	26
Length (64 2800)	mm				60			
Length (64 2813)	mm				55			

Bit socket, splined

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel. Bit made of hard toughened steel, bright finish.

Application: For Ribe CV screws.




64 3100

for screws		M6	M8	M10	M12	M14	M16
63A 64 3100 STAHLWILLE	Bit socket, splined, 1/2 inch	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end	mm	22.7	22.7	22.7	23.7	23.7	27.5
Length	mm	60	60	60	60	60	63

½″

Bit socket, 1/2 inch, long

High quality products made of two parts. Hardened body for receiving and transferring drive energy.
Closely toleranced square socket drive for a safe and wobble-free fit on the drive tool.
Square socket drive to **DIN 3120.**

Bit socket, hexagon, long, for socket head screws

Standard: **DIN 7422**

Material:

64 3300 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
Bit made of hard toughened steel, bright finish.

64 3313 – Chrome vanadium steel, chrome-plated.

64 3329 – Chrome vanadium steel, chrome-plated.
Bit made of hard tough material, bright finish.

64 3360 – Chrome vanadium steel, satin chromium plated.

Advantage:

64 3360 – Hexagon screwdriver set **with retainer ball**, for secure clamping to the connected screw.



64 3360_5


64 3329


64 3300


64 3313_5

Hexagon		mm	4	5	6	7	8	10	12	14
61A 64 3360	Garant	Hexagon bit socket, long, 1/2 inch **with retainer ball**	eShop	eShop	eShop	–	eShop	eShop	–	–
61A 64 3329			–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63A 64 3300	STAHLWILLE	Hexagon bit socket, long, 1/2 inch	–	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
62A 64 3313	HOLEX		–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end (64 3360)		mm	21.5	21.5	21.5	21.5	–	23.5	23.5	–
Ø drive end (64 3329)		mm	–	22.5	22.5	22.5	22.5	22.5	22.5	25
Ø drive end (64 3300)		mm	–	22.7	22.7	22.7	22.7	22.7	23.7	23.7
Ø drive end (64 3313)		mm	–	22	22	22	22	22	22	24
Length (64 3360, 64 3329)		mm	140							
Length (64 3300, 64 3313)		mm	–	120	120	120	120	140	140	140

Bit socket, hexagon, long, TiN coated, for socket head screws

TiN-coated blades for high bonding strength and resistance to abrasion. With optimised corrosion protection.

Standard: **DIN 7422**

Material: Sleeve of chrome vanadium steel, non-flaking, chrome-plated.
Blade of special steel with TiN coating.

Application: Ideally suited to sustained loads such as series screw fastenings.


64 3333

Hexagon		mm	5	6	7	8	10	12	14
63O 64 3333	HAZET	Hexagon bit socket, long, 1/2 inch **TiN coated**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end		mm	23	23	23	23	23	24.6	24.6
Length		mm	140						

Bit socket, hexagon with ball point, long, for socket head screws

Material:

64 3413 – Chrome vanadium steel, chrome-plated.

64 3439 – Chrome vanadium steel, satin chromium plated.

64 3450 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
Bit made of hard toughened steel, bright finish.

Application: For screw tightening at angles less than 25°.


64 3439_5


64 3450


64 3413_5

Hexagon		mm	5	6	8	10
61A 64 3439	Garant	Hexagon bit socket, long, 1/2 inch **with ball point**	eShop	eShop	eShop	eShop
63A 64 3450	STAHLWILLE		eShop	eShop	eShop	eShop
62A 64 3413	HOLEX		eShop	eShop	eShop	eShop
Ø drive end (64 3439)		mm	23.5			
Ø drive end (64 3450)		mm	22.7			
Ø drive end (64 3413)		mm	22			
Length (64 3439)		mm	140			
Length (64 3450, 64 3413)		mm	100			

Bit socket, long, for Torx® screws

Material:

64 3639 – Chrome vanadium steel, satin chromium plated.
64 3660 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
Bit made of hard toughened steel, bright finish.

Torx® profile			TX30	TX40	TX45	TX50	TX60
61A 64 3639	Garant	Bit socket, for Torx®, long, 1/2 inch	eShop	eShop	eShop	eShop	–
63A 64 3660	STAHLWILLE		eShop	eShop	eShop	eShop	eShop
A		mm	5.5	6.6	7.8	8.8	13.2
∅ drive end (64 3639)		mm	23.5	23.5	23.5	23.5	–
∅ drive end (64 3660)		mm	22.7	22.7	22.7	22.7	23.7
Length (64 3639)		mm	140	140	140	140	–
Length (64 3660)		mm	120	140	140	140	140



64 3639_TX30



64 3660

Bit socket, trisquare

Standard: **DIN 2324**

Material:

64 2900 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
Bit made of hard toughened steel, bright finish.
64 2913 – Chrome vanadium steel, chrome-plated.

Application: For XZN screws.

for screws			M8	M10	M12
63A 64 2900	STAHLWILLE	Bit socket, trisquare, long, 1/2 inch	eShop	eShop	eShop
62A 64 2913	HOLEX		eShop	eShop	eShop
∅ drive end (64 2900)		mm	22.7		
∅ drive end (64 2913)		mm	22		
Length		mm	140		


64 2900


64 2913

½″

HOLEX Drive part / adapter / socket, fully insulated to VDE

With plastic insulation **up to 1000 V** to **DIN EN IEC 60900 / VDE 0682-201.**

Note: For working at voltages up to 1000 Volts. In safety areas only **fully insulated** tools (No. 643801 – 643809) may be used in combination.

Type		1/2	overall length mm
62A 64 3801	Reversible ratchet, 1/2 inch **VDE fully insulated**	eShop ■	250


64 3801

Type		1/2	overall length mm
62A 64 3803	T-handle, 1/2 inch **fully insulated**	eShop	200

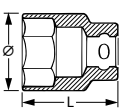

64 3803

overall length		mm	125	250
62A 64 3805	Extension, 1/2 inch **VDE fully insulated**		eShop	eShop


64 3805_125

Width across flats		mm	10	11	12	13	14	16
62A 64 3807	Hexagon socket, 1/2 inch **VDE fully insulated**		eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end		mm	21	22	23	24	26	27
Length		mm	59					

Width across flats		mm	17	18	19	22	24
62A 64 3807	Hexagon socket, 1/2 inch **VDE fully insulated**		eShop	eShop	eShop	eShop	eShop
∅ drive output end		mm	29	30.5	31	35	37
Length		mm	59				





64 3807_17

Hexagon		mm	5	6	8	10
62A 64 3809	Hexagon bit socket, 1/2 inch **VDE fully insulated**		eShop	eShop	eShop	eShop
Uninsulated blade length		mm	15			
Length		mm	116.5			



64 3809_5

½″

STAHLWILLE® Air filter claw, 1/2 inch

Application: For releasing air filters on HGV braking systems.

63A 64 2550	Air filter claw, 1/2 inch	eShop
Claw length	mm	60
overall height	mm	85
Clamping range	mm	100 – 145


64 2550

½″

HOLEX Clip bar for 1/2 inch sockets

Plastic bar with clips which can be slid into position.

Application: For storage and ready access to 1/2 inch sockets.

62A 64 3690	Clip bar for 1/2 inch sockets	eShop ■
overall length	mm	305
Number of mountings		14


64 3690

Socket set 3/4 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** External squares to DIN 3120-B 20 with spring pin, for sockets to DIN 3120-D 20 with hole and release button.

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.

	63A 64 4000 STAHLWILLE® Socket set 3/4 inch square drive **16 pieces**
	eShop
Length mm	575
Width mm	220
Height mm	86
Supplied with: 10 hexagon sockets	No. 644500 size 22; 24; 27; 30; 32; 34; 36; 41; 46; 50
1 sliding head	No. 645500
1 universal joint	1 pc.
2 extensions	No. 645400 200 and 400 mm
1 ratchet head	No. 645000
1 handle	No. 646200
Presented in a	sheet metal case

¾″ 22-50


64 4000

	63A 64 4100 STAHLWILLE® Socket set, 3/4 inch square drive **15 pieces**
	eShop
Length mm	575
Width mm	220
Height mm	86
Supplied with: 9 hexagon sockets	No. 644500 size 32; 34; 36; 38; 41; 46; 50; 55; 60
1 sliding head	No. 645500
1 universal joint	1 pc.
2 extensions	No. 645400 200 and 400 mm
1 ratchet head	No. 645000
1 handle	No. 646200
Presented in a	sheet metal case

¾″ 32-60


64 4100

Material: Chrome vanadium steel, chrome-plated.

	62A 64 4200 HOLEX Socket set 3/4 inch square drive **15 pieces**
	eShop
Length mm	540
Width mm	190
Height mm	80
Supplied with: 10 hexagon sockets	No. 644550 size 22; 24; 27; 30; 32; 34; 36; 41; 46; 50
1 T-handle with sliding head	1 pc.
1 universal joint	1 pc.
2 extensions	200 mm and 400 mm
1 ratchet	1 pc.
Presented in a	sheet metal case

¾″ 22-50


64 4200

3/4″

Hexagon socket, 3/4 inch

Forged from high quality steel, internally bevelled for easy fitting to bolt heads. Close tolerance jaw widths. Internal square to DIN 3120-D 20 with hole and release button.

Hexagon socket

Standard: **DIN 3124-S**

Material:

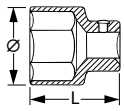
64 4500 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
64 4550 – Chrome vanadium steel, chrome-plated.

Width across flats	mm	19	21	22	24	27	30	32	34
○ 63A **64 4500** STAHLWILLE	Hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
○ 62A **64 4550** HOLEX	Hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end (64 4500)	mm	28.5	31	32	34	38.5	42	44.5	47
Ø drive output end (64 4550)	mm	29.2	31.2	32.2	34.2	38	42	44	47
Length (64 4500)	mm	50	50	51	51	54	58	58	60
Length (64 4550)	mm	50	50	50	51	52	54	56	56

Width across flats	mm	36	38	41	46	50	55	60
○ 63A **64 4500** STAHLWILLE	Hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop
○ 62A **64 4550** HOLEX	Hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end (64 4500)	mm	49.5	52	55.5	61	66	72	78
Ø drive output end (64 4550)	mm	50	52	56	62	68	74	80
Length (64 4500)	mm	60	64	67	73	80	80	80
Length (64 4550)	mm	58	60	64	66	70	76	78



***AS-Drive** profile* 64 4500





64 4550

Bi-hexagon socket, inch sizes (American inch sizes)

Standard: **DIN 3120-D 20**

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.

Width across flats	in	7/8	15/16	1	1.1/16	1.1/8	1.1/4	1.5/16
○ 63A **64 4600** STAHLWILLE	Bi-hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	33	34	37	38.5	41	44.5	46.5
Length	mm	51	51	52	54	57	58	59

Width across flats	in	1.3/8	1.1/2	1.5/8	1.3/4	1.7/8	2
○ 63A **64 4600** STAHLWILLE	Bi-hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	48.5	52	56	59.5	63.5	67
Length	mm	59	64	67	70	76	80



***AS-Drive** profile* 64 4600

Hexagon socket, deep

Standard: **DIN 3124-L**

Material:

64 4700 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
64 4705 – Chrome vanadium steel, chrome-plated.

Width across flats	mm	22	24	27	30	32	34	36	41
○ 63A **64 4700** STAHLWILLE	Hexagon socket deep, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
○ 62A **64 4705** HOLEX	Hexagon socket deep, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end (64 4700)	mm	32	34	38.5	42	44.5	47	49.5	55.5
Ø drive output end (64 4705)	mm	33.3	35.8	39.6	43.3	45.8	48.3	50.8	57.1
Length (64 4700)	mm	90							
Length (64 4705)	mm	85							



***AS-Drive** profile* 64 4700



64 4705

Bit socket, 3/4 inch

Forged of high quality steel. Internal square to DIN 3120-D 20 with hole and release button.

Standard: **DIN 7422**

Material:

64 4800 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
64 4805 – Chrome vanadium steel, chrome-plated.

Hexagon	mm	14	17	19	22
◉ 63A **64 4800** STAHLWILLE	Hexagon bit socket 3/4 inch	eShop	eShop	eShop	eShop
◉ 62A **64 4805** HOLEX	Hexagon bit socket 3/4 inch	eShop	eShop	eShop	eShop
Ø drive end (64 4800)	mm	34.7	34.7	34.7	40
Ø drive end (64 4805)	mm	36			
Length (64 4800)	mm	80			
Length (64 4805)	mm	78			

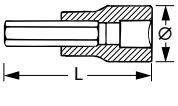
3/4″



64 4800



64 4805

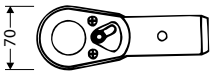


3/4″

Drive part / connection part, 3/4 inch



64 5000



Ratchet reversible

Standard: **DIN 3122-D 20**

				overall length mm	No. of teeth
63A 64 5000	STAHLWILLE	Ratchet head, 3/4 inch **without handle**	eShop	165	36
63A 64 5100		Ratchet head, 3/4 inch **with handle**	eShop	622	36
62A 64 5105	HOLEX		eShop	505	40



64 5100



64 5105

Ratchet with push-thru square drive

64 5300 – Forged; sturdy and practical design with profile shank. With push-through square drive. Right and left hand tightening by pushing the drive pin through.

Standard: **DIN 3122-C 20**



64 5300

				overall length mm	No. of teeth
66A 64 5300	HEYCO	Push-through ratchet, 3/4 inch	eShop	490	36



64 5310

66A 64 5310	HEYCO	Square push-through piece, 3/4 inch, separate	eShop

Extension

Standard: **DIN 3123-B 20**

overall length mm			95	100	200	400
63A 64 5400	STAHLWILLE	Extension, 3/4 inch	eShop	–	eShop	eShop
62A 64 5405	HOLEX		–	eShop	eShop	eShop



64 5400



64 5405

T-handle

Standard: **DIN 3122-A 20**

				overall length mm
63A 64 5500	STAHLWILLE	Sliding head without handle, 3/4 inch	eShop	61.5
63A 64 5600		T-handle, complete, 3/4 inch	eShop	510
62A 64 5605	HOLEX		eShop	500



64 5500



64 5600



64 5605

Universal joint

Standard: **DIN 3123-C 20**

				overall length mm
63A 64 6000	STAHLWILLE	Universal joint 3/4 inch	eShop	109



64 6000

Handle

With spring-mounted pin for non-slip connection to the working tool.

Suitable for: Ratchet head No. 645000 and sliding head No. 645500.



64 6200

				overall length mm
63A 64 6200	STAHLWILLE	Tommy bar for 3/4 inch	eShop	510

Ratchet attachment

Very sturdy design, reversible for right-hand and left-hand use.

Application: As ratchet attachment for drive components No. 645500 and 645605, but also as ratchet attachment to torque wrenches with 3/4 inch square drive.



64 6300

Square in			3/4
63A 64 6300	STAHLWILLE	Ratchet attachment, 3/4 inch	eShop
62A 64 6305	HOLEX		eShop
overall length (64 6300)		mm	106
overall length (64 6305)		mm	96
No. of teeth (64 6300)			44
No. of teeth (64 6305)			72



64 6305

STAHLWILLE® Socket set 1 inch

Drives / accessories to **DIN 3122 / 3123; sockets** to **DIN 3124.** External square to DIN 3120-B 25 with spring pin.
Internal squares to DIN 3120-D 25 with hole and release button.

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.

Application: For hexagon head screws / nuts with thread M30 – M52.

1″ | 46-60 | 65-80



		63A 64 6500
		Socket set, 1 inch square drive **14 pieces**
		eShop
Length	mm	785
Width	mm	200
Height	mm	122
Supplied with: 4 bi-hexagon – sockets		1 pc. each No. 647000 size 46; 50; 55; 60
4 sockets – single hexagon		1 pc. each No. 647100 size 65; 70; 75; 80
1 universal joint		1 piece
1 sliding head		No. 648200
1 handle		No. 648700
2 extensions		1 pc. each No. 648000 size 200; 410
1 ratchet head		No. 647500
Presented in		Sheet steel case

1″

Hexagon socket 1 inch

Bi-hexagon or single hexagon socket

Forged from high quality steel, internally bevelled for easy fitting to bolt heads. Close tolerance jaw widths. Internal square to DIN 3120 D 25 with hole and release button.

Standard: **DIN 3124**

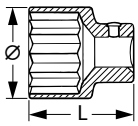
Material:
64 7000/7100 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
64 7050/7150 – Chrome vanadium steel, chrome-plated.



64 7000



64 7050



Width across flats	mm	30	32	36	41	46	50	55	60
63A 64 7000 STAHLWILLE® Bi-hexagon socket, 1 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 64 7050 HOLEX Bi-hexagon socket, 1 inch		–	–	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end (64 7000)	mm	42.5	45	49.5	55.5	61	66	72	78
Ø drive output end (64 7050)	mm	–	–	52	57	65	70	76	82
Length (64 7000)	mm	65	67	67	70	75	80	85	90
Length (64 7050)	mm	–	–	65	70	75	75	80	84

Width across flats	mm	65	70	75	80
63A 64 7100 STAHLWILLE® Hexagon socket, 1 inch		eShop	eShop	eShop	eShop
62A 64 7150 HOLEX Hexagon socket, 1 inch		eShop	eShop	eShop	eShop
Ø drive output end (64 7100)	mm	87	94	101	108
Ø drive output end (64 7150)	mm	88	94	100	105
Length (64 7100)	mm	105	110	115	120
Length (64 7150)	mm	87	93	97	103



64 7100

Hexagon bit socket

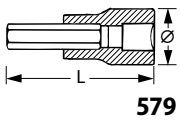
Standard: **DIN 7422**

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.



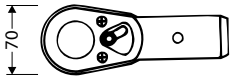
64 7300

Hexagon	mm	14	17	19	22	24	27
63A 64 7300 STAHLWILLE® Hexagon bit socket, 1 inch		eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end	mm	43	43	43	48	48	49
Length	mm	85	85	85	90	90	90



1″

Drive part / connection part, 1 inch



Ratchet reversible

64 7605 – Reversible for right-hand and left-hand use (36 teeth); handle and ratchet head are separate.
64 7500/7600 – Reversible for right-hand and left-hand use (36 teeth); handle and ratchet head are separate. Wearing parts are replaceable (spare parts set No. 647610).

Standard: **DIN 3122-D 25**
Material:
64 7605 – Chrome vanadium steel, chrome-plated.
64 7500/7600 – Chrome alloy steel, non-flaking, chrome-plated over nickel.


64 7500


64 7600


64 7605

			overall length mm	No. of teeth
63A 64 7500	STAHLWILLE	Ratchet head, 1 inch **without handle**	eShop	185	36
63A 64 7600		Ratchet head, 1 inch **with handle**	eShop	817	36
62A 64 7605	HOLEX		eShop	835	36

Extension

External squares to DIN 3120-B 25 with spring pin, for sockets to DIN 3120-D 25 with hole.

Standard: **DIN 3123-B 25**
Material:
64 8000 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
64 8005 – Chrome vanadium steel, chrome-plated.


64 8000


64 8005

overall length		mm	200	400	410
63A 64 8000	STAHLWILLE	Extension, 1 inch	eShop	–	eShop
62A 64 8005	HOLEX		eShop	eShop	–
overall length		mm	200	400	410

T-handle

Sliding head can be moved for the most suitable leverage. Spare sliding head without handle available under No. 648200 and spare handle available under No. 648700.

Standard: DIN 3122-A 25
Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.


64 8300

			overall length mm
63A 64 8300	STAHLWILLE	Tommy-bar, 1 inch **complete**	eShop	700

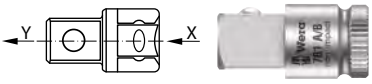
Increaser piece / reducer piece

External and internal square drives to DIN 3120.
64 9500/9550/9505/9555 – Forged external square drives with spring-mounted balls or pins, internal square drives with hole or snap grooves.
64 9520/9525 – Forged, external square drives with ball lock, square socket drives with ball catch groove for secure locking of the connected tool. Knurling at the end for good grip.

Standard: **DIN 3123-A**
Material:
64 9500/9505 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
64 9520/9525 – Chrome vanadium steel, satin chromium plated.
64 9550/9555 – Chrome vanadium steel, chrome-plated.

Note:
Size 2 – Does not satisfy the standard 3123-A.


64 9500

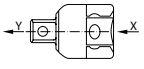


64 9520


64 9550


64 9505


64 9525




64 9555

Type			1	2	4	6	8
63A 64 9500	STAHLWILLE		eShop	eShop	eShop	eShop	eShop
63F 64 9520	Wera	Increaser piece	eShop	eShop	eShop	–	–
62A 64 9550	HOLEX		eShop	eShop	eShop	eShop	–
Drive square [x]		in	1/4	1/4	3/8	1/2	3/4
Drive square [y]		in	3/8	1/2	1/2	3/4	1

Type			3	5	7	9
63A 64 9505	STAHLWILLE		eShop ■	eShop	eShop	eShop
63F 64 9525	Wera	Reducer piece	eShop	eShop	–	–
62A 64 9555	HOLEX		eShop ■	eShop ■	eShop	–
Drive square [x]		in	3/8	1/2	3/4	1
Drive square [y]		in	1/4	3/8	1/2	3/4

Supplied with: (x–y) inch 1/4 – 3/8; 1/4 – 1/2; 3/8 – 1/2; 1/2 – 3/4.

Number of inserts		4
62A 64 9551	HOLEX Set of increaser pieces, 4 pieces	eShop
Supplied with: 1 pc. each reducer piece No. 649550		Size 1; 2; 4; 6



64 9551

Standard: **DIN 3123-A**
Supplied with: (x–y) inch 3/8 – 1/4; 1/2 – 3/8; 3/4 – 1/2.

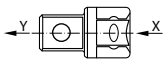
Number of inserts		3
62A 64 9556	HOLEX Set of reducer pieces, 3 pieces	eShop
Supplied with: 1 pc. each reducer piece No. 649555		Size 3; 5; 7



64 9556

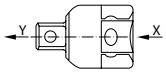
Adapter set

Compact set with adapter pieces, consisting of 3 increaser and 2 reducer pieces.
64 9515 – Supplied in an ABS plastic box.
64 9528 – Supplied on a textile belt.
Standard: **DIN 3123-A**
Material:
64 9515 – Chrome alloy steel, non-flaking, chrome-plated over nickel.
64 9528 – Chrome vanadium steel, satin chromium plated.
Supplied with:
64 9515 – (x–y) inch 1/4 - 3/8; 3/8 - 1/2; 1/2 - 3/4; 3/8 - 1/4; 1/2 - 3/8.
1 pc. each increaser piece No. 649500 size 1; 4; 6.
1 pc. each reducer piece No. 649505 size 3; 5.
64 9528 – (x-y) inch 1/4 - 3/8; 1/4 - 1/2; 3/8 - 1/2; 3/8 - 1/4; 1/2 - 3/8.
1 pc. each increaser piece No. 649520 size 1; 2; 4.
1 pc. each reducer piece No. 649525 size 3; 5.



Increaser piece


64 9515



Reducer piece



64 9528

Number of inserts		5
63A 64 9515	STAHLWILLE	eShop
63F 64 9528	Wera Adapter set, 5 pieces	eShop

HOLEX Converter

Material: Chrome vanadium steel, phosphated.
Application: As adapter to allow sockets with internal square drives to be driven by impact / impulse wrenches with internal hexagon drives.
65 0002 – Except size 6.

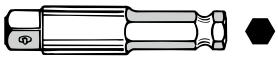

65 0002_9


65 0006_9

Type		1	2	2/100	3	9	4	5	6
62A 65 0002	Converter with spring pin	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62A 65 0006	Converter with sprung ball	–	eShop	eShop	eShop	eShop	–	eShop	–
overall length	mm	50	50	100	50	50	75	75	75
Square drive	in	1/4	1/4	1/4	3/8	1/2	3/8	1/2	1/4
Machine drive		A 5.5	E 6.3 (1/4 inch)	E 6.3 (1/4 inch)	E 6.3 (1/4 inch)	E 6.3 (1/4 inch)	E 11.2 (7/16 inch)	E 11.2 (7/16 inch)	Round shank ∅ 7 mm with wing tangs


Drive A 5.5


Drive E 6.3


Drive E 11.2


Drive ∅ 7 mm with wing tangs

HOLEX Adapter shank for impact wrenches

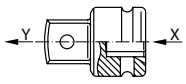
Sturdy shape, suitable for impact wrenches and impulse wrenches with 1/4 inch hex (hex socket) drives.
With spring ball and release function – inserts are securely held.
Material: Chrome vanadium steel. Surface burnished.
Application: As adapter to allow sockets with internal square drives to be driven by impact / impulse wrenches with internal hexagon drives.


65 0009_3/75


65 0009_9/85

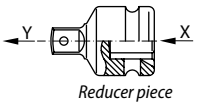
Type		2/75	2/150	3/75	3/150	9/85
62D 65 0009	Adapter shank for impact wrenches	eShop	eShop	eShop	eShop	eShop
overall length	mm	75	150	75	150	85
Square drive	in	1/4	1/4	3/8	3/8	1/2
Machine drive		E 6.3 (1/4 inch)				

Increaser piece / reducer piece (impact wrench attachment)



Increaser piece


65 0011_6



Reducer piece


65 0012_8

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.
65 0011 Size 4/0012 Size 4/0016 Size 3–7/0017 Size 3 – Output drive square with retaining pin.
Material: Chrome molybdenum steel, surface burnished.

Type			4	6	8	10
63R 65 0011	Koken	IMPACT increaser piece	eShop	eShop	eShop	–
62D 65 0012	HOLEX		eShop	eShop	eShop	eShop
Drive square [x]		in	3/8	1/2	3/4	1
Drive square [y]		in	1/2	3/4	1	1,1/2
overall length (65 0011)		mm	32.5	44	62	–
overall length (65 0012)		mm	36	48	63	100


65 0016_11

Type			3	5	7	9	11
63R 65 0016	Koken	IMPACT reducer piece	eShop	eShop	eShop	eShop	eShop
62D 65 0017	HOLEX		eShop	eShop	eShop	eShop	–
Drive square [x]		in	3/8	1/2	3/4	1	1,1/2
Drive square [y]		in	1/4	3/8	1/2	3/4	1
overall length (65 0016)		mm	25	37.5	54	66.5	98
overall length (65 0017)		mm	32	38	56	75	–


65 0017_7

HOLEX Socket for power screwdrivers (impact wrench socket) 1/4 inch

1/4″

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121. With nut and bolt protection profile similar to **AS-Drive** profile.
Material: Chrome molybdenum steel, surface burnished.

Socket hexagon

Standard: **DIN 3129**

Width across flats		mm	6	7	8	10	13
○ 62D 65 0040	IMPACT hexagon socket, 1/4 inch		eShop	eShop	eShop	eShop	eShop
∅ drive output end		mm	10	11.3	12.5	15	18.8
Length		mm			23		


65 0040

Width across flats		mm	6	7	8	10	13
○ 62D 65 0045	IMPACT hexagon socket, 1/4 inch **long**		eShop	eShop	eShop	eShop	eShop
∅ drive output end		mm	10	11.3	12.5	15	18.8
Length		mm			50		


65 0045

Width across flats		mm	6	7	8	10	13
○ 62D 65 0050	IMPACT hexagon socket, 1/4 inch **with magnet**		eShop	eShop	eShop	eShop	eShop
∅ drive output end		mm	10.3	11.6	12.8	15.3	19.1
Length		mm	23	23	25	28	30

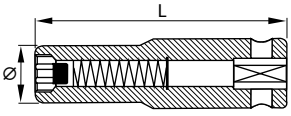

65 0050

Advantage: The bolt is securely held by a spring-mounted magnet. This also ensures that the bolt head is fully engaged. The spring allows nuts / bolts to be easily removed after they have been unscrewed.




65 0052

Width across flats		mm	7	8	10	13
○ 62D 65 0052	IMPACT hexagon socket, 1/4 inch **long, with spring-mounted magnet**		eShop	eShop	eShop	eShop
∅ drive output end		mm	11.3	12.5	15	18.8
Length		mm		50		



Drive part / connection part

External square similar to DIN 3121 with double spring ball. Internal square to DIN 3121-G 6.3 with hole and snap ring groove.

62D 65 0055	IMPACT quick-change adaptor, 1/4 inch		eShop
Square drive		in	1/4
overall length		mm	35
Drive square		in	1/4


65 0055

External square to DIN 3121 – Form E 6.3 with spring pin. Internal square to DIN 3121 - Form G 6.3.

overall length		mm	50	150
62D 65 0057	IMPACT extension, 1/4 inch		eShop	eShop


65 0057

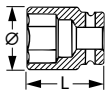
Socket for power screwdrivers (impact wrench socket) 3/8 inch

3/8"

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.

Socket hexagon

Material: Chrome molybdenum steel, surface burnished.



Width across flats	mm	7	8	9	10	13	14	15	16	17	19
63R 65 0130 Koken IMPACT hexagon socket, 3/8 inch **Surface Drive**		(eShop)	(eShop)	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	12	13.3	14.5	15.8	19.5	20.8	22	23.3	24.5	27
Length	mm	32									


65 0130

63R 65 0132 Koken IMPACT 8-piece hexagon socket set, 3/8 inch **Surface Drive**		eShop
Supplied with: 1 each socket No. 650130		Size 9; 10; 13; 14; 15; 16; 17; 19
Magnetic holder rail 200 mm long		1 piece


65 0132

Material: Chrome molybdenum steel, surface burnished.

Width across flats	mm	7	8	9	10	13	14	15	16	17	18	19
62D 65 0100 HOLEX IMPACT hexagon socket, 3/8 inch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	12.5	13.8	15	16	20	21	22	24	25	26	27.5
Length	mm	30										


65 0100

Width across flats	mm	7	8	10	13	14	15	16	17	19
62D 65 0135 HOLEX IMPACT hexagon socket, 3/8 inch **with magnet**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	12.5	14	16.5	20	21.5	22	24	25	27.5
Length	mm	30								


65 0135

Socket hexagon, long

Material: Chrome molybdenum steel, surface burnished.

Width across flats	mm	9	10	13	14	15	16	17	18	19
62D 65 0200 HOLEX IMPACT hexagon socket, 3/8 inch **long**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	15	16	20	21	22	24	25	26	27.5
Length	mm	65								


65 0200

Width across flats	mm	9	10	13	15	16	17	18	19
62D 65 0210 HOLEX IMPACT hexagon socket, 3/8 inch **long, with spring-mounted magnet**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	15	16.5	20	22	24	25	26	27.5
Length	mm	55							


65 0210

Socket for Torx® screws

Material: Chrome molybdenum steel, surface burnished.

Torx® profile		E8	E10	E12
62D 65 0500 HOLEX IMPACT socket 3/8 inch, for Torx® screws		eShop	eShop	eShop
A	mm	7.52	9.42	11.7
Ø drive output end	mm	10.5	12.5	15
Length	mm	32		



65 0500

Hexagon bit for socket-head screws

Material: Chrome molybdenum steel, surface burnished.

Hexagon	mm	5	6	7	8	10	12
62D 65 0550 HOLEX IMPACT hexagon screwdriver bit, 3/8 inch		eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end	mm	25					
Length	mm	50					


65 0550

Bit for Torx® screws

3/8″

Material: Chrome molybdenum steel, surface burnished.

Torx® profile		TX20	TX25	TX30	TX40	TX45
62D 65 0560	HOLEX IMPACT Torx® screwdriver bit, 3/8 inch	eShop	eShop	eShop	eShop	eShop
∅ drive end mm		19				
Length mm		50				



65 0560

Drive part / connection part

65 0390–0600 – External square to DIN 3121 E 10 with spring pin, internal square to DIN 3121 G 10 with hole and snap ring groove.

Material:

65 0390–0650 – Chrome molybdenum steel, surface burnished.



65 0390

overall length mm		75	125	250
63R 65 0390	Koken IMPACT extension, 3/8 inch	eShop	eShop	eShop

overall length mm		75	100	150	250
62D 65 0400	HOLEX IMPACT extension, 3/8 inch	eShop	eShop	eShop	eShop



65 0400

63R 65 0590	Koken IMPACT universal joint, 3/8 inch	eShop
62D 65 0600	HOLEX	eShop
overall length (65 0590) mm		48
overall length (65 0600) mm		50



65 0590

overall length mm		45	46
63R 65 0660	Koken IMPACT quick-change adaptor, 3/8 inch	eShop	–
62D 65 0650	HOLEX	–	eShop
Square drive in		3/8	
Drive square in		3/8	



65 0660



65 0650

Material: Chromium-molybdenum steel, surface manganese phosphated.
Application: Bit holder with 3/8 inch internal square for flexible driving of 1/4 inch C 6.3 bits.

63R 65 0950	Koken Impact bit holder 3/8 inch for 1/4 inch C 6.3 bits	eShop
∅ drive end mm		19
Square drive in		3/8
overall length mm		30



65 0950

Koken Accessories for sockets for power screwdrivers (impact wrench sockets) 3/8 inch

Type		1	2
63R 65 0790	Retainer clip set for bits and sockets, 3/8 inch, including extractor, **10 pieces**	eShop	eShop
Suitable for: Sockets (width across flats)		9 – 12 mm	13 – 19 mm



65 0790

∅ mm		18	22
63R 65 0800	"O" ring for bits and sockets, 3/8 inch	eShop	eShop
∅ mm		18	22
Suitable for: Sockets (width across flats)		9 – 12 mm, No. 650500 all sizes	13 – 19 mm



65 0800

∅×Length mm		2,5×14	2,5×18
63R 65 0900	Locking pin for bits and sockets, 3/8 inch	eShop	eShop
∅ mm		2.5	
Length mm		14	18
Suitable for: Sockets (width across flats)		9 – 12 mm	13 – 19 mm



65 0900 *Size 2.5×18 Also suitable for extensions, universal joints and adapters.*

½″

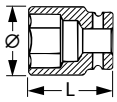
Socket, short, for impact wrenches (impact wrench socket) 1/2 inch

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.
Material: Chrome molybdenum steel, surface burnished.

Socket hexagon

Advantage:

65 1010 – The surface drive profile grips the bolt on the faces and protects the weaker corners. This reliably prevents the socket jamming or damaging the bolt heads.



Width across flats	mm	10	13	14	15	16	17	18	19	21	22	24	27
63R 65 1010 Kokon IMPACT hexagon socket, 1/2 inch **Surface Drive**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	17	20.7	22	23.2	24.5	25.7	27	28.2	30.7	32	34.5	38.2
Length	mm	38	38	38	38	38	38	38	38	38	38	38	40


65 1010

Width across flats	mm	9	10	11	12	13	14	15	16
62D 65 1000 HOLEX IMPACT hexagon socket, 1/2 inch		eShop	eShop ■	eShop	eShop	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end	mm	16	17.5	18.7	20	21	22.5	23.7	25
Length	mm	38							


65 1000

Width across flats	mm	17	18	19	21	22	24	27	30	32
62D 65 1000 HOLEX IMPACT hexagon socket, 1/2 inch		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Ø drive output end	mm	26	27.5	28.7	30	32	35	38.7	42	44
Length	mm	38	38	38	38	38	45	50	50	50

Width across flats	mm	10	13	14	15	16
62D 65 1005 HOLEX IMPACT hexagon socket, 1/2 inch **with magnet**		eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	17.5	21	22.5	23.7	25
Length	mm	38				


65 1005

Width across flats	mm	17	18	19	22	24
62D 65 1005 HOLEX IMPACT hexagon socket, 1/2 inch **with magnet**		eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	26	27.5	29	32.5	35
Length	mm	38	38	38	38	45

Width across flats	mm	10	13	14	15	16	17
62D 65 1020 HOLEX IMPACT hexagon socket, 1/2 inch, thin-walled **Surface Drive**		eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	15.5	19.2	21	21.7	23	24
Length	mm	38					


65 1020

Width across flats	mm	18	19	21	22	24	27
62D 65 1020 HOLEX IMPACT hexagon socket, 1/2 inch, thin-walled **Surface Drive**		eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	25	26	28	29.5	32	36
Length	mm	38	38	38	38	45	50

Hexagon swivel socket

Standard: **DIN 3129**
Advantage: Direct access for bolt tightening where access is difficult, no universal joint required.

Width across flats	mm	13	15	17	18	19	21	22	24
63R 65 1215 Kokon IMPACT hexagon socket, 1/2 inch **with swivel joint**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end	mm	20.7	23.2	25.7	27	28.2	30.7	32	34.5
Length	mm	67.5	69.5	69.5	69.5	73.5	73.5	73.5	73.5


65 1215

Socket for Torx® screws

Torx® profile		E10	E12	E14	E16	E18	E20	E24
62D 65 1500	HOLEX IMPACT socket 1/2 inch, for Torx®	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end	mm	14	15.9	17.7	20	22	24.5	30
Length	mm	38	38	38	38	38	38	41.2



65 1500

½″

HOLEX Socket, long, for impact wrenches (impact wrench sockets) 1/2 inch

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.
Material: Chrome molybdenum steel, surface burnished.



65 1200

Width across flats	mm	10	13	14	15	16	17
62D 65 1200	IMPACT hexagon socket, 1/2 inch **long**	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end	mm	25	25	25	30	30	30
Length	mm	78					

Width across flats	mm	18	19	21	22	24	27
62D 65 1200	IMPACT hexagon socket, 1/2 inch **long**	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end	mm	30	30	30	32	35	38.5
Length	mm	78					

Advantage: The bolt is securely held by a spring-mounted magnet. This also ensures that the bolt head is fully engaged. The spring allows nuts / bolts to be easily removed after they have been unscrewed.



65 1210

Width across flats	mm	10	13	15	16	17	18	19	22	24
62D 65 1210	IMPACT hexagon socket, 1/2 inch **long, with spring-mounted magnet**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end	mm	17.5	21	23.7	25	26.5	27.5	29	32.5	35
Length	mm	78								

½″

Koken Socket set for impact wrenches (impact wrench sockets) 1/2 inch

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.
65 1040/1205 – Compressed IMPACT range for the most popular bolt sizes. Stored in a sturdy metal box.
Standard:
65 1040/1205 – **DIN 3129**
Material: Chromium-molybdenum steel, manganese phosphated.
Advantage:
65 1012 – The surface drive profile grips the bolt on the faces and protects the weaker corners. This reliably prevents the socket jamming or damaging the bolt heads.



65 1012

63R 65 1012	IMPACT 9-piece hexagon socket set, 1/2 inch **Surface Drive**	eShop
Supplied with: 1 each IMPACT socket No. 651010		Size 10; 13; 14; 15; 16; 17; 18; 19; 21
Magnetic clamping rail 300 mm long		1 piece

○	63R 65 1040	IMPACT 18-piece hexagon socket set, 1/2 inch	eShop
	Content: 1 each hexagon socket		10; 11; 12; 13; 14; 15; 16; 17; 19; 21; 22; 27 mm
	Extension		125 mm
	Universal joint		1 pc.
	"O" ring / locking pin		2 pcs./ 2 pcs.


65 1040

○	63R 65 1205	IMPACT 13-piece hexagon socket set, 1/2 inch **long**	eShop
	Content: 1 each hexagon socket		10; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27 mm


65 1205

½″

Socket with plastic sleeve for impact wrenches (impact wrench socket) 1/2 inch

Material: Chromium-molybdenum steel, manganese phosphated.

Thin-walled hexagon socket, with rotating protective sleeve

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.

Standard: **DIN 3129**

Advantage:
- **Smaller Ø** and perfectly matched overall length of the socket permits working on bolts where access is difficult.
- Protective sleeve prevents damage to delicate components (such as aluminium rims).
- Can be positioned while the wrench is running, because the protective sleeve is **free-running**.
- Quick differentiation of the sockets due to colour coding.
- The **torsion zone** permits the socket to accept high loadings.
- The plastic stop on the inside protects the sensitive surfaces of the wheel nut.

Application: Especially for avoiding damage to delicate components (such as alloy wheel rims) during assembly.

Note: For spare protective sleeves see No. 651242





65 1240

Plastic sleeve

	Width across flats		mm	17	19	21	22
○	63R 65 1240	Koken	IMPACT hexagon socket, 1/2 inch **thin-walled, with plastic sleeve**	eShop	eShop	eShop	eShop
	Ø drive output end		mm	25.2	27.2	29	30.5
	Length		mm	110			



65 1241

○	63R 65 1241	Koken	IMPACT hexagon socket set, 1/2 inch **thin-walled, with plastic sleeve**
	Content: 1 each socket No. 651240		Size 17; 19; 21

Socket with protective sleeve

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.

65 1230/1231 – Deep sockets.

Advantage: The surface drive profile grips the bolt on the faces and protects the weaker corners. This reliably prevents the socket jamming or damaging the bolt heads.

Application: To protect light metal bodies / rims during assembly.
Reliable protection due to projecting impact resistant plastic casing.
Quick differentiation of the sockets due to colour coding.


65 1220

	Width across flats		mm	17	19	21
○	62D 65 1220	HOLEX	IMPACT hexagon socket, 1/2 inch **Surface Drive with nylon sleeve**	eShop	eShop	eShop
	Ø drive output end		mm	27	29	31
	Length		mm	85		


65 1221

○	62D 65 1221	HOLEX	IMPACT hexagon socket set, 1/2 inch **Surface Drive with nylon sleeve**
	Content: 1 each socket No. 651220		Size 17; 19; 21

Width across flats		mm	17	19	21
62D 65 1230	HOLEX	IMPACT hexagon socket, 1/2 inch **long, Surface Drive with nylon sleeve**	eShop	eShop	eShop
∅ drive output end		mm	27	29	31
Length		mm	130		



65 1230

62D 65 1231	HOLEX	IMPACT hexagon socket set, 1/2 inch **long, Surface Drive with nylon sleeve**	eShop
Content: 1 each socket No. 651230			Size 17; 19; 21



65 1231

Socket with rotating protective sleeve

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets.

Advantage:
- With rotating plastic sleeve (external) to protect the wheel rims of the wheel bolts become jammed.
- Can be positioned while the wrench is running, because the protective sleeve is free-running.
- With plastic insert to protect the wheel bolt surfaces.
- Hexagonal transaction profile contributes to longer tool life.



65 1260

Width across flats		mm	17	19	21
63D 65 1260	HAZET	IMPACT hexagon socket, 1/2 inch **with rotating plastic sleeve**	eShop	eShop	eShop
∅ drive output end		mm	30		
Length		mm	85		

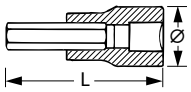
Number of pieces			3
63D 65 1265	HAZET	IMPACT hexagon socket set, 1/2 inch **with rotating plastic sleeve**	eShop
Content: 1 each socket No. 651260			Size 17; 19; 21



65 1265

½″

Bit for power screwdrivers (impact wrench bit) 1/2 inch



Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.
Material: Chrome molybdenum steel, surface burnished.



65 1350

Bit for Torx® screws

Torx® profile			TX30	TX40	TX50	TX55	TX60
62D 65 1350	HOLEX	IMPACT Torx® screwdriver bit, 1/2 inch	eShop	eShop	eShop	eShop	eShop
∅ drive end		mm	25				
Length		mm	55				



65 1301



65 1310

Hexagon bit for socket-head screws

Bit of high alloy special steel.

Note:
65 1301 – Impact blade holder for 7/16 inch individual bits, complete with blade holder. For spare blades see No. 651321.



65 1315

Hexagon			mm	5	6	7	8	10	12	14 NEW	17 NEW	19 NEW
63R 65 1301	Koken	IMPACT hexagon screwdriver bit, 1/2 inch		eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
62D 65 1310				eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
62D 65 1315	HOLEX	IMPACT hexagon screwdriver bit, 1/2 inch with ball point		eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
∅ drive end			mm	25								
Length (65 1301)			mm	52	52	52	52	52	52	–	–	–
Length (65 1310, 65 1315)			mm	75								

HOLEX Stud driver for impact wrenches (impact wrench socket) 1/2 inch

½″

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.
Material: Chrome molybdenum steel, surface burnished.

for threads		M6	M8	M10	M12
62D 65 1390	Stud driver, 1/2 inch	eShop	eShop	eShop	eShop
∅ drive end	mm	25			
Length	mm	55			


65 1390

Adaptor for power screwdrivers (impact wrench bit) 1/2 inch

½″

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.
65 1400–1610 – External square drives to DIN 3121 E 12.5 (spring pin) or F 12.5 (pin hole). Internal square to DIN 3121 G 12.5 with hole and snap ring groove.
Material: Chrome molybdenum steel, surface burnished.

overall length	mm	75	125	250
63R 65 1410	Koken IMPACT extension 1/2 inch, E 12.5	eShop	eShop	eShop
62D 65 1400	HOLEX IMPACT extension 1/2 inch, F 12.5	eShop	eShop	eShop

63R 65 1610	Koken IMPACT universal joint, 1/2 inch, E 12.5	eShop
62D 65 1600	HOLEX IMPACT universal joint, 1/2 inch, F 12.5	eShop
overall length (65 1610)	mm	65
overall length (65 1600)	mm	60

overall length	mm	60
63R 65 1660	Koken IMPACT quick-change adaptor, 1/2 inch	eShop
62D 65 1650	HOLEX IMPACT quick-change adaptor, 1/2 inch	eShop
Square drive	in	1/2
Drive square	in	1/2


65 1410


65 1610


65 1650


65 1660

65

Koken Accessories for sockets (impact wrench attachments) 1/2 inch

½″

Type		3	4
63R 65 1790	Retainer clip set, 10 pieces, for sockets, 1/2 inch, including extractor	eShop	eShop
Suitable for: Sockets (width across flats)		9–14 mm; No. 651301 – 651400; 651650 all sizes	15–27 mm; No. 651410; 651600; 651610 all sizes


Application


65 1790

∅	mm	25	30
63R 65 1800	"O" ring for sockets, 1/2 inch	eShop	eShop
Suitable for: Sockets (width across flats)		9–14 mm; No. 651301 – 651400; 651650 all sizes	15–27 mm; No. 651410; 651600; 651610 all sizes


65 1800

∅×Length	mm	3×20	3×25
63R 65 1900	Locking pin for sockets, 1/2 inch	eShop	eShop
Length	mm	20	25
Suitable for: Sockets (width across flats)		9–14 mm; No. 651301 – 651400; 651650 all sizes	15–27 mm; No. 651410; 651600; 651610 all sizes

Size 3x25
Suitable also for extensions, universal joints and adaptors.


65 1900

Koken Sockets with plastic rotating protective sleeves

The rotating plastic sleeves increase working safety during the assembly process.

The protectors avoid damage to painted, polished or delicate surfaces.



Socket for power screwdrivers (impact wrench socket) 3/4 inch

3/4″

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.

Socket hexagon

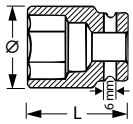
3/4″

Standard:
65 2010 – **DIN 3129**
Material:
65 2010 – Chromium-molybdenum steel, surface manganese phosphated.
65 2000–2210 – Chrome molybdenum steel, surface burnished.

Width across flats		mm	17	18	19	21	22	24
○ 63R	65 2010	Koken IMPACT hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	30	31.3	32.5	35	36.3	38.8
Length		mm	50					


65 2010

Width across flats		mm	27	30	32	34	36	41	46
○ 63R	65 2010	Koken IMPACT hexagon socket, 3/4 inch	eShop	eShop	eShop	(eShop)	eShop	eShop	eShop
Ø drive output end		mm	42.5	46.3	48.8	51.3	53.8	60	66.3
Length		mm	50	53	53	55	55	57	62



Width across flats		mm	16	17	18	19	21	22	24	27	28
○ 62D	65 2000	HOLEX IMPACT hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	44								
Length		mm	50	50	50	50	50	50	50	54	54


65 2000

Width across flats		mm	30	32	34	36	41	46	50
○ 62D	65 2000	HOLEX IMPACT hexagon socket, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	47	49	52	54	60	67	71
Length		mm	54	56	56	56	58	63	72

Width across flats		mm	21	22	24	27	30	32	34	36
○ 62D	65 2200	HOLEX IMPACT hexagon socket, 3/4 inch **long**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	44	44	44	44	47	49	52	54
Length		mm	95							


65 2200

Width across flats		mm	22	24	27	30	32	36	41	46
○ 63R	65 2210	Koken IMPACT hexagon socket, 3/4 inch **thin-walled, long**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	34.3	36.8	40.5	44.3	46.8	51.8	58	64.3
Length		mm	100							


65 2210

Hexagon socket set, 13 pieces

3/4″

Compressed IMPACT set for the most popular bolt sizes. Stored in a sturdy metal box.
Standard: **DIN 3129**
Material: Chromium-molybdenum steel, surface manganese phosphated.


65 2020

○ 63R	65 2020	Koken IMPACT 13-piece hexagon socket set, 3/4 inch	eShop
Content: 1 pc. each socket, hexagon No. 652010			Size 19; 21; 22; 23; 24; 26; 27; 30; 32; 33; 36; 38; 41

Hexagon bit for socket-head screws

3/4″

Material: Chrome molybdenum steel, surface burnished.

Hexagon		mm	14	17	19	22	24	27
◉ 62D	65 2300	HOLEX IMPACT hexagon screwdriver bit, 3/4 inch	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive end		mm	44					
Length		mm	62					


65 2300

Drive part / connection part

3/4″

65 2410–2600 – External square to DIN 3121 F 20 with through pin hole.
Internal square to DIN 3121 G 20 with hole and snap ring groove.

Material: Chrome molybdenum steel, surface burnished.

overall length		mm	175	250	330
63R 65 2410	Koken	IMPACT extension, 3/4 inch	eShop	eShop	eShop
62D 65 2400	HOLEX		eShop	eShop	eShop


65 2410

63R 65 2610	Koken	IMPACT universal joint, 3/4 inch	eShop
62D 65 2600	HOLEX		eShop
overall length (65 2610)		mm	95
overall length (65 2600)		mm	107


65 2600 / 2610

62D 65 2650	HOLEX	IMPACT quick-change adaptor, 3/4 inch	eShop
Square drive		in	3/4
overall length		mm	81
Drive square		in	3/4


65 2650

63R 65 2800	Koken	"O" ring for sockets, 3/4 inch	eShop
63R 65 2900		Locking pin for sockets, 3/4 inch	eShop
Ø (65 2800)		mm	42
Ø (65 2900)		mm	4
Length (65 2900)		mm	35
Suitable for: Sockets (width across flats)			17 – 36 mm and No. 652400 – 2650


65 2900

65 2800

Socket for power screwdrivers (impact wrench socket) 1 inch

1″

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.

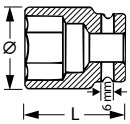
65

Socket hexagon

1″

Standard:
65 3010 – **DIN 3129**

Material:
65 3010 – Chromium-molybdenum steel, surface manganese phosphated.
65 3000/3200 – Chrome molybdenum steel, surface burnished.



Width across flats		mm	27	30	32	34	36
○ 63R 65 3010	Koken	IMPACT hexagon socket, 1 inch	eShop	eShop	eShop	(eShop)	eShop
Ø drive output end		mm	45.3	49	51.5	54	56.5
Length		mm	57	62	62	62	62


65 3010

Width across flats		mm	41	46	50	55	60
○ 63R 65 3010	Koken	IMPACT hexagon socket, 1 inch	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	62.8	69	74	80.3	86.5
Length		mm	66	70	70	75	75


65 3000

Width across flats		mm	27	30	32	36
○ 62D 65 3000	HOLEX	IMPACT hexagon socket, 1 inch	eShop	eShop	eShop	eShop
Ø drive output end		mm	54	54	54	57
Length		mm	60	62	62	67

Width across flats		mm	41	46	50	55	60
○ 62D 65 3000	HOLEX	IMPACT hexagon socket, 1 inch	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	63	70	75	81	87
Length		mm	70	76	80	84	87


65 3200

Width across flats		mm	24	27	30	32	36	41	46
○ 62D 65 3200	HOLEX	IMPACT hexagon socket, 1 inch **long**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Ø drive output end		mm	54	54	54	54	57	63	70
Length		mm	100						

Drive part / connection part

1″

Material: Chrome molybdenum steel, surface burnished.



65 3400

overall length		mm	175	330
62D 65 3400	HOLEX	IMPACT extension, 1 inch	eShop	eShop



65 3600

62D 65 3600	HOLEX	IMPACT universal joint, 1 inch	eShop
overall length		mm	113

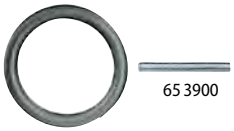


65 3650

62D 65 3650	HOLEX	IMPACT quick-change adaptor, 1 inch	eShop
Square drive		in	1
overall length		mm	100
Drive square		in	1

Standard: **DIN 3129**

Type			1	2	3
63R 65 3800	Koken	"O" ring for sockets, 1 inch	eShop	eShop	eShop
63R 65 3900		Locking pin for sockets, 1 inch	eShop	eShop	eShop
∅ (65 3800)		mm	45	57	75
∅ (65 3900)		mm		5	
Length (65 3900)		mm	45	57	75
Suitable for: Sockets (width across flats)			17 – 46 mm	47 – 70 mm	75 – 100 mm



65 3900

65 3800

65

Koken Socket for power screwdrivers (impact wrench socket) 1.1/2 inch

1½″

Sturdy shape especially for use with electric or compressed air impact wrenches. With cross hole and snap ring groove for securing sockets. Internal square to DIN 3121.
For safety reasons must always be secured using a suitable locking pin and O-ring.

Socket hexagon

1½″

Standard: **DIN 3129**
Material: Chromium-molybdenum steel, surface manganese phosphated.

Width across flats		mm	41	46	50	55	60
○ 63R 65 3950		IMPACT hexagon socket, 1.1/2 inch	eShop	eShop	eShop	eShop	eShop
∅ drive output end		mm	68	74	79	85	91
Length		mm	80	84	84	90	90

Width across flats		mm	65	70	80	90	105
○ 63R 65 3950		IMPACT hexagon socket, 1.1/2 inch	eShop	eShop	eShop	eShop	eShop
∅ drive output end		mm	97	103	115	128	146
Length		mm	95	100	110	112	120



65 3950

Drive part / connection part

63R 65 3970		IMPACT universal joint, 1.1/2 inch	(eShop)
overall length		mm	200



65 3970

∅		mm	95	134
63R 65 3990		"O" ring for sockets, 1.1/2 inch	eShop	eShop
Suitable for: Sockets (width across flats)			41 – 90 mm and No. 653960 – 3970	105 mm



65 3990

∅×Length		mm	7×75	7×110
63R 65 3995		Locking pin for sockets, 1.1/2 inch	eShop	eShop
Suitable for: Sockets (width across flats)			41 – 90 mm and No. 653960 – 3970	105 mm

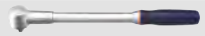
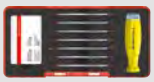
65 3995

Torque range – Overview

Use this overview to select the appropriate tool for your requirements.

Designation		Product code	Nm	°	Klick	1 2	1 2	Torque range in Nm: 0.01 1 10 50 100 500 1000 5000
Calibration device		65 4240	●			●		6 – 400
Testers for torque wrenches / screwdrivers, measurement transducers		65 4250	●			●		0.4 – 1100
		65 4410 / 65 4413	●			●		0.1 – 1000
		65 4300 – 65 4350	●			●		0.04 – 1500
		65 4460	●			●		1.2 – 1500
		65 4471	●			●		1 – 1100
		65 4476	●			●		0.1 – 350
		65 4651/ 65 4656	●			●		1 – 1500 1 – 10
		65 4660		●		●		≤ 400*
Electronic torque/ rotational angle wrenches		65 5010 / 65 5013	●	●		●		2.4 – 850
		65 5015 / 65 5017	●	●	●	●		1 – 1000
		65 5230	●	●		●		1 – 400
		65 5270	●	●		●		3 – 400
		65 5360	●			●		2 – 850
Electronic torque wrenches, torque screwdrivers, measuring systems		65 5025	●			●		2.4 – 340
		65 5275	●			●		1 – 20
		65 5290	●		●	●		10 – 1000
		65 5305	●			●		16.9 – 203.4
		65 5345	●			●		2.4 – 340
		65 5550	●					2.4 – 340
		65 9021/ 65 9023	●			●		0.1 – 5
		65 9005	●			●		0.3 – 10
		65 9010	●			●		0.1 – 4
		65 9050	●			●		0.1 – 4
Mechanical torque wrenches, torque measurement systems		65 5500	●					0.2 – 2100
		65 5520	●					1.2 – 1000
		65 6050			●	●		1 – 1600
		65 6200 / 65 6205 / 65 6210 / 65 6220 / 65 6300			●	●		2.5 – 1000
		65 6500			●	●		1 – 2000
		65 7000			●	●		2.5 – 2000
		65 7090			●	●		4 – 1000
		65 7095			●	●		10 – 400
		65 7105			●	●		6 – 650
		65 7220 / 65 7225			●	●		30 – 1000
		65 7235			●	●		1 – 2800
		65 7272			●	●		4 – 1000
		65 7300			●		●	1.5 – 300

* suitable for torque wrenches up to 400 Nm.

Designation		Product code	Nm	Klick			Torque range in Nm (0.01 · 1 · 10 · 50 · 100 · 500 · 1000 · 5000)
Mechanical torque wrenches, torque measurement systems		65 7320		●		●	0.4 – 420
		65 7352		●		●	4 – 300
		65 7410		●		●	4 – 300
		65 7460		●		●	2 – 320
		65 7500		●		●	2 – 200
		65 7556		●	●		2 – 120
		65 7735		●	●		1 – 50
		65 7750		●		●	0.5 – 60
		65 7762		●	●		1 – 10
		65 7770 – 65 7776		●	●		2 – 12
		65 7766		●		●	1 – 125
		65 8800	●				0.004 – 1.5
Mechanical torque screwdrivers		21 1750		●		●	0.2 – 5.7
		65 9200	●				0.15 – 6
		65 9100		●	●		0.02 – 6
		65 9985		●	●		0.02 – 10
		65 9958		●	●		0.4 – 16
		65 9912		●	●		0.4 – 16
		65 9913		●	●		0.1 – 16
		65 9917		●	●		0.1 – 5
		65 9918		●	●		0.4 – 5
		65 9919		●	●		0.4 – 5
		65 9930		●	●		0.1 – 0.5
		65 9355		●	●		0.1 – 14
		65 9933		●	●		1.2 – 3
		65 9934		●		●	0.1 – 8.8
		65 9954		●		●	0.1 – 6
		65 9935		●	●		0.1 – 1.2
		65 9939		●	●		0.5 – 10
		65 9945		●	●		0.02 – 5
		65 9949		●	●		0.3 – 6
		65 9950		●		●	0.6 – 5
		659890		●		●	0.6 – 5
		65 9965		●		●	0.6 – 5.7
		65 9990		●		●	0.6 – 5
Torque multipliers		65 9980 / 65 9975	Recommended in conjunction with torque wrenches				200 – 7000

±0.5% ▶ 04 ◀ Cal

STAHLWILLE® Manutork® mechanical calibration system for torque tools

Complete calibration system with components well matched to each other. A special torque transmission system avoids movement of the torque application point during calibration.

Application: **Monitoring, calibrating, documenting and managing torque drive tools.** For torque drive tools to deliver precise and reliable measurement values over a long period of time, they must be checked regularly for calibration, and documented.

Supplied with: Mechanical operating device for even and precise loading of the torque wrench. This ensures that in accordance with DIN EN ISO 6789 the torque is applied slowly and progressively.

- 2 transducers **Laboratory** size 6 – 60 Nm and 40 – 400 Nm (display divergence from the measured value is ±0.5 %) with **DAkkS** calibration certificate.
- Software for generating calibration certificates to DIN EN ISO 6789 and measuring equipment management.
- USB adaptor cable for connecting measurement transducers to a PC.
- 4 square drive adaptors to accept various square drives.

Note: An additional test set is required for testing torque screwdrivers. Requirements for PC: min. 1 USB port.
Further transducers available on request.

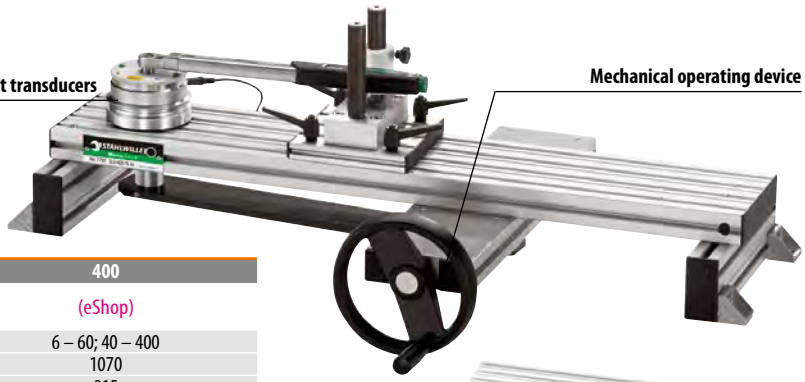
Electronic calibration system from Stahlwille also available (on request).



Optional accessories:
Test set for calibrating torque screwdrivers.



Software and USB adapter cable.





Optional accessories:
Extension kit for torque wrenches >400 Nm.

maximum torque	Nm	400
63B 65 4240	Manutork® mechanical calibration system	(eShop)
Measuring range	Nm	6 – 60; 40 – 400
overall length	mm	1070
for wrench length up to	mm	815
Weight	kg	34
Square socket	in	3/8; 3/4
Supplied with: Calibration adaptor (internal square drive × external square drive)		1/4 inch × 3/8 inch; 1/4 inch × 3/4 inch; 3/8 inch × 3/4 inch; 1/2 inch × 3/4 inch

65

▶ 04 ◀ Cal

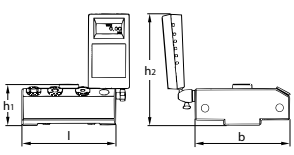
STAHLWILLE® SENSOTORK® 7707W electronic workshop torque analyser

Compact workshop torque analyser for torque wrenches.
Flexible extension by exchanging the measurement transducer. High accuracy due to flat measurement transducers (low lateral forces) with measured value post-processing and digitising directly within the measurement transducer (deviation from measured value is ± 0.25 % in the range from 20 % - 100 % of the nominal value; ± 0.5 % in the range from 10 % - 20 % of the nominal value and ± 1 % in the range from 2 % -10 % of the nominal value).
High security due to additional display of the actual torque applied when testing triggering torque wrenches.

Supplied with: Measurement transducer, retainer, display, support for display, flexible coiled cable, mains adapter, 1.5 m connection cable, fixing kit for horizontal and vertical checking positions.



65 4250



maximum torque	Nm	20	100	1100
63B 65 4250	SENSOTORK® workshop torque analyser	(eShop)	(eShop)	eShop
Measuring range	Nm	0.4 – 20	2 – 100	25 – 1100
Dimension b	mm		180	
Dimension h_1	mm		79	
Dimension h_2	mm		215	
Dimension l	mm		180	
Weight	kg	6.2	7	7.5
Square socket	in	1/4	3/8	3/4
Supplied with: Adaptor (internal square drive × external square drive)		–	1/4 inch × 3/8 inch	1/4 inch × 3/4 inch; 3/8 inch × 3/4 inch; 1/2 inch × 3/4 inch

Measurement transducer

High accuracy due to measurement processing / digitising directly within the measurement transducer. Insensitive to lateral forces due to particularly flat form.

Suitable for: Workshop torque analyser No. 654250.

Note: Analysers and measurement transducers with other measuring ranges available on request.

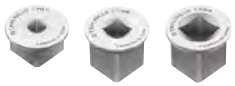


65 4255

maximum torque		Nm	20	100	1100
63B 65 4255	Measurement transducer		(eShop)	(eShop)	(eShop)
Measuring range		Nm	0.4 – 20	2 – 100	25 – 1100
Weight		kg	1.7	2.5	3.1
Square socket		in	1/4	3/8	3/4

STAHLWILLE Square drive calibration adaptor

Suitable for: Measurement transducer No. 654255 and workshop torque analyser No. 654250.



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Type		1	2	3	4	5	6
63B 65 4383	Square drive calibration adaptor	eShop	eShop	eShop	eShop	eShop	eShop
Square socket drive	in	1/4	1/4	3/8	1/2	3/4	1
External square drive	in	3/8	3/4	3/4	3/4	1.1/2	1.1/2

±0.5% RS232C

norbar Electronic torque analyser

- Robust polyurethane body for table mounting or wall hanging.
- Large-format LCD display.
- Direct choice from the test procedure pictogram keypad for
- Interface for connection to an **external sensor.** When using sensors No. 654350 the measurement range and the calibration parameters are recognised automatically.
- Frequency displays for checking pulsed tools or screwdrivers with slip couplings.
- **Target torque values with upper and lower tolerance limits** can be programmed.
- Serial interface for connection to a printer or PC.
- **Power supply:** Integral rechargeable battery for approx. 16 hours free-standing use, or 230 V mains operation.
- TCS calibration software (available free of charge after registration at www.norbar.com/en-gb/downloads/torque-certification-system).

65 4300 – Integral sensor with 1/4 inch hexagon C 6.3 and additional connection for 1 external sensor.

65 4340 – Without integral sensor, with **connections for 3 external sensors.**

Advantage: Flexible measuring system can be extended to 100,000 Nm. Very easy to use.

Application: Calibrating torque screwdrivers with adjustment scale or display. Setting and calibrating torque screwdrivers without scale. **Setting and calibrating electric or pneumatic screwdrivers** with automatic shut-off. Use optional external measurement transducers to calibrate torque wrenches or torque screwdrivers up to 100,000 Nm.

Supplied with:

65 4300 – **Supplied with UKAS calibration certificate, right-hand** and screw tightening simulator for calibrating electric or pneumatic screwdrivers, 2 fastening screws, serial data transmission cable in a plastic case.

65 4340 – **With UKAS calibration certificate, right-hand.**

Note: **Not suitable for impact wrenches.**

65 4300 – Screw tightening simulators for No. 654300 and 654350 under No. 654352.



▶ 04 ◀ Cal

65 4300





Optional accessories: Calibration device for TST, TTT in conjunction with sensors FMT up to 1500 Nm.

maximum torque		Nm	2	10	25
66D 65 4300	Electronic torque screwdriver tester **"TST"**		–	–	–
Measuring range		Nm	0.04 – 2	0.5 – 10	1.25 – 25
Display unit width		mm		288	
Display unit height		mm		72	
Display unit depth		mm		160	
Weight		kg		2.2	

66D 65 4340	Electronic torque tool tester **"TTT"**	–
Display unit width	mm	200
Display unit height	mm	150
Display unit depth	mm	180
Weight	kg	1



65 4340

±0.5%

▶ 04 ◀ Cal

up to size 400

Flange mounted transducer “FMT”

- Static sensors complete with cable (2 m) for direct connection to No. 654300 or No. 654340 (automatic detection of calibration data).
- Direct fixing to the workbench with 3 screws (not included).

Supplied with: **UKAS calibration certificate on the right.**
Up to and including size 150 with screw tightening simulator for checking electric and pneumatic screwdrivers. In a sturdy plastic case.

Note: Not suitable for impact wrenches.



65 4350_2–25



65 4350_150–1500

maximum torque		Nm	2	10	25	150	400	1500
66D 65 4350	Flange mounted transducer “FMT”		–	–	–	–	–	–
Measuring range		Nm	0.04 – 2	0.5 – 10	1.25 – 25	7.5 – 150	20 – 400	30 – 1500
Square socket		in	1/4	1/4	1/4; 3/8	3/8; 1/2	1/2; 3/4	3/4; 1
Hexagon socket		in	1/4	1/4	1/4	–	–	–

±0.5% RS232C ▶ 04 ◀ Cal

“ProTest” electronic torque analyser

- Sturdy cast aluminium body.
- Large-format LCD display.
- Easy to use – pictogram keypad for direct choice of the test procedure etc.
- User-specific input of target torque with upper and lower tolerances; acoustic and visual signal (3 LEDs) on reaching/exceeding the target torque.
- 3 user modes: Following, inflection point detection, and peak value display.

Advantage:
- Checking to DIN EN ISO 6789; only the target value has to be put in – the torque analyser does the rest.
- 11 display languages.
- Testing in horizontal and vertical position.
- Display and measured value sensor can be separated.

Application: For setting and calibrating torque tools.

Supplied with: Measured value sensor, display unit, mains adapter, RS-232C connecting cable to PC or printer, 2 securing screws, and square drive adapter all in a sturdy case, **including UKAS calibration certificate, right-hand.**

Note: Wall bracket under No. 654462.



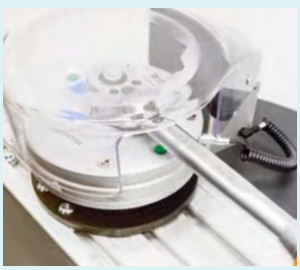
maximum torque		Nm	60	400	1500
66D 65 4460	Electronic torque analyser “ProTest”		–	–	–
Measuring range		Nm	1.2 – 60	8 – 400	30 – 1500
Display unit width		mm		185	
Display unit height		mm		128	
Display unit depth		mm		104	
Measuring value sensor width		mm		106	
Measuring value sensor height		mm		100	
Measuring value sensor depth		mm		185	
Weight		kg	6.3	6.4	7.3
Square drive adapter		in	1/4; 3/8; 1/2	3/8; 1/2; 3/4	3/4



Calibration of torque tools

Torque screwdrivers are measurement tools.
At regular intervals, using appropriate equipment, they must be calibrated and if necessary adjusted.
(See DIN EN ISO 6789:2003, 5.3 Calibration, or DIN EN ISO 9789-1:2017, 5.3 Checking conformity or DIN EN ISO 6789-2:2017, 4.1 Calibration.)

More detailed information on and an overview of the available calibration services can be found on the first few pages of product group 01.



IP 40 | ±1% | HCT | HCT | 04 Cal

HCT

Garant Electronic torque analyser HCT

For use of mechanical and digital brand torque wrenches (not HCT) and screwdrivers, as well as HCT torque wrenches. Setting and testing triggering, indicating, clockwise and anti-clockwise torque wrenches and screwdrivers.

- **Display:** Large sharp contrast illuminated 2.8 inch TFT display with double scale with viewing angle stability. With memory capacity display.
- **Memory capacity:** 1000 measurement values with time stamp (incl. date and time) and 20 configurable test cases.
- **Modes:** Tracking display (**Track**), trigger point sensing (**First-Peak**) and peak value display (**Peak Hold**). When used with an HCT torque wrench, 2 other modes are available: **Track-HCT** and **Peak-Hold-HCT**. The measurement values of the HCT torque wrench and the measurement values of the HCT torque analyser are displayed on the analyser display at the same time. The peak values achieved are displayed in comparison and evaluated automatically.
- **Attachment:** can be attached to flat surfaces (table, wall, etc.) using 4 screws (M10).
- **3 recesses** for secure storage of adapters (increaser piece).
- **Data output:** Available via Bluetooth® or USB-C.
- **Possible wireless applications:** HCT Windows app and HCT mobile app. The analyser has a bi-directional interface. The analyser can also be used independently (without the app).
- **Apps:** The Bluetooth dongle 49 8999 Stick (licence) and the Windows app software are required to activate the HCT Windows app (https://hog.tools/win-app-hct). The HCT mobile app is available free of charge for iOS and Android.
- **Wireless approval:** The torque analyser with Bluetooth interface has valid wireless approval in all EU countries, Switzerland, Norway, Turkey and in the UK.
- **Password protection:** available as protection against unauthorised access to the menu (master password) and for verifying test cases. In addition, if a test case has been performed incorrectly, you can set that any further work requires the input of a password.
- **Warning signals:** visual (change of colour on the display) and acoustic (buzzer). The pre-warning point can be configured individually. The acoustic warning signal can be disabled if desired.
- **Protection class IP40**
- **Languages:** German, English, Spanish, Italian, French.
- **Factory settings:** Can be reset to the factory settings.
- **Displays** the software version with the serial number and date of the last calibration. The date of the next calibration can be set on the torque analyser.

Units of measurement: Nm, lbfft, lbfin.

Accuracy: Clockwise and anti-clockwise: +/- 1%.

Advantage: **When using the torque analyser HCT in conjunction with a torque wrench HCT:**

- Simultaneous display of the measurement values of the torque wrench HCT and the torque analyser HCT on the display of the torque analyser.
- Display and automatic evaluation of the peak values achieved by the torque wrench HCT and the torque analyser HCT.
- HCT torque wrenches blocked due to overload can be released again using the torque analyser. (After release, calibration of the torque wrenches HCT is recommended).

Supplied with: USB-C data cable (1.8 m), power supply unit (USB-A), country adapter (types A, C, G and I), certificate of conformity. Supplied in a sturdy plastic case.

Size 2 – Adapter 1/4 inch square to 1/4 inch hexagon C 6.3 (similar to No. 676950 size 4/4).

Size 12 – Incl. increaser piece No. 649550 size 1 (1/4 inch to 3/8 inch) and converter No. 650006 size 3.

Note: Suitable additional adapters can be found under No. 649550 and No. 650006.
The free smartphone app optionally allows the user to download the latest device software to the analyser via Bluetooth®, thus enabling new extended functionalities to be accessed.



Parallel display of the torque values of the torque wrench HCT and the torque analyser HCT.



Automatic evaluation according to the set tolerances. Torque wrench is outside the set tolerance.



Automatic evaluation according to the set tolerances. Both torque values are within the set tolerances.

65

The GARANT tester is also available as a variant without Bluetooth under No. 65 4413.



Recesses on the rear for secure storage of adapters.



65 4410_350

maximum torque	Nm	2	12	50	350	1000
61D 65 4410 Electronic torque analyser **HCT**		eShop	–	–	–	–
Resolution	Nm	0.01	0.01	0.01	0.1	1
Measuring range	Nm	0.1 – 2	1 – 12	5 – 50	20 – 350	100 – 1000
Display unit width	mm	146	146	146	146	171
Display unit height	mm			86		
Display unit depth	mm			161		
Weight	kg	2.8	3	3	3	3.3
Square socket	in	1/4	3/8	3/8	1/2	–
External hexagon drive	mm	–	–	–	–	27

±1% ▶ 04 ◀ Cal

“TruCheck™ 2” and “TruCheck™ 2 Plus” electronic torque analyser

Application: Setting and testing triggering, indicating and right-hand triggering torque wrenches.

TruCheck™ 2

- Compact, handy torque analyser.
- Screw attachment to a flat surface (table, wall etc.).
- LCD display. LED background lighting ensures good legibility under poor lighting conditions.
- The integral micro-USB 2.0 port provides the power supply.
- Units of measure: Nm.

Accuracy:

Size 30; 350 – Percentage measured value error ±1%.

Size 1100 – Percentage measured value error ±1% for the measurement range 110-1100 Nm; ±2% for the measurement range less than 110 Nm.

Advantage:
- Very easy to use (reduces errors).
- Suitable even for users who are not “Calibration Specialists”.
- Only a single push button to zero the display.

Supplied with: USB power supply unit (EU/UK/US/AUS), micro USB 2.0 cable, in sturdy plastic case.

±1%



65 4471_30

±1%

±2%



65 4471_1100

maximum torque		Nm	30	350	1100
66D 65 4471	Electronic torque analyser „TruCheck™ 2“		–	–	–
Measuring range		Nm	1.5 – 30	10 – 350	50 – 1100
Display unit width		mm	175	138	140
Display unit height		mm	64	110	120
Display unit depth		mm	72	117	132.5
Weight		kg	1.4	2.7	3.5
Square drive adapter		in	1/4; 3/8	1/2	3/4
External hexagon drive		mm	10	–	27

TruCheck™ 2 Plus

- 3 user modes: Tracking display **(Track)** Trigger point sensing **(First Peak)** Peak value display **(Final-Peak)**.
- Easy input of target torque with tolerances.
- LCD display. LED background lighting ensures good legibility under poor lighting conditions.
- The integral micro-USB 2.0 port provides the power supply and data transmission.
- 12 display languages.
- Memory for saving up to 15 measured values.
- Units of measure: Nm, lbfft, lbfin.

Accuracy: Percentage measured value error ±1%.

Advantage: Quick and visually easily recognised status display thanks to change of colour of the display (red, yellow, green). Simple transmission of measured data available via a USB interface.

Application: Adjusting right-hand triggering **torque screwdrivers** and **torque wrenches** with or without setting scale.

Supplied with: USB power supply unit (EU/UK/US/AUS), micro USB 2.0 cable, in sturdy plastic case.



65 4476_3



65 4476_30



65 4476_350

maximum torque		Nm	3	30	350
66D 65 4476	Electronic torque analyser „TruCheck™ 2 Plus“		–	–	–
Measuring range		Nm	0.1 – 3	1.5 – 30	10 – 350
Display unit width		mm	175	175	138
Display unit height		mm	72	64	110
Display unit depth		mm	64	72	117
Weight		kg	1.4	1.4	2.7
Square drive adapter		in	1/4	1/4; 3/8	1/2
External hexagon drive		mm	6.3	10	–

±1% ▶ 04 ◀ Cal

STAHLWILLE® “SmartCheck USB” torque analyser

Variable and flexible torque wrench analyser with rotating display and base body. Can be mounted horizontally and vertically. The display and the membrane keypad are splash-proof and the body is made of impact-resistant plastic. **Micro-USB interface** for **data export** and for power supply. With memory capacity for 250 measured values.
3 user modes: Tracking display **(Track), trigger point sensing** (First-Peak), peak value display **(Peak-Hold).**
Units of measure: Nm, lbfft, lbfin.

Advantage: Compact and variable torque analyser. Operation on power supply or batteries.
Application: Adjusting and checking **torque screwdrivers and torque wrenches** with or without setting scale.
Supplied with: Including power supply unit and SmartCheck USB software for transmitting values and creating test certificates. In a sturdy plastic case.

Note: Suitable Bluetooth® module available (No. 52110222).


Body and display can be rotated.

maximum torque		Nm	10	100	400	800	1500
63B 65 4651	Torque analyser for torque wrenches “SmartCheck USB”		eShop	eShop	eShop	eShop	eShop
63B 65 4656	Torque analyser for torque screwdrivers “SmartCheck USB”		eShop	–	–	–	–
Measuring range		Nm	1 – 10	10 – 100	40 – 400	80 – 800	150 – 1500
Display unit width		mm			120		
Display unit height		mm			124		
Display unit depth		mm			167		
Weight		kg	5.21	5.31	5.69	5.69	5.69
Square socket		in	1/4	3/8	3/4	3/4	1

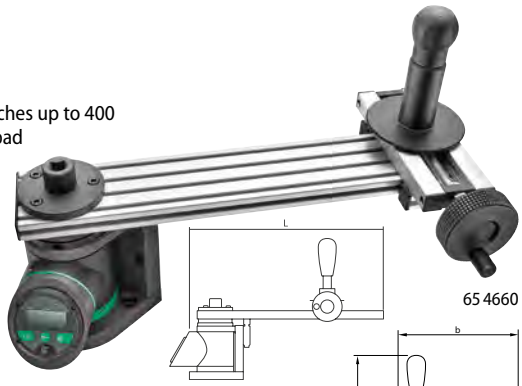

65 4651

±0.05° ▶ i ◀ Cal

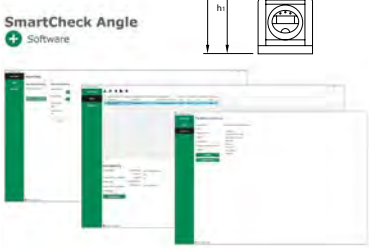
STAHLWILLE® “SmartCheck Angle” rotational angle test device

Variable and flexible rotational angle test device due to exchangeable sockets for rotational angle wrenches up to 400 Nm. Display, display bracket and base body can be rotated by 180°. The display and the membrane keypad are splash-proof and the body is made of impact-resistant plastic. The rotational arm can be locked for transport. Rotational angle measurements up to 720° with nominal value specification and evaluation of the measuring results directly at the device. USB interface for documentation of the test values. Additionally, a bi-directional interface, which permits parametrisation of new test values and the use of individual systems for control. Up to 2000 test values with a timestamp can be stored in the device. Optional documentation software available via free of charge download link.
User modes: Tracking display **(Track)**, peak value display **(Peak-Hold).**

Advantage: Compact and variable rotational angle test device. Operation on power supply or batteries.
Application: Testing **rotational angle wrenches** for compliance with the specified tolerance.
Supplied with: Supplied with a USB power supply unit, reducing adapters to 1/4 inch and 3/8 inch, in a sturdy plastic case.



65 4660



Optional documentation software available by free of charge download link:
https://www.stahlwille.de/de/downloads/software-and-firmware/

Max. measuring range		degrees	720
63B 65 4660	Rotational angle test device for torque wrenches “SmartCheck Angle”		(eShop)
Length L		mm	452; 752
Width b		mm	263
Height h_1		mm	187
Height h_2		mm	327
Weight		kg	7.8
Square socket		in	1/2

STAHLWILLE® Motorised calibration and adjustment device

The **electronic perfectControl calibration device** with electric drive greatly reduces the forces and time required for calibration and adjustment.



Functions:

- Semi-automatic calibration of mechanical torque wrenches.
- Fully automatic calibration of STAHLWILLE electronic torque wrenches.
- The precision bearings of the spindle and the accurately controlled motor prevent incorrect measurement.
- Extremely precise calibration by optimising the bearings and the square sockets of the transducer.
- The QuickRelease locking allows transducers to be changed more quickly and with fewer problems.
- Measured values transferred by USB interface to a PC for post-processing and archiving.
- After calibration, a calibration certificate can be printed or saved as a PDF file.
- Software for machine capability analyses can be added as an option (on request).

PRECISE AS ALWAYS, BETTER CONNECTIVITY THAN EVER: THE HCT WINDOWS APP.

With the HCT Windows app, our **GARANT and HOLEX HCT products** can also easily be connected to PCs and laptops running a Windows operating system.
This makes quick documentation and wireless data transmission, for example to CAQ systems, easier than ever before.

By integrating the GARANT HCT torque analyser into the operator guidance concept of the HCT Windows app, the HCT torque wrenches can be checked before starting work and released for the work plan / shift.



An app packed full of features:

- The GARANT torque wrench / rotational angle wrench HCT No. 65 5010, the HOLEX torque wrench No. 65 5025 and the GARANT torque tester No. 65 4410 can be quickly connected to the PC/laptop via a bi-directional interface.
- The HCT Windows app can then be used in combination with the torque wrenches to easily set up operator guidance so that various HCT tools can be linked in a single workflow.
- The collected data can be provided to CAQ software in a variety of formats (e.g. as a .csv file or via the MUX50 protocol).
- The workpiece's and tool's serial number are linked directly and automatically to the associated measurement value.
- Each dongle enables up to 16 HCT tools to be connected to 1 PC/laptop at the same time.
- Processes can be planned via the app (no need to create screw tightening profiles on the tool thanks to the bi-directional interface).
- The app also expands the actual functions of the HCT tools:
  – The Windows app now also allows you to create and execute screw tightening profiles and workflows for the Holex torque wrench HCT No. 65 5025.
  – Workflows, screw tightening profiles and test cases can now be identified with up to 10 digits, instead of just 4 digits.
  – An unlimited number of screw tightening profiles and workflows can be created.

To enable the full functions, only the following are required:
Bluetooth®dongle No. 49 8999 STICK (license) and the **Windows app software**, which can be downloaded via our homepage **www.hoffmann-group.com**.

±2% ±3% ±1% ±1° ▸ 03 ◂ Cal ▸ 05 ◂ Cal HID HCT HCT

GERMAN INNOVATION AWARD '21 WINNER

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Garant

Electronic torque / rotational angle wrench HCT

- **Display:** Large sharp contrast illuminated 2.8 inch TFT display with double scale with viewing angle stability. With battery display and memory display. Torque and rotational angle both displayed at the same time.
- **Display:** Peak and Track function modes**.**
- **Modes:** Displaying torque, triggering torque, triggering rotational angle, triggering rotational angle with rotational angle monitoring, triggering rotational angle with torque monitoring. Up to 100 screw tightening profiles can be programmed. Recurrent screw tightening profiles and be summarised into a procedure (up to 10 procedures each with up to 10 screw tightening profiles). Screw tightening profiles and procedures can be programmed both directly at the wrench and also conveniently via the app.
- **Possible wireless applications:** HCT Windows app and HCT mobile app. The analyser has a bi-directional interface but can also be used independently (without app).
- **Apps:** The Bluetooth dongle 498999 STICK (license) and the Windows app software are required to activate the HCT Windows app (https://hog.tools/win-app-hct). The HCT mobile app is available free of charge for iOS and Android.
- **Memory capacity:** 1000 measurement values with timestamp (incl. date and time). The memory on the wrench can be manually deactivated if the connection to the end device has been established by HID.
- **Data output:** Available via Bluetooth® or USB-C. Via Bluetooth: Available via the apps as a .csv file, or directly at the torque wrench via the HID interface for simple and convenient digital documentation. Via the USB C interface: The data can the exported as a .csv file.
- **Wireless approval:** The torque wrenches with Bluetooth interface have valid wireless approval in all EU countries, Switzerland, Norway, Turkey, UK, USA and Mexico.
- **Password protection:** available as protection against unauthorised access to the menu (master password) and for verifying screw-tightening cases and procedures. In addition, you can set that reworking a screw connection that has been performed incorrectly requires input of a password.
- **Warning signal outputs** are haptic (vibration), visual (change of colour at the display, 360° LED ring with "traffic light function" clearly visible from anywhere) and acoustic (buzzer). The pre-warning point can be configured individually. Haptic and acoustic warning signals can be disabled if desired.
- **Easy input of reference dimensions:** For tools with a different pitch setting simply input the new pitch. No laborious calculations with formulae.
- **Protection class IP40.**
- **The 2-component handle** of the torque / rotational angle wrench ensures specially good ergonomics and high torque transmission.
- **Resistant** to oils, grease, fuel, brake fluid and Skydrol.
- **Languages:** German, English, Spanish, Italian, French.
- **Factory settings:** The wrench can be reset to the factory settings.
- **Time and date** on the wrench are updated automatically as soon as it is connected to the app.
- **Display** of the software version with serial number, load cycle counter and calibration date.
- **Calibration reminder:** after number of load cycles.

Units of measure: Nm, lbfft, lbfin.

Size 12–340 – with plug-in ratchet.

Size 500; 850 – with built-in reversible ratchet.

Standard: Tested to DIN EN ISO 6789.

Accuracy: Torque: Clockwise ± 2%, anticlockwise ± 3%.
Rotation angle: ± 1° for the measurement range up to 100°, ± 1 % for the measurement range 100° and beyond.

Supplied with: USB-C data cable, reversible ratchet with ejector (size 12 – 340: plug-in ratchet, size 500 and 850: fixed ratchet), 1 commercially available Li-ion battery type 18650 3.6V / 3400 mAh (can be charged directly in the tool via a USB-C plug). Supplied in a sturdy plastic case.

Note: Suitable additional batteries can be found under No. 081574 size 3500. Charger for 4 batteries available as options under: 081590 size 4ULTRA. A holder for a bracket or suspension of the torque wrench is available under No. 655039 size 1.

The GARANT torque wrench is also available as a variant without Bluetooth under No. 65 5013.



65 5010_100



65 5010_500

maximum torque	Nm	12	30	50	100	200	340	500	850
610 65 5010	Electronic torque wrench / rotational angle wrench **HCT**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop
Overall length L	mm	370	370	407.5	423.4	530	650	950	1226
Torque range	Nm	2.4 – 12	6 – 30	10 – 50	20 – 100	40 – 200	68 – 340	100 – 500	170 – 850
Resolution	Nm	0.01	0.01	0.01	0.1	0.1	0.1	0.1	0.1
Angular resolution	degrees	0.1							
Weight	g	735	735	890	1052	1460	1625	3100	4200
Adjusted reference dimension on the torque wrench [l_2]	mm	21.1	21.1	28	28	34.1	34.1	–	–
Square drive	in	1/4	1/4	3/8	1/2	1/2	1/2	3/4	3/4
Socket for plug-in head	mm	9×12	9×12	9×12	9×12	14×18	14×18	–	–

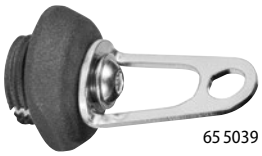
Garant Holder for a bracket or suspension of the GARANT torque wrench HCT

Holder for a bracket or suspension (e.g. balancer) of the GARANT torque wrench HCT No. 655010 or No. 655013. Easy installation by removing the existing battery cap and tightening the holder by turning.

Note: Matching balancers available under No. 079295.



Application example.



65 5039

Type		1
60 65 5039	Torque wrench holder	eShop ■
Suitable for: Torque wrenches		No. 655010; 655013

±2% ±1% ▶ 03 Cal ◀ ▶ 05 Cal ◀ ▶ 01 Cal ◀ HID HCT HCT

HCT

STAHLWILLE® Electronic torque / rotational angle wrench MANOSKOP® 766 DAPTIQ® HCT

Highly precise electronic torque / rotational angle wrench for screw tightening and checking of screw fastenings. Clear OLED display with colour screen and extremely simple menu navigation. Sturdy wrench with "Direct mode" for quick general-purpose use. 4 measurement modes: Torque and angle of rotation. Process reliability results achieved by torque with angular monitoring or rotational angle with torque monitoring. Can be programmed by a PC; password protection for security against tampering. Rotary angle measurement can be programmed easily, no reference arm required. Peak and Track function modes.
The wrench can be used in trigger mode. When the set torque or rotational angle is reached the wrench triggers with acoustic and tactile signals like a conventional mechanical torque wrench.
Units of measure: Nm, lbfft, lbfin.

Highlights:

- Torque wrench is simple to integrate into the HCT worker guidance system.
- Bluetooth® update for the HCT adapter is performed over the air.
- Availability of an open protocol interface via the HCT Windows app.
- Can be used in combination with our GARANT torque tester HCT; supplementary HCT functions can be used (1st peak mode with simultaneous display of measurement from the MANOSKOP® 766 DAPTIQ® HCT and the GARANT torque tester HCT on the display of the tester).
- Electromechanical torque/rotational angle wrench **with true mechanical actuation.**

Standard: Tested to DIN EN ISO 6789.

Supplied with: Includes sturdy plastic box (size 400 to size 1000 in a sheet metal box) and 4 batteries (1.5 V Micro / AAA / LR3), USB data cable.

Note:
- Matching rechargeable battery available under Stahlwille number 54101195.
- Matching charging dock available under Stahlwille number 54100060.



65 5015



65 5017

maximum torque	Nm	10	20	40	60	100	200	400	650	800	1000
60 65 5015	Electronic torque wrench / rotational angle wrench **with plug-in ratchet, HCT**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
60 65 5017	Electronic torque wrench / rotational angle wrench **without plug-in head, HCT**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
Overall length L (65 5017)	mm	226	226	252	393	466	547	687	890	1158	1343
Torque range	Nm	1 – 10	2 – 20	4 – 40	6 – 60	10 – 100	20 – 200	40 – 400	65 – 650	80 – 800	100 – 1000
Resolution	Nm	0.01	0.01	0.01	0.1	0.1	0.1	0.1	1	1	1
Weight (65 5017)	g	370	380	420	810	1085	1361	1765	3222	4572	4990
Adjusted reference dimension on the torque wrench [l_2]	mm	17.5	17.5	17.5	17.5	17.5	25	25	55	55	55
Square drive (65 5015)	in	1/4	1/4	3/8	3/8	1/2	1/2	3/4	–	–	–
Socket for plug-in head	mm	9×12	9×12	9×12	9×12	9×12	14×18	14×18	22×28	22×28	22×28
Wireless application		HID (Human Interface Device); HCT mobile app; HCT Windows app									

±2% ±3% 03 Cal HID HCT HCT

HCT GERMAN INNOVATION AWARD '21 WINNER

HOLEX Electronic torque wrench HCT

- **Display:** Large sharp contrast illuminated 2 inch TFT display with viewing angle stability. With battery display.
- **Fixed ratchet** with changeover lever.
- **Display:** Peak and Track function modes.
- **Modes:** Displaying torque, triggering torque.
- Screw tightening profiles and procedures can be programmed both directly at the wrench and also conveniently via the app.
- **Possible wireless applications:** HCT Windows app and HCT mobile app. The analyser has a bi-directional interface. The analyser can also be used independently (without the app).
- **App:** The Bluetooth dongle 49 8999 Stick (licence) and the Windows app software are required to activate the HCT Windows app (https://hog.tools/win-app-hct). The HCT mobile app is available free of charge for iOS and Android.
- **Data output:** Via Bluetooth. Available via the app as a .csv file, or directly at the torque wrench via the HID interface for simple and convenient digital documentation.
- **Wireless approval:** The torque wrenches with Bluetooth interface have valid wireless approval in all EU countries, in Switzerland, in Norway, Turkey and the UK.
- **Password protection:** possible as protection against unauthorised access to the menu (master password).
- **Warning signals** are haptic (vibration), visual (change of colour on the display) and acoustic (buzzer). The pre-warning point can be configured individually. Haptic and acoustic warning signals can be disabled if desired.
- **Easy input of reference dimensions:** When using extensions, simply input the new value (additional reference dimension). No laborious calculations with formulae.
- **Protection class IP40**
- The **single-component handle** of the torque wrench ensures especially good ergonomics and high torque transmission.
- **Resistant** to oils, grease, fuel, brake fluid and Skydrol.
- **Languages:** German, English, Spanish, Italian, French.
- **Factory settings:** The wrench can be reset to the factory settings.
- **Time and date** on the wrench are updated automatically as soon as it is connected to the app.
- Display of the software version with serial number, load cycle counter and calibration date.
- **Calibration reminder:** after number of load cycles.
- **Counting function:** Load cycle counter is optionally displayed on the screen. This value can be reset at any time.
- **Last measurement:** The last measurement performed can be called up quickly and easily in the main screen.
- **Premium features:** The rotational angle measurement can be activated individually via our GO DIGITAL STORE as an additional licence. Can be found at http://ho7.eu./holex-hct.

Units of measure: Nm, lbfft, lbfin.

Standard: Tested to DIN EN ISO 6789.

Accuracy: Torque: Clockwise ±2 %, anticlockwise ±3 %.

Supplied with: 1 commercially available Li-ion battery type 18650 3.6 V / 3400 mAh (can be charged directly within the tool via an USB-C plug). Supplied in a sturdy plastic case.

Note: Suitable additional batteries can be found under No. 081574 size 3500. Charger for 4 batteries optionally available under No. 081590 size 4ULTRA.



65 5025

maximum torque	Nm	12	30	50	100	200	340
61D 65 5025 Electronic torque wrench **HCT**		–	–	–	–	–	–
Overall length L	mm	355	355	398.5	418.6	535	655
Torque range	Nm	2.4 – 12	6 – 30	10 – 50	20 – 100	40 – 200	68 – 340
Resolution	Nm	0.01	0.01	0.01	0.1	0.1	0.1
Weight	g	590	590	755	910	1360	1525
Square drive	in	1/4	1/4	3/8	1/2	1/2	1/2

HOLEX Electronic torque wrench

Do you want to turn our electronic torque wrench from HOLEX into a torque/rotational angle wrench quickly and easily?

No problem! Simply have the premium feature "rotational angle measurement" for our HOLEX electronic torque wrench HCT No. 65 5025 activated via our GO DIGITAL Store:
https://hog.tools/holex-hct

±2% ±1% ▶ 03 ◀ Cal ▶ 05 ◀ Cal ▶ 01 ◀ Cal

STAHLWILLE® Electronic torque wrench / rotational angle wrench

Highly precise electronic torque / rotational angle wrench for screw tightening and checking of screw fastenings. Clear OLED display with colour screen and extremely simple menu navigation. Sturdy wrench with "Direct mode" for quick general-purpose use. Up to 200 screw tightening cases can be programmed, which can be incorporated in procedural plans. 4 measurement modes: torque and angle of rotation. Process reliability results achieved by torque with angular monitoring or rotational angle with torque monitoring. Can be programmed by a PC; password protection for security against tampering. Rotary angle measurement can be programmed easily, no reference arm required. Peak and Track function modes.
The wrench can be used in trigger mode. When the set torque or rotational angle is reached the wrench triggers with audible and tactile signals like a conventional mechanical torque wrench.
Units of measure: Nm, lbfft, lbfin.
Standard: Tested to DIN EN ISO 6789.
Supplied with: With sturdy plastic case (size 400 in a sturdy sheet metal case) and 4 batteries (1.5 V micro / AAA / LR3), USB data cable, and SENSOMASTER 4 software for transmitting the measured data.

Note:	Suitable Bluetooth module available (No. 52110220).

±2%



65 5230

±1% ▶ 01 ◀ Cal



65 5235

maximum torque		Nm	10	60	100	200	400
63A 65 5230	Electronic torque wrench / rotational angle wrench **with plug-in ratchet**		eShop	eShop	eShop	eShop	(eShop)
63A 65 5235	Electronic torque wrench / rotational angle wrench **without plug-in head**		eShop	eShop	eShop	eShop	(eShop)
Overall length L (65 5235)		mm	226	393	466	547	687
Torque range		Nm	1 – 10	6 – 60	10 – 100	20 – 200	40 – 400
Resolution		Nm	0.01	0.1	0.1	0.1	0.1
Weight (65 5235)		g	370	810	1090	1360	1770
Adjusted reference dimension on the torque wrench [l_2]		mm	17.5	17.5	17.5	25	25
Square drive (65 5230)		in	1/4	3/8	1/2	1/2	3/4
Socket for plug-in head		mm	9×12	9×12	9×12	14×18	14×18

- ***Reversible ratchet***
- ***Easy input of pitch settings:***
  For tools with a different reference dimension, simply input the new dimension.
  No laborious calculations with formulae are necessary.
- ***QuickRelease:***
  Secure engagement and quick change of plug-in heads.
- ***Automatic reminder of calibration:***
  After a certain number of duty cycles and elapsed time and "memory space for up to 2,500 measurements".
- ***Data output:***
  The USB interface allows the saved data to be exported and analysed via PC.
- ***Easy to use:***
  All functions can be selected using the arrow keys. Clear and simple menu navigation.
- ***Warning signals:***
  – Acoustic (buzzer)
  – Visual via 3 LEDs and a colour screen
- ***2-component handle:***
  Resistant to oils, greases, fuels, and Skydrol.

±1% ±1% ▶ 03 ◀ Cal ▶ 05 ◀ Cal

STAHLWILLE® SENSOTORK® 713R electronic torque wrench / rotational angle wrench

The torque/rotational angle wrench offers easy and flexible operation with menu selection on a large display. Recurrent screw settings can be collected on to a menu driven procedure. The early warning of the **visual, tactile and acoustic** signals is adjustable. Resistant to oils, grease, fuel, brake fluid and Skydrol. The wrench is easy to maintain due to simple adjustment, can be programmed via a PC and offers a large measurement range. Password input ensures protection against unintentional adjustment and external access. Torque and rotational angle both displayed at the same time. Rotary angle measurement can be programmed easily, no reference arm required.
Units of measure: Nm, lbfft, lbfin.
Standard: Tested to DIN EN ISO 6789.
Supplied with: Sturdy plastic box (size 400 in sturdy sheet metal box) and 2 batteries (1.5V mignon / AA / LR6).
Optional extras: USB adapter, cable with latching plug and SENSOMASTER 4 software.



65 5270

maximum torque		Nm	60	200	400
63A 65 5270	Electronic torque wrench / rotational angle wrench		–	–	–
Overall length L		mm	378	608	838
Torque range		Nm	3 – 60	10 – 200	20 – 400
Resolution		Nm		0.01	
Weight		g	856	1552	2330
Adjusted reference dimension on the torque wrench [l_2]		mm	17.5	25	25
Square drive		in	3/8	1/2	3/4
Socket for plug-in head		mm	9×12	14×18	14×18

- ***Easy input of pitch settings:***
  For plug-in heads with a different reference dimension, simply input the new dimension. No laborious calculations with formulae.
- ***QuickRelease:***
  Secure engagement and quick change of plug-in heads.
- ***Automatic reminder of calibration:***
  After a certain number of duty cycles and elapsed time.
- ***Rotation angle measurement needs no reference arm.***
- ***Easy to use:***
  All functions can be selected using the arrow keys. Clear and simple controls.
- ***Warning signals:***
  Warning signals can be selected as audible (buzzer), touch (vibration in the handle), visual (LEDs and display) or any combination of these.
  The early warning point can be entered individually.
- ***Any point of application of force:***
  The measurement remains precise in all cases, irrespective of where you grip the torque wrench.
- ***Data output:***
  The USB interface allows the saved data to be read out and analysed via PC.
- ***Background illumination*** *of the display for better legibility and evaluation of the screwing process* ***(traffic light principle).***

±2% ▶ 01 Cal

STAHLWILLE® MANOSKOP® 730DR electromechanical torque wrench Service / Series

Unique electro-mechanical wrench, which combines both the **"displaying" and "triggering"** functions in a single device. When the set torque is reached the wrench triggers, with acoustic and tactile signals like a conventional mechanical torque wrench. In addition the value achieved is displayed and can be transferred to a PC. The additional "displaying" mode provides a continuous visual indication to the user of the torque that is being applied. Saves and documents up to 7500 screw tightening events. An automatic key lock prevents accidental changes to the settings. A PIN code can be entered to prevent unauthorised changes to the settings. The wrench offers a very wide measurement range. Integrated automatic reminder of calibration after the number of operations and elapsed time.

Units of measure: Nm, lbfft, lbfin.

Size 100–650 – With reversible plug-in ratchet.

Size 800; 1000 – Plug-in ratchet with push-through square.

Standard: Tested to DIN EN ISO 6789.

Supplied with: Sturdy plastic box (sizes 100 and 200) or sturdy metal box (from size 400) and 2 batteries (1.5 V mignon / AA / LR6).

Optional extras: USB adapter, cable with latching plug, SENSOMASTER 4 software.

- ***Easy input of reference:*** *For plug-in heads with a different reference dimension, simply input the new dimension. No laborious calculations with formulae.*
- ***QuickRelease:*** *Secure fit and quick change for insert tools.*
- *Robust, compact body.*
- *Tolerance limit settings,shown clearly on a display with colour changes.*
- *Very simple operation; complete use and menu selection with 4 buttons.*
- *2-component handle, resistant to oils, greases, fuels, brake fluids, and Skydrol.*
- *USB interface for exporting the data.*



65 5290

maximum torque		Nm	100	200	400	650	800	1000
63A	65 5290	Electromechanical torque wrench	–	–	–	–	–	–
Overall length L		mm	500	594	738	920	1253	1437
Torque range		Nm	10 – 100	20 – 200	40 – 400	65 – 650	80 – 800	100 – 1000
Adjustment resolution		Nm	0.2	0.5	1	1	1	1
Resolution		Nm	0.1					
Weight		g	1232	1663	2232	3767	6492	6910
Adjusted reference dimension on the torque wrench [l_2]		mm	17.5	25	25	25	55	55
Square drive		in	1/2	1/2	3/4	3/4	3/4	3/4
Socket for plug-in head		mm	9×12	14×18	14×18	14×18	22×28	22×28

MB 12 ±2% ±3% ▶ i Cal

Milwaukee Electronic torque wrench with electric drive

- The electric drive can be used to run the screw forward to the point where torque is applied. The screw is then tightened manually to the set torque. Setting and operation directly at the torque wrench.
- Quick reporting of the torque via **ONE-KEY™** for generation of reports.
- **LCD display** with strong colours and quick response times. Feedback on status and display of relevant information.
- Warning signals can be optionally set as **tactile** (vibration), **visual** (LEDs and display) and **acoustic** or combinations of these. The early warning point can be entered individually.
- Up to **28,000 measured values** can be saved on the torque wrench.
- **With calibration reminders.** After a certain number of duty cycles and elapsed time.

Units of measure: Nm, ft·lbs, in·lbs, kg·cm.

Standard: Tested to DIN EN ISO 6789.

Accuracy: Clockwise ± 2%, anticlockwise ± 3%.

Supplied with: Supplied with 12 V / 2.0 Ah Red Li-ion battery, C12C charger and sturdy plastic case.

Note: See No. 073814ff and No. 073840 for suitable batteries and chargers. Recalibration is performed by the manufacturer.



65 5305

maximum torque		Nm	203
03L	65 5305	Electronic torque wrench with electric drive	eShop
Overall length L		mm	597
Torque range		Nm	16.9 – 203.4
Resolution		Nm	0.1
Weight		g	2600
Square drive		in	1/2
Battery capacity		Ah	2
Nominal voltage		V	12
Motor design			Fuel™
No load speed		min^{-1}	0 – 100



Visual signal by LED traffic light function.

±4% ▶ 03 ◀ Cal

STAHLWILLE® SENSOTORK® 701 electronic torque wrench

- Very slim and compact design for small torques from 1 Nm.
- Easy to use with single button controls.
- 3 measurement modes: Track, Peak Hold, Tightening with evaluation.
- Additional functions with SENSOMASTER 4 software (available at www.stahlwille.de/download free of charge after registration):- Tightening adjustable- Evaluation of the screw tightening procedure by means of coloured LEDs, buzzer and vibration- Adjustable calibration interval- Facility for generating documentation
- Compact design makes work possible even in confined spaces.
- Fixed fine ratchet (80 teeth) with QuickRelease technology.
- Clear display.
- USB interface.
- Any desired force.
- Integrated automatic reminder of calibration after the number of operations and elapsed time.

Units of measure: cNm, Nm, lbfft, lbfin.

Standard: Tested to DIN EN ISO 6789.

Supplied with: Including sturdy plastic case, USB cable, and battery (3.6 V/type 14500) No. 081560 size SL760.





65 5275

maximum torque		Nm	20
63A	65 5275	Electronic torque wrench	eShop
Overall length L		mm	210
Torque range		Nm	1 – 20
Resolution		Nm	0.01
Weight		g	145
Square drive		in	1/4

±2% ±3% ▶ 03 ◀ Cal

HOLEX Electronic torque wrench with digital display

Robust torque wrench with impact resistant casing, 2-component handle, large display and reversible ratchet. Easy operation using large input buttons. Visual and acoustic signal indicates achievement of the set torque **visually and audibly**. Two working modes; selectable between peak value display and following display. The working memory can store up to 50 torque settings.

Units of measure: Nm, lbfft, lbfin, kgfm.

Size 12 – Captive push-through ratchet with ejector. **Any desired force.** Irrespective of where the wrench is held, the measurement always remains accurate.

Size 30–340 – Sturdy plug-in ratchet with change-over wheel.

Standard: Tested to DIN EN ISO 6789.

Accuracy: Clockwise ± 2 %, anticlockwise ± 3 %.

Application: Torque control; controlled tightening of screws in a single operation or for small batch production.



Application example
Optional accessories: Coin driver No. 66 4310 / 66 4311 for unscrewing without damage, for extracting blanking plugs.



65 5345_12



65 5345_135



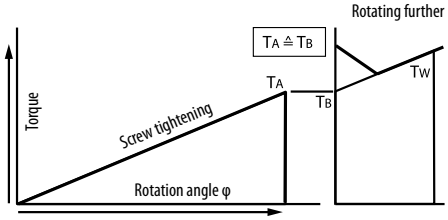
maximum torque		Nm	12	30	135	200	340
62E	65 5345	Electronic torque wrench	eShop	eShop	eShop	eShop	eShop
Overall length L		mm	216	390	410	545	640
Torque range		Nm	2.4 – 12	6 – 30	27 – 135	40 – 200	68 – 340
Resolution		Nm	0.01	0.01	0.1	0.1	0.1
Weight		g	650	1400	1570	2170	2320
Adjusted reference dimension on the torque wrench [l_2]		mm	–	17.5	17.5	25	25
Square drive		in	1/4	1/4	3/8	1/2	1/2
Socket for plug-in head		mm	–	9×12	9×12	14×18	14×18

±1% RS232C ▶ 03 Cal

Your Torque Partner TOHNICHI

Electronic torque testing wrench with digital display

Sturdy test wrench with exchangeable ratchet and compact display and control unit. Visual and acoustic signal indicates achievement of the set torque **visually and audibly**. For right-hand and left-hand threads.
Memory: 999 measured value pairs.
Power supply: NiMH rechargeable battery, operates 20 hours on a charge, charging time 3.5 hours.
Size 850 – **Units of measurement:** Nm, lbfft, kgfm.
Size 10–500 – **Units of measure:** Nm, lbfft, lbfin, kgf·cm.
Standard: Tested to DIN EN ISO 6789.
Application: For quick **checking of screw connections.**
The screw connection is further rotated by a defined angle. The final torque required (T_W) is used to automatically calculate and display the initial tightening torque (T_A equivalent to T_B) for the fastening.
Supplied with: Battery charger, instruction manual in German and English.
Optional extras: Data cable No. 655265 (from RS232C to USB).





maximum torque		Nm	10	20	50	100	200	360	500	850
39E	65 5360	Electronic torque testing wrench	(eShop)	(eShop)	eShop	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Overall length L		mm	255	265	340	450	555	815	1055	1565
Torque range		Nm	2 – 10	4 – 20	10 – 50	20 – 100	40 – 200	72 – 360	100 – 500	170 – 850
Resolution		Nm	0.01	0.02	0.05	0.1	0.2	0.4	0.5	1
Weight		g	460	470	580	630	780	1130	4000	5140
Square drive		in	1/4	3/8	3/8	1/2	1/2	3/4	3/4	1

65



MAKING THE CUSTOMERS' HEADS TURN.

The GARANT socket sets are the ideal complement to our GARANT torque wrenches: There are 23 set combinations available (1/4 inch, 3/8 inch and 1/2 inch), which are perfectly tailored to the customer's needs.
Simply put, everything the user could want.
The **socket sets** can be found in **product groups 63 and 64**.

65 5010

65 6050

65 7762

63 0023

63 4025

±2% ±3% ▶ 03 ◀ Cal

Garant Electronic torque wrench with digital dial gauge display

High-precision, electronic torque wrench with digital dial gauge display. Body of steel, satin chrome-plated, integral reversible ratchet with ejector. Digital display of the Nm value and battery charge status. A control switch for switching on and reset, automatic switch-off after 2 minutes.

Units of measure: Nm, lbfft.

Size 12–50 – 2.8-inch TFT display with double scale (Nm-lbfft) and additional manual switch-off function for the torque wrench.

Size 100–340 – 3.5 inch TFT display with double scale (Nm-lbfft).

Standard: Tested to DIN EN ISO 6789.

Accuracy: Clockwise ± 2 %, anticlockwise ± 3 %.

Function: Actual torque can be read on the gauge whilst working; the final value is held to be read later. **Display:** Peak and Track function modes.

Application: For controlled single tightening of screws and for controlled measurements.

Supplied with: Mini-USB charger cable for the TFT display. Supplied in a sturdy plastic case



Optional accessories:
Coin driver No. 66 4310 / 66 4311 to unscrew blanking plugs without damage.



- Reversible ratchet with ejector.
- Display with battery indicator.
- One button for On / Reset.
- Mini USB port for charging.
- Ergonomic handle.



maximum torque		Nm	12	30	50	100	200	280	340
61E 65 5550	Electronic torque wrench with digital dial gauge display		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L		mm	345	345	388	417	535	655	655
Torque range		Nm	2.4 – 12	6 – 30	10 – 50	20 – 100	40 – 200	56 – 280	68 – 340
Resolution		Nm	0.01	0.01	0.01	0.1	0.1	0.1	0.1
Weight		g	700	700	860	1020	1470	1650	1650
Square drive		in	1/4	1/4	3/8	3/8	1/2	1/2	1/2

±3% ▶ 03 ◀ Cal

Your Torque Partner TOHNICHI Torque wrench with dial gauge

One-armed; slim design with easily readable dial gauge. Body entirely of steel, chrome-plated with fixed square drive for plug-in heads.

Units of measure: Nm.

Standard: Tested to DIN EN ISO 6789.

Function: Actual torque can be read on the gauge whilst working; the final value is held by the memory pointer to be read later.

Application: For controlled single tightening of screws and for controlled measurements.



65 5500_12



65 5500_100

Available with square plug-in socket on request



65 5500_700

maximum torque		Nm	1,5	3	6	12	25	50	100
66F 65 5500	Torque wrench with dial gauge		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L		mm	205	205	205	205	245	320	400
Torque range		Nm	0.2 – 1.5	0.3 – 3	0.7 – 6	1.4 – 12	3.5 – 25	5 – 50	10 – 100
Scale graduation, 1 graduation =		Nm	0.02	0.05	0.1	0.2	0.5	0.5	1
Weight		g	330	330	330	330	400	430	550
Square drive		in	1/4	1/4	1/4	1/4	1/4	3/8	1/2

maximum torque		Nm	200	280	420	700	1000	1400	2100
66F 65 5500	Torque wrench with dial gauge		eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)
Overall length L		mm	501	691	890	1260	1488	1740	2140
Torque range		Nm	20 – 200	35 – 280	40 – 420	70 – 700	100 – 1000	200 – 1400	200 – 2100
Scale graduation, 1 graduation =		Nm	2	5	5	10	10	20	20
Weight		g	800	1650	2400	5300	7400	9800	12000
Square drive		in	1/2	1/2	3/4	3/4	1	1	1

±4% ▶ O3 ◀ Cal

HOLEX Torque wrench with dial gauge

One-armed; slim design with easily readable dial gauge.
Body entirely of steel, chrome-plated with fixed square drive for plug-in heads.
Units of measure: Nm

Size 6–280 – Non-slip 2-component handle.
Size 420–1000 – Knurled metal handle.

Standard: Tested to DIN EN ISO 6789.
Function: Actual torque can be read on the gauge whilst working; the final value is held by the memory pointer to be read later.
Application: For controlled single tightening of screws and for controlled measurements.


65 5520_6 – 280


65 5520_420 – 1000

maximum torque		Nm	6	12	25	50	100	200	280	420	700	1000
62E 65 5520	Torque wrench with dial gauge		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L		mm	225	225	250	332	380	470	690	890	1260	1490
Torque range		Nm	1.2 – 6	2.4 – 12	5 – 25	10 – 50	20 – 100	40 – 200	56 – 280	84 – 420	140 – 700	200 – 1000
Scale graduation, 1 graduation =		Nm	0.1	0.2	0.5	0.5	1	2	5	5	10	10
Weight		g	400	400	400	600	700	1000	1650	2500	5500	6400
Square drive		in	1/4	1/4	1/4	3/8	1/2	1/2	1/2	3/4	3/4	1

▶ O1 ◀ Cal

Torque wrenches with setting scale – automatic triggering

Handy and very compact single-arm torque wrench, adjustable by scale and self-triggering. Extremely high repeat accuracy, since high quality materials are used throughout. Wearing parts, such as compression springs, are specially pre-treated and sorted. Reversible ratchet for left-hand and right-hand tightening.
Units of measure: Nm

Standard: Tested to DIN EN ISO 6789.
Function: The wrench triggers giving a "signal" (clearly audible acoustic tone and noticeable vibration) and afterwards is immediately ready for use again.
Application: For medium to larger batch productions.

Note:	Calibration is only possible for right-hand tightening.

GARANT

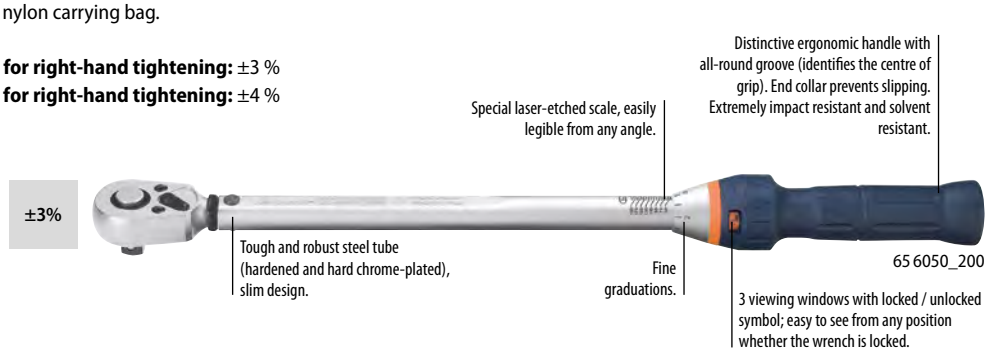
Acoustic and perceptible "click effect" ensures particularly easy use and accurate setting of the desired torque.

65 6050 – With built-in **reversible ratchet** (with ejector up to size 320) – **for left-hand and right-hand tightening.**
65 6055 – Basic tool with **square plug-in socket** (without plug-in head). Suitable spare jaws No. 657582 - 657950.
Size 1000; 1600 – **2-piece** with release tool in nylon carrying bag.

Accuracy:
Size 25–1600 – Of the displayed value **only for right-hand tightening:** ±3 %
65 6050 Size 6 – Of the displayed value **only for right-hand tightening:** ±4 %


unlocked


locked



maximum torque			Nm	6	25	60	60-1/2	120	200	320	400	500	800	1000	1600
61E 65 6050	Garant	Torque wrench **with reversible ratchet**		eShop	eShop ■	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop
61E 65 6055		Torque wrench base unit **without plug-in head**		–	eShop	eShop	–	eShop	eShop	eShop	eShop	eShop	eShop	–	–
Overall length L (65 6050)			mm	225	242	307	307	409	507	633	778	1021	1259	1764	2431
Overall length L (65 6055)			mm	–	225	278	–	372	471	596	692	935	1173	–	–
Torque range			Nm	1 – 6	2.5 – 25	10 – 60	10 – 60	20 – 120	40 – 200	60 – 320	100 – 400	200 – 500	300 – 800	400 – 1000	600 – 1600
Scale graduation, 1 graduation =			Nm	0.1	0.25	0.5	0.5	1	1	2	2.5	2.5	2.5	5	5
Weight (65 6050)			g	300	400	550	550	1000	1300	1400	3700	5500	6300	10000	16000
Adjusted reference dimension on the torque wrench [l_2] (65 6055)			mm	–	17.5	17.5	–	25	25	25	25	25	25	–	–
Square drive (65 6050)			in	1/4	1/4	3/8	1/2	1/2	1/2	1/2	3/4	3/4	3/4	3/4	1
Socket for plug-in head (65 6055)			mm	–	9×12	9×12	–	14×18	14×18	14×18	14×18	14×18	14×18	–	–

HAZET

65 6500 – With built-in **reversible ratchet – for left- and right-hand tightening.**
Size 2000 – **3-piece** with release tool in nylon carrying bag.
65 6510 – Basic tool with **square plug-in socket** (without plug-in head).
Suitable spare jaws No. 657582 - 657950.
Size 6–320 – With HiPer fine tooth reversible ratchet (90 teeth, 4° actuation angle).
Size 1000; 1600 – **2-piece** with release tool in nylon carrying bag.

Accuracy:
Size 10–800 – Of the displayed value **only for right-hand tightening:** ±2 %.
Size 6; 2000 – Of the displayed value **only for right-hand tightening:** ±4 %.
Size 1000; 1600 – Of the displayed value **only for right-hand tightening:** ±3 %.

±3%


65 6500_1000


Locking at the end of the handle.

±2%


65 6500_200


65 6510_200

maximum torque		Nm	6	10	60	120	200	320	400	800	1000	1600	2000
630 65 6500	Torque wrench **with reversible ratchet**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
630 65 6510	Torque wrench base unit **without plug-in head**		–	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–	–
Overall length L (65 6500)		mm	197	198	335	435	543	659	802	1283	1789	2455	3033
Overall length L (65 6510)		mm	–	180	305	400	510	620	718	–	–	–	–
Torque range		Nm	1 – 6	2 – 10	5 – 60	20 – 120	40 – 200	60 – 320	100 – 400	300 – 800	400 – 1000	600 – 1600	800 – 2000
Scale graduation, 1 graduation =		Nm	0.1	0.2	0.5	1	1	2	2.5	2.5	5	5	6
Weight (65 6500)		g	350	400	1000	1700	2000	2300	5100	9000	10400	14000	18000
Adjusted reference dimension on the torque wrench [l_2] (65 6510)		mm	–	19.5	30	38.5	38.5	38.5	44	–	–	–	–
Square drive (65 6500)		in	1/4	1/4	3/8	1/2	1/2	1/2	3/4	3/4	3/4	1	1
Socket for plug-in head (65 6510)		mm	–	9×12	9×12	14×18	14×18	14×18	14×18	–	–	–	–

65

O1 Cal

HOLEX Torque wrenches with setting scale – automatic triggering

±4%


65 7272_500 – 1000

Robust torque wrench, adjustable with micrometer scale, with protection against accidental changes to the setting.
Units of measure: Nm, lbfft.

65 7272 – Integral ratchet to accept sockets.
Size 20 – With **reversible ratchet** and fixed square drive pin – **only for right-hand tightening.**
65 7277 – Basic tool with square plug-in socket (without plug-in head).
Suitable spare jaws No. 657582 - 657950.
65 7272 Size 50–300 – Ratchet with captive **push-through square drive pin** and retaining pin, for **right-hand and left-hand tightening.**
Size 500–1000 – Ratchet with **push-through square drive pin** and retaining pin, for **right-hand and left-hand tightening.**

Standard: Tested to DIN EN ISO 6789.

Accuracy:
Size 20–300 – ±3 % of the displayed value.
Size 500–1000 – ±4 % of the displayed value.

Function: On reaching the set torque value the wrench triggers giving a "signal" (audible and perceptible) and is then immediately ready for use again.

Application: For small to medium series.

±3%


65 7272_50 – 300

±3%


65 7272_20

±3%


65 7277_100


Detail view size 50 – 300

maximum torque		Nm	20	50	100	200	300	500	800	1000
62E 65 7272	Torque wrench **with ratchet**		–	–	–	–	–	–	–	–
62E 65 7277	Torque wrench base unit **without plug-in head**		–	–	–	–	–	–	–	–
Overall length L (65 7272)		mm	232	328	375	459	587	830	1030	1330
Overall length L (65 7277)		mm	215	335	380	465	588	–	–	–
Torque range		Nm	4 – 20	10 – 50	20 – 100	40 – 200	60 – 300	100 – 500	160 – 800	200 – 1000
Scale graduation, 1 graduation =		Nm	0.1	0.5	1	1	1	5	5	5
Weight		g	400	700	800	1000	1350	3800	4700	5700
Adjusted reference dimension on the torque wrench [l_2] (65 7277)		mm	31.8	31.8	40	40	40	–	–	–
Square drive (65 7272)		in	1/4	3/8	1/2	1/2	1/2	3/4	3/4	3/4
Socket for plug-in head (65 7277)		mm	9×12	9×12	14×18	14×18	14×18	–	–	–



Wera Torque wrench with setting scale – automatic triggering

Very sturdy single-handed torque wrench (square drive 1/2 inch) with ergonomic 2-component handle and reversible ratchet with 45 teeth.
Easy adjustment and locking of the specified value is ensured as the user can hear and feel the tool engage when the scale value is reached and easily read off the reading on the main scale and fine scale. User can clearly hear and feel the trigger mechanism upon reaching the set torque value. For right-handed use.
Units of measure: Nm, lbfft.

Standard: Tested to DIN EN ISO 6789.

Accuracy:

65 6200 Size 200-1/2/6210 Size 50-1/2; 50-3/8; 100-1/2; 100-3/8; 300-1/2; 400-1/2; 1000-3/4/6220 Size 50–400 – Percentage of the displayed value **only for right-hand tightening: ±3 %.**

65 6200 Size 25-1/4/6205 Size 25-1/4/6220 Size 25 – Percentage of the displayed value **only for right-hand tightening: ±4 %.**

Function: The wrench triggers giving a "signal" (clearly audible acoustic tone and noticeable vibration) and afterwards is immediately ready for use again.

Advantage:

65 6200/6205 – **Torque lock function:** The torque function can be switched off, meaning the tool can also be used as a standard ratchet for tightening and loosening screws, and for defined angle of rotation applications.

±3%



65 6200_200-1/2

±3%



65 6210_50-3/8

±3%



65 6210_1000-3/4

±3% ±4%



65 6220_25

Type		25-1/4	50-3/8	50-1/2	100-3/8	100-1/2	200-1/2	300-1/2	400-1/2	1000-3/4
63F 65 6200	Torque wrench with reversible ratchet **Torque lock function**	eShop	–	–	–	–	eShop	–	–	–
63F 65 6205	Torque wrench with bit holder **Torque lock function**	eShop	–	–	–	–	–	–	–	–
63F 65 6210	Torque wrench **with reversible ratchet**	–	eShop	eShop	eShop	eShop	–	(eShop)	(eShop)	(eShop)
Overall length L	mm	300	395	395	445	460	510	620	760	1600
Torque range	Nm	2.5 – 25	10 – 50	10 – 50	20 – 100	20 – 100	40 – 200	60 – 300	80 – 400	200 – 1000
Scale graduation, 1 graduation =	Nm	0.1	0.25	0.25	0.5	0.5	1	1	1	1
Weight (65 6200, 65 6210)	g	554	1056	1075	1220	1240	1543	1660	2135	8000
Weight (65 6205)	g	552	–	–	–	–	–	–	–	–
Bit-holder (65 6205)	in	1/4	–	–	–	–	–	–	–	–
Square drive (65 6200, 65 6210)	in	1/4	3/8	1/2	3/8	1/2	1/2	1/2	1/2	3/4

maximum torque	Nm	25	50	100	200	300	400
63F 65 6220	Torque wrench **without plug-in head**	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L	mm	292	347	390	487	578	665
Torque range	Nm	2.5 – 25	10 – 50	20 – 100	40 – 200	60 – 300	80 – 400
Scale graduation, 1 graduation =	Nm	0.1	0.25	0.5	1	1	1
Weight	g	515	960	1052	1264	1439	1960
Adjusted reference dimension on the torque wrench [l_2]	mm	17.5	17.5	17.5	25.5	25.5	25.5
Socket for plug-in head	mm	9×12	9×12	9×12	14×18	14×18	14×18



Wera Torque wrench set 1/2 inch Click-Torque C 3 Set 1



Very sturdy single-handed torque wrench (square drive 1/2 inch) with ergonomic 2-component handle and reversible ratchet with 45 teeth. Easy adjustment and locking of the specified value is ensured as the user can hear and feel the tool engage when the scale value is reached and easily read off the reading on the main scale and fine scale. User can clearly hear and feel the trigger mechanism upon reaching the set torque value. For right-handed use.
Units of measure: Nm, lbfft.

Accuracy: Tested to DIN EN ISO 6789.



65 6300

maximum torque	Nm	200
63F 65 6300	Torque wrench set Click-Torque C 3 Set 1	eShop
Torque range	Nm	40 – 200
Scale graduation, 1 graduation =	cNm	100
Content: Hexagon sockets		1 pc. each size 10; 13; 17; 19 mm
Hexagon screwdriver bits		1 pc. each 6; 8; 10 mm
Screwdriver bits for Torx®		1 pc. each TX30; TX40; TX45; TX50
Extension		1 pc. 125 mm
Torque wrench Click-Torque C 3		1 pc. 40 – 200 Nm
Presented in		Textile box

▶ 01 ◀ Cal

STAHLWILLE®

Torque wrenches with quick adjustment – automatic triggering Service MANOSKOP® 730

Sturdy compact one-armed torque wrench, adjustable to scale and self-triggering. The accuracy is sustained for many thousands of operations, because high quality material is used for all wearing parts and the flexible rod is under load only briefly on each occasion. Body and handle are of sturdy square section. Scales adjustable. **Anti-clockwise tightening by reversing the plug-in tools.**

Standard: Tested to DIN EN ISO 6789.

Function: If the set value is reached while using the wrench, the wrench triggers giving a "signal" (acoustic and perceptible) and is then immediately ready for use again.

Application: Since the set torque can be varied, it is ideal for repairs and short series production.





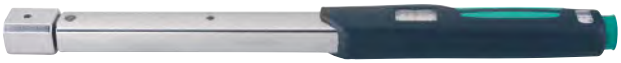
QuickRelease:
Secure location and quick change-over of any plug-in heads with QuickRelease safety locking.
The rectangular socket allows use of a wide variety of plug-in heads.



65 7090_100



65 7092_100



65 7094_100

Service MANOSKOP® 730 N with QuickSelect quick adjustment

Size 20 – **Units of measure:** Nm, lbfin.
Size 50–1000 – **Units of measure:** Nm, lbfft.
65 7092 – With **square drive plug–in head.**
65 7094 – Without any plug-in head (basic model); see No. 657582 – 657950 for suitable plug-in heads.
65 7090 Size 20–650 – With **plug–in reversible ratchet.**
65 7090 Size 800; 1000 – With **plug-in ratchet with push-through square.**

Advantage:
- Ergonomically shaped two-component handle, resistant to aggressive liquids such as fuel, Skydrol etc.
- The adjustment scale is placed behind a sight glass for protection against dirt and damage.
- Quick, precise, and reliable setting: Pull the setting knob, "Twist" to set the desired value and "Press" to save it. Setting knob moves easily since there is no spring pressure to be overcome.

±3%







QuickSelect quick adjustment

maximum torque		Nm	20	50	100	130	200	400	650	800	1000
63A 65 7090	Torque wrench QuickSelect **with plug-in ratchet**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63A 65 7092	Torque wrench QuickSelect **with square drive plug-in head**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
63A 65 7094	Torque wrench QuickSelect **without plug-in head**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L (65 7094)		mm	275	330	386	421	467	607	890	1178	1363
Torque range		Nm	4 – 20	10 – 50	20 – 100	25 – 130	40 – 200	80 – 400	130 – 650	160 – 800	200 – 1000
Scale graduation, 1 graduation =		Nm	0.2	0.25	0.5	0.5	1	2	2.5	5	5
Weight (65 7094)		g	737	831	988	1128	1264	1655	3231	4825	5000
Adjusted reference dimension on the torque wrench [l_2]		mm	17.5	17.5	17.5	25	25	25	25	55	55
Square drive (65 7090, 65 7092)		in	3/8	3/8	1/2	1/2	1/2	3/4	3/4	3/4	3/4
Socket for plug-in head		mm	9×12	9×12	9×12	14×18	14×18	14×18	14×18	22×28	22×28

Service MANOSKOP® 730 Fix with QuickSelect quick adjustment and adjustment locking

65 7095 – With **plug–in reversible ratchet.**
Units of measure: Nm, lbfft.
65 7099 – Without any plug-in head (basic model); see No. 657582 – 657950 for suitable plug-in heads.

Advantage: Can be pre-set using the scale, and secured against further changes by removal of the setting knob. Optionally the wrench can be secured against tampering using the locking screw and the sticker supplied.

±3%



Adjustment button



Security screw



Security sticker

Maximum torque		Nm	50	100	130	200	400
63A 65 7095	QuickSelect torque wrench **with adjustment locking and plug-in ratchet**		eShop	eShop	eShop	eShop	eShop
63A 65 7099	QuickSelect torque wrench **with adjustment locking, without plug-in head**		eShop	eShop	eShop	eShop	eShop
Overall length L (65 7099)		mm	330	386	421	467	607
Torque range		Nm	10 – 50	20 – 100	25 – 130	40 – 200	80 – 400
Scale graduation, 1 graduation =		Nm	0.25	0.5	0.5	1	2
Weight (65 7099)		g	831	988	1128	1264	1655
Adjusted reference dimension on the torque wrench [l_2]		mm	17.5	17.5	25	25	25
Square drive (65 7095)		in	3/8	1/2	1/2	1/2	3/4
Socket for plug-in head		mm	9×12	9×12	14×18	14×18	14×18

Service MANOSKOP® 730 Quick with quick adjustment

±4%

65 7105 – With **plug–in reversible ratchet.**
Size 20L; 40L – **Units of measure:** Nm.
Size 50–650 – **Units of measure:** Nm, lbfft.
65 7205 – With **square drive plug–in head.**
65 7215 – Without any plug-in head (basic model); see No. 657582 – 657950 for suitable plug-in heads.

Function: Quick adjustment of the torque with the slide setting button. The value is fixed using the locking key in the handle.


65 7105_100


65 7205_100


65 7215_100


Easy to read scale.


Quick adjustment

Maximum torque		Nm	50	100	130	200	300	400	650
63A 65 7105	Torque wrench **with plug-in reversible ratchet**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
63A 65 7205	Torque wrench **with square plug-in head**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
63A 65 7215	Torque wrench **without plug-in head**		eShop ■	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L (65 7215)		mm	315	370	410	455	520	590	875
Torque range		Nm	6 – 50	20 – 100	25 – 130	40 – 200	60 – 300	80 – 400	130 – 650
Scale graduation, 1 graduation =		Nm	2	2.5	2.5	5	10	10	20
Weight (65 7215)		g	780	940	1080	1210	1400	1620	3190
Adjusted reference dimension on the torque wrench [l_2]		mm	17.5	17.5	25	25	25	25	25
Square drive (65 7105, 65 7205)		in	3/8	1/2	1/2	1/2	1/2	3/4	3/4
Socket for plug-in head		mm	9×12	9×12	14×18	14×18	14×18	14×18	14×18


Locking button in the end of the handle.

Maximum torque		Nm	20L	40L
63A 65 7105	Torque wrench **with plug-in reversible ratchet**		eShop	eShop
63A 65 7205	Torque wrench **with square plug-in head**		eShop	eShop
63A 65 7215	Torque wrench **without plug-in head**		eShop ■	eShop
Overall length L (65 7215)		mm	179	222
Torque range		Nm	4 – 20	8 – 40
Scale graduation, 1 graduation =		Nm	0.5	1
Weight (65 7215)		g	315	395
Adjusted reference dimension on the torque wrench [l_2]		mm	17.5	
Square drive (65 7105, 65 7205)		in	3/8	
Socket for plug-in head		mm	9×12	


65 7215_20L

±4% ▶ 01 ◀ Cal

STAHLWILLE®

Torque wrenches with setting scale – automatic triggering – Standard MANOSKOP® 721

Sturdy compact, torque wrench, adjustable to scale (Nm and lbfft) and self-triggering. The accuracy is sustained for many thousands of operations, because high quality material is used for all wearing parts and the flexible rod is under load only briefly on each occasion. It returns immediately to an off-position after the torque has been achieved. Body and handle are of sturdy square section.

Units of measure: Nm, lbfft.

65 7225 Size 150 – With **integral ratchet** – **only for right-hand tightening.**
Size 300 – Ratchet with **push-through square drive pin** for **right-hand and left-hand tightening.**
Size 800; 1000 – With **push-through square** for **right-hand and left-hand tightening.**

Standard: Tested to DIN EN ISO 6789.

Function: If the set value is reached while using the wrench, the wrench triggers giving a "signal" (acoustic and perceptible) and is then immediately ready for use again.
65 7225 – Quick adjustment of the torque with the slide setting button. The value is fixed using the locking key in the handle.

Application: The quick setting features makes it ideal for repairs and small series production.


Easy to read scale.


Locking button in the end of the handle


Quick adjustment


65 7225_150


65 7220_800

maximum torque		Nm	150	300	800	1000
63A 65 7220	Torque wrench Standard MANOSKOP® 721 with ratchet		–	–	eShop	eShop
63A 65 7225			eShop	eShop	–	–
Overall length L		mm	452	553	1051	1504
Torque range		Nm	30 – 150	60 – 300	160 – 800	200 – 1000
Scale graduation, 1 graduation =		Nm	5	10	20	25
Weight		g	1280	1645	6380	7010
Square drive		in	1/2	1/2	3/4	3/4

±3% ▶ 01 ◀ Cal

Torque wrenches with setting scale – automatic triggering



65 7235_5 – 25

Torque wrench, adjustable using micrometer scale, with protection against accidental changes to the setting.
With reversible ratchet head and square drive for sockets.
Units of measure: Nm.
Size 50–280 – With synthetic resin handle.
Size 5; 10; 15; 25; 420; 750; 1400; 2100; 2800 – With knurled metal handle.



65 7235_50 – 280

Standard: Tested to DIN EN ISO 6789.
Function: On reaching the set torque value the wrench triggers giving a "signal" (acoustic and perceptible) and is then immediately ready for use again.
Application: For medium and large batch productions.



Note:
Size 1400–2800 – Use only sockets with lock hole.

maximum torque	Nm	5	10	15	25	50	100	140	280	420	750	1400	2100	2800
66F 65 7235 Torque wrench with setting scale		eShop	eShop ■	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
Overall length L	mm	160	195	195	230	260	335	400	695	995	1342	1787	1899	2405
Torque range	Nm	1 – 5	2 – 10	3 – 15	5 – 25	10 – 50	20 – 100	30 – 140	40 – 280	60 – 420	150 – 750	300 – 1400	500 – 2100	800 – 2800
Scale graduation, 1 graduation =	Nm	0.05	0.1	0.1	0.25	0.5	1	1	2	2	5	10	10	20
Weight	g	160	190	190	250	400	650	750	2000	4000	5600	10800	17000	24500
Square drive	in	1/4	1/4	1/4	3/8	3/8	1/2	1/2	1/2	3/4	3/4	1	1	1.1/2

±3% ▶ 01 ◀ Cal

Torque wrenches with setting scale – automatic triggering – DREMOMETER

Handy, robust construction, light weight. All heavily loaded parts high-quality steel.
Fixed square drive (no ratchet).
Size 12 – With body of glass fibre reinforced plastic and 2-component handle.
Size 2000 – **Units of measure:** Nm.
Size 12; 40 – **Units of measure:** Nm, lbfin.
Size 120–1000 – **Units of measure:** Nm, lbfft.
Size 120–300 – Square drive with push-button unlocking.
Size 1000; 2000 – With extension tube.
Standard: Tested to DIN EN ISO 6789.
Function: On reaching the set torque value the wrench triggers giving a "signal" (acoustic and perceptible) and is then immediately ready for use again.
The desired torque is set using a captive hexagon L-wrench that is pulled out from the end of the handle. The set torque can be easily read on the scale. No inadvertent changes to the setting can be made whilst working.
Application: For medium to larger series production.



_12



_200



_1000

maximum torque	Nm	12	40	120	200	300	550	760	1000	2000
63L 65 7000 Torque wrench DREMOMETER with fixed square drive		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L	mm	211	338	462	551	617	812	812	1403	2353
Torque range	Nm	2.5 – 12	8 – 40	25 – 120	40 – 200	60 – 300	110 – 550	155 – 760	520 – 1000	750 – 2000
Scale graduation, 1 graduation =	Nm	0.5	5	5	5	5	10	10	10	50
Weight	g	320	1000	1500	1400	2000	2900	3200	5600	11600
Square drive	in	1/4	3/8	1/2	1/2	1/2	3/4	3/4	3/4	1

Note!

Torque tools are measuring tools.
At regular intervals, using appropriate equipment, they must be calibrated and if necessary adjusted.
(See DIN EN ISO 6789, 5.3 Recalibration/conformity test).

▶ 06 ◀ Cal ▶ 07 ◀ Cal

Torque wrenches without scale – automatic triggering

Single-handed torque wrenches without a setting scale. Wrench setting using torque analyser.

Standard: Tested to DIN EN ISO 6789.

Function: If the set value is reached while using the wrench, the wrench triggers giving a "signal" (audible and perceptible) and is then immediately ready for use again.

Application: For controlled screw tightening etc. to specified torques in series production.

±4%



65 7300 _12,5



65 7300_40-300

65 7300 Size 12,5 – With **integral ratchet** – only for right-hand tightening.

65 7352 Size 20 – With **reversible ratchet** and fixed square drive pin – only for right-hand tightening.

65 7300 Size 40–300 – With reversible plug-in ratchet – left-hand tightening by reversing the plug-in head.

65 7352 Size 50–300 – Integral ratchet with captive push-through square drive pin for **right-hand and left-hand tightening.**

Accuracy:

65 7300 – ±4% of the set value.

65 7352 – ±3% of the set value.

±3%



65 7352_20



65 7352_50-300

maximum torque	Nm	12,5	20	40	50	100	200	300
63A 65 7300 STAHLWILLE	Torque wrench without scale	eShop	–	eShop	–	eShop	eShop	eShop
62E 65 7352 HOLEX		–	–	–	–	–	–	–
Overall length L (65 7300)	mm	174	–	234.5	–	351.5	504	656
Overall length L (65 7352)	mm	–	232	–	328	375	459	587
Torque range	Nm	1.5 – 12.5	4 – 20	4 – 40	10 – 50	20 – 100	40 – 200	60 – 300
Torque range (65 7300)	lbfft	1 – 9	–	4 – 30	–	15 – 74	30 – 147	40 – 220
Weight (65 7300)	g	340	–	677	–	780	1362	1512
Weight (65 7352)	g	–	400	–	1000	1000	1200	1600
Adjusted reference dimension on the torque wrench [l_2] (65 7300)	mm	–	–	17.5	–	17.5	25	25
Square drive	in	1/4	1/4	3/8	3/8	1/2	1/2	1/2
Socket for plug-in head (65 7300)	mm	–	–	9×12	–	9×12	14×18	14×18

±3%

Size 2; 5; 280; 420N – With knurled metal handle.

Size 2; 5 – Quick-change tool system with pin (Ø 6 mm).

Size 6–140 – With synthetic resin handle.

Size 6–420N – **Fixed reversible ratchet.**

Note: Suitable setting tools No. 657325.

Size 2; 5 – Suitable insert tools No. 657322 and No. 657323.



65 7320_2; _5



65 7320_100



65 7320_280

Maximum torque	Nm	2	5	6	12	25	50	100	140	280	420N
66F 65 7320 TOHNICHI	Torque wrench without scale	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L	mm	133	133	185	185	215	240	315	380	665	970
Torque range	Nm	0.4 – 2	1 – 5	1 – 6	2 – 12	5 – 25	10 – 50	20 – 100	30 – 140	40 – 280	60 – 420
Weight	g	60	60	190	190	250	400	650	700	1800	3100
Square drive	in	–	–	1/4	1/4	3/8	3/8	1/2	1/2	1/2	3/4
Socket for plug-in head	mm	Ø 6	Ø 6	–	–	–	–	–	–	–	–

Garant Torque wrench base unit without scale – automatic triggering

±2% | ▶ 06 ◀ Cal | ▶ 07 ◀ Cal

One-armed torque wrench without a setting scale. Set the desired torque value with setting tool No. 657452 size 1 in conjunction with a suitable test device.

65 7450 – **Anti-clockwise tightening by reversing the plug-in head.** Without plug-in head (base model);for suitable plug-in heads see No. 657582 – 657950.

65 7460 – With built-in **reversible ratchet** with ejector – **for left-hand and right-hand tightening.** Torque wrench, only right-hand triggering.

Standard: Tested to DIN EN ISO 6789.

Function: On reaching the set torque value the wrench triggers giving a "signal"(audible and perceptible) and is then immediately ready for use again.

Application: For controlled screw tightening etc. to specified torques in batch productions.



65 7450



65 7460

maximum torque		Nm	10	25	50	100	200	320
61E 65 7450	Torque wrench base unit without scale **without plug-in head**		eShop	eShop	eShop	eShop	eShop	eShop
61E 65 7460	Torque wrench without scale **with reversible ratchet**		eShop	eShop	eShop	eShop	eShop	eShop
Overall length L (65 7450)		mm	139	189	247	368	410	636
Overall length L (65 7460)		mm	155	205	276	404	446	672
Torque range		Nm	2 – 10	5 – 25	10 – 50	20 – 100	50 – 200	60 – 320
Weight (65 7450)		g	170	230	290	450	700	1100
Weight (65 7460)		g	190	280	340	550	800	1200
Square drive (65 7460)		in	1/4	1/4	3/8	1/2	1/2	1/2
Socket for plug-in head (65 7450)		mm	9×12	9×12	9×12	14×18	14×18	14×18

Application: For setting and locking the torque value.

Type		1
61E 65 7452	Setting wrench for the torque value	eShop
suitable for		Torque wrench No. 657450; 657460



65 7452

Torque wrench base unit without scale – automatic triggering

 ±4%  ▶ 06 ◀ Cal | ▶ 07 ◀ Cal

Single-handed torque wrench without a setting scale. Wrench setting using torque analyser. **Left-hand tightening by reversing the plug-in head.**
Without plug-in head (base model); see No. 657582 – 657590 for suitable plug-in heads.

Standard: Tested to DIN EN ISO 6789.

Function: On reaching the set torque value the wrench triggers giving a "signal"(audible and perceptible) and is then immediately ready for use again.

Application: For controlled screw tightening etc. to specified torques in batch productions.



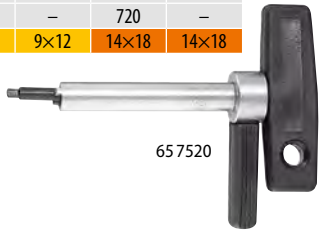
65 7410



65 7500

maximum torque		Nm	12	35	40	80	85	100	200	300
63A 65 7410	STAHLWILLE	Torque wrench base unit	–	–	eShop	–	–	eShop	eShop	eShop
62E 65 7500	HOLEX		eShop	eShop	–	eShop	eShop	–	eShop	–
Overall length L (65 7410)		mm	–	–	201	–	–	318	457	609
Overall length L (65 7500)		mm	125	180	–	240	315	–	405	–
Torque range (65 7410)		Nm	–	–	4 – 40	–	–	20 – 100	40 – 200	60 – 300
Torque range (65 7500)		Nm	2 – 12	7 – 35	–	10 – 80	15 – 85	–	50 – 200	–
Weight (65 7410)		g	–	–	520	–	–	640	1060	1210
Weight (65 7500)		g	190	250	–	310	380	–	720	–
Socket for plug-in head		mm	9×12	9×12	9×12	9×12	9×12	9×12	14×18	14×18

62E 65 7520	HOLEX	Setting wrench for the torque value	eShop
suitable for			Torque wrench No. 657500



65 7520

Garant Deflecting torque wrench without scale – automatic triggering



Torque wrench without scale. Wrench setting using torque analyser. **The trigger mechanism makes unintentional overtightening extremely unlikely. Anti-clockwise tightening** by reversing the plug-in head.

Standard: Tested to DIN EN ISO 6789.

Accuracy:

Size 5; 14 – ±4 % of the set value.

Size 25; 60 – ±3 % of the set value.

Function: On reaching the preset torque value the wrench triggers a clearly detectable deflection and is then immediately ready for use again. The long-travel indication gives the user an unmistakable signal that the set torque has been reached.

Note: Suitable spare jaws No. 657582 - 657950.

±3%

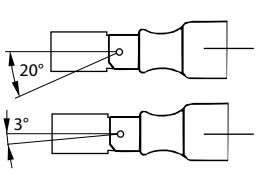


_25

±4%



_14



With long-travel indication No. 65 7750. Unintentional overtightening extremely unlikely.

Standard mechanism

maximum torque		Nm	5	14	25	60
61E 65 7750	Deflecting torque wrench **without scale**		eShop	eShop	eShop	eShop
Overall length L		mm	145	205	240	360
Torque range		Nm	0.5 – 5	4 – 14	5 – 25	10 – 60
Weight		g	220	290	650	870
Adjusted reference dimension on the torque wrench [l_2]		mm	17.5	17.5	17.5	25
Socket for plug-in head		mm	9×12			



Closure cap and internal locking screw prevent inadvertent change of the setting.

Garant Deflecting torque wrench with scale – automatic triggering



One-armed torque wrench, adjustable by a scale, self-triggering.
The trigger mechanism makes unintentional overtightening extremely unlikely. Anti-clockwise tightening by reversing the plug-in head.
Units of measure: Nm

Standard: Tested to DIN EN ISO 6789.

Accuracy:

Size 5; 10 – ±6 % of the set value.

Size 25; 50 – ±4 % of the set value.

Function: On reaching the preset torque value the wrench triggers a clearly detectable deflection and is then immediately ready for use again. The long-travel indication gives the user an unmistakable signal that the set torque has been reached.

Note:

Size 5; 10 – Suitable spare jaws No. 657582 - 657950.

±4%



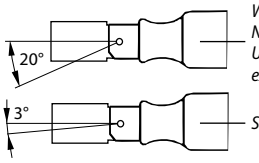
_25

±6%



_5

maximum torque		Nm	5	10	25	50
61E 65 7735	Deflecting torque wrench **with scale**		eShop	eShop	eShop	eShop
Overall length L		mm	222	230	345	365
Torque range		Nm	1 – 5	2 – 10	5 – 25	10 – 50
Scale graduation, 1 graduation =		Nm	0.025	0.05	0.1	0.25
Weight		g	290	300	1110	1140
Adjusted reference dimension on the torque wrench [l_2]		mm	18.3	18.3	–	–
Square drive		in	–	–	1/4	3/8
Socket for plug-in head		mm	9×12	9×12	–	–



With long-travel indication No. 65 7735. Unintentional overtightening extremely unlikely.

Standard mechanism

TorqueScout

Quick and easy search of the desired torque tools, or determination of the correction to the reference dimension.

- Direct and simple ordering process.
- Search by torque value, range or by the screw to be tightened.
- If adapters, extensions, and special plug-in tools are used, a correction must be made to the reference dimension; this value can be calculated easily and automatically.



Visit us online at www.toolscout.com and discover the wide range of solutions offered by the ToolScout.

Garant Torque wrenches “Slipper”, automatic triggering

The special slipping trigger mechanism **reliably prevents unintentional overtightening.**

Standard: Tested to DIN EN ISO 6789.
Accuracy: ±6 % of the set value.
Function: On reaching the set torque value the wrench triggers a clearly detectable deflection and is then immediately ready for use again. The special trigger mechanism ensures that the set torque values are reliably achieved, **but not exceeded.**
Advantage: Precision triggering mechanism facilitates working in inaccessible places.
Application: For medium to larger batch productions.

With adjustment scale

Torque wrench with **micrometer scale for setting**, self-triggering. Hold in position at the end of the handle against inadvertent adjustment. With integral ratchet.
Units of measure: Nm.

maximum torque		Nm	5	10
61E 65 7762	Torque wrench “Slipper” **with scale**		eShop	eShop
Overall length L		mm	204	
Torque range		Nm	1 – 5	2 – 10
Scale graduation, 1 graduation =		Nm	0.05	0.1
Weight		g	235	
Square drive		in	1/4	

▶ 01 ◀ Cal ±6%



65 7762_5

Without adjustment scale

Torque wrench **without scale.** Wrench setting using torque analyser.

maximum torque		Nm	5	10	25	55	125
61E 65 7766	Torque wrench “Slipper” **without scale**		eShop	eShop	eShop	eShop	eShop
Overall length L		mm	185	185	216	324	460
Torque range		Nm	1 – 5	2 – 10	5 – 25	15 – 55	40 – 125
Weight		g	190	190	340	800	1360
Square drive		in	1/4	1/4	1/4	3/8	1/2

▶ 06 ◀ Cal ▶ 07 ◀ Cal ±6%



65 7766_10

▶ 01 ◀ Cal

HAZET Fully insulated torque wrench with setting scale – automatic triggering

Torque wrench **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**
Single-handed torque wrench, adjustable using the scale, with protection against accidental changes to the setting. Integral ratchet, **reversible left-hand and right-hand** tightening by push-through drive square.
Units of measure: Nm.

Standard: Tested to DIN EN ISO 6789.
Accuracy:
Size 10 – ±6% of the set value.
Size 25; 120 – ±4% of the set value.
Function: On reaching the set torque value the wrench triggers giving a “signal” (audible and perceptible) and is then immediately ready for use again.
Attention: Any repairs must be performed on in the HAZET Service Centre, since the wrench must be subjected after repair to an individual 10,000 V test to DIN EN 60900 / VDE 0682-201!

Note: For working at voltages up to 1000 Volts. In safety areas only **fully insulated** tools may be used in combination.



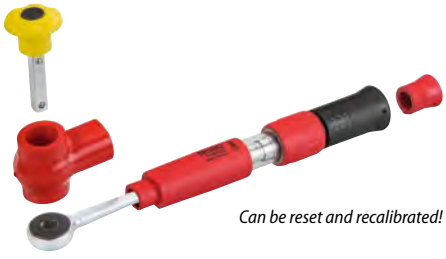


±6%



65 7556_10

Maximum torque		Nm	10	25	120
630 65 7556	Torque wrench, fully insulated **with push-through square**		eShop	eShop	eShop
Overall length L		mm	275	305	420
Torque range		Nm	2 – 10	5 – 25	20 – 120
Scale graduation, 1 graduation =		Nm	0.2	0.5	1
Weight		g	590	640	1440
Square drive		in	3/8	3/8	1/2



Can be reset and recalibrated!

±10% ▶ 03 ◀ Cal

Wera Torque wrench “Safe Torque” automatically triggering

The special slipping trigger mechanism reliably prevents unintentional overtightening. Desired torque value is easily set and saved as the user can hear and feel the device engage upon reaching the scale value. The 72 fine-pitched teeth enable a low return angle of only 5°.

Standard: Tested to DIN EN ISO 6789.

Function: On reaching the set torque value the wrench triggers a clearly detectable deflection and is then immediately ready for use again. The overslip trigger mechanism ensures that the set torque values are **not exceeded.**

Advantage: **Torque lock function:** The torque function can be switched off – the tool can therefore also be used as a standard ratchet with high release torques and for applications involving defined rotational angles.



Torque lock function.



Overslip mechanism prevents excessive torques from being applied.

with 1/4 inch square drive

maximum torque		Nm	12
63F 65 7770	Torque wrench “Safe-Torque A 1” **with 1/4 inch square drive and scale**		eShop
Overall length L		mm	244
Torque range		Nm	2 – 12
Scale graduation, 1 graduation =		Nm	0.1
Weight		g	553
Square drive		in	1/4


65 7770_12

¼″ 5.5-13

10-piece set incl. torque wrench Safe-Torque A 1.

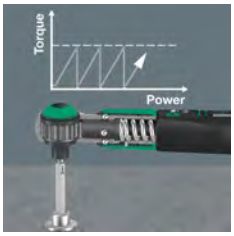
maximum torque		Nm	12
63F 65 7772	Torque wrench set “Safe-Torque A 1 Set” **with 1/4 inch square drive and scale**		eShop
Torque range		Nm	2 – 12
Scale graduation, 1 graduation =		Nm	0.1
Content: Sockets, hexagon, 1/4 inch			1 pc. each 5.5; 6; 7; 8; 10; 11; 12; 13 mm
Extension with quick-rotation sleeve			1 pc. length 75 mm
Torque wrench Safe-Torque A 1			1 pc. No. 657770 size 12
Presented in			Textile box


65 7772_12

with 1/4 inch bit holder

D 6.3 F 6.3

maximum torque		Nm	12
63F 65 7774	Torque wrench “Safe-Torque A 2” **with 1/4 inch bit holder and scale**		eShop
Overall length L		mm	244
Torque range		Nm	2 – 12
Scale graduation, 1 graduation =		Nm	0.1
Weight		g	552




65 7774_12

D 6.3 F 6.3 5.5-13

23-piece set incl. torque wrench Safe-Torque A 2.

maximum torque		Nm	12
63F 65 7776	Torque wrench set “Safe-Torque A 2 Set” **with 1/4 inch bit holder and scale**		eShop
Torque range		Nm	2 – 12
Scale graduation, 1 graduation =		Nm	0.1
Content: Sockets, hexagon, 1/4 inch			1 pc. each 5.5; 6; 7; 8; 9; 10; 11; 12; 13 mm
1/4 inch bits for Phillips, shank E 6.3			1 pc. PH 2 (length 50 mm)
1/4 inch bits for hex socket, shank E 6.3			1 pc. each 2.5; 3; 4; 5; 6 mm (length 50 mm)
1/4 inch bits for Torx®, shank E 6.3			1 pc. each TX10; TX15; TX20; TX25; TX27; TX30 (length 50 mm)
Adapter with 1/4 inch square – C 6.3 hexagon shank			1 pc. length 25 mm
Torque wrench Safe-Torque A 2			1 pc. No. 657774 size 12
Presented in			Textile box


65 7776_12

Plug-in head for torque wrench

Drop-forged; all plug-in heads = Rectangular shank with spring retaining pin. This ensures a solid and secure fit of the plug-in head in the torque wrench.

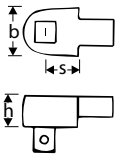
Suitable for: Torque wrench with rectangular sockets.

Plug-in ratchet / plug-in tool

65 7582 Size 1-1/2–2-1/2 – Very compact **plug-in reversible ratchet with ejector**.
65 7582 Size 2-3/4 – Very compact plug-in reversible ratchet.
65 7590 – **Plug-in reversible ratchet with ejector.**
Size 1-1/4 – With reversing lever.
65 7640 – **Slim plug-in ratchet** with recessed reverser.
65 7600/7630 – **Plug-in reversible ratchet.**
65 7698/7700 – **Square plug-in head.**

Material:
65 7582/7640/7698/7630 – Chrome vanadium steel, chrome-plated.
65 7590/7600/7700 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!




65 7582-1/2


65 7582_2-3/4


65 7590_1-1/4

Further plug-in heads with plug-in shank □ 22×28 mm available on request.




65 7600_1- 3/8


65 7640


65 7698


65 7700


65 7630

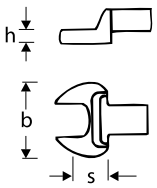
Type-Square drive			in	1-1/4	1-1/4F	1-3/8	1-1/2	2-3/8	2-1/2	2-3/4	2-3/4HD	3-3/4HD
61E 65 7582	Garant	Plug-in ratchet reversible		eShop	–	eShop	eShop	–	eShop	eShop	–	–
63A 65 7590	STAHLWILLE	Plug-in ratchet reversible **with QuickRelease ejector**		eShop ■	–	eShop	eShop	–	eShop	–	–	–
63A 65 7600		Plug-in ratchet reversible		eShop	eShop	eShop ■	eShop	–	eShop	eShop	eShop	eShop
63O 65 7640	HAZET	Plug-in ratchet slim with recessed reverser		–	–	–	–	eShop	eShop	–	–	–
61E 65 7698	Garant	Square Drive Insert		eShop	–	eShop	eShop	–	–	–	–	–
63A 65 7700	STAHLWILLE			eShop	–	eShop	eShop	–	eShop	eShop	–	–
62E 65 7630	HOLEX	Plug-in ratchet		eShop	–	eShop	eShop	–	eShop	eShop	–	–
b (65 7582)			mm	25	–	32	32	–	39	39	–	–
b (65 7590)			mm	22	–	29	29	–	41	–	–	–
b (65 7600)			mm	22	24	33	33	–	43	50	58	61
b (65 7640, 65 7698)			mm	23	–	23	23	40	40	–	–	–
b (65 7700)			mm	20	–	20	20	–	27	40	–	–
b (65 7630)			mm	25	–	35	35	–	43	43	–	–
h (65 7582)			mm	11.5	–	16.4	16.4	–	20.5	20.5	–	–
h (65 7590)			mm	14.5	–	14.5	14.5	–	22.3	–	–	–
h (65 7600)			mm	13.8	13.8	24	24	–	26	32	36	35
h (65 7640, 65 7698)			mm	15	–	15	15	14.3	14.3	–	–	–
h (65 7630)			mm	15.3	–	22.5	22.5	–	29	29	–	–
h (65 7700)			mm	14	–	14	14	–	22.3	25	–	–
Long-term rated loading (65 7582, 65 7698, 65 7630)			Nm	30	–	135	135	–	340	450	–	–
Long-term rated loading (65 7590)			Nm	40	–	100	100	–	200	–	–	–
Long-term rated loading (65 7600)			Nm	40	42	80	100	–	300	400	650	650
Long-term rated loading (65 7640)			Nm	–	–	–	–	200	320	–	–	–
Long-term rated loading (65 7700)			Nm	40	–	80	100	–	300	650	–	–
Pitch S (65 7582)			mm	21	–	28	28	–	34	34	–	–
Pitch S (65 7590)			mm	17.5	–	28	28	–	38.5	–	–	–
Pitch S (65 7600, 65 7698, 65 7700, 65 7630)			mm	17.5	17.5	17.5	17.5	–	25	25	30	55
Pitch S (65 7640)			mm	–	–	–	–	36	36	–	–	–
No. of teeth (65 7582)				48	–	48	48	–	48	48	–	–
No. of teeth (65 7590)				22	–	30	30	–	36	–	–	–
No. of teeth (65 7600)				22	60	60	60	–	60	60	60	60
No. of teeth (65 7640)				–	–	–	–	40	40	–	–	–
No. of teeth (65 7630)				52	–	52	52	–	52	52	–	–
Plug-in shank			mm	9×12	9×12	9×12	9×12	14×18	14×18	14×18	14×18	22×28

Open jaw plug-in head

Material:

65 7792 – Chrome vanadium steel, chrome-plated.
65 7800 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!




65 7792


65 7800

Type-Width across flats	mm	1-8	1-10	1-11	1-12	1-13	1-14	1-15	1-16	1-17	1-18	1-19
61E 65 7792 Garant / 63A 65 7800 STAHLWILLE – Open jaw plug-in head		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
b (65 7792)	mm	22	24.8	26	27.5	28.8	31.5	33.5	36	37.7	39	41.6
b (65 7800)	mm	22	26	26	30	30	35	35	38	38	42	42
h (65 7792)	mm	5.7	5.7	5.7	5.7	5.7	7.7	7.7	7.7	7.7	7.7	7.7
h (65 7800)	mm	5	5.5	5.5	7	7	8	8	8.5	8.5	9	9
Pitch S (65 7792)	mm	17.5	17.5	17.5	17.5	17.5	20	20	20	20	20	20
Pitch S (65 7800)	mm	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	20	20
Plug-in shank	mm	9×12										

Type-Width across flats	mm	2-13	2-14	2-16	2-17	2-18	2-19	2-21	2-22	2-24	2-27	2-30	2-32	2-36	2-38	2-41
61E 65 7792 Garant / 63A 65 7800 STAHLWILLE – Open jaw plug-in head		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	eShop
		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
b (65 7792)	mm	29.7	31.1	35.8	37	38.6	40.6	45.2	47.3	50.8	58.7	62.7	65.2	66.5	–	82.5
b (65 7800)	mm	30	35	38	38	42	42	50	50	53	60	66	66	74	74	82
h (65 7792)	mm	7	7	9	9	9	9	11	11	11	14	14	14	14	–	14
h (65 7800)	mm	7	8	9	9	10	10	11	11	12	13	14	14	15	15	15
Pitch S (65 7792)	mm	25	25	25	25	25	25	25	25	25	32.5	32.5	32.5	32.5	–	40
Pitch S (65 7800)	mm	25	25	25	25	25	25	25	25	25	30	30	32.5	32.5	32.5	36.5
Plug-in shank	mm	14×18														

Open ring plug-in head

Material:

65 7902 – Chrome vanadium steel, chrome-plated.
65 7910 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

Note: The rated load on this plug-in head is limited to the corresponding jaw width, and may be less than that of the torque wrench.
Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!


65 7902


65 7910

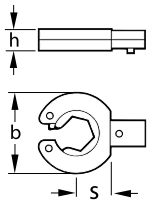
Type-Width across flats	mm	1-10	1-11	1-12	1-13	1-14	1-16	1-17	1-19	1-22	1-24
61E 65 7902 Garant / 63A 65 7910 STAHLWILLE – Open ring plug-in head		eShop	eShop	–	eShop	eShop	–	eShop	eShop	eShop	–
		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
b (65 7902)	mm	21.2	22.6	–	25.2	27.3	–	31.6	34.6	39.3	–
b (65 7910)	mm	21.5	22.5	24.5	26	27	30.5	31.5	34	39.5	40
h (65 7902)	mm	12	12	–	12	13	–	13	15	15	–
h (65 7910)	mm	11	11	12	12	13	13	13	15	15	15
Pitch S (65 7902)	mm	17.5	17.5	–	17.5	17.5	–	17.5	17.5	17.5	–
Pitch S (65 7910)	mm	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	20	20
Plug-in shank	mm	9×12									

Open ring ratchet plug–in head

Patented special head for screw fitting pipework connectors and other union nuts.
Size 11–13 – With stop for screw heads; prevents slipping off.

Advantage: The **ratchet function saves huge amounts of time and makes work easier** compared to conventional open ring tools.

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!




65 7920

Width across flats	mm	10	11	12	13	17
66F 65 7920 WALTER Open ring ratchet plug–in head		eShop	eShop	eShop	eShop	eShop
b	mm	33	33	33	33	45
h	mm	11	11	11	11	16
Pitch S	mm	17	17.5	17.5	17.5	21
Plug-in shank	mm	9×12				

Adjustable spanner plug-in head

Great versatility due to the adjustable opening width.

Material: Chrome vanadium steel, chrome-plated.

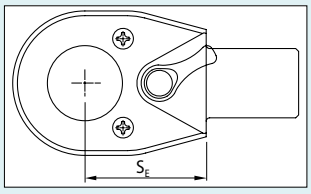
Advantage: Adjustment of the opening width **does not necessitate modification of the reference dimension.**

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!


65 7850

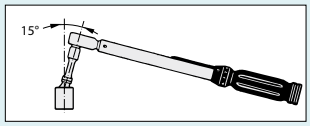
Type-Opening width	mm	1-27	1-30	2-30	2-41
61E 65 7850 Garant Adjustable spanner plug-in head		eShop	eShop	eShop	eShop
b	mm	61.8	71.8	71.8	88.6
h	mm	14.6	16.9	16.9	20.4
Opening width	mm	4 – 27	5 – 30	5 – 30	7 – 41
Opening width	in	1/8 – 1.1/16	3/16 – 1.3/16	3/16 – 1.3/16	1/4 – 1.1/2
Pitch S	mm	62.7	74.4	74.4	85.4
Plug-in shank	mm	9×12	9×12	14×18	14×18

Use of plug-in heads, adapters and extensions

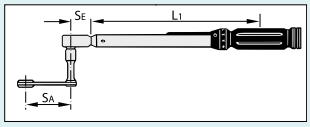


If the torque wrench is used with a plug-in head, adapter or extension whose reference dimension S (effective length) differs from the adjusted reference dimension on the torque wrench S_J (see supplied test report or operating instructions), this will mean that the effective length of the wrench is altered compared to the "normal" drive take-off point. This, in turn, will affect the effective torque and the reference dimension will need to be corrected.

The reference dimension S_E of the plug-in head is determined as shown in the drawing.
If several plug-in heads and adapters are combined with each other, the sum of all "S"s must be taken into account.
A practical aid for the reference dimension calculation can be found in our online shop under Tool Scout / Application data (www.toolscout.com).



The use of **"Wobble" extensions** with less than 15° displacement has only a negligible effect on the effective torque.
When using universal joint drives, it is recommended that a new effective torque is determined (see below).
The use of plug-in heads or adapters alters the effective length of the wrench compared to the "normal" drive take-off point, which changes the effective torque setting.



For a torque wrench basic tool, the torque to be set is calculated as follows:

$$MDE = \frac{MDV \times (L_1 + S_J)}{L_1 + S_E + S_A}$$

MDE = torque to be set.
MDV = prescribed torque.
L_1 = effective length of the torque tool.
S_J = adjusted reference dimension on the torque wrench.
S_E = reference dimension of the plug-in head.
S_A = length of the adapter.

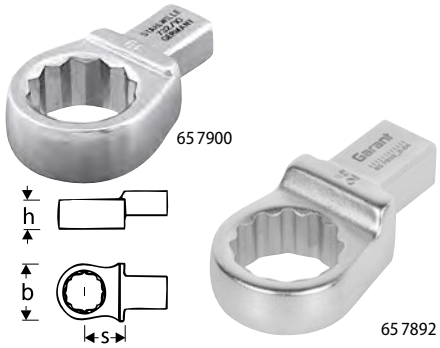
Ring plug-in head

Material:

65 7892 – Chrome vanadium steel, chrome-plated.

65 7900 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!



Type-Width across flats	mm	1-7	1-8	1-10	1-12	1-13	1-14	1-15	1-16	1-17	1-18	1-19	1-22
61E 65 7892 Garant	Ring plug-in head	–	eShop	eShop	eShop	eShop	–	–	eShop	eShop	eShop	eShop	–
63A 65 7900 STAHLWILLE		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
b (65 7892)	mm	–	13.1	17.6	20.3	21.1	–	–	26.4	27.4	28.9	31	–
b (65 7900)	mm	13	14.2	17.2	20.5	21.5	22.5	24.5	26	27	28	30.5	34.5
h (65 7892)	mm	–	8	8	12.2	12.2	–	–	13.2	13.2	13.2	13.2	–
h (65 7900)	mm	8	8	9	11	11	11	12	12	13	13	13	15
Pitch S	mm	17.5											
Plug-in shank	mm	9×12											

Type-Width across flats	mm	2-13	2-14	2-15	2-16	2-17	2-18	2-19	2-21	2-22	2-24	2-27	2-30	2-32	2-36	2-41
61E 65 7892 Garant	Ring plug-in head	–	eShop	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63A 65 7900 STAHLWILLE		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
b (65 7892)	mm	–	23	–	–	27.5	29.5	31	33	35	38	42	45.1	48	53	59.3
b (65 7900)	mm	22.5	23	24	25.5	27	29	30.5	33	34.5	37.5	42.5	46	47.5	54	60
h (65 7892)	mm	–	12	–	–	12.5	12.5	12.5	15	15	15	17.5	17.5	17.5	19	19
h (65 7900)	mm	11	11	11	12	12	13	13	15	15	15	17	19	19	19	20
Pitch S (65 7892)	mm	–	25	–	–	25	25	25	25	25	25	31	31	31	31	31
Pitch S (65 7900)	mm	25	25	25	25	25	25	25	25	25	25	25	25	25	28	30
Plug-in shank	mm	14×18														

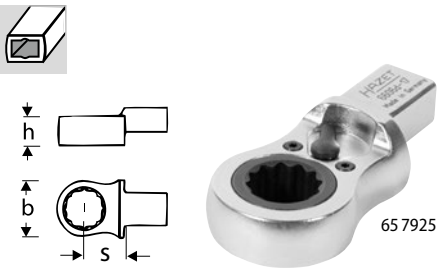
Ratchet ring plug-in head

Deep cranked **ring ratchet**, reversible. Working angle of 9°.

Material: Chrome vanadium steel, chrome-plated.

Advantage: Ratchet operation at extremely inaccessible places.

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!



Type-Width across flats	mm	2-16	2-17	2-18	2-19	2-21
630 65 7925 HAZET	Ratchet ring plug-in head	eShop	eShop	eShop	eShop	eShop
b	mm	40				
h	mm	14.3				
Pitch S	mm	36				
Plug-in shank	mm	14×18				

Ratchet plug–in head to take bits

Ratchet reversible for clockwise / anticlockwise tightening.

Material:

65 7932 – Chrome vanadium steel, chrome-plated.

65 7940 – Chrome alloy steel, non-flaking, chrome-plated over nickel.

Application:

Size 1/4 – To take bits with hexagon shank to DIN ISO 1173 C 6.3 and E 6.3 (1/4 inch).

Size 5/16 – To take bits with hexagon shank to DIN ISO 1173 C 8 and E 8 (5/16 inch).

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!



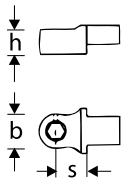
Bit-holder	in	1/4	5/16
61E 65 7932 Garant	Bit ratchet plug-in head	eShop	–
63A 65 7940 STAHLWILLE		eShop	eShop
b (65 7932)	mm	17.5	–
b (65 7940)	mm	22	29
h (65 7932)	mm	12.4	–
h (65 7940)	mm	13.6	17.9
Long-term rated loading (65 7932)	Nm	15	–
Long-term rated loading (65 7940)	Nm	40	
No. of teeth (65 7932)		60	–
No. of teeth (65 7940)		22	30
Pitch S	mm	17.5	28
Plug-in shank	mm	9×12	

Plug-in head to take 5/16 inch bits

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.

Application: To take bits with hexagon shank to DIN ISO 1173 C 8 (5/16 inch).

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!





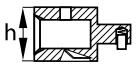
65 7930

Type		1	2
63A 65 7930	STAHLWILLE Bit holder plug-in head	eShop	eShop
b	mm	16	
h	mm	12.5	
Pitch S	mm	17.5	25
Plug-in shank	mm	9×12	14×18

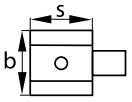
Plug-in adapters

Material: Chrome alloy steel, non-flaking, chrome-plated over nickel.

Note: Please note the pitch of the plug-in head and match this to that of the adjustment tool (see test certificate/operating instructions of the torque wrench you are using). If these vary, correct the pitch!




65 7948



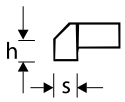


65 7949

Type		1	2
63A 65 7948	STAHLWILLE Plug-in adapter enlarger	eShop	–
63A 65 7949	STAHLWILLE Plug-in adapter reducer	–	eShop
b	mm	31	28
h	mm	26	21
for plug-in heads	mm	14×18	9×12
Pitch S	mm	30.5	21.5
Plug-in shank	mm	9×12	14×18

Weld-on plug-in head

Application: To take customer's own tools, e.g. a special crank wrench. The scale has to be corrected in accordance with the length of the part welded on.

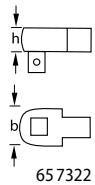



65 7950

Type		1	2
63A 65 7950	STAHLWILLE Weld-on plug-in head	eShop	eShop
l	mm	8	12
h	mm	8	11
Plug-in head (tool blank)	mm	8×14	11×25
Pitch S	mm	8	12
Plug-in shank	mm	9×12	14×18

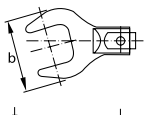
Your Torque Partner TOHNICHI Plug-in tool for torque wrench No. 657320 size 2 and 5

65 7322 – Switchable ratchet attachment with 48 teeth and 7.5° working arc.



65 7322


65 7322



65 7323


65 7323

Square drive	in	1/4
66F 65 7322	Ratchet head, reversible	eShop
b	mm	15
h	mm	8
Pitch S	mm	25
No. of teeth		48
Plug-in shank	mm	∅ 6
Suitable for: Torque wrenches		No. 657320 size 2 and 5

Width across flats	mm	5,5	6	7	8	10	11	12	13	14	16	17	19
66F 65 7323	Open jaw plug-in head	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
b	mm	13	15	17	18	20	21	22	23	24	26	27	29
h	mm	3	3	3	4.5	4.5	4.5	4.5	5	5	5	5	5
Pitch S	mm	25											
Plug-in shank	mm	∅ 6											
Suitable for: Torque wrenches		No. 657320 size 2 and 5											

±2% F 6.3 ▶ 01 ◀ Cal ▶ 03 ◀ Cal HID HCT

HCT

Garant Electronic torque screwdriver HCT

- **Display:** Large, sharp-contrast illuminated 1.3-inch TFT display with viewing angle stability and **rotating view** to easily read the display regardless of the application. With battery display and memory display. Torque and rotational angle both displayed at the same time.
- **Display:** Peak and Track function modes.
- **Modes:** Displaying torque, triggering torque. Up to 100 screw tightening profiles can be programmed. Recurrent screw tightening profiles and be summarised into a procedure (up to 10 procedures each with up to 10 screw tightening profiles). Screw tightening profiles and procedures can be programmed both directly at the wrench and also conveniently via the app.
- **Possible wireless applications:** HCT Windows app and HCT mobile app. The torque screwdriver has a bi-directional interface but can also be used independently (without app).
- **Apps:** The Bluetooth® dongle No. 498999 size STICK (license) and the Windows app software are required to activate the HCT Windows app (https://hog.tools/win-app-hct). The HCT mobile app is available free of charge for iOS and Android.
- **Memory capacity:** 1000 measurement values with timestamp (incl. date and time).
- **Data output:** Available via Bluetooth® or USB-C. Via Bluetooth®: Available via the apps as a .csv file, or directly at the torque screwdriver via the HID interface for simple and convenient digital documentation. Via the USB C interface: The data can the exported as a .csv file.
- **Wireless approval:** The torque screwdrivers with Bluetooth interface have valid wireless approval in all EU countries, Switzerland, Norway, Turkey and the UK.
- **Password protection:** available as protection against unauthorised access to the menu (master password) and for verifying screw-tightening cases and procedures. In addition, you can set that reworking a screw connection that has been performed incorrectly requires input of a password.
- **Warning signal outputs** are haptic (vibration), visual (change of colour at the display, clearly visible 180° LED ring with "traffic light function") and acoustic (buzzer). Haptic and acoustic warning signals can be disabled if desired.
- **Protection class IP40.**
- The **2-component handle** of the torque screwdriver ensures especially good ergonomics and high torque transmission.
- **Resistant** to oils, grease, fuel, brake fluid and Skydrol.
- **Languages:** German, English, Spanish, Italian, French.
- **Factory settings:** Can be reset to the factory settings.
- **Time and date** on the torque screwdriver are updated automatically as soon as it is connected to the app.
- **Display** of the software version with serial number, load cycle counter and calibration date.
- **Calibration reminder:** after number of load cycles.
- **Tolerances:** Three types of tolerance can be set. Relative tolerance in %, absolute tolerance in the unit that was set, and a tolerance window.
- **Quick-change adapter** with magnetic holder for bits.
- **Unit of measure:** cNm, Nm, lbfft, lbfin.

Standard: Tested to DIN EN ISO 6789.

Accuracy: Torque: Clockwise and anti-clockwise ±2%.

Supplied with: USB-C data cable, 1 commercially available Li-ion rechargeable battery type 18650 3.6 V / 3400 mA (can be charged directly within the tool via a USB-C plug). Supplied in a sturdy plastic case.

Note: Suitable additional batteries can be found under No. 081574 size 3500. Charger for 4 batteries optionally available under No. 081590 size 4ULTRA.

Display can be rotated.





65 9021

Simple menu navigation.



Comfortable-to-read display.



maximum torque		cNm	50	200	500
61D 65 9021	Electronic torque screwdriver **HCT**		–	–	–
Overall length L		mm		246	
Torque range		cNm	10 – 50	40 – 200	80 – 500
Resolution		cNm	0.01	0.1	0.1
Weight		g		294	

¼" | ±4% | F 6.3 | ▶ 03 ◀ Cal

STAHLWILLE® TORSIOTRONIC electronic torque screwdriver with digital display

Integral bit ratchet with 80 teeth for a working angle of just 4.5°. This enables fine-step work with screw connections that are difficult to access.
Mechanics with ball mechanism triggers audibly and noticeably when the target torque is reached. After triggering, the sliding mechanism prevents the set tightening torque from being exceeded unintentionally and the screw from being overtightened.
Ergonomically shaped ball handle allows fatigue-free working. A 1/4 inch square drive is incorporated into the end of the handle. Resistant to oils, greases, fuels and brake fluids.

- Three operating modes with visual, acoustic and haptic stop signal.
- Memory capacity: Up to 2500 measured values.
- An integral micro-USB port permits the measurement data to be read and documented at terminals.
- Bright OLED power display, low power consumption places little burden on the battery.

Units of measure: cNm, Nm, lbfft, lbfin, ozf·in

Standard: Tested to DIN EN ISO 6789.

Supplied with: Supplied with a 3.6 V / 2.6 Ah Lithium-ion battery type 18650 (external charging), SENSOMASTER 4 software, micro-USB on a USB-A cable, bit-holder (hexagonal drive D 6.3; 1/4 inch). In a plastic case.

Size 1000 – With T-handle.

Note: Suitable charger and charger adapter available on request. Additional batteries can be found under No. 081574 size 2600 or alternatively size 3500.

The appropriate charger can be found under No. 08 1590 size 4ULTRA. Additional batteries can be found under No. 08 1574 size 2600 or alternatively size 3500.



65 9005



maximum torque		cNm	300	600	1000
63A 65 9005	Electronic torque screwdriver		eShop	eShop	eShop
Overall length L		mm		317	
Torque range		cNm	30 – 300	60 – 600	100 – 1000
Resolution		cNm	0.1	0.1	1
Weight		g	679	682	684

±1% | F 6.3 | ▶ 03 ◀ Cal

Your Torque Partner TOHNICHI Electronic testing torque screwdriver with digital display

High precision electronic torque screwdriver with large easy-to-read display.

- Display: Track mode and Peak mode.
- Memory capacity: Up to 1000 measured values.
- Interface: The saved measured data can be uploaded to a PC via a USB cable. Choice of 2 measurement modes:
- Screw tightening mode (specification of the required torque value, with warning limit).
- Inspection mode (specification of the upper and lower tolerance values). The respective measurement result is indicated by LEDs and a buzzer.

Units of measure: cNm, lbfin, kgfcm, ozfin

Standard: Tested to DIN EN ISO 6789.

Supplied with: Supplied with lithium-ion battery and USB data transmission cable No. 655265.

Unit changeover
between cN·m, lbf·in, kgf·cm, ozf·in



65 9010

Integral ratchet
reversible for clockwise/ anti-clockwise rotation

maximum torque		cNm	50	200	400
66F 65 9010	Electronic torque screwdriver		eShop	eShop	eShop
Overall length L		mm		230	
Torque range		cNm	10 – 50	40 – 200	80 – 400
Resolution		cNm	0.05	0.2	0.5
Weight		g		340	

±2% | F 6.3 | ▶ 03 ◀ Cal

HOLEX Electronic torque screwdriver with digital display

Torque screwdriver with a flexible range of applications; with a 2-component handle, large display and quick-change coupling shank for bits. When the set value is reached, the torque screwdriver gives a clear visual and audible signal.
2 working modes are available - peak value display and tracking value display. Stores up to 50 values.

Units of measure: cNm, lbfin, kgfcm

Standard: Tested to DIN EN ISO 6789.



Optional accessories: Coin driver No. 664310 / 664311, for unscrewing without damage, for extracting blanking plugs.

maximum torque		cNm	50	200	400
62E 65 9050	Electronic torque screwdriver		eShop	eShop	eShop
Overall length L		mm		203	
Torque range		cNm	10 – 50	40 – 200	80 – 400
Resolution		cNm		0.1	
Weight		g		200	

±6% D 6.3 F 6.3 ▶ 01 ◀ Cal

Garant Torque screwdriver with 1/4 inch bit holder, with scale, automatic triggering

- Ergonomically shaped power grip with easy-grip Haptoprene surface ensures high transmission of force.
- Clear and easy to read thanks to large numeric display.
- Short 36° trigger distance with clearly audible and perceptible signal.
- Trigger mechanism with 10 detent elements made of high-alloy tool steel with high wear resistance for a long service life.
- The overload clutch ("Slipper") ensures the set value is not exceeded.
- Easy to use and easy to identify the locked and unlocked state by the orange signal ring on the rotary knob.
- Bit holder (1/4 inch – D 6.3 / F 6.3) with quick release fastener. Fast bit changes with one hand.

Standard: Tested to **DIN EN ISO 6789.**

Function: On reaching the set torque value, the screwdriver can be felt and heard to trigger and is then again immediately ready for use. In the anti-clockwise direction of rotation: without torque function to loosen screw connections.

Lock and unlock status



Easy readability





65 9100_600

maximum torque		cNm	30	120	600
61E 65 9100	Torque screwdriver with 1/4 inch bit holder, **with scale, automatic triggering**		eShop	eShop	eShop
Overall length L		mm	204		
Torque range		cNm	2 – 30	20 – 120	100 – 600
Resolution		cNm	0.2	1	10
Weight		g	310		

65

±6% D 6.3 F 6.3 ▶ 01 ◀ Cal

HAZET Torque screwdriver with 1/4 inch bit holder, with scale, automatic triggering

- Very easy to read thanks to large, clear numeric display.
- Short 36° release distance with clearly audible signal.
- Bit holder (1/4 inch – D 6.3 / F 6.3) with quick release fastener – fast bit changes with one hand.
- "Ratchet function" with free-running mechanism, reversible and can be locked, enables fast working due to smooth re-gripping action when tightening/loosening screw connections, even in confined spaces
- Release mechanism made of high-alloy tool steel – wear resistant.
- Overload clutch ("Slipper") ensures the set value is not exceeded.
- Lock symbols clearly indicate the locking status.

Standard: Tested to **DIN EN ISO 6789.**



65 9985_30



65 9985_1000

maximum torque		cNm	30	120	600	1000
630 65 9985	Torque screwdriver with 1/4 inch bit holder, **with scale, automatic triggering**		eShop	eShop	eShop	eShop
Overall length L		mm	196	196	198	198
Torque range		cNm	2 – 30	20 – 120	100 – 600	400 – 1000
Torque range		Nm	0.02 – 0.3	0.2 – 1.2	1 – 6	4 – 10
Scale graduation, 1 graduation =		cNm	0.2	1	10	10

±6% D 6.3 ▶ 01 ◀ Cal

HOLEX Torque screwdrivers, adjustable, automatic triggering





Practical handle for transmission of the required torques without problems. Easy to read micrometer scale, protected against dirt. Lock at the end of the handle against inadvertent adjustment. Interchangeable blade to take 1/4 inch bits included.

Standard: Tested to DIN EN ISO 6789.

Function: On reaching the set torque value, the screwdriver can be felt and heard to trigger and is then again immediately ready for use.

Application: For controlled tightening of screws to a pre-set torque.

maximum torque		cNm	150	300	600
62E 65 9945	Torque screwdriver with scale		–	–	–
Overall length L		mm	153		
Torque range		cNm	30 – 150	60 – 300	120 – 600
Torque range		Nm	0.3 – 1.5	0.6 – 3	1.2 – 6
Scale graduation, 1 graduation =		cNm	5	10	20



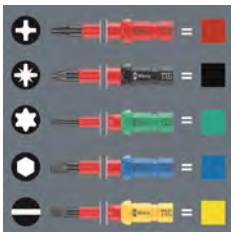
Unlocked



Locked

±6%

Wera Set of VDE torque screwdrivers



Kraftform handle made of impact-resistant plastic with integral soft zones facilitates torque transmission and thus protects hand and arm. With colour coding for visual differentiation of the screw profiles. Handle and blade **fully insulated up to 1000 V** to **DIN EN IEC 60900 / VDE 0682-201.**

maximum torque		cNm	300
63F 65 9356	Torque screwdriver set, 16 pieces **VDE fully insulated**		eShop
Torque range		cNm	120 – 300
Content: Slot-head blades			0.4×2.5; 0.6×3.5; 0.8×4.0; 1.0×5.5
Blades for Phillips			PH1 and PH2
Pozidriv bits			PZ1 and PZ2
blades for Torx®			Size TX10; TX15; TX20; TX25
Pozidriv-slot-head combination profile			PZ/ S1 and PZ/ S2 (combination profile)
Torque screwdriver			1 pc.
Kraftform handle for interchangeable blades			1 pc.



65 9356_300

±6%

wiha Set of VDE torque screwdrivers

Torque continuously adjustable using Torque–Setter (included). On reaching the set torque value, the screwdriver can be felt and heard to trigger and is then immediately ready for use again. Handle and blade **fully insulated up to 1000 V** to **DIN EN IEC 60900 / VDE 0682-201.** With 15 **Slim blades** = reduced blade/ and insulation diameter for deep-set screw and spring elements **(insulation Ø = blade Ø).**

Standard: Tested to DIN EN ISO 6789.

Application: For use at voltages up to 1000 V.

maximum torque		cNm	500
63K 65 9370	TorqueVario®-S electric torque screwdriver set, 19 pieces **VDE fully insulated**		eShop
Torque range		cNm	80 – 500
Content: Slot-head blades			2.5; 3.5; 5.5; 6.5
Blades for Phillips			PH1 and PH2
Blades for Pozidriv			PZ1 and PZ2
blades for Torx®			TX9; TX10; TX15; TX20; TX25
Pozidriv-slot-head combination profile			PZ/ S1 and PZ/ S2 (combination profile)
Torque screwdriver			1 pc.
Torque setter adjustment tool			1 pc. No. 659931 size 1
Adapter for slimBits			1 pc.



65 9370

±6%

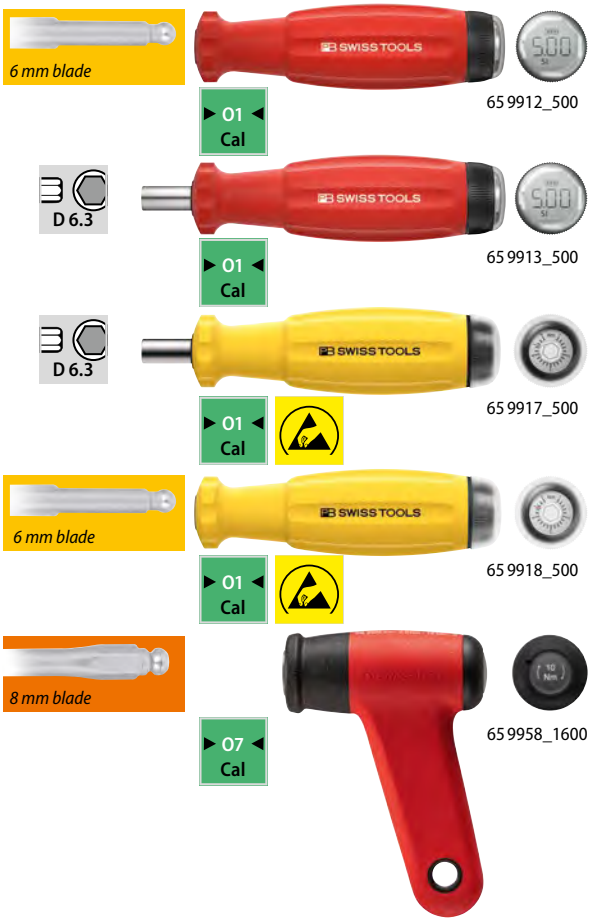
Torque screwdrivers, adjustable, automatic triggering

Power grip with non-allergenic elastomer coating allows transmission of the required torque with no problems even with **wet or oily hands.** On reaching the set torque value, the screwdriver can be felt and heard to trigger and is then again immediately ready for use. The release torque is higher than the tightening torque (overload protection).

65 9912 Size 50 – To **take interchangeable blades** (No. 669605 – 669608).
Size 1600 – To **take 8 mm interchangeable blades** (No. 659870 – 659884).
65 9913/9917 – **Bit holder with magnet** to take C 6.3 bits.
65 9917/9918 – The desired torque is set using an adjustment wheel at the end of the handle. Putting the wheel into the locked position prevents inadvertent changes to the setting. Easy to read micrometer scale, protected against dirt.
Suitable for ESD work.
65 9958 – The desired torque can be set by stepless adjustment using a torque analyser (No. 654300 – 654460) and a 5 AF hexagon screwdriver (not supplied).
Size 1600 – To **take 8 mm interchangeable blades** (No. 659870 – 659884).
With pistol grip for delivering high torques.
65 9912/9913 – Torque adjustment **without using tools** just pull the cap and turn it. The torque setting is displayed in a window **(digital display at the end of the handle).** Built-in electronics with NFC interface. Battery can be replaced by the customer (button cell CR 1/3 N; 3V). **Units of measure:** Nm, lbfft.
65 9912/9918/9958 Size 200; 500 – To **take 6 mm interchangeable blades** (No. 659920 – 659928).

Standard: Tested to DIN EN ISO 6789.

Application:
65 9912/9913 – For controlled tightening of screws to a pre-set torque.



maximum torque		cNm	50	200	500	1600
63D 65 9912	Torque screwdriver **with digital display, to take interchangeable blades**		eShop	eShop	eShop	eShop
63D 65 9913	Torque screwdriver **with digital display, to take D 6.3 bits**		eShop	eShop	eShop	–
63D 65 9917	Torque screwdriver **with scale, to take D 6.3 bits, ESD**		–	eShop	eShop	–
63D 65 9918	Torque screwdriver **with scale, to take interchangeable blades, ESD**		–	eShop	eShop	–
63D 65 9958	Torque screwdriver **without scale, to take interchangeable blades**		–	eShop	eShop	eShop
Overall length L (65 9912)		mm	107	126	126	125
Overall length L (65 9913)		mm	127.5	146.5	146.5	–
Overall length L (65 9917)		mm	–	144	144	–
Overall length L (65 9918, 65 9958)		mm	–	124	124	126
Torque range (65 9912, 65 9913, 65 9917, 65 9918)		cNm	10 – 50	40 – 200	100 – 500	340 – 1600
Torque range (65 9958)		cNm	–	40 – 200	100 – 500	320 – 1600
Torque range (65 9912, 65 9913, 65 9917, 65 9918)		Nm	0.1 – 0.5	0.4 – 2	1 – 5	3.4 – 16
Torque range (65 9958)		Nm	–	0.4 – 2	1 – 5	3.2 – 16
Resolution (65 9912, 65 9913)		cNm	1	2	5	10
Scale graduation, 1 graduation = (65 9917, 65 9918)		cNm	–	5	10	–

±6% 01 Cal

Torque screwdriver set, adjustable, automatic triggering

Power grip with a non-allergenic elastomer coating. On reaching the set torque value, the screwdriver can be felt and heard to trigger and is then again immediately ready for use. The release torque is higher than the tightening torque (overload protection). The desired torque is set using an adjustment wheel at the end of the handle. Putting the wheel into the locked position prevents inadvertent changes to the setting.
Easy to read micrometer scale, protected against dirt.
Tool handle made of conductive plastic, **suitable for ESDs.**

Standard: Tested to DIN EN ISO 6789.

maximum torque		cNm	50
63D 65 9919	Torque screwdriver set, 8 pieces **with scale, to take interchangeable blades, ESD**		eShop
Torque range		Nm	0.1 – 0.5
Torque range		cNm	10 – 50
Scale graduation, 1 graduation =		cNm	1
Content:			1 pc.
Torque screwdriver			
3 blades for slot-head / Phillips (No. 669605)			2 / 00; 2.5 / 0; 3.5 / 1
2 hexagon blades (No. 669606)			1.5 / 2; 2.5 / 3
2 bits for Torx® screws (No. 669607)			TX6 / TX7; TX8 / TX9



65 9919

±3% ▶ O3 ◀ Cal

KANON Minimal torque gauge

Accurate measuring instrument for the smallest torques. Easy-to-read scale with memory pointer on the top and additional scale on the side. **With 3-jaw steel chuck.**

Standard: Tested to DIN EN ISO 6789.

Application: For measuring the smallest torques (such as rotation and frictional resistances) and for controlled tightening of screws.



maximum torque	cNm	3	6	12	24	36	60	90	150
66F 65 8800	Minimal torque gauge	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L	mm	106	106	106	132	132	132	132	132
Torque range	cNm	–	–	–	2 – 24	4 – 36	5 – 60	10 – 90	10 – 150
Torque range	mNm	4 – 30	5 – 60	10 – 120	–	–	–	–	–
Scale graduation, 1 graduation =	cNm	–	–	–	0.2	0.5	1	2	2
Scale graduation, 1 graduation =	mNm	0.5	1	2	–	–	–	–	–
Clamping chuck range	mm	1 – 6.5	1 – 6.5	1 – 6.5	1 – 8.5	1 – 8.5	1 – 8.5	1 – 8.5	1 – 8.5
∅	mm	43	43	43	63	63	63	63	63
Weight	g	290	290	290	600	600	600	600	600

±4% F 6.3 ▶ O3 ◀ Cal

STAHLWILLE Torque screwdrivers "Torsiometer" with display scale

Ergonomic handle with torsion rod measuring device.
Scale with memory pointer for right hand threads.
Units of measurement: cNm, lbfin

Standard: Tested to DIN EN ISO 6789.

Application: For controlled single tightening of screws and for controlled measurements.



65 9200

maximum torque	cNm	75	150	300	600
63A 65 9200	"Torsiometer" torque screwdriver	eShop	eShop	eShop	eShop
Overall length L	mm	185			
Torque range	cNm	15 – 75	30 – 150	60 – 300	120 – 600
Torque range	lbfin	1.5 – 6.5	3 – 13	6 – 26	12 – 52
Scale graduation, 1 graduation =	cNm	2.5	5	10	20

▶ O1 ◀ Cal

±6% ±10%

wiha Torque screwdrivers TorqueVario® with scale

Numerical display of the torque value via scale in the window (40 – 50 individual values, depending on the torque range). Torque continuously adjustable using Torque–Setter (included). On reaching the set torque value, the screwdriver can be felt and heard to trigger and is then immediately ready for use again.

Size 60 – Accuracy class ±10 %.
Size 100–1400 – Accuracy class ±6 %.

Standard: Tested to DIN EN ISO 6789.

Application:

Size 1400 – With T-handle and bit holder for 1/4 inch bits.
Size 60–700 – For checking threaded fastenings to the specified torque, in combination with a Wiha Torque interchangeable bit No. 659932 – 659946.

Note: Setting standard for size 60-700: No. 659931 size1 and for size 1400: No. 659931 size 2.



65 9930_60-700



Setting tool

D 6.3 F 6.3



65 9930_1400

maximum torque	cNm	60	100	200	500	700	1400
63K 65 9930	Torque screwdriver TorqueVario®	eShop ■	eShop	eShop	eShop ■	eShop	eShop
Overall length L	mm	127	127	131	138	142	120
Torque range	cNm	10 – 60	40 – 100	50 – 200	80 – 500	200 – 700	500 – 1400
Torque range	Nm	0.1 – 0.6	0.4 – 1	0.5 – 2	0.8 – 5	2 – 7	5 – 14
Scale graduation, 1 graduation =	Nm	0.05	0.05	0.1	0.2	0.2	–
∅	mm	23	23	30	36	41	–

±6% D 6.3 F 6.3 ▶ 01 ◀ Cal

wiha Torque screwdrivers iTorque® with digital display

High-quality comfortable metal-plastic composite handle ensures ergonomic working and easy application of the set torques. Quick and easy reading and setting **via the large digital display.** Automatic switch-off after 15 seconds (battery life at least 1 year). The battery can be changed at the factory or during recalibration. Display changeover between Nm and lbf in. Includes bit-holder blade No. 659932 to take 1/4 inch bits.

Units of measure: Nm, lbfin

Standard: Tested to DIN EN ISO 6789.

Function: On reaching the set torque value, the screwdriver can be felt and heard to trigger and is then again immediately ready for use.

Advantage: An **integral counter function** records the number of tightening operations, providing the basis for monitoring by test instruments.

Application: For controlled tightening of screws to a pre-set torque.

Note: For further options see No. 659940 - 659946.





65 9935

maximum torque		cNm	150	300	500
63K 65 9935	Torque screwdriver iTorque® **with digital display**		eShop	eShop	eShop ■
Overall length L		mm		134	
Torque range		cNm	40 – 150	80 – 300	100 – 500
Torque range		Nm	0.4 – 1.5	0.8 – 3	1 – 5
Resolution		cNm		1	
∅		mm	34	34	40

No additional tool required for setting



Calibration alarm after 5000 tightening operations.



65

±6% D 6.3 F 6.3

Wera Torque screwdrivers, adjustable, automatic triggering

Kraftform handle for easy transmission of the required torque. With **Rapidaptor** quick-change holder for 1/4 inch bits with C 6.3 **and** E 6.3 shank.

65 9933 – Torque setting by hand using a micrometer scale (from size 600 using the integral auxiliary tool or a 17AF open spanner).

65 9954 – Tool handle made of conductive plastic, **suitable for ESDs.**

Size 600; 880 – With pistol grip for delivering high torques.

65 9934/9954 – The torque can be set using a torque analyser (No. 654300 – 654460) and a 7AF hexagon screwdriver (10AF for size 600) . **The torque screwdrivers are factory-set to the most frequently used torque setting.**

Standard: Tested to DIN EN ISO 6789.

Function: When the set torque is reached the screwdriver triggers, with clearly audible and perceptible signals. The triggering torque is unrestricted.

Note:
65 9933/9934 – Rapidaptor free-running adapter available (No. 675035 size 6.3F).



65 9933_34-300

▶ 01 ◀ Cal



65 9933_600+880



65 9934_34-300

▶ 06 ◀ Cal



65 9934_600

maximum torque		cNm	34	120	300	600	880
63F 65 9933	Torque screwdriver **with scale**		eShop	eShop	eShop	eShop	eShop
Overall length L		mm	142	155	155	150	150
Torque range		cNm	10 – 34	30 – 120	120 – 300	300 – 600	400 – 880
Torque range		Nm	0.1 – 0.34	0.3 – 1.2	1.2 – 3	3 – 6	4 – 8.8
Scale graduation, 1 graduation =		cNm	1.5	5	10	25	40



65 9954_120

maximum torque		cNm	34	120	300	600
63F 65 9934	Torque screwdriver **without scale**		eShop	eShop	eShop	eShop
63F 65 9954	Torque screwdriver **without scale, ESD**		eShop	eShop	–	–
Overall length L		mm	133	155	155	150
set torque		Nm	0.1	0.3	1.2	3
Torque range		cNm	10 – 34	30 – 120	120 – 300	300 – 600
Torque range		Nm	0.1 – 0.34	0.3 – 1.2	1.2 – 3	3 – 6
1 turn (360°) corresponds to		cNm	–	10	20	50

Remove cover flap in the end of the handle for torque setting.



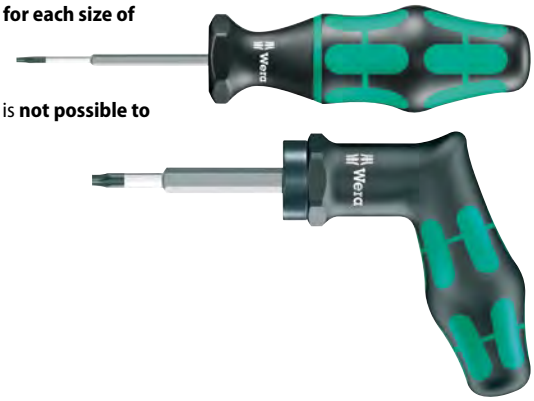




±10%

Wera Torque screwdrivers without scale, automatic triggering

Proven Kraftform handle, from 5 Nm with pistol grip. Every screwdriver is preset to the **correct torque for each size of screw.**
A sealing ring protects the mechanism in the handle from interference and inadvertent adjustment.
Drive size and torque are stamped on the end of the handle.
When the set torque is reached the screwdriver triggers with clearly audible and perceptible signals. It is **not possible to tighten the screw any further.**
Size 2 – 4 for socket head screws.
Size TX6 – TX20 for screws with **Torx® profile.**
Size 6IP – 20IP for screws with **Torx Plus® profile.**
Size TX20; 4; 20IP – With pistol grip for delivering high torques.
Standard: Tested to DIN EN ISO 6789.
Application: Ideal for fitting indexable inserts.



Pistol grip size 4; TX20; 20IP

Type		2	2,5	3	4
63F 65 9950	Torque screwdriver	eShop	eShop	eShop	eShop
Overall length L	mm	175	175	175	160
Blade length	mm		65		
set torque	Nm	1.4	2	3	5
set torque	cNm	140	200	300	500

Type		TX6	TX7	TX8	TX9	TX10	TX15	TX20
63F 65 9950	Torque screwdriver	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L	mm	175	175	175	175	175	175	160
Blade length	mm				65			
set torque	Nm	0.6	0.9	1.2	1.4	2	3	5
set torque	cNm	60	90	120	140	200	300	500

Type		6IP	7IP	8IP	9IP	10IP	15IP	20IP
63F 65 9950	Torque screwdriver	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length L	mm	175	175	175	175	175	175	160
Blade length	mm				65			
set torque	Nm	0.6	0.9	1.2	1.4	2	3	5
set torque	cNm	60	90	120	140	200	300	500



±10% ±15% F 6.3

Garant Torque screwdriver set "TQ-Station", 27 pieces

Torque screwdriver with easy-grip 2-component T-handle and **fixed torque.** 1/4 inch bit holder with magnet. Flexible modular bit-holder station with a sturdy sheet metal body and light-weight plastic storage units. Quick access to the torque screwdrivers and also to the E 6.3 precision bits. Handy storage of items such as indexable inserts in 3 retractable container boxes. Non-tipping solution for the workbench or machine, or for hanging from a perforated panel.
Standard: Tested to DIN EN ISO 6789.
Accuracy: Size 0.6 - 1.5 = ± 15 % of the stated value.
Size 2.2 - 5.7 = ± 10 % of the stated value.
Function: On reaching the set torque value, the screwdriver can be felt and heard to trigger and is then again immediately ready for use. Unlimited release torque.

Note: The individual sizes of the torque screwdrivers are available under No. 211750.



Pull-out drawers for small components. 65 9965

21B 65 9965	"TQ-Station" torque screwdriver set	eShop ■
Overall length L	mm	107
Supplied with: Torque screwdriver No. 211750		1 each size 0.6; 0.9; 1.2; 1.5; 2.2; 3.0; 3.8; 5.0; 5.7
Bits for Torx® No. 674248		1 each size TX6; TX7; TX8; TX9; TX10; TX15; TX20
Bits for Torx Plus® No. 674252		1 each size 6IP; 7IP; 8IP; 9IP; 10IP; 15IP; 20IP
Storage station		1 pc.
Container boxes (drawers)		3pcs.





±6%

SAU Torque screwdriver set, 15 pieces

Torque screwdrivers of anodised aluminium. Easy to use, **no adjustment necessary,** because **this is done automatically when the blade is inserted** - each blade has its own exactly pre-set torque value. Blade with coloured sleeve for quick location of the correct drive size.

Application: TX6/6IP – 0.6 Nm; TX7/7IP – 0.9 Nm; TX8/8IP – 1.2 Nm; TX9/9IP – 1.4 Nm; TX10/10IP – 2.0 Nm; TX15/15IP – 3.0 Nm; TX20/20IP – 5.0 Nm.



6 7 8 9 10 15 20

Number of pieces		15
66F 65 9990	Set of "Dinaplus" torque screwdrivers	eShop
Supplied with: 1 each blade No. 659995		Size TX6; TX7; TX8; TX9; TX10; TX15; TX20
1 each blade No. 659996		Size 6IP; 7IP; 8IP; 9IP; 10IP; 15IP; 20IP
Torque screwdriver holder No. 659991		1 piece

SAU Interchangeable blade for torque screwdriver

Suitable for: Torque screwdriver set No. 659990.



6 7 8 9 10 15 20

Torx® profile		TX6	TX7	TX8	TX9	TX10	TX15	TX20
66F 65 9995	Torque interchangeable blade for **Torx®**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length	mm	175						
Torque	Nm	0.6	0.9	1.2	1.4	2	3	5



6 7 8 9 10 15 20

Torx Plus® profile		6IP	7IP	8IP	9IP	10IP	15IP	20IP
66F 65 9996	Torque interchangeable blade for **Torx Plus®**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length	mm	175						
Torque	Nm	0.6	0.9	1.2	1.4	2	3	5

±10% D 6.3 F 6.3 ▶ 01 Cal

HOLEX Torque screwdriver, fixed setting without scale, automatic triggering

Torque screwdriver with easy-grip 2-component handle and **fixed torque.**
When the set torque is reached the screwdriver triggers, with clearly audible and perceptible signals.
Suitable for clockwise tightening. **It is not possible to tighten the screw any further.**

Standard: Tested to **DIN EN ISO 6789.**
Accuracy: ±10% of the specified value.
Advantage: Torque screwdriver can be used with all conventional bits C 6.3 and E 6.3 (similar to No. 675155, 675390).
Application: Ideal for fitting indexable inserts.

Note: The set torque value **cannot** be changed.



65 9890

set torque	Nm	0,6	0,9	1,2	1,4	2,0
62E 65 9890	Torque screwdriver, fixed setting without scale	eShop	eShop	eShop	eShop	eShop
Overall length L	mm	168				
set torque	Nm	0.6	0.9	1.2	1.4	2
set torque	cNm	60	90	120	140	200

set torque	Nm	2,5	3,0	3,8	5,0
62E 65 9890	Torque screwdriver, fixed setting without scale	eShop	eShop	eShop	eShop
Overall length L	mm	168			
set torque	Nm	2.5	3	3.8	5
set torque	cNm	250	300	380	500

±3% F 6.3 ▶ 01 ◀ Cal

Your Torque Partner TOHNICHI

Torque screwdriver with setting scale

Torque screwdrivers with over-torque protection for different applications from series production to maintenance work. With a locking mechanism that prevents adjustment of the torque when in use. The hexagon lock shape prevents rolling away. Setting by using micrometer scale.

Size 120; 260 – With synthetic resin handle for better grip.

Size 15; 30; 60; 500 – Profiled light metal handle.

Standard: Tested to DIN EN ISO 6789.

Function: When the set torque is reached the screwdriver triggers and signals clearly (audibly and perceptibly). It is then again immediately ready for use. The trigger mechanism is unavailable for tightening left-handed threads.



65 9939_60



65 9939_120

maximum torque		cNm	15	30	60	120	260	500
66F 65 9939	Torque screwdriver with scale		eShop	eShop	eShop	eShop	eShop	eShop
Overall length L		mm	100	100	110	130	150	155
Torque range		cNm	2 – 15	4 – 30	10 – 60	20 – 120	60 – 260	100 – 500
Torque range		Nm	0.02 – 0.15	0.04 – 0.3	0.1 – 0.6	0.2 – 1.2	0.6 – 2.6	1 – 5
Scale graduation, 1 graduation =		cNm	0.1	0.2	0.5	1	2	5
∅		mm	16	16	20	24	30.5	33

±6% F 6.3 ▶ 03 ◀ Cal

Torque screwdriver with setting scale

Setting using a micrometer scale. Profiled light alloy handle.

Standard: Tested to DIN EN ISO 6789.

Function: When the set torque is reached the screwdriver triggers and signals clearly (audibly and perceptibly). It is then again immediately ready for use.



65 9949_60



65 9949_300

maximum torque		cNm	15	30	60	120	300	500
66F 65 9949	Torque screwdriver with scale		eShop	eShop	eShop	eShop	eShop	eShop
Overall length L		mm	107	107	110	157	157	200
Torque range		cNm	1 – 15	2 – 30	5 – 60	20 – 120	40 – 300	100 – 500
Torque range		Nm	0.01 – 0.15	0.02 – 0.3	0.05 – 0.6	0.2 – 1.2	0.4 – 3	1 – 5
Scale graduation, 1 graduation =		cNm	0.1	0.2	0.5	1	1	2.5
∅		mm	16	16	25	30	34	40

TorqueScout

Quick and easy search of the desired torque tools, or determination of the correction to the reference dimension.

- Direct and simple ordering process.
- Search by torque value, range or by the screw to be tightened.
- If adapters, extensions, and special plug-in tools are used, the reference dimension will need to be corrected; this value can be calculated easily and automatically.



Visit us online at www.toolscout.com and discover the wide range of solutions offered by the ToolScout.

Torque multiplier

Mechanical manual torque multiplier for controlled screw tightening.
Multiplier and support of high-quality steel. With overload shut-off to protect the transmission.
Input drive with internal square socket for drive tools such as a ratchet, T-handle, torque wrench.
It is sensible to operate the device with a torque wrench, so that the maximum load and the screw torque values can be checked.
Output drive with external square for holding sockets (preferably use impact sockets due to the high torques).

65 9975 – Precise planetary transmissions guarantee exact torque transfer with long-term accuracy of **±5 %.**

65 9980 – Extremely precisely machined transmissions with ground gears and honed bores guarantee exact and consistently reproducible torque multiplication. Unique accuracy of not less than **±4 %.** Very compact and lightweight design, exceptionally long working life, and low maintenance.

Advantage: Torque multipliers allow the transmission of higher torques with a correspondingly shorter lever arm.

Note:

65 9980 – Alternative reaction plates for No. 659980 size 2000 and 7000 available on request. No. 659980 size 2000 available on request with electronic measured value sensors.



65 9980_1000



65 9980_1300 / _2700



65 9980_3000/_4500



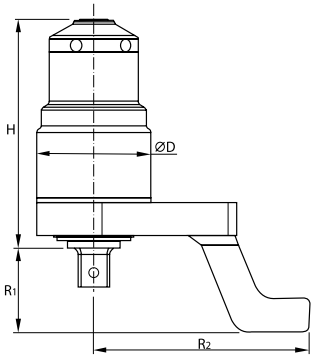
Operating principle torque multiplier.
At a stated transmission ratio of 1:25, 25 revolutions at the input (and 0.84 revolutions at the output) are necessary to convert an input torque of 100 Nm into an output torque of 2500 Nm.

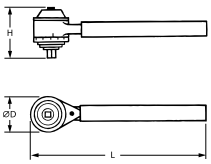


65 9980_2000/_7000



65 9975_800 – _2000





maximum output capacity	Nm	1000	1300	2000	2700	3000	4500	7000
66D **65 9980** Norbar Torque multiplier from size 1300 in a plastic case		–	–	–	–	–	–	–
Length L	mm	273	398	–	398	498	498	–
Height H	mm	63	103	150	100	131	149	212
Dimensions R1	mm	55	77	74	85	–	–	91
Dimensions R2	mm	143	212	165	140	–	–	212
maximum input capacity	Nm	200	260	74	540	193	173	275
Torque multiplication / effective force multiplication		1:5	1:5	1:27	1:5	1:15.5	1:26	1:25.5
recommended torque wrench / tightening range	Nm	250	300	100	600	250	200	300
Number of supports (reaction plates)		2	2	1	2	1	1	1
Drive square	in	3/4	3/4	1	1	1	1	1.1/2
Square drive	in	1/2	1/2	1/2	3/4	1/2	1/2	1/2
∅ D	mm	65	108	72	108	108	108	119
Weight	kg	1.5	3.8	3.2	3.8	6.1	7	9.3
Non-return valve		no	no	yes	no	yes	yes	yes
Overload protection					yes			

maximum output capacity	Nm	800	1350	2000	3000	5000
63A **65 9975** STAHLWILLE Torque multiplier in a sheet metal case		eShop	eShop	eShop	eShop	(eShop)
Length L	mm	215	265	330	330	400
Height H	mm	85	106	161	161	180
maximum input capacity	Nm	229	375	160	240	294
Torque multiplication / effective force multiplication		1:3.5	1:3.6	1:12.5	1:12.5	1:17
recommended torque wrench / tightening range	Nm	250	400	200	300	400
Number of supports (reaction plates)				1		
Drive square	in	3/4	3/4	1	1	1.1/2
Square drive	in	1/2	3/4	1/2	3/4	3/4
∅ D	mm	66	90	95	95	120
Weight	kg	2	3.4	7	7	10.4
Non-return valve		no	no	yes	yes	yes
Overload protection				yes		

Workshop screwdriver with 2-component power grip (slot-head)

with 2-component Haptoprene power handle

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands.
Blade of chrome vanadium steel. **From size 8 with hexagon flats for wrench assistance.**
Application: For repair and assembly work, for loosening tight screws etc.



66 0032

Blade width b	mm	2	2,5	3,5	4	5,5	6,5	8	10
61F **66 0032** Garant — Screwdriver for slot-head, with 2-component Haptoprene handle		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Tip thickness a	mm	0.4	0.4	0.6	0.8	1	1.2	1.2	1.6
Blade length	mm	60	80	90	100	120	140	160	180
overall length	mm	120	162	180	195	220	245	270	300
Hexagon collar for wrench assistance	mm	–	–	–	–	–	–	13	13

Number of screwdrivers		5	6
61F **66 0036** Garant — Screwdriver set for slot-head, with 2-component Haptoprene handle		eShop	eShop ■
Content: 1 each screwdriver No. 660032		Sizes 3.5; 4; 5.5; 6.5; 8	Size 3.5; 4; 5.5; 6.5; 8; 10


66 0036_6

with SwissGrip power grip

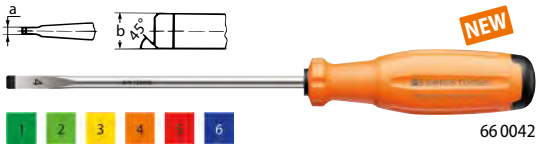
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated. Black tip. Stepped plane parallel tips provide full-surface instead of linear contact, enabling higher torque transmission.

66 0050 – **SwissGrip power grip** with non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. High torques can be exerted even with wet and oily hands. Tool handle made of conductive plastic, **suitable for ESD components**.

66 0042/0043 – **SwissGrip Evo power grip** allows transmission of the required torque with no problems, even with wet or oily hands. Work without getting tired thanks to modified circular shape. High-tech 3-component materials improve the chemical and mechanical resistance. Handle with "Rainbow" colour coding for finding the correct drive size quickly

Supplied with:

66 0043 – With wall bracket.



66 0042

PB Swiss Tools colour coding for sizes



66 0050

Blade width b	mm	2,5	3,5	4	5,5	6,5	8	10
63E **66 0042** — Screwdriver for slot-head, with 2-component SwissGrip Evo handle		–	eShop	eShop	eShop	eShop	eShop	eShop
63E **66 0050** PB SWISS TOOLS — Screwdriver for slot-head, with 2-component SwissGrip handle **ESD**		eShop	eShop	eShop	eShop	eShop	–	–
Blade designation		0	1	2	3	4	5	6
Tip thickness a	mm	0.4	0.5	0.6	0.8	1	1.2	1.6
Blade length	mm	80	90	100	120	140	160	180
overall length	mm	160	180	195	220	245	270	300



66 0043

Number of screwdrivers		6
63E **66 0043** PB SWISS TOOLS — Screwdriver set for slot-head, with 2-component SwissGrip Evo handle		eShop
Content: 1 each screwdriver No. 660042		Size 3.5; 4; 5.5; 6.5; 8; 10 mm

Workshop screwdriver with power grip (slot-head)

with "multicraft" power grip

"Multicraft" power grip of impact resistant plastic (cadmium free), particularly easy grip, even with oily hands.
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. With parallel stepped tip.
From size 8 with hexagon flats for wrench assistance. Surface nickel-plated and chrome-plated, black tip.

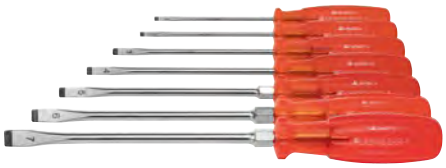
Advantage:
- Stepped plane parallel tips provide full-surface instead of linear contact, enabling higher torque transmission.
- No cam-out effect.
- Tips perfectly fit standard and non-standard screw slot sizes.
- Smooth, burr-free rounding of the end of the handle prevents friction in the palm of the hand.
- Rounded ergonomic shape with comfortable easy-grip surface ensures non-fatiguing working and high torque transmission.
- Non-roll flats.
- Marked with drive symbol and size.



66 0900

Blade width b	mm	3,5	4	5,5	6,5	8	10	13
63E 66 0900 PB SWISS TOOLS Screwdriver for slot-head, with "multicraft" power grip		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade designation		1	2	3	4	5	6	7
Tip thickness a	mm	0.5	0.6	0.8	1	1.2	1.6	2
Blade length	mm	90	100	120	140	160	180	200
overall length	mm	180	195	220	245	270	300	320
Hexagon collar for wrench assistance	mm	–	–	–	–	10	13	13

Number of screwdrivers		5	6	7
63E 66 0910 PB SWISS TOOLS Screwdriver set for slot-head, with "multicraft" power grip		eShop	eShop	eShop
Content: 1 each screwdriver No. 660900		Size 3.5; 4; 5.5; 6.5; 8	Size 3.5; 4; 5.5; 6.5; 8; 10	Size 3.5; 4; 5.5; 6.5; 8; 10; 13



66 0910_7

with Kraftform handle

Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm.
Blade of high hardness special steel with special toughness; **diamond-coated tips.**
Hexagon profile blade from size 5.5 with hexagon flats for wrench assistance, nicromatt chromium plated surface.

Advantage:
- Very high wear resistance and secure fit in the screw due to diamond coating.
- Fast and ergonomic working due to the Kraftform handle.
- High transfer of torque due to integral soft zones.
- Non-roll flats.
- Marked with drive symbol and size on cap.



66 0100

Blade width b	mm	3,5	4	5,5	7	9	10
63H 66 0100 Wera Screwdriver for slot-head, with Kraftform handle		eShop	eShop	eShop ■	eShop	eShop	eShop
Tip thickness a	mm	0.6	0.8	1	1.2	1.6	1.6
Blade length	mm	75	90	100	125	150	175
overall length	mm	156	188	198	230	262	287
Hexagon collar for wrench assistance	mm	–	–	8	10	13	13

Number of screwdrivers		5	6
63H 66 0110 Wera Screwdriver set for slot-head, with Kraftform handle		eShop	eShop
Content: 1 each screwdriver No. 660100		Size 3.5; 4; 5.5; 7; 9	Size 3.5; 4; 5.5; 7; 9; 10

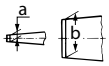


66 0110_6

with Kraftform handle, hexagon blade and impact cap

Kraftform handle made of impact resistant plastic **with integrated soft zones** and **impact cap**
(sizes 12 and 14 without soft zones; size 3.5 without impact cap and through blade).
Hexagon blade made of impact resistant special steel, **through to the end of the handle.**
From size 4.5 with hexagon flats for wrench assistance, nicromatt chromium plated surface.







66 0300

Blade width b	mm	3,5	4,5	5,5	7	9	10	12	14
63H 66 0300 Wera Screwdriver for slot-head, with Kraftform handle **and impact cap**		eShop ■	eShop	eShop ■	eShop	eShop	eShop ■	eShop	eShop
Tip thickness a	mm	0.6	0.8	1	1.2	1.6	1.6	2	2.5
Blade length	mm	80	90	100	125	150	175	200	250
overall length	mm	161	188	205	230	262	287	317	367
Hexagon collar for wrench assistance	mm	–	8	10	10	13	13	16	16

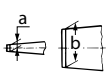
Number of screwdrivers		5	6	8
63H 66 0310 Wera Screwdriver set for slot-head, with Kraftform handle **and impact cap**		eShop	eShop	eShop
Content: 1 each screwdriver No. 660300		Size 3.5; 4.5; 5.5; 7; 9	Size 3.5; 4.5; 5.5; 7; 9; 10	Size 3.5; 4.5; 5.5; 7; 9; 10; 12; 14



66 0310_8

with multi-component power grip, hexagon blade

Multi-component power handle with grip zone optimised for torque and comfort.
Hex blade of chrome vanadium steel, chrome-plated. Chrom-Top tips for optimum rust protection.
From size 5.5 with hexagon flats for wrench assistance.





66 0701

Blade width b	mm	2,5	3	3,5	4	5,5	7	8	10	12
62F 66 0701 HOLEX Screwdriver for slot-head, with power grip		eShop ■	eShop	eShop ■	eShop	eShop ■	eShop ■	eShop ■	eShop	eShop ■
Tip thickness a	mm	0.4	0.5	0.6	0.8	1	1.2	1.2	1.6	2
Blade length	mm	75	80	100	100	100	125	150	175	200
overall length	mm	162	167	187	207	200	225	264	295	320
Hexagon collar for wrench assistance	mm	–	–	–	–	8	10	12	13	16

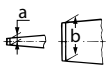
Number of screwdrivers		5	9
62F 66 0711 HOLEX Screwdriver set for slot-head, with power grip		eShop	eShop
Content: 1 pc. each screwdriver No. 660701		Size 3.5; 4; 5.5; 7; 8	Size 2.5; 3; 3.5; 4; 5.5; 7; 8; 10; 12



66 0711_9

HOLEX Workshop screwdriver (slot-head)

Handle of sealed beechwood, with leather impact cap. Blade of chrome vanadium steel, through hardened.
From size 5.5, through blade with hexagon flats for wrench assistance. Surface bright nickel-plated.





66 0800_12

With wooden handle, round steel blade

Blade width b	mm	3,5	4,5	5,5	7	9	10	12	14
62F 66 0800 Screwdriver for slot-head, with wooden handle		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Tip thickness a	mm	0.6	0.8	1	1.1	1.4	1.6	2	2.5
Blade length	mm	75	90	100	125	150	175	200	250
overall length	mm	177	192	205	230	269	294	319	384
Hexagon collar for wrench assistance	mm	–	–	8	10	13	13	13	17

Number of screwdrivers		5	6	7	8
62F 66 0810 Screwdriver set for slot-head, with wooden handle		eShop	eShop	eShop	eShop
Content: 1 each screwdriver No. 660800		Size 3.5; 4.5; 5.5; 7; 9	Size 3.5; 4.5; 5.5; 7; 9; 10	Size 3.5; 4.5; 5.5; 7; 9; 10; 12	Size 3.5; 4.5; 5.5; 7; 9; 10; 12; 14



66 0810_8

Blade screwdriver (slot-head)

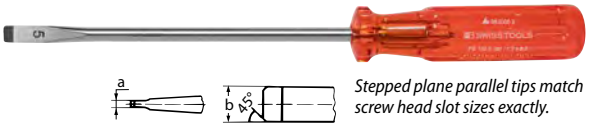
Forged blades, the tips are precisely manufactured to the standard sizes of slot-head screws.

Note: Optimum working life for blade screwdrivers if screwdrivers always match the screw slot size (see table).
Incorrect screwdriver size selection will cause damage to the screw head.

With cylindrical handle and round steel blade

"Classic" power grip of transparent, impact-resistant plastic (cadmium-free). **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. With parallel stepped tip. Surface nickel-plated and chrome-plated, black tip.

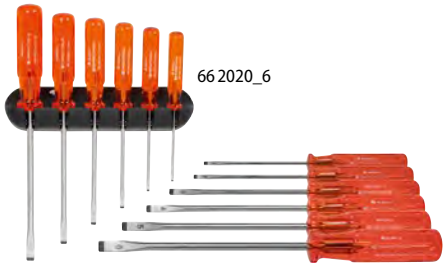
Standard: Similar to **DIN 5265 form A.**



Stepped plane parallel tips match screw head slot sizes exactly.

Blade width b	mm	2×50	2×70	2,5	3,5	4	5,5	6,5	8	10	13
63E 66 2000 PB SWISS TOOLS Blade screwdriver for slot-head, with plastic handle		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade designation		00	00	0	1	2	3	4	5	6	7
Tip thickness a	mm	0.3	0.3	0.4	0.5	0.6	0.8	1	1.2	1.6	2
Blade length	mm	50	70	80	90	100	120	140	160	180	200
overall length	mm	125	145	165	180	195	220	245	270	300	325

Number of screwdrivers		5	6	9
63E 66 2010 PB SWISS TOOLS Blade screwdriver set for slot-head, with plastic handle		eShop	eShop	eShop
63E 66 2020 PB SWISS TOOLS Blade screwdriver set for slot-head, with plastic handle and wall rack		–	eShop	–
Content: 1 each screwdriver No. 662000		Size 4; 5.5; 6.5; 8; 10	Size 3.5; 4; 5.5; 6.5; 8; 10	Size 2x70; 2.5; 3.5; 4; 5.5; 6.5; 8; 10; 13



66 2020_6

66 2010_6

with Kraftform handle and round steel blade

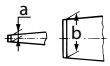
Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm.
Blade of high-alloy special steel. Nicromatt chrome-plated surface, black tips or chemically nickel-coated Lasertip tips.

Standard: **DIN 5265 Form A**



66 2200_10





Blade width b	mm	2,5	3	3,5	4	5,5	6,5	8	10
63H 66 2200 Wera Blade screwdriver for slot-head, with Kraftform handle		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop
Tip thickness a	mm	0.4	0.5	0.6	0.8	1	1.2	1.2	1.6
Blade length	mm	75	80	100	100	125	150	175	200
overall length	mm	145	161	181	198	223	255	287	312
Blade tip		black	black	black	Lasertip	Lasertip	Lasertip	Lasertip	Lasertip

Number of screwdrivers		5	8
63H 66 2210 Wera Blade screwdriver set for slot-head, with Kraftform handle		eShop	eShop
Content: 1 each screwdriver No. 662200		Size 3.5; 4; 5.5; 6.5; 8	Size 2.5; 3; 3.5; 4; 5.5; 6.5; 8; 10



66 2210_5

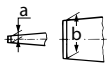
Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm.
Wera Lasertip blade of stainless steel with tapered **micro-textured drive tip** (from size 3.5).

Standard: **DIN 5265 Form A**



66 2500





S/STL

Blade width b	mm	3	3,5	4	5,5	6,5	8	10
63H 66 2500 Wera "Stainless" blade screwdriver for slot-head, with Kraftform handle		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Tip thickness a	mm	0.5	0.6	0.8	1	1.2	1.2	1.6
Blade length	mm	80	100	100	125	150	175	200
overall length	mm	161	181	198	223	255	287	312

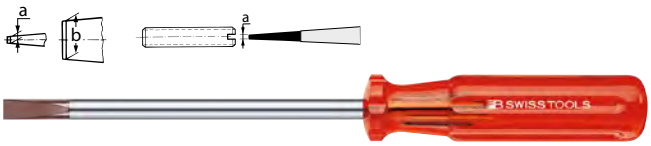
Number of screwdrivers		6
63H 66 2510 Wera "Stainless" blade screwdriver set for slot-head, with Kraftform handle		eShop
Content: 1 each screwdriver No. 662500		Size 3; 3.5; 4; 5.5; 6.5; 8



66 2510_6

PB SWISS TOOLS Grub screw screwdrivers (terminal board screwdrivers)

"Classic" power grip of transparent, impact-resistant plastic (cadmium-free).
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. With **stronger tip for terminal screws.**
Surface nickel-plated and chrome-plated, black tip.



Blade width b	mm	3	4	5	6
63E 66 2700 — Terminal-blade screwdriver for slot-head, with plastic handle		eShop	eShop	eShop	eShop
Blade designation		1	2	3	4
Tip thickness a	mm	0.6	0.8	1	1.2
Blade length	mm	100	110	120	130
overall length	mm	190	205	220	235

Electrician's screwdriver (slot-head)

Handle and blade **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**
Each of these screwdrivers is individually tested in a water bath for insulation breakdown under high voltage.
Application: For use at voltage up to 1000 V.

with 2-component Haptoprene power grip, fully insulated

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands.
Blade of chrome vanadium steel.

With **SLIM blade** = reduced blade diameter/and insulation diameter for deep-set screw and spring elements **(insulation Ø = blade Ø)**


Insulation Ø = blade Ø in the case of size 2.5 and 3


Insulation Ø = blade Ø



66 2902

Blade width b		2,5	3	3,5	4	5,5	6,5
61F 66 2902 — Garant — Electrician's screwdriver for slot-head, with 2-component Haptoprene handle **SLIM blade VDE fully insulated**		eShop	eShop	eShop	eShop	eShop	eShop
Tip thickness a	mm	0.4	0.5	0.6	0.8	1	1.2
Blade length	mm	100	100	100	100	125	150
overall length	mm	195	195	195	200	230	261


66 2906

Number of screwdrivers	6
61F 66 2906 — Garant — Electrician's screwdriver set for slot-head, with 2-component Haptoprene handle **SLIM blade VDE fully insulated**	eShop
Content: 1 each screwdriver No. 662902	Size 2.5; 3; 3.5; 4; 5.5; 6.5

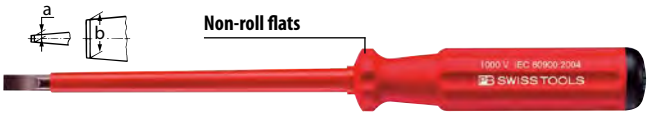
with Classic 2-component handle, fully insulated

Slim handle with a non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene.
Due to its special surface structure, the grip is non-slip even with oily or wet hands.
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.

Drive symbol
moulded into the end of the handle



Non-roll flats



66 3000

Blade width b	mm	2	2,5	3	3,5	4	5,5	6,5	8	10
63E 66 3000 — PB SWISS TOOLS — Electrician's screwdriver for slot-head, Classic **VDE fully insulated**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade designation		00	0	1	2	3	4	5	6	8
Tip thickness a	mm	0.4	0.4	0.5	0.6	0.8	1	1.2	1.2	1.6
Blade length	mm	45	80	100	100	100	125	150	180	200
overall length	mm	125	165	190	190	195	230	255	300	320

Number of screwdrivers			6	8
63E 66 3010	PB SWISS TOOLS	Electrician's screwdriver set, for slot-head, Classic **VDE fully insulated**	eShop	eShop
Content: 1 each screwdriver No. 663000			Size 2.5; 3.5; 4; 5.5; 6.5; 8	Size 2; 2.5; 3.5; 4; 5.5; 6.5; 8; 10



66 3010_6

with Kraftform handle, fully insulated

Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm.

66 3100/3110 – **Blade** of high-alloy special steel. Nicromatt chrome-plated surface, black tips or chemically nickel-coated Lasertip tips (as from size 4).
From size 5.5 the outside ∅ of the insulation is the same as the tip width (helpful when working in narrow spaces).

66 3200/3210 – Blade made of high-alloy special steel with taper tip, zinc phosphated. **Reduced blade ∅ with integral protective insulation** for deep-lying screws of spring elements (blade ∅ = insulation ∅ near the tip of the blade).



66 3100



66 3200

Blade width b		mm	2,5	3	3,5	4	5,5	6,5	8	10
63H 66 3100	Wera	Electrician's screwdriver for slot-head, with Kraftform handle **VDE fully insulated**	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63H 66 3200	Wera	Electrician's screwdriver for slot-head, reduced blade ∅, with Kraftform handle **VDE fully insulated**	–	–	eShop	eShop	eShop	–	–	–
Tip thickness a		mm	0.4	0.5	0.6	0.8	1	1.2	1.2	1.6
Blade length		mm	80	100	100	100	125	150	175	200
overall length		mm	161	181	181	198	223	255	287	312
Blade tip (66 3100)			black	black	black	Lasertip	Lasertip	Lasertip	Lasertip	Lasertip



66 3100 / 3110

Number of screwdrivers			3	5	6	8
63H 66 3110	Wera	Electrician's screwdriver set for slot-head, with Kraftform handle **VDE fully insulated**	–	eShop	eShop	eShop
63H 66 3210	Wera	Electrician's screwdriver set for slot-head, reduced blade ∅ with Kraftform handle **VDE fully insulated**	eShop	–	–	–
Content: 1 each screwdriver No. 663100 (66 3110)			–	Size 2.5; 3; 3.5; 4; 5.5	Size 2.5; 3; 3.5; 4; 5.5; 6.5	Size 2.5; 3; 3.5; 4; 5.5; 6.5; 8; 10
1 each screwdriver No. 663200 (66 3210)			Size 3.5; 4; 5.5	–	–	–



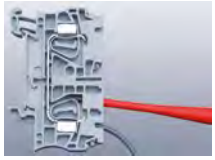
66 3210_3



66 3110_5



Insulation ∅ matches the blade ∅ for optimum access e.g. for spring terminals.



with multi-component power grip, fully insulated

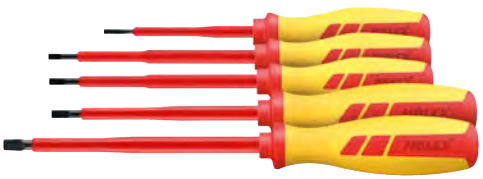
Multi-component power handle with grip zone optimised for torque and comfort.
Blade of high-alloy tool steel.
From size 5.5 the outside ∅ of the insulation is the same as the tip width (helpful when working in narrow spaces).



66 3301_5,5

Blade width b		mm	2,5	3	3,5	4	5,5	6,5	8	10
62F 66 3301	HOLEX	Electrician's screwdriver for slot-head **VDE fully insulated**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
Tip thickness a		mm	0.4	0.5	0.6	0.8	1	1.2	1.2	1.6
Blade length		mm	75	100	100	100	125	150	175	200
overall length		mm	162	187	187	207	232	257	295	320

Number of screwdrivers			5	6	8
62F 66 3311	HOLEX	Electrician's screwdriver set for slot-head **VDE fully insulated**	eShop ■	eShop ■	eShop
Content: 1 each screwdriver No. 663301			Size 2.5; 3; 3.5; 4; 5.5	Size 2.5; 3; 3.5; 4; 5.5; 6.5	Size 2.5; 3; 3.5; 4; 5.5; 6.5; 8; 10



66 3311_5

Screwdriver with long blade (slot-head)

with cylindrical handle

"Classic" power grip of transparent, impact-resistant plastic (cadmium-free). Forged blades, the tips are precisely manufactured to the standard sizes of slot-head screws.

Material: Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated.



66 3700

Blade width b×Blade length		mm	2,5×125	3,5×150	4×150	4×200	5,5×200	5,5×250	5,5×300	6,5×200	6,5×300	8×400	10×500
63E 66 3700	PB SWISS TOOLS	Screwdriver for slot-head, with long blade	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade designation			0	1	2	2	3	3	3	4	4	5	6
Tip thickness a		mm	0.4	0.5	0.6	0.6	0.8	0.8	0.8	1	1	1.2	1.6
Blade length		mm	125	150	150	200	200	250	300	200	300	400	500
overall length		mm	210	240	245	295	300	350	400	305	405	510	620

with Kraftform handle

Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm.
Blade of high-alloy special steel. Nicromatt chrome-plated surface, black tips or chemically nickel-coated Lasertip tips.





66 3750

Blade width b×Blade length		mm	3×150	3×200	3,5×200	4×200	4×300	5,5×200	5,5×300
63H 66 3750	Wera	Screwdriver for slot-head, with long blade and Kraftform handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Tip thickness a		mm	0.5	0.5	0.6	0.8	0.8	1	1
Blade length		mm	150	200	200	200	300	200	300
overall length		mm	231	281	281	298	398	298	398
Blade tip			black	black	Lasertip	Lasertip	black	Lasertip	black

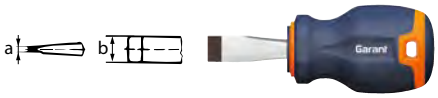
66

Short screwdriver (slot-head)

Standard: Similar to **DIN 5265B.**

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands. **Blade** of chrome vanadium steel. Surface nickel-plated and chrome-plated, black tip.

Blade width b		mm	4	5,5	6,5	8	10
61F 66 4122	Garant	Screwdriver for slot-head, short, with 2-component Haptoprene handle	eShop ■	eShop ■	eShop ■	eShop ■	eShop
Tip thickness a		mm	0.8	1	1.2	1.2	1.6
Blade length		mm			30		
overall length		mm			85		



66 4122

"Classic" power grip of transparent, impact-resistant plastic (cadmium-free). Forged parallel blade.

Material: Blade of PB Swiss Tools special alloy, nickel-plated and chrome-plated; black tip.

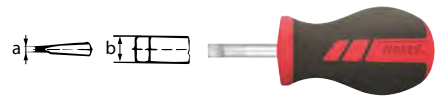
Blade width b		mm	4	5,5	6,5	8	10
63E 66 4100	PB SWISS TOOLS	Screwdriver for slot-head, short	eShop	eShop	eShop	eShop	eShop
Blade designation			2	3	4	5	6
Tip thickness a		mm	0.6	0.8	1	1.2	1.6
Blade length		mm			30		
overall length		mm	75	75	75	80	80



66 4100

Multi-component power handle with grip zone optimised for torque and comfort. Blade of chrome vanadium steel, chrome-plated. Chrom-Top tips for optimum rust protection.

Blade width b		mm	4	5,5	6,5
62F 66 4201	HOLEX	Screwdriver for slot-head, short	eShop	eShop	eShop
Tip thickness a		mm	0.8	1	1.2
Blade length		mm		25	
overall length		mm		82	



66 4201

Coin Driver with handle

Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated.

66 4311 – **Power grip** with skin-friendly elastomer coating and a core of particularly tough and impact-resistant polypropylene. The special surface structure allows transmission of high torques, even with wet or oily hands.

66 4312 – **SwissGrip Evo power grip** allows transmission of the required torque with no problems, even with wet or oily hands. Work without getting tired thanks to modified circular shape. High-tech 3-component materials improve the chemical and mechanical resistance.

Application: For unscrewing plastic screws and blanking plugs (e.g. battery compartment cover) without damaging them.



66 4311



66 4312



Application example

Blade length		mm	45
63E **66 4311**	Coin-Driver, short		eShop
63E **66 4312**	Coin Driver with handle		eShop
overall length (66 4311)		mm	100
overall length (66 4312)		mm	150

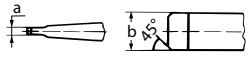
Electronics screwdriver (slot-head)

Narrow blade with plane parallel stepped tip. Handle of transparent impact resistant plastic.

Material: PB Swiss Tools special alloy, nickel-plated and chrome-plated, black tip.



66 4400



Blade width b		mm	2	2,5	3,5
63E **66 4400**	Electronics screwdriver for slot-head, with plastic handle		eShop	eShop	eShop
Blade designation			00	0	1
Tip thickness a		mm	0.3	0.4	0.5
Blade length		mm	70	80	90
overall length		mm	180	190	205



66 4410

Ergonomic multi-component handle with rotating cap.

66 4410/4415 – **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Very high precision tips. Surface nickel-plated and chrome-plated, black tip.

66 4415/9900 – Tool handle made of conductive plastic, **suitable for ESDs.**

66 4600/9900 – **Blade** of high-quality tool steel, surface matt chrome-plated, black tip.



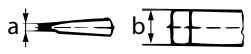
66 4415



66 4600



66 9900



Blade width b		mm	1,2	1,5	1,8	2	2,5	3	3,5	4
63E **66 4410**	Electronics screwdriver for slot-head		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
63E **66 4415**	Electronics screwdriver for slot-head **ESD**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
63H **66 4600**	Electronics screwdriver for slot-head **Kraftform Micro**		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop
63H **66 9900**	Electronics screwdriver for slot-head **Kraftform Micro, ESD**		eShop	eShop	eShop ■	–	eShop	eShop	–	eShop
Tip thickness a (66 4410, 66 4415)		mm	0.2	0.25	0.3	0.4	0.4	0.5	0.6	–
Tip thickness a (66 4600, 66 9900)		mm	0.25	0.23	0.3	0.4	0.4	0.5	0.6	0.8
Blade length		mm	40	40	60	60	80	80	80	80
overall length (66 4410, 66 4415)		mm	133	133	153	153	173	173	173	–
overall length (66 4600, 66 9900)		mm	137	137	157	157	177	177	177	177

PB SWISS TOOLS Offset screwdriver (slot-head)

Two equal width tips, offset 90° from one another. PB Swiss Tools special alloy, surface nickel-plated and chrome-plated. Black tips.
Knurled shank for a secure hold in wet or oily environments. With forged offset tips to standard slot head widths.



66 4800

Blade width b		mm	4	5,5	6,5	8	10	13
63E 66 4800	Offset screwdriver for slot-head		eShop	eShop	eShop	eShop	eShop	eShop
Tip thickness a		mm	0.6	0.8	1	1.2	1.6	2
overall length		mm	100	100	110	125	150	175

Voltage tester up to 250 Volt – to VDE 0680/6

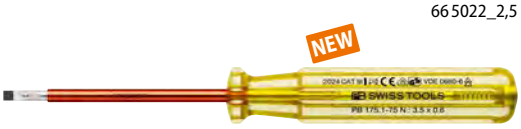
Plastic handle with insulated screwdriver blade and pocket clip.

66 5022 – High-quality blade, size 3.5 without pocket clip. Testing range 220 - 250 V.
66 5030 – Testing range 150 - 250 V.
66 5050 – Simple design, size 3.5 without pocket clip. Testing range 120 - 250 V.

Note: These voltage testers conform to VDE 0680/6 safety standards. Bulbs therefore are non–replaceable.



66 5022_2,5



66 5022_3,5


66 5030


66 5050_3,5

Blade width		mm	2,5	3	3,5
63E 66 5022	PB SWISS TOOLS Voltage tester special quality		eShop	–	eShop
63H 66 5030	Wera Single-pole phase tester		–	eShop	–
66B 66 5050			–	eShop	eShop
Blade length (66 5022, 66 5030)		mm	60	70	75
Blade length (66 5050)		mm	–	60	100
overall length (66 5022, 66 5030)		mm	135	145	175
overall length (66 5050)		mm	–	145	190

PB SWISS TOOLS Voltage tester up to 250 volts – with LED

Plastic grip with high-quality insulated screwdriver blade. Test range 110 – 250 V. LED for high illumination.

Size 2,5 – with pocket clip.
Size 3,5 – without clip.


66 5021_2,5


66 5021_3,5

Blade width		mm	2,5	3,5
63E 66 5021	LED special-quality voltage tester		eShop	eShop
Blade length		mm	60	75
overall length		mm	135	175

Special tester for vehicles

Sturdy casing with metal clip and needle probe.

66 5133 – Slide mechanism for clamping the needle probe to the cable.

Standard:
66 5133 – DIN EN 61010-1; DIN EN 61326.

Advantage: No need to strip insulation from the cable.

Application:
66 5133 – For cars, HGVs and e-bikes.



66 5133

			overall length mm	Test range V
73H 66 5133	Weidmüller Voltage tester VT CTB	eShop	137	3 – 48
66B 66 5700	Vehicle light test lamp	eShop	120	6 – 24


66 5700

Screw-in fuse carrier key

Changeover between fuse carrier screws 2 – 25 A and 35 – 63 A. **Fully insulated** up to 1000 V to DIN EN 60900 / VDE 0682-201.


66 5800

			overall length mm
66B 66 5800	Screw-in fuse carrier key, dual function **VDE fully insulated**	eShop	110

Wera Screw holder

Permanently elastic blade grip for sliding on to screwdriver blades and bits. The resilient and highly wear-resistant screw grip retains the screw mechanically. Screwing the screw into the workpiece releases the screw automatically.

Size 2; 3 – For screwdrivers **fully insulated** to VDE.

Suitable for: All commonly-used screwdrivers and long bit blades. Can be used for round and hexagon shaft screwdrivers, irrespective of the drive profile.

Application: For holding screws when working in narrow areas.


66 6425_1


66 6425_2


66 6425_3

Type		1	2	3
63H 66 6425	Screw holder	eShop	eShop	eShop
for blade ∅	mm	4.5 – 6	4.5 – 6	6.5 – 8
External ∅	mm		17	
Length	mm		41	


Application examples

Wera Magnetiser for screwdrivers

Application: For magnetising and demagnetising tool tips.

Type		1
63H 66 6451	Magnetiser	eShop ■
Length	mm	65
Width	mm	32
Height	mm	20

MAGNETIZER


66 6451


Magnetising

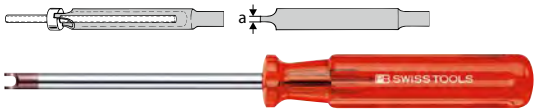

Demagnetising

PB SWISS TOOLS Screwdriver for slotted nuts, with handle

"Classic" power grip of transparent, impact-resistant plastic (cadmium-free). Tubular blade with exceptionally deep head for projecting screw threads.

Material: Blade of PB Swiss Tools special alloy, surface nickel-plated and chrome-plated.

Application: For slotted round nuts DIN 546.



66 6600

Blade ∅	mm	2,5	3	4	5	6	8	9	11	14	18
63E 66 6600	Screwdriver for slotted nuts	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
for nuts		M1	M1.2; M1.4	M1.7; M2	M2.5	M3	M4	M5	M6	M8	M10
Blade length	mm	50	60	70	80	90	100	100	110	120	120
overall length	mm	125	135	155	170	185	200	205	220	240	245
Hole ∅	mm	1.2	1.5	2.2	2.8	3.7	4.2	5.3	6.4	8.4	10.5
Drive bit thickness a	mm	0.3	0.4	0.5	1	1.2	1.4	2	2.5	3	3.5

Screwdriver set

with 2-component Haptoprene handle (workshop screwdriver)

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and impact-resistant plastic core. **Blade** of chrome vanadium steel. Surface nickel-plated and chrome-plated, black tip.

Supplied with:

66 6956 – 1 each screwdriver for slot-head No. 660032 size 3.5; 4; 5.5; 6.5.
1 each screwdriver for Phillips No. 667702 size 1; 2.

66 6966 – 1 each screwdriver for slot-head No. 660032 size 3.5; 4; 5.5; 6.5.
1 each screwdriver for Pozidriv No. 667712 size 1; 2.


66 6956

Number of screwdrivers			4/2
61F 66 6956	Garant	Workshop screwdriver set, 6 pieces **for slot-head and Phillips**	eShop ■
61F 66 6966	Garant	Workshop screwdriver set, 6 pieces **for slot-head and Pozidriv**	eShop ■

with 3-component ergo handle

3-component ergonomic handle made of impact resistant plastic. **Blade** made of chrome vanadium steel, chrome-plated. Black tips.

Supplied with: 1 each of screwdriver for slot-head 0.5×3; 0.8×4; 1.0×5.5; 1.2×6.5.
1 each of screwdriver for Phillips size 1; 2.


66 7280

Number of screwdrivers			4/2
63U 66 7280	BAHCO	ergo screwdriver set, 6 pieces **For slot-head and Phillips**	eShop

Screwdriver set

with "multicraft" power grip (workshop screwdrivers)

"multicraft" power grip of transparent, impact-resistant plastic (cadmium-free).
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip.

Supplied with:

66 7000 Size 4/2 – 1 each screwdriver for slot-head No. 660900 size 3.5; 4; 5.5; 6.5.
1 each screwdriver for Phillips No. 668100 size 1; 2; **with wall bracket**.
Size 6/2 – 1 each screwdriver for slot-head No. 660900 size 3.5; 4; 5.5; 6.5; 8; 10.
1 each screwdriver for Phillips No. 668100 size 1; 2.
66 7050 Size 4/2 – 1 each screwdriver for slot-head No. 660900 size 3.5; 4; 5.5; 6.5.
1 each screwdriver for Pozidriv No. 668150 size 1; 2; **with wall bracket**.



66 7000_4/2



66 7000_6/2

Number of screwdrivers			4/2	6/2
63E 66 7000	PB SWISS TOOLS	Workshop screwdriver set **For slot-head and Phillips**	eShop	eShop
63E 66 7050	PB SWISS TOOLS	Workshop screwdriver set **for slot-head and Pozidriv**	eShop	–

with Kraftform handle (workshop screwdrivers)

Handle of impact resistant plastic with integral soft zones.
Blade of special steel; tips **diamond coated.**

Supplied with:

66 7100 – 1 each screwdriver for slot-head No. 660100 size 3.5; 4; 5.5; 7.
1 each screwdriver for Phillips No. 667700 size 1; 2.
66 7150 – 1 each screwdriver for slot-head No. 660100 size 3.5; 4; 5.5; 7.
1 each screwdriver for Pozidriv No. 667800 size 1; 2.



66 7100



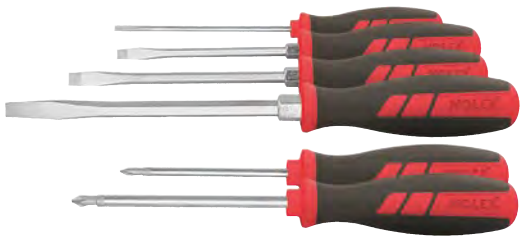
Number of screwdrivers			4/2
63H 66 7100	Wera	Workshop screwdriver set, 6 pieces **For slot-head and Phillips**	eShop
63H 66 7150	Wera	Workshop screwdriver set, 6 pieces **for slot-head and Pozidriv**	eShop

with multi-component power grip

Multi-component power handle with grip zone optimised for torque and comfort.
Blade of chrome vanadium steel.

Supplied with:

66 7312 – 1 each slot-head screwdriver No. 660701 size 3.5; 5.5; 7; 8.
1 each screwdriver for Phillips No. 668401 size 1; 2.
66 7322 – 1 pc. each slot-head screwdriver No. 660701 size 3.5; 5.5; 7; 8.
1 pc. each Posidriv screwdriver No. 668501 size 1; 2.
66 7332 – 1 pc. each slot-head screwdriver No. 660701 size 3.5; 5.5; 7; 8.
1 pc. each screwdriver for Phillips No. 668401 size 1; 2.
1 pc. each Pozidriv screwdriver No. 668501 size 1; 2.



66 7312_4/2

Number of screwdrivers			4/2	4/2/2
62F 66 7312	HOLEX	Screwdriver set, 6 pieces **For slot-head and Phillips**	eShop	–
62F 66 7322	HOLEX	Screwdriver set, 6 pieces **for slot-head and Pozidriv**	eShop	–
62F 66 7332	HOLEX	Screwdriver set, 8 pieces **for slot-head, Phillips and Pozidriv**	–	eShop

Multi-component power handle with grip zone optimised for torque and comfort.
Blade of chrome vanadium steel.

Supplied with:

66 7316 – 1 each short screwdriver for slot-head No. 664201 size 4; 5.5; 6.5.
1 each short screwdriver for Phillips No. 668471 size 1; 2.
66 7326 – 1 each short screwdriver for slot-head No. 664201 size 4; 5.5; 6.5.
1 each short screwdriver for Pozidriv No. 668476 size 1; 2.



66 7316

Number of screwdrivers			3/2
62F 66 7316	HOLEX	Screwdriver set, stub, 5 pieces **For slot-head and Phillips**	eShop
62F 66 7326	HOLEX	Screwdriver set, stub, 5 pieces **for slot-head and Pozidriv**	eShop

with Kraftform handle; through hexagon blade and impact cap

Handle of impact resistant plastic with integral soft zones.
Impact cap and wrench assistance (apart from slot-head size 3.5).
Hexagon **blade** of special steel, through to the end of the handle.
(Size 3.5 not through).

Supplied with:

Size 4/2 – 6 pieces.
1 each screwdriver for slot-head No. 660300 size 3.5; 4.5; 5.5; 7.
1 each screwdriver for Phillips No. 668300 size 1; 2.

Size 13 – 13 pieces in 2 plastic holders.
1 each screwdriver for slot-head No. 660300 size 3.5; 4.5; 5.5; 7; 9.
1 each screwdriver for Phillips No. 668300 size 1; 2; 3.
1 each screwdriver for Pozidriv No. 668305 size 1; 2; 3.
1× each screwdriver for Torx® size TX20; TX25.



66 7270_4/2





66 7270_13

Number of screwdrivers			4/2	13
63H 66 7270	Wera	Screwdriver set	eShop	eShop

with wooden handle (workshop screwdriver)

Handle of sealed beechwood, with leather impact cap.
Blade of chrome vanadium steel, through hardened.
From size 5.5, through blade with hexagon flats for wrench assistance.
Surface bright nickel-plated.

Supplied with: 1 each screwdriver for slot-head No. 660800 size 3.5; 4.5; 5.5; 7.
1 each screwdriver for Phillips No. 668450 size 1; 2.



66 7360

Number of screwdrivers			4/2
62F 66 7360	HOLEX	Screwdriver set, with wooden handle, 6 pieces **For slot-head and Phillips**	eShop

with 2-component handle (electronics screwdriver)

Handle with rotating cap.
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.
Surface nickel-plated and chrome-plated, black tip.

66 7165 – Tool handle made of conductive plastic, **suitable for ESDs.**

Supplied with:

66 7160 – 6 pieces in a plastic clip.
1 each screwdriver for slot-head No. 664410 size 1.2; 1.5; 1.8; 2.5.
1 each screwdriver for Phillips No. 668891 size 00; 0.

66 7165 – 6 pieces in a plastic clip.
1 each screwdriver for slot-head No. 664415 size 1.2; 1.5; 1.8; 2.5.
1 each screwdriver for Phillips No. 668895 size 00; 0.



66 7160



66 7165

Number of screwdrivers			4/2
63E 66 7160	PB SWISS TOOLS	Workshop screwdriver set, 6 pieces **For slot-head and Phillips**	eShop
63E 66 7165	PB SWISS TOOLS	Workshop screwdriver set, 6 pieces **for slot-head and Phillips, ESD**	eShop

with precision handle "Kraftform-Micro" (electronics screwdriver)

Handle with rotating centring cap and quick-spinning zone.
Blade of special steel.

Size 25 – **"Big Pack"** 25 pieces in a textile pouch.

66 9924 – Tool handle made of conductive plastic, **suitable for ESDs.**

Supplied with:

Size 3/3 – 6 pieces in a plastic clip
1 each screwdriver for slot-head No. 664600 size 1.5; 2; 3.5.
1 each screwdriver for Phillips No. 668800 size 00; 0; 1.

Size 12 – 12 pieces in a textile tool roll.
1 each screwdriver for slot-head No. 664600 size 1.5; 1.8; 2; 2.5; 3.
1 each screwdriver for Phillips No. 668800 size 00 and 0.
1 each screwdriver for Torx ® similar to No. 625770 size TX5 and TX6.
1 each screwdriver for hex socket No. 627470 size 0.9; 1.5; 2.

Size 25 – 25 pieces in a textile tool roll.
1 each screwdriver for Phillips size 000; 00; 0.
1 each screwdriver for Torx® size TX1; TX3.
1 each screwdriver for Torx® with hold function size TX5; TX6; TX7; TX8; TX10.
1 screwdriver for TorxPlus® size 1IPR.
1 each screwdriver for hex socket No. 627470 size 0.9; 1.3; 1.5; 2.
1 each screwdriver for slot-head size 1.0; 1.8; 2.0; 2.5; 2.5; 3.0.
1 each socket screwdriver for external hexagon size 4; 5.5.
1 screwdriver for Microstix® size m × 40 mm.
1 chip lifter 3.5×50 mm.

Size 4/2 – 6 pieces in a plastic clip.
1 each screwdriver for slot-head No. 669900 size 1.2; 1.5; 1.8; 2.5.
1 each screwdriver for Phillips No. 669905 size 0; 1.

Note: 25-piece ESD "Big Pack" available under No. 669924 size 25.


66 7170_3/3


66 7170_12


66 7170_25


66 9924_4/2

Number of screwdrivers			3/3	12	25	4/2
63H 66 7170	Wera	Electronics screwdriver set **Kraftform Micro**	eShop	eShop ■	eShop	–
63H 66 9924	Wera	Electronics screwdriver set **Kraftform Micro, ESD**	–	–	–	eShop

Electrician's screwdriver set

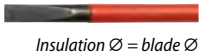
with 2-component Haptoprene handle, fully insulated

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core.
Blade of chrome vanadium steel, **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**
With **SLIM blade** = reduced blade/and insulation diameter for deep-set screw and spring elements **(insulation Ø = blade Ø).**

Supplied with:

66 6986 – 1 each screwdriver for slot-head No. 662902 size 2.5; 3.5; 4; 5.5.
1 each screwdriver for Phillips No. 668902 size 1 and 2.

66 6996 – 1 each screwdriver for slot-head No. 662902 size 2.5; 3.5; 4; 5.5.
1 each screwdriver for Pozidriv No. 668912 size 1 and 2.


Insulation Ø = blade Ø

Number of screwdrivers			4/2
61F 66 6986	Garant	Electrician's screwdriver set, 6 pieces **for slot-head and Phillips, SLIM blade, VDE fully insulated**	eShop
61F 66 6996	Garant	Electrician's screwdriver set, 6 pieces **for slot-head and Pozidriv, SLIM blade, VDE fully insulated**	eShop


66 6986

with Classic 2-component handle, fully insulated

66 7077 – Aluminium rack with spring-loaded plastic slots for secure storage of screwdrivers. Suitable for attachment to a wall.

66 7070/7071 – Slim handle with comfortable elastomer surface and tough impact-resistant polypropylene core.
Handle and blade **fully insulated up to 1000 V** to **DIN EN IEC 60900 / VDE 0682-201.**

Supplied with:

66 7070 – 1 each screwdriver for slot-head No. 663000 size 2.5; 3.5; 4; 5.5.
1 each screwdriver for Phillips No. 668370 size 1 and 2.
1 **tool rack** No. 667077 size M.

66 7071 – 1 each screwdriver for slot-head No. 663000 size 2.5; 3.5; 4; 5.5.
1 each screwdriver for Pozidriv No. 668380 size 1 and 2.



66 7070



66 7071

Number of screwdrivers			4/2
63E **66 7070**	PB SWISS TOOLS	Electrician's screwdriver set, 6 pieces **for slot-head and Phillips, VDE fully insulated**	eShop
63E **66 7071**	PB SWISS TOOLS	Electrician's screwdriver set, 6 pieces **for slot-head and Pozidriv, VDE fully insulated**	eShop

Type			S	M	L
63E **66 7077**	PB SWISS TOOLS	Tool rack for wall mounting	eShop	eShop	eShop
overall length		mm	230	280	330
Number of tool sockets			6	9	11



66 7077_M

with Kraftform handle, fully insulated

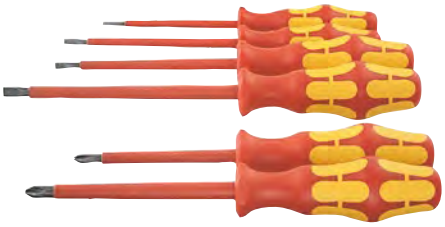
Wera laser tip blade fully insulated up to 1000 V to **DIN EN IEC 60900 / VDE 0682-201.**

Supplied with:

66 7200 – 1 each screwdriver for slot-head No. 663100 size 2.5; 3.5; 4; 5.5.
1 each screwdriver for Phillips No. 668600 size 1 and 2.

66 7250 – 1 each screwdriver for slot-head No. 663100 size 2.5; 3.5; 4; 5.5.
1 each screwdriver for Pozidriv No. 668700 size 1 and 2.





66 7200

Number of screwdrivers			4/2
63H **66 7200**	Wera	Electrician's screwdriver VDE set, 6 pieces **for slot-head and Phillips, fully insulated**	eShop ■
63H **66 7250**	Wera	Electrician's screwdriver set, 6 pieces **for slot-head and Pozidriv, VDE fully insulated**	eShop

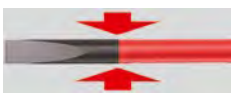
with Kraftform handle, fully insulated

Blade with reduced blade ∅, fully insulated up to 1000 V to **DIN EN IEC 60900 / VDE 0682-201.**

Supplied with:

66 7230 – 1 each screwdriver for slot-head No. 663200 size 3.5; 4; 5.5.
1 each screwdriver for Phillips No. 668620 size 1 and 2.

66 7240 – 1 each screwdriver for slot-head No. 663200 size 3.5; 4; 5.5.
1 each screwdriver for Pozidriv No. 668720 size 1 and 2.



Insulation ∅ matches the blade ∅ for optimum access e.g. for spring terminals.

Number of screwdrivers			3/2
63H **66 7230**	Wera	Electrician's screwdriver set, 5 pieces **for slot-head and Phillips, reduced blade ∅, VDE fully insulated**	eShop
63H **66 7240**	Wera	Electrician's screwdriver set, 5 pieces **for slot-head and Pozidriv, reduced blade ∅, VDE fully insulated**	eShop



66 7230

with multi-component power grip, fully insulated

Multi-component power handle with grip zone optimised for torque and comfort.
Blade of high-alloy tool steel, **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**

Supplied with:

66 7216 – 1 each screwdriver for slot-head No. 663301 size 2.5; 3.5; 4; 5.5.
1 each screwdriver for Phillips No. 668631 size 1 and 2.

66 7226 – 1 each screwdriver for slot-head No. 663301 size 2.5; 3.5; 4; 5.5.
1 each screwdriver for Pozidriv No. 668731 size 1 and 2.

Number of screwdrivers			4/2
62F 66 7216	HOLEX	Electrician's screwdriver set, 6 pieces **for slot-head and Phillips, VDE fully insulated**	eShop
62F 66 7226	HOLEX	Electrician's screwdriver set, 6 pieces **for slot-head and Pozidriv, VDE fully insulated**	eShop



66 7216

wiha VDE range „speedE® II electric" cordless bit screwdriver with interchangeable blades

Quicker working due to electronic screw tightening over 2 power levels: 0.4 Nm and 1.0 Nm. This opens up a new range of applications. A material protection function for both power levels is integrated, which switches off the screw tightening function after the tightening torque of 0.4 Nm or 1.0 Nm is reached. Further tightening by hand is possible without having to change grip, using the electronic ratchet. The manual strength of the user determines the maximum tightening torque. The integrated ring LED ensures optimum illumination of the screw during the screw fastening. Holder and bits **fully insulated to 1000 V** to **DIN EN IEC 60900 / VDE 0682-201.**

Supplied with: E-screwdriver handle speedE® II
1× slimBit SL 0.6×3.5; bit length: 75 mm.
1× PowerBit SL/PZ2; bit length: 75 mm.
USB charger (without mains adapter).
2 rechargeable Li-ion batteries.
In a sturdy plastic box L-BOXX® Mini



Quick and efficient screw fastening by cordless drive

Type		1
60N 66 7268	„speedE® II" VDE set 1	eShop

Wera Kraftform Kompakt RA VDE set

Kraftform handle with 154-mm-long **interchangeable blades fully insulated up to 1000 V** to **DIN EN IEC 60900 / VDE 06082-201**.
The integral ratchet function (40 teeth/working arc 9°) simplifies and accelerates screwdriving without tedious repositioning.
Reversing ring for left- and right-hand tightening and for fixed operation.
Supplied in a sturdy textile folder with hook and loop fastening.

Advantage: "Take it Easy" tool finder with colour marking by profiles – **to find the required tool quickly and easily.**





Reversible

Number of pieces		17
63H 66 7256	Kraftform Kompakt RA VDE set	eShop
Content: Slot-head blades		0.4×2.5; 0.6×3.5; 0.8×4.0; 1.0×5.5; 1.2×6.5
Blades for Phillips		PH1 and PH2
Pozidriv bits		PZ1 and PZ2
Pozidriv/slot-head blades (combination profile)		PZ/ S1 and PZ/ S2 (combination profile)
blades for Torx®		Size TX10; TX15; TX20; TX25
Kraftform handle for interchangeable blades No. 667411		Gr.1
Kraftform handle with ratchet function		1 piece



Wera Kraftform Kompakt VDE sets

Kraftform handle with 154-mm-long **interchangeable blades (including control cabinet keys) fully insulated up to 1000 V** according to **DIN EN 6000 / VDE 0682-201** and a voltage tester (up to 250 V to VDE 0680/6) in a sturdy textile tool roll with hook and loop fastener and belt loop.

Advantage: "Take it Easy" tool finder with colour marking by profiles – **to find the required tool quickly and easily.**



Number of pieces		18
63H 66 7262	Kraftform Kompakt VDE sets	eShop
Content: Slot-head blades		0.4×2.5; 0.6×3.5; 0.8×4.0; 1.0×5.5
Blades for Phillips		PH1 and PH2
Pozidriv bits		PZ1 and PZ2
Phillips/slot-head blade (combination profile)		PH/ S1 and PH/ S2 (combination profile)
Pozidriv/slot-head blade (combination profile)		PZ/ S1 and PZ/ S2 (combination profile)
Square		8 mm and 1/4 inch (89 mm long)
3-square		9 mm (89 mm long)
Two-wing		(89 mm long)
Voltage tester No. 665030		Size 3
Kraftform handle for interchangeable blades No. 667411		Size 1



Wera Kraftform Kompakt VDE set with installation pliers

Kraftform handle with ratchet function and fine toothing for a small working arc.
Easy-to-use changeover ring. Loosen and tighten the screw using the "rapid twisting function", even if there is no resistance. Hexagonal non-roll feature prevents any rolling away.
Kraftform ratchet T-handle with free-turning sleeve and square drive output (1/4 inch).
All contents **fully insulated up to 1000 V** to **DIN EN IEC 60900 / VDE 0682-201.**



66 7264

Number of pieces		24
63H **66 7264**	Kraftform Kompakt VDE 24 all-rounder set	eShop
Content:		
Blades for slot head		1 pc. each size 0.4×2.5; 0.6×3.5; 0.8×4.0; 1.2×6.5 mm
Blades for Phillips		Size 1; 2
Blades for Pozidriv		Size 1; 2
blades for Torx®		Size TX15; TX20; TX25
Sockets 1/4 inch, for external hexagon		Size 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13 mm
Adaptor blade square drive output (1/4 inch		1 pc.
Kraftform T-handle with ratchet function		1 pc.
Kraftform handle with ratchet function		1 pc.
Kraftform handle for interchangeable blades No. 667411		1 pc.

PB Swiss Tools Assembly screwdriver set "All-rounder"

"Multicraft" power grip and telescopic precision handle to hold the bits.
8 double bits, 14 bits, and 1 voltage tester (110 - 250 V to VDE 0680/6) for all common screw connections.
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.
Surface nickel-plated and chrome-plated. Black tips, accurately dimensioned.
Supplied with: Plastic tool roll.

Note:	Spare blades can be found under No. 669605 – 669608 and No. 659921 – 659928.


66 7615

Number of pieces		25
63E **66 7615**	Assembly screwdriver set "All-rounder"	eShop
Content:		
Blades for slot head		Size 2; 2.5; 3.5; 4; 5.5; 6.5; 8 mm
Blades for Phillips		Size 00; 0; 1; 2
Blades for Pozidriv		Size 0; 1; 2
Blades for hexagon		Size 1.5; 2; 2.5; 3; 4; 5; 6 mm
blades for Torx®		Size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25
Voltage tester No. 665020		Size 2.5
Reamer blade No. 667640		1 pc.
Plastic handle No. 667620		1 pc.
Telescopic handle		1 pc.

Garant Screwdriver set with interchangeable blades

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands.
Double blade of chromium vanadium special alloy combining maximum hardness and exceptional toughness.
Surface nickel-plated and chrome-plated. Black tips, accurately dimensioned.
Supplied with: Textile roll-up wallet.



66 7533

Number of pieces		10
61F **66 7533**	Screwdriver set with interchangeable blades	eShop ■
Content:		
Blades for slot head		0.8×4 / 0.6×3.5 mm; 1.2×6 / 1×5 mm
Blade for Phillips		Size 1 / Size 2
Blade for Pozidriv		Size 1 / Size 2
blades for Torx®		TX10 / TX15; TX20 / TX25
Blades for hexagon		2.5 / 3 mm; 4 / 5 mm
Bit holder		1 pc.
2-component handle		1 pc.

PB SWISS TOOLS PC and assembly screwdriver set

Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.
Slot-head blades with parallel, stepped tip, ensuring an exact fit to standard screw head slot sizes.
Tips of cross-head blades precisely milled. Surface nickel-plated and chrome-plated, black tip.

66 7551 – Assorted specially for working on a PC.

66 7605 – **Power grip** with a non-allergenic elastomer surface and a particularly tough impact-resistant polypropylene core for holding different blades, particularly secure grip, even with oily hands. **Suitable for ESD work.**

66 7551/7601 – **"multicraft" power grip** of impact-resistant plastic (cadmium-free), for holding different bits, particularly easy grip, even with oily hands.

Supplied with: Textile roll-up wallet.



66 7551

Number of pieces		11
63E **66 7551**	PC screwdriver set with "multicraft" power grip	eShop
Content:		
Slot-head blades No. 659928		Sizes 4 and 5.5
Blade for Phillips No. 659921		Sizes 1 and 2
Blades for Torx® No. 659922		Size TX10 and TX15
Precision screwdriver (slot-head) No. 664415		Sizes 2 and 3
Screwdriver (for Phillips) No. 668891		Size 0
Fine socket (for external hex-head bolts)		5 mm
Plastic grip		1 pc.



66 7601

Number of pieces		11
63E **66 7601**	Assembly screwdriver set with "multicraft" power grip	eShop
Content:		
Slot-head blades No. 659928		Size 4; 5.5; 6.5; 8
Blades for Phillips No. 659921		Sizes 1 and 2
Pozidriv blade No. 659923		Size 2
Reamer blade No. 667640		1 pc.
Plastic handle No. 667620		1 pc.
Electronics screwdriver (slot-head) No. 664400		Sizes 2.5 and 3.5



66 7605

Number of pieces		10
63E **66 7605**	Screwdriver set with 2-component SwissGrip handle **ESD**	eShop
Content:		
Slot-head blades No. 659928		Size 4; 5.5; 6.5; 8
Blades for Phillips No. 659921		Sizes 1 and 2
Reamer blade No. 667640		1 pc.
Precision screwdriver (slot-head) No. 664415		Sizes 2.5 and 3
Plastic grip		1 pc.

Wera Assembly screwdriver set – Vario – (handle with exchangeable bits)

Kraftform handle of impact resistant plastic to hold different bits.
Hexagon bits of special steel combining exceptional toughness and hardness.
Nicromatt chrome-plated, steel grey tips.

66 7406 – With ratchet function and fine toothing for a small working arc. Easy-to-use reversing ring. Loosen and tighten the screw using the "rapid twisting function", even if there is no resistance.

Supplied with: Textile tool roll.



Reversing ring.



66 7406

Number of pieces			7
63H **66 7406**	Assembly screwdriver set **with ratchet function**		eShop
overall length		mm	175
Blade length		mm	100
Content:			
1 slot-head blade			4×0.6 / 6×1
1 blade for Phillips			Size 1 / Size 2
1 Pozidriv blade			Size 1 / Size 2
1 hexagonal blade			4 / 5 mm
2 blades for Torx®			TX10 / TX15; TX20 / TX25
Kraftform handle with ratchet			1 pc.



66 7400

Number of pieces			11
63H **66 7400**	Assembly screwdriver set		eShop ■
overall length		mm	175
Blade length		mm	100
Content:			
2 slot-head blades			4×0.6 / 6×1; 5×0.8 / 7×1.2
1 blade for Phillips			Size 1 / Size 2
1 Pozidriv blade			Size 1 / Size 2
3 hexagonal bits			4 / 4; 5 / 5; 6 / 6 mm (1 end with ball head)
3 blades for Torx®			TX10 / TX15; TX20 / TX25; TX30 / TX40
Kraftform handle No. 667410			1 pc.

Screwdriver for cross-head screws (Phillips, Pozidriv)

with 2-component Haptoprene power handle

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core.
The special surface structure allows transmission of high torques, even with wet or oily hands.
Blade of chrome vanadium steel. Surface nickel-plated and chrome-plated, black tip.
66 7702/7712 Size 2; 3 – With hexagon collar for wrench assistance.



66 7702

Cross-head size			00	0	1	2	3
61F 66 7702	Garant	Screwdriver for Phillips, with 2-component Haptoprene handle	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
61F 66 7712	Garant	Screwdriver for Pozidriv, with 2-component Haptoprene handle	–	eShop	eShop ■	eShop ■	eShop
for screw ∅	mm		–	up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2
Blade length	mm		60	60	80	100	150
overall length	mm		120	140	175	205	270
Hexagon collar for wrench assistance	mm		–	–	–	10	13

Number of screwdrivers			3
61F 66 7706	Garant	Screwdriver set for Phillips, with 2-component Haptoprene handle	eShop
61F 66 7716	Garant	Screwdriver set for Pozidriv, with 2-component Haptoprene handle	eShop
Content:			
1 each screwdriver No. 667702 (66 7706)			Size 1; 2; 3
1 each screwdriver No. 667712 (66 7716)			Size 1; 2; 3



66 7706

Cross-head size			0	1	2
61F 66 7722	Garant	Screwdriver for Phillips, short, with 2-component Haptoprene handle	eShop ■	eShop	eShop ■
61F 66 7732	Garant	Screwdriver for Pozidriv, short, with 2-component Haptoprene handle	–	eShop	eShop ■
for screw ∅	mm		up to 2	2.1 – 3	3.1 – 5.2
Blade length	mm		25	30	35
overall length	mm		90	85	90



66 7722



66 7732

with SwissGrip power grip

Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.
Surface nickel-plated and chrome-plated, black tip.

66 7685/7687 – **SwissGrip power grip** with non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. High torques can be exerted even with wet or oily hands. Tool handle made of conductive plastic, **suitable for ESDs.**

66 7795/7797/7796/7798 – **SwissGrip Evo power grip** allows transmission of the required torque with no problems, even with wet or oily hands. Work without getting tired thanks to modified circular shape. High-tech 3-component materials improve the chemical and mechanical resistance. Handle with "Rainbow" colour coding for finding the correct drive size quickly.

Supplied with:

66 7796/7798 – With wall bracket.



66 7795





66 7685

Cross-head size			0	1	2	3
63E 66 7795	PB SWISS TOOLS	Screwdriver for Phillips, with 2-component SwissGrip Evo handle	eShop	eShop	eShop	eShop
63E 66 7797	PB SWISS TOOLS	Screwdriver for Pozidriv, with 2-component SwissGrip Evo handle	eShop	eShop	eShop	eShop
63E 66 7685	PB SWISS TOOLS	Screwdriver for Phillips, with 2-component SwissGrip handle **ESD**	eShop	eShop	eShop	–
63E 66 7687	PB SWISS TOOLS	Screwdriver for Pozidriv, with 2-component SwissGrip handle **ESD**	–	eShop	eShop	–
for screw ∅	mm		up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2
Blade length	mm		60	80	100	150
overall length	mm		140	175	205	270

Number of screwdrivers			4
63E 66 7796	PB SWISS TOOLS	Screwdriver set for Phillips, with 2-component SwissGrip Evo handle	eShop
63E 66 7798	PB SWISS TOOLS	Screwdriver set for Pozidriv, with 2-component SwissGrip Evo handle	eShop
Content:			
1 each screwdriver No. 667795 (66 7796)			Size 0; 1; 2; 3
1 each screwdriver No. 667797 (66 7798)			Size 0; 1; 2; 3

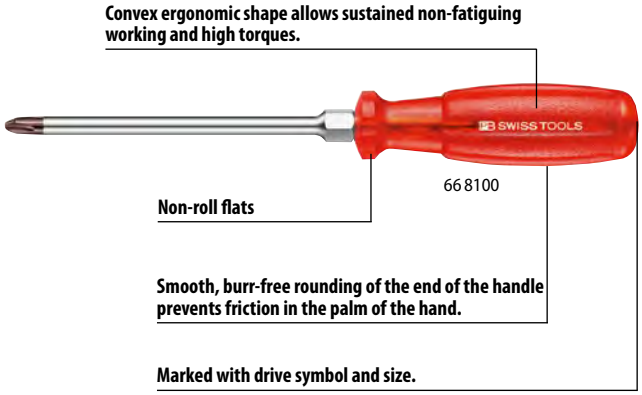


66 7796

Screwdrivers for cross-head screws (Phillips, Pozidriv)

with "multicraft" power grip

"multicraft" power grip of transparent, impact-resistant plastic (cadmium-free), particularly easy grip, even with oily hands.
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip.



Cross-head size			0	1	2	3
63E 66 8100	PB SWISS TOOLS	Screwdriver for Phillips, with "multicraft" power grip	eShop	eShop	eShop	eShop
63E 66 8150	PB SWISS TOOLS	Screwdriver for Pozidriv, with "multicraft" power grip	eShop	eShop	eShop	eShop
for screw ∅	mm		up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2
Blade length	mm		60	80	100	150
overall length	mm		140	180	210	270
Hexagon collar for wrench assistance	mm		–	–	10	13


66 8150

Number of screwdrivers			3
63E 66 8110	PB SWISS TOOLS	Screwdriver set for Phillips, with "multicraft" power grip	eShop
63E 66 8160	PB SWISS TOOLS	Screwdriver set for Pozidriv, with "multicraft" power grip	eShop
Content: 1 each screwdriver No. 668100 (66 8110)			Size 1; 2; 3
1 each screwdriver No. 668150 (66 8160)			Size 1; 2; 3


66 8110_3

with cylindrical handle of impact resistant plastic

"Classic" power grip of transparent, impact-resistant plastic (cadmium-free).
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip.
Size 0K–2K – Short version.


66 8000

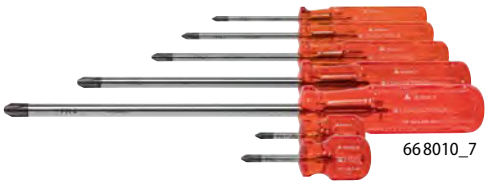

66 8200


66 8000_1K


66 8200_1K

Cross-head size			0	1	2	3	4	0K	1K	2K
63E 66 8000	PB SWISS TOOLS	Screwdriver for Phillips, with plastic handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
63E 66 8200	PB SWISS TOOLS	Screwdriver for Pozidriv, with plastic handle	eShop	eShop	eShop	eShop	eShop	–	eShop	eShop
for screw ∅	mm		up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2	7.3 – 12.7	up to 2	2.1 – 3	3.1 – 5.2
Blade length	mm		60	80	100	150	200	30	30	40
overall length	mm		150	175	215	270	330	75	75	90

Number of screwdrivers			3	4	7
63E 66 8010	PB SWISS TOOLS	Screwdriver set for Phillips, with plastic handle	eShop	eShop	eShop
63E 66 8210	PB SWISS TOOLS	Screwdriver set for Pozidriv, with plastic handle	eShop	eShop	eShop
Content: 1 pc. each hexagon key L-wrench No. 668000 (66 8010)			Size 1; 2; 3	Size 1; 2; 3; 4	Size 0; 1; 2; 3; 4; 1K; 2K
1 pc. each hexagon key L-wrench No. 668200 (66 8210)			Size 1; 2; 3	Size 1; 2; 3; 4	Size 0; 1; 2; 3; 4; 1K; 2K


66 8010_7

with Kraftform handle, diamond-coated tips

Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm.
Blade made of high hardness special steel with special toughness; **diamond-coated tips.** Nicromatt chrome-plated surface.

Very high wear resistance
and secure fit in the screw due to diamond coating.


66 7800

Non-roll flats

Fast and ergonomic working due to the Kraftform handle.

High transfer of torque due to integral soft zones.

Marked with drive symbol and size on cap.

Cross-head size			0	1	2	3
63H 66 7700	Wera	Screwdriver for Phillips with Kraftform handle	eShop	eShop	eShop	eShop
63H 66 7800	Wera	Screwdriver for Pozidriv, with Kraftform handle	eShop	eShop	eShop	eShop
for screw ∅	mm		up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2
Blade length	mm		60	80	100	150
overall length	mm		141	178	205	262
Hexagon collar for wrench assistance	mm		–	8	10	13

Number of screwdrivers			3
63H 66 7710	Wera	Screwdriver set for Phillips with Kraftform handle	eShop
63H 66 7810	Wera	Screwdriver set for Pozidriv, with Kraftform handle	eShop
Content: 1 pc. each hexagon key L-wrench No. 667700 (66 7710)			Size 1; 2; 3
1 pc. each hexagon key L-wrench No. 667800 (66 7810)			Size 1; 2; 3



66 7710

with cylindrical handle of impact resistant plastic – long blade

"Classic" power grip of transparent, impact-resistant plastic (cadmium-free).
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.
Surface nickel-plated and chrome-plated, black tip.

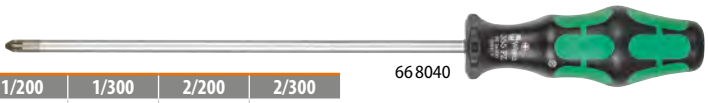


66 8050

Cross-head size / Blade length	mm		1/130	1/200	2/150	2/250	2/300
63E 66 8050	PB SWISS TOOLS	Screwdriver for Phillips, long and with plastic handle	eShop	eShop	eShop	eShop	eShop
overall length	mm		225	295	255	360	410

with Kraftform handle – long blade

Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm. **Blade** of high-alloy special steel. Nicromatt chrome-plated surface, black tips or chemically nickel-coated Lasertip tips.


66 8040

Cross-head size / Blade length	mm		1/200	1/300	2/200	2/300
63H 66 8040	Wera	Screwdriver for Phillips, long and with Kraftform handle	eShop	eShop	eShop	eShop
63H 66 8240	Wera	Screwdriver for Pozidriv, long and with Kraftform handle	eShop	eShop	eShop	eShop
overall length	mm		298	398	305	405
Blade tip			Lasertip	black	Lasertip	black



with Kraftform handle and round steel blade

Kraftform handle made of impact resistant plastic **with integrated soft zones** facilitates torque transmission and thus protects hand and arm.

66 8260/8270 – **Wera Lasertip blade** made of high-alloy special steel with **micro-textured drive tip,** chemically nickel-plated**.** (Size 0; 1S; 2S without laser tip, with black drive tip).

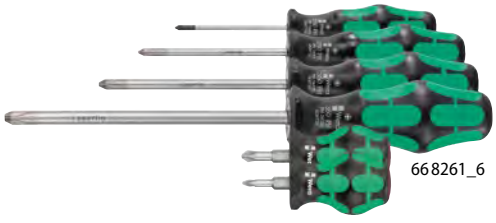

66 8260_0


66 8270_1S

Cross-head size			0	1	2	3	1S	2S
63H 66 8260	Wera	Screwdriver for Phillips, with round steel blade	eShop	eShop	eShop	eShop	eShop	eShop
63H 66 8270	Wera	Screwdriver for Pozidriv, with round steel blade	eShop	eShop	eShop	eShop	eShop	eShop
for screw ∅	mm		up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2	2.1 – 3	3.1 – 5.2
Blade length	mm		60	80	100	150	25	25
overall length	mm		141	178	205	262	79	79
Blade tip			black	Lasertip	Lasertip	Lasertip	black	black



Number of screwdrivers			3	6
63H 66 8261	Wera	Screwdriver set for Phillips	eShop	eShop
63H 66 8271	Wera	Screwdriver set for Pozidriv	eShop	eShop
Supplied with: 1 each screwdriver No. 668260 (66 8261)			Size 1; 2; 3	Size 0; 1; 2; 3; 1S; 2S
1 each screwdriver No. 668270 (66 8271)			Size 1; 2; 3	Size 0; 1; 2; 3; 1S; 2S


66 8261_6

with Kraftform handle and stainless steel blade "Stainless"

S/STL

Kraftform handle made of impact resistant plastic **with integrated soft zones** facilitates torque transmission and thus protects hand and arm.
Wera Lasertip blade made of stainless steel with **micro-textured drive tip** (from size 1).



66 8280



Cross-head size			0	1	2	3
63H 66 8280	Wera	"Stainless" screwdriver for Phillips, with stainless steel blade	eShop	eShop	eShop	eShop
63H 66 8290	Wera	"Stainless" screwdriver for Pozidriv, with stainless steel blade	eShop	eShop	eShop	eShop
for screw ∅		mm	up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2
Blade length		mm	60	80	100	150
overall length		mm	141	178	205	262

Number of screwdrivers			3
63H 66 8285	Wera	"Stainless" screwdriver set for Phillips, with stainless steel blade	eShop
63H 66 8295	Wera	"Stainless" screwdriver set for Posidriv, with stainless steel blade	eShop
Supplied with: 1 each screwdriver No. 668280 (66 8285)			Size 1; 2; 3
1 each screwdriver No. 668290 (66 8295)			Size 1; 2; 3



66 8285

with Kraftform handle, through hexagon blade, and impact cap

Kraftform handle made of impact resistant plastic with **integral soft zones** (except size 4) and **impact cap. Hexagon blade** made of tough special steel **through to end of handle**, hexagon collar for wrench assistance.
Nicromatt chrome-plated surface, black tips.





66 8300_3

Cross-head size			1	2	3	4
63H 66 8300	Wera	Screwdriver for Phillips **with impact cap**	eShop	eShop	eShop	eShop
63H 66 8305	Wera	Screwdriver for Pozidriv **with impact cap**	eShop	eShop	eShop	eShop
for screw ∅		mm	2.1 – 3	3.1 – 5.2	5.3 – 7.2	7.3 – 12.7
Blade length		mm	80	100	150	200
overall length		mm	178	205	262	317
Hexagon collar for wrench assistance		mm	8	10	13	16

Number of screwdrivers			3	4
63H 66 8310	Wera	Screwdriver set for Phillips **with impact cap**	eShop	eShop
63H 66 8315	Wera	Screwdriver set for Pozidriv **with impact cap**	eShop	eShop
Supplied with: 1 each screwdriver No. 668300 (66 8310)			Size 1; 2; 3	Size 1; 2; 3; 4
1 each screwdriver No. 668305 (66 8315)			Size 1; 2; 3	Size 1; 2; 3; 4



66 8310_4

with cylindrical handle of hardwood and round steel blade

Handle of sealed beechwood, with leather impact cap. Blade through to end of handle.
Blade of chrome vanadium steel, through hardened, with hexagon collar for wrench assistance, bright nickel-plated.



66 8450

Cross-head size			1	2	3	4
62F 66 8450	HOLEX	Screwdriver for Phillips, with wooden handle	eShop	eShop	eShop	eShop
for screw ∅		mm	2.1 – 3	3.1 – 5.2	5.3 – 7.2	7.3 – 12.7
Blade length		mm	80	100	150	200
overall length		mm	177	205	269	334
Hexagon collar for wrench assistance		mm	8	10	13	17



66 8460_4

Number of screwdrivers			3	4
62F 66 8460	HOLEX	Screwdriver set for Phillips, with wooden handle	eShop	eShop
Supplied with: 1 each screwdriver No. 668450			Size 1; 2; 3	Size 1; 2; 3; 4

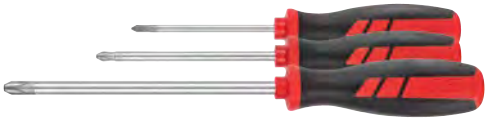
with multi-component power grip

Multi-component power handle with grip zone optimised for torque and comfort.
Blade of chrome vanadium steel, surface chrome-plated.
Chrom-Top tips for optimum rust protection.



66 8401

Cross-head size			0	1	2	3	4
62F 66 8401	HOLEX	Screwdriver for Phillips, with power grip	eShop ■	eShop ■	eShop ■	eShop ■	eShop
62F 66 8501	HOLEX	Screwdriver for Pozidriv, with power grip	eShop	eShop ■	eShop	eShop	–
for screw ∅	mm		up to 2	2.1 - 3	3.1 - 5.2	5.3 - 7.2	7.3 - 12.7
Blade length	mm		60	80	100	150	200
overall length	mm		147	187	207	270	320



66 8411_3

Number of screwdrivers			3	5
62F 66 8411	HOLEX	Screwdriver set for Phillips, with power grip	eShop	eShop
62F 66 8511	HOLEX	Screwdriver set for Pozidriv, with power grip	eShop	–
Supplied with: 1 pc. each screwdriver No. 668401 (66 8411)			Size 1; 2; 3	Size 0; 1; 2; 3; 4
1 pc. each screwdriver No. 668501 (66 8511)			Size 1; 2; 3	–

with multi-component power handle and stub blade

Multi-component power grip. Blade of chrome vanadium steel, surface chrome-plated.
Chrom-Top tips for optimum rust protection.



66 8471



66 8476

Cross-head size			1	2
62F 66 8471	HOLEX	Screwdriver for Phillips, short	eShop	eShop
62F 66 8476	HOLEX	Screwdriver for Pozidriv, short	eShop	eShop
for screw ∅	mm		2.1 - 3	3.1 - 5.2
Blade length	mm		25	
overall length	mm		82	

Electrician's screwdriver for PlusMinus screws (Pozidriv/slot-head)

Handle and blade **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**
Each of these screwdrivers is individually tested in a water bath for insulation breakdown under high voltage.

Application: For use at voltages up to 1000 V.
The screwdriver drive tip fits perfectly into the **PlusMinus screws (combination Pozidriv / slot-head)**, which are primarily used in electrical installation components.

with 2-component Haptoprene power grip, fully insulated

Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands. **Blade** of chrome vanadium steel. Surface nickel-plated and chrome-plated, black tip. With **SLIM blade** = reduced blade/and insulation diameter for deep-set screw and spring elements **(insulation ∅ = blade ∅).**





Insulation ∅ = blade ∅



66 8922_2

Profile size			1	2
61F 66 8922	Garant	Electrician's screwdriver for PlusMinus screws, with 2-component Haptoprene handle, **SLIM blade, VDE fully insulated**	eShop	eShop
Profile Pozidriv – slot head			1 – 0.7×4.5	2 – 1.0×6
Blade length	mm		80	100
overall length	mm		180	205

with Classic 2-component handle, fully insulated

Slim handle with a non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. Due to its special surface structure, the grip is non-slip even with oily or wet hands.
Blade of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness.



66 8390

Profile size			1	2
63E 66 8390	PB SWISS TOOLS	Electrician's screwdriver for PlusMinus screws, Classic **VDE fully insulated**	eShop	eShop
Profile Pozidriv – slot head			1 – 0.7×4.5	2 – 1.0×6
Blade length		mm	80	100
overall length		mm	175	205



Detail view:
Drive tip fits perfectly into the PlusMinus screw.



Electrician's screwdriver for cross-head screws (Phillips, Pozidriv)

Handle and blade **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.** Each of these screwdrivers is individually tested in a water bath for insulation breakdown under high voltage.
Application: For use at voltages up to 1000 V.

with 2-component Haptoprene power grip, fully insulated

Ergonomically shaped **power handle** with easy-grip **Haptoprene** surface and an impact-resistant plastic core. The special surface structure allows transmission of high torques, even with wet or oily hands.
Blade of chrome vanadium steel.
With **SLIM blade** = reduced blade/and insulation diameter for deep-set screw and spring elements **(insulation Ø = blade Ø).**



Insulation Ø = blade Ø

Cross-head size			1	2
61F 66 8902	Garant	Electrician's screwdriver for Phillips with 2-component Haptoprene handle, **SLIM blade, VDE fully insulated**	eShop ■	eShop
61F 66 8912	Garant	Electrician's screwdriver for Pozidriv with 2-component Haptoprene handle, **SLIM blade, VDE fully insulated**	eShop	eShop
for screw Ø		mm	2.1–3	3.1–5.2
Blade length		mm	80	100
overall length		mm	180	205



66 8902_02

with Classic 2-component handle, fully insulated

Slim handle with a non-allergenic elastomer coating and a core of particularly tough and impact-resistant polypropylene. Due to its special surface structure, grip is non-slip even in oily or wet hands
Blade of PB Swiss Tools special alloy combining maximum hardness and exceptional toughness.



Cross-head size			1	2	3
63E 66 8370	PB SWISS TOOLS	Electrician's screwdriver for Phillips, Classic **VDE fully insulated**	eShop	eShop	eShop
63E 66 8380	PB SWISS TOOLS	Electrician's screwdriver for Pozidriv, Classic **VDE fully insulated**	eShop	eShop	eShop
for screw Ø		mm	2.1 – 3	3.1 – 5.2	5.3 – 7.2
Blade length		mm	80	100	150
overall length		mm	175	205	270

Identification
moulded into the end of the handle.

Non-roll flats



66 8370



66 8380

Number of screwdrivers			3
63E 66 8371	PB SWISS TOOLS	Electrician's screwdriver set for Phillips, Classic **VDE fully insulated**	eShop
63E 66 8381	PB SWISS TOOLS	Electrician's screwdriver set for Pozidriv, Classic **VDE fully insulated**	eShop
Supplied with: 1 each screwdriver No. 668370 (66 8371)			Size 1; 2; 3
1 each screwdriver No. 668380 (66 8381)			Size 1; 2; 3



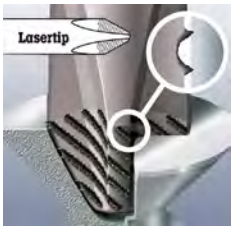
66 8371

with Kraftform handle, fully insulated

Kraftform handle made of impact resistant plastic **with integral soft zones** facilitates torque transmission and thus protects hand and arm.

66 8600/8700/8610/8710 – **Blade** of high-alloy special steel. Nicromatt chrome-plated surface, black tips or chemically nickel-coated Lasertip tips.

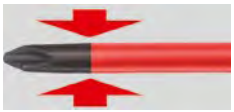
66 8620/8720 – Blade made of high-alloy special steel, zinc phosphated.
Reduced blade Ø with integral protective insulation for deep-lying screws of spring elements (blade Ø = insulation Ø near the tip of the blade).



Cross-head size			0	1	2	3	4
63H 66 8600	Wera	Electrician's screwdriver for Phillips, with Kraftform handle **VDE fully insulated**	eShop	eShop	eShop	eShop	eShop
63H 66 8700	Wera	Electrician's screwdriver for Pozidriv, with Kraftform handle **VDE fully insulated**	eShop	eShop	eShop	eShop	eShop
63H 66 8620	Wera	Electrician's screwdriver for Phillips, reduced blade Ø, with Kraftform handle **VDE fully insulated**	–	eShop	eShop	–	–
63H 66 8720	Wera	Electrician's screwdriver for Pozidriv, reduced blade Ø, with Kraftform handle **VDE fully insulated**	–	eShop	eShop	–	–
for screw Ø mm			up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2	7.3 – 12.7
Blade length mm			80	80	100	150	200
overall length mm			161	178	205	262	312
Blade tip (66 8600, 66 8700)			black	Lasertip	Lasertip	Lasertip	black


66 8600


66 8620


Insulation Ø matches the blade Ø near the tip of the blade.

Number of screwdrivers			3	4	5
63H 66 8610	Wera	Electrician's screwdriver set for Phillips, with Kraftform handle **VDE fully insulated**	eShop	eShop	eShop
63H 66 8710	Wera	Electrician's screwdriver set for Pozidriv, with Kraftform handle **VDE fully insulated**	eShop	eShop	eShop
Supplied with: 1 each screwdriver No. 668600 (66 8610)			Size 1; 2; 3	Size 1; 2; 3; 4	Size 0; 1; 2; 3; 4
1 each screwdriver No. 668700 (66 8710)			Size 1; 2; 3	Size 1; 2; 3; 4	Size 0; 1; 2; 3; 4


66 8610_3

with multi-component power grip, fully insulated

Multi-component power handle with grip zone optimised for torque and comfort.
Blade of high-alloy tool steel.

Cross-head size			0	1	2	3	4
62F 66 8631	HOLEX	Electrician's screwdriver for Phillips **VDE fully insulated**	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
62F 66 8731	HOLEX	Electrician's screwdriver for Pozidriv **VDE fully insulated**	eShop	eShop ■	eShop ■	eShop ■	–
for screw Ø mm			up to 2	2.1 – 3	3.1 – 5.2	5.3 – 7.2	7.3 – 12.7
Blade length mm			60	80	100	150	200
overall length mm			147	187	207	270	320


66 8631

Number of screwdrivers			3	4	5
62F 66 8641	HOLEX	Electrician's screwdriver set for Phillips **VDE fully insulated**	eShop ■	eShop ■	eShop ■
62F 66 8741	HOLEX	Electrician's screwdriver set for Pozidriv **VDE fully insulated**	eShop ■	–	–
Supplied with: 1 each screwdriver No. 668631 (66 8641)			Size 1; 2; 3	Size 1; 2; 3; 4	Size 0; 1; 2; 3; 4
1 each screwdriver No. 668731 (66 8741)			Size 1; 2; 3	–	–


66 8641_3

Electronics screwdrivers for cross-head screws (Phillips, Pozidriv)

Ergonomic multi-component handle with rotating cap.
66 8800/9905/8850/9910 – **Blade** of high-quality tool steel, surface matt chrome-plated, black tip.
66 8891/8895 – **Blade** of PB Swiss Tools special alloy combines maximum hardness with exceptional toughness. Surface nickel-plated and chrome-plated, black tip.
66 8895–9910 – Tool handle made of conductive plastic, **suitable for ESDs.**


66 8891_00


66 8895_00


66 8800_1


66 9905_0


66 8850_1


66 9910_0

Cross-head size			00	0	1
63E 66 8891	PB SWISS TOOLS	Electronics screwdriver for Phillips	eShop	eShop	eShop
63E 66 8895	PB SWISS TOOLS	Electronics screwdriver for Phillips **ESD**	eShop	eShop	eShop
63H 66 8800	Wera	Electronics screwdriver for Phillips **Kraftform Micro**	eShop ■	eShop ■	eShop ■
63H 66 9905	Wera	Electronics screwdriver for Phillips **ESD**	eShop	eShop	eShop
63H 66 8850	Wera	Electronics screwdriver for Pozidriv **Kraftform Micro**	–	eShop	eShop
63H 66 9910	Wera	Electronics screwdriver for Pozidriv **ESD**	–	eShop	–
for screw ∅ (66 9905, 66 9910)	mm		up to 2	up to 2	2.1 – 3
Blade length	mm		60	60	80
overall length (66 8891, 66 8895)	mm		153	153	173
overall length (66 8800, 66 9905, 66 8850, 66 9910)	mm		157	157	177

66

PB SWISS TOOLS Offset screwdrivers for cross-head screws (Phillips)

Two tips angled 90°. PB Swiss Tools special alloy, surface nickel-plated and chrome-plated. Black tips.
Knurled shank for a secure hold in wet or oily environments.
Screwdriver tips are offset at 45° to each other.
For screws with Phillips cross-head.


66 9400

Cross-head size			1	2	3
63E 66 9400	Offset screwdriver for Phillips		eShop	eShop	eShop
for screw ∅	mm		2.1 – 3	3.1 – 5.2	5.3 – 7.2
overall length	mm		100	125	150

ESD – four golden rules

1. Always assume that **all active devices are ESD sensitive**.
2. Handle electronic devices **only in electrostatic protected areas (EPA)** and only if they are **properly grounded**.
3. **Store and transport** ESD sensitive devices in ESD protected containers.
4. **Check** the ESD protection system regularly.

Follow the principle
"Where there is no charge, there can be no discharge".

Making as few movements as possible and using ESD safe equipment keeps the risk of static charge caused by personnel to a minimum.

More about the basics of electrostatic charges and discharge can be found under:

https://hog.tools/esd

Symbol for a component that requires ESD protection

Warning symbol for ESD sensitive devices

Precision screwdriver set

Precision handle made of easy-grip plastic with rotating centring head, clamping mechanism with union nut for fixing the bits at the desired length (telescopic blades). **Blades** of PB Swiss Tools special alloy combining maximum hardness with exceptional toughness. Very high precision tips. Surface nickel-plated and chrome-plated, black tips. Supplied in a plastic tool roll.

66 9610 – Tool handle made of conductive plastic, **suitable for ESDs.**



Telescopic blades



66 9600



66 9610

Number of pieces		7
63E 66 9600	Precision screwdriver set	eShop
63E 66 9610	Precision screwdriver set **ESD**	eShop ■
Content: Plastic telescopic handle		1 pc.
2 blades for Torx® No. 669607		TX6 / TX7; TX8 / TX9
2 blades for hex. socket No. 669606		1.5 / 2; 2.5 / 3
2 blades for slot-head / Phillips No. 669605		2×0.3 / 00; 2.5×0.4 / 0

Interchangeable blade for telescopic handles and ESD torque screwdrivers

Suitable for: Precision screwdriver set No. 669600 and 669610, torque set No. 659912 50 and 659919.

Type		1	2	3
63E 66 9605	Blade for slot-head and Phillips screws	eShop	eShop	eShop
Blade width	mm	2	2.5	3.5
Cross-head size		00	0	1
Blade ∅	mm	3.5		
overall length	mm	120		

66 9605

Type		1	2
63E 66 9606	Blade for hexagon socket head screws	eShop	eShop
Hexagon	mm	1.5 / 2	2.5 / 3
Blade ∅	mm	3.5	
overall length	mm	120	



66 9606

Type		1	2
63E 66 9607	Blade for Torx® screws	eShop	eShop
Torx® profile		TX6 / TX7	TX8 / TX9
Blade ∅	mm	3.5	
overall length	mm	120	



66 9607

Type		1
63E 66 9608	Blade for Pozidriv screws	eShop
Cross-head size		PZ0 / PZ1
Blade ∅	mm	3.5
overall length	mm	120

66 9608

Screwdriver set in a wallet

Companion for precision work, in a wallet.



66 9626

Number of screwdrivers		2
61F 66 9626	Screwdriver set in a wallet	eShop ■
Content: Screwdriver for Phillips No. 667702		Size 00, length 120 mm
Slot-head screwdriver No. 660032		Size 2, length 120 mm

HOLEX Watchmaker's screwdriver

End of handle with rotating hexagonal head allowing precision work.
66 9305 – With plastic handle.
66 9005–9205 – Corrosion-resistant aluminium handle, with fixed pressed-in blade.
Material: Bits made of special steel.



66 9005


66 9015

	Blade width b	mm	1	1,5	1,8	2,3	3,0	3,5
⊖ 62F 66 9005	Watchmaker's screwdriver for slot head		eShop	eShop	eShop	eShop	eShop	eShop
	overall length	mm	80	84	100	110	112	112

	Cross-head size		0	1
⊕ 62F 66 9015	Watchmaker's screwdriver for Phillips		eShop	eShop
	overall length	mm	112	


66 9205


66 9305

	Number of pieces	5	6	**Content:** 1 pc. each watchmaker's screwdriver, slot head
⊖ 62F 66 9205	Watchmaker's screwdriver set, 6 pieces **with aluminium handle in a wooden case**	–	eShop	1 pc. each 1; 1.5; 1.8; 2.3; 3.0; 3.5 mm
⊖ 62F 66 9305	Watchmaker's screwdriver set, 5 pieces **with plastic handle in a wooden case**	eShop	–	1 pc. each 1; 1.5; 1.8; 2.3; 3.0 mm

HOLEX Watchmaker's screwdriver with 4 interchangeable blades

Ribbed brass handle, nickel-plated with collet chuck for bit retention.
Rotating end of handle. Hollow handle for storage of bits.
Material: Bits made of chrome vanadium steel, brass handle, nickel-plated.


66 9500

⊖ 62F 66 9500	Watchmaker's screwdriver for slot head **with 4 blades.**		eShop
	overall length	mm	120
	Content:		4 blades; 1.5; 2; 2.5; 3 mm

HOLEX Watchmaker's screwdriver set in a plastic case

Short, slim, ribbed steel handle, nickel-plated, with fixed pressed-in bit.
The end of the handle has a rotating hexagonal head.
Handles more slim and shorter than for No. 669005 – 669205.
These screwdrivers are availably only as a set.
Material: Bits made of special steel.



66 9805

	Number of pieces	6	**Content:**
⊕ ⊖ 62F 66 9805	Watchmaker's screwdriver set, 6 pieces **for slot-head and Phillips**	eShop	1 piece each for slot-head 1.2; 1.8; 2.4; 3.0 mm and for Phillips size 0 and 1.

Wera Electronics screwdrivers Kraftform Micro with halfmoon blades

Ergonomically designed multi-component handle with **rotating cap, quick-spinning zone** for efficient screwdriving and **power zone.** With **quick-change chuck** to take 4 mm half-moon bit blades (No. 669932 to 669936) and 4 mm HIOS bit blades.
Blades made of high-quality tool steel.

66 9930 – Tool handle made of conductive plastic, **suitable for ESD components**.

Application:

66 9930 – For work on electronic components in areas where there is a static electricity hazard.
Size 21 – Specially suited to Japanese screw profiles.



66 9630_11



66 9930_21

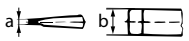
Number of pieces		11	20	21
63H 66 9630	Screwdriver set Micro-electronics in a textile wallet	eShop	–	–
63H 66 9930	Screwdriver set Micro-electronics in a textile wallet **ESD**	–	eShop	eShop
Content: Screwdriver holder		1 pc.	1 pc. No. 669931	1 piece No. 669931
Slot-head blades No. 669932		1 each size 1.5; 2; 3	1 each size 1.5; 2; 3	1 each size 1.5; 2.5
Blades for Phillips No. 669933		1 each size 00; 0; 1	1 each size 00; 0; 1	1 each size 000; 00; 0
Hexagon blades No. 669934		1 each size 1.5; 2	1 each size 1.5; 2	–
Nut driver blade (66 9930)		–	–	1 pc. size 2.5
Blades for Torx® No. 669935		1 each size TX5; TX6	1 each size TX1; TX2; TX3; TX4; TX5; TX6	1 each size TX1; TX2; TX3; TX4; TX5
Blades for Torx Plus® No. 669936 (66 9930)		–	1 each size 1IP; 2IP; 3IP; 4IP	1 each size 1IP; 2IP; 3IP; 4IP
Blades for Torx Plus® IPR with hole (66 9930)		–	1 pc. size 1IPR	1 pc. size 1IPR
Microstix blades (66 9930)		–	–	1 each size m; 00; F; 0

Bit

Blade made of high quality tool steel.

Suitable for: Screwdriver holder No. 66 9931.

Note: See under 669933 – 669936 for further bits.





66 9932



66 9935

Blade width b	mm	1,5	2	3
63H 66 9932 Slot-head blade halfmoon, 4 mm		eShop	eShop	eShop
Cutter thickness	mm	0.23	0.4	0.5
Blade ∅	mm	1.5	2	3
Blade length	mm	20		
overall length	mm	44		

Torx® profile		TX1	TX2	TX3	TX4	TX5	TX6	TX7	TX8	TX10
63H 66 9935 Blade for Torx® halfmoon, 4 mm		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Torx® profile		TX1	TX2	TX3	TX4	TX5	TX6	TX7	TX8	TX10
Blade ∅	mm	1.5	1.5	1.7	1.8	3	3	2.3	3	3
Blade length	mm	20	20	20	20	30	30	33	20	20
overall length	mm	44	44	44	44	44	44	64	64	70

Koken Hand impact driver set in sheet metal case

Solid handle with hexagon socket for holding interchangeable bits.
Reversible, for right-hand and left-hand threads.
Bit holder (5/16 inch) removable, allowing sockets with 1/2 inch square drive to be used without adaptor.
For suitable spare bits see No. 675400 – 675470.

Application: The best tool for loosening tight screws with one hammer action or for tightening screws exceptionally well.





67 3000

Set contents		5
63R 67 3000	Hand impact driver set in sheet metal case	eShop
Content: Holder with bit adaptor similar to No. 676945		1pc. size 2/16
Slot-head blades		9; 11 mm
Blades for Phillips		Size 2; 3

Wera Impact screwdriver set KK900

For loosening stubborn screw connections.
The hammer pulse is converted into a rotary motion with a release torque of approx. 25 Nm.
The through blade ensures zero-loss power transmission.
For use with specially hardened and extra tough bits with 1/4 inch hexagon head drive.

Advantage: Impact wrench and screwdriver functions can be switched as required.



67 3010

Number of pieces		19
63H 67 3010	Impact screwdriver set KK900	eShop
Supplied with: Impact driver bit for Phillips, 70 mm		1 pcs. each PH1; PH2; PH3
Impact driver bit for Pozidriv, 70 mm		1 pcs. each PZ1; PZ2; PZ3
Impact driver bit for hexagon, 70 mm		1 pc. each size 3; 4; 5; 6 mm
Impact driver bit for Torx, 70 mm		1 pc. each size TX15; TX20; TX25; TX30; TX40
Impact driver bit for slot-head, 70 mm		1 pc. each size 4; 5.5; 6.5 mm
Impact driver handle		1 pc.

D 6.3

Wera Adapter for Impaktor bits (2-component system)

For absorbing extreme peak loads when used in IMPACT screwdrivers.
When used in combination with IMPAKTOR bits, the integral double torsion spring creates the first Tri-Torsion system in the world. It provides working lives up to 10 times longer than standard bits.
Shank machine E 6.3 (1/4 inch), bit holder to DIN 3126 D 6.3 (1/4 inch).

Size 6,3 – Made of stainless steel with snap ring and magnet.
Size 6,3R – With snap ring and **ring magnet sleeve** – holds screws reliably.




67 4100_6.3R

67 4100_6.3

Hexagon shank	mm	6,3	6,3R
63H 67 4100	IMPAKTOR adapter for IMPAKTOR bits C 6.3	eShop	eShop
overall length	mm	75	

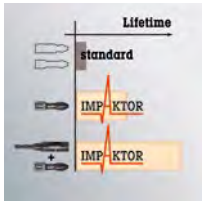
Wera Set of bits for IMPACT screwdrivers

Selected steel quality, hardening technique, production process, and special geometries lead to outstanding results with IMPACT screwdrivers. In connection with the diamond coating (significantly reduces cam-out forces) and the torsion zone, **working lives up to 5 times longer** than standard bits are achieved.

Application: Due to their rotational impact function, IMPACT screwdrivers generate a number of peak forces, which "normal bits" cannot withstand over the long term.
IMPAKTOR bits are specially designed for use in impact screwdrivers and, depending on the drive, increase the working life of the bits to several times the life of conventional standard bits.



67 4111_2





Bit 25 mm long, C 6.3, set with 10 bits

Cross-head size		2	3
63H 67 4111	IMPAKTOR bit for Phillips, 1/4 inch C 6.3 **Set of 10 bits**	eShop	eShop
63H 67 4113	IMPAKTOR bit for Pozidriv, 1/4 inch C 6.3 **Set of 10 bits**	eShop	eShop
Bit length	mm	25	

Hexagon	mm	4	5	6
63H 67 4116	IMPAKTOR bit for hex socket, 1/4 inch C 6.3 **Set of 10 bits**	eShop	eShop	eShop
Bit length	mm	25		

Torx® profile		TX20	TX25	TX30	TX40
63H 67 4118	IMPAKTOR bit for Torx®, 1/4 inch C 6.3 **Set of 10 bits**	eShop	eShop	eShop	eShop
Bit length	mm	25			


67 4111

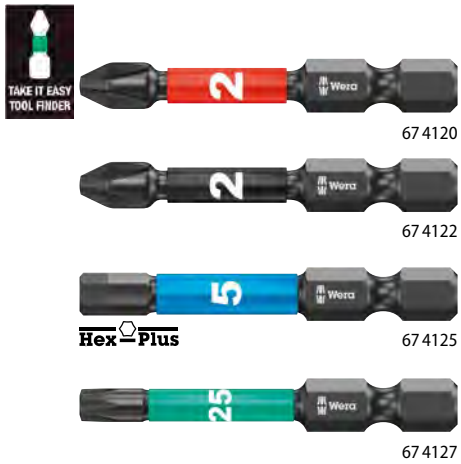
67 4113

67 4116

67 4118

Bit 50 mm long, E 6.3, set with 5 bits

Cross-head size			2	3	
⊕	63H 67 4121	IMPAKTOR bit for Phillips, 1/4 inch E 6.3 **Set of 5 bits**	eShop	eShop	
⊕	63H 67 4123	IMPAKTOR bit for Pozidriv, 1/4 inch E 6.3 **Set of 5 bits**	eShop	eShop	
	Bit length	mm	50		
Hexagon		mm	4	5	6
●	63H 67 4126	IMPAKTOR bit for hex socket, 1/4 inch E 6.3 **Set of 5 bits**	eShop	eShop	eShop
	Bit length	mm	50		
Torx® profile			TX20	TX25	TX30	TX40
✱	63H 67 4128	IMPAKTOR bit for Torx®, 1/4 inch E 6.3 **Set of 5 bits**	eShop	eShop	eShop	eShop
	Bit length	mm	50			



67 4120
67 4122
67 4125
67 4127

Bit set

63H 67 4131	IMPAKTOR bit set for IMPACT screwdrivers, 10 pieces		eShop
	Bit length	mm	25
⊕	**Content:** IMPAKTOR bits, C 6.3, for Phillips		3 pc. size 2; 1 pc. size 3
✱	IMPAKTOR bits, C 6.3, for internal Torx®		3 pcs. size TX25, 1 pc. each size TX30, TX40
	1 IMPAKTOR adapter		Size 6.3R with ring magnet



67 4131

63H 67 4136	IMPAKTOR bit set for IMPACT screwdrivers, 30 pieces		eShop
	Bit length	mm	25
⊕	**Content:** IMPAKTOR bits, C 6.3, for Phillips		2 pcs. size 1; 3 pcs. size 2; 2 pcs. size 3
⊕	IMPAKTOR bits, C 6.3, for Pozidriv		2 pcs. size 1; 3 pcs. size 2; 2 pcs. size 3
●	IMPAKTOR bits, C 6.3, for hex socket		1 pc. size 3; 4; 5; 6
✱	IMPAKTOR bits, C 6.3, for internal Torx®		1 pc. size TX10; TX15; 2 pcs. size TX20; 3 pcs. size TX25; 2 pcs. size TX30; TX40
	1 IMPAKTOR adapter		Size 6.3R with ring magnet



67 4136

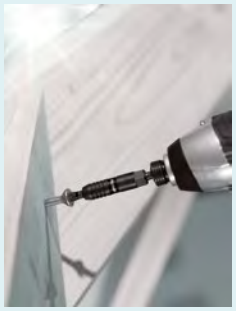
63H 67 4141	IMPAKTOR bit set for IMPACT screwdrivers, 6 pieces		eShop
	Bit length	mm	50
⊕	**Content:** IMPAKTOR bits, E 6.3, for Phillips		1 pc. size 2; 3
⊕	IMPAKTOR bits, E 6.3, for Pozidriv		1 pc. size 2; 3
✱	IMPAKTOR bits, E 6.3, for internal Torx®		1 pcs. size TX25; TX30



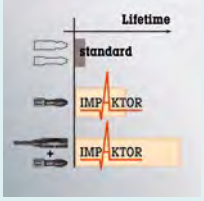
67 4141

Wera Impactor technology

Impactor technology ensures above-average tool life under extreme conditions.
Increased frictional resistance due to diamond particle coating on the bit tips prevents cam-out from the screw.
Especially suitable for use with commercially available impact screwdrivers / wrenches.









wiha Set of TY® bits

The TY® bits are 29 mm long. The additional length of 4 mm compared to 25 mm bits provides a longer torsion zone, resulting in longer working life. Ideal for high-powered power drills and impact screwdrivers.
Bits are stored in the BitBuddy® plastic holder, allowing easy one-handed change of the bit directly from the holder into the screwdriver.

Advantage: The coloured bits can be found quickly and easily, and thanks to the fluorescent coating can be found even **in the dark using UV light**.

Note: A suitable LED / UV torch can be found under No. 081518 UV-LED.

Number of pieces		8
63K 67 4161	TY® bit set, 8 pieces, 1/4 inch C 6.3 **29 mm**	eShop
Bit length	mm	29
Content: Bits, C 6.3, for internal Torx®		1 pc. each size TX10; TX15; TX25; TX30; TX40 2 pcs. size TX20
Adapter		1 pc.

Number of pieces		8
63K 67 4163	TY® bit set, 8 pieces, 1/4 inch C 6.3 **29 mm**	eShop
Bit length	mm	29
Content: Bits, C 6.3, for Phillips		1 pc. PH2
Bits, C 6.3, for Pozidriv		1 pc. each size PZ1; PZ2; PZ3
Bits, C 6.3, for internal Torx®		1 pc. each size TX15; TX20; TX25
Adapter		1 pc.









67 4161_8



67 4163_8

Bit 1/4 inch E 6.3

For use in manual drivers or machines with suitable hexagon holder or for use in coupling shanks No. 675000 – 675050.

Standard: **DIN ISO 1173**

Material: High-tensile special steel combining maximum hardness and special toughness.
Application: For Phillips cross-head screws DIN 3128.



67 4205

Cross-head size / overall length		1	1/95	2	2/95	3	3/95	
63E 67 4205 PB SWISS TOOLS PrecisionBit for Phillips, 1/4 inch E 6.3		eShop	eShop	eShop	eShop	eShop	eShop	10
overall length	mm	50	95	50	95	50	95	

From size 3/89 with hexagonal blade through to the end of the handle.
Material: Chrome vanadium special alloy, high strength.
Application: For Phillips cross-head screws DIN 3128.



67 4200

Cross-head size / overall length		1	1/89	1/152	2	2/89	2/152	3	3/89	3/152	
63H 67 4200 Wera Bit for Phillips, 1/4 inch E 6.3		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length	mm	50	89	152	50	89	152	50	89	152	

Material: High-tensile special steel combining maximum hardness and special toughness.
Application: For Pozidriv cross-head screws DIN 3128.



67 4225

Cross-head size / overall length		1	1/95	2	2/95	3	3/95	
63E 67 4225 PB SWISS TOOLS PrecisionBit for Pozidriv, 1/4 inch E 6.3		eShop	eShop	eShop	eShop	eShop	eShop	10
overall length	mm	50	95	50	95	50	95	

From size 3/89 with hexagonal blade through to the end of the handle.
Material: Chrome vanadium special alloy, high strength.
Application: For Pozidriv cross-head screws DIN 3128.



67 4220

Cross-head size / overall length		1	1/89	1/152	2	2/89	2/152	3	3/89	3/152	
63H 67 4220 Wera Bit for Pozidriv, 1/4 inch E 6.3		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length	mm	50	89	152	50	89	152	50	89	152	

Material: High-tensile special steel combining maximum hardness and special toughness.
Application: For combination screws (combination of slot-head and Pozidriv profile).



67 4235

Profile size / overall length	mm	1	1/95	2	2/95	
63E **67 4235** PB SWISS TOOLS	PrecisionBit for combination profile, 1/4 inch E 6.3	eShop	eShop	eShop	eShop	10
overall length	mm	50	95	50	95	



67 4242

Material:
67 4240 – Chrome vanadium special alloy, high strength.
67 4242 – High-tensile special steel combining maximum hardness and special toughness.
Application: For hexagon socket head screws DIN 7426.



Hex Plus 67 4240

Hexagon	mm	1,5	2	2,5	3	4	5	6	8	10	
63E **67 4242** PB SWISS TOOLS	PrecisionBit for hexagon, 1/4 inch E 6.3	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
63H **67 4240** Wera	Bit for hexagon, 1/4 inch E 6.3 **Hex-plus profile**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	1
overall length	mm	50									





With ball point and MagicRing® retaining spring for reliable retention of the socket head screw.
Material: Chrome vanadium special alloy, high strength.
Application: For hexagon socket head screws DIN 7426.



67 4243

Hexagon	mm	3	4	5	6	
63K **67 4243** wiha	Bit for hexagon, 1/4 inch E 6.3 **with ball point / MagicRing®**	eShop	eShop	eShop	eShop	5
overall length	mm	50				

With centre hole for socket head screws with a tamper-proof pin.
Material: Chrome vanadium special alloy, high strength.
Application: For hexagon socket head screws DIN 7426.



Hex Plus 67 4244

Hexagon	mm	2	2,5	3	4	5	6	
63H **67 4244** Wera	Bit for hexagon, long, 1/4 inch E 6.3 **Hex-Plus profile with bore**	eShop	eShop	eShop	eShop	eShop ■	eShop	1
overall length	mm	89						

From size 6/89 with hexagonal blade through to the end of the handle.
Material: Chrome vanadium special alloy, high strength.
Application: For hexagon socket head screws DIN 7426.



Hex Plus 67 4247

Hexagon / overall length	mm	3/89	4/89	4/152	5/89	5/152	6/89	6/152	
63H **67 4247** Wera	Bit for hexagon, long, 1/4 inch E 6.3 **Hex-plus profile**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length	mm	89	89	152	89	152	89	152	

Material: Chrome vanadium special alloy, high strength.
Application: For square socket screws.



67 4246

Square size		0	1	2	
63H **67 4246** Wera	Robertson square bit, 1/4 inch E 6.3	eShop	eShop	eShop	1
overall length	mm	50			

67 4245 Size TX40 – With hexagonal blade through to the end of the handle.
Material:
67 4245 – Chrome vanadium special alloy, high strength.
67 4248 – High-tensile special steel combining maximum hardness and special toughness.
Application: For screws with Torx® profile.


67 4248


67 4245

Torx® profile			TX5	TX6	TX7	TX8	TX9	TX10	TX15	TX20	TX25	TX30	TX40	
63E	67 4248	PrecisionBit for Torx®, 1/4 inch E 6.3	eShop	eShop ■	eShop ■	eShop ■	eShop	eShop ■	eShop ■	eShop	eShop	eShop	eShop	10
63H	67 4245	Bit for Torx®, 1/4 inch E 6.3	–	–	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length		mm	50											

Material: High-tensile special steel combining maximum hardness and special toughness.
Application: For screws with Torx® profile.


67 4249

Torx® profile / overall length		mm	TX10/95	TX15/95	TX20/95	TX25/95	TX30/95	TX40/95	
63E	67 4249	PrecisionBit for Torx®, long, 1/4 inch E 6.3	eShop	eShop	eShop	eShop	eShop	eShop	10
overall length		mm	95						

From size TX40 with hexagonal blade through to the end of the handle.
Material: Chrome vanadium special alloy, high strength.
Application: For screws with Torx® profile.


67 4250

Torx® profile / overall length		mm	TX6	TX8	TX10	TX10/89	TX10/152	TX15	TX15/89	TX15/152	TX20	TX20/89	
63H	67 4250	Bit for Torx®, long, 1/4 inch E 6.3	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length		mm	70	70	70	89	152	70	89	152	70	89	

Torx® profile / overall length		mm	TX20/152	TX25	TX25/89	TX25/152	TX27	TX30	TX30/89	TX30/152	TX40	TX40/89	
63H	67 4250	Bit for Torx®, long, 1/4 inch E 6.3	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length		mm	152	70	89	152	70	70	89	152	70	89	

Material: High-tensile special steel combining maximum hardness and special toughness.
Application: For all screws using the powerful Torx Plus® screw system. Torx Plus® screws are increasingly used for screwed connections on inserts and drive mechanisms.


67 4252

Torx Plus® profile			5IP	6IP	7IP	8IP	9IP	10IP	15IP	20IP	25IP	30IP	40IP	
63E	67 4252	PrecisionBit for Torx Plus®, 1/4 inch E 6.3	eShop	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop ■	eShop	eShop	eShop	eShop	10
overall length		mm	50											

Material: Chrome vanadium special alloy, high strength.
Application: For screws with Torx Plus® IPR profile and security pin.




67 4256

Torx Plus® IPR profile			10IPR	15IPR	20IPR	25IPR	27IPR	30IPR	
63H	67 4256	Bit for Torx Plus®, 1/4 inch E 6.3 **with bore**	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length		mm	50						

Material: High-tensile special steel combining maximum hardness and special toughness.
Application: For slot-head screws DIN 3127.


67 4257

Blade width / overall length		mm	3/75	3,5	4	4/75	5,5	5/75	6,25	8	
63E	67 4257	PrecisionBit for slot-head, 1/4 inch, E 6.3	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
Cutter thickness		mm	0.6	0.5	0.6	0.8	0.8	1	1	1.2	
overall length		mm	75	50	50	75	50	75	50	50	

Material: Chrome vanadium special alloy, high strength.
Application: For slot-head screws DIN 3127.



67 4260

Blade width / overall length		mm	3	3,5	4	4/89	5,5	5,5/89	6,5	8	8/89	
63H	67 4260	Wera Bit for slot-head, 1/4 inch E 6.3	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
Cutter thickness		mm	0.5	0.6	0.8	0.8	1	1	1.2	1.2	1.2	
overall length		mm	50	50	50	89	50	89	50	50	89	

Socket wrench bit 1/4 inch E 6.3

For use in manual drivers or machines with suitable hexagon holder or for use in coupling shanks No. 675000 – 675050.
Standard: **DIN ISO 1173**

Magnetic insert



67 4265

Material:
67 4265 – Of PB Swiss Tools special steel combining maximum hardness with exceptional toughness.
67 4273 – Chrome vanadium steel.
Application: For hexagon nuts and bolts DIN 3126.

Magnetic insert.



67 4273

Width across flats		mm	5,5	6	7	8	10	13
63E	67 4265	PB SWISS TOOLS Socket wrench bit,1/4 inch E 6.3 **with magnet**	eShop	eShop	eShop	eShop	eShop	eShop
62A	67 4273	HOLEX	eShop	eShop	eShop	eShop	eShop	eShop
overall length (67 4265)		mm	60					
overall length (67 4273)		mm	50					

Magnetic insert



67 4267

Material: Chromium-molybdenum steel, surface manganese phosphated.

Width across flats		mm	5,5	6	7	8	10	13
63R	67 4267	Koken IMPACT socket wrench bit, 1/4 inch E 6.3 **with magnet**	eShop	eShop	eShop	eShop	eShop	eShop
overall length		mm	50					

D 6.3

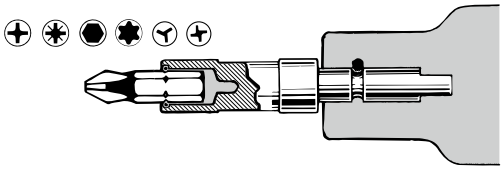
HOLEX Adaptor for bits (two-part system)

67 5005 – Adaptor to DIN 7427 B with snap ring for C 6.3 bits.
67 5013 – Adaptor with magnet and snap ring **for C 6.3 and E 6.3 bits** (the magnet holds the screw).
67 5025 – Adaptor with automatic **quick-change coupling** for C 6.3 bits.
The lock reliably retains the bits; the pulling sleeve is unlocked at the end of the shank.
Extra slim design for good access even to confined places.

SDS PLUS



67 5005



Two-piece, i.e. shank and bit are separate.
This means that in case of wear, only the relevant bit has to be replaced.

F 6.3

Magnetic insert



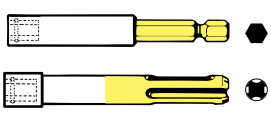
67 5013



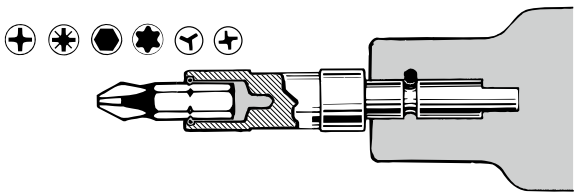
67 5025

Release collar

Hexagon shank	62F 67 5005 Shank with snap ring	62A 67 5013 Shank with magnet / snap ring	62F 67 5025 Shank with quick-change coupling and lock	overall length mm	Hexagon drive	Machine drive
6,3	–	eShop	eShop	75	D 6.3 (1/4 inch)	E 6.3 (1/4 inch)
6,3/100	–	eShop	–	100	D 6.3 (1/4 inch)	E 6.3 (1/4 inch)
6,3/150	–	eShop	–	150	D 6.3 (1/4 inch)	E 6.3 (1/4 inch)
SDS	eShop	–	–	69	D 6.3 (1/4 inch)	SDS-plus



Adaptor for bits (two-part system)



Two-piece, i.e. shank and bit are separate. This means that in case of wear, only the relevant bit has to be replaced.

GARANT and HOLEX

Adaptor with automatic **quick-change coupling** and magnet **for C 6.3 and E 6.3 bits** (the magnet holds the screw).

- Holder for **C 6.3 and E 6.3 bits.**
- The sleeve clicks into the open position. It **locks automatically** when a bit is inserted.
- Even the smallest bits can be removed without problems, since the sleeve lifts the bit away from the magnet - **quick change of bits, always one-handed**.



67 5050_6,3



67 5055_6,3

- *Holder for **C 6.3 and E 6.3 bits.***
- *The sleeve clicks into the open position. It locks automatically when a bit **is inserted.***

Hexagon shank	61F 67 5050 Garant	62F 67 5055 HOLEX	overall length		Hexagon drive	Machine drive
	Shank with magnet / quick-change coupling		67 5050 mm	67 5055 mm		
6,3	eShop	eShop	50	60	D 6.3 (1/4 inch)	E 6.3 (1/4 inch)

WERA

67 5000 – Adaptor to DIN 7427 B with snap ring.
67 5010 – Adaptor with magnet and snap ring for C 6.3 bits (the magnet holds the screw).
67 5020 – **"Rapidaptor"** adaptor with automatic **quick-release adaptor** and magnet for C 6.3 and E 6.3 bits (the magnet holds the screw).
Size 6,3S – Of stainless steel "Stainless", without magnet.
Size 6,3R – The floating, free-running ring magnet sleeve reliably holds even long and heavy screws (only for C 6.3 bits).
67 5030 – **"Rapidaptor" BiTorsion** adapter with automatic quick-change coupling and magnet for C 6.3 and E 6.3 bits. The integral precisely calculated torsion zone significantly reduces the load on the bits and therefore considerably increases their tool life. For use in combination with **BiTorsion** bits No. 675510 – 675550.

Note:	Rapidaptor free-running adapter available (No. 675035 size 6.3F).



67 5000_6,3



67 5010_5,5

S/STL



67 5020_6.3S



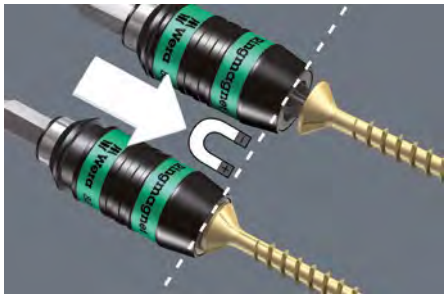
67 5020



67 5020_6,3



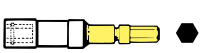
67 5030

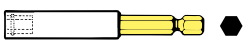


Application example 67 5020_6.3R

- *Holder for **C 6.3 and E 6.3 bits.***
- *The sleeve clicks into the open position. It locks automatically when a bit **is inserted.***
- *Even the smallest bits can be removed without problems, since the sleeve lifts the bit away from the magnet. **Quick change of bits, always one-handed.***
- *Strong ring magnet reliably holds even long and heavy screws.*

Hexagon shank	63H 67 5000	63H 67 5010	63H 67 5020	63H 67 5030	overall length		Hexagon drive	Machine drive
	Shank with snap ring	Shank with magnet / snap ring	Shank with magnet / quick-change coupling	BiTorsion	67 5000 67 5010 mm	67 5020 67 5030 mm		
5,5	–	eShop	–	–	72	–	D 6.3 (1/4 inch)	A 5.5 (5.5 mm)
6,3	eShop	–	eShop	eShop	57	75	D 6.3 (1/4 inch)	E 6.3 (1/4 inch)
6,3S	–	–	eShop	–	–	50	D 6.3 (1/4 inch)	E 6.3 (1/4 inch)
6,3K	–	–	eShop ■	–	–	52	D 6.3 (1/4 inch)	E 6.3 (1/4 inch)
6,3R	–	–	eShop	–	–	57	D 6.3 (1/4 inch)	E 6.3 (1/4 inch)





Bit 1/4 inch C 6.3

For use in manual drivers or machines with suitable hexagon holder or for use in adapters No. 675000 – 675050.
67 5350 – With centre hole for tamper-proof screws.
Standard: DIN ISO 1173.
Material:
67 5105–5270/5310–5395/5510–5565 – Chrome vanadium special alloy, **toughened.**
67 5281–5300 – High-tensile special steel combining maximum hardness and special toughness.
67 5490–5496 – Stainless steel.

For Phillips cross-head screws DIN 3128

Cross-head size / overall length			mm	0/25	1/25	2/25	2/50	3/25	4/32	
61F	67 5105	Garant	Bit for Phillips, 1/4 inch C 6.3, with torsion zone	–	eShop	eShop	–	eShop	–	10
63E	67 5281	PB Swiss Tools	PrecisionBit for Phillips, 1/4 inch C 6.3	eShop	eShop	eShop	–	eShop	–	10
63H	67 5310	Wera	Bit for Phillips, 1/4 inch C 6.3	eShop	eShop	eShop	eShop	eShop	eShop	1
63H	67 5200	Wera	Bit for Phillips, 1/4 inch C 6.3, with torsion zone	–	eShop	eShop	–	eShop	–	1
63H	67 5330	Wera	Bit for Phillips, 1/4 inch C 6.3, with torsion zone **hard**	–	eShop	eShop	–	eShop	–	1
63H	67 5520	Wera	Bit for Phillips, 1/4 inch C 6.3 **BiTorsion**	–	eShop	eShop	–	eShop	–	1
63H	67 5490	Wera	Bit for Phillips, 1/4 inch C 6.3 **Stainless steel "Stainless"**	–	eShop	eShop	–	eShop	–	1
63H	67 5510	Wera	Bit for Phillips, 1/4 inch C 6.3 **BiTorsion, diamond-coated**	–	eShop	eShop	–	eShop	–	1

S/STL



For Pozidriv cross-head screws DIN 3128

Cross-head size / overall length			mm	0/25	1/25	2/25	2/50	3/25	4/32	
61F	67 5115	Garant	Bit for Pozidriv, 1/4 inch C 6.3, with torsion zone	–	eShop	eShop	–	eShop	–	10
63E	67 5285	PB Swiss Tools	PrecisionBit for Pozidriv, 1/4 inch C 6.3	eShop	eShop	eShop	–	eShop	–	10
63H	67 5320	Wera	Bit for Pozidriv, 1/4 inch C 6.3	eShop	eShop	eShop	eShop	eShop	eShop	1
63H	67 5220	Wera	Bit for Pozidriv, 1/4 inch C 6.3, with torsion zone	–	eShop	eShop	–	eShop	–	1
63H	67 5380	Wera	Bit for Pozidriv, 1/4 inch C 6.3, with torsion zone **hard**	–	eShop	eShop	–	eShop	–	1
63H	67 5540	Wera	Bit for Pozidriv, 1/4 inch C 6.3 **BiTorsion**	–	eShop	eShop	–	eShop	–	1
63H	67 5492	Wera	Bit for Pozidriv, 1/4 inch C 6.3 **Stainless steel "Stainless"**	–	eShop	eShop	–	eShop	–	1
63H	67 5530	Wera	Bit for Pozidriv, 1/4 inch C 6.3 **BiTorsion, diamond-coated**	–	eShop	eShop	–	eShop	–	1

S/STL



The Hoffmann Group 1/4 inch bits C 6.3

Garant / Holex		67 5105, 67 5115, 67 5155	67 5541, 67 5544	**Garant:** With torsion zone, toughened. The torsion zone reduces the peaks of force when screw driving. Protects the screw profile and gives longer tool life (apart from size TX40). **Holex:** Standard design, high strength.
		67 5125	67 5547	Standard design, high strength.
PB Swiss Tools		67 5281, 67 5285, 67 5290, 67 5295, 67 5300		Strong elasticity and toughness combined with high hardness for a long tool life. High precision drive tips for perfect fit in the screw head and "Anti-cam-out". The nano-coating is both a colour code and an attractive anti-rust protection.
Wera		67 5200, 67 5220		With torsion zone, toughened. The torsion zone absorbs the peaks of force when screw driving. Protects the screw profile and gives longer tool life.
		67 5240, 67 5270, 67 5250, 67 5310, 67 5320, 67 5340, 67 5350	67 5360, 67 5370, 67 5390, 67 5395, 67 5565	Standard design, high strength.
		67 5330, 67 5380		With torsion zone, hard. Ideal for light applications (e.g. screw driving into wood, plastic etc.).
		67 5490 up to 67 5496		With torsion zone for reduced peaks of force when screw driving. Stainless steel, toughened by vacuum ice hardening.
		67 5510 up to 67 5550		BiTorsion design with reduced hardness in the torsion zone to absorb load peaks = longer tool life. Optimum effect when used with BiTorsion quick-change toolholder No. 67 5030.

For hexagon socket head screws DIN 7426.



Hex-plus profile
Low surface pressure
Low notch stress
Longer working life for the screw

Hexagon			mm	1,5	2	2,5	3	4	5	6	8	
61F 67 5125	Garant	Bit for hexagon, 1/4 inch C 6.3 **Hex-plus profile**		–	eShop	eShop	eShop	eShop	eShop	eShop	–	10
63E 67 5290	PB SWISS TOOLS	PrecisionBit for hexagon, 1/4 inch C 6.3		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
63H 67 5240		Bit for hexagon, 1/4 inch C 6.3 **Hex-plus profile**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
63H 67 5494	Wera	Bit for hexagon, 1/4 inch C 6.3 **Hex-Plus profile stainless steel "Stainless"**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	1
63H 67 5270		Bit for hexagon, 1/4 inch C 6.3 **with ball point**		–	–	eShop	eShop	eShop	eShop	eShop	–	1
overall length (67 5125, 67 5240, 67 5494, 67 5270)			mm	25								
overall length (67 5290)			mm	25	25	25	25	25	25	25	33	

S/STL

67 5125

67 5290

67 5240

67 5494

67 5270


For all screws of the TORQ-SET® screw drive system

TORQ-SET® profile				6	8	10	1/4	
63H 67 5360	Wera	TORQ-SET® Mplus bit, 1/4 inch C 6.3		eShop	eShop	eShop	eShop	1
overall length			mm	25	25	25	32	

67 5360_8


For all screws of the TRI-WING® screw drive system

TRI-WING® profile				1	2	3	4	
63H 67 5370	Wera	TRI-WING® bit, 1/4 inch C 6.3		eShop	eShop	eShop	eShop	1
overall length			mm	25				

67 5370


For screws of the Torx® screw drive system

Torx® profile				TX5	TX6	TX7	TX8	TX9	TX10	TX15	
61F 67 5155	Garant	Bit for Torx®, 1/4 inch C 6.3, with torsion zone		eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
63E 67 5295	PB SWISS TOOLS	PrecisionBit for Torx®, 1/4 inch C 6.3		eShop	eShop	eShop	eShop	eShop	eShop	eShop	10
63H 67 5340		Bit for Torx®, 1/4 inch C 6.3		eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
63H 67 5550	Wera	Bit for Torx®, 1/4 inch C 6.3 **BiTorsion**		–	–	–	–	–	eShop	eShop	1
63H 67 5496		Bit for Torx®, 1/4 inch C 6.3 **Stainless steel "Stainless"**		–	–	–	eShop	–	eShop	eShop	1
overall length			mm	25							

Torx® profile				TX20	TX25	TX27	TX30	TX40	TX45	
61F 67 5155	Garant	Bit for Torx®, 1/4 inch C 6.3, with torsion zone		eShop	eShop	eShop	eShop	eShop	–	10
63E 67 5295	PB SWISS TOOLS	PrecisionBit for Torx®, 1/4 inch C 6.3		eShop	eShop	eShop	eShop	eShop	–	10
63H 67 5340		Bit for Torx®, 1/4 inch C 6.3		eShop	eShop	eShop	eShop	eShop	eShop	1
63H 67 5550	Wera	Bit for Torx®, 1/4 inch C 6.3 **BiTorsion**		eShop	eShop	–	eShop	eShop	–	1
63H 67 5496		Bit for Torx®, 1/4 inch C 6.3 **Stainless steel "Stainless"**		eShop	eShop	–	eShop	eShop	–	1
overall length			mm	25	25	25	25	25	35	

67 5155

67 5295

67 5340

67 5550

S/STL
67 5496


TAKE IT EASY TOOL FINDER

Torx® profile				TX10	TX15	TX20	TX25	TX27	TX30	TX40	
63H 67 5350	Wera	Bit for Torx®, 1/4 inch C 6.3 **with bore**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length			mm	25							

67 5350


For all screws of the powerful Torx Plus® screw drive system

Torx Plus® profile				7IP	8IP	9IP	10IP	15IP	20IP	25IP	30IP	40IP	
63H 67 5390	Wera	Bit for Torx Plus®, 1/4 inch C 6.3		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length			mm	25									

67 5390


For slot-head screws DIN 3127

			Blade width mm	3	4	5,5	6	6,5	8	8/1,6	
63E	67 5300	PB SWISS TOOLS	PrecisionBit for slot-head, 1/4 inch C 6.3	–	eShop	eShop	eShop	–	eShop	–	10
63H	67 5250	Wera	Bit for slot-head, 1/4 inch C 6.3	eShop	eShop	eShop	–	eShop	eShop	eShop	1
			Cutter thickness (67 5300) mm	–	0.6	0.8	1	–	1.2	–	
			Cutter thickness (67 5250) mm	0.5	0.5	0.8	–	1.2	1.2	1.6	
			overall length mm	25							


67 5300


67 5250

For XZN screws

			for screws	M4	M5	M6	M8	
63H	67 5565	Wera	Tri-square bit, 1/4 inch C 6.3	eShop	eShop	eShop	eShop	1
			overall length mm	25				


67 5565

For spanner screws (snake eyes)

			Type	4	6	8	10	
63H	67 5395	Wera	Spanner bit 1/4 inch C 6.3	eShop	eShop	eShop	eShop	1
			overall length mm	25				
			Pin spacing mm	1.52	2.41	2.79	3.3	


67 5395

HOLEX Set of bits 1/4 inch C 6.3

For use in manual drivers or machines with suitable hexagon holder or for use in adapter No. 675000 – 675050.

Standard: DIN ISO 1173.

Material: Chrome vanadium special alloy, **high strength.**

Application:

67 5541 – For Phillips cross-head screws DIN 3128.

67 5544 – For Pozidriv cross-head screws DIN 3128.



67 5541_1

			Cross-head size	1	2
62F	67 5541	Bit for Phillips, 1/4 inch C 6.3 **Set of 30 bits**		eShop	eShop
62F	67 5544	Bit for Pozidriv, 1/4 inch C 6.3 **Set of 30 bits**		eShop	eShop
			Bit length mm	25	


67 5541_individual bit


67 5544_individual bit

Application: For hexagon socket head screws DIN 7426.

			Hexagon mm	2,5	3	4	5
62F	67 5547	Bit for hexagon socket head screws, 1/4 inch C 6.3 **Set of 30 bits**		eShop	eShop	eShop	eShop
			Bit length mm	25			


67 5547_individual bit

For socket sets with bits, see Group 63


63 0023_SD


63 0329_6


63 0299_6

Wera Bit 5/16 inch C 8

For use in manual drivers or machines with suitable hexagon holder.

Standard: DIN ISO 1173

Material: Chrome vanadium special alloy, toughened.

Application: For Phillips and Pozidriv cross-head screws DIN 3128.

Cross-head size		1	2	3	4	
63H 67 5400	Bit for Phillips, 5/16 inch C 8	eShop	eShop	eShop	eShop	1
63H 67 5420	Bit for Pozidriv, 5/16 inch C 8	eShop	eShop	eShop	eShop	1
overall length mm		32				


67 5400


67 5420

Application: For hexagon socket head screws DIN 7426.

Hexagon mm		3	4	5	6	8	
63H 67 5440	Bit for hexagon, 5/16 inch C 8 **Hex-plus profile**	eShop	eShop	eShop	eShop	eShop	1
overall length mm		30					


67 5440

Hex-Plus

Application: For slot-head screws DIN 3127.

Blade width mm		8	10	12	
63H 67 5460	Bit for slot-head, 5/16 inch C 8	eShop	eShop	eShop	1
Cutter thickness mm		1.2	1.6	2	
overall length mm		41			


67 5460

Application: For screws with Torx® profile.

Torx® profile		TX20	TX25	TX27	TX30	TX40	TX45	TX50	TX55	
63H 67 5470	Bit for Torx®, 5/16 inch C 8	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	1
overall length mm		35								


67 5470

67

Bit set, small

Type		KPS	TX
63H 67 5601	Wera Set of bits **7 pieces**	eShop	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips		No. 675310 1 pc. each size 1/25; 2/25	–
Bits, length 25 mm, C 6.3, for Pozidriv		No. 675320 1 pc. each size 1/25; 2/25	–
Bits, length 25 mm, C 6.3, for internal Torx®		–	No. 675340 1 pc. each size TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head		No. 675250 1 pc. each size 5.5; 6.5	–
Adapter		1 pc.	


67 5601_KPS

Type		KPS
63H 67 5651	Wera BiTorsion set of bits **7 pieces, diamond-coated**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips		No. 675510 1 pc. each size 1/25; 2/25
Bits, length 25 mm, C 6.3, for Pozidriv		No. 675530 1 pc. each size 1/25; 2/25
Bits, length 25 mm, C 6.3, for slot-head		No. 675560 1 pc. each size 5.5; 6.5
"Rapidaptor" adaptor		1 pc. No. 675020 size 6.3K


67 5651

TAKE IT EASY TOOL FINDER

Type		TX
63H 67 5661	Wera BiTorsion set of bits **7 pieces, diamond-coated**	eShop
Content: Bits, length 25 mm, C 6.3, for internal Torx®		1 pc. each size TX10; TX15; TX20; TX25; TX30; TX40
"Rapidaptor" adaptor		1 pc. No. 675020 size 6.3K


67 5661

TAKE IT EASY TOOL FINDER

Type	KPS	TX
63H **67 5671** Wera Set of bits **10 pieces, with torsion zone**	eShop	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips	No. 675200 1 pc. each size 1/25; 2/25; 3/25	–
Bits, length 25 mm, C 6.3, for Pozidriv	No. 675220 1 pc. each size 1/25; 2/25; 3/25	–
Bits, length 25 mm, C 6.3, for internal Torx®	–	1 pc. each size TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head	1 pc. each size 0.8×5.5; 1.0×5.5; 1.2×6.5 mm	–
Quick-release adaptor	1 pc.	



67 5671 _TX

Type	KPS
63H **67 5701** Wera Set of bits **10 pieces, with torsion zone**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips	No. 675200 1 pc. each size 1/25; 2/25; 3/25
Bits, length 25 mm, C 6.3, for Pozidriv	No. 675220 1 pc. each size 1/25; 2/25; 3/25
Bits, length 25 mm, C 6.3, for slot-head	1 pc. each size 0.8×5.5; 1.0×5.5; 1.2×6.5 mm
"Rapidaptor" adaptor	1 pc. No. 675020 size 6.3K



67 5701

63H **67 5771** Wera Set of bits **10 pieces, BiTorsion**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips	No. 675520 1 pc. each size 1/25; 2/25; 3/25
Bits, length 25 mm, C 6.3, for Pozidriv	No. 675540 1 pc. each size 1/25; 2/25; 3/25
Bits, length 25 mm, C 6.3, for slot-head	1 pc. each size 0.8×5.5; 1.0×5.5; 1.2×6.5 mm
Adapter "Rapidaptor BiTorsion"	1 pc. No. 675030 size 6.3



67 5771

63H **67 5681** Wera Set of bits **10 pieces, "Stainless" steel**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips	No. 675490 1 pc. size 2/25
Bits, length 25 mm, C 6.3, for Pozidriv	No. 675492 1 pc. size 1/25; 2 pcs. size 2/25
Bits, length 25 mm, C 6.3, for internal Torx®	No. 675496 1 pc. each size TX10; TX15; TX20; TX25; TX30
Adapter "Rapidaptor Stainless"	1 pc. No. 675020 size 6.3S



67 5681 S/STL

63E **67 5610** PB SWISS TOOLS PrecisionBits set **10 pieces**	eShop
Content: Bits, length 50 mm, E 6.3, for Pozidriv	No. 674225 1 pc. each size 1; 2; 3
Bits, length 50 mm, E 6.3, for inner Torx®	No. 674248 1 pc. each size TX10; TX15; TX30 2 pcs. each size TX20; TX25


67 5610

Number of pieces	10
63E **67 5616** PB SWISS TOOLS PrecisionBits set **10 pieces**	eShop
Content: Bits, length 50 mm, E 6.3, for Phillips	No. 674205 1 pc. each size 1; 2
Bits, length 50 mm, E 6.3, for hex socket	No. 674242 1 pc. each size 3; 4; 5; 6
Bits, length 50 mm, E 6.3, for inner Torx®	No. 674248 1 pc. each size TX10; TX15; TX20; TX25



67 5616

Number of pieces	10
63E **67 5621** PB SWISS TOOLS PrecisionBits set **10 pieces**	eShop
Content: Bits, length 50 mm, E 6.3, for Phillips	No. 674205 1 pc. each size 1; 2
Bits, length 50 mm, E 6.3, for Pozidriv	No. 674225 1 pc. each size 1; 2
Bits, length 50 mm, E 6.3, for inner Torx®	No. 674248 1 pc. each size TX10; TX15; TX20; TX25
Bits, length 50 mm, E 6.3, for slot-head	No. 674257 1 pc. each size 4; 6.25



67 5621

Type	TX	IP
63E **67 5640** PB SWISS TOOLS PrecisionBits set **10 pieces**	eShop	eShop
Content: Bits, length 50 mm, E 6.3, for inner Torx®	No. 674248 1 pc. each size TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX30	–
Bits, length 50 mm, E 6.3, for internal Torx Plus®	–	No. 674252 1 pc. each size IP5; IP6; IP7; IP8; IP9; IP10; IP15; IP20; IP25; IP30


67 5640

63H 67 5772	Wera	BiTorsion set of bits **12 pieces**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips			No. 675520 1 pc. each size 1/25; 2/25; 3/25
Bits, length 25 mm, C 6.3, for Pozidriv			No. 675540 1 pc. each size 1/25; 2/25; 3/25
Bits, length 25 mm, C 6.3, for internal Torx®			No. 675550 1 pc. each size TX10; TX15; TX20; TX25; TX30
"Rapidaptor" adaptor			1 pc. No. 675020 size 6.3K



67 5772

TAKE IT EASY TOOL FINDER

Bit set, medium

Number of pieces			30
63E 67 5645	PB SWISS TOOLS	Set of bits **30 pieces**	eShop
Content: Bits, length 50 mm, E 6.3, for Phillips			No. 674205 1 pc. each size 0; 1; 2; 3
Bits, length 50 mm, E 6.3, for Pozidriv			No. 674225 1 pc. each size 1; 2: 3
Bits, length 50 mm, E 6.3, for hex socket			No. 674242 1 pc. each size 2.5; 3; 4; 5; 6
Bits, length 50 mm, E 6.3, for inner Torx®			No. 674248 1 pc. each size TX6; TX7; TX8; TX9; TX40; 2 pc. each size TX10; TX15; TX20; TX25; TX30
Bits, length 50 mm, E 6.3, for slot-head			No. 674257 1 pc. each size 2; 3; 4


67 5645

63H 67 5791	Wera	Set of bits Universal **30 pieces**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips			No. 675200 2 pcs. size 1/25; 3 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv			No. 675380 2 pcs. size 1/25; 3 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3, for hex socket			No. 675240 1 pc. each size 3; 4; 5; 6; 8
Bits, length 25 mm, C 6.3, for internal Torx®			Similar to No. 675550 1 pc. each size TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 25 mm, C 6.3, for internal Torx® with pin			No. 675350 1 pc. each size TX10; TX15; TX20; TX25; TX30
Bits, length 25 mm, C 6.3, for slot-head			1 pc. size 1.0×5.5 mm
"Rapidaptor" adaptor			1 pc. No. 675020 size 6.3K



67 5791

63H 67 5793	Wera	Set of bits Metal **30 pieces**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips			No. 675310 3 pcs. size 1/25; 3 pcs. size 2/25; 2 pcs. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv			No. 675320 3 pcs. size 1/25; 3 pcs. size 2/25; 3 pcs. size 3/25
Bits, length 25 mm, C 6.3, for hex socket			No. 675240 1 pc. each size 4; 5; 6
Bits, length 25 mm, C 6.3, for internal Torx®			No. 675340 1 pc. each size TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head			1 pc. each size 0.6×4.5; 1.0×5.5; 1.2×6.5 mm
Adapter			1 pc.

Hex Plus



67 5793

Hex Plus

63H 67 5796	Wera	Set of bits, "Stainless" steel **30 pieces**	eShop
Bit length	mm		25
Content: Bits, length 25 mm, C 6.3, for Phillips			No. 675490 1 pc. size 1/25; 3 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv			No. 675492 2 pcs. size 1/25; 3 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3, for hex socket			No. 675494 1 pc. each size 2.5; 3; 4; 5; 5.5
Bits, length 25 mm, C 6.3, for internal Torx®			No. 675496 2 pcs. size TX10; 2 pcs. size TX15; 3 pcs. size TX20; 3 pcs. size TX25; 2 pcs. size TX30; 1 pc. size TX40
Adapter "Rapidaptor Stainless"			1 pc. No. 675020 size 6.3S

Hex Plus S/STL

TAKE IT EASY TOOL FINDER



67 5796

63H	67 5797	Wera	Set of bits BiTorsion **30 pieces, diamond-coated**	eShop
Content:				
Bits, length 25 mm, C 6.3, for Phillips				No. 675510 2 pcs. size 1/25; 4 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv				No. 675530 2 pcs. size 1/25; 4 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3, for internal Torx®				Similar to No. 675550 2 pcs. size TX10; 2 pcs. size TX15; 3 pcs. size TX20; 3 pcs. size TX25; 1 pc. size TX30; 1 pc. TX40
Bits, length 25 mm, C 6.3, for slot-head				1 pc. each size 0.8×5.5; 1.0×5.5; 1.2×6.5 mm
"Rapidaptor" adaptor				1 pc. No. 675020 size 6.3K



67 5797

63H	67 5798	Wera	Set of bits BiTorsion **30 pieces**	eShop
Content:				
Bits, length 25 mm, C 6.3, for Phillips				No. 675520 2 pcs. size 1/25; 5 pcs. size 2/25; 2 pcs. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv				No. 675540 2 pcs. size 1/25; 6 pcs. size 2/25; 2 pcs. size 3/25
Bits, length 25 mm, C 6.3, for internal Torx®				No. 675550 1 pc. size TX10; 2 pcs. size TX15; 2 pcs. size TX20; 2 pcs. size TX25; 2 pcs. size TX30; 1 pc. size TX40
"Rapidaptor" adaptor				1 pc. No. 675020 size 6.3K



67 5798

Number of pieces				31
62F	67 5592	HOLEX	Set of bits **31 pieces**	eShop ■
Content:				
Bits, length 25 mm, C 6.3, for Phillips				1 pc. each size 1; 2; 3
Bits, length 25 mm, C 6.3, for Pozidriv				2 pcs. each size 1; 2; 3
Bits, length 25 mm, C 6.3, for hex socket				1 pc. each size 4; 5; 6
Bits, length 25 mm, C 6.3, for internal Torx®				3 pc. each size TX10; TX15; TX20 2 pc. each size TX25; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head				1 pc. each size 4; 5.5; 6.5 mm
Adapter				1 pc. No. 675055 size 6.3



67 5592

67

Bit set, large

67 5598 – The bits with length 29 mm and 50 mm have a longer torsion zone, resulting in a longer tool life. Ideal for drill/drivers and impact wrenches.

67 6040 – System box of virtually indestructible ABS plastic with integral hinges and snap fastener. The bits are widely spaced so that when the box is open they can be easily accessed and taken out.

61F	67 6040	Garant	Set of bits **61 pieces**	eShop ■
Content:				
Bits, length 25 mm, C 6.3, for Phillips				No. 675105 3 pcs. size 1/25; 6 pcs. size 2/25; 2 pcs. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv				No. 675115 3 pcs. size 1/25; 6 pcs. size 2/25; 2 pcs. size 3/25
Bits, length 25 mm, C 6.3, for hex socket				No. 675125 1 pc. size 2; 2.5; 3; 4; 5; 6 mm
Bits, length 25 mm, C 6.3, for hex socket, with ball point				1 pc. each size 2.5; 3; 4; 5; 6 mm
Bits, length 25 mm, C 6.3, for internal Torx®				No. 675155 1 pc. size TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, length 25 mm, C 6.3, for internal Torx® with pin				1 each size TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head				1 pc. each size 0.5×4; 0.6×4.5; 1.0×5.5; 1.2×6.5 mm
Bits, length 25 mm, C 6.3, for TRI-WING®				1 pc. each size 2; 3; 4; 5
Quick-release adaptor				1 pc. No. 675050 size 6.3


67 6040
Hex-Plus

63H	67 5950	Wera	BiTorsion set of bits **61 pieces**	eShop
Content:				
Bits, length 25 mm, C 6.3 for Phillips				No. 675510 1 pc. size 1/25; 2 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3 for Phillips				No. 675520 2 pcs. size 1/25; 8 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3 for Pozidriv				No. 675530 1 pc. size 1/25; 2 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3 for Pozidriv				2 pcs. size 1; 8 pcs. size 2; 1 pc. size 3
Bits, length 25 mm, C 6.3 for hex socket				3 pcs. size 2.5; 3 pcs. size 3.0; 3 pcs. size 4.0; 2 pcs. size 5.0 mm
Bits, length 25 mm, C 6.3 for internal Torx®				No. 675550 3 pcs. size TX10; 2 pcs. size TX15; 4 pcs. size TX20; 4 pcs. size TX25; 2 pcs. size TX30; 1 pc. size TX40
Bits, length 25 mm, C 6.3 for slot-head				1 pc. each size 0.8×5.5; 1.0×5.5; 1.2×6.5 mm
"Rapidaptor" adaptor				1 pc. No. 675020 size 6.3K



67 5950
Hex-Plus

Type	M
63H **67 5900** Wera Set of bits **61 pieces**	eShop ■
Content: Bits, length 25 mm, C 6.3, for Phillips	No. 675200 3 pcs. size 1/25; 6 pcs. size 2/25; 2 pcs. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv	No. 675320 3 pcs. size 1/25; 6 pcs. size 2/25; 2 pcs. size 3/25
Bits, length 25 mm, C 6.3, for hex socket	No. 675240 1 pc. each size 2; 2.5; 3; 4; 5; 6 mm
Bits, length 25 mm, C 6.3, for hex socket, with ball point	No. 675270 1 pc. each size 2.5; 3, 4; 5; 6 mm
Bits, length 25 mm, C 6.3, for internal Torx®	1 pc. each size TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, length 25 mm, C 6.3, for internal Torx® with pin	No. 675350 1 pc. each size TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head	1 pc. each size 0.5×4.0; 0.6×4.5; 1.0×5.5; 1.2×6.5 mm
Bits, length 25 mm, C 6.3, for TRI-WING®	No. 675370 1 pc. each size 2; 3; 4; 5
Quick-release adapter	1 pc.



67 5900

Type	KPS
63H **67 5800** Wera Set of bits **61 pieces**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips	No. 675200 7 pcs. size 1/25; 15 pcs. size 2/25; 3 pcs. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv	No. 675220 7 pcs. size 1/25; 15 pcs. size 2/25; 3 pcs. size 3/25
Bits, length 25 mm, C 6.3, for slot-head	5 pcs. each size 1.0×5.5; 1.2×6.5 mm
Quick-release adapter	1 pc.

Hex-Plus



67 5800

Number of pieces	71
62F **67 5597** HOLEX Set of bits **71 pieces**	eShop ■
Content: Bits, length 25 mm, C 6.3, for Phillips	3 pcs. size 1; 4 pcs. size 2; 2 pcs. size 3
Bits, length 25 mm, C 6.3, for Pozidriv	3 pcs. size 1; 4 pcs. size 2; 2 pcs. size 3
Bits, length 25 mm, C 6.3, for hex socket	1 pc. each size 2.5; 3; 4; 5; 6 mm
Bits, length 25 mm, C 6.3, for hex socket with ball point	1 pc. each size 2.5; 3; 4; 5; 6 mm
Bits, length 25 mm, C 6.3, for internal Torx®	1 pc. each size TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX27; TX30; TX40 2 pc. each size TX20; TX25
Bits, length 25 mm, C 6.3, for internal Torx® with pin	1 each size TX10; TX15; TX20; TX25; TX27; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head	1 pc. each size 4; 4.5; 5.5; 6.5 mm
Bits, length 25 mm, C 6.3, for TRI-WING®	1 pc. each size 2; 4; 5
Bits, length 25 mm, C 6.3, for TORQ-SET®	1 pc. each size 6; 8; 10
adapter	1 pc. bit shank C 6.3 – square 1/4 inch
Bits, length 75 mm, E 6.3, for Phillips	1 pc. each size 1; 2
Bits, length 75 mm, E 6.3, for Pozidriv	1 pc. each size 1; 2
Bits, length 75 mm, E 6.3, for inner Torx®	1 pc. each size TX15; TX20; TX25; TX30; TX40
Shank with magnet	1 pc.
Shank with quick-change coupling	1 pc.



67 5597

Number of pieces	108
62F **67 5598** HOLEX Set of bits **108 pieces**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips	3 pcs. size 1; 5 pcs. size 2; 2 pcs. size 3
Bits, length 25 mm, C 6.3, for Pozidriv	2 pcs. size 1; 3 pcs. size 2; 1 pc. size 3
Bits, length 25 mm, C 6.3, for hex socket	2 pcs. each size 1.5; 2; 2.5; 3; 4; 5; 6; 1 pc. size 8 mm
Bits, length 25 mm, C 6.3, for internal Torx®	2 pcs. each size TX6; TX7; TX8; 1 pc. size TX9; 3 pcs. each size TX10; TX15; 5 pcs. each size TX20; TX25; 2 pcs. size TX27; 2 pcs. each size TX30; TX40
Bits, length 25 mm, C 6.3, for internal Torx® with pin	1 pc. each size TX10; TX15; TX27; TX30; TX40; 2 pc. each size TX20; TX25
Bits, length 25 mm, C 6.3, for internal Torx Plus®	1 pc. each size 7IP; 8IP; 9IP; 10IP; 15IP; 20IP; 25IP; 30IP; 40IP
Bits, length 25 mm, C 6.3, for slot-head	1 pc. each size 4.5; 5.5; 6.5 mm
Bits, length 25 mm, C 6.3, for TORQ-SET®	1 pc. each size 6; 8; 10
Bits, length 25 mm, C 6.3, for clamp	1 pc. each size 8; 10
Adapter	1 pc. bit shank C 6.3 – square 1/4 inch
Bits, length 29 mm, C 6.3, for Phillips	2 pcs. size 2
Bits, length 29mm, C 6.3, for Pozidriv	2 pcs. size 2
Bits, length 29 mm, C 6.3, for hex socket	1 pc. each size 3; 4; 6; 2 pcs. size 5 mm
Bits, length 29 mm, C6.3, for internal Torx®	1 pc. each size TX20; TX25
Bits, length 50 mm, E 6.3, for Phillips	1 pc. size 2
Bits, length 50mm, E 6.3, for Pozidriv	1 pc. size 2
Bits, length 50 mm, E 6.3, for inner Torx®	1 pc. each size TX10; TX15; TX20; TX 25;TX30; TX40
Shank with magnet	1 pc.



67 5598

Wera Bit set with additional tool

Kraftform handle with quick–change holder for 1/4 inch bits with C 6.3 **and** E 6.3 shank.
Supplied in a sturdy textile tool roll with hook and loop fastener.

63H 67 5990	Bit set with drive tool and hexagon key L-wrenches **52 pieces**	eShop
Content:		
Bits, length 25 mm, C 6.3, for Phillips		No. 675520 2 pcs. size 1/25; 4 pcs. size 2/25; 2 pcs. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv		2 pcs. size 1; 4 pcs. size 2; 2 pcs. size 3
Bits, length 25 mm, C 6.3, for internal Torx®		No. 675550 2 pcs. size TX10; 2 pcs. size TX15; 3 pcs. size TX20; 2 pcs. size TX25; 2 pcs. size TX30; 1 pc. size TX40
Bits, length 25 mm, C 6.3, for slot-head		1 pcs. each size 0.8×5.5; 1.0×5.5 mm
IMPACTOR bits, length 50 mm, E 6.3, for Phillips		2 pc. size 2; 1 pc. size 3
IMPACTOR bits, length 50 mm, E 6.3, for Pozidriv		2 pc. size 2; 1 pc. size 3
IMPACTOR bits, length 50 mm, E 6.3, for hex socket		1 pc. each size 4; 5; 6 mm
IMPACTOR bits, length 50 mm, E 6.3, for internal Torx®		1 pc. each size TX25; TX30; TX40
L-wrench with ball point Hex-Plus, for hex socket		1 pc. each size 1.5; 2.0; 2.5; 3.0; 4.0; 5.0; 6.0; 8.0 mm
Screwdriver handle		1 pc.
"Rapidaptor" adaptor		1 pc. No. 675020 size 6.3K

TAKE IT EASY TOOL FINDER



67 5990
Hex Plus

Bit set with drive tool

Practical Kraftform Kompakt® set of bits and drive tool **for manual and machine drives.**
Kraftform handle with quick–change holder for 1/4 inch bits with C 6.3 **and** E 6.3 shank.

67

For left and right-hand rotation. The integral ratchet (36 teeth/working arc 10°) simplifies and accelerates screwdriving without tedious repositioning.



TAKE IT EASY TOOL FINDER

67 6061
Hex Plus

63H 67 6061	Wera Bit set BiTorsion with drive tool **14 pieces**	eShop ■
Number of pieces		14
Content:		
Bits, length 50 mm, E 6.3, for Phillips		1 pc. each size 1; 2
Bits, length 50 mm, E 6.3, for Pozidriv		1 pc. each size 1; 2
Bits, length 50 mm, E 6.3, for hex socket		1 pc. each size 2.5; 3; 4; 5 mm
Bits, length 50 mm, E 6.3, for inner Torx®		1 pc. each size TX10; TX15; TX20; TX25
Bits, length 50 mm, E 6.3, for slot-head		1 pc. size 0.8x5.5 mm
Screwdriver handle		1 pc.



67 6061_Detail

Up to **four screw tightening speeds** within a handle, optionally by the press of a button or a planetary gearbox that can be **engaged/disengaged**. Switching off is recommended before fine adjustment and the final tightening or release of a screw with a high torque (up to 14 Nm).
Kraftform handle with **Rapidaptor bit holder** for 1/4 inch bits with C 6.3 and E 6.3 shank.
Supplied in a sturdy textile tool roll with hook and loop fastener.

Advantage:
- Powerful final tightening and simple fine adjustment.
- Purely mechanical 4-fold**multiplication** (without battery) of the screw speed.



67 6205
Hex Plus

63H 67 6205	Wera Bit set with turbo drive tool **19 pieces**	eShop
Number of pieces		19
Content:		
Bits, length 89 mm, E 6.3, for Phillips		1 pc. each No. 674200 size 1/89; 2/89; 3/89
Bits, length 89 mm, E 6.3, for Pozidriv		1 pc. each No. 674220 size 1/89; 2/89; 3/89
Bits, length 89 mm, E 6.3, for hex socket		1 pc. each No. 674244 size 3; 4; 5; 6 mm
Bits, length 89 mm, E 6.3, for inner Torx®		1 pc. each No. 674250 size TX10/89; TX15/89; TX20/89; TX25/89; TX30/89
Bits, length 89 mm, E 6.3, for slot-head		1 pc. size 0.8×4.0; 1.0×5.5; 1.2×6.5 mm
Screwdriver handle		1 pc. No. 676390 size 6.3



67 6205_Detail

Up to four times the screw tightening speed by means of the planetary gear that can be engaged/disengaged

Ergonomic 2-component handle with finger grip hollows and pleasant feel for very high transmission of force and non-fatiguing work. For anti-clockwise and clockwise rotation (with changeover lever).
The integral ratchet with fine toothing (80 teeth/working arc 4.5°) simplifies and accelerates screwdriving without tedious repositioning. With Rapidaptor bit holder.



67 6212
Hex-Plus

Number of pieces	17
63H **67 6212** Wera Bit set KK400 RA with drive tool **17 pieces**	eShop
Content: Bits, length 89 mm, E 6.3 for Phillips	1 pc. each No. 674200 size 2/89; 3/89
Bits, length 89 mm, E 6.3 for Pozidriv	1 pc. each 674220 size 2/89; 3/89
Bits, length 89 mm, E 6.3 for hex socket	1 pc. each No. 674247 size 3/89; 4/89; 5/89; 6/89; 8/89
Bits, length 89 mm, E 6.3 for internal Torx®	1 pc. each No. 674250 size TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 89 mm, E 6.3 for slot-head	1 pc. each No. 674260 size 5.5/89
Screwdriver handle	1 pc. No. 676657 size 6.3

67 6215 – With ergonomic 2-component T-handle with Rapidaptor bit holder.



67 6215
Hex-Plus

Number of pieces	17
63H **67 6215** Wera Bit set with drive tool **17 pieces**	eShop
Content: Bits, length 89 mm, E 6.3 for Phillips	1 pc. each No. 674200 size 2/89; 3/89
Bits, length 89 mm, E 6.3 for Pozidriv	1 pc. each No. 674220 size 2/89; 3/89
Bits, length 89 mm, E 6.3 for hex socket	1 pc. each No. 674247 size 3/89; 4/89; 5/89; 6/89; 8/89
Bits, length 89 mm, E 6.3 for internal Torx®	1 pc. each No. 674250 size TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 89 mm, E 6.3 for slot-head	1 pc. No. 674260 size 5.5/89
Screwdriver handle	1 pc. No. 676656 size 6.3

63H **67 6222** Wera Bit set with drive tool **17 pieces**	eShop
Content: Bits, length 89 mm, E 6.3, for Phillips	1 pc. each No. 674200 size 1/89; 2/89; 3/89
Bits, length 89 mm, E 6.3, for Pozidriv	1 pc. each No. 674220 size 1/89; 2/89; 3/89
Bits, length 89 mm, E 6.3, for hex socket	1 pc. each No. 674247 size 3/89; 4/89; 5/89; 6/89
Bits, length 89 mm, E 6.3, for internal Torx® with pin	1 pc. each similar to No. 674250 size TX10/89; TX15/89; TX20/89; TX25/89; TX30/89
Bits, length 89 mm, E 6.3, for slot-head	1 pc. No. 674260 size 5.5/89
Screwdriver handle	1 pc. No. 676410 size 6.3 with "Rapidaptor" quick-change chuck C/E 6.3



67 6222
Hex-Plus

63H **67 6225** Wera Bit set with drive tool **17 pieces, ESD**	eShop
Content: Bits, length 89 mm, E 6.3, for Phillips	1 pc. each No. 674200 size 1/89; 2/89; 3/89
Bits, length 89 mm, E 6.3, for Pozidriv	1 pc. each No. 674220 size 1/89; 2/89; 3/89
Bits, length 89 mm, E 6.3, for hex socket	1 pc. each No. 674247 size 3/89; 4/89; 5/89; 6/89
Bits, length 89 mm, E 6.3, for internal Torx® with pin	1 pc. each similar to No. 674250 size TX10/89; TX15/89; TX20/89; TX25/89; TX30/89
Bits, length 89 mm, E 6.3, for slot-head	1 pc. No. 674260 size 5.5/89
ESD screwdriver handle	1 pc. No. 676415 size 6.3 with "Rapidaptor" quick-change chuck C/E 6.3



67 6225
Hex-Plus

Compact Zyklop ratchet with integrated bit magazine.
With fine tooth reversible ratchet (72 teeth) and 5° working arc.
The magnetic direct mount makes the 3/8 inch ratchet a bit ratchet screwdriver with 1/4 inch bit holder at the same time.



Ratchet head can be freely swivelled.



Direct drive for 3/8 inch sockets and 1/4 inch bits.

Number of pieces	17
63H **67 6230** Wera Bit set "Zyklop Pocket" with drive tool **17 pieces**	eShop
Content: Bits, **BiTorsion**, length 25 mm, C 6.3, for Phillips	1 pc. each no. 675520 size 1/25; 2/25
Bits, **BiTorsion**, length 50 mm, C 6.3, for Pozidriv	1 pc. each no. 675540 size 1/25; 2/25
Bits, **BiTorsion**, length 25 mm, C 6.3, for hex socket	1 pc. each size 3; 4; 5; 6 mm
Bits, **BiTorsion**, length 25 mm, C 6.3, for Torx®	1 pc. each No. 675550 size TX10, TX15, TX20; TX25
Sockets 1/4 inch, for external hexagon	1 pc. each size 8; 10; 13 mm
Universal holder	1 pc. with 1/4 inch hex head drive
Precision ratchet Zyklop Pocket	1 pc. No. 676635 with pivoting ratchet head

TAKE IT EASY TOOL FINDER



67 6230
Hex-Plus

67 6235 – With ergonomic 2-component handle, short.

Number of pieces	19
63H **67 6235** Wera Bit set with drive tool **19 pieces**	eShop
Content: Bits, **BiTorsion**, length 25 mm, C 6.3, for Phillips	1 pc. each no. 675520 size 1/25; 2/25
Bits, **BiTorsion**, length 25 mm, C 6.3, for Pozidriv	1 pc. each no. 675540 size 1/25; 2/25
Bits, **BiTorsion**, length 25 mm, C 6.3, for hex socket	1 pc. each size 2; 2.5; 3; 4; 5; 5.5 mm
Bits, **BiTorsion**, length 25 mm, C 6.3, for internal Torx®	1 pc. each No. 675550 size TX10; TX15; TX20; TX25; TX30
Bits, **BiTorsion**, length 25 mm, C 6.3, for slot-head	1 pc. each size Gr. 0.8×5.5; 1.0×5.5; 1.2×6.5
Screwdriver handle	1 pc. No. 676405

TAKE IT EASY TOOL FINDER



67 6235
Hex-Plus

63H **67 6130**	Wera Bit set with drive tool and sockets **26 pieces**	eShop ■
Content: Bits, length 50 mm, E 6.3, for Phillips		1 pc. each No. 674200 size 1; 2; 3
Bits, length 50 mm, E 6.3, for Pozidriv		1 pc. each No. 674220 size 1; 2
Bits, length 50 mm, E 6.3, for hex socket		1 pc. each No. 674240 size 3; 4; 5; 6
Bits, length 50 mm, E 6.3, for Torx®		1 pc. each No. 674245 size TX10; TX15; TX20; TX25; TX27; TX30
Bits, length 50 mm, E 6.3, for slot-head		1 pc. No. 674260 size 5.5
Sockets 1/4 inch, for external hexagon		1 pc. each size 5.5; 6; 7; 8; 10; 12; 13 mm
adapter		1 pc. 1/4 inch square socket – 1/4 inch bit holder
"Zyklop Speed" precision ratchet, 1/4 inch		1 pc. No. 632390 with pivoting ratchet head
Extension 1/4 inch		1 pc. 150 mm with free-turning sleeve



67 6130
Hex-Plus

63H 67 6140 Wera	Bit set with drive tool **33 pieces**	eShop ■
Content: Bits, length 89 mm, E 6.3, for Phillips		1 pc. each No. 674200 size 1/89; 2/89; 3/89
Bits, length 89 mm, E 6.3, for Pozidriv		1 pc. each No. 674220 size 1/89; 2/89; 3/89
Bits, length 89 mm, E 6.3, for hex socket with pin		1 pc. each No. 674244 size 2; 2.5; 3; 4; 5; 6
Bits, length 89 mm, E 6.3, for internal Torx® with pin		1 pc. size TX8/89; TX10/89; TX15/89; TX20/89; TX25/89; TX27/89; TX30/89; TX 40/89 (similar to No. 674250)
Bits, length 89 mm, E 6.3, for slot-head		1 pc. size 6.5/89 (similar to No. 674260)
Bits, length 89 mm, E 6.3, for TRI-WING®		1 pc. each size 1/89; 2/89; 3/89; 4/89 (similar to No. 675370)
Bits, length 89 mm E 6.3, for TORQ-SET®		1 pc. size 6/89; 8/89; 10/89 (similar to No. 675360)
Bits, length 89 mm, E 6.3, for clamp		1 pc. each size 4/89; 6/89; 8/89; 10/89
Screwdriver handle		1 pc. No. 676410 size 6.3 with "Rapidaptor" quick-change chuck C/E 6.3



67 6140
Hex Plus

Number of pieces	63H 67 6101 Wera	63H 67 6102 Wera
	Bit set "Universal" with drive tool **32 pieces**	Bit set "Security" with drive tool **32 pieces**
32	eShop	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips	No. 675200 3 pcs. each size 1/25; 2/25; 3/25	–
Bits, length 25 mm, C 6.3, for Pozidriv	No. 675220 3 pcs. each size 1/25; 2/25; 3/25	–
Bits, length 25 mm, C 6.3, for hex socket	No. 675240 1 pc. each size 4; 5; 6	–
Bits, length 25 mm, C 6.3, for hex socket with pin	–	1 pc. each size 2; 2.5; 3; 4; 5; 6 mm
Bits, length 25 mm, C 6.3, for internal Torx® with pin	No. 675350 1 pc. each size TX10; TX15; TX20; TX25; TX30; TX40	No. 675350 1 pc. each size TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head	1 pc. each size 0.6x4.5; 1.0x5.5; 1.2x6.5 mm	–
Bits, length 25 mm, C 6.3, for square socket drive	–	1 pc. each size 0; 1; 2; 3
Bits, length 25 mm, C 6.3, for TRI-WING®	–	No. 675370 1 pc. each size 1; 2; 3
Bits, length 25 mm, C 6.3, for TORQ-SET®	–	No. 675360 1 pc. each size 6; 8; 10; 1/4
Bits, length 25 mm, C 6.3, for clamp	–	No. 675395 1 pc. each size 4; 6; 8; 10
Screwdriver handle	1 pc. No. 676410 size 6.3 with "Rapidaptor" quick-change chuck C/E 6.3	
„Rapidaptor" coupling shank	1 pc. No. 675020 size 6.3K	



67 6102
Hex Plus

67

67 6160 – System box of virtually indestructible ABS plastic with integral hinges and snap fastener. The bits are widely spaced so that when the box is open they can be easily accessed and taken out.



61F 67 6160 Garant	Bit set with drive tool **32 pieces**	eShop
Content: Bits, length 25 mm, C 6.3, for Phillips		No. 675105 1 pc. each size 1/25; 2/25; 3/25
Bits, length 25 mm, C 6.3, for Pozidriv		No. 675115 2 pcs. each size 1/25; 2/25; 3/25
Bits, length 25 mm, C 6.3, for hex socket		No. 675125 1 pc. size 2.5; 3; 4; 5; 6
Bits, length 25 mm, C 6.3, for internal Torx®		No. 675155 2 pcs. each size TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 25 mm, C 6.3, for slot-head		1 pc. size 4×0.5; 5.5×1; 6.5×1.2
adapter		1 pc. 1/4 inch square socket – 1/4 inch bit holder
Quick-release adaptor		1 pc. No. 675050 size 6.3
Bit ratchet, 1/4 inch		1 pc. No. 676690



67 6160
Hex Plus

63H **67 6150** Wera — Bit set with drive tool **31 pieces** — eShop



67 6150
Hex-Plus

Content:	
Bits, length 25 mm, C 6.3, for Phillips	No. 675200 2 pcs. size 1/25; 3 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3, for Pozidriv	No. 675380 1 pc. size 1/25; 3 pcs. size 2/25; 1 pc. size 3/25
Bits, length 25 mm, C 6.3, for hex socket	1 pc. 675240 size 3; 4; 5; 6; 8
Bits, length 25 mm, C 6.3, for internal Torx®	1 pcs. size TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 25 mm, C 6.3, for internal Torx® with pin	1 pc. 675350 size TX10; TX15; TX20; TX25; TX30
Bits, length 25 mm, C 6.3, for slot-head	1 pc. size 1.0×5.5 mm
adapter	1 pc. 1/4 inch square socket – 1/4 inch bit holder
"Rapidaptor" adaptor	1 pc. No. 675020 size 6.3K
Bit ratchet, 1/4 inch	1 pc. No. 676645

TAKE IT EASY TOOL FINDER

63H **67 6172** Wera — Bit set "Tool-Check PLUS" with drive tool and sockets **39 pieces** — eShop

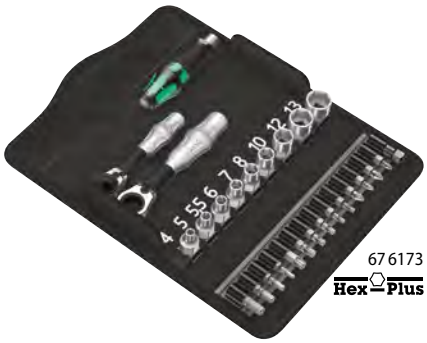


67 6172
Hex-Plus

Number of pieces	39
Content:	
Bits, length 25 mm, C 6.3, for Phillips	2 pcs. size 1; 3 pcs. size 2; 1 pc. size 3
Bits, length 25 mm, C 6.3, for Pozidriv	1 pcs. size 1; 3 pcs. size 2; 1 pcs. size 3
Bits, length 25 mm, C 6.3, for hex socket	1 pc. each size 3; 4; 5; 6; 8 mm
Bits, length 25 mm, C 6.3, for internal Torx®	1 pc. each TX10; TX15; TX20; TX25; TX30; TX40
Bits, length 25 mm, C 6.3, for internal Torx® with pin	1 pc. each TX10; TX15; TX20; TX25; TX30
Bits, length 25 mm, C 6.3, for slot-head	1 pc. size 1.0×5.5 mm
Sockets 1/4 inch, for external hexagon	1 pc. each size 5.5; 6; 7; 8; 10; 12; 13 mm
Adapter	1 pc. 1/4 inch square socket – 1/4 inch bit holder
"Rapidaptor" adaptor	1 pc. No. 675020 size 6.3K
Screwdriver holder	1 pc.
Bit ratchet, 1/4 inch	1 pc. No. 676645 size 1/4

67

63H **67 6173** Wera — Bit set with drive tool and sockets **27 pieces** — eShop



67 6173
Hex-Plus

Number of pieces	27
Content:	
Bits, length 25 mm, C 6.3, for Phillips	1 pc. each no. 675310 size 1/25; 2/25
Bits, length 25 mm, C 6.3, for Pozidriv	1 pc. each no. 675320 size 1/25; 2/25
Bits, length 25 mm, C 6.3, for external hexagon	1 pc. each No. 675240 size 3; 4; 5; 6
Bits, length 25 mm, C 6.3, for Torx®	1 pc. each No. 675340 size TX10; TX15; TX20; TX25; TX30; TX40
Sockets 1/4 inch, for external hexagon	1 pc. each size 4; 5; 5.5; 6; 7; 8; 10; 12; 13 mm
adapter	1 pc. 1/4 inch square socket – 1/4 inch bit holder
Screwdriver holder	1 pc.
Bit ratchet, 1/4 inch	1 pc. No. 676645 size 1/4
Ratchet, square, 1/4 inch	1 pc.

All popular small profile sizes with 4 mm bit holder included in the set. Bit ratchet with 5° working arc.
ESD precision screwing handle for working on electronic devices in electrostatic sensitive areas.

63K **67 6175** wiha — Bit set with drive tool and sockets **65 pieces, ESD** — eShop



67 6175

Content:	
Bits, length 28 mm, 4 mm for Phillips	1 pc. each size 000; 00; 0; 1
Bits, length 28 mm, 4 mm for hex socket	1 pc. each size 0.7; 0.9; 1.3; 1.5; 2.0; 2.5; 3.0; 4.0 mm 1 pc. each size 0.050; 1/16; 5/64; 3/32; 7/64; 1/8; 9/64; 5/32 inch
Bits, length 28 mm, 4 mm for internal Torx®	1 pc. each size TX3; TX4; TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20
Bits, length 28 mm, 4 mm for slot-head	1 pc. each size 0.8; 1.2; 1.5; 1.8; 2.0; 2.5; 3.0; 3.5; 4.0 mm
Bits, length 28 mm, 4 mm for Pentalobe	1 pc. each size PL1; PL2; PL3; PL4; PL5; PL6
Sockets, for external hexagon	1 pc. each size 2.0; 2.5; 3.0; 3.5; 4.0; 4.5; 5.0; 5.5 mm 1 pc. each size 5/64; 3/32; 7/64; 1/8; 9/64; 5/32; 3/16; 7/32 inch
adapter	1 pc. 1/4 inch bit shank – 4 mm hex socket
Bit ratchet	1 pc., for bits C 6.3 and E 6.3; with thumbwheel
Extension 4 mm	1 pc. 100 mm
ESD precision screwdriving handle with 4 mm bit-holder	1 pc. 110 mm

HSS | 118°

Wera HSS twist drill bit

1/4 inch hexagon shank to DIN 3126 C 6.3.

Advantage: Quick, uncomplicated changes between drill, countersink, and screw bits.

Application: Ideal for repair and assembly work in mobile situations.
General purpose use in metal, wood and plastic.
Special rivet hole sizes 3.1 and 5.1 mm.



67 6302

Drill ∅	mm	3	3,1	3,3	4	4,1	4,2	5	5,1	6	6,8	8	8,5	10
63H 67 6302 HSS twist drill bit		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Flute length	mm	16	18	18	20	20	20	26	26	26	30	32	33	38
overall length	mm	38	38	40	44	44	45	50	50	50	50	51	53	54
Shaft length	mm							14						

63H 67 6304	Twist drill bit set in a tool roll **19 pieces**	eShop
Content: Jobber drill bits		No. 676302 1 pc. each size 3; 4; 4.2; 5; 6; 8
Bits for Phillips		No. 675200 2 pcs. size 1/25; 3 pcs. size 2/25; 1 pc. size 3/25
Bits for internal TORX®		No. 675340 1 pc. each size TX10; TX15; TX20; TX25; TX30; TX40
"Rapidaptor" adaptor		1 pc. similar to No. 675020 size 6.3K (without magnet)



67 6304

HSS

Drill, tap, and countersink bit

1/4 inch hexagon shank to DIN 3126 C 6.3.

Advantage: Quick and uncomplicated changes between drill, countersink, and screw bits.

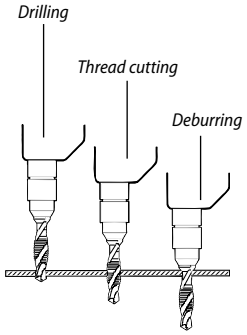
Application: Ideal for repair and assembly work in mobile situations.



67 6305

HSS stepped drill bit

9 drill steps **2 mm** increments, for use in materials up to 4 mm thickness.
With edge breaker (sheet deburrer) at ∅ 10 for 1 mm sheet metals.



Drill step range	mm	4-20
63H 67 6305 Wera Stepped drill bit		eShop
overall length	mm	67
Shaft length	mm	20
Step height	mm	4

Combination tap bit

M | 60° | ISO 2 6H | 60° | ≤1×D

Application: **1 tool for 3 operations:**
drill tapping hole – tap thread – deburr / countersink.
For use in power drills with forward and reverse drive.



67 6306

for threads		M3	M4	M5	M6	M8	M10
63H 67 6306 Wera HSS combination tap bit		eShop	eShop	eShop	eShop	eShop	eShop
overall length	mm	36	39	41	41	51	59
Shaft length	mm				12		
Drill length a	mm	5	6	7	8	11	15
Twist drill ∅	mm	2.5	3.3	4.2	5	6.8	8.5
Pitch	mm	0.5	0.7	0.8	1	1.25	1.5

63H 67 6308 Wera	Combination tap bit set in a sturdy box, 7 pieces	eShop
Content: Combination tap bits		No. 676306 1 pc. each size M3; M4; M5; M6; M8; M10
„Rapidaptor" coupling shank		1 pc. similar to No. 675020 size 6.3K (without magnet)



67 6308

Tap bit




67 6307

for threads			M3	M4	M5	M6	M8	M10
63H 67 6307	Wera	HSS tap bit	eShop	eShop	eShop	eShop	eShop	eShop
overall length		mm	33	36	36	39	40	41
Shaft length		mm	14					
Pitch		mm	0.5	0.7	0.8	1	1.25	1.5

63H 67 6309	Wera	Tap bit set in a sturdy box, 7 pieces
		eShop
Content: Tap bits		No. 676307 1 pc. each size M3; M4; M5; M6; M8; M10
„Rapidaptor" coupling shank		1 pc. similar to No. 675020 size 6.3K (without magnet)


67 6309

HSS jobber drill bit, for wood

Application:

67 6315 – For drilling smooth and accurate blind holes in softwood, hardwood, and faced boards.


67 6315

Drill ∅		mm	3	4	5	6	8	10
66B 67 6315	FISCH	Jobber drill bit, for wood	eShop	eShop	eShop	eShop	eShop	eShop
Flute length		mm	30	35	45	55	70	70
overall length		mm	70	75	85	95	110	110

66B 67 6317	FISCH	Jobber drill bit set in a tool roll, for wood, 15 pieces
		eShop
Content: Wood jobber drill bits		No. 676315 1 pc. each size 3; 4; 5; 6; 8
Bits for Pozidriv		1 pc. each size 1/25; 2/25; 3/25
Bits for internal Torx®		1 pc. each size TX10; TX15; TX20; TX25; TX30; TX40
Quick-change adaptor		1 pc. similar to No. 675020 size 6.3K (with magnet)


67 6317

90° countersinking bit, three-flute



Application:

67 6310 – For use in power drills using adapter (No. 675000 – 675050) or in screwdriver holders (No. 676400 – 676770).

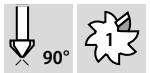

67 6310

External ∅		mm	6,3	8,3	10,4	12,4	16,5	20,5
63H 67 6310	Wera	Countersinking bit, three-flute	eShop	eShop	eShop	eShop	eShop	eShop
overall length		mm	31	31	34	35	40	41
Shaft length		mm	20					
for bores from		mm	1.5	2	2.5	2.8	3.2	3.5
for countersunk screw			M3	M4	M5	M6	M8	M10

63H 67 6312	Wera	Countersinking bit set in a sturdy box, 8 pieces
		eShop
Content: Countersinking bits, three-flute		No. 676310 1 pc. each size 6.3; 8.3; 10.4; 12.4; 16.5; 20.5
Screwdriver holder		1 pc. No. 676410
„Rapidaptor" coupling shank		1 pc. similar to No. 675020 size 6.3K (without magnet)


67 6312

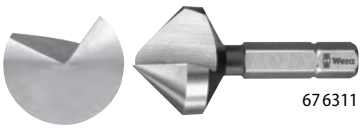
90° countersinking bit, single-flute



67 6311 – CBN ground, single-flute for chatter-free deburring and countersinking.

Application:

67 6311 – For use in power drills using adapter (No. 675000 – 675050) or in screwdriver holders (No. 676400 – 676770).


67 6311

External ∅		mm	6,3	8,3	10,4	12,4	16,5	20,5
63H 67 6311	Wera	Countersinking bit, single-flute	eShop	eShop	eShop	eShop	eShop	eShop
overall length		mm	32	32	34	36	40	43
Shaft length		mm	21	21	21	21	22	22
for bores from		mm	1.5					
for countersunk screw			M3	M4	M5	M6	M8	M10

63H 67 6313	Wera	Countersinking bit set in a sturdy box, 8 pieces
		eShop
Content: Countersinking bits, single-flute		No. 676311 1 pc. each size 6.3; 8.3; 10.4; 12.4; 16.5; 20.5
Screwdriver holder		1 pc. No. 676410
„Rapidaptor" coupling shank		1 pc. similar to No. 675020 size 6.3K (without magnet)


67 6313

D 6.3

Screwdriver holder for 1/4 inch bits

The special surface structure allows transmission of high torques, even with wet or oily hands.
Bit holder with strong permanent magnet.

67 6602 – Ergonomically shaped **power grip** with easy-grip **Haptoprene** surface and an impact-resistant plastic core.

67 6668 – Multi-component power handle with grip zone optimised for comfort.

Suitable for: 1/4 inch bits with C 6.3 shank.



67 6602_100



67 6602_30



67 6602_10



67 6668

Blade length		mm	10	30	60	100
61F 67 6602	Garant	Screwdriver holder for 1/4 inch bits **with magnet**	eShop ■	eShop ■	–	eShop ■
61F 67 6668	HOLEX		–	–	eShop	–
overall length		mm	65	135	150	205

D 6.3

Wera Screwdriver holder for 1/4 inch bits

Kraftform handle with holder for 1/4 inch bits.

67 6415 – Tool handle made of conductive plastic, **suitable for ESDs.**

67 6420 – Bit holder with snap ring.

67 6445 – **With flexible shank.** Bit holder with locking mechanism and strong permanent magnet.

67 6405/6440 – Bit holder with strong permanent magnet for holding the screw.

67 6410/6415 – With **"Rapidaptor" quick-change holder.**



67 6445



67 6405



F 6.3

67 6410



F 6.3

67 6415



67 6420/67 6440

Hexagon socket		mm	6,3
63H 67 6405	Kraftform screwdriver holder for 1/4 inch bits C 6.3, short **with magnet**		eShop
63H 67 6410	Kraftform screwdriver holder for 1/4 inch bits C 6.3 and E 6.3 **with quick-change chuck**		eShop
63H 67 6415	Kraftform screwdriver holder for 1/4 inch bits C 6.3 and E 6.3 **with quick-change chuck, ESD**		eShop ■
63H 67 6420	Kraftform handle, bit holder for 1/4 inch bits C 6.3 **with snap ring**		eShop ■
63H 67 6440	Kraftform handle, bit holder for 1/4 inch bits C 6.3 **with magnet**		eShop
63H 67 6445	Kraftform screwdriver holder for 1/4 inch bits C 6.3 **with flexible shank**		eShop ■
overall length (67 6405)		mm	64
overall length (67 6410, 67 6415)		mm	119
overall length (67 6420, 67 6440)		mm	232
overall length (67 6445)		mm	275

PB SWISS TOOLS "Twister" ratchet handle for 1/4 inch bits, reversible

D 6.3

SwissGrip Evo ratchet handle allows transmission of the required torque with no problems, even with wet or oily hands. Work without getting tired thanks to modified circular shape.
High-tech 3-component materials improve the chemical and mechanical resistance.
For left-hand and right-hand driving (working arc 15°) plus integral central setting (ratchet locked).
Bit holder with strong permanent magnet.

Suitable for: 1/4 inch bits with C 6.3 shank.



67 6659_30

NEW



67 6659_100



Blade length		mm	30	100
63E 67 6659	Ratchet handle "Twister" for 1/4 inch bits **with magnet**		eShop	eShop
overall length		mm	158	228

D 6.3 F 6.3

Wera Screwdriver holder for 1/4 inch bits with telescopic blade

Kraftform handle with **retractable telescopic blade with"Rapidaptor" quick-change holder.**
The shank is extended by simple actuation of the locking sleeve; the handle then becomes a fully-fledged screwdriver. By actuating the sleeve again the shank can be removed and used as a coupling shank for power screwdrivers.
Suitable for: 1/4 inch bits with **C 6.3 shank and E 6.3 shank.**



63H	**67 6400**	Kraftform handle, bit holder 1/4 inch with telescopic blade	eShop
overall length		mm	135 – 180

D 6.3

Garant T-handle for 1/4 inch bits

Ergonomically shaped T-handle with easy-grip **Haptoprene** surface and an impact-resistant plastic core.
The special surface structure allows transmission of high torques, even with wet or oily hands.
Bit holder with strong permanent magnet.
Suitable for: 1/4 inch bits with C 6.3 shank.



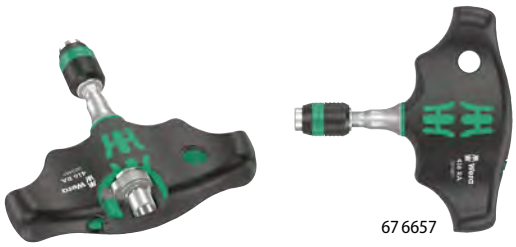
Blade length		mm	30	100
61F	**67 6612**	T-handle for 1/4 inch bits **with magnet**	eShop ■	eShop
overall length		mm	105	175

67

D 6.3 F 6.3

Wera T-handle for 1/4 inch bits

Ergonomic 2-component handle with finger grip hollows and pleasant feel for very high transmission of force and non-fatiguing work. With **"Rapidator" quick-change chuck.**
67 6657 – For anti-clockwise and **clockwise rotation (with changeover lever).**
The integral ratchet with fine toothing **(80 teeth/working arc 4.5°)** simplifies and accelerates screwdriving without tedious repositioning.
Suitable for: 1/4 inch bits with C 6.3 shank and E 6.3 shank.



Hexagon socket		mm	6,3
63H	**67 6657**	Kraftform T-handle holder for 1/4 inch bits **with integrated ratchet and quick-change chuck**	eShop
63H	**67 6656**	Kraftform T-handle holder for 1/4 inch bits **with quick-change chuck**	eShop
overall length (67 6657)		mm	100
overall length (67 6656)		mm	93.6



D 6.3

Wera Bit-holding screwdriver with magazine Kraftform Kompakt Stubby with ratchet and 1/4 inch bits

Particularly small ergonomic 2-component handle with 1/4 inch bit holder for inaccessible areas.
With ratchet function and fine toothing for a small working arc. Easy-to-use reversing ring.
Loosen and tighten the screw using the "rapid twisting function", even if there is no resistance.
Including 6 tough universal bits C 6.3, which are in a magazine in the handle.
The strong permanent magnet in the bit holder ensures secure seating of the bit.
Suitable for: 1/4 inch bits with C 6.3 shank.


Reversing ring


"Rapid twisting"

Type			1	2
63H	**67 6564**	Bit-holding screwdriver with magazine with 1/4 inch bits **with ratchet and magnet**	eShop	eShop
overall length		mm	69	
Content: Bits, length 25 mm, C 6.3, for Phillips			1 pc. each No. 675520 size 1/25; 2/25	
Bits, length 25 mm, C 6.3, for Pozidriv			–	1 pc. each No. 675540 size 1/25; 2/25
Bits, length 25 mm, C 6.3, for internal Torx®			1 pc. each No. 675550 size TX15; TX20; TX25	1 pc. No. 675550 size TX25
Bits, length 25 mm, C 6.3, for slot-head			1 pc. 0.8×5.5 mm	

TAKE IT EASY TOOL FINDER



HOLEX Bit-holding screwdriver with magazine, with ratchet and 1/4 inch bits

D 6.3

Ergonomic handle with 1/4 inch bit holder for inaccessible areas. With ratchet function (45 teeth) via reversing ring for right-hand and left-hand tightening, and for fixed operation. Including 6 tough universal bits C 6.3, which are in a magazine in the handle. The strong permanent magnet in the bit holder ensures secure seating of the bit.

Suitable for: 1/4 inch bits with C 6.3 shank.

Content: 1 bit each:
for Phillips, size 1; 2.
for internal Torx®, size TX15; TX20; TX30.
for slot-head, size 5.5.



67 6566_1



67 6566_2

Type		1	2
62F 67 6566	Bit-holding screwdriver with magazine with 1/4 inch bits **with ratchet and magnet**	eShop ■	eShop
overall length mm		69	254

Wera Bit-holding screwdriver with magazine and fine-tooth reversible ratchet Zyklop Pocket Set 1

D 6.3

Compact Zyklop ratchet with integrated bit magazine. The magnetic direct mount makes the 3/8 inch ratchet a bit ratchet screwdriver with 1/4 inch bit holder at the same time. The freely swivelling ratchet head can be fixed in 5 defined positions. The fine-tooth reversible ratchet has 72 teeth and a working arc of 5°.

Suitable for: 1/4 inch bits with C 6.3 shank.



67 6635

Number of pieces		13
63H 67 6635	Bit-holding screwdriver with magazine and fine-tooth "Zyklop Pocket" reversible ratchet with 1/4 inch bits **with ratchet and magnet**	eShop ■
overall length mm		133
Content: Bits, length 25 mm, C6.3 for Phillips		1 pc. each no. 675520 size 1/25; 2/25
Bits, length 25 mm, C6.3 for Pozidriv		1 pc. each no. 675540 size 1/25; 2/25
Bits, length 25 mm, C6.3 for hex socket		1 pc. each size 3; 4; 5; 6
Bits, length 25 mm, C6.3 for internal Torx®		1 each size TX10; TX15; TX20; TX25



Direct drive for 3/8 inch sockets and 1/4 inch bits.

67

Wera Bit-holding screwdriver with magazine with 1/4 inch bits

D 6.3

Kraftform handle with integral bit magazine including 6 pieces C 6.3 bits and holder for 1/4 inch bits with strong permanent magnet.
Telescopic blade is retractable into the handle (100 mm).
The telescopic blade can be removed and used as an adapter for a screwdriver.

Suitable for: 1/4 inch bits with C 6.3 shank.

Content: 1 pc. each:
for slot-head, size 5.5; 6.5
for Phillips, No. 675310 size 1/25; 2/25
for Pozidriv, No. 675320 size 1/25; 2/25




67 6555



63H 67 6555	Bit-holding screwdriver with 1/4 inch bits **telescopic shank and magnet**	eShop ■
overall length mm		143 – 189

PB SWISS TOOLS Bit-holding screwdriver with magazine with 1/4 inch bits

D 6.3

"Insider" handle and **sliding magazine with end locking**. Bit holder with strong permanent magnet.
67 6667 – Grip with a non-allergenic elastomer coating.

Suitable for: 1/4 inch bits with C 6.3 shank.

Content:
67 6667 Size 10 – 1 bit each:
for slot-head No. 675300 size 5.5.
for Phillips No. 675281 size 1/25; 2/25.
for internal Torx® No. 675295 size TX15; TX20; TX25.

67 6661 Size 15/6662 Size 110 – 1 bit each:
for slot-head No. 675300 size 4; 5.5; 6.
for Phillips No. 675281 size 1/25; 2/25.
for internal Torx® No. 675295 size TX10; TX15; TX20.



67 6661



67 6662

Blade length mm		10	15	110
63E 67 6661	Bit-holding screwdriver "Insider" with magazine with1/4 inch bits **with magnet**	–	eShop	–
63E 67 6662	Bit-holding screwdriver "Insider Long" with magazine with 1/4 inch bits **with magnet**	–	–	eShop
63E 67 6667	"Insider Stubby" magazine holder with 1/4 inch bits **with magnet**	eShop	–	–
overall length mm		65	120	215


67 6667

D 6.3

"Insider Pro Ratchet" ratchet handle with bits storage and 1/4 inch bits, reversible

"multicraft" ratchet handle of glass-fibre-reinforced plastic, with fold-away bits magazine.
For left-hand and right-hand driving (working arc 15°) plus integral central setting (ratchet locked).
Bit holder for 1/4 inch bits C6.3, with strong permanent magnet. With 10 pcs. C 6.3 bits.

Suitable for: 1/4 inch bits with C 6.3 shank.

Content: 1 pc. each:
for slot-head, No. 675300 size 5.5; 6
for Phillips, No. 675281 size 2/25
for Pozidriv, No. 675285 size 2/25
for hex socket, No. 675290 size 3; 4
for internal Torx®, No. 675295 size TX10; TX15; TX20; TX25





Blade length		mm	30	100
63E	67 6665	"Insider Pro Ratchet" ratchet handle with 1/4 inch bits **with magnet**	eShop	eShop
overall length		mm	158	228

Ratcheting bit holder, reversible

Reversible for left-hand / right-hand operation using lever.
67 6690/6645/6696/6650 – Bit holder D 6.3 / F 6.3.
67 6651 – Bit holder D 6.3 / F 6.3. With ejector and **QuickRelease** locking system.
67 6670 – Bit holder D 8.
67 6675 – Double ratcheting bit holder, cranked, one end with bit holder D 6.3, the other end with bit holder D 8.
67 6696 – 4° working angle.
With 2-component handle and integrated suspension option.

Suitable for:
67 6690/6645/6696/6650/6651 – 1/4 inch bits with C 6.3 shank **and** E 6.3 shank.
67 6670 – 5/16 inch bits with C 8 shank.
67 6675 – 1/4 inch bits with C 6.3 shank **and** 5/16 inch bits with C 8 shank.

Supplied with:
67 6645 – Includes adapter with 1/4 inch square for sockets.

D 6.3 D 8



67 6675

D 6.3 F 6.3



67 6690

¼" D 6.3 F 6.3



Supplied with adapter with 1/4 inch square

67 6645

D 6.3 F 6.3



67 6696

D 6.3 F 6.3



67 6650

D 6.3 F 6.3



QuickRelease

67 6651

D 8



67 6670

Type			1/4	5/16	Length mm	Width mm	Height mm	No. of teeth
61F 67 6675	Garant	Double ratchet bit holder for 1/4 inch bits C 6.3 and 5/16 inch bits C 8	eShop	–	128	21	17	60; 72
61F 67 6690		Ratchet bit holder for 1/4 inch bits C 6.3 and E 6.3	eShop	–	100	18	12	60
63H 67 6645	Wera		eShop	–	88	17.5	12	60
63O 67 6696	HAZET		eShop	–	116	22	12	90
63A 67 6650			eShop	–	117	22	10	80
63A 67 6651	STAHLWILLE	Ratchet bit holder for 1/4 inch bits C 6.3 and E 6.3, with ejector**QuickRelease**	eShop	–	117	22.6	16	80
63R 67 6670	Koken	Ratchet bit holder for 5/16 inch bits C 8	–	eShop	128	25	14	20

D 6.3 F 6.3

Wera Single-handed magazine ratchet with 1/4 inch bits, reversible

Kraftform handle with integral soft zones. With ratchet function and fine toothing for a small working arc. Easy-to-use changeover ring. Loosen and tighten the screw using the "rapid twisting function", even if there is no resistance. Integral magazine for 6 bits.

Suitable for: 1/4 inch bits C 6.3 and E 6.3.

Content: 1 pc. each:
for Phillips No. 675310 size 1/25; 2/25
for Pozidriv No. 675320 size 1/25; 2/25
for internal Torx® No. 675340 size TX20; TX25
for Phillips No. 674200 size 1/89; 2/89
for Pozidriv No. 674220 size 1/89; 2/89
for internal Torx® No. 674250 size TX20/89; TX25/89


67 6771


"Rapid twisting"


Fixing, right / left-hand tightening.

Type		1
63H 67 6771	Single-handed magazine ratchet with 1/4 inch bits in a textile belt holder	eShop
overall length mm		150

Bit adapter

Application: For connecting screwdriver bits to drive attachments or screwdrivers with a 1/4, 3/8 or 1/2 inch square drive.

67 6800 – With retaining spring; for hand-held tools.
67 6830 – With **locking system,** prevents accidentally releasing or losing the bits.
67 6850 – With snap ring; for electric screwdrivers.
67 6880 – With spring ring and quick-change coupling. Adapter can be pivoted 45° to get to hard-to-reach places. For power screwdrivers.
67 6900 – With quick-change coupling; for electric screwdrivers.
67 6945 – Spring retaining ring and ball; for hand-operated tools.

D 6.3


67 6900_4/4

D 8


67 6945_8/16

D 6.3


67 6830_4/4

D 6.3


67 6800_4/4

D 8


67 6850_8/16

D 6.3


67 6880_4/4

Type			4/4	8/4	8/16	2/4	2/16
63H 67 6900	Wera	Adapter with quick-change coupling for power screwdrivers	eShop ■	eShop ■	eShop	eShop	eShop
63R 67 6945	Koken	Adapter	–	eShop	eShop	eShop	eShop
62F 67 6800			eShop ■	–	–	–	–
62F 67 6830		Adapter **with locking system**	eShop	eShop	–	–	–
62F 67 6850	HOLEX	Adapter for power screwdrivers	–	–	eShop	–	eShop
62F 67 6880		Adapter with quick-change coupling for power screwdrivers **Can be rotated 45°**	eShop	–	–	–	–
Square drive		in	1/4	3/8	3/8	1/2	1/2
overall length (67 6900)		mm	30	43	50	50	50
overall length (67 6945, 67 6880)		mm	47	30	38	38	38
overall length (67 6800, 67 6850)		mm	25	–	37	–	40
overall length (67 6830)		mm	23	27	–	–	–
Hexagon drive			C 6.3 (1/4 inch)	C 6.3 (1/4 inch)	C 8 (5/16 inch)	C 6.3 (1/4 inch)	C 8 (5/16 inch)

HOLEX Adapter with 1/4 inch C 6.3 hexagon shank

Application: Converter for fitting 1/4 inch square sockets (DIN 3120 D 6.3) to drive attachments with 1/4 inch C 6.3 hexagon bit holders.

Further converters/adapters can be found in the catalogue under No. 65 0002 – 65 0009.


67 6950

Type		4/4
62F 67 6950	Adapter with 1/4 inch C 6.3 hexagon shank	eShop
overall length	mm	25
Hexagon drive		C 6.3 (1/4 inch)
Square drive		A 6.3 (1/4 inch)

8G 20G

Garant Tool set

Application: Modular box of virtually indestructible ABS plastic with integral hinges and 2 snap fasteners. All tools are held securely for easy access in a specially moulded **PUR foam insert.**

Note: **Supplied with tools sorted in a plastic box.**
The range offers in addition space for 4 pieces of small parts storage bins No. 951251 size 2×3/1 or 2 pieces of small parts storage bins No. 951251 size 2×6/1 (not included in the scope of supply).


68 0157

Number of tools		20
6H 68 0157	Universal tool set **20 pieces**	eShop
Length	mm	510
Width	mm	294
Height	mm	61
Supplied with: Tape measure with viewing window		1 pc. No. 462201 size 2.5
Hexagon key L-wrench set with ball point		1 pc. No. 627132 size 9 (9 pieces)
Screwdriver for slot-head		1 pc. each No. 660032 size 2.5; 4; 5.5
Screwdriver for Phillips		1 pc. each No. 667702 size 1; 2
Combination pliers		1 pc. No. 700940 size 160
Engineer's hammer		1 pc. No. 750110 size 200
General purpose scissors		1 pc. No. 769240 size 175
Pliers wrench		1 pc. No. 813501 size 180
General-purpose knife with snap-off blades		1 pc. No. 845020

68

Garant Tool sets in textile bags

High-quality **GARANT GreenPlus** tool textile bag equipped with handy professional tools as a companion for your day-to-day tasks.

Note: **Tools are supplied loose.**

Type		692210	692230
6H 68 5000	Tool set **150 pieces**	eShop	eShop
Supplied with: Hexagonal key L-wrench set, long with spherical head, 9 pieces		1 pc. No. 627132 size 9	
Pliers set, 4 pieces		1 pc. No. 700001 size 4	
Pliers wrench		1 pc. No. 813501 size 180	
Vernier calliper		1 pc. No. 410100 size 150	
Locking tape measure 3 m		1 pc. No. 461900 size 3	
Plastic folding rule 2 m		1 pc. No. 466200 size 2	
Cutter knives		1 pc. No. 845020	
Multi-purpose scissors with 2-component handle, straight		1 pc. No. 763030 size 205	
Bit holder screwdriver		1 pc. No. 676602 size 30	
Bit holder ratchet		1 pc. No. 676690 size 1/4	
Bit set, 61 pieces		1 pc. No. 676040	
Screwdriver set slot-head and Phillips		1 pc. No. 666956 size 4/2	
Socket set 1/4 inch, 41 pieces		1 pc. No. 630325 size SD	
Textile tool roll for open-ended spanners		1 pc. No. 614835 size 10	
Double open-ended spanner		1 pc. each of No. 610600 size 8×9; 10×11; 12×13; 14×15; 17×19; 18×19; 20×22; 22×24	
Universal deburrers		1 pc. No. 839901 size S10	
Hand deburrer		1 pc. No. 150400 size 12.4	
Engineer's hammer		1 pc. No. 750110 size 300	
Carbide multi-purpose drill set, 7 pieces		1 pc. No. 787078 size 7	
Headlamp (HOLEX)		1 pc. No. 081493 size 300	
Safety glasses		1 pc. No. 096200 size CLEAR	
Presented in		1 pc. No. 692210 size 1	1 pc. No. 692230 size 1

Garant GREENPLUS


_692210


_692230



KNIPEX Tool set Electro, 63 pieces

Comprehensive electrician's tool kit in high-quality tool case. With mobility unit and telescopic handle.

68 0102 – Case made from ABS with all-round aluminium frame, opening both sides.
68 0104 – Case made from polypropylene for the toughest operating conditions: Resistant to dust, watertight, and temperature resistant.

Note:	Supplied with tools sorted in a tool case.



68 0102

Number of tools		63
73F 68 0102	Tool selection "BIG Twin Move" Electro **63 pieces**	eShop
73F 68 0104	Tool selection "Robust 45 Move" Electro **63 pieces**	eShop
Supplied with: Electrician's spirit level		1 pc. No. 467415 size 430
Pocket spirit level electric		1 pc. No. 467484 size 70
"JOKER" double-ended ring spanner		1 pc. size 10×13 mm
Multi-function key TwinKey®		1 pc. No. 623550
Socket set 1/4 inch, 28 pieces		1 pc. No. 630295 size S
Screwdriver for Pozidriv, insulated to VDE		1 pc. size 1
Screwdriver for slot-head, insulated to VDE		1 pc. size 3.5 mm
Kraftform Kompakt VDE set, 16-piece		1 pc. similar to No. 667260
Pointed combination pliers, chrome-plated, insulated to VDE		1 pc. No. 701655 size 145
Water pump pliers Cobra® chemically blacked		1 pc. No. 705800 size 180
Snipe nose pliers, angled, insulated to VDE		1 pc. No. 713700 size 200
Heavy-duty side cutter, chrome-plated, insulated to VDE		1 pc. No. 723500 size 200
Side cutters,chrome-plated, insulated to VDE		1 pc. No. 725300 size 160
ErgoStrip® universal stripping tool		1 pc. No. 728091 size 8-13
Wire stripping tool up to 16 mm² Preci Strip		1 pc. No. 728631 size 16
Installation pliers, insulated to VDE		1 pc. No. 728787 size 200
Crimping tool for terminal sleeves up to 16 mm²		1 pc.
Electrician's chisel		1 pc. No. 743000 size 250
Engineer's hammer		1 each size 300 g
Pliers wrench		1 pc. No. 813700 size 180
Fixed blade cable knife, insulated to VDE		1 pc. No. 844410
Tool case (68 0102)		1 pc. No. 692615 size 1
Tool case (68 0104)		1 pc. "Robust 45 Move"



68 0104

Wera Maintenance tool set, 35 pieces

Compact tool kit with the most important tools for maintenance work indoors and outdoors.

Note:	Supplied with tools sorted in a textile wallet.

Hex-Plus

TAKE IT EASY TOOL FINDER



68 0370

63H 68 0370	Maintenance tool set, **35 pieces**	–
Supplied with: Kraftform handle, insulated to VDE		1 pc. No. 667411 size 1
Screwdriver blades for Phillips, insulated to VDE		1 pc. each size 1; 2
Screwdriver blades for Pozidriv, insulated to VDE		1 pc. each size 1; 2
Screwdriver blades for internal Torx®, insulated to VDE		1 pc. each size TX10; TX15; TX20; TX25
Screwdriver blades for slot-head, insulated to VDE		1 pc. each size 0.4; 0.6; 0.8; 1.0 mm
Bits for Pozidriv, C 6.3		1 pc. each No. 675320 size 1/25; 2/25
Bits for hex socket, C 6.3		1 pc. each No. 675240 size 3; 4; 5; 6
BITS for internal Torx® C 6.3		1 pc. No. 675340 size TX25
1/4 inch bit holder with magnet		1 pc.
1/4 inch hexagon socket set		1 pc. each size 5.5; 6; 7; 8; 10; 11; 12; 13 mm
1/4 inch extension		1 pc. size 75 mm
1/4 inch coupling shank		1 pc.
1/4 inch "Zyklop Speed" precision ratchet		1 pc. No. 632390
Screw holder		1 pc. No. 666425 size 2
Voltage tester		1 pc. No. 665030 size 3
Double open-ended spanner "Joker 6002"		1 pc. size 10x13 mm

01 Cal ±6%

Tool set

Compact tool range with the most important tools for mechatronics engineers and electricians,
fully insulated up to 1000 V according to **DIN EN IEC 60900 / VDE 06082-201**.
The TorqueVario®-S system provides controlled screw tightening and at the same time safety in electrical applications.
The 6 mm slimBits and sockets can only be used in the speedE®, slimVario® or TorqueVario®-S electric tools.







68 0360_36

Number of pieces		36
66H 68 0360	Mechatronik Pro tool range, **36 pieces**	eShop
Length	mm	240
Width	mm	170
Height	mm	70
Torque range	cNm	80 – 500
Supplied with: VDE screwdriver blades for Phillips		1 pc. each size 0; 1; 2
VDE screwdriver blades for Pozidriv		1 pc. each size 1; 2
VDE screwdriver blades for hex socket		1 pc. each size 3; 4; 5 mm
VDE screwdriver blades for internal Torx®		1 each size TX10; TX15; TX20; TX25
VDE screwdriver blades for slot-head		1 pc. each size 2.0; 3.5; 5.5; 6.5 mm
Screwdriver blades for Pozidriv slot-head (combination profile)		1 pc. each size PZ/S1; PZ/S2 (combination profile)
VDE hexagon sockets		1 pc. each size 5; 5.5; 6; 7; 8; 10; 11; 13 mm
VDE extension		1 pc. size 69.5 mm
VDE adapter		1 pc. bit shank – square 1/4 inch
VDE handle		1 pc.
VDE stubby handle		1 pc.
VDE precision screwdriver handle		1 pc.
1/4 inch VDE ratchet		1 pc.
VDE torque screwdriver TorqueVario®		1 pc. size 500 cNm
VDE bit holder for torque screwdriver		1 pc.
VDE adapter for torque screwdriver		1 pc. bit shank – square 1/4 inch
Setting tool for torque screwdriver		1 pc. No. 659931 size 1

68

IP 67

XL 2 Trolley electric tool case, 60 pieces

The XL 2 Trolley offers optimal storage space and a variety of organisation options for versatile use.
With 92 loops, two plug-in modules, a document and small-parts compartment and individually adjustable base divider, it keeps everything neat and tidy and provides quick access to tools.
Ergonomic and insulated screwdriving tools for safe work on electrical equipment, tested according to **IEC 60900.**

- Easy to transport: extra-long telescopic handle and smooth-running wheels ensure effortless transportation.
- Safe: gas pressure dampers prevent it snapping shut unintentionally and protect the fingers.
- Robust: Made of resistant polypropylene (PP), ideal for air travel thanks to the air pressure compensation valve.



68 0110_60

Number of pieces		60
66H 68 0110	XL 2 Trolley electric tool case, **60 pieces**	eShop
Width	mm	520
Height	mm	440
Depth	mm	277
Supplied with: VDE slot-head screwdriver		1 pc. each size 3.5; 4.0; 5.5 mm
VDE screwdriver for Phillips		1 pc. each size PH1; PH2
Electrician's folding rule 2 m metric		1 pc.
Electrician's spirit level 400 mm		1 pc.
VDE screwdriver with bit magazine, mixed with 4 slimBits		1 pc.
Crimping tool for terminal sleeves		1 pc. 0.08 – 16 mm²
Hexagon L-wrench set 9-piece holder hexagon ball point screwdriver; satin chrome-plated		1 pc.
VDE stripping multitool for round cables 125 mm		1 pc.
VDE combination pliers with extra-long cutting edge 180 mm		1 pc.
VDE side cutter 160 mm		1 pc.
VDE snipe nose pliers with side cutter, straight shape 200 mm		1 pc.
Bit set 31 pieces mixed, for Phillips; for Pozidriv; for slot-head		1 pc.
Cable cutter with opening spring that can be engaged and disengaged in blister 210 mm		1 pc.
XL 2 Trolley tool case empty		1 pc.

Mechanics tool set, 90 pieces

Comprehensive tool selection with a total of 90 brand tools, 12 of which are from KNIPEX in a high-quality tool case. With mobility unit and telescopic handle.

68 0106 – Case made from ABS with all-round aluminium frame.

68 0108 – Case made from polypropylene for the toughest operating conditions: resistant to dust, watertight, and temperature resistant.

Note:	**Supplied with tools sorted in a tool case.**

Number of tools		90
73F **68 0106**	Tool set "BIG Basic Move" mechanics **90 pieces**	eShop
73F **68 0108**	Tool set "Robust45 Move" mechanics **90 pieces**	eShop
Content: Diagonal cutter		1 pc. length 160 mm
Heavy-duty diagonal cutters		1 pc. length 200 mm
Compact bolt cutter CoBolt®		1 pc. No. 731752 size 200
Multi-function key TwinKey®		1 pc. No. 623550
Snipe nose pliers with cutting edge and straight jaws		1 pc.
Snipe nose pliers with cutting edge and angled jaws		1 pc.
Super Knips® electronics side cutters		1 pc. No. 726620 size 140
Cobra® water pump pliers		1 pc. No. 705800 size 250
Pliers wrench		1 pc. No. 813702 size 250
ErgoStrip® universal stripping tool		1 pc. No. 728091 size 8-13
Folding cable knife		1 pc. No. 844610 size 1
Spirit level		1 pc. length 220 mm
Zyklop metal ratchet set, 1/4 inch		1 pc. No. 630295 size S (28-piece)
Hexagon key L-wrench set with ball head and holder		1 pc. 1.5 – 10 mm, 9-piece
Combination spanner set in holder		1 pc. 6 – 19 mm, 12-piece
Automatic centre punch		1 pc. 60N - 130N
Pin punch set		1 pc. ∅ 3 – 10 mm, 6-piece
Folding wooden rule		1 pc. length 2 metres
Engineer's hammer		1 each size 300 g
Screwdriver for Phillips screws		1 pc. each No. 668260 size 1; 2; 3
Screwdriver for Pozidriv		1 pc. each No. 668270 size 1; 2; 3
Screwdriver for slot-head		1 pc. each No. 662200 size 3.5; 4
Screwdriver for slot-head with impact cap		1 pc. each No. 660300 size 5.5; 7; 9
Screwdriver for internal Torx®		1 pc. each No. 625500 size TX10; TX15; TX20; TX25; TX30
Electronics screwdriver for Philips		1 pc. each No. 668800 size 00; 0
Electronics screwdriver for slot-head		1 pc. each No. 664600 size 1.5; 2.5
Toolcase (68 0106)		1 pc. No. 692613 size 1
Toolcase (68 0108)		1 pc. "Robust45 Move"



Fitted with



68 0106



68 0108

Tool sets in textile bags

High-quality textile bags equipped with handy tool selections, as a companion for your day-to-day tasks.

Note:	**Tool is supplied loose.**

Number of pieces		9
66H **68 6000**	Assembly tool set, 9 pieces **in a tool roll**	eShop ■
Supplied with: Double open-ended spanner set, chrome-plated		1 pc. No. 610960 size 8 (6×7 – 19×22)
Adjustable spanner		1 pc. No. 813961 size 200
Textile tool roll with snap fastener		1 pc. No. 692255 size 390×320



68 6000_9

Number of pieces		12
66H **68 6003**	Assembly tool set, 12 pieces **in a tool roll**	eShop ■
Supplied with: Combination spanner set, chrome-plated		1 pc. No. 613960 size 12 (5.5 – 24)
Textile tool roll with snap fastener		1 pc. No. 692255 size 500×320



68 6003_12

¼″

Number of pieces		91
66H 68 6016	Assembly tool set, 59 pieces **in a tool rucksack**	eShop
Supplied with: Vernier calliper		1 pc. No. 410625 size 150
Locking tape measure		1 pc. No. 462014 size 3
Double open-ended spanner		1 pc. each No. 610950 size 8×9; 10×11; 12×13; 16×17; 18×19
Hexagon key L-wrench set long with ball point		1 pc. No. 627225 size 9 (1.5 – 10 mm)
Socket set 1/4 inch		1 pc. No. 630368 size 6 (29 pieces)
Screwdriver for slot-head		1 pc. each No. 660701 size 3, 4, 7
Screwdriver for Phillips		1 pc. each No. 668401 size 0, 1, 2
Combination pliers		1 pc. No. 702995 size 180
Water pump pliers		1 pc. No. 706145 size 250
Snipe nose pliers, angled		1 pc. No. 713595 size 200
Diagonal side cutter		1 pc. No. 725245 size 160
Engineer's hammer		1 pc. No. 750125 size 300
Adjustable spanners		1 pc. No. 813961 size 200
Universal knife		1 pc. No. 845039 size 160
LED torch		1 pc. No. 081437 size BLACK
31-piece bit assortment		1 pc. No. 675592 size 31
Bit holder		1 pc. No. 676668 size 60
Textile tool rucksack		1 pc. No. 692267 size 1



68 6016_91

Number of pieces		38
66H 68 6018	Electrician's tool set, 38 pieces **in a tool rucksack**	eShop
Supplied with: Locking tape measure		1 pc. No. 462014 size 3
Single open ended spanner, VDE-insulated		1 pc. each 613333 size 10; 13; 17; 19; 24
Single ring wrench, VDE-insulated		1 pc. each 618203 size 10; 13; 17; 19
Textile tool roll		1 pc. No. 692255 size 390×320
Hexagon key L-wrench set long with ball point		1 pc. No. 627225 size 9 (1.5 – 10 mm)
Screwdriver for slot-head, insulated to VDE		1 pc. each 663301 size 2.5; 3; 3.5; 4; 5.5
Voltage tester		1 pc. No. 665050 size 3
Screwdriver for Phillips, insulated to VDE		1 pc. each No. 668631 size 0; 1; 2
Set of pliers, VDE-insulated		1 pc. each No. 700121 size 4
Water pump pliers, insulated to VDE		1 pc. No. 705746 size 250
Cable knife		1 pc. No. 844525 size 1F
Adjustable spanner, insulated to VDE		1 pc. No. 814006 size 200
Universal knife		1 pc. No. 845039 size 160
LED torch		1 pc. No. 081437 size BLACK
Textile tool rucksack		1 pc. No. 692267 size 1



68 6018_38

Number of pieces		15
66H 68 6006	Assembly tool set, 15 pieces **in a tool case**	eShop
Supplied with: Screwdriver for slot-head		1 pc. each No. 660701 size 2.5; 3; 3.5; 4
Screwdriver for TORX® screws		1 pc. each No. 668401 size 0, 1, 2
Combination pliers		1 pc. No. 702995 size 180
Water pump pliers		1 pc. No. 706145 size 250
Diagonal cutter		1 pc. No. 725245 size 160
Engineer's hammer		1 pc. No. 750125 size 300
Adjustable spanner		1 pc. No. 813961 size 200
General-purpose knife		1 pc. No. 845039 size 160
LED torch		1 pc. No. 081437 size BLACK
Telescopic magnetic holder		1 pc. No. 081650
Textile tool case with snap fastener		1 pc. No. 692257 size 1



68 6006_15

Number of pieces		15
66H 68 6010	Electrician's tool set, 15 pieces **in a tool case**	eShop
Supplied with: Screwdriver for slot-head, insulated to VDE		1 pc. each No. 663301 size 2.5; 3; 3.5; 4
Voltage tester		1 pc. No. 665050 size 3
Screwdriver for Phillips, insulated to VDE		1 pc. each No. 668631 size 0, 1, 2
Combination pliers, VDE insulated		1 pc. No. 701852 size 180
Water pump pliers, insulated to VDE		1 pc. No. 705746 size 250
Side cutters, insulated to VDE		1 pc. No. 725351 size 160
Wire stripper, insulated to VDE		1 pc. No. 728761 size 160
Engineer's hammer		1 pc. No. 750125 size 300
General-purpose knife		1 pc. No. 845039 size 160
LED torch		1 pc. No. 081437 size BLACK
Textile tool case with snap fastener		1 pc. No. 692257 size 1



68 6010_15

Number of pieces		24
66H 68 6013	Electrician's tool set, 24 pieces **in electrician's case**	eShop ■
Supplied with: Tape measure		1 pc. No. 462014 size 3
Hexagon key L-wrench set long with ball point		1 pc. No. 627225 size 9 (1.5 – 10 mm)
Screwdriver for slot-head, insulated to VDE		1 pc. each No. 663301 size 3.5; 5.5
Voltage tester		1 pc. No. 665050 size 3
Screwdriver for Phillips, insulated to VDE		1 pc. each No. 668631 size 1, 2
Combination pliers, VDE insulated		1 pc. No. 701852 size 180
Water pump pliers, insulated to VDE		1 pc. No. 705746 size 250
Snipe nose pliers straight, insulated to VDE		1 pc. No. 713351 size 200
Side cutters, insulated to VDE		1 pc. No. 725351 size 160
Cable stripping tools		1 pc. No. 728043 size 6 – 25
Precision wire stripper, steplessly adjustable		1 pc. No. 728501 size 016-08
Adjustable spanner, insulated to VDE		1 pc. No. 814006 size 200
General-purpose knife		1 pc. No. 845039 size 160
LED torch		1 pc. No. 081437 size BLACK
Textile electrician's case		1 pc. No. 692260 size 1



68 6013_24

¼″

Number of pieces		106
66H 68 6020	Assembly tool set, 74 pieces **in a tool bag**	–
Supplied with: Locking tape measure		1 pc. No. 462014 size 3
Aluminium spirit level		1 pc. No. 467435 size 400
Files set		1 pc. No. 517419 size 200
Hacksaw frame with bimetal blade		1 pc. No. 580750 size 300
Double open-ended spanner 6 – 34 mm with toolholder		1 pc. No. 610960 size 12 (6×7 – 30×34) with 1 pc. No. 611500 size 12
Hexagon key L-wrench set long with ball point		1 pc. No. 627225 size 9 (1.5 – 10 mm)
Socket set 1/4 inch		1 pc. No. 630368 size 6 (29 pieces)
Screwdriver for slot-head		1 pc. each No. 660701 size 3, 4, 7
Screwdriver for Phillips		1 pc. each No. 668401 size 0, 1, 2
Combination pliers		1 pc. No. 702995 size 180
Water pump pliers		1 pc. No. 706145 size 250
Snipe nose pliers, angled		1 pc. No. 713595 size 200
Diagonal side cutter		1 pc. No. 725245 size 160
Engineer's hammer		1 pc. No. 750125 size 300
Universal knife		1 pc. No. 845039 size 160
Leather work gloves (pair)		1 pc. No. 094055 size 10
Frame safety glasses		1 pc. No. 096845 size CLEAR
Shell type ear protectors		1 pc. No. 097795 size STEEL
31-piece bit assortment		1 pc. No. 675592 size 31
Bit holder		1 pc. No. 676668 size 60
Textile tool bag		1 pc. No. 692262 size 2



68 6020_106

68

Garant Tool set in an L-BOXX®

Modular plastic L-BOXX® case of shock and impact-resistant ABS plastic, fully splash-proof.
The sturdy click-on mechanism allows the case to be quickly and easily attached and detached, and also the transport together of several modular plastic cases up to 40 kg.
Lid can be loaded to 100 kg, loading capacity up to 25 kg.

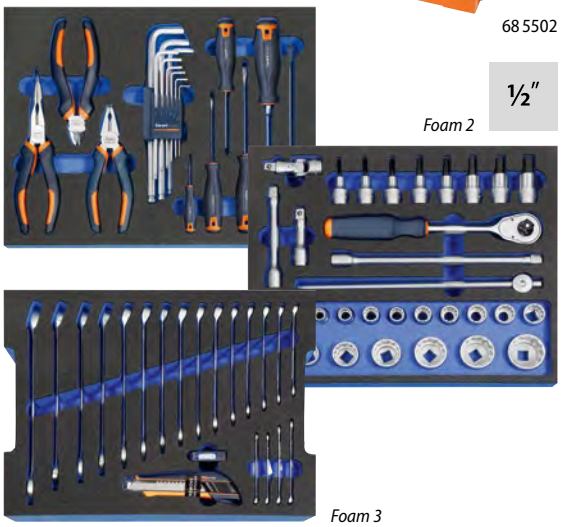
Note: **Supplied with tools sorted in L-BOXX®.**
68 5522 – The suitable roller trolley for transporting up to 5 items of the L-BOXX® size 102 is available under No. 693370 size 5.



68 5502

Number of pieces		70
66H 68 5502	Universal tool set XXL **70 pieces**	eShop
Weight	kg	11
Supplied with: Sockets bi-hexagon		1 pc. each No. 642129 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34
Screwdriver bits hexagon		1 pc. each No. 643229 size 4; 5; 6; 7; 8; 10; 12; 14
T-handle		1 pc. No. 641329 size 295
Extension		1 pc. each No. 641029 size 75; 125; 250
Universal joint		1 pc. No. 641629 size 1/2
Ratchet		1 pc. No. 640025 size 1/2
Locking tape measure		1 pc. No. 462201 size 2.5
Combination spanner		1 pc. each No. 613600 size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24
Combination pliers		1 pc. No. 700940 size 160
Snipe nose pliers		1 pc. No. 713040 size 200
Diagonal side cutter		1 pc. No. 724840 size 160
Slot-head screwdriver		1 pc. each No. 660032 size 2; 3.5; 5.5; 6.5
Screwdriver for Phillips		1 pc. each No. 667702 size 1; 2
Hexagon key L-wrench set with ball point		1 pc. No. 627132 size 9
Cutters		1 pc. No. 845020
Lid inlay		1 pc. No. 693352
Stored in		L-BOXX® No. 693330 size 238

Foam 1



½″

Foam 2

Foam 3

Number of pieces		22
66H 68 5522	Universal tool set L **22 pieces**	eShop
Weight	kg	3.8
Supplied with: Locking tape measure		1 pc. No. 462201 size 2.5
Double open-ended spanner		1 pc. each No. 610600 size 8×9; 10×11; 12×13; 14×15; 17×19
Hexagon key L-wrench set with ball point		1 pc. No. 627132 size 9
Slot-head screwdriver		1 pc. each No. 660032 size 2; 3.5; 5.5; 6.5
Screwdriver for Phillips		1 pc. each No. 667702 size 1; 2
Combination pliers		1 pc. No. 700940 size 160
Lid inlay		1 pc. No. 693352
Stored in		L-BOXX® No. 693330 size 102



68 5522

Note: **Supplied with tools sorted in L-BOXX®.**
The suitable roller trolley for transporting up to 5 items of the L-BOXX® size 102 is available under No. 693370 size 5.

Number of pieces		32
66H 68 5550	Socket set 1/2 inch **32 pieces**	eShop
Weight	kg	6.6
Supplied with: Bi-hexagon sockets		1 pc. each No. 642129 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34
Hexagon screwdriver bits		1 pc. each No. 643229 size 4; 5; 6; 7; 8; 10; 12; 14
T-handle		1 pc. No. 641329 size 295
Extension		1 pc. each No. 641029 size 75; 125; 250
Universal joint		1 pc. No. 641629 size 1/2
Ratchet		1 pc. No. 640025 size 1/2
Lid inlay		1 pc. No. 693352
Storage in		L-BOXX® No. 693330 size 102



68 5550

Number of pieces		8
66H 68 5610	Circlip pliers set **8 pieces**	eShop
Weight	kg	3.6
Supplied with: Precision circlip pliers for internal circlips in bores		1 pc. each No. 719770 size J0, J1, J2; J3
Precision circlip pliers for external circlips on shafts		1 pc. each No. 719870 size A0, A1, A2; A3
Lid inlay		1 pc. No. 693352
Stored in		L-BOXX® No. 693330 size 102



68 5610

Tool set in a tool case

Note: **Supplied with tools sorted in a tool case.**

		21
6H 68 0132	Garant Tool set, 21 pieces **in zip fastener case**	eShop
Supplied with: Measuring tape		1 pc. No. 462201 size 2.5
Double open ended spanner		1 pc. each No. 610600 size 8×9; 10×11; 12×13; 14×15; 17×19
Hexagon key L-wrench set with ball point and retainer ball in a plastic clip		1 pc. No. 627132 size 9 (1.5 – 10 mm)
Slot-head screwdriver		1 pc. each No. 660032 size 3.5; 5.5; 6.5
Screwdriver for Phillips		1 pc. each No. 667702 size 1; 2
Combination pliers		1 pc. No. 700940 size 160
Storage in zip fastener case		1 pc. No. 691536


68 0132

Number of pieces		21
66H **68 0135**	HOLEX Tool set, 21 pieces **in zip fastener case**	eShop
Supplied with: Tape measure		1 pc. No. 462014 size 3
Double open ended spanners		1 pc. each No. 610950 size 8×9; 10×11; 12×13; 14×15; 17×19
Hexagon key L-wrench set with ball point, in a plastic clip		1 pc. No. 627225 size 9
Pozidriv screwdriver		1 pc. each No. 660701 size 3.5; 4; 5.5
Screwdriver for Phillips		1 pc. each No. 668401 size 1; 2
Combination pliers		1 pc. No. 701515 size 160
Storage in zip fastener case		1 pc. No. 691536



68 0135

66H **68 0200**	Standard tool set, 18 pieces **in textile tool case**	eShop
Supplied with: **STABILA®** wooden folding rule		1 pc. No. 466005 size 2
DICK multi-purpose hand file with handle		1 pc. No. 515000 size 200
PUK® universal hacksaw		1 pc. No. 581240
Slot-head screwdriver		1 pc. each No. 660701 size 3.5; 5.5; 8
Voltage tester up to 250 V		1 pc. No. 665050 size 3
Screwdriver for Phillips		1 pc. No. 668401 size 2
KNIPEX® combination pliers		1 pc. No. 701601 size 160
Water pump pliers, jaws hardened		1 pc. No. 706101 size 250
KNIPEX® pincers		1 pc. No. 706610 size 180
KNIPEX® snipe nose pliers with side cutter		1 pc. No. 713100 size 140
Engineer's hammer with hickory handle		1 pc. No. 750125 size 300
General purpose scissors		1 pc. No. 769100 size 180
Adjustable spanners		1 pc. No. 814001 size 200
Bradawl		1 pc. No. 831600 size 80
Tajima general-purpose knife with snap-off blades		1 pc. No. 845000
Spatula		1 pc. No. 087650 size 40
Tool folder		1 pc. No. 692257 size 1



68 0200

66H **68 0540**	Tool set, 29 pieces, tools insulated to VDE **in a tool case**	eShop
Supplied with: Single open ended spanner		1 pc. each No. 613333 size 10; 13; 16; 17; 18; 19
wiha socket with handle		1 pc. each No. 622500 size 5.5; 6; 7; 8; 9; 10
Electrician's slot-head screwdriver		1 pc. each No. 663301 size 2.5; 3; 3.5; 4; 5.5; 6.5
PB Swiss Tools voltage tester up to 250 V		1 pc. No. 665020 size 2.5
BENNING voltage tester "Analog"		1 pc. No. 473105 size ANALOG
Screw-in fuse carrier key, fully insulated up to 1000 V to EN 60900		1 pc. No. 665800
Electrician's screwdriver for Phillips		1 pc. each No. 668631 size 1; 2
KNIPEX® combination pliers, insulated to VDE		1 pc. No. 701700 size 180
KNIPEX® snipe nose pliers with side cutter		1 pc. No. 713300 size 200
KNIPEX® side cutter, insulated to VDE		1 pc. No. 725300 size 160
KNIPEX® wire strippers, insulated to VDE		1 pc. No. 728750 size 160
KNIPEX® cable cutters		1 pc. No. 730350 size 165
KNIPEX® fixed blade cable knife		1 pc. No. 844410



68 0540

Tool set for trainees

Note:	Tools are supplied loose.

66H 68 0440	Trainee electronics fitter's tool set, 25 pieces **with tool case**	eShop
66H 68 0445	Trainee electronics fitter's tool set, 25 pieces **without tool case**	eShop
Supplied with: **GARANT** calipers		1 pc. No. 410100 size 150
STABILA® wooden folding rule		1 pc. No. 465960 size 2
DICK half-round file		1 pc. No. 513300 size 250
Hardwood file handle		1 pc. No. 519400 size 120
PUK® universal hacksaw		1 pc. No. 581220 size 150
Wera slot-head screwdriver, insulated to VDE		1 pc. each No. 663100 size 2.5; 3.5; 4; 5.5; 6.5; 8
Wera screwdriver for Phillips, insulated to VDE		1 pc. each No. 668600 size 1; 2
KNIPEX® combination pliers, insulated to VDE		1 pc. No. 701700 size 160
KNIPEX® water pump pliers, insulated to VDE		1 pc. No. 705740 size 250
KNIPEX® flat-nose pliers, insulated to VDE		1 pc. No. 710300 size 160
KNIPEX® round-nose pliers, insulated to VDE		1 pc. No. 710700 size 160
KNIPEX® snipe nose pliers, insulated to VDE		1 pc. each No. 713300 size 160; 200
GARANT electronics side cutter		1 pc. No. 726210 size 125
JOKARI® automatic wire strippers		1 pc. No. 728622 size 6
JOKARI® sheath and wire stripper for all common coaxial cables		1 pc. No. 729806 size RG58/59
GARANT engineer's hammer with hickory handle		1 pc. No. 750110 size 300
Plastic hammer		1 pc. No. 754200 size 32
Cable knife with wooden handle, folding		1 pc. No. 844500 size 1
PARAT® tool case (68 0440)		1 pc. No. 690200



68 0440

Tool set for mechanical and assembly work

Note:	Tool is supplied loose.

66H 68 0252	Mechanic's tool set, 94 pieces **with tool case**	eShop
66H 68 0255	Mechanic's tool set, 94 pieces **without case**	eShop
Supplied with: **GARANT** calipers		1 pc. No. 410100 size 150
GARANT tape measure		1 pc. No. 462210 size 2
DICK three square file H2 with handle		1 pc. No. 511200 size 200
DICK half-round file H2 with handle		1 pc. No. 513200 size 200
DICK round file H2 with handle		1 pc. No. 514200 size 200
Precision key files in a plastic wallet		1 pc. No. 518930 (6-piece)
File brush		1 pc. No. 576000 size 115×40
PUK® universal hacksaw		1 pc. No. 581220 size 150
Open-ended spanners 6 – 22 mm with clip		1 pc. No. 610960 size 8 (6×7 – 19×22 mm) with 1 pc. No. 611500 size 8
Torx® key L-wrench set		1 pc. No. 624857 size 8 (TX6 – TX25)
Hexagon key L-wrench set with a plastic clip		1 pc. No. 626072 size 9 (1.5 - 10 mm)
Socket set 1/4 inch		1 pc. No. 630368 (29 pieces)
Slot-head screwdriver		1 pc. No. 660711 size 5 (3.5 - 8 mm)
Screwdriver for Phillips		1 pc. each No. 668401 size 1; 2
KNIPEX® combination pliers		1 pc. No. 701500 size 160
Water pump pliers		1 pc. No. 706151 size 250
KNIPEX® snipe nose pliers with side cutter		1 pc. No. 713150 size 160
Tweezers needle pointed		1 pc. No. 727520 size N
KNIPEX® side cutter		1 pc. No. 724900 size 160
PB Swiss Tools flat chisel		1 pc. No. 741000 size 150
RENNSTEIG pin punch set with guide sleeve		1 pc. No. 747200 size 6 (2 - 8 mm)
PB Swiss Tools centre punch		1 pc. No. 749200 size 90
GARANT engineer's hammer with hickory handle		1 pc. each No. 750110 size 100; 300
Ideal sheet metal shears with compound action		1 pc. No. 766042 size 260
PB Swiss Tools bradawl		1 pc. No. 831600 size 80
NOGA precision engineer's scraper		1 pc. No. 836400 size 120
Plastic bottle oiler		1 pc. No. 083529 size 80
Multi-purpose shears		1 pc. No. 763100 size 140



68 0252

66H **68 0300**	Assembly tool set, 59 pieces **with sheet metal toolbox**	eShop
66H **68 0302**	Assembly tool set, 59 pieces **with tool case**	eShop
66H **68 0305**	Assembly tool set, 59 pieces **without container**	eShop
Supplied with: **STABILA®** wooden folding rule		1 pc. No. 466005 size 2
Wire brush		1 pc. No. 575000 size 3
DICK workshop files set, 2nd cut with handle, assorted, in a tool roll		1 pc. No. 517200 size 200 (5-piece)
PUK® universal hacksaw		1 pc. No. 581220 size 150
GARANT open-ended spanners set 6 – 34 mm with clip		1 pc. No. 610610 size 12 (6×7 – 30×34 mm) with 1 pc. No. 611500 size 12
Hexagon key L-wrench set with a plastic clip		1 pc. No. 626072 size 8 (2 - 10 mm)
PB Swiss Tools slot-head screwdriver set		1 pc. No. 660910 size 5 (3.5 - 8 mm)
PB Swiss Tools offset screwdriver for slot-head		1 pc. No. 664800 size 6.5
PB Swiss Tools voltage tester up to 250 V		1 pc. No. 665020 size 3.5
PB Swiss Tools screwdriver for Phillips		1 pc. each No. 668100 size 1; 2
KNIPEX® combination pliers		1 pc. No. 701500 size 180
KNIPEX® water pump pliers		1 pc. No. 705500 size 250
KNIPEX® pincers		1 pc. No. 706610 size 210
Universal grip wrench		1 pc. No. 708205 size 250
KNIPEX® snipe nose pliers with side cutter		1 pc. No. 713150 size 160
Internal circlip pliers, straight		1 pc. No. 719805 size J2
External circlip pliers, straight		1 pc. No. 719905 size A2
KNIPEX® side cutter		1 pc. No. 724900 size 160
RENNSTEIG cold chisel		1 pc. No. 740500 size 175
RENNSTEIG taper pin punch set and centre punch		1 pc. No. 745600 size 6 (2 - 6 mm; 120 mm)
Engineer's hammer with hickory handle		1 pc. No. 750110 size 300
Plastic hammer		1 pc. No. 754500 size 32
PB Swiss Tools reamer		1 pc. No. 831700 size 110
Fixed blade cable knife		1 pc. No. 844300 size 175
Plastic bottle oiler		1 pc. No. 083532 size 125
Insulating tape, black		1 pc. No. 083654 size BLACK
Marker pen, blue		1 pc. No. 085154 size B
Sheet steel toolbox (68 0300)		1× No. 693455 size 5/530
Tool case (68 0302)		1 pc. No. 690200



68 0302

66H **68 0275**	Assembly tool set, 90 pieces **with GARANT tool case**	eShop
66H **68 0280**	Assembly tool set, 90 pieces **without tool case**	eShop
Supplied with: **WIHA** plastic folding rule 2 m		1 pc. No. 466200 size 2
DICK high-performance flat file with handle		1 pc. No. 515000 size 200
GARANT mini bow saw		1 pc. No. 581195
GARANT combination spanner set		1 pc. No. 613610 size 9 (5.5 - 19 mm)
PB Swiss Tools L-wrench set for Torx®		1 pc. No. 624810 size 8 (TX6 - TX25)
GARANT hexagon key L-wrench set with ball point and retention function, in a plastic clip		1 pc. No. 627132 size 9 (1.5 - 10 mm)
GARANT socket set 1/4 inch		1 pc. No. 630299 size 6 (39 pieces)
GARANT slot-head screwdriver set		1 pc. No. 660036 size 6 (3.5 - 10 mm)
GARANT screwdriver for Phillips		1 pc. each No. 667702 size 1; 2
GARANT combination pliers		1 pc. No. 700940 size 180
KNIPEX® water pump pliers		1 pc. No. 705800 size 250
GARANT snipe nose pliers, angled		1 pc. No. 713440 size 200
KNIPEX® internal circlip pliers, straight		1 pc. No. 719790 size J2
KNIPEX® external Circlip pliers, straight		1 pc. No. 719890 size A2
GARANT side cutters		1 pc. No. 724840 size 160
PB Swiss Tools chisel taper pin punch set		1 pc. No. 745100 (6-piece)
Engineer's hammer with 3-component handle		1 pc. No. 750450 size 300
Combined engineer's hammer and soft hammer		1 pc. No. 754880 size 30
GARANT tool case (68 0275)		1 pc. No. 692790



68 0275

66H **68 0350**	Assembly tool set, 107 pieces **with sheet metal toolbox**	eShop
66H **68 0352**	Assembly tool set, 107 pieces **with X-ABS toolbox**	eShop
66H **68 0355**	Assembly tool set, 107 pieces **without container**	eShop
Supplied with: Dividers		1 pc. No. 457600 size 200
Scriber, double-ended		1 pc. No. 458400
STABILA® wooden folding rule		1 pc. No. 466005 size 2
DICK workshop files set, 2nd cut with handle, assorted, in a tool roll		1 pc. No. 517200 size 200 (5-piece)
Precision key files in a plastic wallet		1 pc. No. 518930 (6-piece)
Wire brush, 3-row		1 pc. No. 575000 size 3
Hacksaw frame with blade		1 pc. No. 580700 size 300
GARANT mini bow saw		1 pc. No. 581195
GARANT open-ended spanner 6 – 34 mm with clip		1 pc. No. 610610 size 12 (6×7 – 30×34 mm) with 1 pc. No. 611500 size 12
GARANT double-ended ring spanner, 6 – 22 mm		1 pc. No. 615610 size 8 (6×7 - 19×22 mm)
Hexagon key L-wrench set in a plastic clip		1 pc. No. 626072 size 9 (1.5 - 10 mm)
Torx® key L-wrench		1 pc. No. 624857 size 8 (TX6 – TX25)
Socket set 1/2 inch		1 pc. No. 637718 size 6 (16 pieces)
GARANT slot-head screwdriver set		1 pc. No. 660036 size 5 (3.5 - 8 mm)
PB Swiss Tools slot-head screwdriver, short		1 pc. No. 664100 size 6.5
PB Swiss Tools offset screwdriver for slot-head		1 pc. No. 664800 size 6.5
PB Swiss Tools voltage tester up to 250 V		1 pc. No. 665020 size 3.5
GARANT screwdriver for Phillips		1 pc. each No. 667702 size 1; 2
Combination pliers		1 pc. No. 703000 size 180
Water pump pliers		1 pc. No. 706151 size 250
KNIPEX® pincers		1 pc. No. 706610 size 210
Universal grip wrench		1 pc. No. 708205 size 250
Snipe nose pliers with side cutter		1 pc. No. 713200 size 160
Internal circlip pliers, straight		1 pc. No. 719805 size J2
External circlip pliers, straight		1 pc. No. 719905 size A2
Diagonal side cutter		1 pc. No. 725250 size 160
RENNSTEIG cold chisel		1 pc. No. 740500 size 175
RENNSTEIG cold cross-cut chisel		1 pc. No. 740600 size 150
RENNSTEIG taper pin punch set and centre punch		1 pc. No. 745600 size 6 (2 - 6 mm; 120 mm)
Engineer's hammer with 3-component handle		1 pc. each No. 750450 size 300; 500
Plastic hammer		1 pc. No. 754500 size 32
Ideal sheet metal shears with compound action		1 pc. No. 766042 size 260
Electrician's scissors		1 pc. No. 769005 size 130
PB Swiss Tools reamer		1 pc. No. 831700 size 110
Fixed blade cable knife		1 pc. No. 844300 size 175
Plastic bottle oiler		1 pc. No. 083532 size 125
Torch, LED light		1 pc. No. 081437 size BLACK
Insulating tape, black		1 pc. No. 083654 size BLACK
Marker pen, blue		1 pc. No. 085154 size B
Sheet metal toolbox (68 0350)		1× No. 693455 size 5/530
PARAT® X-ABS tool case (68 0352)		1 pc. No. 692671



68 0350



68 0352

68

Tools for bikes

A selection of suitable tool sets for bicycle applications is available from our e-shop.







Bicycle set 3, No. 68 0701 size 41

Compact bicycle tool set with ratchet, bit, sockets and a bit holder. Ideal as a universal companion for a wide variety of screwdriving applications. High-quality bit holder with Kraftform Plus handle for pleasant, ergonomic working that makes blisters and calluses a thing of the past. Supplied with two tyre levers with additional functions.



Bicycle set 5, No. 68 0703 size 5

Ultra-compact and lightweight bike tool with two 4-way bits and three tyre levers. Just one bit provides four different screwdriving profiles.



Tool set for electronics and electrical work

Note: **Tools are supplied loose.**



66H **68 0400**	Electronics tool set, 118 pieces **With tool case**	eShop
66H **68 0405**	Electronics tool set, 118 pieces **without case**	eShop
Content: **GARANT** calipers		1 pc. No. 410100 size 150
Stahlwille® combination spanner		1 pc. each No. 613500 size 3.2; 4; 5; 5.5; 7; 8; 10; 11; 13
Hexagon key L-wrenches		1 pc. each No. 626038 size 0.7; 0.9 1 pc. each No. 626037; 1.3; 1.5; 2; 2.5; 3; 4; 5 1 pc. each No. 626039; 1/16; 3/32; 1/8; 3/16
GARANT socket set 1/4 inch		1 pc. No. 630325 size SD (41 pieces)
PB Swiss Tools electrician's slot-head screwdriver		1 pc. each No. 663000 size 2; 2.5; 3.5; 4; 5.5
PB Swiss Tools slot-head screwdriver, short		1 pc. each No. 664100 size 5.5; 8
PB Swiss Tools offset screwdriver for slot-head		1 pc. each No. 664800 size 4; 5.5
PB Swiss Tools offset screwdriver for Phillips		1 pc. each No. 669400 size 1; 2
PB Swiss Tools screwdriver for Phillips		1 pc. each No. 668000 size 0; 1; 2; 1K; 2K
Inspection mirror		1 pc. No. 081620 size 23
Wera electronics slot-head screwdriver		1 pc. each No. 669900 size 2.5; 3; 4
Wera electronics screwdriver for Phillips		1 pc. each No. 669905 size 0; 1
Wera Pozidriv electronics screwdriver		1 pc. No. 669910 size 0
KNIPEX® water pump pliers Cobra®		1 pc. No. 705800 size 125
pair anti-magnetic tweezers, pointed		1 pc. No. 727520 size AM
pair anti-magnetic tweezers, shouldered / flat tips		1 pc. No. 727580 size AM
pair anti-magnetic reverse action tweezers, angled / flat tips		1 pc. No. 727700 size AM
pair anti-magnetic extraction tweezers for micro packages		1 pc. No. 727840 size AM
pair anti-magnetic tweezers, fully insulated, pointed		1 pc. No. 727920 size AM
Assembly forceps		1 pc. No. 727950 size 200
GARANT electronics side cutter		1 pc. No. 726210 size 125
GARANT electronics snipe-nosed pliers		1 pc. No. 727170 size 140
GARANT electronics flat-nose pliers		1 pc. No. 727165 size 140
GARANT vanadium side cutters		1 pc. No. 723040 size 160
GARANT automatic wire strippers		1 pc. No. 728613 size 6
Varnish stripping tweezers		1 pc. No. 728770 size 120
Cable cutter, small		1 pc. No. 730100 size 160
Parallel pin punch with sleeve		1 pc. No. 748201 size 9 (0.9 - 5.9 mm)
Engineer's hammer with hickory handle		1 pc. No. 750100 size 100
Tajima general-purpose knife with snap-off blades		1 pc. No. 844900
Adjustable spanners		1 pc. No. 813961 size 150
Insulating tape, black		1 pc. No. 083654 BLACK
Torch, LED light		1 pc. No. 081437 BLACK
PARAT® tool case (68 0400)		1 pc. No. 692500



66H **68 0450**	Electrician's tool set, 36 pieces **with leather case**	eShop
66H **68 0455**	Electrician's tool set, 36 pieces **without case**	eShop
Content: **STABILA®** wooden folding rule		1 pc. No. 466005 size 2
STABILA® light metal spirit level		1 pc. No. 467030 size 400
PUK® universal hacksaw		1 pc. No. 581220
Wera slot-head screwdriver, insulated to VDE		1 pc. each No. 663100 size 3.5; 4; 5.5; 6.5; 8
Voltage tester up to 250 V		1 pc. No. 665014 size 2.5
Screw-in fuse carrier key to EN 60900, fully insulated up to 1000 V		1 pc. No. 665800 from 2 - 63 A
Wera screwdriver for Phillips, insulated to VDE		1 pc. each No. 668600 size 1; 2
KNIPEX® combination pliers, insulated to VDE		1 pc. No. 701700 size 160
KNIPEX® water pump pliers, insulated to VDE		1 pc. No. 705740 size 250
KNIPEX® snipe nose pliers, insulated to VDE, with side cutter		1 pc. No. 713300 size 160
KNIPEX® side cutter, insulated to VDE		1 pc. No. 725300 size 160
KNIPEX® wire strippers, insulated to VDE		1 pc. No. 728750 size 160
JOKARI® cable stripping knife		1 pc. No. 728010 size 8 – 28
RENNSTEIG stone chisel, flat		1 pc. No. 742500 size 250
RENNSTEIG stone chisel, pointed		1 pc. No. 742600 size 250
RENNSTEIG electrician's chisel, flat		1 pc. No. 743000 size 250
GARANT engineer's hammer with hickory handle		1 pc. No. 750110 size 500
Club hammer with handle		1 pc. No. 751010 size 1
Milwaukee® carbide concrete drill set in a plastic case		1 pc. No. 786081 size 5 (∅ 4 –10 mm)
PB Swiss Tools reamer		1 pc. No. 831700 size 110
RUNPOTEC® cable insertion strip made from nylon		1 pc. No. 814862 size 10
Fixed blade cable knife		1 pc. No. 844300
Spatula		1 pc. No. 087650 size 50
Rubber mixing bowl		1 pc. No. 087680 size 125
Water application brush		1 pc. No. 087005 size 20
Insulating tape, black		1 pc. No. 083654 size BLACK
Torch, LED light		1 pc. No. 081437 size BLACK
PARAT® leather case (68 0450)		1 pc. No. 691200



Basic equipment tool selection

Application: Popular assortments for keeping in roller cabinets, workbenches, drawer cabinets etc.

66H **68 0560**	Tool set A / 95 pieces – basic set	eShop
Supplied with: **Tajima** pocket tape measure		1 pc. No. 462300 size 5
DICK half-round file, 2nd cut		1 pc. No. 513200 size 200
Hardwood file handle		1 pc. No. 519400 size 120
Precision key file set in metal case		1 pc. No. 518950 (6-piece)
Steel wire hand brush		1 pc. No. 575000 size 4
Stahlwille® double open-ended spanner set		1 pc. No. 611000 size 10 (6×7 - 27×30 mm)
Stahlwille® double-ended ring spanner set		1 pc. No. 615500 size 10 (6×7 - 27×30 mm)
Hexagon key L-wrench set		1 pc. No. 626072 size 8 (2 - 10mm)
Stahlwille® socket set, 1/2 inch, including drive accessories		1 pc. No. 637916 size 6 (28-piece)
Wera slot-head screwdriver set		1 pc. No. 660110 size 6 (3.5 - 10 mm)
Voltage tester 150 – 250 V		1 pc. No. 665014 size 2.5
PB Swiss Tools slot-head screwdriver short		1 pc. No. 664100 size 6.5
Wera screwdriver short for Phillips		1 pc. No. 668260 size 2S
Wera screwdriver set for Phillips		1 pc. No. 667710 size 3 (3 pieces)
KNIPEX® heavy duty combination pliers chrome-plated		1 pc. No. 700400 size 180
KNIPEX® water pump pliers		1 pc. No. 705900 size 250
KNIPEX® side cutter chrome-plated		1 pc. No. 724861 size 160
RENNSTEIG cold chisel		1 pc. No. 740500 size 175
RENNSTEIG taper pin punch set and centre punch		1 pc. No. 745600 size 6 (2 - 6 mm; 120mm)
GARANT engineer's hammer		1 pc. No. 750110 size 500
Wera plastic mallet with polyurethane inserts		1 pc. No. 754200 size 32
PB Swiss Tools bradawl with plastic handle		1 pc. No. 831600 size 110
RENNSTEIG three-edge hollow scraper with wooden handle		1 pc. No. 836010 size 150
RENNSTEIG flat scraper with wooden handle		1 pc. No. 837020 size 200
Tajima universal knife, 18 mm blade		1 pc. No. 845030
Plastic oiler with brass tube		1 pc. No. 083529 size 80
Telescopic magnetic retriever		1 pc. No. 081650 (length 160 – 670 mm)
Torch, LED light		1 pc. No. 081437 BLACK



68 0560

66H **68 0570**	Tool set V / 100 pieces – basic set	eShop
Supplied with: **Tajima** pocket tape measure		1 pc. No. 462300 size 5
DICK half-round file 200 mm, cut		1 pc. No. 513200 size 200
Hardwood file handle		1 pc. No. 519400 size 120
Precision key file set in metal case		1 pc. No. 518950 (6-piece)
Steel wire hand brush		1 pc. No. 575000 size 4
GARANT open-ended spanner set		1 pc. No. 610610 size 10 (6×7 - 27×30 mm)
GARANT double-ended ring spanner set		1 pc. No. 615610 size 10 (6×7 - 27×30 mm)
Hexagon key L-wrench set		1 pc. No. 626072 size 8 (2 - 10 mm)
Socket set, 1/2 inch, including drive accessories		1 pc. No. 638018 size 12 (33-piece)
Slot-head screwdriver set		1 pc. No. 660711 size 5 (3.5 - 8 mm)
Voltage tester 150 – 250 V		1 pc. No. 665014 size 2.5
PB Swiss Tools slot-head screwdriver short		1 pc. No. 664100 size 6.5
PB Swiss Tools screwdriver for Phillips, short		1 pc. No. 668000 size 2K
Screwdriver set for Phillips		1 pc. No. 668411 size 3 (1-3)
GARANT heavy duty combination pliers chrome-plated		1 pc. No. 700340 size 180
KNIPEX® water pump pliers		1 pc. No. 705700 size 250
GARANT side cutters chrome-plated		1 pc. No. 724840 size 160
RENNSTEIG cold chisel		1 pc. No. 740500 size 175
RENNSTEIG taper pin punch set and centre punch		1 pc. No. 745600 size 6 (2 - 6 mm; 120mm)
Engineer's hammer		1 pc. No. 750125 size 500
Wera plastic mallet with polyurethane inserts		1 pc. No. 754200 size 32
PB Swiss Tools bradawl 200 mm long with plastic handle		1 pc. No. 831600 size 110
RENNSTEIG three-edge hollow scraper with wooden handle		1 pc. No. 836010 size 150
RENNSTEIG flat scraper with wooden handle		1 pc. No. 837020 size 200
Tajima universal knife, 18 mm blade		1 pc. No. 845030 size 2K
Plastic oiler with brass tube		1 pc. No. 083529 size 80
Telescopic magnetic retriever		1 pc. No. 081650 (length 160 – 670 mm)
Torch, LED light		1 pc. No. 081437 BLACK



68 0570

40 kg | 100% | 20G 16G | 8G 10G | 8G 20G | ½″

GRID LINE

Garant

Roller cabinet with general-purpose tool selection

Compact roller cabinet in the new GridLine range with 7 drawers, of which 4 are equipped with the high-quality professional tools supplied. Consisting of the following: Spanners, 1/2 inch socket spanners, screwdrivers, pliers, hammers, files, striking tools, bits, hexagon key l-wrenches and supplementary items. The contents of the other 3 drawers can be individually selected. The general-purpose tool selection fits precisely in two-tone PE rigid foam inlays, in which each tool has its own defined place in the roller cabinet. The drawers of the roller cabinet are unlocked using a central catch integrated in the handle.
Each 75 mm drawer is supplied with 1 slotted partition No. 951510 size 75, each 125 mm drawer is supplied with 1 slotted partition No. 951510 size 125. If desired, the worktop can be exchanged for another worktop (such as a bamboo worktop).

Note:	**Tools are supplied loose.** **Other tool organiser systems for roller cabinets can be found from No. 952048.** **The equipped roller cabinet 689000 size 1 can be dispatched only to destinations within the EU.**

Systematic. Divisible.
With 7 drawers, offers room for a large number of tools.

Large area. Practical.
Scratch-resistant and non-slip X-ABS tray, which does not damage surfaces.

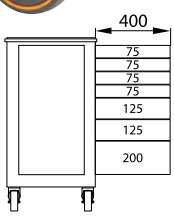
Visual. Powerful.
Two-tone powder-coated, silver combined with RAL 7016 anthracite.

20G 16G



68 9000

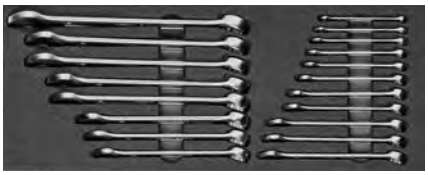
Mobile. Stable.
2 fixed wheels and 2 castors with brakes for reliable smooth running and stability.



Type		1
61H 68 9000	Roller cabinet incl. general-purpose tool selection, **174 pieces for 4 drawers**	–

See our eShop for further product details.

8G 20G



½″











8G 10G









100% ½″ ¼″

STAHLWILLE

Mobile workbench with universal tool set

Mobile workbench WB 621 with 7 drawers. The 2 upper drawers are equipped with a **137-piece Stahlwille tool set**, consisting of the following configuration:
Spanners, pliers, 1/4-inch and 1/2-inch sockets,
striking tools, circlip pliers, screwdrivers and supplementary articles.
The contents of the other 5 drawers can be individually selected.

Note:	**Tools are supplied loose.**

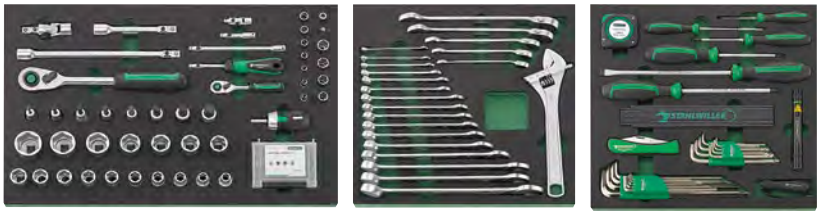


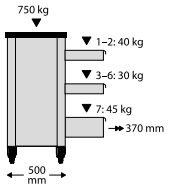


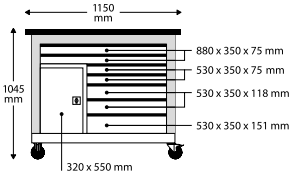
See our eShop for product details.

½″

¼″







Type		1
66H 68 9100	Mobile workbench with universal tool set **137 pieces**	eShop

68

25 kg 100% ¼″

Wera

Tool Rebel roller cabinet with tool selection

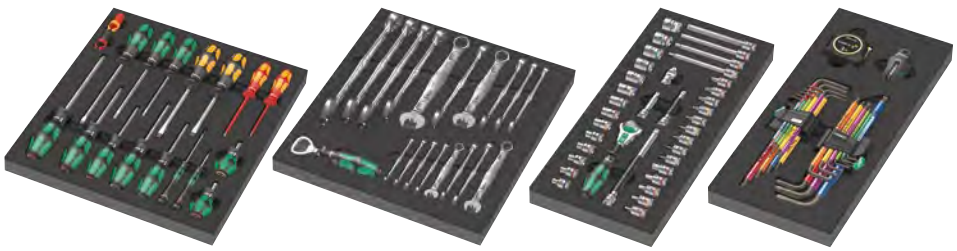
Roller cabinet in exclusive Tool Rebel design with 7 drawers (5 shallow, 2 tall).
The 2 upper shallow drawers are equipped with a high-quality 94-piece professional tool selection consisting of the following configuration:
Screwdrivers, 1/4-inch sockets, combination spanners and L-keys.
The contents of the other 5 drawers can be individually selected.

Note:	**Tools are supplied loose.**



See our eShop for product details.

¼″







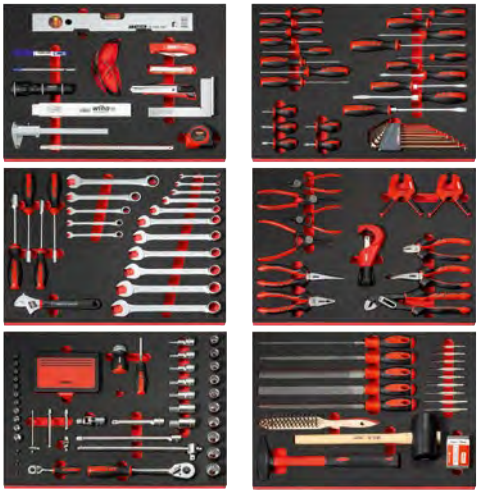
Type		1
66H 68 9200	Tool Rebel roller cabinet with tool selection 9700, **94 pieces**	eShop

HOLEX Roller cabinet with general-purpose tool selection

Compact roller cabinet with 7 drawers. The drawers are equipped with a **241-piece HOLEX general-purpose tool set**, consisting of the following configuration: Spanners, pliers, 1/4-inch and 1/2-inch sockets, striking tools, circlip pliers, screwdrivers and supplementary articles. The tools in the upper **6 drawers** fit into precise, two-tone PE rigid foam inlays, in which each tool has its own defined place in the roller cabinet. The tools in the bottom drawer can be inserted loose and individually supplemented with additional tools.

Note:	Tools are supplied loose. The equipped roller cabinet 689500 size 1 can be dispatched only to destinations within the EU.

See our eShop online for further product details www.hoffmann-group.com







68 9500_1

Type		1
66H 68 9500	Roller cabinet incl. general-purpose tool set, **241 pieces for 7 drawers**	–

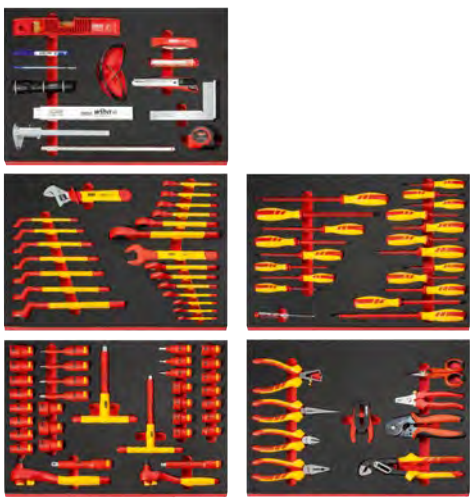
68

HOLEX Roller cabinet with electrician's tool set

Compact roller cabinet with 7 drawers. The drawers are equipped with a **111-piece HOLEX electrician's tool set**, consisting of the following configuration: Spanners, pliers, 3/8 inch and 1/2 inch sockets, screwdrivers, supplementary articles and tools for stripping, cutting and crimping. The tools in the top **5 drawers** fit precisely in two-tone PE rigid foam inlays, in which each tool has its own defined place in the roller cabinet. The contents of the other 2 drawers can be individually selected.

Note:	Tools are supplied loose. The equipped roller cabinet 689505 size 1 can be dispatched only to destinations within the EU.

See our eShop online for further product details www.hoffmann-group.com







68 9505_1

Type		1
66H 68 9505	Roller cabinet incl. electrician's tool set, **111 pieces for 6 drawers**	–

PARAT® Leather tool case drop-down front panel – with centre partition

Front panel opens with two strong zips. A wide compartment for larger tools. Front panel, side panels, and base are extra **reinforced.**

Base shell of galvanized steel. Centre partition can be swung forwards and backwards, or completely removed. With an internal pocket for drawings.





69 0200

63X 69 0200	Leather tool case with centre partition		eShop
Internal dimension length		mm	400
Internal dimension width		mm	140
Internal dimension height		mm	280
Weight		kg	2.9

Base shell of galvanized steel. Centre partition fixed, 180 mm high.





69 0300

63X 69 0300	Leather tool case with centre partition		eShop
Internal dimension length		mm	415
Internal dimension width		mm	165
Internal dimension height		mm	275
Weight		kg	3.5

PARAT® Leather tool case drop-down

Base shell and side panels of double skin, oil-resistant plastic. Front panel drops down partially.





69 0500

63X 69 0500	Leather tool case drop-down		eShop
Internal dimension length		mm	420
Internal dimension width		mm	160
Internal dimension height		mm	250
Weight		kg	2.6

Electrician's case

Leather bag, edges reinforced with aluminium angles. Base protected with studs. Internal flap cover with transparent pocket.
69 0820 – With new PARALOCK® magnetic lock

63X 69 0800	PARAT Electrician's case, leather		eShop
Internal dimension length		mm	220
Internal dimension width		mm	140
Internal dimension height		mm	250
Weight		kg	1.2

63X 69 0820	PARAT Electrician's case, leather **with magnetic catch**		eShop
Internal dimension length		mm	230
Internal dimension width		mm	140
Internal dimension height		mm	300
Weight		kg	1.5


69 0800


69 0820

Bag made of hard-wearing water-resistant nylon fabric. Patented storage system **with 2 removable unbreakable tool boards** and 2 container boxes for small parts.

64A 69 0850	Electrician's case **of nylon fabric**		eShop
Internal dimension length		mm	300
Internal dimension width		mm	120
Internal dimension height		mm	320
Weight		kg	1.3


2 container boxes.


69 0850

PARAT Electrician's case with front pockets

With 2 front pockets and shoulder strap (No. 690440).

63X 69 1200	Electrician's case		eShop
Internal dimension length		mm	390
Internal dimension width		mm	120
Internal dimension height		mm	280
Weight		kg	2.1

63X 69 1210	Electrician's case		eShop
Internal dimension length		mm	400
Internal dimension width		mm	160
Internal dimension height		mm	300
Weight		kg	2.6


69 1200 / 69 1210
Carrying strap with shoulder protection.


69 1200

ABS

PARAT Tool case made of leather / ABS plastic

Base and side walls made of unbreakable ABS material (without seams, thus eliminating wear at seams). Flap made of leather. Without internal divisions.

63X 69 1300	Tool case small		eShop
Internal dimension length		mm	360
Internal dimension width		mm	110
Internal dimension height		mm	170
Weight		kg	0.6

63X 69 1310	Tool case		eShop
Internal dimension length		mm	390
Internal dimension width		mm	170
Internal dimension height		mm	230
Weight		kg	1.3




69 1310

PARAT® Tool case made of leather / plastic with centre partition

ABS

Side parts made of wear-resistant ABS plastic(no seam wear), front wall and flap made of **extra strong** grained leather.



69 1450



Easy to see contents due to drop down front and back panels.

63X 69 1450	Tool case drop down front and rear, with centre divider		eShop
Internal dimension length		mm	420
Internal dimension width		mm	185
Internal dimension height		mm	315
Weight		kg	3.1

HDPE

Side panels of wear-resistant HDPE plastic (no wear at the seams), edges reinforced with aluminium angle section.



69 1460

63X 69 1460	Tool case drop down front and rear, with centre divider		eShop
Internal dimension length		mm	460
Internal dimension width		mm	210
Internal dimension height		mm	340
Weight		kg	4.5

PARAT® PARAMOVER® transport system

Three-piece handlebar made of robust lightweight aluminium with two 360° rotating case carrier plates that allow access to the tool cases at any time without needing to remove them. A toolbox is integrated at the bottom; it has a storage capacity of 48 litres and is ideal for tools. Each tool case is equipped with two tool boards and four toolholders and offers a capacity of 35 litres, in addition to an extra-large base tray with a height of 120 mm. The tool case is opened at the side, and the cover contains a document compartment, two business card pockets and two pen loops. For easy transport, the PARAMOVER® is equipped with non-slip handles made of TPE, which have a nubbed surface. The two free-running wheels have ball bearings and a diameter of 160 mm, ensure that the PARAMOVER® can be moved easily on uneven surfaces and offer a high load capacity.



Application example



Application example



69 2280

Type			1
63X 69 2280	PARASHERPA® transport system		(eShop)
External dimension length		mm	510
External dimension width		mm	570
External dimension height		mm	1110
Weight		kg	31

PARAT Multi-purpose case with drawers

With pull-out drawers made of unbreakable polyethylene, resistant against oil, acid, and petrol; can be divided individually using trays and dividers.
When case is closed, even the smallest parts cannot intermingle.
Front wall, side walls, and base are extra reinforced, edges are reinforced with aluminium trim.

69 1720 – **Internal fitments:**
With 5 inserts (4 drawers, 1 carrying tray).
The space between the inserts and the back wall (approx. 90 mm) can be used to hold additional tools.
CP-7 tool gripper up to diameter 15 mm on the rear panel.

69 1730 – Same as No. 691720, but with telescopic pull handle and low-friction rollers.

Supplied with: **Case, including dividing material:** 4 centre dividers No. 691760
4 trays No. 691750
8 small dividers No. 691770
(sufficient to sub-divide 1 drawer).

Optional extras: Dividers No. 691750 – 691770 and dividers set No. 691780.



CP-7 tool gripper:
Tools can be stored at random. Tools are gripped firmly.



69 1720 / 69 1730

63X	69 1720	Multi-purpose case with 4 drawers	eShop
63X	69 1730	Multi-purpose case with 4 drawers **and wheels and push handle**	eShop
Internal dimension length		mm	410
Internal dimension width		mm	220
Internal dimension height		mm	310
Weight (69 1720)		kg	4.9
Weight (69 1730)		kg	6



69 1720



69 1730

Dividing material

Made of unbreakable polyethylene, resistant against oil, acid, and petrol.

Application:

69 1750 – 4 trays fit into each drawer.

69 1760 – Centre divider insert No. 691750.

69 1770 – Small divider for further subdividing tray No. 691750.

63X	69 1750	1 tray	eShop
63X	69 1760	1 centre divider	eShop
63X	69 1770	1 small divider	eShop
Length (69 1760)		mm	110
Length (69 1770)		mm	43
Height (69 1760, 69 1770)		mm	36
Internal dimension length (69 1750)		mm	110
Internal dimension width (69 1750)		mm	90
Internal dimension height (69 1750)		mm	36



69 1750



69 1760



69 1770

Set of dividers

Supplied with: 4 trays No. 691750, 4 centre dividers No. 691760,
8 small dividers No. 691770 (sufficient for 1 drawer).

63X	69 1780	Set of dividers	eShop



69 1780

Tool case

Made of black synthetic leather.
With zip fastening on 3 sides.
Case opens out flat.
With 20 tape loops for carrying tools.

62G	69 1535	Tool case with zip fastening	eShop
Internal dimension length		mm	250
Internal dimension width		mm	40
Internal dimension height		mm	210



69 1535

Made of black synthetic leather.
With zip fastening on 3 sides and removable centre partition.
Case opens out flat.
With 16 shaft pockets and 25 tape loops for carrying tools.

62G	69 1538	Tool case with zip fastening and centre partition	eShop
Internal dimension length		mm	380
Internal dimension width		mm	70
Internal dimension height		mm	280





69 1538

Tool belt

Practical tool belt with shaft pockets and wide pockets for holding a wide variety of tools. Belt and pockets of water-resistant nylon fabric.

- 69 1500 – Empty tool belt for individual arrangement.
- 69 1502 – Large storage compartment and loops for tools and tape holder. 280×220×70 mm.
- 69 1504 – With securing compartment, measuring-tape and tape holder. 310×220×25 mm.
- 69 1506 – Holster for cordless screwdriver. 340×150 mm.
- 69 1508 – Large compartment for storing screws and nails. 160×140×60 mm.
- 69 1510 – Tool belt with pockets, measuring-tape and hammer holder.

Suitable for:

69 1502–1508 – Tool belt No. 691500.


69 1500


69 1502


69 1506


69 1504


69 1508

64A	**69 1500**	Tool belt, without tools	eShop
	Strap length	mm	920 – 1350

64A	**69 1502**	Electrician's case	eShop
64A	**69 1504**	Pocket with clip compartment	eShop
64A	**69 1506**	Holster	eShop
64A	**69 1508**	Nail bag	eShop

64A	**69 1510**	Tool belt	eShop
	Strap length	mm	920 – 1350
	Weight	kg	0.3

Configuration example – Supplied without tools.



69 1510

Modular X18 textile tool rucksack

- Practical and comfortable: fully fold-up front, removable tool board and ergonomic back padding.
- Individual: optimum flexibility thanks to innovative FIDLOCK® adapter and MOLLE straps.
- Ready for any challenge: with two separate internal compartments for tools, measuring devices, notebooks or tablets.

Tough fabric made of sustainable recycled synthetic fibres: splash-proof and easy to clean. Waterproof base shell made of impact-resistant plastic for stability when open and closed, 6 cm high. 1 MOLLE strap inside and 4 MOLLE straps outside for attaching any adapters, carabiners, accessories as required. Quick FIDLOCK® connectors: a magnetic fastener allows the chest strap and modular pockets to be fastened or released in no time.
With a total of 21 holders and 37 pockets, some with zip fasteners, which can be locked. Also with case tab for attaching to telescopic handles on tool cases. Tested load capacity: up to 15 kg tool weight. Large tool board in the front can be fixed in various positions.

Material: Made of tough and sustainable recycled synthetic fibres.


Separate laptop compartment (up to 15 inch)


Comfortable back padding with integrated FIDLOCK® fastener.


Large tool board in the front area with adjustable opening width.

Type		1
64D **69 2245**	Modular X18 textile tool rucksack	eShop
External dimension length	mm	350
External dimension width	mm	250
External dimension height	mm	500
Weight	kg	2.9

Garant GreenPlus textile tool bag

The new **GARANT GreenPlus textile bags** combine the best of 2 worlds: They impress with their sustainability while being very comfortable to wear and offering outstanding ergonomics, excellent durability, ideal access and optimum flexibility. They are produced according to the comprehensive and strict standards of the **bluesign®** system, taking into account the needs of people, the environment and resources. Help shape a more sustainable future. With optimised padding system for even better ergonomics and comfort.



69 2210

Textile tool rucksack with 2 main compartments:

- One main compartment with 2 inside pockets, a robust tool board with 32 shaft pockets and a lockable zip fastener.
- One main compartment with 2 separate, padded compartments for laptops up to 15 inches and tablets and a lockable zip fastener.

Front pocket on the rucksack with mobile phone pocket and business card pocket, pen loops, key holder and 2 storage compartments. Small front pocket with orange zip fastener. With compression straps at the side to reduce the volume so that the weight can be carried as close to the body as possible and to allow additional equipment to be attached to the outside. Anatomically shaped shoulder strap and padded carrying handle. With ergonomic body-contact back system and breast strap for perfect load distribution and optimally balanced, secure seating. Splash–proof base with water edge and 4 stand feet. With elastic outer pockets and a reflective strip for good visibility.

Material: A combination of 420 denier nylon yarn and 200 denier polyester yarn, for impressive tear-resistant and lightweight performance.



Type		1
61G 69 2210	GARANT GreenPlus textile tool rucksack	eShop
External dimension length	mm	350
External dimension width	mm	220
External dimension height	mm	470
Weight	kg	2.3



69 2230

Textile tool shoulder bag with 2 generous main compartments:

- 1 main compartment for tools with 15 shaft pockets and 25 rubber loops.
- 1 main compartment for documents and papers up to size A4 and a padded laptop compartment for laptops up to 15 inches in size.

There is also a front pocket with orange zip fastener and a mobile phone pocket and business card pocket, pen loops and key holder. There is another zip pocket on the back of the shoulder bag. Splash–proof base with water edge. Adjustable, removable shoulder straps with shoulder padding. On the back there is a suitcase loop to attach the bag to the telescopic handle of a suitcase. With reflector strips for good visibility.



Type		1
61G 69 2230	GARANT GreenPlus textile tool shoulder bag	eShop
External dimension length	mm	450
External dimension width	mm	120
External dimension height	mm	320
Weight	kg	1

Textile installer bag with large main compartment with 13 shaft pockets, with elastic closure. 2 short and one long external pocket (with zip fastener compartment) and 3 additional elastic external pockets. Stow-away cover with additional opening for use of the comfortable aluminium carrying handle. Splash–proof base with water edge and 6 stand feet. Adjustable, removable shoulder straps with shoulder padding. With reflector strips for good visibility.



69 2250

Type		1
61G 69 2250	GARANT GreenPlus textile installer bag	eShop
External dimension length	mm	470
External dimension width	mm	300
External dimension height	mm	300
Weight	kg	2.5

Garant GREENPLUS

A plus for people, the environment and resources

At Hoffmann, you will find high-quality tools that are not only durable, high-quality and effective, but environmentally friendly production and use is also our priority. Our GARANT GreenPlus tools are manufactured from sustainable materials and produced under strict environmental regulations. This means you can be sure that GARANT GreenPlus products will not only meet your needs, but also make a positive contribution to the environment. Make conscious choices and help shape a more sustainable future.

The GARANT GreenPlus product range will help you on your way to becoming more sustainable.

The products are marked with this icon in the catalogue.



08 8072_50
Thread-locking fluid*



09 4337_9_v
Gloves



08 8001_500
Cleaning agents and adhesives*



55 8570_500
Grinding oil*



08 8018_5
Ultrasonic cleaner*



69 2210_1
Textile tool rucksack

*The chemical products from the GARANT GreenPlus range are hazard-label-free and conserve resources, making them a real alternative to hazardous substances that have been used until now.

69

HOLEX Textile tool bags

High-quality textile tool bags as a companion for your day-to-day tasks.
With reflector strips for good visibility.

Material: Made from sturdy polyester fabric.

With shaped and stitched shaft pockets of varying sizes and cover flap for rolling up. The adjustable restraining strap and the plastic snap fastener for one-handed closure and opening ensure the tools are held securely.



69 2255

Length×width	mm	280×320	390×320	500×320	680×320	790×320
62G 69 2255	Textile tool roll with snap fastener	eShop	eShop ■	eShop ■	eShop ■	eShop ■
Number of tool pockets		5	9	12	15	20

With carrying handle and snap fastener. Bag is fully fold-away for convenient tool withdrawal. With 13 shaft pockets and 2 elastic straps for holding tools, in addition a business card pocket. The bag is also suitable for documents in A4 format.

Type		1
62G 69 2257	Textile tool case with snap fastener	eShop ■
External dimension length	mm	350
External dimension width	mm	50
External dimension height	mm	255
Weight	kg	0.7



Application example



69 2257

With 2 removable break-resistant tool boards
with 12 shaft pockets and 2 external pockets.
Additionally 1 set box for small parts.
The adjustable non-slip shoulder strap with padding ensures
pleasant wearing comfort.
With hook and loop fastener and feet.



Application example



69 2260



Including 2 tool boards
and 1 set box for small parts.

Type		1
62G 69 2260	Textile electrician's case	eShop ■
External dimension length	mm	230
External dimension width	mm	110
External dimension height	mm	320
Weight	kg	0.7

With the generous interior and handy outside pockets, there is plenty of storage space and good sorting of the tools.
With carrying handles, zip fastener and a splash-proof sturdy base with feet.
External: 6 external pockets for quick tool storage and access.

- Size 1 – Internal: Large main compartment with 5 internal pockets and 11 shaft pockets.
- Size 2 – Internal: Large main compartment with 5 internal pockets and 18 shaft pockets.
- Size 2 – The adjustable non-slip shoulder strap with padding ensures pleasant carrying comfort.



69 2262_1



69 2262_2

Type		1	2
62G 69 2262	Textile tool bag	eShop ■	eShop ■
External dimension length	mm	320	510
External dimension width	mm	210	200
External dimension height	mm	240	270
Weight	kg	0.5	1.2

The shoulder bag is divided into 2 large main compartments separated from each other, 1 of which is for tools and 1 for documents, writing material and a laptop.
The adjustable non-slip shoulder strap with padding ensures pleasant wearing comfort. With carrying handle, zip fastener and feet.
Internal: with 19 shaft pockets and 1 document pocket.
The shoulder bag also has a padded compartment for laptops up to 17 inches.
External: 1 front pocket with zip fastener and 2 with hook and loop fastener (1× front and 1× back).



Application example



69 2265

Type		1
62G 69 2265	Textile tool shoulder bag	eShop
External dimension length	mm	400
External dimension width	mm	120
External dimension height	mm	325
Weight	kg	1.1

Convenient backpack for carrying and storing tools.
The adjustable, padded, non-slip shoulder straps combine with a waist strap and back padding for comfortable carrying.
With carrying handle, zip fastener and feet.
Internal: With 1 removable tool board.
Total of 2 document pockets, 16 shaft pockets and 5 hook and loop fasteners.
External: 1 small front pouch with zip and 2 with hook and loop fasteners.
Additionally 2 side shaft pockets.



Application example



69 2267

Type		1
62G 69 2267	Textile tool rucksack	eShop ■
External dimension length	mm	320
External dimension width	mm	175
External dimension height	mm	415
Weight	kg	2.3



The backpack trolley can be easily pulled and carried on the back, both via the telescopic handle and the integrated wheels.
The wheels can be covered with a protective cover, which prevents any dirt coming loose during carrying.
The adjustable non-slip and stow-away shoulder straps with padding ensure pleasant wearing comfort.
With carrying handle, zip fastener and feet.
Internal: The backpack trolley has 2 removable tool boards which can be configured on both sides with 16 shaft pockets, 16 elastic straps and a padded compartment with that can be closed with a hook and loop fastener for a laptop up to 15 inches.
There is also a large zip fastener compartment inside, which provides further storage space.
External: 2 front pockets with zip fasteners.
Additionally 2 side shaft pockets.



Application example



69 2270

Type		1
62G 69 2270	Textile tool backpack trolley, mobile	eShop ■
External dimension length	mm	360
External dimension width	mm	215
External dimension height	mm	480
Weight	kg	4.25





Interior view

The tool bag trolley can be easily pulled via the telescopic handle and the integrated wheels (90 mm diameter) and transported on the shoulder.
The adjustable non-slip shoulder strap with padding ensures pleasant carrying comfort.
The bag has a splash-proof, sturdy base with feet.
The protective cover can be easily fastened with a hook-and-loop fastener.
External: 6 external pockets for quick storage and access, can be closed with practical hook-and-loop fastener. Also 6 shaft pockets for tools and 1 pocket on the front for a saw.
Internal: Large main compartment offering plenty of storage space.
Inside, located at the side: 1 pocket for documents and laptop, 1 small compartment for storing the protective cover, 5 shaft pockets and 12 elastic tabs.



69 2272

Type		1
62G 69 2272	Textile tool bag trolley, mobile	eShop
External dimension length	mm	530
External dimension width	mm	400
External dimension height	mm	400
Weight	kg	5.1

Material properties of tool cases X-ABS

X-ABS

- Composite plastic (2 components).
- Good scratch resistance.
- Break-proof (suitable for air travel).
- Resistant to oils, greases, hydrocarbons and fuels.
- Immensely robust (e.g. on baggage conveyors).



- Highly impact resistant.
- High distortion resistance.
- Non-slip and does not damage surfaces (rubberised effect).
- Maintains all its materials characteristics in the temperature range – 45 °C to + 85 °C.

X-ABS | 30 kg

Garant Service tool case of X-ABS

X-ABS is extremely impact resistant, tough and thus **suitable for air travel.** The surface is scratch-resistant, **non-slip (rubberised effect)** and **does not damage surfaces.** Anodised double aluminium frame with integral toggle cylinder locks and glass fibre reinforced positioning hinges for case lid positioning.

Application: Optimal case for customer service and service engineers due to the shell material, which does not damage surfaces, and high strength with low weight.



69 2790

Internally fitted with stitched shaft pockets:
1 dividable base shell, including tool board with 6 shaft pockets as cover,
1 tool board with 14 shaft pockets and document compartment on the front and back.

GIG	69 2790	Service tool case of X-ABS with shaft pockets		eShop
	Internal dimension length		mm	460
	Internal dimension width		mm	310
	Internal dimension height		mm	210
	Weight		kg	3.6

69 2705 – **Internally fitted with tool clips:**
1 base shell with sub-divisions including tool board with 1 tool holder as a cover (similar to No. 692750).
1 tool board with 2 tool holders (No. 692720).
1 board for documents, fixed to the cover.

69 2706 – **Internally fitted with stitched shaft pockets:**
1 base shell with sub-divisions including tool board with 16 shaft pockets as a cover (similar to No. 692717).
1 tool board with 26 shaft pockets on front and back (similar to No. 692711).
1 board for documents, fixed to the cover.



69 2705



69 2706



Extremely flat 4-fold telescopic extension handle with push button operation.

69 2705
69 2706

Plain bearing wheels Ø 60 mm.

GIG	69 2705	Service tool case of X-ABS **wheeled with tool clips**	eShop
GIG	69 2706	Service tool case of X-ABS **wheeled with shaft pockets**	eShop
	Internal dimension length	mm	460
	Internal dimension width	mm	360
	Internal dimension height	mm	190
	Weight	kg	6.6

Garant Protective mat

High quality anti-slip mat coated with washable nylon fabric and all-round binding strip.

Application: For protecting delicate surfaces (e.g. during service and maintenance) or as a versatile underlay for everyday use.



69 2800

GIG	69 2800	Protective mat	eShop
	Width	mm	890
	Depth	mm	500

Service tool case of polycarbonate

PC

- The integrated combination lock securely protects the case against unauthorised opening.
- Wide variety of storage options.
- Detachable wheels and push handle developed for tool cases for the first time.



- Stable and extremely shock-proof product made from injection-moulded polycarbonate – especially highly stressed areas can thus be provided with more material.
- The aluminium frame and the plastic corner guards provide a high level of stability at particularly stressed areas.
- The advantages of polycarbonate lie in its high impact toughness, strength, stiffness and hardness over a wide range of temperatures.

PC | 35 kg

Garant Service tool case of polycarbonate

The polycarbonate case shells are produced by injection moulding. The advantages of polycarbonate lie in its high impact toughness, strength, stiffness and hardness over a wide range of temperatures. Aluminium frame with plastic impact corners, integral combination lock and case lid positioning.

69 2815 – With wheels and push handle, 4-stage telescopic extension and ball bearing wheels.

69 2835 – **Internal fitments for internal height 185 mm:**
1 base tray including cover board with 12 double elastic straps. 2 transverse dividers, 6 partitions and 10 inserted boxes in the base shell. 1 tool board with 9 textile shaft pockets and tool holder on the front and back. 1 tool board with 6 textile shaft pockets and tool holder on the front and back.
With **removable wheels and push handle**, 4-stage telescopic extension and ball bearing wheels. Foldable wheels and push handle with 3 additional storage compartments.

69 2810/2815 – **Internal fitments for internal height 150 mm:**
1 base tray including cover board with 12 double elastic straps. 2 transverse dividers, 6 partitions and 10 inserted boxes in the base shell. 1 tool board with 9 textile shaft pockets and tool holders on the front and back.

More information and a product video at: https://hog.tools/koffer



69 2810



69 2815

61G			
69 2810	Service tool case with base tray and tool boards		eShop
69 2815	Service tool case with base tray and tool boards **mobile**		eShop
Internal dimension length		mm	435
Internal dimension width		mm	275
Internal dimension height		mm	150
Weight (69 2810)		kg	4.6
Weight (69 2815)		kg	6.7



69 2835

61G			
69 2835	Service tool case with base tray and tool boards **with removable wheels and push handle**		eShop
Internal dimension length		mm	435
Internal dimension width		mm	275
Internal dimension height		mm	185
Weight		kg	8.3

ABS

Tool case

Hard-wearing version of ABS material in black with all-round aluminium frame and metal hinges. The case comes with a sturdy and ergonomic carrying handle. 2 stickers for individual identification are supplied for the labelling field. The tool boards consist of dirt-repellent PP twin-wall sheets.



69 2600

15 kg

With 2 integral metal rocker locks and 1 three-digit combination lock.
Internal equipment:
a total of 41 insertion points:
1 base tray (secured with a push stud) with 4 longitudinal dividers (2× short and 2× long).
1 tool board with 12 insertion pockets and 1 flat pocket as a cover for the base tray.
1 tool board with a total of 20 insertion pockets on the front and back face.
1 tool board with 7 elastic straps and 1 securing pocket in the cover.



69 2600

Type		1
64D 69 2600	"Basic" tool case	eShop
Internal dimension length	mm	440
Internal dimension width	mm	350
Internal dimension height	mm	180
Weight	kg	5.1

20 kg

With 2 integral metal rocker locks and 1 three-digit combination lock.
With a telescopic handle recessed into the base, and two free-running skater rollers on the outer edges for comfortable transport.
Internal equipment:
a total of 54 insertion points:
1 base tray (secured with a push stud) with 4 longitudinal dividers (2× short and 2× long).
1 tool board with 13 insertion pockets and 1 flat pocket as a cover for the base tray.
1 tool board with a total of 21 insertion pockets on the front and back face.
1 tool board with 10 insertion pockets and 1 elastic strap on the front face and 1 securing pocket with 7 elastic straps on the back face.



69 2613

Type		1
64D 69 2613	"BIG Basic Move" tool case	eShop
Internal dimension length	mm	480
Internal dimension width	mm	350
Internal dimension height	mm	200
Weight	kg	6.8

30 kg

With a telescopic handle recessed into the base, and two free-running skater rollers on the outer edges for comfortable transport.
Free standing in all opening positions, thanks to stepped cover struts on each side with hinge mechanisms; the angle can be freely selected. Can be opened from one side or both sides. Base and cover can be opened independently of each other, and each has 2 metal rocker switches for fixing the position. In addition the base can be secured by 1 three-digit combination switch.
Internal equipment:
a total of 95 insertion points:
Cover:
1 tool board with 12 insertion pockets and 1 flat pocket on the front face and 10 elastic straps on the back face.
1 tool board with 7 elastic straps and 1 clamping pocket in the cover.
Centre part with 37 elastic straps.
Base:
1 base tray (secured with a push stud) with 3 longitudinal dividers (3× long)
1 tool board with 12 insertion pockets and 1 flat pocket as a cover for the base tray.
Centre part with 15 elastic straps and 13 insertion pockets.



69 2615

Type		1
64D 69 2615	"BIG Twin Move" tool case	eShop
Internal dimension length	mm	490
Internal dimension width	mm	370
Internal dimension height	mm	210
Weight	kg	8.6



69 2615

X-ABS | 30 kg

PARAT “Classic” customer service tool case, of X-ABS



X-ABS is extremely impact resistant, tough and thus **suitable for air travel.** The surface is scratch-resistant, **non-slip (rubberised effect)** and **does not damage surfaces.** Double aluminium frame with **integral toggle cylinder locks**, positioning hinges with stop, and base studs.
TSA locks: When travelling to the USA these locks can be opened for searching and relocked by the US “Transportation Security Administration” (TSA) using a master key. Forcible opening of the case (irreparably damaging the locks) for searching can thus be avoided.

Note:	Case available with other type of lock on request.



69 2500



69 2520

Internal fitments:
1 tool board with 25 shaft pockets and 1 securing pocket 400 mm,1 tool board with 10 shaft pockets, 1 cover board with 15 shaft pockets and 1 securing pocket 400 mm and 1 document pocket with 2 business card pockets and 2 penholder slots.

69 2500 – 1 base shell with cover board with sub-divisions, height 58 mm.
69 2541 – with 4-stage telescopic extension.
69 2520/2541 – 1 base shell with cover board with sub-divisions, height 88 mm.

63X 69 2500	X-ABS tool case with base shell, 2 tool boards and **TSA locks**		eShop
Internal dimension length		mm	460
Internal dimension width		mm	190
Internal dimension height		mm	310
Volume		l	27
Weight		kg	4.6



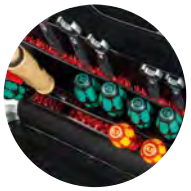
69 2541



			1
63X 69 2520	X-ABS tool case with base shell, 2 tool boards and **TSA locks**		eShop
63X 69 2541	X-ABS tool case with base shell, 2 tool boards and **TSA locks, wheels**		eShop ■
Internal dimension length		mm	470
Internal dimension width		mm	210
Internal dimension height		mm	360
Volume		l	36
Weight (69 2520)		kg	5.4
Weight (69 2541)		kg	8



“Classic” with tool holders



CP-7 tool gripper
Tools can be stored at random.
Tools are gripped firmly.

69 2641 – **Internal fitments:**
1 base shell with sub-divisions including tool board with 1 tool holder as a cover (No. 692750), 1 tool board with 2 tool holders (No. 692720), 1 tool board with 1 tool holder (No. 692730), 1 board for documents, fixed to the cover.

69 2631/2671 – **Internal fitments:**
1 base shell with sub-divisions including tool board with 1 tool holder as a cover (No. 692750), 1 tool board with 2 tool holders (No. 692720), 1 board for documents, fixed to the cover.



69 2631

Type			1
63X 69 2631	X-ABS tool case with base shell, 2 tool boards and **TSA locks**		eShop
63X 69 2641	X-ABS tool case with base shell, 3 tool boards and **TSA locks**		eShop
Internal dimension length		mm	460
Internal dimension width		mm	190
Internal dimension height		mm	310
Weight (69 2631)		kg	4.6
Weight (69 2641)		kg	5



69 2671

Type			1
63X 69 2671	X-ABS extra high tool case with base shell, 2 tool boards and **TSA locks**		eShop
Internal dimension length		mm	470
Internal dimension width		mm	210
Internal dimension height		mm	360
Weight		kg	5.7

X-ABS 20 kg

PARAT® "Silver" customer service tool case of X-ABS plastic

Integral locks in the frame, metal hinges and studs on the base.
Permitted as hand luggage on planes.

69 2101 – **Internal fitments:**
1 tool board with 26 shaft pockets (No. 692711),
1 tool board with 16 shaft pockets (No. 692712),
1 tool board with 10 shaft pockets (No. 692714),
1 tool board with clips and rubber strap (No. 692715).

69 2301 – **Internal fitments:**
1 dividable base shell, including tool board with 16 shaft pockets as cover,
1 tool board with 26 shaft pockets (No. 692711).





69 2101

69 2301

Type		1
63X 69 2101	ABS tool case with 4 tool boards	eShop
63X 69 2301	ABS tool case with base shell and tool boards	eShop
Internal dimension length	mm	460
Internal dimension width	mm	310
Internal dimension height	mm	170
Weight	kg	3.8

69

X-ABS

PARAT® "LAPTOOL" service engineer case of X-ABS plastic

The LAPTOOL combines a tool case and business case in one.
It has space for 39 tools and also a laptop (up to 17 inches)
in a separate padded compartment.
Integral locks in the frame, and metal hinges.
Mobile, thanks to trolley and smooth wheels.







With laptop compartment

Type		1
63X 69 1970	X-ABS service tool case **mobile**	eShop
Internal dimension length	mm	435
Internal dimension width	mm	210
Internal dimension height	mm	315
Weight	kg	6.4

Tool sets

Practical tool sets in lots of variations can be found in product group 68.



HOLEX Service tool case of polypropylene

The case shells are resistant to shocks, high temperatures, and acids. They are held together by a sturdy aluminium frame with integral flap locks and case lid lock. With rubberised carrying handle.

Internal fittings:
1 tool board with 20 shaft pockets, 16 rubber straps and 1 pocket for small parts.
1 sub-dividable base tray including tool board with 8 pockets and 6 rubber straps as cover.

69 2947 – With pull handle and wheels.

Note:	A combination lock as an alternative can be found under No. 692926 size 2.



69 2945



Shaft pockets with elastic collar for optimal retention of the tools.



Extendable telescopic handle with push–button extension/ retraction

69 2947

Type		1
62G 69 2945	Service tool case	eShop
Internal dimension length	mm	445
Internal dimension width	mm	315
Internal dimension height	mm	198
Weight	kg	4.15

Type		1
62G 69 2947	Service tool case **wheeled**	eShop
Internal dimension length	mm	445
Internal dimension width	mm	315
Internal dimension height	mm	190
Weight	kg	5.15

HDPE

Service tool case of HDPE with wheels and handle

TSA locks: When travelling to the USA these locks can be opened for searching and relocked by the US "Transportation Security Administration" (TSA) using a master key. Forcible opening of the case (irreparably damaging the locks) for searching can thus be avoided.

69 2905 – Integral TSA locks (No. 692915) and feet, metal hinges, carrying handle, 2 ball bearing mounted wheels (Ø 100 mm).
Internal fittings with stitched shaft pockets:
1 dividable base tray, including tool board with 18 shaft pockets as cover.
2 small parts bins in the base tray (No. 692909). 1 tool board with 26 shaft pockets, 13 rubber straps and 1 pocket for small parts on the front and back. 2 document pockets, fixed to the cover.

69 2927 – Extremely tough and impact-resistant HDPE case trays with aluminium frames, reinforced edges and 2 TSA locks (No. 692918).
Internal fittings with stitched shaft pockets:
1 base tray, including tool board with 18 shaft pockets as cover (No. 692908 size 2).
1 dimpled foam inlay in the base tray. 1 tool board with 24 shaft pockets, 12 rubber straps and 1 pocket for small parts on the front and back (No. 692908 size 1).
1 document pocket and 2 small parts containers in the cover.

Size H – Horizontal alignment of the case. 2 ball bearing mounted wheels (Ø 100 mm). Case with handle.

Size V – Vertical alignment of the case. 2 ball bearing mounted, **extra large wheels** (Ø 120 mm), for even more comfortable handling. Case with handle.
With **gas pressure springs** to hold the cover in position.

Application: Tool case **for frequent fliers.**



Extendable telescopic handle with push–button extension/ retraction.

69 2905



Extendable telescopic handle with push–button extension/ retraction.

69 2927_H



Extendable telescopic handle with push–button extension/ retraction.

69 2927_V

64A 69 2905	Service tool case of HDPE **wheeled**	eShop
Internal dimension length	mm	453
Internal dimension width	mm	345
Internal dimension height	mm	185
Weight	kg	7.5

Type		H	V
64A 69 2927	"Rock Turtle" service tool case of HDPE **wheeled**	eShop ■	eShop ■
Internal dimension length	mm	470	
Internal dimension width	mm	390	
Internal dimension height	mm	320	340
Weight	kg	8.5	

Tool case ALL.IN.ONE

PP | 50 kg

69 3150 – **Internal fittings:**
1 removable monitor stand
1 drawer with the internal dimensions 467 mm × 255 mm × 30 mm, empty, No. 693177
2 drawers with the internal dimensions 467 mm × 255 mm × 60 mm, empty, No. 693182
1 drawer with the internal dimensions 467 mm × 255 mm × 95 mm with 5 small parts storage bins in various sizes.

69 3155 – **Internal fittings:**
1 removable work tray
1 drawer 30 mm with dimpled foam inlay, No. 693179
1 drawer 60 mm with adjustable dividers (23 compartments for small parts)
1 drawer 60 mm with dimpled foam inlay, No. 693184
1 drawer 95 mm with 5 small part bins in various sizes.

69 3150/3155 – Sturdy tool case of polypropylene with wheels and push handle (4 sturdy wheels and telescopic extension) and 2 handles at the side. Cover and front flap removable. Can be locked centrally via a cylinder lock, also each flap can be locked separately with a padlock. Cover compartment with removable monitor stand, front compartment fitted with 4 drawers with extension limit. Tool cases can be safely stacked via a locking mechanism in the bottom and lid unit.

Optional extras:

69 3150/3155 – Mobility set with 4 wheels (360° pivoting) No. 693160.
Tool board for mounting in the upper cover No. 693170 / 693175 (only 1 board can be fitted).

Note:

69 3150/3155 – For individual configuration with a variety of drawers.
Tailor-made rigid foam inlays can be created using the eForm configurator.
Spare lock incl 2 keys available under No. 693161 and individual spare drawers available under No. 693177 – 693189.



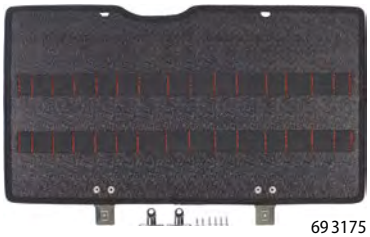
69 3155


69 3155

64A	**69 3150**	Service tool case ALL.IN.ONE, wheeled, with 4 drawers, empty	eShop ■
64A	**69 3155**	Service tool case ALL.IN.ONE, wheeled, with 4 drawers **with drawer dividers**	eShop
External dimension length		mm	581
External dimension width		mm	381
External dimension height		mm	455
Weight		kg	13.2


69 3160


69 3170


69 3175

64A	**69 3160**	Set of castors (4 pieces) for tool case ALL.IN.ONE	eShop
64A	**69 3170**	Tool board with 9 shaft pockets for tool case ALL.IN.ONE	eShop
64A	**69 3175**	Tool board with 30 elastic pockets for tool case ALL.IN.ONE	eShop

Water-tight case "Explorer"

Extremely sturdy tool case of impact resistant plastic, filled with pre-shaped chequer foam.
Lockable with padlock No. 085830 – 085875. Thick walls throughout for high stability.
Pressure-tight and resistant to chemicals. Temperature-resistant from –33 °C to 90 °C.
Size 2712; 3818; 4209; 4419; 4820; 5822 – Heavenly Delight versions with a weight saving of approx. 30% and increased strength compared to previous models.

Application: For protection, packaging, and transport of delicate parts and devices.

Note: Many other case sizes, fittings variants, and accessories available on request.

Individual foam inlays via the eForm configurator!



Handy pull handle and wheels (size 5326, 5833, and 7630).





Type		2712	3818	4209	4216	4419	4820	5326	5822	5833	7630
64A 69 2930	Water-tight case "Explorer"	(eShop)	eShop	eShop	eShop	(eShop)	eShop	eShop	eShop	eShop	eShop
External dimension length	mm	316	410	457	457	485	520	627	650	670	860
External dimension width	mm	270	340	366	366	414	435	475	510	510	560
External dimension height	mm	143	205	118	183	212	230	292	245	372	355
Internal dimension length	mm	276	380	420	420	445	480	538	580	580	765
Internal dimension width	mm	200	270	300	300	345	370	405	440	440	485
Internal dimension height	mm	120	180	95	160	190	205	250	220	330	305
Volume	l	6.6	18.4	12	20	29.2	35.5	53	56.1	84.2	113.1
Number of catches		2	2	2	2	2	2	4	4	4	7
Number of side handles		–	–	–	–	–	–	2	2	2	2
Number of wheels		–	–	–	–	–	–	2	–	2	2
maximum loading	kg	15	12.4	15	22	25	24.7	37.2	36.7	62	81.8
Weight	kg	1.3	2.75	2.6	3.2	2.91	4.2	11.3	8.4	12.7	16.4

PARAT Plastic toolbox

Made of polypropylene - light, robust, and impact resistant.
Large comfortable carrying handle with locking function and 2 quick-acting plastic catches.
Lockable using padlock with shackle Ø 5 mm (No. 085830 – 085875 all in size 30).
With removable carrying tray and small parts holder over spacious main compartment.



Type		440	475	585
63X 69 3200	Plastic toolbox	eShop	eShop	eShop
External dimension length	mm	445	480	580
External dimension width	mm	230	255	285
External dimension height	mm	230	260	290
Usable length	mm	415	450	545
Usable width	mm	200	215	240
Insert height	mm	50	55	50
Number of catches			2	
Weight	kg	1.8	2.4	3

raaco Toolbox "COMPACT" of polypropylene

Made of polypropylene - light, robust, and impact resistant. Resistant to most acids and bases.
Lockable using padlock with shackle Ø 5 mm (No. 085830 – 085875 all in size 30).
With removable carrying tray from size 20 (size 15 without carrying tray).



693310_27

Volume	l	15	20	27	47	62
64B 69 3310	Toolbox "COMPACT" of polypropylene	eShop	eShop	eShop	eShop	eShop
External dimension length	mm	426	474	474	540	621
External dimension width	mm	215	239	239	296	311
External dimension height	mm	170	190	248	292	322
Number of side handles		–	–	–	2	2
Number of small components drawers		–	–	2	2	4
Number of variable inserts		–	6	6	7	10
Weight	kg	1.5	1.9	2.6	4.6	7.1
Volume	l	15	20	27	47	62

Folding box of polypropylene

Stackable plastic box of polypropylene. 2 folding boxes of size 19 fit onto 1 folding box of size 42.
Volume reduction by folding the box up equals 64%.



693450_19



693450_42

Volume	l	19	42
61G 69 3450	Folding box of polypropylene	eShop	eShop
External dimension length	mm	400	600
External dimension width	mm	300	400
External dimension height	mm	220	
Height folded up	mm	89	80
Internal dimension length	mm	356	558
Internal dimension width	mm	257	358
Internal dimension height	mm	217	205
maximum load capacity	kg	15	40
Weight	kg	2	2.3

PP

Tool tote tray

Plastic container of polypropylene, with aluminium carrying handle.

61G			
69 3400	Tool tote tray		eShop
External dimension length		mm	420
External dimension width		mm	250
External dimension height		mm	210
Tray height		mm	120
Weight		kg	0.5



Modular plastic case L-BOXX®

ABS IP X4 L-BOXX

Of shock and impact-resistant ABS plastic, fully splash-proof.
The sturdy click-on mechanism allows the case to be quickly and easily attached and detached, and also the transport together of several modular plastic cases up to 40 kg.
The ergonomically-shaped handles and additional grip recesses make for great convenience when carrying. Lid can be loaded to 100 kg, loading capacity up to 25 kg.

69 3335 Size 102 – Modular plastic cases L-BOXX® No. 693330 size 102 including small components insert with lid inlay No. 693350.
Size 136 – Modular plastic case L-BOXX® No. 693330 size 136 including lid inlay No. 693355 and modular foam inlay No. 693352.
69 3337 – L-BOXX® modular plastic cases No. 693330 size 102 including 2 L-BOXX® mini small parts cases, small parts insert and lid inlay No. 693348.

Note:
Size 102 – The suitable roller trolley for transporting up to 5 items of the L-BOXX® size 102 is available under No. 693370 size 5.

Type			102	136	238
61G 69 3330	Modular plastic case L-BOXX®, empty		eShop	eShop	eShop
61G 69 3335	Modular plastic case L-BOXX® with inserts		eShop ■	eShop	–
61G 69 3337	Modular plastic case L-BOXX® with 2 small parts cases and inserts		eShop	–	–
External dimension length		mm		442	
External dimension width		mm		357	
External dimension height		mm	117	151	253
Internal dimension length		mm	375	375	378
Internal dimension width		mm	313	311	306
Internal dimension height		mm	71	107	209
Weight (69 3330)		kg	2.1	2.2	2.8



69 3330


69 3335_102


69 3335_136

IP X4 L-BOXX

Small parts case L-BOXX® Mini for storage of all types of small parts.
The sturdy click-on mechanism allows the case to be quickly and easily attached and detached, and also the transport together of several small parts cases. With handy carrying handle and 7 removable dividers for individual adjustment as required. Made of foodstuffs-compatible plastic. Load capacity up to 1.5 kg.

Suitable for: Modular plastic case No. 693330 size 102.

61G			
69 3340	Small parts case L-BOXX® Mini		eShop
External dimension length		mm	260
External dimension width		mm	155
External dimension height		mm	65
Weight		kg	0.4


69 3337


69 3340

L-BOXX

Open plastic toolbox LT-BOXX® with carrying handle that swings wide open for easy loading and unloading. Compatible with the modular plastic toolbox No. LT-BOXX® No. 693330. Load capacity up to 25 kg.

Type			170
61G 69 3345	Plastic toolbox LT-BOXX®		eShop
External dimension length		mm	442
External dimension width		mm	362
External dimension height		mm	185
Internal dimension length		mm	378
Internal dimension width		mm	311
Internal dimension height		mm	164
Weight		kg	2.26


69 3345

Accessories

69 3348 – 2 small parts cases L-BOXX® Mini and small components inlay with 8 pockets.
69 3350 – Small components insert with 24 compartments.
69 3352 – The lid inlay of hard foam fits flush and prevents the contents falling out.
69 3360 – Tool board with 6 shaft pockets for attachment to the lid (instead of the lid inlay).
69 3362 – Document board for documents up to size DIN A4 for attachment inside the cover (instead of the cover inlay).
69 3365 – Mobile unit (646×492×184 mm) with 4 castors (2 with brakes) to take the case 693330 / 693335 / 693337 / 693345. Load capacity up to 100 kg.
69 3367 – The suspended insert hooks into the BOXXes using two adhesive adapters, providing a second, removable level.

Suitable for:

69 3355 – Modular plastic case L-BOXX® No. 693330 size 136.
69 3367 – Plastic carrying case L-BOXX® no. 693330 size 238.
69 3348/3350 – Modular plastic case L-BOXX® No. 693330 size 102.


69 3348


69 3350


69 3352


69 3355


69 3360


69 3362

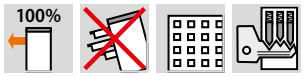

Application example


69 3365

61G 69 3348	2 mini small parts cases L-BOXX® Mini with small components insert including lid inlay	eShop
61G 69 3350	Small components insert including lid inlay	eShop
61G 69 3352	Lid inlay individual	eShop
61G 69 3355	Modular foam inlay	eShop
61G 69 3360	Tool board	eShop
61G 69 3362	Document board	eShop
61G 69 3365	Mobility unit	eShop

Type		238
61G 69 3367	Suspended insert	eShop


69 3367



Garant "L-Trolley" tool trolley

The suitable roller trolley for transporting up to 5 items of the L-BOXX® size 102 (not supplied - see catalogue hand tools and measurement tools, material group 69).
The stable sheet metal housing of the tool trolley is fitted with perforated side panels for quick retrieval of accessories. With 4 castors, 2 of them with parking brakes.
With integrated central locking system for drawers. Tamper-proof anti-tilt device (only one drawer can be opened at a time). Two handles of 2-component Haptoprene on the top of the roller trolley. Shelf of sheet metal. Plastic protectors to protect the upper corners of the trolley and reduce the risk of collision that would damage delicate surfaces.
Simple attachment of L-BOXX®es by a click system, secured at the back by brackets to prevent slippage.

Suitable for: For L-BOXX®es see No. 693330, 693335 and 693337, size 102 in each case.
Colour: Two-tone **powder-coated**, silver combined with RAL 7016 anthracite.

Note: Please note the maximum load capacities of the individual pull-out shelves listed in the operating instructions.


69 3370


Cover for the L-BOXX® fully swing-back.


Application example

Number of pull-out shelves		5
61G 69 3370	"L-Trolley" tool trolley, with 5 pull-out shelves	eShop
Height	mm	1085
Width	mm	570
Depth	mm	440
Weight	kg	38

Sheet metal toolbox

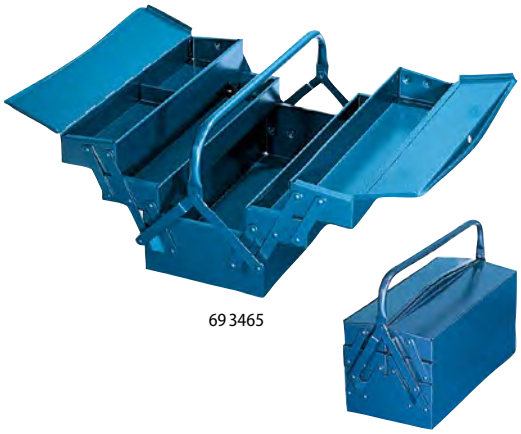
Lockable with padlock (No. 085830 ff). Upper parts attached with continuous hinge strip.
Especially strong construction, in part of **0.9 mm sheet steel.**
Colour: The box is orange and the handle anthracite grey powder-coated.



Type		5/530
66K 69 3455	Sheet steel toolbox "Extra"	eShop
External dimension length	mm	530
External dimension width	mm	200
External dimension height	mm	200
Version		5 pieces
Weight	kg	6.3

Sheet metal toolbox

Lockable with padlock (No. 085830 ff). Upper parts attached with continuous hinge strip.
69 3460 – Made of 0.6 mm sheet steel.
69 3465 – **Especially strong construction,** in part of **0.9 mm sheet steel.**
Colour: Tool box paint finish blue, powder-coated all round.



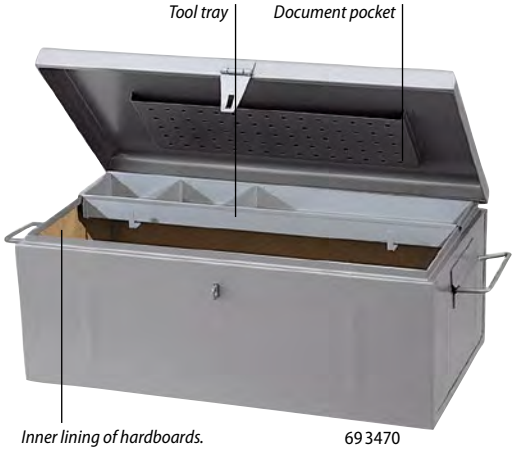
69 3465

Type		3/430	5/430	5/530	5/600
66K 69 3460	Sheet steel toolbox	eShop	eShop	eShop	–
66K 69 3465	Sheet steel toolbox "Robust"	–	eShop	eShop	eShop
External dimension length	mm	430	430	530	600
External dimension width	mm	200			
External dimension height	mm	150	200	200	200
Version		3-part	5-part	5-part	5-part
Weight (69 3460)	kg	3.3	4.3	5.3	–
Weight (69 3465)	kg	–	5.3	6.3	6.6

69

Sheet steel tool chest

69 3470 – 1 mm thick sheet metal with embossed strengthening. 2 carrying handles and lid stay. Lockable with padlock (No. 085830 ff).
Colour: RAL 7001 silver grey, **powder-coated.**



69 3470

Type		690	830	910
66K 69 3470	Sheet steel tool chest	eShop	eShop	eShop
66K 69 3475	Spare tool tray	eShop	eShop	eShop
External dimension length (69 3470)	mm	690	830	910
External dimension width (69 3470)	mm	360	440	530
External dimension height (69 3470)	mm	310	340	430
Usable length	mm	660	790	870
Usable width	mm	170		
Insert height	mm	50		
Weight (69 3470)	kg	16	21	27

Polypropylene tool chest with transport rollers

PP

Extremely hard-wearing tool chest made of polypropylene. Water-resistant, shock-resistant and corrosion-resistant. 2 laterally foldable handles for 2-person transport and for transport on the integrated rollers. Can be locked with a padlock. Stackable and just 6.3 kg for 89 litres of volume. The case can be supplemented by up to 2 tool inserts No. 693486 SET.



69 3476

Type		807
64A 69 3476	Polypropylene tool chest **with transport rollers**	eShop
External dimension length	mm	807
External dimension width	mm	470
External dimension height	mm	345
Weight	kg	6.3
Volume	l	89

1 tool tray with metal clips and 1 elastic strap to secure the tools in the tool chest. Tool tray with one removable divider.
Suitable for: Polypropylene tool chest No. 693476.



69 3486



Type		SET
64A 69 3486	Tool tray **with elastic strap and metal clips**	eShop

Small parts case “Boxxser”

Double-wall casing of PP and cover of polycarbonate ensure **high load capacity** and rigidity.
Convenient locking mechanism for single-hand operation, **carrying handle with safety lock.**
Matching profiles in the cover and base keep the exchangeable inserts and their contents in place during transport.

Supplied with: 3 different coloured labels for identification.

Number of inserts		15
64B **69 3520**	Small parts case “Boxxser”	eShop
External dimension length	mm	298
External dimension width	mm	284
External dimension height	mm	55
Fitted with: Number of inserts L×W×H		8 pcs. 55×39×47 mm; 1 pc. 109×39×47 mm; 1 pc. 163×39×47 mm; 4 pcs. 79×55×47 mm; 1 pc. 109×79×47 mm


69 3520_15

Number of inserts		14
64B **69 3530**	Small parts case “Boxxser”	eShop
External dimension length	mm	354
External dimension width	mm	323
External dimension height	mm	55
Fitted with: Number of inserts L×W×H		6 pcs. 55×39×47 mm; 2 pcs. 218×39×47 mm; 3 pcs. 79×55×47 mm; 2 pcs. 109×79×47 mm; 1 pc. 157×109×47 mm


69 3530_14

Number of inserts		25	45
64B **69 3540**	Small parts case “Boxxser”	eShop	eShop
External dimension length	mm	421	
External dimension width	mm	361	
External dimension height	mm	55	
Fitted with: Number of inserts L×W×H		25 pcs. 79×55×47 mm	40 pcs. 55×39×47 mm; 5 pcs. 79×55×47 mm


69 3540_25


69 3540_45

Number of inserts		14	20
64B **69 3550**	Small parts case “Boxxser”	eShop	eShop
External dimension length	mm	421	
External dimension width	mm	361	
External dimension height	mm	78	
Fitted with: Number of inserts L×W×H		6 pcs. 79×55×69 mm; 2 pcs. 157×55×69 mm; 1 pc. 235×55×69 mm; 4 pcs. 109×79×69 mm; 1 pc. 218×79×69 mm	15 pcs. 79×55×69 mm; 5 pcs. 109×79×69 mm


69 3550_14


69 3550_20

Number of inserts		18	20
64B **69 3560**	Small parts case “Boxxser”	eShop	eShop
External dimension length	mm	465	
External dimension width	mm	401	
External dimension height	mm	78	
Fitted with: Number of inserts L×W×H		8 pcs. 79×55×69 mm; 2 pcs. 157×55×69 mm; 2 pcs. 235×55×69 mm; 5 pcs. 109×79×69 mm; 1 pc. 218×79×69 mm	14 pc. 79×55×69 mm; 1 pc. 157×55×69 mm; 2 pcs. 235×55×69 mm; 1 pc. 109×79×69 mm; 2 pcs. 157×109×69 mm


69 3560_18


69 3560_20

Carrier box with small parts cases

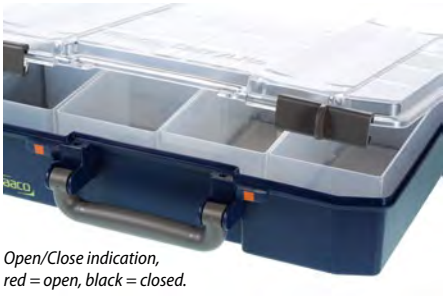
Mobile carrier box of polypropylene, steel blue.
Fitted with 4 small parts cases No. 693520 size 15 with 15 inserts.
Mouldings on the sides hold the small parts cases securely in place in the carrier box.

Number of small parts cases		4
64B **69 3580**	Carrying box with “Boxxser” small parts cases	eShop
External dimension length	mm	347
External dimension width	mm	305
External dimension height	mm	342
Fitted with: Small parts cases (each 298×284×55 mm)		4 pcs. each 15 inserts


69 3580

raaco Parts cases “CarryLite”

Case body of PP and cover of polycarbonate. Strong multi-point hinges ensure stability, and 2 slide catches lock the transparent cover. Profiles in the cover keep the exchangeable inserts and their contents in place during transport.



Open/Close indication, red = open, black = closed.

Number of inserts		10	16
64B 69 3610	Parts cases “CarryLite”	eShop	eShop
External dimension length	mm	337	
External dimension width	mm	278	
External dimension height	mm	57	
Fitted with: Number of inserts L×W×H		1 pc. 55×39×47 mm 2 pcs. 109×39×47 mm 1 pc. 163×39×47 mm 1 pc. 218×39×47 mm 2 pcs. 79×55×47 mm 1 pc. 157×55×47 mm 1 pc. 109×79×47 mm 1 pc. 218×79×47 mm	8 pcs. 55×39×47 mm 4 pcs. 79×55×47 mm 2 pcs. 157×55×47 mm 2 pcs. 109×79×47 mm



69 3610_10



69 3610_16

Number of inserts		25/1	25/2
64B 69 3620	Parts cases “CarryLite”	eShop	eShop
External dimension length	mm	413	
External dimension width	mm	330	
External dimension height	mm	57	
Fitted with: Number of inserts L×W×H		25 pcs. 79×55×47 mm	10 pcs. 55×39×47 mm 10 pcs. 79×55×47 mm 5 pcs. 109×79×47 mm



69 3620_25/1



69 3620_25/2

Number of inserts		9	12
64B 69 3630	Parts cases “CarryLite”	eShop	eShop
External dimension length	mm	337	
External dimension width	mm	278	
External dimension height	mm	79	
Fitted with: Number of inserts L×W×H		4 pcs. 79×55×69 mm 1 pc. 157×55×69 mm 2 pcs. 109×79×69 mm 2 pcs. 163×79×69 mm	8 pcs. 79×55×69 mm 4 pcs. 109×79×69 mm



69 3630_9



69 3630_12

Number of inserts		15
64B 69 3640	Parts cases “CarryLite”	eShop
External dimension length	mm	413
External dimension width	mm	330
External dimension height	mm	79
Fitted with: Number of inserts L×W×H		5 pcs. 79×55×69 mm 10 pcs. 109×79×69 mm

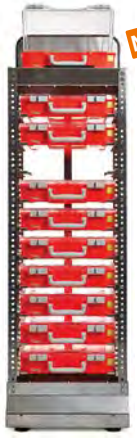


69 3640_15

raaco “CarryLite LMS” small parts cases

Case body made of **fluorescent material,** base made of PP, cover made of polycarbonate. Strong multi-point hinges ensure stability, and 2 slide catches lock the transparent cover. Special inserts snap securely into the click grid base and can be repositioned if necessary. Profiles in the cover keep the exchangeable inserts and their contents in place during transport. The case is RFID-compatible, has sealing openings and is equipped with an interchangeable ID label.

Advantage: Assortment case with position identification system (Location Management System).



69 3670

NEW

Depots for all “CarryLite” 5×10 and 4×8 on request.



69 3670_16

Number of inserts		16	20
64B 69 3670	“CarryLite LMS” small parts cases	eShop	eShop
External dimension length	mm	337	513
External dimension width	mm	278	330
External dimension height	mm	83	
Fitted with: Number of inserts L×W×H		8 pcs. 79×55×69 mm 2 pcs. 55×39×69 mm 2 pcs. 109×79×69 mm 2 pcs. 79×55×69 mm	10 pcs. 79×55×69 mm 5 pcs. 109×79×69 mm 5 pcs. 79×55×69 mm



69 3670_20

There's more in it for you!

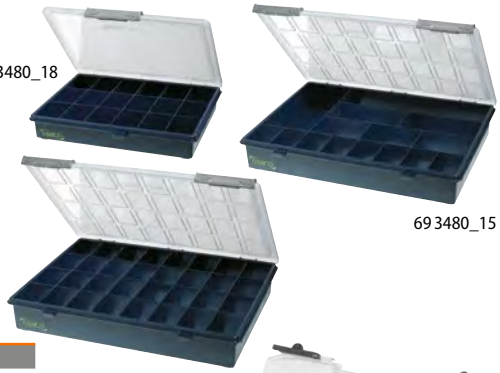
Now you can easily plan individual inlays for the CarryLite case, intuitively, clearly and entirely according to your wishes using our eForm configurator.
This ensures that your tools are kept ready to hand at all times.



raaco Small parts case

Strong hinges and sliding locks prevent the transparent lid springing open.
U-profiles in the lid prevent small parts getting mixed between divisions.

69 3480 – Body and lid of polypropylene. With fixed divisions.
69 3485 – Casing made from polypropylene. Cover made from polycarbonate. With carrying handle for comfortable transport and removable dividers.



69 3480_18

69 3480_15

69 3480_32

Number of compartments		18	15	32
64B 69 3480	"Assorter" small parts case	eShop	eShop	eShop
External dimension length	mm	240	338	338
External dimension width	mm	195	260	260
External dimension height	mm	43	57	57
Fitted with: Number of compartments length×width		18 pcs.55×39 mm	8 pcs. 55×39 mm; 3 pcs. 79×55 mm; 2 pcs. 118×55 mm; 1 pc. 235×55 mm; 1 pc. 165×79 mm	32 pcs. 55×39 mm

Number of compartments		8
64B 69 3485	"CarryLite" small parts case	eShop
External dimension length	mm	413
External dimension width	mm	330
External dimension height	mm	147



69 3485_8

raaco Carrier box with small parts cases

Mobile carrier box of polypropylene, black.
Fitted with 4 small parts cases (similar to No. 693520 / 693530 - 2 pieces with 15 compartments, 2 pieces with 17 compartments).
Mouldings on the sides hold the small parts cases securely in place in the carrier box.



69 3490

Number of small parts cases		4
64B 69 3490	Carrier box with "Assorter" small parts cases	eShop
External dimension length	mm	375
External dimension width	mm	265
External dimension height	mm	310
Fitted with: Small parts cases (each 338×261×57 mm)		2 pcs. each 15 compartments; 2 pcs. each 17 compartments

raaco For drawer units see No. 96 3251 – 96 3259







7 Innovations

NEW

We use this symbol to tag new items in our range of catalogue products



Pages **739–786**
Pliers with 3-component handle and KNIPEXtend interface



Page **742**
Cobra ES water pump pliers



Page **747**
HOLEX front-gripper grip wrench



Page **780**
HOLEX universal cable stripping tool



Page **793**
Crimping set



Page **799**
Sleeve pliers



Page **800**
Automatic cable tie gun



Page **801**
Cutting tool for plastic cable ties



Page **810**
Universal chisel hand protector sleeve





Page **847**
Various blind rivets



Page **819**
Carpenter's claw hammer with tubular steel handle



Page **819**
Carpenter's roofing hammer XSTRIKER FIBERTEC

Gripping, cutting, and striking tools

The whole tooling catalogue for these brands is available from the Hoffmann Group – just ask us!



Garant, KNIPEX, FACOM, HAZET, HOLEX — Sets of pliers, combination pliers, water pump pliers, grip wrenches, mesh cutting pincers — 70 734 – 750



Garant, KNIPEX, BAHCO, FACOM, HOLEX — Mechanic's and snipe nose pliers, circlip pliers — 71 751 – 761



Garant, LINDSTRÖM, Weidmüller, KNIPEX, HOLEX — Side cutters, electronics pliers, wire stripping tools, crimping tools, tweezers — 72 762 – 800



Garant, KNIPEX, VBW, BAUDAT, HOLEX — Bolt cutters, cable cutters — 73 801 – 808



SWISS TOOLS, FACOM, RENNSTEIG, HALDER, HOLEX — Chisels, pin punches and taper pin punches, centre punches — 74 809 – 815



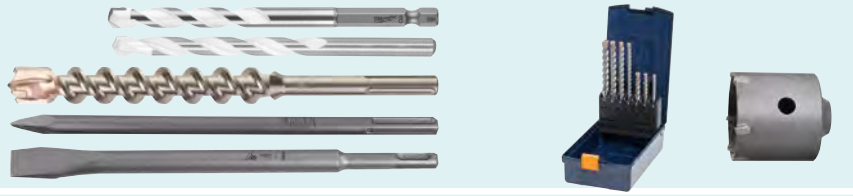
Garant, SWISS TOOLS, PEDDINGHAUS, HALDER, HOLEX — Hammers, non-sparking tools, wrecking bars — 75 816 – 830



Garant, Erdi, martor, LÖWE, intercable, HOLEX — Snips and heavy-duty shears, paper scissors, fabric scissors, hand-operated shears — 76 831 – 840



GESIPA, Milwaukee, HOLEX — Hand pop riveter, pop riveters and pop rivet nut setting tools, pop rivets — 77 841 – 847



Garant, BOSCH, alpen, Milwaukee, HOLEX — Masonry drills, hole saws, SDS-plus chisels, SDS-max chisels — 78 848 – 856



FISCH, BAHCO, Milwaukee — Woodworking tools — 79 857 – 859

7

Pictograms

Battery circuit system	MB 12	MB 18	CAS 18			
Types of bags and cases	L-BOXX	Modular case compatible with L-Boxx system.	HD	HD modular case of ABS with easy connection facility between them. Supplied in an HD box (modular case).		
Use of circlip pliers		For internal rings / holes				For external rings / shafts
Shank version, masonry drills and chisels	SDS PLUS	SDS MAX	Cylindrical		E 6,3	1/4 inch hexagon shank to DIN 3126 E 6.3
Material	HM	Carbide	INOX	Non-rusting stainless steel		
Use of masonry drills and chisels	For use in machines with impact mechanism		Rotary use only. Not suitable for hammer drills		max. 200 min^{-1}	Maximum speed 200 rpm
Standard	DIN 8039	Satisfies DIN 8039	ISO 5468	Satisfies ISO 5468		
Insulation	Fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201					
ESD	Identification of **tools compatible with ESD,** which avoid the build-up / discharge of static charges (**ESD** **E**lectro **S**tatic **D**ischarge). For the handles of these tools, DIN EN 61340-5-1 specifies a discharge resistance between 10^4 – 10^{11} Ohm.					
Cutting chamfer on electronics side cutters	**No bevel**	kW	Increasing upward pressure	The individual cutting operations are differentiated by the upper and lower pressure distribution. The finer the bevel on the jaw the less burr on the cut surfaces. Side cutters with no bevel give a virtually burr-free surface (ideal for soldered joints).		
	Very fine bevel	SFW				
	Fine bevel	FW				
	Bevel	W				

Colour coding system for the application range of side cutters:

Material	Strength	N/mm²	Example
Copper, plastics	soft	up to 250	Copper wire, plastics
Steel, bronze	medium hard	500 – 1000	Nails, wire nails
Steel	hard	1400 – 2200	Wire cables, spring wire
Steel	piano wire	from 2200	Hardened spring wire

Conversion table AWG into conductor cross section (mm²) or conductor Ø (Ø mm without insulation)

AWG	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
mm²	0.0324	0.04	0.0516	0.0646	0.08	0.102	0.128	0.163	0.205	0.259	0.325	0.412	0.519	0.653	0.823	1.04	1.31
Ø mm	0.2	0.23	0.26	0.29	0.32	0.36	0.4	0.46	0.5	0.57	0.64	0.72	0.81	0.91	1.02	1.15	1.3

AWG	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	1/0	2/0
mm²	1.65	2.08	2.63	3.31	4.15	5.27	6.62	8.35	10.6	13.3	16.8	21.2	26.7	33.6	42.4	53.4	67.5
Ø mm	1.4	1.6	1.8	2.1	2.3	2.6	2.9	3.3	3.7	4.1	4.6	5.2	5.8	6.5	7.3	8.2	9.3

HOLEX Snipe-nose pliers set, 3 pieces, long version

Robust pliers of chrome vanadium steel, nickel-plated. Double plastic coating on the handles for good grip, inner faces of jaws serrated.

Application: Gripping and assembling recessed or inaccessible parts.



Number of pliers		3
72A **70 0115**	Snipe-nose pliers set, long version **3 pieces**	eShop
Supplied with: 1 snipe nose pliers, straight		280 mm
1 snipe-nose pliers 45° angled		280 mm
1 mechanic's pliers (extractor pliers for spark plugs)		280 mm

Garant Pliers set 4 pieces

Pliers chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface. High cutting and gripping performance.
Water pump pliers, manganese phosphated, polished jaws, plastic coated handles.



Number of pliers		4
71A **70 0001**	Pliers set, with grips **4 pieces**	eShop ■
Supplied with: 1 combination pliers No. 700940		Size 180
1 water pump pliers No. 706001		Size 250
1 snipe-nose pliers angled No. 713040		Size 200
1 side cutter No. 724840		Size 160

HOLEX Pliers set 4 pieces

Chrome vanadium steel, bright finish head and joint. Handles with multi-component covering.



Number of pliers		4
72A **70 0108**	Pliers set, with grips **4 pieces**	eShop ■
Supplied with: 1 combination pliers No. 702995		Size 180
1 water pump pliers No. 706145		Size 250
1 snipe-nose pliers angled No. 713595		Size 200
1 side cutter No. 725245		Size 160

HOLEX Pliers set 4 pieces

Chrome vanadium steel, bright finish head and joint. Plastic coated handles.



Number of pliers		4
72A **70 0110**	Pliers set **4 pieces**	eShop ■
Supplied with: 1 combination pliers No. 703000		Size 180
1 water pump pliers similar to No. 706151		Size 250
1 snipe-nose pliers angled No. 713600		Size 200
1 side cutter No. 725250		Size 160

KNIPEX Cobra® water pump pliers set

Box joint (= double guidance). Designed to prevent fingers being trapped. **Push-button fine step adjustment**. Concave profile serrated jaws, self-clamping.
Pliers chemically blacked, polished head, plastic coated handles.

Standard: **DIN ISO 8976**
Material: Chrome vanadium electro-steel, drop forged.

Note: For KNIPEX® pliers wrench set see No. 813730 and mixed set, see No. 813735.



_5



_3

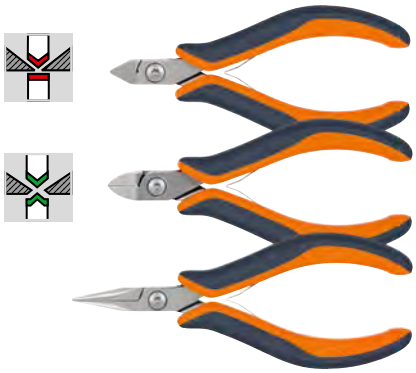
Number of pliers		3	5
73F **70 0050**	Set of water pump pliers	eShop ■	eShop ■
Supplied with: 1 each water pump pliers No. 705800		Size 180; 250; 300;	Size 125; 150; 180; 250; 300
Storage in		–	Textile roll-up case



Garant Precision electronics pliers set 3 pieces

Precision machined with slim shape. Cutter induction hardened (62–64 HRC), jaws with smooth gripping faces. Non-reflecting surface, matt shot-blasted with inlaid joint and countersunk screw.
Double interchangeable spring for easy operation. **2-component** grips made of conductive plastic.
Suitable for ESDs. Cutting edges precision ground.

Material: CNC-machined special tool steel for extremely accurate tolerances.

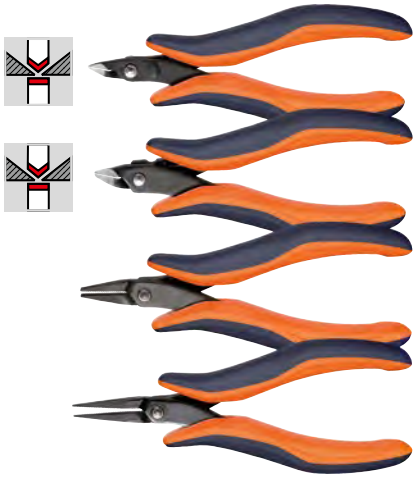


Number of pliers		3
71A 70 0157	Precision electronics pliers set **3 pieces**	eShop ■
Supplied with: 1 electronics side cutter No. 726250 (pointed head)		Size 125
1 electronics side cutter No. 726210 (normal head)		Size 125
1 electronics snipe-nose pliers No. 727170		Size 140
Stored in		ABS plastic box

Garant Electronics pliers set 4 pieces

Precision stamped, both pliers parts are accurately assembled due to carefully machined holes and ground surfaces. The cutter jaws are offset for a slight shearing action. With opening spring for ease of operation.
2-component grips made of conductive plastic. **Suitable for ESD work.**

Material: Made of carbon steel (C70), precision stamped and heat-treated with non-reflective phosphate.



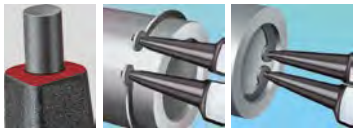
Number of pliers		4
71A 70 0161	Electronics pliers set **4 pieces**	eShop ■
Supplied with: 1 electronics side cutter No. 726682 (slim head – 9.5 mm)		Size 130
1 electronics angle cutter No. 726702 (normal head – 13.5 mm)		size 135
1 electronics flat nose pliers No. 727142		size 145
1 electronics snipe-nose pliers No. 727162		Size 155

70

Circlip pliers set

Forged grip and joint, precision made tips of special steel, special precision profile, pressed into the body. Pliers black, head ground, plastic coated handles.

Advantage: Pressed-in tips are highly durable even during continuous operation.
Up to 10 times the working life of turned tips.



Pressed-in precision tips. *For external circlips on shafts.* *For internal circlips in bores.*

Straight jaws

Standard: **DIN 5256 C** – for internal circlips.
Supplied with: 1 each circlip pliers No. 719770 size J1; J2; J3; J4.

Number of pliers			4
71A 70 0132	Garant	Precision circlip pliers set, 4 pieces **for internal circlips**	eShop
for internal circlip ∅		mm	12 – 25; 19 – 60; 40 – 100; 85 – 140
Tip ∅		mm	1.25; 1.8; 2.25; 3.2;
maximum overall length		mm	140; 180; 225; 320

Joint with **integral opening spring.**
Standard: **DIN 5254 A** – for external circlips.
Supplied with: 1 each circlip pliers No. 719870 size A0; A1; A2; A3.



70 0132

Number of pliers			4
71A 70 0142	Garant	Precision circlip pliers set, 4 pieces **for external circlips**	eShop
for external circlip ∅		mm	3 – 10; 10 – 25; 19 – 60; 40 – 100
Tip ∅		mm	0.9; 1.25; 1.8; 2.25
maximum overall length		mm	140; 140; 185; 230;

Offset jaws

Standard: **DIN 5256 D** – for internal circlips.
Supplied with: 1 each circlip pliers No. 719770 size J11; J21; J31; J41.

Number of pliers			4
71A **70 0137**	Garant	Precision circlip pliers set, 4 pieces **for internal circlips**	eShop
for internal circlip ∅		mm	12 – 25; 19 – 60; 40 – 100; 85 – 140
Tip ∅		mm	1.25; 1.8; 2.25; 3.2;
maximum overall length		mm	130; 170; 210; 305

Joint with **integral opening spring.**
Standard: **DIN 5254 B** – for external circlips.
Supplied with: 1 each circlip pliers No. 719870 size A01; A11; A21; A31.

Number of pliers			4
71A **70 0147**	Garant	Precision circlip pliers set, 4 pieces **for external circlips**	eShop
for external circlip ∅		mm	3 – 10; 10 – 25; 19 – 60; 40 – 100
Tip ∅		mm	0,9; 1,25; 1,8; 2,25
maximum overall length		mm	130; 130; 175; 220



700147

Straight and angled jaws

Joint for external ring pliers with **integral opening spring.**
Standard: **DIN 5256 C and D** – for internal circlips.
DIN 5254 A and B – for external circlips.
Supplied with:
Size 8 – 1 each circlip pliers No. 719790 size J1; J2; J11; J21.
1 each circlip pliers No. 719890 size A1; A2; A11; A21.
Size 4 – 1 each retaining ring pliers No. 719790 size J1 and J2.
1 each retaining ring pliers No. 719890 size A1 and A2.

Note:
Size 8 – Range without case see No. 700156 size 8



Pressed-in precision tips.



700155_4

Number of pliers			4	8
73F **70 0155**	KNIPEX	Precision circlip pliers set **for internal and external circlips**	eShop ■	eShop ■
for internal circlip ∅		mm	12 – 25; 19 – 60	
for external circlip ∅		mm	10 – 25; 19 – 60	
Tip ∅ for internal circlip pliers		mm	1.25; 1.8	
Tip ∅ for external circlip pliers		mm	1.25; 1.8	
maximum overall length of internal circlip pliers		mm	140; 180	130; 140; 170; 180;
maximum overall length of external circlip pliers		mm	140; 185	130; 140; 175; 185;
Storage in			Textile roll-up case	Plastic case



700155_8

FACOM Circlip pliers set for internal and external circlips, 20 pieces

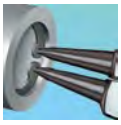
Forged grip and joint, interchangeable tips (clamping screw). Pliers chrome-plated, plastic coated handles. With **opening spring** and steplessly adjustable **opening stop.**
Standard: **DIN 5256 C and D** – for internal circlips.
DIN 5254 A and B – for external circlips.
Supplied with: 1 each circlip pliers for internal and external circlips with 9 pairs of interchangeable tips (3× pairs each straight, 45° angled and 90° angled).





73R **70 0170**	Circlip pliers set, 20 pieces **for internal and external circlips**	eShop
for internal circlip ∅	mm	8 – 12; 12 – 25; 19 – 63
for external circlip ∅	mm	3 – 10; 10 – 25; 19 – 63
Tip ∅ for internal circlip pliers	mm	0.9; 1.3; 1.8
Tip ∅ for external circlip pliers	mm	0.9; 1.3; 1.8
maximum overall length of internal circlip pliers	mm	180
maximum overall length of external circlip pliers	mm	180
Storage in		Plastic case

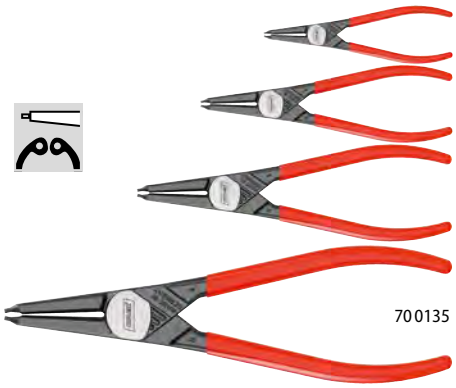
HOLEX 4-piece set of circlip pliers

Drop forged from a single piece of steel, plastic coated handles.

Standard: **DIN 5256 C** – straight jaws, for internal circlips.
Supplied with: 1 each circlip pliers No. 719805 size J1; J2; J3; J4.

Number of pliers		4
72A **70 0135**	4-piece set of circlip pliers **for internal circlips**	eShop
for internal circlip ∅	mm	12 – 25; 19 – 60; 40 – 100; 85 – 140
Tip ∅	mm	1,3; 1,8; 2,3; 3,2
maximum overall length	mm	135; 180; 225; 320


70 0135

Standard: **DIN 5254 A** – straight jaws, for external circlips.
Supplied with: 1 each circlip pliers No. 719905 size A0; A1; A2; A3.

Number of pliers		4
72A **70 0145**	4-piece set of circlip pliers **for external circlips**	eShop
for external circlip ∅	mm	3 – 10; 10 – 25; 19 – 60; 40 – 100
Tip ∅	mm	0.9; 1.3; 1.8; 2.3;
maximum overall length	mm	135; 135; 180; 225

Pliers set 4 pieces, VDE insulated

Pliers chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface. **Insulated to DIN EN IEC 60900 / VDE 0682-201** for working at voltages up to 1000 V.


70 0180

Number of pliers		4
71B **70 0180**	Garant Pliers set, 4 pieces **VDE insulated**	eShop ■
Supplied with: 1 combination pliers No. 701710		Size 180
1 snipe-nose pliers straight No. 713310		Size 200
1 side cutter No. 725310		Size 160
1 wire stripper No. 728755		Size 160

Bright finish head and joint, handles with multi-component covering. **Insulated to DIN EN IEC 60900 / VDE 0682-201** for working at voltages up to 1000 V.


70 0121

Number of pliers		4
72A **70 0121**	HOLEX Pliers set, 4 pieces **VDE insulated**	eShop ■
Supplied with: 1 combination pliers No. 701852		Size 180
1 snipe-nose pliers straight No. 713351		Size 200
1 side cutter No. 725351		Size 160
1 wire stripper No. 728761		Size 160

KNIPEX Snipe-nose combination pliers

Gripping faces with special three-point contour for secure gripping of flat parts. East cutting thanks to high ratio compound action. Milled slot in the gripping area enables small workpieces such as nails, pins and bolts to be held and pulled. Handy for working in inaccessible locations. Slim head profile with tapered jaws.

70 1651 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.
70 1655 – **Insulated to DIN EN IEC 60900 / VDE 0682-201** for working at voltages up to 1000 V.

Standard: **DIN ISO 5746.**
Material: Special tool steel.


70 1651


70 1655

		145
73F **70 1651**	Snipe-nose combination pliers chrome-plated, with grips	eShop
73F **70 1655**	Snipe-nose combination pliers, chrome-plated **VDE insulated**	eShop
Cutting capacity hard wire up to ∅	mm	2
Cutting capability medium hard wire up to ∅	mm	3

Heavy-duty combination pliers

Considerable cutting performance with little effort. Serrated jaws. Cutting edges additionally induction hardened (approx. 63 HRC); also suitable for piano wire.

70 0340 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
70 0400 – Jaws chrome-plated, handles with multi-component covering.
70 0401 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.
70 0440 – Jaws chemically blacked, polished head, plastic coated handles.
70 0445 – Jaws bright finished, handles with multi-component covering.
70 0450 – Jaws bright finished, plastic coated handles.

Standard: **DIN ISO 5746**.
Material: Special tool steel, drop-forged and oil-hardened.


70 0340


70 0400



70 0401


70 0440


70 0445


70 0450

overall length		mm	180	200	225
71B 70 0340	Garant	Heavy-duty combination pliers, chrome-plated, with two-component grips	eShop	eShop	–
73F 70 0400	KNIPEX	Heavy-duty combi pliers, chrome-plated, with grips	–	eShop	eShop
73F 70 0401	KNIPEX	Heavy-duty combi pliers, chrome-plated, with grips	eShop	–	–
73F 70 0440	KNIPEX	Heavy-duty combi pliers, polished	eShop	eShop	eShop
72B 70 0445	HOLEX	Heavy-duty combination pliers, bright finish, with two-component grips	eShop	eShop	–
72B 70 0450	HOLEX	Heavy duty combi pliers, bright finish	eShop	eShop	–
Cutting capacity hard wire up to ∅		mm	2.5	2.8	3
Cutting capacity piano wire up to ∅		mm	2	2.2	2.5

Heavy-duty combination pliers VDE insulated

Considerable cutting performance with little effort. Serrated jaws. Cutting edges additionally induction hardened (approx. 63 HRC); also suitable for piano wire. Insulated to **DIN EN IEC 60900 / VDE 0682-201** for working at voltages up to 1000 V.

70 1900 – Jaws chrome-plated, handles with multi-component covering.
70 1910 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.

Standard: **DIN ISO 5746**.
Material: Special tool steel, drop-forged, and oil-hardened.


70 1910


70 1900

overall length		mm	180	200	225
71B 70 1910	Garant	Heavy duty combination pliers, chrome-plated **VDE insulated**	eShop	eShop	–
73F 70 1900	KNIPEX	Heavy duty combination pliers, chrome-plated **VDE insulated**	eShop	eShop	eShop
Cutting capacity hard wire up to ∅		mm	2.5	2.8	3
Cutting capacity piano wire up to ∅		mm	2	2.2	2.5

FACOM Combination pliers with return spring

Chrome vanadium steel, chrome-plated head and joint, with heavy-duty grips. Serrated jaws. **Plastic opening spring for reduced operator fatigue.** Cutting edges additionally induction hardened (approx. 64 HRC), also suitable for piano wire.

Standard: **DIN ISO 5746**.


70 1661

Overall length		mm	180
73R 70 1661	Combination pliers, chrome-plated		eShop
Cutting capacity piano wire up to ∅		mm	2

Combination pliers, tool steel

Serrated jaws. Cutting edges additionally induction hardened (approx. 60 HRC).

70 0940 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
70 1500 – Jaws chemically blacked, polished head, plastic coated handles.
70 1501 – Pliers chrome-plated, plastic coated handles.
70 1515 – Jaws bright finished, handles with multi-component covering.
70 1520 – Jaws bright finished, plastic coated handles.
70 1601 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.

Standard: **DIN ISO 5746**.

Material:

70 0940 – Chrome vanadium steel, drop forged.
70 1500–1601 – Special tool steel.


70 0940


70 1601



70 1501


70 1500

overall length			mm	110	140	160	180	200	250
71B 70 0940	Garant	Combination pliers, chrome-plated, with 2-component grips		–	–	eShop	eShop ■	eShop	–
73F 70 1601	KNIPEX	Combination pliers, chrome-plated, with grips		–	eShop	eShop	eShop	eShop	–
73F 70 1501	KNIPEX	Combination pliers, chrome-plated		eShop	–	–	–	–	–
73F 70 1500	KNIPEX	Combination pliers, polished		–	eShop	eShop	eShop	eShop	eShop
72B 70 1515	HOLEX	Combination pliers, bright finish, with two-component grips		–	–	eShop	eShop	eShop	–
72B 70 1520	HOLEX	Combination pliers, bright finish		–	–	eShop	eShop	eShop	–
Cutting capacity hard wire up to ∅			mm	1.6	1.8	2	2.2	2.5	2.5
Cutting capability medium hard wire up to ∅			mm	2.5	2.8	3.1	3.4	3.8	3.8


70 1515

70 1520

70

Tool steel combination pliers, VDE insulated

Special tool steel; serrated jaws. **Insulated to DIN EN IEC 60900 / VDE 0682-201** for working at voltages up to 1000 V.
Cutting edges additionally induction hardened (approx. 60 HRC).

70 1700 – Jaws chrome-plated, handles with multi-component covering.
70 1735 – Jaws chrome-plated, plastic coated handles, **dip insulated.**

Standard: **DIN ISO 5746**.


70 1735

Dip insulated for maximum protection against electric shock and slipping

overall length		mm	160	180	200
73F 70 1735	Combination pliers, chrome-plated **VDE dip insulated**		–	eShop	eShop
73F 70 1700	Combination pliers, chrome-plated **VDE insulated**		eShop ■	eShop	eShop
Cutting capacity hard wire up to ∅		mm	2	2.2	2.5
Cutting capability medium hard wire up to ∅		mm	3.1	3.4	3.8


70 1700

1000 V

Pipe grip pliers of plastic, fully insulated

Jaws of glass fibre-reinforced plastic, handles with a soft plastic zone for a secure grip.
Fully insulated, reduces the risk of a short circuit.
For working at voltages up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.

Application: For fitting and disconnecting meters.


70 2400

overall length		mm	180
73F 70 2400	Pipe grip pliers of plastic **fully insulated to VDE**		eShop

HOLEX Vanadium combination pliers

Serrated jaws. Cutting edges additionally induction hardened (approx. 64 HRC); suitable even for piano wire.

70 2995 – Jaws bright finished, handles with multi-component covering.
70 3000 – Jaws bright finished, plastic coated handles.

Standard: **DIN ISO 5746**
Material: Chrome vanadium steel, drop forged.


70 2995


70 3000

Overall length		mm	160	180	200
72B **70 2995**	Vanadium combination pliers, bright finished, with two-component grips		eShop	eShop ■	eShop
72B **70 3000**	Vanadium combination pliers, bright finished		eShop	eShop ■	eShop
Cutting capacity hard wire up to ∅		mm	2	2.2	2.5
Cutting capacity piano wire up to ∅		mm	1.5	1.8	2

Vanadium combination pliers, VDE-insulated

Serrated jaws. Cutting edges additionally induction hardened (approx. 64 HRC); also suitable for piano wire.
For working at voltages up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.

70 1710 – Pliers chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
70 1800 – Pliers chrome-plated, handles with multi-component covering.
70 1852 – Pliers bright finished, handles with multi-component covering.

Standard: **DIN ISO 5746**
Material: Chrome vanadium steel, drop forged.


70 1710


70 1800


70 1852

overall length			mm	160	180	190	200
71B **70 1710**	Garant	Vanadium steel combination pliers, chrome-plated **VDE insulated**		eShop ■	eShop ■	–	eShop ■
73F **70 1800**	KNIPEX			eShop	–	eShop	–
72B **70 1852**	HOLEX	Vanadium combination pliers **VDE insulated**		eShop ■	eShop ■	–	eShop
Cutting capacity hard wire up to ∅			mm	2	2.2	2.5	2.5
Cutting capacity piano wire up to ∅			mm	1.5	1.8	2	2

KNIPEX Front gripping pliers TwinGrip®, extra slim head

Special, extra slim head shape for use in tight spaces.
Box joint (= double guidance). Designed to prevent fingers being trapped.
Fine adjustment at intervals by means of a spring-loaded pushbutton, for precisely adapting the width.
Front gripping and side gripping function.
Jaws chemically greyed, polished head, teeth additionally induction hardened (approx. 61 HRC).

70 5991 – Plastic coated handles.
70 5993 – Handles with multi-component sleeves and KNIPEXtend interface.

Material: Chrome vanadium electro-steel, drop forged.
Application: Reliable frontal gripping of even flat workpieces due to three-point system. Gripping, tightening and releasing of even hardened screw heads as well as worn bolts and screws.


70 5991



70 5993


New type of front gripping function, including for worn bolts and screws.


The push-button allows the gripping capacity to be adjusted in five steps (in the case of size 200) directly on the workpiece and it then engages securely – no accidental adjustments.

overall length		mm	150	200
73F **70 5991**	TwinGrip® front gripping pliers **chemically blacked**		eShop	eShop ■
73F **70 5993**	TwinGrip® front gripping pliers **chemically blacked, with grips**		–	eShop
Jaw length		mm	21	27
Jaw width		mm	9	11
Hexagon across flats		mm	16	22
Jaw capacity for pipes		in	5/8	7/8
Number of fine adjustment steps			3	5

Garant Water pump pliers with box joint

Box joint designed to prevent fingers being trapped. Push-button **fine step adjustment**, which also allows for quick adjustments directly on the workpiece. Concave profile serrated jaws, self-clamping. The teeth also run against each other in the rear of the jaw for a tight grip.
Surface manganese phosphated, polished teeth.
Ergonomically shaped handles with non-slip plastic coating.

Standard: **DIN ISO 8976**
Material: Chrome vanadium steel, drop forged.


70 6001_180


70 6001_250


70 6001_300

overall length		mm	180	250	300
71B	**70 6001**	Water pump pliers with stepped fine adjustment, black	eShop	eShop ■	eShop
Hexagon across flats		mm	36	46	60
Jaw capacity for pipes		in	1.1/2	2	2.3/4
Number of fine adjustment steps			19	25	30

SmartGrip® water pump pliers

Jaws chemically blacked, polished head, plastic coated handles.
Box joint (= double guidance). Designed to prevent fingers being trapped.
Stepped fine adjustment and fully automatic adjustment to the component by closing the handles.
Self-clamping on the component.

Standard: **DIN ISO 8976**
Material: Chrome vanadium steel, drop forged.


Automatic self-adjustment

overall length		mm	250
73F	**70 5400**	SmartGrip® water pump pliers, self-adjusting	eShop
Hexagon across flats		mm	36
Jaw capacity for pipes		in	1.1/4


70 5400

Cobra®ES water pump pliers, extra-slim head

Special, extra slim head shape for use in tight spaces.
Box joint (= double guidance). Designed to prevent fingers being trapped.
Fine step adjustment by means of a spring-loaded push button.
Concave profile serrated jaws, self-clamping.
Jaws chemically blacked, polished head, plastic coated handles.

Standard: DIN ISO 8976
Material: Chrome vanadium electro-steel, drop forged.


NEW
70 6251

overall length		mm	180	250
73F	**70 6251**	Cobra®ES water pump pliers with fine adjustment at intervals **extra slim head**	eShop	eShop
Hexagon across flats		mm	32	36
Jaw capacity for pipes		in	1.1/4	1.1/2
Number of fine adjustment steps			18	25



Pliers wrenches from No. 813501 onwards in Group 81



81 3730_5


81 3735_2


81 3501_250


81 3722_250

Quick adjustment by pressing a button.



Works on the ratchet principle.



Cobra® water pump pliers with fine adjustment at intervals

Box joint (= double guidance). Designed to prevent fingers being trapped. Concave profile serrated jaws, self-clamping.

70 5800 Size 100 – Single-handed fine adjustment by sliding, no push button required. Handles ridged on the outside.
70 5850 – Additional quick adjustment at the workpiece without pressing the button. Plastic coated handles.
70 5900 – Pliers chrome-plated, plastic coated handles.
70 5950 – Jaws chrome-plated, handles with multi-component covering.
Size 125–560 – With **push-button fine step adjustment**.
70 5800 Size 125–560 – Plastic coated handles.
70 5800/5850 – Jaws chemically blackened, head bright polished.

Standard: **DIN ISO 8976**
Material: Chrome vanadium electro-steel, drop forged.
Optional extras: Soft jaws No. 705805 size 180-300.





70 5800_100



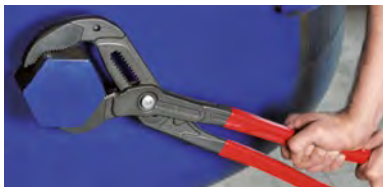
70 5800_125



70 5800_250



70 5800_400



Self-tightening on pipes and nuts: no slipping on the workpiece; the entire operating force is available for turning the workpiece; there is no need to apply high force to close the handles, so little effort is required.



Cobra® QuickSet 70 5850
1 *Press the button – the pliers open fully.*
2 *Apply the top jaw – simply push the pliers closed.*
3 *The joint pin locks into position when force is applied.*



With additional quick adjustment



70 5850_250



70 5900_180



70 5950_250

overall length		mm	100	125	150	180	250	300	400	560
73F 70 5800	Water pump pliers Cobra® chemically blacked		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop
73F 70 5850	Water pump pliers Cobra® QuickSet chemically blacked **with quick adjustment**		–	–	–	–	eShop ■	eShop ■	–	–
73F 70 5900	Water pump pliers Cobra® chrome-plated		–	eShop	–	eShop	eShop	eShop	–	–
73F 70 5950	Water pump pliers Cobra® chrome-plated with coated handles		–	–	–	–	eShop	eShop	–	–
Hexagon across flats		mm	28	27	30	36	46	60	95	120
Jaw capacity for pipes		in	1	1	1.1/4	1.1/2	2	2.3/4	3.1/2	4.1/2
Number of fine adjustment steps (70 5800, 70 5900, 70 5950)			11	13	11	18	25	30	27	20
Number of fine adjustment steps (70 5850)			–	–	–	–	25	25	–	–

Water pump pliers

Box joint (= double guidance). Designed to prevent fingers being trapped. Induction hardened. Notched serrated jaws, self-clamping on pipes and nuts. Multi-position stepped adjustment.

70 5700 – Jaws chrome-plated, handles with multi-component covering.
70 6101 – Red powder-coated, polished jaws and joint.
70 6145 – Pliers chemically blacked. Polished head. Handles with multi-component covering.
70 5500/6151 – Jaws chemically blacked, polished head, plastic coated handles.

Standard: **DIN ISO 8976**
Material: Chrome vanadium steel, drop forged.


70 5500


70 5700


70 6101


70 6151


70 6145

overall length			mm	175	250	300	400
73F 70 5500	KNIPEX	Alligator® water pump pliers, chemically blacked		eShop ■	eShop ■	eShop ■	eShop
73F 70 5700	KNIPEX	Alligator® water pump pliers,chrome-plated with coated handles		eShop	eShop ■	eShop	–
72B 70 6101		Water pump pliers powder-coated		eShop	eShop	eShop	–
72B 70 6151	HOLEX	Water pump pliers with plastic coating		–	eShop ■	eShop	–
72B 70 6145		Water pump pliers chemically blacked, with coated grips		–	eShop ■	eShop	–
Hexagon across flats (70 5500, 70 5700)			mm	36	46	60	95
Hexagon across flats (70 6101, 70 6151, 70 6145)			mm	30	36	48	–
Jaw capacity for pipes (70 5500, 70 5700)			in	1.1/2	2	2.3/4	3.1/2
Jaw capacity for pipes (70 6101, 70 6151, 70 6145)			in	1.1/4	1.1/2	2	–

Water pump pliers, insulated to VDE

Standard: **DIN ISO 8976**

Box joint (= double guidance). Designed to prevent fingers being trapped. Induction hardened. Notched serrated jaws, self-clamping on pipes and nuts. Multi-position stepped adjustment. **Insulated to DIN EN IEC 60900 / VDE 0682-201** for working at voltages up to 1000 V.

70 5730 – Jaws chrome plated, handles dip insulated.
70 5740 – Pliers chrome-plated, handles insulated with multi-component covering.
70 5746 – Pliers chemically blacked, head bright polished, handles insulated with multi-component covering.

Material: Chrome vanadium steel, drop forged.


70 5730


70 5740


70 5746

overall length			mm	250
73F 70 5730	KNIPEX	Alligator® water pump pliers **VDE dip insulated**		eShop
73F 70 5740	KNIPEX	Alligator® water pump pliers **VDE grips**		eShop
72B 70 5746	HOLEX	Water pump pliers **VDE grips**		eShop ■
Hexagon across flats (70 5730, 70 5740)			mm	46
Hexagon across flats (70 5746)			mm	36
Jaw capacity for pipes (70 5730, 70 5740)			in	2
Jaw capacity for pipes (70 5746)			in	1.1/2

Pliers chrome-plated, handles insulated with multi-component covering. Push-button **fine step adjustment.** Fully automatic adjustment when pushed directly on to the workpiece.


70 5750

overall length			mm	250
73F 70 5750	KNIPEX	Cobra® water pump pliers with fine adjustment at intervals **VDE grips**		eShop
Hexagon across flats			mm	46
Jaw capacity for pipes			in	2
Number of fine adjustment steps				24

Heavy-duty pincers

Sturdy model, wear resistant. Jaws chemically blackened, head bright polished.

Standard: **DIN ISO 9243**

Material: Special tool steel, drop-forged, and oil-hardened.


70 6610


70 6615

overall length		mm	160	180	210	225	250
73F 70 6610	KNIPEX	Heavy-duty pincers	eShop	eShop	eShop	eShop	eShop
72B 70 6615	HOLEX		eShop	eShop	eShop	–	–
Cutting capability medium hard wire up to ∅		mm	1.8	2	2.2	2.2	2.2

Mesh cutting pincers (pincers for wire mesh or steel fixers' nippers)

With special slim head and long handles. High strength precision ground cutting edges.

70 6665 – Induction hardened cutting edges, approx. 64 HRC. Plastic coated handles.

Standard:

70 6670–6675 – **DIN ISO 9242**

Material: Special tool steel, drop-forged, and oil-hardened.

Application:

70 6665 – Slim and narrow design for twisting difficult-to-access binding wires

70 6670/6671 – With special high leverage for interlacing mild steel mesh. Cuts soft wire up to 4.5 mm ∅. Reduced stress on sinews and muscles due to heavy damping of the cutting impact.


70 6670


70 6671


70 6665


70 6675

overall length			mm	200	220	250	280	300
73F 70 6670	KNIPEX	Mesh cutting pincers, galvanised		–	–	eShop	–	eShop
73F 70 6671		Powerful mesh-cutting pincers, chemically blacked		–	–	–	–	eShop
73D 70 6665	wiha	Powerful mesh-cutting pincers, black burnished		–	–	–	–	eShop
72B 70 6675	HOLEX	Mesh cutting pincers chemically blacked		eShop	eShop	eShop	eShop	eShop
Cutting capability medium hard wire up to ∅ (70 6670, 70 6671, 70 6665)			mm	–	–	3.3	–	3.8
Cutting capability medium hard wire up to ∅ (70 6675)			mm	2.5	2.5	2.5	2.8	2.8





Gas pliers (conical seat pliers)

Thin head with profiled serrated gripping jaws. Jaws chemically blacked, polished head, plastic coated handles.

Standard: **DIN ISO 5743**

Material: Special tool steel, drop-forged, and oil-hardened.


70 6800

overall length		mm	200
73F 70 6800	Gas pliers		eShop
Head thickness		mm	3.5
Jaw length		mm	45
suitable for pipe ∅ up to		mm	30

Wire twisting pliers

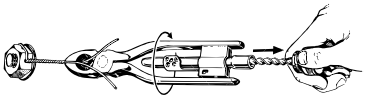
Body drop-forged. Inner face of jaws serrated. Induction hardened cutting edges. **Front of teeth chamfered to 40°.**

Material: Special steel, burnished or painted finish, bright finished head.

Application: For twisting locking wires (see diagram); by moving along any length can be worked. For wire ∅ up to approx. 1.6 mm. For right-handed and left-handed action, with automatic return.


70 7910


70 7920



overall length		mm	230	280	290
73A 70 7910	STAHLWILLE	Wire twisting pliers	eShop	eShop	–
72B 70 7920	HOLEX		eShop	–	eShop

Pliers with welded securing eye

Pliers with a securing eye for fitting a safety harness. Securing eye, welded to the grip, dynamic load capacity up to 3 m drop height.
Insulated to DIN EN IEC 60900 / VDE 06082-201 for working at voltages up to 1000 V.

Material: Chrome vanadium electro-steel, drop forged.

Application: For use in building construction, underground construction, building maintenance, on industrial structural work, roofing work, in exhibition stand construction, etc.

Note: Other versions and sizes available on request.



Overall length		mm	180
73F 70 6010	Combination pliers, chrome-plated **Insulated to VDE, with securing eye**		eShop
Cutting capacity hard wire up to ∅		mm	2.2


70 6010

Overall length		mm	250
73F 70 6025	Water pump pliers Cobra® chemically blacked **Insulated to VDE, with securing eye**		eShop
Hexagon across flats		mm	46
Jaw capacity for pipes		in	2
Number of fine adjustment steps			25


70 6025

Overall length		mm	200
73F 70 6030	Snipe-nose pliers, straight **Insulated to VDE, with securing eye**		eShop
Jaw length		mm	70


70 6030

overall length		mm	200
73F 70 6031	Snipe-nose pliers, angled **Insulated to VDE, with securing eye**		eShop
Jaw length		mm	73


70 6031

Overall length		mm	160
73F 70 6040	Side cutter **Insulated to VDE, with securing eye**		eShop
Cutting capacity soft wire up to ∅		mm	4
Cutting capacity hard wire up to ∅		mm	2


70 6040

overall length		mm	200
73F 70 6051	Heavy-duty side cutter, chrome-plated **Insulated to VDE, with securing eye**		eShop
Cutting capacity soft wire up to ∅		mm	4.2
Cutting capacity hard wire up to ∅		mm	3
Cutting capacity piano wire up to ∅		mm	2.5


70 6051

overall length		mm	200
73F 70 6070	Installation pliers with opening spring **Insulated to VDE, with securing eye**		eShop
Cutting capacity		mm²	5×2.5
Cutting capacity up to ∅		mm	15


70 6070

Fall protection for tools

Tool fall protection products can be found in Vol. 4 from No. 09 8230 onwards.


09 8240_6,8


09 8245_FIX_T2T


09 8250_FIX2



HOLEX Front-gripper grip wrench

Serrated jaws and sturdy spring steel body.
Span and clamping pressure adjustable with a knurled screw.
Fully nickel-plated. Handle with multi-component covering.

Material: Jaws of high-quality steel, hardened and tempered

Application: For gripping, tightening and loosening screw heads and bolts, as well as for clamping profiled and flat materials.
1. Use the knurled screw to adjust the gripping jaws to the screw head.
2. Tighten the adjustment screw another 90 – 180° clockwise.
3. Push the handles to lock the jaws. Turn and loosen the screw.






70 8310_175

overall length		mm	125	175
72B 70 8310	Front-gripper grip wrench		eShop	eShop
Jaw length (serrated area)		mm	20	27
Clamping width for screw head ∅		mm	3 – 9.5	7 – 12
Jaw capacity		mm	26	41

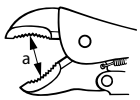
Garant Automatic grip wrench, self-adjusting

Automatically sets the appropriate clamping range for the jaws, allowing easy one-hand working. Setting the clamping force once ensures consistent clamping pressure over the entire clamping range.

Size 190 – Long, narrow jaw shape with serrated gripping faces.
Size 160; 230 – Oval jaw shape with serrated gripping faces.

Application: For quick and efficient gripping of profiled and flat materials. Clamping force up to 10,000 N.

Spare part: Spare springs No. 708301 sizes 5CJ and 8.5CJ.




70 8251_160


70 8251_190


70 8251_230

overall length		mm	160	190	230
71B 70 8251	Automatic grip wrench, self-adjusting		eShop	eShop	eShop
Jaw length		mm	24	53	30
Jaw capacity		mm	32	44	44

FACOM Universal grip wrench with single-handed locking and unlocking

With one-hand locking and unlocking. Push button for controlled and smooth release.
Upper jaw with a milled groove for gripping tubes and small diameters.

Application: For quick and secure gripping of profiled and flat materials. Clamping force adjustable up to 10,000 N.


70 8355

overall length		mm	250
73R 70 8355	Universal grip wrench		eShop
Jaw length		mm	45
Jaw capacity		mm	60

HOLEX Universal grip wrench

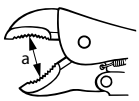
Serrated jaws and sturdy spring steel body.
Span and clamping pressure adjustable with a knurled screw. Fully nickel-plated.

70 8005 – Jaw shape oval.
70 8105 – Jaw shape double Vee.
70 8205 – Jaw shape upper straight, lower Vee.

Material: Jaws of chrome vanadium steel, drop forged.

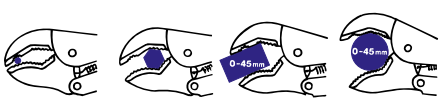
Application: For clamping profiled and flat materials. Clamping force up to 10,000 N.

Spare part:
Size 300 – Spare spring No. 708301 size 12.
Size 250 – Spare spring No. 708301 size 10.
70 8205 Size 175 – Spare spring No. 708301 size 7.




70 8005


70 8105




70 8205

overall length		mm	115	140	175	185	225	250	300
72B 70 8005	Universal grip wrench, jaw shape oval		eShop ■	eShop ■	–	eShop ■	eShop ■	–	eShop ■
72B 70 8105	Universal grip wrench, jaw shape double Vee		–	–	–	–	–	eShop ■	–
72B 70 8205	Universal grip wrench, jaw shape Vee		–	–	eShop	–	–	eShop ■	eShop
Jaw length (70 8005, 70 8105)		mm	16	23	–	32	38	35	47
Jaw length (70 8205)		mm	–	–	30	–	–	35	45
Jaw capacity (70 8005, 70 8105)		mm	25	28	–	35	40	40	60
Jaw capacity (70 8205)		mm	–	–	30	–	–	40	55

HOLEX Angled grip wrench

Long slim jaws, angled 70°. Serrated on the inside; at the rear of the jaws a non-serrated area for clamping hoses. The special head shape ensures that in the clamped condition the handles do not obstruct the working area.

Material: Jaws of high-quality steel, hardened and tempered.

Application: For clamping and gripping in restricted and inaccessible places, where it is essential that the handles do not obstruct the working area.

Spare part: Spare spring No. 708301 size 7.



overall length		mm	185
72B 70 8381	Angled grip wrench		eShop
Head height		mm	120
Jaw length (serrated area)		mm	60
Jaw capacity		mm	60

HOLEX Long nose grip wrench

Long slim jaws, serrated on the inside. Adjustable clamping pressure, pliers fully nickel-plated.

Material: Jaws of high-quality steel, hardened and tempered.

Application: For holding small and very small components (jaws approx. 4 mm thick at tip).

Spare part: Spare springs No. 708301 sizes 4, 5, and 7.



overall length		mm	135	175	220
72B 70 8401	Long nose grip wrench		eShop	eShop ■	eShop
Jaw length		mm	40	45	65

FACOM Grip wrench with adjustable jaws

Easy and safe to use. Trouble-free and quick opening by the **release lever** on the lower handle. With large clamping range and clamping depth, 5-step quick adjustment and additional fine adjustment. Lower jaw deeply cranked for clamping U–shaped and angle profiles, pipes etc. Serrated gripping jaws and special stable spring steel body. Fully nickel-plated.

Material: Chrome molybdenum vanadium steel jaws; drop forged.

Application: For secure gripping of profiled, flat, and tubular materials. Clamping force adjustable up to 10,000 N.







overall length		mm	230	250	275
73R 70 8901	Grip wrench PLUS with adjustable lower jaw		eShop	eShop	eShop
Jaw length		mm	40	60	80
Jaw capacity round materials		mm	80	110	135
Jaw capacity angled materials		mm	40	50	70

with pivoted lower jaw



overall length		mm	250
73R 70 8903	Grip wrench with pivoted lower jaw		eShop
Jaw length		mm	60
Jaw capacity round materials		mm	110
Jaw capacity angled materials		mm	50

HOLEX Grip wrench PLUS with pivoted lower jaw

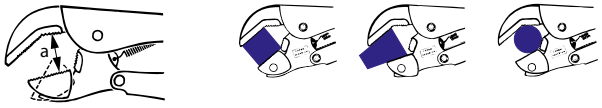
Serrated jaws and sturdy spring steel body. Lower jaw with movable clamping face. **Parallel and prismatic clamping is available over the entire clamping range.** Fully nickel-plated.

Material: Chrome vanadium steel gripping jaws, drop forged.
Application: Equally suitable for holding flat, profiled and round materials, clamping force up to 10,000 N.
Spare part: Spare spring No. 708301 size 10.



70 8701

overall length		mm	250
72B 70 8701	Grip wrench PLUS with pivoted lower jaw		eShop
Jaw length		mm	45
Jaw capacity for round and rectangular material		mm	45



HOLEX Locking C clamp with C jaws

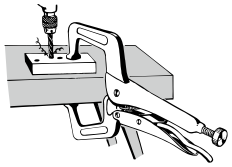
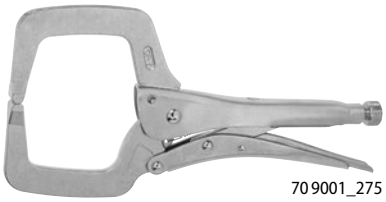
Narrow jaws with high C shape; wide clearance. Sturdy spring steel body. Nickel-plated handles and clamping jaws.

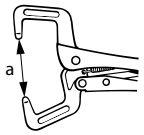
70 9101 – With movable jaws to protect the component.

Material:

70 9001 Size 150 – Jaws of high-quality steel, hardened and tempered.
Size 275 – Chrome vanadium steel clamping jaws, drop forged.

Application: Particularly suitable for clamping profiled material with high flanges or bulky components.
Spare part: Spare springs No. 708301 sizes 5 and 10.



70 9001_275




70 9101

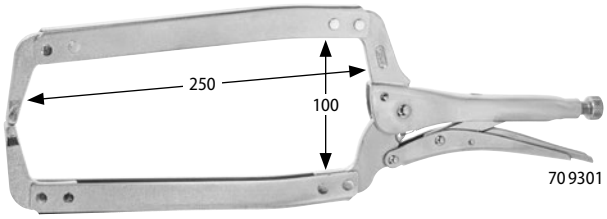
overall length		mm	150	275
72B 70 9001	Locking C clamp		eShop	eShop
72B 70 9101	Locking C clamp with movable jaws		–	eShop
Jaw capacity (70 9001)		mm	50	90
Jaw capacity (70 9101)		mm	–	75

HOLEX Locking C clamp with C jaws

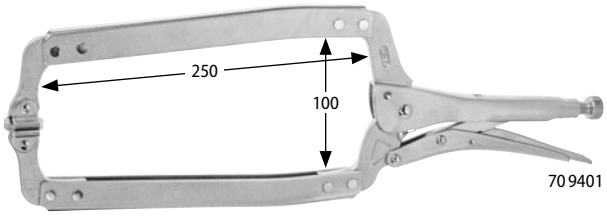
Deep long-reach clamp for exceptionally wide components. Body with adjustable screw, clamp, and release lever. Nickel-plated handles and frame.

70 9401 – With movable jaws to protect the component.

Application: Particularly suitable for clamping profiled shapes when drilling, welding or screw-fixing; large reach.
Spare part: Spare spring No. 708301 size 10.



70 9301



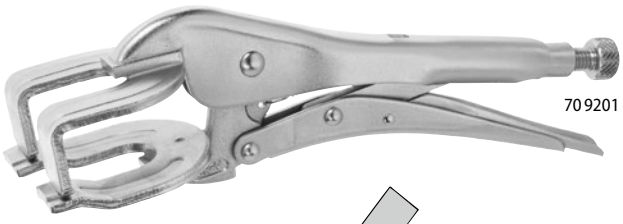
70 9401

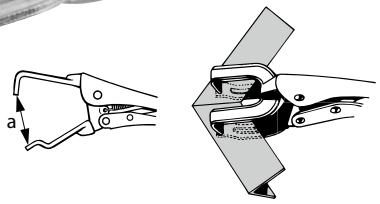
overall length		mm	455
72B 70 9301	Locking C clamp		eShop
72B 70 9401	Locking C clamp with movable jaws		eShop
Jaw capacity		mm	220
Throat		mm	250

HOLEX Welder's clamp

U-shaped clamping jaws; upper jaw angled 90°. Sturdy spring steel body. Fully nickel-plated.

Material: Chrome vanadium steel clamping jaws.
Application: For clamping profiled or flat materials etc. when welding.
Spare part: Spare spring No. 708301 size 10.


70 9201



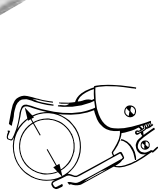
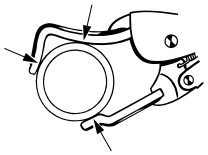
overall length		mm	275
72B 70 9201	Welder's clamp		eShop
Jaw capacity a		mm	55

HOLEX Pipe welder's clamp

U-shaped clamping jaws, the upper jaws have Vee profile to give secure three-point contact when clamping pipes. Sturdy spring steel body. Fully nickel-plated.

Material: Chrome vanadium steel clamping jaws.
Application: For centralised clamping of pipes and rods when welding.
Spare part: Spare spring No. 708301 size 10.


70 9501



Secure three-point contact

overall length		mm	280
72B 70 9501	Pipe welder's clamp		eShop
Jaw capacity for pipes		mm	10 – 70
Jaw capacity for pipes		in	2/5 – 2.3/4
Jaw capacity a		mm	90

HOLEX Chain clamp

70 9901 – With chain to grip a wide variety of components.
Clamps all shapes around which the chain can be wrapped.
Adjustable clamping pressure.

Application:

70 9901 – For holding and clamping a variety of shapes.
The clamping force can be adjusted, so it can also be used as a ratchet on round components.


70 9901


70 9911

overall length without chain		mm	225
72B 70 9901	Chain clamp		eShop
Chain length		mm	505
Capacity without extension chain		mm	150

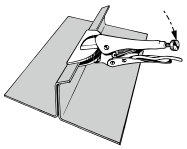
overall length		mm	505
72B 70 9911	Extension chain		eShop
Chain length		mm	505

HOLEX Sheet metal clamp

Particularly wide and flat clamping jaws. Sturdy spring steel body.
Fully nickel-plated.

Material: Chrome vanadium steel clamping jaws.
Application: Particularly suitable for holding, bending, and flanging sheet metal.
Spare part: Spare spring No. 708301 size 7.


70 9701



overall length		mm	180
72B 70 9701	Sheet metal clamp		eShop
Jaw width		mm	80
Jaw capacity		mm	45

Erdi Tinsmith's pliers

Strong, finely serrated jaws. Inlaid joint and sturdy handles.
Drop-forged and hardened. Head bright finished. Plastic coated handles.

Material: Chrome vanadium steel.


70 9930


70 9935

76B 70 9930	Tinsmith's flat nose pliers		eShop
76B 70 9935	Tinsmith's round nose pliers		eShop
Jaw length		mm	50
overall length (70 9930)		mm	240
overall length (70 9935)		mm	260

Erdi Seaming pliers

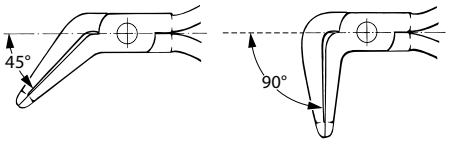
Exceptionally robust design with sturdy jaws. Inlaid joint.
Drop-forged; hardened and painted.

Size 22 – Plastic coated handles.

Material: Special steel.


70 9940_22


70 9940_60



Jaw width		mm	22	60
76B 70 9940	Seaming pliers straight		eShop	eShop
76B 70 9945	Seaming pliers 45° offset		eShop	eShop
76B 70 9950	Seaming pliers 90° offset		–	eShop
Jaw length (70 9940)		mm	30	60
Jaw length (70 9945, 70 9950)		mm	28	50
overall length		mm	180	270

KNIPEX Flat nose pliers

With short strong jaws (flat). Serrated inside jaws.

71 0100 – Jaws chemically blacked, polished head, plastic coated handles.
71 0300 – Pliers chrome-plated, handles with multi-component covering, **insulation up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**
71 0400 – Jaws chrome-plated, handles with multi-component covering.
71 0401 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.

Standard: **DIN ISO 5745**

Material: Special tool steel, drop-forged, and oil-hardened.


71 0100


71 0300


71 0400



71 0401

overall length		mm	125	140	160	180
73F 71 0100	Flat nose pliers, polished		eShop	eShop	eShop	eShop
73F 71 0300	Flat nose pliers chrome-plated **VDE insulated**		–	–	eShop	–
73F 71 0400	Flat nose pliers chrome-plated with grips		–	–	eShop	–
73F 71 0401			–	eShop	–	–
Jaw length		mm	27	28	30	35

KNIPEX Round nose pliers

With short strong jaws (round). Smooth jaws.

71 0500 – Jaws chemically blacked, polished head, plastic coated handles.
71 0700 – Pliers chrome-plated, handles with multi-component covering, **insulation up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**
71 0801 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.

Standard: **DIN ISO 5745**

Material: Special tool steel, drop-forged and oil-hardened.


71 0500


71 0700


71 0801

overall length		mm	125	140	160
73F 71 0500	Round nose pliers polished		eShop	eShop	eShop
73F 71 0700	Round nose pliers chrome-plated **VDE insulated**		–	–	eShop ■
73F 71 0801	Round nose pliers chrome-plated with grips		–	eShop	eShop
Jaw length		mm	27	28	30

Long nose pliers

With long, slim jaws and flush fitting joint.

Standard: DIN ISO 5745

Material: Chrome vanadium steel, drop-forged and oil-hardened.


71 1180


71 1200


71 1201


71 1300

Flat jaws, serrated inside

71 1000 – Pliers chrome-plated, plastic coated handles.

71 1095 – Jaws bright finished, handles with multi-component covering.

71 1100 – Jaws bright finished, plastic coated handles.

71 1180 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.

71 1200 – Jaws chrome-plated, handles with multi-component covering.

71 1201 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.

71 1300 – Pliers chrome-plated, handles with multi-component covering, **insulation up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**


71 1000


71 1095


71 1100

overall length			mm	140	160
71B 71 1180	Garant	Long flat nosed pliers, chrome-plated, with grips		–	eShop
73F 71 1200	KNIPEX			eShop	–
73F 71 1201				–	eShop
73F 71 1300		Long flat nosed pliers, chrome-plated **VDE insulated**		–	eShop
73F 71 1000		Long flat nosed pliers, chrome-plated		eShop	eShop
72B 71 1095	HOLEX	Long flat nosed pliers, bright finished, with coated grips		–	eShop
72B 71 1100		Long flat nosed pliers, bright finished		–	eShop
Jaw length			mm	42	47

Snipe nose jaws, serrated inside

71 1495 – Jaws bright finished, handles with multi-component covering.

71 1500 – Jaws bright finished, plastic coated handles.

71 1580 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.

71 1601 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.


71 1580



71 1601


71 1495


71 1500

overall length			mm	160
71B 71 1580	Garant	Long snipe nose pliers, chrome-plated, with grips		eShop
73F 71 1601	KNIPEX			eShop
72B 71 1495	HOLEX	Long snipe nose pliers, bright finished, with coated grips		eShop
72B 71 1500		Long snipe nose pliers, bright finished		eShop
Jaw length			mm	50

Round jaws, smooth inside

71 1800 – Pliers chrome-plated, plastic coated handles.
71 1980 – Jaws chrome-plated, handles with ergonomically optimised multi-component covering, with non-slip **Haptoprene** surface.
71 2001 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.


71 1980


71 2001


71 1800

overall length			mm	160
71B 71 1980	Garant	Long round nosed pliers, chrome-plated, with grips		eShop
73F 71 2001	KNIPEX			eShop
73F 71 1800	KNIPEX	Long round nosed pliers, chrome-plated		eShop
Jaw length			mm	41

Snipe nose pliers, without side cutter (telephone pliers)

With long, slim jaws tapering snipe-nosed.
Flush fitting joint with no play. Serrated inside jaws.

71 2201 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.
71 2250 – Jaws chemically blacked, polished head, plastic coated handles.

Standard: **DIN ISO 5745**
Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.


71 2201


71 2250

overall length			mm	160
73F 71 2201		Snipe nose pliers, chrome-plated, with grips		eShop
73F 71 2250		Snipe nose pliers, polished		eShop
Jaw length			mm	54

Snipe nose pliers with side cutter

Very long snipe nose jaws. Cutting edges induction hardened (approx. 61 HRC), suitable for cutting hard and soft wire. Serrated inside jaws.

Standard: **DIN ISO 5745**
Material: Chrome vanadium steel, drop-forged and oil-hardened.


71 3040


71 3100_140

Snipe nose pliers with straight jaws

71 3040 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
71 3100 – Jaws chrome-plated. Twist-tolerant flexible precision tips.
Size 125 – Plastic coated handles.
Size 140 – Handles with multi-component coverings.
71 3101 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.
71 3150 – Jaws chemically blackened, head bright polished. Plastic coated handles. Twist-tolerant flexible precision tips.
71 3195 – Jaws bright finished, handles with multi-component covering.
71 3200 – Jaws bright finished, plastic coated handles.


71 3101


71 3150


71 3195


71 3200_160

overall length			mm	125	140	160	200
71B 71 3040	Garant	Snipe nose pliers, straight, chrome-plated, with grips		–	–	eShop ■	eShop ■
73F 71 3100	KNIPEX			eShop	eShop	–	–
73F 71 3101	KNIPEX			–	–	eShop	eShop
73F 71 3150	KNIPEX	Snipe nose pliers, straight, polished		eShop ■	eShop	eShop ■	eShop
72B 71 3195	HOLEX	Snipe-nose pliers, straight, bright finished, with grips		–	–	eShop ■	eShop
72B 71 3200	HOLEX	Snipe nose pliers, straight, bright finished		–	–	eShop ■	eShop ■
Jaw length			mm	27	42	50	73

Snipe nose pliers with angled jaws (approx. 40 – 45°)

71 3440 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
71 3501 – Pliers, chrome-plated, handles with ergonomically optimised multi-component covers and KNIPEXtend interface.
71 3550 – Jaws chemically blackened, head bright polished. Plastic coated handles. Twist-tolerant flexible precision tips.
71 3595 – Jaws bright finished, handles with multi-component covering.
71 3600 – Jaws bright finished, plastic coated handles.


71 3440


71 3501


71 3550


71 3595


71 3600

overall length			mm	160	200
71B 71 3440	Garant	Snipe nose pliers, angled, chrome-plated, with grips		eShop ■	eShop ■
73F 71 3501	KNIPEX			eShop	eShop
73F 71 3550	KNIPEX	Snipe nose pliers, angled, polished		eShop ■	eShop
72B 71 3595	HOLEX	Snipe nose pliers, angled, bright finished, with grips		eShop	eShop
72B 71 3600	HOLEX	Snipe nose pliers, angled, bright finished		eShop	eShop ■
Jaw length			mm	50	73

Snipe nose pliers, with side cutter, insulated to VDE

Very long snipe nose jaws. Cutting edges induction hardened (approx. 61 HRC), suitable for cutting hard and soft wire. Serrated inside jaws.
Insulated to DIN EN IEC 60900 / VDE 0682-201 for working at voltages up to 1000 V.

Standard: **DIN ISO 5745**
Material: Chrome vanadium steel, drop-forged and oil-hardened.

Snipe nose pliers with straight jaws

71 3300 – Jaws chrome-plated, handles with multi-component covering.
71 3310 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
71 3335 – Jaws chrome-plated, plastic coated handles, **dip insulated.**
71 3351 – Jaws bright finished, handles with multi-component covering.


71 3310


71 3335


71 3300


71 3351

overall length			mm	160	200
71B 71 3310	Garant	Snipe nose pliers, straight **VDE insulated**		eShop ■	eShop ■
73F 71 3335	KNIPEX	Snipe nose pliers, straight **dip insulated to VDE**		–	eShop
73F 71 3300	KNIPEX	Snipe nose pliers, straight **VDE insulated**		eShop ■	eShop ■
72B 71 3351	HOLEX			eShop ■	eShop ■
Jaw length			mm	50	73

Snipe nose pliers with angled jaws (approx. 40 – 45°)

71 3700 – Jaws chrome-plated, handles with multi-component covering.
71 3710 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
71 3735 – Jaws chrome-plated, plastic coated handles, **dip insulated.**
71 3751 – Jaws bright finished, handles with multi-component covering.


71 3710


71 3735


71 3700


71 3751

overall length			mm	160	200
71B 71 3710	Garant	Snipe nose pliers, angled **VDE insulated**		eShop	eShop ■
73F 71 3735	KNIPEX	Snipe nose pliers, angled **dip insulated to VDE**		–	eShop
73F 71 3700	KNIPEX	Snipe nose pliers, angled **VDE insulated**		eShop ■	eShop ■
72B 71 3751	HOLEX			eShop ■	eShop
Jaw length			mm	50	73

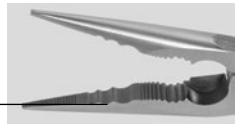
ORBIS Snipe nose pliers, offset, with cutter – insulated to VDE

Cutting edges induction hardened (approx. 64 HRC); suitable even for piano wire. Long snipe nose jaws with "WAVE profile" for gripping delicate parts such as cables or threaded rods. Inner face of jaws serrated near the tip. Handles with thick-walled grips **insulated to DIN EN IEC 60900 / VDE 0682-201 for working at voltages up to 1000 V.**

Material: Special tool steel, jaws bright finished. Handles with multi-component coverings.

Application: Ideal for electrical installation work - offset design for improved ergonomics and a clear view of the working area.

WAVE profile





overall length		mm	220
76B 71 3380	Snipe nose pliers, offset **VDE insulated**		eShop
Jaw length		mm	65

KNIPEX Snipe nose pliers of plastic, fully insulated

Jaws of glass fibre-reinforced plastic. Handles with a soft plastic zone for a secure grip. Very long snipe nose jaws. **Fully insulated, reduces the risk of a short circuit. For working at voltages up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**



overall length		mm	220
73F 71 3370	VDE snipe nose pliers, straight **fully insulated**		eShop
Jaw length		mm	75

KNIPEX Assembly pliers, long version

With milled grooves with small surface, for securely gripping, retaining and guiding small copper pipes, bolts and cables, and other round parts. Jaws chemically blacked, polished head, plastic coated handles.

Standard: **DIN ISO 5743**

Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.

Application: Slim, very long design, suitable for gripping, adjustment and assembly work where access is difficult.



71 3770



71 3780

Overall length		mm	280
73F 71 3770	Assembly pliers, long version, straight		eShop ■
73F 71 3780	Assembly pliers, long version, 45° angled		eShop
Jaw length (71 3770)		mm	76.5
Jaw length (71 3780)		mm	70





FACOM Snipe nose pliers, with side cutter and return spring

Chrome-plated jaws and joint, with heavy-duty grips. Plastic opening spring for reduced operator fatigue. Serrated jaws with pipe grip. Induction hardened cutting edges, suitable for hard and soft wire.

Standard: **DIN ISO 5745**

Advantage: Compatible with the Facom SLS (Safety Lock System) safety harness, for securing tools when working at great heights and for protection against falling tools.



71 3261



71 3661

Overall length		mm	200
73R 71 3261	Snipe nose pliers, straight, chrome-plated		eShop
73R 71 3661	Snipe nose pliers, angled, chrome-plated		eShop
Jaw length (71 3261)		mm	75
Jaw length (71 3661)		mm	69

BAHCO ERGO™ snipe nose pliers, with side cutter and return spring

Chrome vanadium steel, chrome-plated head and joint. Exceptionally slim, serrated snipe nose jaws. Heavy-duty grips with **opening spring that can be engaged / disengaged.** Induction hardened cutting edges (approx. 59 HRC); suitable for hard and soft wire.

Standard: **DIN ISO 5745**

ergo®



overall length		mm	140	160
730 71 3940	ERGO™ snipe nose pliers, straight, chrome-plated		eShop	eShop
Jaw length		mm	39	49

Needle nose pliers

With particularly long and slim snipe nose jaws. Tapering to 3 mm wide and 1 mm high at the tip.
Smooth jaws. Jaws chemically blacked, polished head, plastic coated handles.

71 5000 – Straight form.
71 5100 – With 45° angled jaws.

Standard: **DIN ISO 5743**
Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.


71 5000


71 5100

overall length		mm	160
73F 71 5000	Needle nose pliers straight		eShop ■
73F 71 5100	Needle nose pliers angled 45°		eShop
Jaw length		mm	55

Weaver's nippers (duckbill profile)

With **long, wide,** and thin tapering jaws, smooth inner surfaces.
Pliers chrome-plated, plastic coated handles.

Standard: **DIN ISO 5743**
Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.


71 5200

overall length		mm	160
73F 71 5200	Weaver's nippers, chrome-plated		eShop
Jaw length		mm	55

Mechanic's pliers (extractor pliers for pulling off spark plug connectors)

45° angled jaws, specially for gripping spark plug connectors and other round parts.
Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.

Standard: DIN ISO 5745
Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.





71 5351

overall length		mm	200
73F 71 5351	Spark plug connector removal pliers, chrome-plated		eShop
Jaw length		mm	73

71

Assembly pliers

With long slim jaws and particularly long slim handles.
Jaws chemically blacked, polished head, plastic coated handles.

71 5420 – With flat jaws, serrated gripping surfaces.
71 5425 – With snipe nose, serrated gripping surfaces.

Standard: **DIN ISO 5743**
Material: Special tool steel, drop-forged, and oil-hardened.


71 5420


71 5425

overall length		mm	200
73F 71 5420	Assembly pliers flat		eShop
73F 71 5425	Assembly pliers snipe-nosed		eShop
Jaw length (71 5420)		mm	33
Jaw length (71 5425)		mm	34

Precision mechanics pliers

With short and slender jaws, smooth inside.
Pliers chrome-plated, plastic coated handles.

Standard: **DIN ISO 9655**
Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.


71 5500


71 5800


71 6100


71 6400

overall length		mm	125
73F 71 5500	Precision mechanics pliers chrome-plated **wide flat-nosed**		eShop
Jaw length		mm	27
overall length		mm	125
73F 71 5800	Precision mechanics pliers chrome-plated **flat pointed**		eShop
Jaw length		mm	27
overall length		mm	125
73F 71 6100	Precision mechanics pliers chrome-plated **flat-round**		eShop
Jaw length		mm	27
overall length		mm	125
73F 71 6400	Precision mechanics pliers chrome-plated **round nosed**		eShop
Jaw length		mm	27

Mechanic's pliers

Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.
71 6801 – Strong, long serrated jaws.
Standard: DIN ISO 5745
Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.

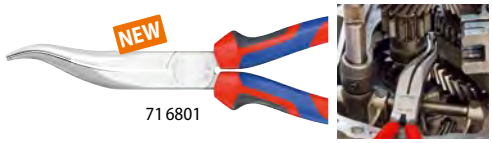
overall length		mm	200
73F 71 6601	Mechanic's pliers chrome-plated **snipe-nosed, straight**		eShop
Jaw length		mm	73


71 6601

overall length		mm	200
73F 71 6701	Mechanic's pliers chrome-plated **snipe-nosed pliers, angled 40°**		eShop
Jaw length		mm	73


71 6701

overall length		mm	200
73F 71 6801	Mechanic's pliers chrome-plated **snipe-nosed, offset**		eShop
Jaw length		mm	73



71 6801

Adjusting pliers

Extra flat and slender jaws, inside smooth. Pliers chrome-plated, plastic coated handles.
Standard: **DIN 5235**
Material: Chrome vanadium steel, drop-forged and oil-hardened.

Overall length		mm	140
71B 71 7005	Adjusting pliers form A **flat-pointed, straight**		eShop
Jaw length		mm	33


71 7005_140

Overall length		mm	140
71B 71 7205	Adjusting pliers form B **wide flat-nosed, straight**		eShop
Jaw length		mm	33


71 7205_140

Overall length		mm	140
71B 71 7405	Adjusting pliers form C **45° angled, wide flat-nosed**		eShop
Jaw length		mm	33


71 7405_140

Overall length		mm	140
71B 71 7605	Adjusting pliers form E **90° angled, wide flat-nosed**		eShop
Jaw length		mm	33


71 7605_140

LINDSTRÖM HOLEX Tweezers from No. 72 7502


72 7505


72 7690


72 7506


72 7507


72 7508


72 7710


72 7720


72 7504_5

Circlip pliers for internal circlips in bores

With inserted precision tips.

71 9770 – Pliers, blacked. Ground head. Plastic coated handles.
71 9795 – Handles of steel plate with locking mechanism.
71 9805 – Forged from a single piece. Pliers chemically blacked. Plastic coated handles.
71 9770–9792 – Forged grip and joint. Precision made tips of special steel, special precision profile and pressed into the body.
71 9790/9792 – Pliers, chemically blacked. Plastic coated handles.

Standard: **DIN 5256 C and D** – for internal circlips.

Advantage:

71 9770–9795 – Pressed-in tips are highly durable even during continuous operation. Up to 10 times the working life of turned tips.

Application: For fitting and removing circlips.







71 9770_J0-J4



71 9790_J0-J4



71 9792_J1-J2

Form C – straight jaws



71 9792 – With adjustable limit stop.

Type		J0	J1	J2	J3	J4
71B 71 9770	Garant Precision circlip pliers	eShop	eShop	eShop	eShop	eShop
73F 71 9790	Garant Precision circlip pliers	eShop	eShop	eShop	eShop ■	eShop
73F 71 9792	KNIPEX Precision circlip pliers **with over-expansion guard**	–	eShop	eShop	–	–
72B 71 9805	HOLEX Circlip pliers	eShop	eShop	eShop	eShop	eShop
overall length (71 9770, 71 9790, 71 9792) mm		140	140	180	225	320
overall length (71 9805) mm		135	135	180	225	320
for internal circlips ∅ mm		8 – 13	12 – 25	19 – 60	40 – 100	85 – 140
Tip ∅ (71 9770, 71 9790, 71 9792) mm		0.9	1.25	1.8	2.25	3.2
Tip ∅ (71 9805) mm		0.9	1.3	1.8	2.3	3.2



Pressed-in precision tips.



71 9805_J0-J4

Type		J5	J6
73F 71 9795	KNIPEX Circlip pliers	eShop	eShop
overall length mm		570	580
for internal circlips ∅ mm		122 – 300	252 – 400
Tip ∅ mm		3.5	4.5



71 9795_J5-J6

Form D – 90° angled jaws





Pressed-in precision tips.

Type		J01	J11	J21	J31	J41
71B 71 9770	Garant Precision circlip pliers	eShop	eShop	eShop	eShop	eShop
73F 71 9790	KNIPEX Precision circlip pliers	eShop	eShop	eShop	eShop	eShop
72B 71 9805	HOLEX Circlip pliers	eShop	eShop	eShop	eShop	eShop
overall length (71 9770, 71 9790) mm		130	130	165	210	305
overall length (71 9805) mm		135	135	180	225	320
for internal circlips ∅ mm		8 – 13	12 – 25	19 – 60	40 – 100	85 – 140
Tip ∅ (71 9770, 71 9790) mm		0.9	1.25	1.8	2.25	3.2
Tip ∅ (71 9805) mm		0.9	1.3	1.8	2.3	3.2



71 9770_J01-41



71 9790_J01-J41



71 9805_J01-J41

Type		J51
73F 71 9795	KNIPEX Circlip pliers	eShop
overall length mm		590
for internal circlips ∅ mm		122 – 300
Tip ∅ mm		3.5



71 9795_J51

Circlip pliers for external circlips on shafts

71 9870 – Pliers, blacked. Ground head. Plastic coated handles. Joint with **integral opening spring.**
71 9892 – With adjustable limit stop.
71 9895 – Handles of steel plate with locking mechanism.
71 9905 – Forged from a single piece. Pliers chemically blacked. Plastic coated handles.
71 9870–9892 – Forged grip and joint. Precision made tips of special steel, special precision profile and pressed into the body.
71 9890/9892 – Pliers, chemically blacked. Plastic coated handles. Joint with **integral opening spring.**

Standard: **DIN 5254 A and B** – for external circlips.

Advantage:
71 9870–9895 – Pressed-in tips are highly durable even during continuous operation. Up to 10 times the working life of turned tips.

Application: For fitting and removing circlips.







Pressed-in precision tips.



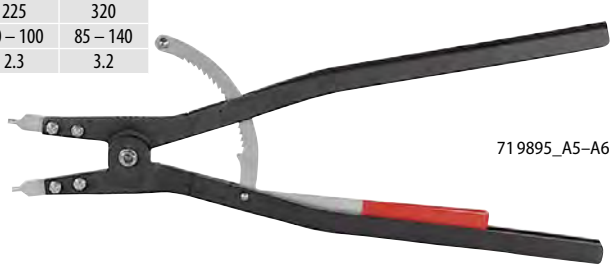
Form A – straight jaws



Type			A0	A1	A2	A3	A4
71B 71 9870	Garant	Precision circlip pliers	eShop	eShop ■	eShop ■	eShop	eShop
73F 71 9890	KNIPEX		eShop	eShop	eShop	eShop ■	eShop
73F 71 9892	KNIPEX	Precision circlip pliers **with over-expansion guard**	eShop	eShop	eShop	–	–
72B 71 9905	HOLEX	Circlip pliers	eShop	eShop	eShop	eShop	eShop
overall length (71 9870, 71 9890, 71 9892)		mm	140	140	180	225	320
overall length (71 9905)		mm	135	135	180	225	320
for external circlips ∅		mm	3 – 10	10 – 25	19 – 60	40 – 100	85 – 140
Tip ∅		mm	0.9	1.3	1.8	2.3	3.2



Type			A5	A6
73F 71 9895	KNIPEX	Circlip pliers	eShop	eShop
overall length		mm	560	570
for external circlips ∅		mm	122 – 300	252 – 400
Tip ∅		mm	3.5	4.5



Form B – 90° angled jaws





Pressed-in precision tips.



Type			A01	A11	A21	A31	A41
71B 71 9870	Garant	Precision circlip pliers	eShop ■	eShop ■	eShop ■	eShop	eShop
73F 71 9890	KNIPEX		eShop	eShop	eShop	eShop	eShop
73F 71 9892	KNIPEX	Precision circlip pliers **with over-expansion guard**	eShop	eShop	eShop	–	–
72B 71 9905	HOLEX	Circlip pliers	eShop	eShop	eShop	eShop	eShop
overall length (71 9870, 71 9890, 71 9892)		mm	130	130	165	210	305
overall length (71 9905)		mm	135	135	180	225	320
for external circlips ∅		mm	3 – 10	10 – 25	19 – 60	40 – 100	85 – 140
Tip ∅		mm	0.9	1.3	1.8	2.3	3.2



Type			A51
73F 71 9895	KNIPEX	Circlip pliers	eShop
overall length		mm	570
for external circlips ∅		mm	122 – 300
Tip ∅		mm	3.5



HOLEX Circlip pliers with 45° angled tips

Forged from a single piece. Bolt cutter chemically blackened, plastic coated handles.

Standard:
Size J0–J4 – Similar to **DIN 5256.**
Size A0–A4 – Similar to **DIN 5254.**

Material: Chrome vanadium steel, drop-forged and oil-hardened.

Application: For fitting and removing circlips.


71 9845_J2

Type		J0	J1	J2	J3	J4
72B 71 9845	Circlip pliers **45° angled**	eShop	eShop	eShop	eShop	eShop
overall length	mm	135	135	180	225	320
for internal circlips ∅	mm	8 – 13	12 – 25	19 – 60	40 – 100	85 – 140
Tip ∅	mm	0.9	1.3	1.8	2.3	3.2


71 9845_A2

Type		A0	A1	A2	A3	A4
72B 71 9845	Circlip pliers **45° angled**	eShop	eShop	eShop	eShop	eShop
overall length	mm	135	135	180	225	320
for external circlips ∅	mm	3 – 10	10 – 25	19 – 60	40 – 100	85 – 140
Tip ∅	mm	0.9	1.3	1.8	2.3	3.2

KNIPEX Assembly pliers for gripper rings (rings for shafts without grooves)

Jaws chemically blacked, polished head, plastic coated handles. Straight tips; flanged, i.e. to fit the holes in the gripper rings. With opening spring; size G0 with adjustment screw.

Standard: **DIN ISO 5743**

Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.

Application: For **gripper rings** (rings for shafts without groove).


Gripper rings for shafts without groove


71 9950_G0

Type		G0	G1	G2	G3	G4
73F 71 9950	Assembly pliers for gripper rings	eShop	eShop	eShop	eShop	eShop
overall length	mm	140	140	140	140	180
Tip ∅	mm	0.9	1.3	1.3	1.3	1.8
for shaft ∅	mm	1.5 – 4	4 – 7	5 – 13	14 – 18	20 – 30

KNIPEX Assembly pliers for snap rings

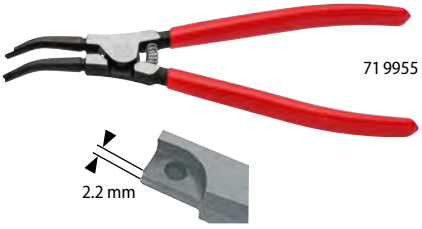
Specially shaped tips for assembly using snap rings without holes. With opening spring. Pliers burnished, plastic coated handles. Jaws 30° angled.

Standard: **DIN ISO 5743**

Material: Chrome-vanadium electro-steel, forged and oil-hardened.

Application: For snap rings and retaining rings without holes.


Snap ring



71 9955

overall length	mm	220
73F 71 9955	Assembly pliers for snap rings	eShop
Gap minimal	mm	2.2
for shaft ∅	mm	from 12

There's more in it for you!

The entire tooling catalogues for the following brands are available from the Hoffmann Group – just ask for them!



Hose clip pliers for hose clips with lugs

Sturdy model with slim head and long handles. Chemically blacked, polished head, PVC coated handles.

Material: Special tool steel, drop-forged, and oil-hardened.

Application: For fitting 1-lug or 2-lug hose clips on axle sleeves, coolant pipes and fuel pipes, compressed air systems, compressors. The special arrangement of the jaws allows the clips to be pressed either at the end or at the side, depending on the accessibility of the working area.



Pressing at the side face.



Pressing at the end face



71 9984



71 9985

overall length		mm	220
73F 71 9984	KNIPEX	Hose clip pliers	eShop
72B 71 9985	HOLEX		eShop

KNIPEX Spring hose clamp pliers

Based on the drop-forged Cobra® water pump pliers with push-button fine step adjustment. With special jaws to hold self-clamping hose clips; **jaws can be turned through 360°.** Pliers chemically blacked.

71 9967 – With lock and one-hand release. Permits easy and secure working on the tensioned hose clip.

Advantage: Improved leverage means less force needs to be applied. Jaw opening up to 80 mm.

Application: For secure gripping of self-clamping hose clips, standard, low-profile and wire clips together with flat spring clamping rings.





71 9965

Release lever



71 9967

overall length		mm	180	250
73F 71 9965	Spring hose clamp pliers		eShop	eShop
73F 71 9967	Spring hose clamp pliers with retainer		–	eShop ■
Nominal size		mm	50	70
max. clamping travel		mm	30	40

HOLEX Hose clip pliers for self-clamping hose clips

With special jaws to hold self-clamping hose clips; **jaws can be turned through 360°.** Steel handles, nickel-plated.

Application: For fixing self-clamping hose clips, e.g. on to heater hoses in cars, water hoses, washing machine hoses etc.





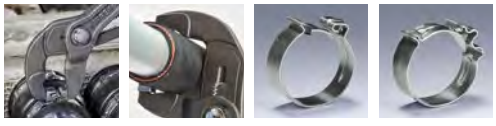
overall length		mm	210
72B 71 9970	Hose clip pliers		eShop
Opening width		mm	60

KNIPEX Hose clip pliers for Clic hose clips

Based on the drop-forged Cobra® water pump pliers with push-button fine step adjustment. With special gripper jaws for secure actuation of the hose clip in any position; **jaws can be rotated.** Pliers chemically blacked.

Advantage: Improved leverage means less force needs to be applied.

Application: The toothed gripper jaws permit secure opening and closing of Clic hose clips and gentle release of hoses.

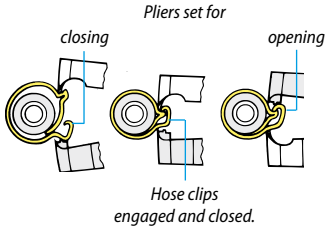




overall length		mm	180	250
73F 71 9975	Hose clip pliers		eShop	eShop

HOLEX Hose clip pliers for Clic hose clips

Made of sheet metal. With special jaws for Clic hose clips. Suitable for closing and opening; for all sizes.





overall length		mm	180
72B 71 9980	Hose clip pliers		eShop

Heavy-duty end cutter

Sturdy head with short joint. Cutting edges induction hardened (approx. 64 HRC). Jaws chemically blacked, polished head, plastic coated handles. High cutting capacity due to optimum leverage.

Standard: **DIN ISO 5748**

Material:

72 1100 – Chrome-vanadium high-performance steel, forged, multi-stage oil-hardened.

72 1150 – Chrome-vanadium heat treatable steel, oil-hardened.





72 1100



72 1150

overall length		mm	160
73F 72 1100	KNIPEX	End cutter, polished	eShop
72B 72 1150	HOLEX	End cutter, bright finish	eShop
Cutting capacity soft wire up to ∅		mm	4.5
Cutting capacity hard wire up to ∅		mm	2.5
Cutting capacity piano wire up to ∅		mm	2

Heavy-duty end cutter

Strong head, laid-on joint. Jaws chemically blacked, polished head, plastic coated handles. Cutting edges induction hardened (approx. 61 HRC).

Standard:

Size 160–200 – **DIN ISO 5748**

Material: Special quality tool steel, forged and multi-stage oil-hardened.





overall length		mm	160	180	200	280
73F 72 1900	Heavy-duty end cutter		eShop	eShop	eShop	eShop
Cutting capacity soft wire up to ∅		mm	4	4	4	4.5
Cutting capacity hard wire up to ∅		mm	2.3	2.5	2.8	3.2

Bolt cropper

Induction hardened cutting edges (approx. 64 HRC), extreme leverage so less force needs to be applied.

72 2000 – Jaws chemically blacked, polished head, plastic coated handles.

72 2010 – Pliers chemically blacked, head bright polished, handles with multi-component covering.

Standard: **DIN ISO 5743**

Material: Vanadium electro-steel, forged and multi-stage oil-hardened.

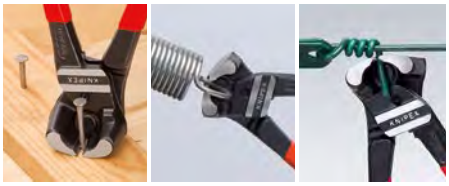


72 2000



72 2010

overall length		mm	200
73F 72 2000	Bolt cropper		eShop
73F 72 2010	Bolt cropper with coated grips		eShop
Cutting capacity soft wire up to ∅		mm	1 – 6
Cutting capacity hard wire up to ∅		mm	3.5
Cutting capacity piano wire up to ∅		mm	3



VBW Bolt cropper CombiCUT®

72 2400 – Strong end cutting jaws, induction hardened, side-offset cutting edges. No need to adjust the jaw. Forged stops prevent unintentional overtravel. Painted tubular handles with ergonomic plastic grips.

Material: Special tool steel, drop-forged.

Application: For flush trimming projecting wires.

Note: Spare jaws available only for models 2004 and later.



overall length		mm	370
73K 72 2400	CombiCUT® bolt cropper		eShop
73K 72 2450	Spare CombiCUT® jaws with bolts and retaining rings		eShop
Cutting capacity soft wire up to ∅		mm	7
Cutting capacity hard wire up to ∅		mm	4

Heavy-duty diagonal side cutters

Heavy-duty head with additionally induction hardened cutting edges (approx. 64 HRC).
Laid-on joint. High cutting performance due to optimum leverage.

- 72 3040 – Jaws chrome-plated, handles with ergonomically optimised multi-component sleeves with non-slip **Haptoprene** surface.
- 72 3100 – Jaws chrome-plated, handles with multi-component sleeves.
- 72 3101 – Pliers chrome-plated, handles with multi-component sleeves and KNIPEXtend interface.
- 72 3150 – Jaws chemically blacked, polished head, plastic coated handles.
- 72 3395 – Jaws bright finished, handles with multi-component sleeves.
- 72 3400 – Jaws bright finished, plastic coated handles.

Standard: **DIN ISO 5749**
Material: Chrome vanadium steel, drop-forged and oil-hardened.
Application: For all types of wire (long working life even with hard wire). Heavy duty for the most demanding applications.




72 3040


72 3100



72 3101


72 3150


72 3395


72 3400

overall length		mm	140	160	180	200	250
71B 72 3040	Garant	Heavy-duty side cutter, chrome-plated, with grips	–	eShop	eShop	eShop	–
73F 72 3100	KNIPEX		eShop	eShop	eShop	–	eShop
73F 72 3101	KNIPEX		–	–	–	eShop	–
73F 72 3150	KNIPEX	Heavy-duty side cutter, polished	eShop	eShop	eShop ■	eShop ■	eShop
72B 72 3395	HOLEX	Heavy-duty side cutter, bright finish, with grips	–	eShop	eShop	eShop	–
72B 72 3400	HOLEX	Heavy-duty side cutter, bright finish	–	eShop	eShop	eShop	–
Cutting capacity soft wire up to ∅		mm	3.1	3.4	3.8	4.2	4.6
Cutting capacity hard wire up to ∅		mm	2	2.5	2.7	3	3.5
Cutting capacity piano wire up to ∅		mm	1.5	2	2.2	2.5	3

Heavy-duty side cutters – insulated to VDE

Heavy-duty head, induction hardened cutting edges (approx. 64 HRC), laid-on joint with no play.
Insulated to DIN EN IEC 60900 / VDE 0682-201 for working at voltages up to 1000 V.

- 72 3500 – Jaws chrome-plated, handles with multi-component sleeves.
- 72 3510 – Jaws chrome-plated, handles with ergonomically optimised multi-component sleeves with non-slip **Haptoprene** surface.
- 72 3535 – Jaws chrome-plated, plastic coated handles, **dip insulated.**
- 72 3551 – Jaws bright finished, handles with multi-component sleeves.

Standard: **DIN ISO 5749**
Material: Chrome vanadium steel, drop-forged and oil-hardened


72 3510


72 3535


72 3500


72 3551

overall length		mm	160	180	200	250
71B 72 3510	Garant	Heavy-duty side cutter, chrome-plated **VDE insulated**	eShop ■	eShop	eShop	–
73F 72 3535	KNIPEX	Heavy-duty side cutter, chrome-plated **VDE dip insulated**	–	–	eShop	eShop
73F 72 3500	KNIPEX	Heavy-duty side cutter, chrome-plated **VDE insulated**	eShop	eShop	eShop	eShop
72B 72 3551	HOLEX	Heavy-duty side cutter **VDE insulated**	eShop	eShop	eShop	–
Cutting capacity soft wire up to ∅		mm	3.4	3.8	4.2	4.6
Cutting capacity hard wire up to ∅		mm	2.5	2.7	3	3.5
Cutting capacity piano wire up to ∅		mm	2	2.2	2.5	3

Heavy-duty side cutters with selectable opening spring

Heavy-duty head with additionally induction hardened cutting edges (approx. 64 HRC). Laid-on joint.
With return spring that can be engaged / disengaged. Jaws chemically blackened, head bright polished.
High cutting performance due to optimum leverage

- 72 5230 – Handles with multi-component sleeves.
- 72 5231 – Handles with multi-component sleeves and KNIPEXtend interface.

Standard: **DIN ISO 5749**
Material: Chrome vanadium steel, drop-forged and oil-hardened.


72 5230



72 5231

overall length		mm	160	180
73F 72 5230	Heavy-duty side cutter, polished, with return spring		eShop	–
73F 72 5231			–	eShop
Cutting capacity soft wire up to ∅		mm	3.4	3.8
Cutting capacity hard wire up to ∅		mm	2.5	2.7
Cutting capacity piano wire up to ∅		mm	2	2.2

High-performance heavy-duty side cutter TwinForce® (patented)

Heavy-duty head, induction hardened cutting edges (approx. 64 HRC),
laid-on joint with eccentric double-joint design.

72 3170 – Jaws chemically blacked, polished head, plastic coated handles.

72 3181 – Pliers chemically blacked, head bright polished,
handles with multi-component covering and KNIPEXtend interface.

Standard: **DIN ISO 5749**

Material: Chrome vanadium steel, drop-forged and oil-hardened.

Advantage: **Superior heavy-duty side cutter requiring 50 % less applied force** than conventional heavy-duty side cutters of the same size.
Reapplying the tool reduces the force required.


72 3170


72 3181

overall length		mm	180
73F 72 3170	High-performance heavy-duty side cutter TwinForce®, polished		eShop
73F 72 3181	High-performance heavy-duty side cutter TwinForce®, polished, with grips		eShop
Cutting capacity soft wire up to ∅		mm	5.5
Cutting capacity hard wire up to ∅		mm	3.2
Cutting capacity piano wire up to ∅		mm	3


Patented double joint.


50 % less force required.


Ability to reapply the tool.

X-Cut® compact side cutter with box joint



With slim head with induction hardened cutting edges (approx. 64 HRC). **Box joint** for maximum stability.
Jaws chrome-plated, handles with multi-component covering.

72 4310 – **Insulated to DIN EN IEC 60900 / VDE 0682-201** for working at voltages up to 1000 V.

Standard: **DIN ISO 5749**

Material: Special tool steel, drop-forged, and oil-hardened.


72 4300

overall length		mm	160
73F 72 4300	X-Cut® compact side cutter, chrome-plated with grips		eShop
73F 72 4310	X-Cut® compact side cutter, chrome-plated with grips **VDE insulated**		eShop
Cutting capacity soft wire up to ∅		mm	4.8
Cutting capacity hard wire up to ∅		mm	2.7
Cutting capacity piano wire up to ∅		mm	2.2


72 4310

Side cutter ERGO™ with opening spring

Jaws chrome-plated. **Progressively ground cutting edges** additionally induction hardened (approx. 62 HRC). With strong chamfered cutting edges near to the joint for hard material and a finer chamfer on the tips for optimum cutting of soft material.
Heavy-duty grips with **opening spring that can be engaged / disengaged.**

Standard: **DIN ISO 5749**

Material: Chrome vanadium steel, drop-forged and oil-hardened.

Opening spring can be engaged / disengaged.


72 5240

overall length		mm	125	160
730 72 5240	Side cutter ERGO™, chrome-plated		eShop	eShop
Cutting capacity piano wire up to ∅		mm	1.6	2

Side cutters with opening spring

Jaws chrome-plated with thick-walled grips.
Plastic opening spring for reduced operator fatigue.
Cutting edges additionally induction hardened (approx. 62 HRC).

Standard: **DIN ISO 5749**

Material: Chrome vanadium steel, drop-forged and oil-hardened.


72 5265

Overall length		mm	160	180
73R 72 5265	Side cutter, chrome-plated		eShop	eShop
Cutting capacity hard wire up to ∅		mm	2	2.2
Cutting capacity piano wire up to ∅		mm	1.8	2

Side cutters

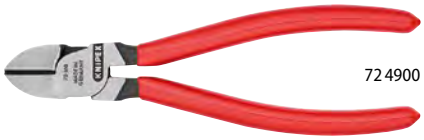
Slim shape with induction hardened cutting edges (approx. 62 HRC).

72 4840 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
72 4861 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.
72 4900 – Jaws chemically blacked, polished head, plastic coated handles.
72 5245 – Jaws bright finished, handles with multi-component covering.
72 5250 – Jaws bright finished, plastic coated handles.

Standard: **DIN ISO 5749**
Material: Chrome vanadium steel, drop-forged and oil-hardened.


72 4840


72 4861


72 4900

overall length			mm	110	125	140	160	180
71B 72 4840	Garant	Side cutter chrome-plated, with grips		–	–	eShop ■	eShop ■	–
73F 72 4861	KNIPEX			–	eShop	eShop	eShop	eShop
73F 72 4900	KNIPEX	Side cutter polished		eShop	eShop	eShop	eShop ■	eShop
72B 72 5245	HOLEX	Side cutter, bright finish, with grips		–	–	eShop	eShop ■	–
72B 72 5250	HOLEX	Side cutter, bright finish		–	–	eShop	eShop ■	–
Cutting capacity soft wire up to ∅ (72 4840, 72 5245, 72 5250)			mm	–	–	2.8	2.8	–
Cutting capacity soft wire up to ∅ (72 4861, 72 4900)			mm	2	3	4	4	4
Cutting capacity hard wire up to ∅			mm	1.2	1.5	1.8	2	2.5


72 5245


72 5250

Side cutters – insulated to VDE

Slim shape with induction hardened cutting edges (approx. 62 HRC).
Insulated to DIN EN IEC 60900 / VDE 0682-201 for working at voltages up to 1000 V.

72 5300 – Jaws chrome-plated, handles with multi-component covering.
72 5310 – Jaws chrome-plated, handles with ergonomically optimised multi-component coverings with non-slip **Haptoprene** surface.
72 5335 – Jaws chrome-plated, plastic coated handles, **dip insulated.**
72 5351 – Jaws bright finished, handles with multi-component covering.

Standard: **DIN ISO 5749**
Material: Special tool steel, drop-forged and oil-hardened.


72 5310

***Dip insulated for** maximum protection against electric shock and slipping.*


72 5335

overall length			mm	125	140	160	180
71B 72 5310	Garant	Side cutter, chrome-plated **VDE insulated**		–	eShop ■	eShop ■	–
73F 72 5335	KNIPEX	Side cutter, chrome-plated **VDE dip insulated**		–	–	eShop	eShop
73F 72 5300	KNIPEX	Side cutter, chrome-plated **VDE insulated**		eShop ■	eShop	eShop ■	eShop
72B 72 5351	HOLEX	Side cutter **VDE insulated**		–	eShop ■	eShop ■	eShop
Cutting capacity soft wire up to ∅			mm	3	4	4	4
Cutting capacity hard wire up to ∅			mm	1.5	1.8	2	2.5


72 5300


72 5351

Mechanic's side cutters slim shape

With slim head and induction hardened cutting edges.
Cutter edge hardness approx. 63 HRC.
Flush fitting joint with no play.

- 72 4000 – Pliers chrome-plated, plastic coated handles.
- 72 4200 – Jaws chrome-plated, handles with multi-component covers. With opening spring.
- 72 4201 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.
- 72 4205 – Jaws polished, handles with multi-component covers. With opening spring.

Standard: **DIN ISO 5749**
Material: Special tool steel, drop-forged, and oil-hardened.


72 4000


72 4200



72 4201


72 4205

overall length		mm	110	125
73F 72 4000	Mechanic's side cutter, chrome-plated		–	eShop
73F 72 4200	Mechanic's side cutter chrome-plated with grips		eShop	–
73F 72 4201			–	eShop
73F 72 4205	Mechanic's side cutter, polished, with grips	KW	–	eShop
Cutting capacity soft wire up to ∅		mm	3	2.5
Cutting capacity hard wire up to ∅		mm	1.2	1
Cutting capacity piano wire up to ∅		mm	–	0.6

Precision mechanics side cutter

Slim head, cutting edges induction hardened and precision ground, fine chamfered.

- 72 5393/5391 – Plastic -coated handles, with opening spring.
- 72 5390/5392 – Handles with plastic grips and opening spring.

Material: Chrome vanadium steel, drop-forged and oil-hardened.


72 5390_110


72 5393_125



72 5391_125


72 5392_110

overall length			mm	110	125
71B 72 5390	Garant	Precision mechanics side cutter, standard jaws	SFW	eShop ■	–
71B 72 5393			SFW	–	eShop ■
73D 72 5391	wiha		SFW	–	eShop
71B 72 5392	Garant	Precision mechanics side cutter, pointed jaws with blunted tip	SFW	eShop ■	–
Cutting capacity soft wire up to ∅ (72 5390, 72 5391, 72 5392)			mm	0.3 – 1.2	0.3 – 2
Cutting capacity soft wire up to ∅ (72 5393)			mm	–	0.15 – 2
Cutting capacity medium hard wire up to ∅ (72 5390, 72 5391, 72 5392)			mm	0.3 – 0.8	
Cutting capacity medium hard wire up to ∅ (72 5393)			mm	–	0.15 – 0.8

Side cutters for plastics

Cutting edges without bevel to give a flush cut with no burr. Head and joint polished, plastic coated handles, opening spring.

72 5550 – 45° angled head.
72 5570 – 85° angled head.
72 5490/5505/5590 – 15° angled head.

Standard:
72 5570 – **DIN ISO 5743**

Material:
72 5490/5550/5590 – Chrome vanadium steel, drop-forged and oil-hardened.
72 5505/5570 – Vanadium electro-steel, forged and oil-hardened.

Application: For flush cutting of plastic sprues on mouldings **(not for metal).**


72 5490


72 5550


72 5505


72 5570


72 5590

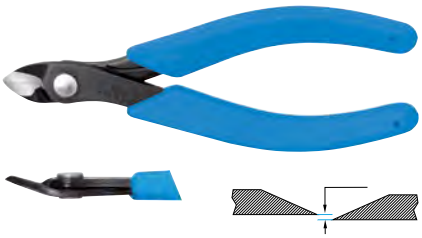
overall length			mm	130	150	160	190
71B 72 5490	Garant	Side cutter for plastics, 15° angled	KW	eShop	eShop	–	eShop ■
71B 72 5550	Garant	Side cutter for plastics, 45° angled	kW	–	eShop ■	–	–
73F 72 5505	KNIPEX	Side cutter for plastics, 15° angled	KW	–	–	eShop	–
73F 72 5570	KNIPEX	Side cutter for plastics, 85° angled	kW	–	–	eShop	–
72B 72 5590	HOLEX	Side cutter for plastics, 15° angled	KW	eShop ■	–	eShop ■	–

Side cutters for plastics

Cutting edges without bevel to give a flush cut with almost no burr. Cutters offset for a slightly **shearing action.** Handles with non-slip rubber grips and return spring. 20° angled head.

Material: Special tool steel, burnished.

Application: For flush cutting plastic sprues on mouldings and cable ties **(not for metal).**


0.1 – 0.25 mm offset

overall length		mm	130	150
76B 72 5700	Side cutter for plastics, 20° angled	kW	eShop	eShop

High leverage flush cutter for plastic and soft metal

Special compound action allows excellent cutting performance with relatively low applied force. Cutting edges induction hardened (approx. 59 HRC). Pliers chemically blacked, head bright polished, handles with multi-component covering. **With opening spring** and integral lock. **Head 20° offset for flush cutting.**

Material: Chrome-vanadium electric steel, forged and multi-stage oil-hardened.

Application: For flush cutting of soft materials such as plastic aluminium, copper (also Cu busbars up to 3×10 mm), lead.





overall length		mm	200
73F 72 5610	High-leverage flush cutter with 20° angled head		eShop
Cutting capacity soft wire up to ∅		mm	6

LINDSTRÖM RX Precision electronics side cutters

Slim style with precision ground induction hardened jaw edges (63 – 65 HRC). Black surface to reduce reflections. Adjustable precision screw joint for minimal friction and optimum axial alignment of the cutters. **Suitable for ESDs,** with ergonomic **2-component** grips.
The patented opening spring reduces the resistance when closing the cutter. Thus the force is concentrated on the cut.

Material: High-performance ball-bearing steel, drop forged, burnished.



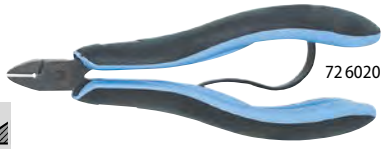


overall length		mm	140	150
73M 72 6000	Electronics side cutter, oval head	FW	eShop	eShop
Head width		mm	13	16
Cutter length		mm	12.5	16
Cutting capacity copper wire up to ∅		mm	0.3 – 1.6	0.4 – 2

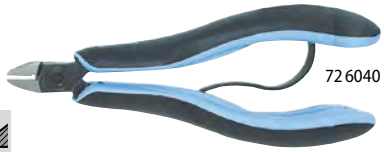
ergo®



overall length		mm	135
73M 72 6020	Electronics side cutter, small oval head	FW	eShop
Head width		mm	10.5
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.2 – 1.25



overall length		mm	135
73M 72 6040	Electronics side cutter, small head	kW	eShop
Head width		mm	10.5
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.1 – 1



overall length		mm	135
73M 72 6060	Electronics side cutter, hollowed jaws, pointed head	kW	eShop
Head width		mm	10.5
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.1 – 0.8



72

LINDSTRÖM RX Precision electronics grip pliers

Slim shape with narrow jaws. Jaws with rounded outer edges. Precision box joint with extra long slides for maximum stability with minimum friction. Mirror-polished head and joint. **Suitable for ESDs,** with ergonomic **2-component** grips. The patented opening spring reduces the resistance when closing the pliers, therefore the force applied to the component can be accurately gauged.

Material: High-performance ball-bearing steel, drop forged.



Flat nose, smooth internal jaws.

overall length		mm	150
73M 72 6120	Electronics flat-nose pliers		eShop
Head width		mm	9
Jaw length		mm	20

ergo®



Long snipe nose, serrated internal jaws.

overall length		mm	150
73M 72 6160	Electronics snipe-nosed pliers, serrated jaws		eShop
Head width		mm	9
Jaw length		mm	32



Electronics side cutter mirror-polished



Mirror polished, therefore no faults in the circuit due to peeling chrome plate.
Sturdy box joint with zero play.
Low-friction double spring for smooth and gentle opening.
72 6429 – Plastic coated handles.
72 6430–6434 – Handles with multi-component coating.
Material: Ball-bearing steel, cutting edges induction hardened.
Application: For making precision cuts, e.g. in electronics and precision mechanisms.

Overall length			mm	115
73F 72 6429	Electronics side cutter, mirror-polished, round head	FW		eShop
73F 72 6430	Electronics side cutter, mirror-polished, round head	FW		eShop
73F 72 6433	Electronics side cutter, mirror-polished, round head **with wire holder**	FW		eShop
Head width			mm	11
Cutter length			mm	14
Cutting capacity hard wire up to ∅			mm	0.3 – 0.6
Cutting capacity copper wire up to ∅			mm	0.3 – 1.6
Cutting capacity medium hard wire up to ∅			mm	0.3 – 1.2

overall length			mm	115
73F 72 6431	Electronics side cutter, mirror-polished, pointed head	FW		eShop
Head width			mm	11
Cutter length			mm	14
Cutting capacity hard wire up to ∅			mm	0.3 – 0.5
Cutting capacity copper wire up to ∅			mm	0.3 – 1.3
Cutting capacity medium hard wire up to ∅			mm	0.3 – 1

Overall length			mm	115
73F 72 6434	Electronics side cutter, mirror-polished, round head	kW		eShop
Head width			mm	11
Cutter length			mm	14
Cutting capacity copper wire up to ∅			mm	0.3 – 1.3
Cutting capacity medium hard wire up to ∅			mm	0.3 – 1

overall length			mm	115
73F 72 6432	Electronics side cutter, mirror-polished, pointed head	KW		eShop
Head width			mm	11
Cutter length			mm	14
Cutting capacity copper wire up to ∅			mm	0.3 – 1.3
Cutting capacity medium hard wire up to ∅			mm	0.3 – 0.8


72 6429


72 6430


72 6433


72 6431


72 6434


72 6432

Electronics side cutter mirror-polished

Mirror polished, therefore no faults in the circuit due to peeling chrome plate.
Sturdy box joint with zero play. Low-friction double spring for smooth and gentle opening.
Multi-component grips, black/grey, electrically conductive. **Suitable for ESDs.**
Material: Ball-bearing steel, cutting edges induction hardened.
Application: For making precision cuts, e.g. in electronics and precision mechanisms.

Further versions available on request

overall length			mm	115
73F 72 6435	Electronics side cutter, mirror-polished, round head	FW		eShop
Head width			mm	11
Cutter length			mm	14
Cutting capacity hard wire up to ∅			mm	0.3 – 0.6
Cutting capacity copper wire up to ∅			mm	0.3 – 1.6
Cutting capacity medium hard wire up to ∅			mm	0.3 – 1.2

overall length			mm	115
73F 72 6436	Electronics side cutter, mirror-polished, pointed head	FW		eShop
Head width			mm	11
Cutter length			mm	14
Cutting capacity hard wire up to ∅			mm	0.3 – 0.5
Cutting capacity copper wire up to ∅			mm	0.3 – 1.3
Cutting capacity medium hard wire up to ∅			mm	0.3 – 1

overall length			mm	115
73F 72 6437	Electronics side cutter, mirror-polished, pointed head	KW		eShop
Head width			mm	11
Cutter length			mm	14
Cutting capacity copper wire up to ∅			mm	0.3 – 1.3
Cutting capacity medium hard wire up to ∅			mm	0.3 – 0.8


72 6435


72 6436


72 6437

Garant Precision electronics side cutters, oval jaws

Precision machined with slim shape. Cutting edges induction hardened (62 - 64 HRC). Non-reflecting surface, matt shot-blasted with inlaid joint and countersunk screw. Double interchangeable springs for easy operation. **2-component** conductive grips. **Suitable for ESDs.** Cutting edges precision ground.

Material: CNC-machined special tool steel for extremely accurate tolerances.



Overall length			mm	125
71B 72 6170	Electronics side cutter, small head shape	FW		eShop
71B 72 6180		kW		eShop ■
Head width			mm	10
Cutter length			mm	10
Cutting capacity copper wire up to ∅ (72 6170)			mm	0.2 – 1.2
Cutting capacity copper wire up to ∅ (72 6180)			mm	0.1 – 1



Overall length			mm	125
71B 72 6210	Electronics side cutter, standard head shape	FW		eShop
71B 72 6215		SFW		eShop
Head width			mm	12
Cutter length			mm	11.5
Cutting capacity copper wire up to ∅			mm	0.2 – 1.6



LINDSTRÖM Precision electronics side cutters, oval jaws

Slim style with precision ground induction hardened jaw edges (63 – 65 HRC). Black surface to reduce reflections. Yellow plastic grips of conductive material with return spring. **Suitable for ESDs.** Adjustable precision screw joint for minimal friction and optimum axial alignment of the cutters.

Material: High performance steel alloy, drop forged, burnished.



overall length			mm	110	125
73M 72 6240	Electronics side cutter, oval head	FW		eShop	eShop
73M 72 6260		SFW		eShop	eShop
73M 72 6280		kW		eShop	eShop
Head width			mm	10	16
Cutter length			mm	10	16
Cutting capacity copper wire up to ∅ (72 6240)			mm	0.2 – 1.25	0.4 – 2
Cutting capacity copper wire up to ∅ (72 6260)			mm	0.1 – 1.25	0.3 – 2
Cutting capacity copper wire up to ∅ (72 6280)			mm	0.1 – 1	0.3 – 1.6





KNIPEX Electronics side cutter especially for hard wire

Pointed shape with strong cutting chamfer, especially for hard wires. Adjustable screw joint. Jaws burnished, handles with plastic coating.

Standard: **DIN ISO 9654**

Material: Special tool steel, drop-forged, and oil-hardened.



overall length			mm	125H
73F 72 6440	Electronics side cutter, pointed head	W		eShop ■
73F 72 6460	Electronics side cutter, pointed head **with wire holder**	W		eShop
Head width			mm	10.5
Cutter length			mm	14
Cutting capacity medium-hard steel wire			mm	0.2 – 1
Cutting capacity hard steel wire			mm	0.2 – 0.6



Garant Precision electronics side cutter with pointed jaws

Precision machined with slim shape. Cutting edges induction hardened (62 - 64 HRC). Non-reflecting surface, matt shot-blasted with inlaid joint and countersunk screw. Double interchangeable springs for easy operation. **2-component** conductive grips. **Suitable for ESDs.** Cutting edges precision ground.

Material: CNC-machined special tool steel for extremely accurate tolerances.



Overall length		mm	125
71B 72 6250	Electronics side cutter, pointed head	kW	eShop ■
Head width		mm	10
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.1 – 1

Pointed hollowed jaws

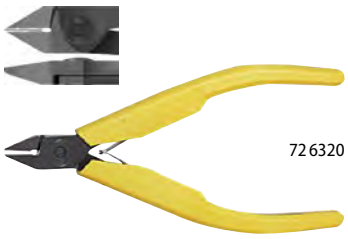


Overall length		mm	125
71B 72 6255	Electronics side cutter, pointed head, hollowed jaws	kW	eShop ■
Head width		mm	10
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.1 – 1

LINDSTRÖM Precision electronics side cutter with pointed jaws

Slim shape with precision ground induction hardened cutting edges (63 – 65 HRC). Black surface to reduce reflections. Yellow plastic grips made of conductive material with opening spring. **Suitable for ESDs.** Adjustable precision screw joint for minimal friction and optimum axial alignment of the cutters.

Material: High performance steel alloy, drop forged, burnished.



overall length		mm	110
73M 72 6320	Electronics side cutter, pointed head, hollowed jaws	FW	eShop
Head width		mm	10
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.2 – 1.25

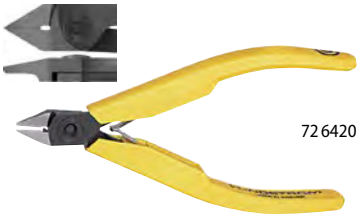


overall length		mm	110
73M 72 6340	Electronics side cutter, pointed head	SFW	eShop
Head width		mm	10
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.1 – 1.25



overall length		mm	110
73M 72 6360	Electronics side cutter, pointed head	kW	eShop
Head width		mm	10
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.1 – 1

Pointed hollowed jaws



overall length		mm	110
73M 72 6420	Electronics side cutter, pointed head, hollowed jaws	kW	eShop
Head width		mm	10
Cutter length		mm	10
Cutting capacity copper wire up to ∅		mm	0.1 – 0.8

Super Knips® electronics side cutters

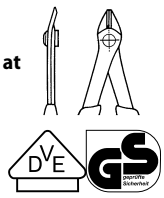
Slim head with precision ground cutting edges, with fine cutting chamfer. Handles with multi-component covering, with opening spring.

Standard: **DIN ISO 9654**

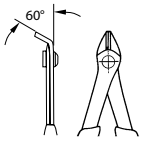
72 6653 – Plastic-coated handles **to DIN EN 60900 / VDE 0682-201 insulated for working at voltages up to 1000 V.**

Material:

72 6610 – Special tool steel, burnished.
72 6480–6595 – Made of stainless steel (INOX).



overall length		mm	125	140
73F 72 6480	Electronics side cutter Super Knips®	kW	eShop ■	eShop ■
73F 72 6653	Electronics side cutter Super Knips® **VDE insulated**	KW	eShop	–
73F 72 6590	Electronics side cutter Super Knips® **with wire holder**	kW	eShop	–
73F 72 6595	Electronics side cutter Super Knips® **60° angled**	kW	eShop	–
Head width		mm	13.5	15.7
Cutter length (72 6480, 72 6653, 72 6590)		mm	9	12.3
Cutter length (72 6595)		mm	5.5	–
Cutting capacity copper wire up to ∅ (72 6480, 72 6653, 72 6590)		mm	0.2 – 1.6	0.2 – 2.1
Cutting capacity copper wire up to ∅ (72 6595)		mm	0.2 – 1	–
Cutting capacity medium-hard steel wire (72 6480, 72 6653, 72 6590)		mm	0.2 – 1	0.2 – 1.2
Cutting capacity medium-hard steel wire (72 6595)		mm	0.2 – 0.6	–



overall length		mm	125
73F 72 6610	Electronics side cutter Super Knips®, slender head	kW	eShop
Head width		mm	12.5
Cutter length		mm	9
Cutting capacity copper wire up to ∅		mm	0.2 – 1

Material: Special tool steel, burnished.

Application:

72 6620 – Suitable even for cutting glass fibre cable (fibre optic cable).

overall length		mm	125	125H	140
73F 72 6620	Electronics side cutter Super Knips®	kW	eShop ■	–	eShop ■
73F 72 6640	Electronics side cutter Super Knips® **with wire holder**	kW	eShop	–	–
73F 72 6645	Electronics side cutter Super Knips®	SFW	–	eShop	–
73F 72 6650	Electronics side cutter Super Knips® **with wire holder**	SFW	–	eShop	–
Head width		mm	13.5	13.5	15.7
Cutter length		mm	9	9	12.3
Cutting capacity hard wire up to ∅		mm	–	0.2 – 0.6	–
Cutting capacity copper wire up to ∅		mm	0.2 – 1.6	0.2 – 1.6	0.2 – 2.1
Cutting capacity medium-hard steel wire		mm	0.2 – 1.2	0.2 – 1.2	0.2 – 1.4



Super Knips® electronics side cutters

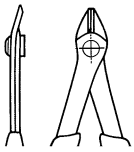
Slim head with precision ground cutter, without chamfer. Handles with multi-component covering, with opening spring. **Suitable for ESDs.**

Material:

72 6655/6656 – Made of stainless steel (INOX).
72 6660/6661 – Special tool steel, burnished.

Application:

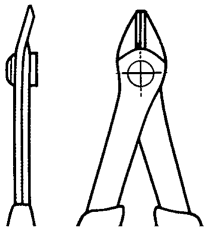
72 6660 – Suitable even for cutting glass fibre cable (fibre optic cable).



overall length		mm	125	140
73F 72 6655	Electronics side cutter Super Knips®, conductive grips	kW	eShop	eShop
73F 72 6656	Super Knips® electronics side cutter, conductive grips **with wire holder**	kW	eShop	–
73F 72 6660	Electronics side cutter Super Knips®, conductive grips	kW	eShop	eShop
73F 72 6661	Super Knips® electronics side cutter, conductive grips **with wire holder**	kW	eShop	–
Head width		mm	13.5	15.7
Cutter length		mm	9	12.3
Cutting capacity copper wire up to ∅		mm	0.2 – 1.6	0.2 – 2.1
Cutting capacity medium-hard steel wire (72 6655, 72 6656)		mm	0.2 – 1	0.2 – 1.2
Cutting capacity medium-hard steel wire (72 6660, 72 6661)		mm	0.2 – 1.2	0.2 – 1.4



Garant Electronics side cutter



Professional diagonal side cutter with slightly shearing cut. Both cutter parts are very accurately put together using carefully machined holes and polished surfaces to ensure a precise cut. With opening spring and ergonomically designed handles for secure and comfortable use. **2-component grips** of dissipative material. **Suitable for ESD work.**

Material: Made of carbon steel (C70), precision stamped and heat-treated, non-reflective phosphate.

overall length			mm	130
71B 72 6682	Electronics side cutter slim design	kW	eShop ■	
Head width			mm	9.5
Cutter length			mm	8
Cutting capacity copper wire up to ∅			mm	0.8



overall length			mm	135
71B 72 6702	Electronics side cutter clean cut, stronger jaws	kW	eShop ■	
Head width			mm	13.5
Cutter length			mm	8
Cutting capacity copper wire up to ∅			mm	1.3



overall length			mm	135
71B 72 6722	Electronics side cutter for ferrous materials	FW	eShop ■	
Head width			mm	13.5
Cutter length			mm	8
Cutting capacity copper wire up to ∅			mm	2



overall length			mm	135
71B 72 6742	Electronics side cutter for ferrous materials	kW	eShop ■	
Head width			mm	13.5
Cutter length			mm	8
Cutting capacity copper wire up to ∅			mm	2



overall length			mm	135
71B 72 6762	Electronics side cutter especially for hard wire	kW	eShop	
Head width			mm	13
Cutter length			mm	12
Cutting capacity hard wire up to ∅			mm	0.4
Cutting capacity copper wire up to ∅			mm	1.3



Garant Precision electronics oblique cutters

Precision machined with slim shape. Cutting edges induction hardened (62 - 64 HRC). Non-reflecting surface, matt shot-blasted with inlaid joint and countersunk screw. Double interchangeable springs for easy operation. **2-component grips** of dissipative material. **Suitable for ESD work.**

Material: CNC-machined special tool steel for extremely accurate tolerances.



overall length			mm	125
71B 72 6670	Electronics oblique cutter	SFW	eShop	
Head width			mm	10
Cutter length			mm	10
Cutting capacity copper wire up to ∅			mm	0.2 – 1.5

LINDSTRÖM Precision electronics oblique end cutters and end cutters

Slim style with precision ground induction hardened jaw edges (63 – 65 HRC). Black surface to reduce reflections. Yellow plastic grips of conductive material with return spring. **Suitable for ESDs.** Adjustable precision screw joint for minimal friction and optimum axial alignment of the cutters.

Material: High performance steel alloy, drop forged, burnished.

overall length		mm	118
73M 72 6880	Electronics oblique end cutter with long hollowed jaws	SFW	eShop
Head length		mm	18
Head width		mm	10
Cutting capacity copper wire up to ∅		mm	0.2 – 0.8



LINDSTRÖM Precision electronics oblique end cutters "Supreme"

With precision ground inductive hardened cutting edges (63–65 HRC). White plastic grips of conductive material with return spring. **Suitable for ESDs.** Specially made box joint with particularly long contact faces, undesired movements in the joint are minimised, which ensures extremely precise axial alignment of the jaws.

Material: Special ball bearing steel, drop-forged.





overall length		mm	108
73M 72 6910	Electronics oblique end cutter	FW	eShop
73M 72 6912		SFW	eShop
Head length		mm	8
Head width		mm	10.5
Cutter length		mm	15
Cutting capacity copper wire up to ∅		mm	0.35 – 1.25

Garant Electronics end cutters and IC cutters

Professional cutters with slightly shearing cut. Both cutter parts are very accurately put together using carefully machined holes and polished surfaces to ensure a precise cut. With opening spring and ergonomically designed handles for secure and comfortable use. **2-component grips** of dissipative material. **Suitable for ESD work.**

Material: Made of carbon steel (C70), precision stamped and heat-treated, non-reflective phosphate.



overall length		mm	130
71B 72 6922	Electronics end cutter	SFW	eShop
Head length		mm	10
Head width		mm	10
Cutting capacity copper wire up to ∅		mm	0.6



overall length		mm	130
71B 72 6942	Electronics IC cutter	SFW	eShop
Head length		mm	18
Head width		mm	14
Cutting capacity copper wire up to ∅		mm	1.02

KNIPEX Electronic end cutter mirror-polished, 27° angled

Mirror polished, therefore no faults in the circuit due to peeling chrome plate. Sturdy box joint with zero play. Low-friction double spring for smooth and gentle opening. Multi-component grips, blue/red.

Standard: **DIN ISO 9654**

Material: Ball-bearing steel, cutting edges induction hardened.

Application: For making precision cuts, e.g. in electronics and precision mechanisms.





overall length		mm	115
73F 72 6960	Electronic end cutter, mirror-polished, 27° angled	FW	eShop
73F 72 6962		kW	eShop
Head width		mm	10.5
Cutter length		mm	12
Cutting capacity copper wire up to ∅ (72 6960)		mm	1.5
Cutting capacity copper wire up to ∅ (72 6962)		mm	1.3

Electronics gripping pliers mirror-polished

Mirror polished, therefore no faults in the circuit due to peeling chrome plate. Precision box joint.
Low-friction double spring for smooth and gentle opening. Gripping faces ground smooth.
Edges carefully deburred.

72 7189 – Plastic coated handles.
72 7190–7193 – Handles with multi-component coating.

Standard: DIN ISO 9655
Material: Ball-bearing steel, oil quenched.
Application: For precision assembly work, e.g. in electronics and precision mechanisms.

Further versions available on request.

Overall length		mm	115
73F 72 7189	Electronics flat-nosed pliers		eShop
73F 72 7190			eShop
Head width		mm	9.5
Jaw length		mm	22.5


72 7189


72 7190

overall length		mm	115
73F 72 7191	Electronics snipe-nosed pliers		eShop
Head width		mm	9.5
Jaw length		mm	22.5


72 7191

overall length		mm	115
73F 72 7192	Electronics snipe-nosed pliers, angled 45°		eShop
Head width		mm	9.5
Jaw length		mm	22.5


72 7192

overall length		mm	145
73F 72 7193	Electronics snipe-nosed pliers, angled 45°		eShop
Head width		mm	12
Jaw length		mm	35


72 7193

Electronics gripping pliers mirror-polished

Mirror polished, therefore no faults in the circuit due to peeling chrome plate. Precision box joint.
Low-friction double spring for smooth and gentle opening.
Multi-component grips, black/grey, electrically conductive. **Suitable for ESDs.**
Gripping faces ground smooth. Edges carefully deburred.

Standard: DIN ISO 9655
Material: Ball-bearing steel, oil quenched.
Application: For precision assembly work, e.g. in electronics and precision mechanisms.

Further versions available on request.

overall length		mm	115
73F 72 7195	Electronics flat-nose pliers		eShop
Head width		mm	9.5
Jaw length		mm	22.5


72 7195

overall length		mm	115
73F 72 7196	Electronics snipe-nosed pliers		eShop
Head width		mm	9.5
Jaw length		mm	22.5


72 7196

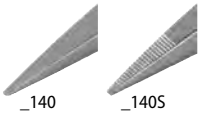
overall length		mm	115
73F 72 7197	Electronics snipe-nosed pliers, angled 45°		eShop
Head width		mm	9.5
Jaw length		mm	22.5


72 7197

Garant Precision electronics gripping pliers

Precision machined with slim shape. Surface matt shot-blasted with inlaid joint and countersunk screw. Double spring for easy operation. **2–component** conductive grips, **suitable for ESDs**.

Material: Special tool steel, CNC-machined for extremely accurate tolerances.



Size 140 – Jaws with **smooth gripping faces.**
Size 140S – Jaws with **serrated gripping faces.**

			mm	140	140S
71B	72 7165	Electronics flat-nosed pliers		eShop ■	eShop ■
		Head width	mm	10	
		Jaw length	mm	30	



Long narrow jaws.
Size 140 – Jaws with **smooth gripping faces.**
Size 140S – Jaws with **serrated gripping faces.**

			mm	140	140S
71B	72 7170	Electronics snipe-nosed pliers		eShop	eShop ■
		Head width	mm	10	
		Jaw length	mm	30	



Long rounded jaws with fine tips.

			mm	135
71B	72 7175	Electronics round-nose pliers		eShop ■
		Head width	mm	10
		Jaw length	mm	20



Garant Electronics gripping pliers

The jaws of the cutter are accurately put together using carefully machined holes and polished surfaces. With opening spring and ergonomically designed handles for secure and comfortable use. **2–component** conductive grips, **suitable for ESDs**.

Material: Made of carbon steel (C70), precision stamped and heat-treated, non-reflective phosphate.

Flat-nose, serrated internal jaws.

			mm	145
71B	72 7142	Electronics flat-nose pliers		eShop ■
		Head width	mm	13
		Jaw length	mm	20



Snipe-nose, serrated internal jaws.

			mm	155
71B	72 7162	Electronics snipe-nose pliers with long jaws		eShop ■
		Head width	mm	13
		Jaw length	mm	32



Needle-nose, serrated internal jaws.

			mm	150
71B	72 7182	Electronics needle-nose pliers 48° angled		eShop ■
		Head width	mm	13
		Jaw length	mm	35



LINDSTRÖM Precision tweezers set

INOX

A practical assortment for everyday applications, in a high quality, sturdy nylon case.

Material: Precision tweezers made of stainless non-magnetic acid-resistant steel.

			Content: 1 each precision tweezers
73M 72 7502	Precision tweezers set, 2 pieces	eShop	Form SS (long, slim, fine tips); Form AA (fine, sturdy tips)
Packaging		Nylon case	



			Content: 1 each precision tweezers
73M 72 7505	Precision tweezers set, 5 pieces	eShop	Form 00 (flat, strong tips); Form 1 (sturdy, fine tips); Form 3c (very sharp tips); Form 5 (very fine tips); Form 7 (fine, sickle-shaped tips)
Packaging		Nylon case	



HOLEX Tweezers set

A practical assortment for everyday applications.



72 7504_3AMB



72 7504_5

Number of tweezers		3N	3AMB	5
76B 72 7504	Tweezers set	eShop ■	eShop ■	eShop ■
Packaging		Plastic pouch	Plastic pouch	Plastic toolroll
Content: 1 each tweezers		727520_N 727550_N 727600_N	727520_AMB 727550_AMB 727600_AMB	727520_AMB 727550_AM 727610_AM 727630_AMB 727660_AM

LINDSTRÖM Carbon fibre tweezers

Made of stainless non-magnetic acid-resistant steel. Carbon fibre tips, conductive non-magnetic acid-resistant and heat-resistant up to 270 °C.



72 7506



72 7507



72 7508

			Length mm
73M 72 7506	Carbon fibre tweezers, fine, curved tips	eShop	130
73M 72 7507	Carbon fibre tweezers, flat, strong tips	eShop	130
73M 72 7508	Carbon fibre tweezers, very fine tips	eShop	130

HOLEX Tweezers for SMD

72 7630 – Additionally with black epoxy resin coating (protection against nickel allergy, anti-glare), **suitable for ESDs.**

72 7670 – Milled-out section at the tip for very small components and wires.



72 7630



72 7640



72 7650



72 7660



72 7670

Material		AMB	AM
76B 72 7630	Tweezers, shouldered / sickle shaped pointed, 120 mm, Form 7	eShop ■	–
76B 72 7640	Tweezers shouldered / sickle shaped pointed, short angled, 120 mm, Form 7b	–	eShop
76B 72 7650	Tweezers shouldered / pointed bevelled gripping surface, 115 mm	–	eShop
76B 72 7660	Tweezers with short, angled gripping surface, 120 mm	–	eShop
76B 72 7670	Tweezers milled cut-out section at tip, 120 mm	–	eShop

S/STL

HOLEX Assembly tweezers for electronic components

72 7840 – Made of non-magnetic, stainless steel.

72 7800–7830 – Made of non-magnetic stainless steel, epoxy resin coating, **suitable for ESDs.**



72 7800



72 7810



72 7820



72 7840

Material		AMB	AM	Length mm	Width mm
76B 72 7800	Assembly tweezers for 0.8 - 2.0 mm ∅	eShop ■	–	120	3
76B 72 7810	Assembly tweezers for 1.5 - 3.0 mm ∅	eShop ■	–	120	5
76B 72 7820	Assembly tweezers for 3.5 - 7.0 mm ∅	eShop ■	–	120	5
76B 72 7830	Assembly tweezers for 6.5 - 10.0 mm ∅	eShop	–	120	5
76B 72 7840	Extraction tweezers for micropackages 8 - 14 pins	–	eShop	150	6

HOLEX Reverse action tweezers

Precision tweezers made of non-magnetic steel, self-clamping with finger pads.



72 7690



72 7700

Material		AM
76B 72 7690	Cross-lock tweezers rounded / straight tips, 160 mm	eShop
76B 72 7700	Cross-lock tweezers rounded / angled tips, 160 mm	eShop

HOLEX Tweezers

Size AM – Made of non-magnetic, stainless steel.
Size AMB – Additionally with black epoxy resin coating (protection against nickel allergy, anti-glare), **suitable for ESDs.**
Size TITAN – Pure titanium, **stainless**, acid-resistant, non-magnetic, highly resilient, highly wear resistant, heat resistant to approx. 800 °C.
Size N – Of special steel, nickel-plated (No. 727520 / 7560 painted black).
72 7520 Size INOX – Made of stainless steel.
72 7530–7550/7600 – Inside serrated.



Version N, INOX, AM, TITAN



Version AMB

Material		S/STL				
		N	INOX	AM	AMB	TITAN
76B 72 7510	Tweezers pointed, 115 mm Form 3c	–	–	eShop	eShop	eShop ■
76B 72 7520	Tweezers pointed, 125 mm Form AA	eShop ■	eShop ■	eShop ■	eShop	–
76B 72 7530	Tweezers narrow tips, 155 mm Form 22	eShop	–	eShop	–	eShop
76B 72 7540	Tweezers, rounded tips 1 mm wide, 125 mm	eShop	–	–	–	–
76B 72 7550	Tweezers, rounded tips 3 mm wide, 145 mm, form 40	eShop ■	–	eShop ■	eShop ■	eShop ■
76B 72 7560	Tweezers shouldered pointed, 110 mm, Form 5	eShop	–	eShop	eShop ■	–
76B 72 7570	Tweezers shouldered pointed, 135 mm, Form GG	–	–	eShop ■	eShop ■	–
76B 72 7580	Tweezers shouldered, flat tips 2.5 mm wide 120 mm, Form 2a	–	–	eShop	eShop ■	–
76B 72 7590	Tweezers, shouldered, needle pointed, angled, 115 mm, form G	–	–	eShop	–	–
76B 72 7600	Tweezers with narrow tips angled, 150 mm, Form 22b	eShop ■	–	–	eShop ■	–
76B 72 7610	Tweezers with 4.5 mm wide flat tips, angled, 120 mm, form 38a	–	–	eShop	–	–
76B 72 7620	Tweezers, broad tips 6.5 mm wide, 120 mm, form 35a	–	–	eShop	–	–



72 7510_AM

72 7520_AM

With guide pin, serrated internal points
72 7530_TITAN



serrated inside
72 7540_N



Round, serrated inside
72 7550_TITAN



72 7560_AM



72 7570_AM



72 7580_AM



72 7590_AM



With guide pin, serrated internal points
72 7600_N



72 7610_AM



PTFE anti-stick coating
72 7620_AM

HOLEX Cutting tweezers

Precision tweezers made of special steel, nickel-plated.
Application: For snipping off very fine copper wire.



76B 72 7710	Cutting tweezers 100 mm		eShop
Cutter length		mm	8

HOLEX Non-metallic tweezers

			Length mm	Version
76B 72 7720	Nylon tweezers, rounded tips	eShop ■	115	–
76B 72 7730	Carbon tweezers, pointed tips	eShop	110	antistatic, conductive
76B 72 7740	Carbon tweezers, wide tips	eShop	110	antistatic, conductive



72 7720



72 7730



72 7740

HOLEX Fully insulated tweezers

Made of steel with fine tips, anti-slip double insulated handles.
Size N – Made of special steel, nickel-plated.
72 7920 Size AM – Made of non-magnetic, stainless steel.

Material		N	AM	Length mm	Version
76B 72 7900	Tweezers straight, insulated	eShop	–	155	with fine tips
76B 72 7910	Tweezers angled 35°, insulated	eShop ■	–	155	with fine tips
76B 72 7920	Tweezers Form AA straight, insulated	eShop	eShop	130	pointed



72 7900



72 7910



72 7920

S/STL

HOLEX Assembly forceps with ratchet clamp

With particularly long slim jaws with angled or bent ends. Handles with scissor grip and ratchet for automatic clamping. Gripping faces serrated.

72 7950 – Jaw tips offset 90°, grip faces with cross Vees.

72 7960 – Jaws offset approx. 25°.

Material: Stainless steel.

Application: These forceps can be used for automatic clamping of small components and wires, so that both hands are free, e. g. when soldering.



Assembly forceps



72 7950_200



72 7960_200

overall length		mm	200	240
72B 72 7950	Assembly forceps with ratchet clamp		eShop ■	eShop ■
Jaw length		mm	50	75

overall length		mm	200	240
72B 72 7960	Assembly forceps with ratchet clamp, 25° angled		eShop ■	eShop ■
Jaw length		mm	50	

Pick/hook set

72 7990 – **"multicraft" power grip** of transparent, impact-resistant plastic (cadmium-free), particularly easy grip, even with oily hands. **Blade** of chrome vanadium special alloy combining maximum hardness and exceptional toughness. Precision curved and ground tips.

72 7995 – Multi-component handle with ergonomic shape. Blade made of chrome vanadium steel, four **spoon-shaped** hooks and **pointed** hooks each.

Application: Ideal for fitting and for removing O rings and seals that are difficult to access, e.g. on engines, gearboxes, brakes, air conditioners, etc. For cleaning threaded holes and seal seats. Particularly suitable for locating cracks in metal and for much more.

Note:

72 7990 – Individual Pick Tools are available under No. 727991.



72 7990_5

Number of tools			5
73B 72 7990	PB SWISS TOOLS Pick set, 5 pieces, in a wallet		eShop ■



72 7995

Four spoon-shaped hooks *Four pointed hooks*



72 7995_8

Number of tools			8
76B 72 7995	HOLEX Hook set, 8 pieces, in a wallet		eShop ■

Cable stripping tool

Rotating knife for circular, longitudinal, and helical cutting. Adjustable depth of cut. The Vee-shape cable holder adjusts automatically to the required cable ∅. Retaining clip with integral cutter for breaking out the part of the insulation that has been cut. The cable sheath is cut by twisting and pulling the cutter.

72 8040 – Supplied with 1 spare blade in the handle.

Advantage: **Insulation can be stripped** from the cable **at any desired place**. Very sturdy design.



72 8040



72 8043

for cable ∅		mm	6-25	25-35
73H 72 8040	Weidmüller Cable stripping tool		eShop	eShop
76C 72 8043	HOLEX Cable stripping tool		eShop ■	–
Manufacturer's type designation (72 8040)			AM25	AM35
overall length (72 8040)		mm	157	174
overall length (72 8043)		mm	150	–

Universal stripping tool

Material: Glass-fibre-reinforced plastic

Multi-component pistol handle design for comfortable grip and secure handling.

72 8095 – Version for left-handed users

Application: For quick and precise sheath stripping of all conventional round cable and moisture-proof cables (NYM cables) of ∅ 8 - 13 mm, data cables (CAT 5 to CAT 7), twisted pair cables (UTP / STP) and coaxial cables from ∅ 4.8 - 7.5 mm and for stripping insulation from conductor cross-sections 0.2; 0.3; 0.8; 1.5; 2.5 and 4.0 mm².



Wire stripping



Wire stripping range / markings 4–24 mm



Cable stripping in installation boxes



Stripping a coaxial cable



72 8091

for cable ∅			mm	8-13
73F 72 8091	KNIPEX	ErgoStrip® universal stripping tool		eShop
73F 72 8095		ErgoStrip® universal stripping tool for left-handed use		eShop
overall length			mm	135

Ergonomic pistol handle design for comfortable grip and secure handling.

Application: For quick and precise sheath stripping of all conventional round cables of ∅ **6 - 13 mm** and flat cables **up to 18 mm** width, permits circular and longitudinal cuts.
The depth of the blade can be conveniently and precisely adjusted in steps of 0.1 mm to 3 mm using a lockable adjusting wheel
Stripping of conductor cross-section 0.5 - 6.0 mm² (20 - 10 AWG).







Circular and longitudinal cut for common flat and round cables.



72 8098

for cable ∅			mm	6-13
72B 72 8098	HOLEX	Universal stripping tool		eShop
overall length			mm	164

72

JOKARI original Cable stripping tool

Hollow plastic handle with fixed, integral blades. Simple to strip "into the box".
Knife with TiN-coated blade for longer working life.

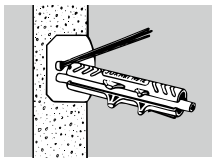
72 8050 – With blades for a circular cut.
72 8055 – With blades for a circular cut, long version.
72 8075 – With blades for a circular cut and wire stripping blades.
72 8065/8070 – With blades for circular cut, longitudinal cut, wire strippers and retractable blade.



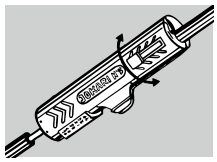
72 8050



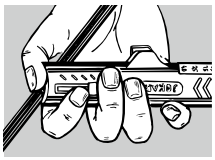
72 8055



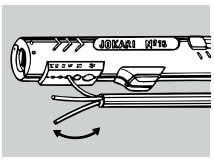
„Stripping in the outlet"



Cable stripping (circular cut)



Cable stripping (longitudinal cut)



Stripping the insulation

for cable ∅			mm	8-13	5,5-15	4,5-10
76C 72 8050	Cable stripping tool	TiN		eShop	–	–
76C 72 8055	Cable stripping tool, long	TiN		eShop	–	–
76C 72 8065	Cable stripping tool with wire strippers and blade	TiN		eShop	–	–
76C 72 8070	Cable stripping tool with wire strippers for data and control cables	TiN		–	eShop	–
76C 72 8075	Cable stripping tool with wire stripping blades for CAT/twisted-pair cables	TiN		–	–	eShop
overall length (72 8050, 72 8065, 72 8070, 72 8075)			mm		124	
overall length (72 8055)			mm	176	–	–



72 8065



72 8070



72 8075

JOKARI original Cable stripping tool with locators

Sheath stripper with **force and height limiter**. Different colours offer the facility to reserve set locators for selected recurrent types of cable. Length stop can be positioned for left-handed and right-handed users.

Application: Stripping the sheath from all conventional round cables ∅ 8 - 15 mm and stripping insulation from individual conductors 1.5 and 2.5 mm².

Supplied with:
- **UNI-PLUS** cable stripping tool No. 728082 size 8-15.
- **Locator box** No. 728083 with 4 pcs. locators and 1 pc. hexagon L-wrench 1.5 AF.

Note: The cable stripping tool No. 728082 size 8-15 and the locator box No. 728083 can also be ordered separately.



Adjust the grub screw of the locator in order to define the blade distance.



Locator box in the handle



for cable ∅		mm	8-15
76C 72 8081	Cable stripping tool with locators	TiN	eShop
overall length		mm	130

intercable Cable stripping tool

Size ABI1 – Universal external sheath cutter with spring quick-release clamping system for removing all plastic insulation layers from **cable ∅ 4.5 mm to 29 mm.**
Suitable for soft and hard insulation types of cables. Special grinding of the blade for clean removal of the outer sheath. **Suitable for circular, longitudinal and helical cutting.** Cutting depth adjustable in increments from 0.1 mm - 3 mm using rotary knob (clockwise direction). The special sliding characteristics of the contact surface ensure resistance-free work on the cable.

Size AV6220 – Cable stripping tool for stripping all the layers of plastic insulating external sheath **from cables of ∅ 25 mm.** Cutting on a **ratchet principle** without application of large forces. Suitable for cutting circumferentially and longitudinally.
Cutting depth adjustable from 0 – 5 mm. With exchangeable blade

Advantage: **Insulation can be stripped from the cable at any desired place.**



_ABI1



_AV6220

Type		ABI1	AV6220
76C 72 8085	Cable stripping tool	eShop	eShop
overall length	mm	140	160



_ABI1



_AV6220

Weidmüller Cable stripping tool

Particularly small and handy body, ideal for use in narrow and cramped locations such as in cable ducts.
The sprung plastic claws adjust automatically to the required cable ∅.
Twist knife for circular and longitudinal cut, adjustable depth of cut.
The cable sheath is cut by twisting and pulling the cutter.

Advantage: Outstandingly suitable for sequential wire stripping at any point along the cable.





for cable ∅		mm	6-17
73H 72 8045	Cable stripping tool		eShop
Manufacturer's type designation			AM16
Length		mm	41
Width		mm	58
Height		mm	53

JOKARI original Cable stripping tool

New type of protection mechanism for the hooked blade is mounted in the handle end ensures **safe handling** and **reliably protects against cutting injuries.** The penetration depth of the hooked blade is adjustable in four steps. With 2 **exchangeable clips** for cable ∅ 8 - 28 mm and 27 - 35 mm, other clip sizes available as options. Viewing window on the exchangeable clip for an **optimum cutting characteristic** (size 8 - 28 and size 4 - 16).

You can find cable stripping knives in the eShop under No. 72 8000 – 72 8030 in sizes 8 – 28 in each case.



72 8035



72 8036_4-16



72 8036_50-70

for cable ∅		mm	8-28
76C 72 8035	Safety cable stripping knife	TiN	eShop
overall length		mm	167

Suitable for: Cable stripping knife no. 728035

for cable ∅		mm	4-16	8-28	27-35	35-50	50-70
76C 72 8036	Exchangeable clip		eShop	eShop	eShop	eShop	eShop

Cable stripping tool with ratchet function

Multi-component handle with ergonomic design and eyelet for attachment. **3-stage blade locking** with safety-locking mechanism, slider and push-button. Blade with four detent positions: folded in, straight, angled and movable. Also cuts very hard or tough plastic sheathing up to 7 mm thick. Suitable for cutting circumferentially and longitudinally.



72 8150

overall length		mm	145
73F 72 8150	Cable stripping knife, with slide block and ratchet function		eShop

Four detent positions:
1. Transport position.
2. Circumferential cutting position.
3. Circumferential and longitudinal cutting position.
4. Longitudinal cutting position with ratchets.

Suitable for: Cable stripping knife no. 728150

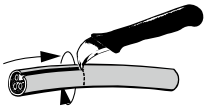

72 8151

Type		1
73F 72 8151	Replacement blade with slide block	eShop

Cable stripping knife - VDE insulated

Multi-component handle with ergonomic shape. Blade protected by a transparent cap. Insulated up to 1000 volts to **DIN EN IEC 60900 / VDE 0682-201.**

72 8100 – Sickle-shaped hooked blade with slide plate at the tip. The back of the blade is insulated.
72 8110 – Narrow sickle-shaped hooked blade, suitable for sector cables.
72 8120 – Short sturdy hooked blade, suitable for round cables.




72 8100


72 8110


72 8120

73F 72 8100	Cable stripping knife VDE insulated, with slide plate		eShop ■
73F 72 8110	Cable stripping knife VDE insulated, narrow blade		eShop
73F 72 8120	Cable stripping knife VDE insulated, hooked blade		eShop
overall length (72 8100)		mm	180
overall length (72 8110)		mm	190
overall length (72 8120)		mm	170

Precision wire stripper

Wire stripping range adjustable in the steps 0.25; 0.30; 0.40; 0.50; 0.60 and 0.80 mm ∅. With integral wire cutter.



72 8540

for wire ∅		mm	025-08
76C 72 8540	JOKARI original Precision wire stripper with wire cutter		eShop
for conductor cross section AWG			30-20

The sensing system automatically adjusts the blades and pressure to the respective cross-section. This ensures the wire stripping is performed without causing damage. With adjustable and scalable length end stop over a working range of 5 to 45 mm. Suitable for right and left hand rotation.

Application: For fine stranded conductors and wires, PVC, PTFE/Teflon, Kynar insulations amongst others. Particularly for cable stripping when the conductor cross section changes frequently.



72 8501

for wire ∅		mm	016-08
72B 72 8501	HOLEX Precision wire stripper, steplessly adjustable		eShop ■
for conductor cross section AWG			34-20

Wire stripping tool for fibre optic cable

Jaws burnished, handles with multi-component coating.

Material: Special quality chrome-vanadium electro-steel, oil-quenched.

Application: For removal of primary and secondary coatings from glass fibre cables.


Primary coating


Secondary coating


72 8768

Overall length		mm	130
73F 72 8768	Wire stripper for fibre optic cable		eShop

Automatic wire stripping tool – self-adjusting

Very sturdy, lightweight body made of glass fibre-reinforced plastic. The blades adjust automatically to the various cable diameters. The insulation is cut and removed in one operation. With length stop and wire cutter.

Spare part: Spare blade available under No. 728710 size 6/N.



72 8613

for conductor cross-section	mm²	6
71B 72 8613 Garant Wire stripping tool		eShop ■
overall length	mm	200
for conductor cross-section	mm²	0.08 – 6



72 8630

72 8631 – Half-round metal restraint jaws with a comb profile, precision cut thanks to parabolic profile wire stripping knife. Fine adjustment permits exact setting of the knives in response to cater for special materials or temperature conditions.

Advantage: Robust clamping jaws of steel with cutting edge.

Spare part: Spare blade available under No. 728714 and length stop available under No. 728715.

for conductor cross-section	mm²	10
73F 72 8630 KNIPEX MultiStrip 10 wire stripping tool		eShop ■
overall length	mm	195
for conductor cross-section	mm²	0.03 – 10



72 8631

Fine adjustment



Half-round clamping jaws and parabolic profile wire stripping knife.

for conductor cross-section	mm²	16
73F 72 8631 KNIPEX PreciStrip 16 wire stripping tool		eShop
overall length	mm	195
for conductor cross-section	mm²	0.08 – 16



72 8645_1

Upper **handle piece can be taken off,** allowing variable handle sizes for large and small hands (from size 6UL). **Also for partial stripping.**

Size 6UL; 10UL – stripax® Ultimate for hard insulation.

Spare part: Spare blade available under No. 728710.



72 8645_6UL

for conductor cross-section	mm²	1	6UL	10UL
73H 72 8645 Weidmüller Wire stripping tool STRIPAX®		eShop ■	eShop	eShop
overall length	mm	135	190	190
for conductor cross-section	mm²	0.08 – 1	0.25 – 6	2.5 – 10

for conductor cross-section	mm²	10	16
73H 72 8645 Weidmüller Wire stripping tool STRIPAX®		eShop ■	eShop
overall length	mm	190	
for conductor cross-section	mm²	0.08 – 10	6 – 16



Changeover lever for partial stripping

72 8645_16

High-tensile tool steel with plastic grips.

Advantage: No limit of the length to be stripped, i.e. **insulation can be stripped from the middle of the cable.**



72 8720

for conductor cross-section	mm²	6
72B 72 8720 HOLEX Wire stripping tool		eShop
overall length	mm	225
for conductor cross-section	mm²	0.2 – 6



JOKARI original Automatic wire stripping tool

Size 6; 6PRO – With length stop and wire cutter.
Size 6PRO – With multi-component grip.

for conductor cross-section	mm²	6	6PRO
76C 72 8622 Wire stripping tool, economy version		eShop	eShop
Manufacturer's type designation		Super 4 plus	Super 4 Pro
overall length	mm	165	163
for conductor cross-section	mm²	0.2 – 6	
for conductor cross section AWG		24-10	



72 8622_6 72 8622_6PRO

Size 6 – With length stop and wire cutter.
Size 6; 16 – With multi-component grip.
Spare part: Spare blades available under No. 728712.

for conductor cross-section	mm²	6	16
76C 72 8625 Wire stripping tool		eShop	–
76C 72 8626		–	eShop
Manufacturer's type designation		SECURA 2K	6-16²
overall length	mm	200	172
for conductor cross-section	mm²	0.2 – 6	6 – 16
for conductor cross section AWG		24-10	10-6



72 8626_16 72 8625_6

With multi-component grip.
Application: For PUR halogen-free **sensor/actuator cables,** highly flexible TPE-U cables, control cables **e.g. Ölflex®,** PUR/PVC cables, shielded and unshielded cables, telephone installation cables J-Y(ST)Y, fire alarm cables BMK J-Y(ST)Y, functional integrity cables E30/E90.

for max. cable ∅	mm	4,4	7
76C 72 8628 Wire stripping tool		eShop	eShop
Manufacturer's type designation		Sensor Mini	Sensor Special
overall length	mm	172	
for round cable ∅	mm	3.2 – 4.4	4.4 – 7



72 8628_4,4 72 8628_7

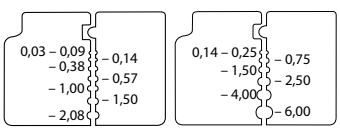
Automatic wire stripping tool – for specific cable ∅

Jaws burnished, handles with multi-component coating.
Advantage: Can be used irrespective of the toughness and dimension of the insulation material. No crushing or deformation of the cable ends. Smooth mechanical movement. Replaceable blade.
Application: For high-quality, damage-free stripping of all electrical single-core and multi-core cables; particularly for insulation which is difficult to cut (e.g. Teflon®).
72 8700 Size 0,03-2,08 – With cable guide and length end-stop.
72 8705 – For AS interface cables (blade cut-out for external sleeve and both individual cores).


Cleanly cuts the insulation all the way round.


With cable guide and length end-stop.

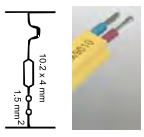

The precise blade profiles allow shape-fit cable stripping.



for conductor cross-section	mm²	0,03-2,08	0,14-6
73F 72 8700 KNIPEX Automatic wire stripping tool		eShop	eShop
overall length	mm	195	


72 8700_0,14-6

Type		AS
73T 72 8705 RENNSTEIG Automatic wire stripping tool		eShop
overall length	mm	195



72 8705_AS

Wire stripping tool

Offset jaws with V-shaped cutting edges (up to max. 5 mm external ∅).
Laid-in joint with "no-play" action and opening spring.
With adjustable screw for cross section adjustment.

Material: Special tool steel, drop-forged and oil-hardened.



72 8736

72 8736 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface. KNIPEXtend is used to connect extensions, such as ColourCode Clips (CCCs) for customisation or TetheredTool Clips (TTCs) for attaching a TetheredTools fall protection device.

72 8737 – Pliers polished, plastic coated handles.

72 8739 – Jaws bright finished, handles with multi-component covering.

72 8740 – Jaws bright finished, plastic coated handles.



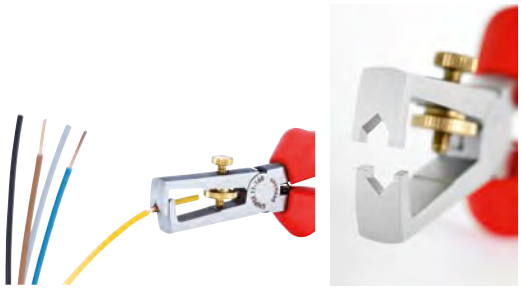
72 8737



72 8739



72 8740



overall length			mm	160
73F	72 8736	KNIPEX	Wire stripping tool, chrome-plated	eShop
73F	72 8737	KNIPEX	Wire stripping tool, polished	eShop
72B	72 8739	HOLEX	Wire stripping tool	eShop
72B	72 8740	HOLEX	Wire stripping tool	eShop

Wire stripping tool - insulated to VDE

Handles with multi-component covering,
insulated up to 1000V to DIN EN IEC 60900 / VDE 0682-201.

72 8761 – Jaws bright finished.

72 8755/8750 – Jaws chrome-plated.



72 8755



72 8750



72 8761

overall length			mm	160
71B	72 8755	Garant	Wire stripping tool chrome-plated **VDE insulated**	eShop ■
73F	72 8750	KNIPEX		eShop
72B	72 8761	HOLEX	Wire stripping tool **VDE insulated**	eShop ■

Wire stripping tool with cable cutter

Handles with multi-component covering, **insulated up to 1000V to DIN EN IEC 60900 / VDE 0682-201.** With steps in the jaw for visual orientation assistance for stripping constant lengths (11 mm and 16 mm). Up to a maximum of 5 mm outside ∅.
Jaws chrome-plated.

Material: Special tool steel, drop-forged and oil-hardened.



72 8763

Overall length		mm	180
73F 72 8763	"StriX" wire stripping tool with cable cutter **VDE insulated**		eShop
Cutting capacity		mm²	10
Cutting capacity up to ∅		mm	5

Electronics wire stripping tool

Jaws bright finished, handles with multi-component covering and opening spring. With adjustable screw for cross section adjustment to the desired wire or flex cable ∅. With extended point for precise cutting of fine wires even in constricted areas.

Application: For cutting and stripping single-core, multi-core, and fine multi-strand cables up to ∅ 1.0 mm.





72 8765

overall length		mm	140
73F 72 8765	Electronics wire stripping tool		eShop
Wire stripping for conductor ∅		mm	0.03 – 1

Electrician's wiring pliers

72 8784 – Jaws chemically blacked, polished head, plastic coated handles.
72 8786 – Pliers chrome-plated, handles with multi-component covers and KNIPEXtend interface.

Material: Special tool steel, drop-forged and oil-hardened.

Application: For gripping, cutting, and stripping as well as crimping terminal sleeves.



- *Gripping and bending.*
- *Cutting.*
- *Crimping terminal sleeves.*
- *Stripping 0.5 – 0.75 / 1.5 / 2.5 mm².*

72 8784



72 8786

overall length		mm	160
73F 72 8784	Electrician's wiring pliers polished		eShop
73F 72 8786	Electrician's wiring pliers chrome-plated, with grips		eShop
cuts wire up to ∅		mm	2.5
Wire stripping for conductor ∅		mm²	0.5 - 0.75 / 1.5 / 2.5

Wire stripping side cutter – VDE insulated

Induction hardened precision cutting edges (approx. 60 HRC) for soft wire. Precision stripping knife for single-core (solid) conductors 1.5 and 2.5 mm². Handles with thick-walled grips **insulated to DIN EN IEC 60900 / VDE 0682-201 for working at voltages up to 1000V.**

Material: Special tool steel, jaws chrome-plated, handles with multi-component covering.

Application: Ideal for electrical installation work.





72 8780

overall length		mm	160
73F 72 8780	Wire stripping side cutter **VDE insulated**		eShop
Cutting capacity soft wire up to ∅		mm	2.5

HOLEX Multi-function pliers

Pliers body made of flat steel, painted black, legs with plastic grips and opening spring. Crimps for 0.35 – 1; 1.5 – 6 insulated / uninsulated plugs / connectors and 7 – 8 mm car ignition terminals. Threaded cutter for bolts M2.6 – M5. Wire stripper 0.5 – 6 mm². Cutting for soft Cu and Al wires. Long serrated clamping nose for working in confined spaces.

Application: For stripping, cutting, compressing etc., primarily for repair work.



72 9701

overall length		mm	225
72B 72 9701	Multi-function pliers		eShop ■
for conductor cross-section		mm²	1.5 – 6; 0.35 – 1
Wire stripping for conductor ∅		mm²	6

KNIPEX Installation pliers – VDE insulated

Multi-function pliers for electrical installation work, with screwed joint for precise, play-free action.

- For gripping flat and round material.
- Bending wires and copper conductors.
- Deburring and widening flush-mounted boxes.
- Cutting copper cables up to ∅ 15 mm (5×2.5 mm²).
- Stripping copper wires 0.75 up to 1.5 mm² and 2.5 mm².
- Crimping terminal sleeves 0.5 to 2.5 mm².

Handles with grips **insulated to DIN EN IEC 60900 / VDE 0682-201.**

72 8788 – With opening spring.

Material: Special tool steel, jaws chrome-plated, handles with multi-component covering.



72 8787



72 8788









overall length		mm	200
73F 72 8787	Installation pliers **VDE insulated**		eShop
73F 72 8788	Installation pliers with opening spring **VDE insulated**		eShop
Cutting capacity		mm²	5×2.5
Cutting capacity up to ∅		mm	15

HOLEX Installation pliers

Multi-function pliers for electrical installation work. Special tool steel, handles with multi-component covering. For gripping, cutting, and stripping as well as crimping terminal sleeves.

- Cutting copper cables up to ∅ 15 mm (5×2.5 mm²).
- Stripping copper wires 0.75 to 4.0 mm².
- Crimping terminal sleeves 0.75 to 1.5 mm² and 1.5 to 4.0 mm².
- Threaded cutter for bolts M3 and M4.
- Bending wires and copper conductors.
- Deburring and widening flush-mounted boxes.



72 8795

overall length		mm	200
72B 72 8795	Installation pliers		eShop
Cutting capacity		mm²	5×2.5
Cutting capacity up to ∅		mm	15





ORBIS Multi-function heavy-duty side cutter – VDE insulated

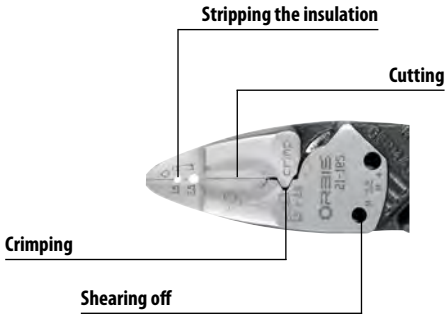
Induction hardened precision cutting edges (approx. 64 HRC) for piano wire. Precision stripping knife for single-core (solid) conductors 1.5 and 2.5 mm². Precise crimping profile for 1.5 and 2.5 mm² terminal sleeves. Shearing cutter for cutting M3.5 and M4 brass and copper screws to length with a flat cut. Bending device for forming solid copper wires ∅ 4, 5, and 6 mm into eyes. Handles with thick-walled grips **insulated up to 1000V according to DIN EN ICE 60900 / VDE 0682-201.** High cutting and crimping power due to optimum leverage.

Material: Special tool steel, jaws bright finished, handles with multi-component covering.

Application: Ideal for electrical installation work - offset design for improved ergonomics and a clear view of the working area.



72 8790



overall length		mm	180
76B 72 8790	Multi-function heavy-duty side cutter **VDE insulated**		eShop
Cutting capacity piano wire ∅		mm	2

Crimping tool for terminal sleeves – with non-compound action

Body drop forged. Jaws chemically blackened, head bright polished. Notched jaws for crimping terminals to DIN 46228.

72 9404/9402 – Plastic coated handles.
72 9402 Size 6 – Connector insertion from the front.
72 9405 – Handles with multi-component coverings.
Insulation up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.


72 9404 _2,5


72 9402_6



72 9402_16

Jaw shapes



for conductor cross-section			mm²	2,5	6	16
71B 72 9404	Garant	Crimping tool for terminal sleeves		eShop	–	eShop
73F 72 9402	KNIPEX			–	eShop	eShop
73F 72 9405	KNIPEX	Crimping tool for terminal sleeves **VDE insulated**		eShop	–	eShop
overall length (72 9404)			mm	150	–	185
overall length (72 9402, 72 9405)			mm	145	180	180
for conductor cross-section			mm²	0.25 – 2.5	0.5 – 6	0.25 – 16


72 9405_2.5

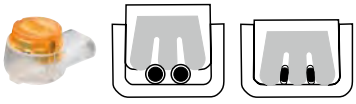
KNIPEX Crimping tool for Scotchlok™ - connectors, with cut-off jaws

Body drop-forged. Jaws chemically blackened, head bright polished. With opening spring. Plastic coated handles.

Application: For crimping plastic-insulated remote control cable cores or signal cable cores by the U-contact principle in Scotchlok™ individual connectors. No wire stripping, the U-elements make the contact.



72 9390



No wire stripping, the U-elements make the contact.

for wire ∅		mm	0,4-1,1
73F 72 9390	Crimping pliers for Scotchlok™ connectors		eShop
overall length		mm	155

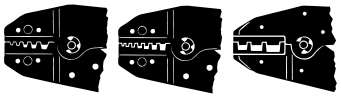
Crimping tool for terminal sleeves – with compound action

Steel body with compound action. Defined crimping force accurately ensured by integral stop function.



Economy version. Terminal sleeve insertion from the side.

Jaw shape



for conductor cross-section	mm²	6	16	35
72B 72 9420 HOLEX Crimping tool for terminal sleeves		eShop	eShop	eShop
overall length	mm	205	220	205
for conductor cross-section	mm²	0.5 – 6	0.5 – 16	16; 25; 35



72 9420_16

Terminal sleeve insertion from the side. Crimping pressure calibrated by manufacturer.

Jaw shape



for conductor cross-section	mm²	6
73F 72 9425 KNIPEX Crimping tool for terminal sleeves		eShop ■
overall length	mm	220
for conductor cross-section	mm²	0.25 – 6



72 9425_6

Self-adjusting crimping tool, crimping head freely rotatable through 360° with 8 locking positions. **Trapezoidal** crimp opening accessible on both sides, press up to 18 mm length in a single operation, excess lengths of terminal sleeves can be repeated. Crimping of twin terminal sleeves up to 2×6 mm² is possible.



Jaw shape



for conductor cross-section	mm²	10
73F 72 9426 KNIPEX Twistor® T crimping tool for terminal sleeves		eShop
overall length	mm	200
for conductor cross-section	mm²	0.14 – 10



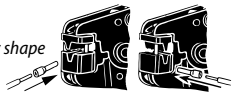
72 9426

Parallel crimping (except size PZ16 and PZ50).
Size 6ROTO – With **swivel** jaws.
Size 6ROTO-ADJ – Adjustable grip width reduction (for crimping up to 2.5 mm²).
Size 6ROTO-L; 6ROTO-ADJ – With **swivel and stop function** jaws (at 0° and 90°).



72 9440_6ROTO

Jaw shape



Type		6ROTO	6ROTO-L	6ROTO-ADJ
73H 72 9440 Weidmüller Crimping tool for terminal sleeves		eShop	eShop	eShop
overall length	mm	200		
for conductor cross-section	mm²	0.14 – 6		

Adjustable grip reduction
for crimping up to 2.5 mm².

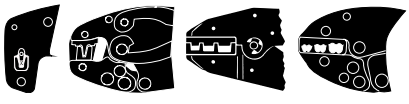


72 9440_6ROTO-ADJ



72 9440

Jaw shape



Type		PZ2,5	PZ4	PZ16	PZ50
73H 72 9440 Weidmüller Crimping tool for terminal sleeves		eShop	eShop	eShop	eShop
overall length	mm	160	200	200	260
for conductor cross-section	mm²	0.14 – 2.5	0.5 – 4	6 – 16	25 – 50



72 9440_PZ4



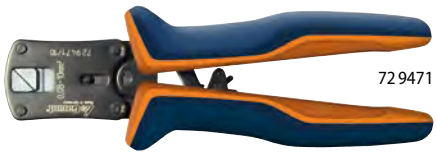
72 9440_PZ50

Crimping tool for square crimping

Accurate **parallel crimping** with synchronously actuated crimping jaws. DIN-compatible **square crimping** = optimum contact areas.







for conductor cross-section		mm²	10	16
71B 72 9471	Garant	Crimping tool for terminal sleeves	eShop ■	eShop
overall length		mm	190	
for conductor cross-section		mm²	0.08 – 10	2.5 – 16

Self-adjusting crimping tool, crimping head freely rotatable through 360° with 8 indent positions. Crimping of twin terminal sleeves up to 2×6 mm² is possible.
Accurate **parallel crimping** with synchronously actuated crimping jaws. DIN-compatible **square crimping** = optimum contact areas.



for conductor cross-section		mm²	16
73F 72 9446	KNIPEX	Twistor® 16 crimping tool for terminal sleeves	eShop
overall length		mm	200
for conductor cross-section		mm²	0.14 – 16

Accurate **parallel crimping** with synchronously actuated crimping jaws. DIN-compatible **square crimping** = optimum contact areas.

72 9450 – Pliers burnished, jaws chrome-plated
72 9451 – Pliers chrome-plated, jaws burnished.







for conductor cross-section		mm²	10	16
73T 72 9450	RENNSTEIG	Crimping tool for terminal sleeves	–	eShop ■
73T 72 9451	RENNSTEIG	Crimping tool for terminal sleeves	–	eShop
72B 72 9456	HOLEX	Crimping tool for terminal sleeves	eShop	–
overall length		mm	190	180
for conductor cross-section		mm²	0.08 – 10	0.08 – 16

Accurate **parallel crimping** with synchronously actuated crimping jaws. DIN-compatible **square crimping** = optimum contact areas.

Size 10 – Side insertion facility for terminal sleeves up to 2.5 mm².
Size 16 – Also for twin terminal sleeves up to 2×6 mm².



for conductor cross-section		mm²	10	16
73T 72 9460	RENNSTEIG	Crimping tool for terminal sleeves	eShop	eShop
overall length		mm	190	
for conductor cross-section		mm²	0.08 – 10	0.08 – 6



Type			PZ3
73H 72 9441	Weidmüller	Crimping tool for terminal sleeves	eShop
overall length		mm	200
for conductor cross-section		mm²	0.5 – 6



Type			PZ10SQR
73H 72 9455	Weidmüller	Crimping tool for terminal sleeves	eShop
overall length		mm	195
for conductor cross-section		mm²	0.14 – 10

Crimping tool for hexagonal crimping





Accurate **parallel crimping** with synchronously actuated crimping jaws. DIN-compatible **hexagonal crimping** = space saving. Crimp profile to DIN 46228.
With swivel positioner for small cross-sections up to 4 mm², for reliable processing.



72 9463

for conductor cross-section		mm²	16
71B 72 9463	Garant	Crimping tool for terminal sleeves	eShop
overall length		mm	213
for conductor cross-section		mm²	0.08 – 16

Accurate **parallel crimping** with synchronously actuated crimping jaws. DIN-compatible **hexagonal crimping** = space saving. Crimp profile to DIN 46228.

72 9465 – Pliers burnished, jaws chrome-plated.
72 9466 – Pliers chrome-plated, jaws burnished.
72 9465/9466 – Also for twin terminal sleeves up to 2×10 mm².



72 9465



72 9466



72 9467

for conductor cross-section		mm²	16
73T 72 9465	RENNSTEIG	Crimping tool for terminal sleeves	eShop
73T 72 9466	RENNSTEIG	Crimping tool for terminal sleeves	eShop
72B 72 9467	HOLEX	Crimping tool for terminal sleeves	eShop
overall length (72 9465, 72 9466)		mm	180
overall length (72 9467)		mm	190
for conductor cross-section (72 9465, 72 9466)		mm²	0.08 – 16
for conductor cross-section (72 9467)		mm²	0.08 – 6; 10 – 16

Accurate **parallel crimping** with synchronously actuated crimping jaws. DIN-compatible **hexagonal crimping** = space saving. Crimp profile to DIN 46228.



72 9468

Type			PZ10HEX
73H 72 9468	Weidmüller	Crimping tool for terminal sleeves	eShop
overall length		mm	195
for conductor cross-section		mm²	0.14 – 10

Weidmüller Wire stripping and crimping tool stripax® plus

Very sturdy, lightweight body made of glass fibre-reinforced plastic. The blades adjust automatically to the various cable diameters. The insulation is cut and removed in one operation. With length stop and wire cutter. Installed crimping station with magazine for terminal sleeves (on strips, incorporated in the handle).

Advantage: **Cutting** and **stripping** the cable as well as **crimping** of terminal sleeves **with only one tool,** no need for laborious tool changes.

Application: Wiring and installation work in small series production (e.g. control cabinet building).

Optional extras: Terminal sleeve sets, 500 pieces each (10 strips with 50 pieces each) No. 729497 in sizes 0.5; 0.75; 1.0; 1.5; 2.5.

Note: Only terminal sleeves strips No. 729497 from Weidmüller may be used. Feeding terminal sleeves from rollers can lead to defective work.



72 9493

73H 72 9493	stripax® plus wire stripping and crimping tool		eShop
overall length		mm	210
for conductor cross-section		mm²	0.5 – 2.5

Terminal sleeve set for stripax® plus

Content: 10 strips of 50 pieces each.



72 9497

for conductor cross-section		mm²	0,5	0,75	1,0	1,5	2,5
73H 72 9497	Terminal sleeves set		eShop	eShop	eShop	eShop	eShop
Number of terminal sleeves			500				
Suitable for: Stripax plus wire stripping and crimping tool			No. 729493				

Electrician's multi-tool NexStrip®

Very sturdy light-weight body made of glass fibre-reinforced plastic with ergonomic two-component handle. Stripping flexible and solid conductors of 0.03 – 10 mm² (AWG 32 – 8). Optimum adaptation to special materials or temperature conditions through fine adjustment.
Quick and precise square crimping of individual terminal sleeves to DIN 46228 part 1 + 4, from 0.25 – 4 mm². Self-adjusting – permits quick switching between various sizes. With length stop and wire cutter.

Advantage: **Cutting** and **stripping** the cable as well as **crimping** of terminal sleeves **with only one tool,** no need for laborious tool changes.
Application: For wiring electronic devices, such as PLC (programmable logic controller), in household installations or in mobile homes.
Spare part: Spare blade available under No. 728714 size 10 and length stop available under No. 728715 size 10.



***Stripping**, cable up to 10 mm².*



***Cutting off**, cable up to 10 mm².*



***Crimping** terminal sleeves up to 4 mm².*



72 9501

Type		1
73F 72 9501	Electrician's multi-tool NexStrip®	eShop
overall length	mm	190
for conductor cross-section (crimping)	mm²	0.25 – 4
for conductor cross-section (cutting and stripping)	mm²	0.03 – 10

Modular crimping tool for interchangeable heads

Basic tool

With quick-change mounting (no tools required).
- Sturdy steel body with compound action.
- Integral positive stop function.
- **Linear stroke** gives very precise results.



72 9611

Overall length	mm	150
71B 72 9611	Modular crimping tool	eShop

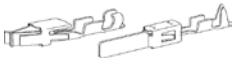
Interchangeable heads, can be certified

With **insulation stop for positive positioning of the terminal.**

Suitable for: Basic tool No. 729611.
Size 1,5 – Universal heads: up to 1.5 mm²; blade terminals and sleeves: F2.8; Tyco Junior Power Timer: Timer and TAB; Tyco AMP: MCP 1,2; RK 2,5; UNML; III+ and M-series; Kostal: MLK 1.2, RK 2.5.
Size 2,5 – Blade terminals and sleeves: F2.8, F4.8, F6.3 and F9.5; GHW flat terminals: AFK and AFS; Tyco Junior Power Timer: Timer; Tyco AMP: MCP 1.2; RK 2.5; UNML; E95; MT 3 and ELO; Kostal: LKS 1.5 and SLK 2.8 contacts.
Size D – Tyco Junior Power Timer: D-Sub and HD 20.
Application: For use with electronic connectors.



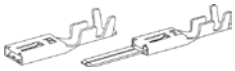
Blade terminals and sleeves



GHW flat terminals



Tyco Junior Power Timer



Kostal



_1,5



_2,5



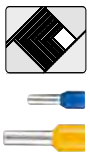
_D

Type		1,5	2,5	D
71B 72 9624	Interchangeable crimping head	eShop	eShop	eShop
for conductor cross-section	mm²	0.1 – 1.5	0.5 – 2.5	0.08 – 0.56

Accurate **parallel crimping** with 4 synchronously actuated crimping jaws. Rectangular DIN standard crimping = optimum contact.

Suitable for: GARANT basic tool No. 729611.
Application: For attaching terminals to wires.

Note: Other interchangeable heads available on request.





_16

Type		10	16
71B 72 9626	Interchangeable crimping head	eShop	eShop
for conductor cross-section	mm²	0.08 – 10	2.5 – 16

Crimping set

Comprehensive set for crimping **insulated** terminal sleeves. Electrician's multi-tool NexStrip® for cross-sections **0.25 – 4.0 mm²** (crimp) and **0.03 – 10 mm²** (cut and strip).

Supplied with: Multi-tool No. 729501 size 1 and 2050 pieces of conventional terminal sleeves in a sturdy plastic box (TANOS MINI-systainer®) with 2 stackable plastic inserts.



72 9479

Type		1
73F 72 9479	Crimping set, terminal sleeves **Including Electrician's multi-tool NexStrip®**	eShop

Comprehensive set for crimping the most popular **insulated** terminal sleeves. Self-adjusting Twistor16 crimping tool with rotatable crimping head and 8 indent positions for cross-sections from **0.14 to 16 mm² (square crimping)**.

Supplied with: Crimping tool No. 729446 size 16 and 1190 pieces of popular terminals (0.50 – 16 mm²) in a sturdy
plastic box (TANOS MINI-systainer®) with 2 stackable plastic inserts.


72 9469

Type		1
73F 72 9469	Crimping set, terminal sleeves **supplied with a Twistor16 crimping tool**	eShop

Comprehensive set for crimping the most popular **insulated** terminal sleeves. Robust powerful crimping tool with compound action for cross sections from **0.08 – 16 mm² (square crimping).**

Supplied with: Crimping tool No. 729450 size 16 and 1250 pieces of popular terminal sleeves in a sturdy plastic box (TANOS MINI-systainer®) with 2 stackable plastic inserts.


72 9473

73F 72 9473	Crimping set, terminal sleeves **including crimping tool**	eShop

Comprehensive set for crimping the most popular **insulated** terminal sleeves. Robust powerful crimping tool with compound action for cross sections from **0.08–16 mm² (square crimping),** wire strippers for conductor cross-sections from **0.03 – 10 mm².**

Supplied with: Crimping tool similar to No. 729460 Size 16, wire strippers No. 728630 Size 10 and 1250 pieces of popular terminal sleeves in a sturdy plastic box (TANOS MINI-systainer®) with 2 stackable plastic inserts.


72 9474

Type		1
73F 72 9474	Crimping set, terminal sleeves **with crimping tool and wire strippers**	eShop

Comprehensive set for crimping the most popular **insulated** cable lugs, plugs, and connectors. Robust powerful crimping tool with compound action for cross sections from **0.5 – 6 mm².**

Supplied with: Crimping tool No. 729722 size 6IS and 300 pieces of popular cable lugs, plugs, and connectors in a sturdy plastic box (TANOS MINI-systainer®) with 2 stackable plastic inserts.


72 9723

73F 72 9723	Crimping set, cable lugs, plugs and connectors **including crimping tool**	eShop

Comprehensive set for crimping the most popular **insulated** terminal sleeves. Robust powerful crimping tool with compound action for cross sections from **0.5 – 16 mm².**

Supplied with: Crimping tool No. 729420 size 16 and 2700 pieces of popular terminal sleeves in a sturdy metal box with compartment divisions.

72B 72 9475	HOLEX	Crimping set for terminal sleeves **including crimping tool**	eShop



72 9475

Set of the most popular **insulated** terminal sleeves.

Standard:

Size 400 – according to DIN 46228/4

Supplied with: Common terminal sleeves in storage box with divider compartments (without crimping pliers).

Size 400 – for cross-sections of 0.5 – 2.5 mm²

Size 970; 2700 – for cross-sections of 0.5 – 16 mm²

Number of pieces			400	970	2700
72B 72 9477	HOLEX	Terminal sleeves set without crimping tool	eShop	eShop	eShop
Storage in			Plastic box	Plastic case	Metal box


72 9477_400



72 9477_970

Comprehensive set for crimping the most popular **insulated** cable lugs, plugs, and connectors. Robust powerful crimping tool with compound action for cross sections from **0.5 – 6 mm².**

Supplied with: Crimping tool No. 729720 size 6IS and 500 pieces of popular cable lugs, plugs, and connectors in a sturdy metal box with compartment divisions.

72B 72 9725	HOLEX	Crimping set cable lugs, plugs and connectors **including crimping tool**	eShop



72 9725

Set of the most popular **insulated** cable lugs, plugs, and connectors.

Supplied with: Popular cable lugs, plugs, and connectors for cross-sections from 0.5 – 6 mm² in a storage box with compartment divisions (without crimping tool).

Number of pieces			265	500
72B 72 9727	HOLEX	Cable lugs, plugs, and connectors set, without crimping tool	eShop	eShop
Storage in			Plastic case	Metal box



72 9727

72

KNIPEX Crimping tool MultiCrimp® with interchangeable magazine

Crimping tool with quick-change system for mobile assembly work. The separate, round magazine contains 3 or 5 crimping heads for the most common crimping applications. Jaws burnished, handles with multi-component coating.

- Quick-change of the crimping head no tools required.
- One tool for the most common crimping applications.
- Crimping results comparable with fixed-head tools.

Supplied with: Crimping tool with round magazine including 3 or 5 crimping heads.


72 9650_3






72 9650_5

Number of interchangeable heads			3	5
73F 72 9650		Crimping tool MultiCrimp® with interchangeable magazine	eShop	eShop
overall length	mm		250	
for terminal sleeves	mm²		0.25 – 6.0	0.25 – 6.0 and 10; 16; 25
for insulated cable lugs and connectors	mm²		0.5 – 6	
for uninsulated blade terminals	mm²		0.5 – 6	
for uninsulated cable lugs and connectors	mm²		–	0.5 – 10
for uninsulated push-fit connectors	mm²		–	0.5 – 10

Crimping tool for cable lugs, connectors, and spade lugs

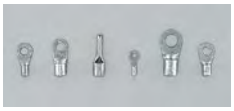
Crimping tool with compound action

Steel body with compound action. Defined crimping force accurately ensured by integral stop function.

- 72 9709 – **GARANT:** Made of high-tensile special steel. **Ergonomically optimised soft anti-slip handles.** Optimum crimping due to special profile geometry.
- 72 9715 – Precision profiles, high leverage.
- Size 6ISG – Further development of the 6IS with double crimp action.
- 72 9720 – Economy version. F48/63 including holder for blade terminals.
- 72 9722 – Made of special steel. Precision profiles, very high leverage - particularly useful for crimping large cross sections.



Size IS = Insulated cable lugs, plugs, connectors.

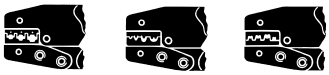


Size NIS = Non-insulated cable lugs, plugs, connectors.



Size F = Non-insulated tab connectors.

Jaw shape



Type		6IS	10NIS	F28/95
71B 72 9709	Garant Crimping tool	eShop ■	eShop ■	eShop
overall length	mm	225		
for conductor cross-section	mm²	0.5 – 6	0.1 – 10	0.5 – 6
for blade terminals		–	–	F2.8 / F6.3 / F9.5



72 9709

Jaw shape

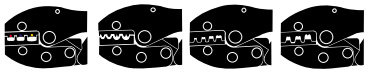


Type		6IS	6ISG	6NIS
73H 72 9715	Weidmüller Crimping tool	eShop	eShop	eShop
overall length	mm	250	250	200
Manufacturer's type designation		CTI6	CTI6G	HTN21
for conductor cross-section	mm²	0.5 – 6		



72 9715

Jaw shape



Type		6IS	10NIS	F48	F63
73F 72 9722	KNIPEX Crimping tool	eShop ■	eShop	eShop	eShop
overall length	mm	220			
for conductor cross-section	mm²	0.5 – 6	0.5 – 10	0.1 – 2.5	0.5 – 6
for blade terminals		–	–	F2.8 / F4.8	F4.8 / F6.3



72 9722

Jaw shape



Type		6IS	10NIS	F28/48	F48/63
72B 72 9720	HOLEX Crimping tool	eShop ■	eShop	eShop	eShop
overall length	mm	230			
for conductor cross-section	mm²	0.5 – 6	1.5 – 10	0.25 – 2.5	0.5 – 6
for blade terminals		–	–	F2.8 / F4.8	F4.8 / F6.3



F48/63 with holder for blade terminals.



72 9720

RENNSTEIG Crimping system tool – a wide range of applications (e.g. solar contacts)

A selection of other crimping solutions such as crimping inserts or contact mountings is available in our eShop.

Crimping system tool PEW 12:



No. 72 9660_200

Crimping tool for crimping almost all current types of crimp connector.

- Steel body with optimal lever action.
- Burnished surface.
- 2-component handles.
- Reliable crimping results thanks to integrated forced completion with emergency release.

Accessories:

If you need to work on **solar connectors, as well as in many other applications**, you can choose from a wide range of different **crimping solutions for the PEW 12 system.**

72 9665_570



72 9665_1193



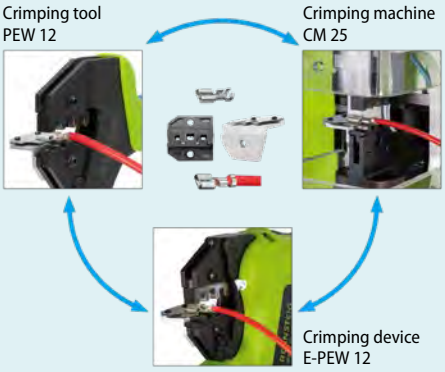
E.g. crimping insert set (crimping insert and contact mounting):

- No. 72 9665_570 for Stäubli MC4 contacts (conductor cross-section 2.5 - 6 mm²)
- No. 72 9665_1193 for Stäubli MC4 contacts (conductor cross-section 4 - 10 mm²)



for Stäubli MC4

System PEW 12:



Crimping solutions also suitable for RENNSTEIG – cordless mechanical crimping device E-PEW 12 and crimping machine CM 25-1.

Four-pin crimping tool for industry and aerospace

Industrial version



Size 6,0/K – With standard contact mounting for Harting, HTS, Ilme and comparable contacts.
72 9540 – Crimp mandrel advance can be adjusted in steps of 0.01 mm.
72 9550 – Crimp mandrel advance can be adjusted in steps of 0.01 mm and read digitally. With recalibration function. Electronic wear monitoring. Different setting functions can be called up.
Size 2,5 – With standard contact mounting for Coninvers and comparable contacts.
72 9560 – Special crimp pliers for processing turned contact pins and socket contacts in the DT series of TE Connectivity (previously: Deutsch contacts). Crimp mandrel can be adjusted via Selector with 8 positions. **Optimised opening aperture, ergonomic design and reduced manual force requirement.** Quality testing by means of Go-Nogo gauges **(optional No. 729561 size 3).**
72 9540–9560 – Reliable crimping due to positive barrier and synchronised advance of the crimping pins.
72 9540/9550 – Use the check pin supplied to check the basic setting.

Application:
72 9540–9560 – For turned pin and socket contacts

Supplied with:
72 9560 – Four-pin crimp tool with universal contact mounting in system packaging.
72 9540/9550 – Four-pin crimp tool in a case.



72 9540_6,0

Type		6,0	6,0/K
73F 72 9540	Four-pin crimping tool MicroCrimp, 2-component grips	eShop	eShop
for conductor cross-section mm²		0.14 – 6	
overall length mm		250	230



72 9550_6.0/K

Type		2,5	6,0/K
73F 72 9550	Four-pin crimping tool DigiCrimp, 2-component grips	(eShop)	eShop
for conductor cross-section mm²		0.08 – 2.5	0.14 – 6
overall length mm		195	250



72 9560_3

Type		3
73T 72 9560	Four-pin crimping tool SelectorCrimp HDT-48, 2-component handles	eShop
for conductor cross-section mm²		0.35 – 3
overall length mm		230



72 9561_3

Type		3
73T 72 9561	Go-Nogo pair of gauges for SelectorCrimp HDT-48	eShop
overall length mm		76.5

Aerospace version

Reliable crimping due to positive barrier and synchronised advance of the crimping pins.
72 9525 – Crimp mandrel advance can be selected according to MIL within a range of 8 positions. Individual contact making and multi-pin contact making available. MIL positioning can be performed without problems. **Optimised opening aperture, ergonomic design and reduced manual force requirement**. Selector position can be read from both sides of the crimp tool.
72 9530 – Crimp mandrel advance can be adjusted in steps of 0.01 mm and read digitally (setting in mm and inch). Use the check pin supplied to check the basic setting. With recalibration function. Electronic wear monitoring with warning function. Setting function can be called up. Can be used with Rennsteig and MIL positioners.

Application: For turned pin and socket contacts with crimp geometry similar to MIL.

Supplied with:
72 9525 – Four-pin crimp tool in system packaging.
72 9530 – Four-pin crimp tool in a case.



Note:
72 9525 – The selection of the crimp tool and contact mounting depend on the respective application. There are various contact mountings, depending on the insertion system. These are available on request.



72 9525_3,3

Type		3,3
70N 72 9525	Four-pin crimping tool SelectorCrimp, 2-component grips	eShop
for conductor cross-section mm²		0.14 – 3.3
overall length mm		230



72 9530_6,0

Type		0,5	2,5	6,0
73T 72 9530	RENNSTEIG Four-pin crimping tool DigiCrimp, 2-component grips	eShop	eShop	(eShop)
for conductor cross-section	mm²	0.03 – 0.5	0.08 – 2.5	0.14 – 6
overall length	mm	175	175	230

KNIPEX Insertion tool for LSA-Plus and identical construction design

Tool for putting on boards, sockets and fields. Pushing down and cutting in one operation.

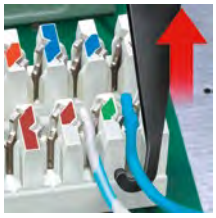
Material: Housing of impact-proof plastic.

Application: For UTP and STP cables with conductor ∅ 0.4 to 0.8 mm and integrated pulling hook together with a release blade.



72 9790



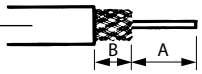


for wire ∅	mm	0,4-0,8
73F 72 9790 Insertion tool **for LSA-Plus and identical construction design**		eShop
overall length	mm	175

Weidmüller Sheath and wire stripping tools for coaxial cables

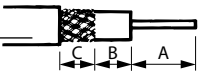
Application: Tools for removing the outer insulation, braid, and PE foam insulation from coaxial cables.

Two-step



Dimension A according to information from the connector manufacturer

Three-step



Basic tool made of plastic with replaceable cutter cartridges set at the most common cutter spacings (see table: B, C). **For 2 or 3 stage stripping of coaxial cables in a single operation.** Quick adjustment to the cable ∅. Adjustable cutting depth.

Adjustment to match cable ∅.

Cutter cartridge



72 9800

73H 72 9800	Basic tool without cartridge	eShop
overall length	mm	100

Size KOMBI – Knife spacing adjustable to cater for stripping of 1-layer to 3-layer insulation. Particularly useful for special sizes.



_KOMBI



_GELB



_GRUEN

Colour		KOMBI	GELB	GRUEN
73H 72 9801	Cutter cartridge	eShop	eShop	eShop
Stripping dimension B	mm	3.2 – 17	12	5.1
Stripping dimension C	mm	3.2 – 17	–	7.1

JOKARI Sheath and wire stripping tools for coaxial cables



72 9806 – Both insulation stripping actions at 1 end.
Additionally with 11 mm socket of high-rigidity fibreglass-reinforced plastic for tightening F-plugs (HEX 11).

72 9807 – One stripping head at each end.

Application: Tools for removing the outer insulation, braid, and PE foam insulation from coaxial cables. Quick and easy stripping of all common coaxial cables, e.g. RG 58, RG 59, TV aerial cables 4.8 – 7.5 mm ∅, and PVC round cable 3×0.75 mm². **Blades TiN coated.**



72 9806



72 9807

for coaxial cable types			RG58/59
76C 72 9806	Round coaxial cable stripping tool	TiN	eShop
76C 72 9807		TiN	eShop

Crimping tool for coaxial connectors

Steel body with compound action. Plastic coated handles. Defined crimping force accurately ensured by integral stop function. For crimping BNC and TNC connectors.

72 9821 – **GARANT:** Made of high-tensile special steel. High-stress parts especially hardened and tempered. Surface burnished. Ergonomically designed handles with anti-slip protection.

72 9825 – Made of chrome vanadium special steel, oil-hardened. Handles with multi-component coverings.

72 9830 – Economy version.



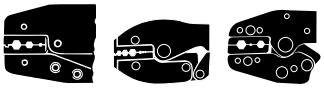


72 9821



72 9825

Jaw shape



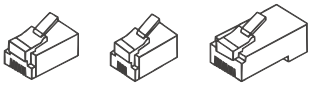


72 9830

for coaxial cable types			RG58/71	RG316	RG58/62
71B	72 9821	Garant	eShop	–	–
73F	72 9825	KNIPEX	–	eShop	–
72B	72 9830	HOLEX	–	–	eShop
suitable for cable type RG		Crimping tool for coaxial connectors	58; 59; 62; 71	58; 174; 188; 316	58; 59; 62
overall length	mm		225	220	202

HOLEX Crimping tool for RJ connectors (telephone connectors/Western plugs)

Steel body with compound action. 2-component plastic grips. Defined crimping force accurately ensured by integral stop function. For crimping 4 – 8 pin telephone plugs (Western plugs); front of the crimp for 6-pin and 8-pin plugs, rear for 4-pin plugs. With built-in device for cutting and stripping (restricted capability) 4, 6, and 8-core cables.





Type			4-8P
72B	72 9845	Crimping tool for telephone plugs	eShop
overall length	mm		205
suitable for plug type RJ			11; 12; 45

KlauKe® Notch pliers for crimp and tube crimping lugs

Compound action, **positive stop function** guarantees reliable crimping and uniform pressure. Handles of sheet steel with PVC coating.

Application:

Size 16QU – For uninsulated crimp cable lugs to DIN 46234

Size 16R – For uninsulated tube type cable lugs and connectors (standard design)



Jaw shape



Type			16QU	16R
76C	72 9880	Notch pliers	eShop	eShop
overall length	mm		325	
for conductor cross-section	mm²		0.5 – 16	0.75 – 16

Large crimping tool for non-insulated tubular cable lugs and connectors

Sturdy head with compound action and integral rotatable form wheels.
Tubular handles with plastic grips.
Cross-section assignment visible on the form wheels.

72 9905 – Form wheel adjustment by one-hand operation.
Guarantees reliable cross-section assignment by synchronised form wheel adjustment.
With ergonomic 2-component handle and slip protection on both sides.

Size K06SYNCRO – Extendable lever arms.

72 9970 – With innovative i-crimping, suitable for multi-core compacted and fine stranded cables.
I-crimping allows values far in excess of normal requirements to be achieved.

Application: For non-insulated **tubular cable lugs** and **connectors** (standard design).

Note:	Not suitable for DIN compression cable lugs or for French CNF cable lugs. Crimping tools for DIN and French CNF cable lugs available on request.

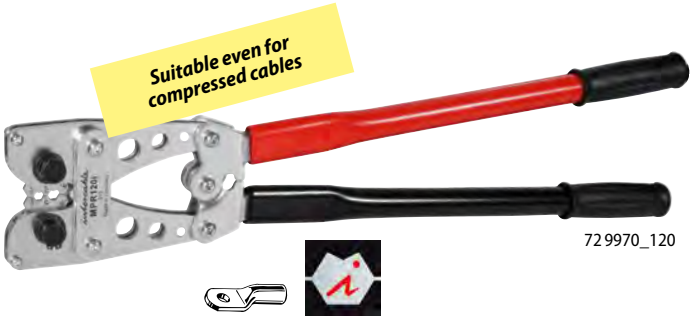


_K06SYNCRO –
Optimum force matching by adjustable telescopic handle.



72 9905_K06SYNCRO

Type		K05SYNCRO	K06SYNCRO
76C **72 9905** Klauke® Large crimping tool		eShop	eShop
for conductor cross-section	mm²	6 – 50	6 – 120
Weight	kg	1.2	2.6
overall length	mm	390	600 – 750



72 9970_120

Type		50	120
76C **72 9970** intercable Large crimping tool		eShop	eShop
for conductor cross-section	mm²	6 – 50	10 – 120
Weight	kg	1.5	3.7
overall length	mm	380	535

HellermannTyton Sleeve pliers (three-pin pliers)

72 9932 – Plastic pliers body with 3 interchangeable steel pins.
Opening width can be adjusted using the locking screw.
Flexible for right and left-handed use.

Application:

72 9932 – Easy installation (spreading) of sleeves of any kind on cables and lines.



72 9932

Type		3.3	3.7
76C **72 9932** Sleeve pliers		eShop	eShop
for cable outer ∅	mm	4 – 14	6 – 15
maximum sleeve length	mm	26	37
overall length	mm	132	

Type		3.3	3.7
76C **72 9934**	Set of spare pins **6 pieces**	eShop	eShop



72 9934

Automatic cable tie gun

Advantage:

Size EVO7I; EVO9I – Ergonomic cable tie gun with cutter impact reduction, particularly easy on the wrists during operation.

Application: Pre-set tightening and flush cut-off of cable ties in a single operation. Adjustable tensile force. The cable ties are cut cleanly with no sharp edges. The cut strip is retained within the gun.

72 9960 – **For stainless steel cable ties.**

72 9940/9950 – For plastic cable ties.

Optional extras:

72 9940 – Spare blade No. 729941.

72 9950 – Spare blade No. 729951.

72 9960 – Cable tie No. 083710.
Spare blade No. 729961.

72 9940/9950 – Cable ties No. 083700 / 083705.



72 9940_EVO7I



72 9940_EVO9I

Manufacturer's designation		EVO7I	EVO9I
76C 72 9940	HellermannTyton Automatic cable tie gun	eShop	eShop
for cable ties up to width	mm	4.8	13.5
for cable ties up to thickness	mm	1.5	2
Weight	g	275	369



72 9950

72B 72 9950	HOLEX Automatic cable tie gun	eShop ■
for cable ties up to width	mm	4.8
for cable ties up to thickness	mm	1.3
Weight	g	335



72 9960

Manufacturer's designation		MK9SST
76C 72 9960	HellermannTyton Automatic cable tie gun **for stainless steel cable ties**	eShop
for cable ties up to width	mm	16
for cable ties up to thickness	mm	0.5
Weight	g	600

HOLEX Plastic cable tie pliers

Simple and robust design.

Advantage: Quick fastening due to long travel for a fast approach.

Application: Tightening and flush cutting-off of cable ties in 2 working steps.



1. Tighten the cable tie.



2. Cut off cable tie.

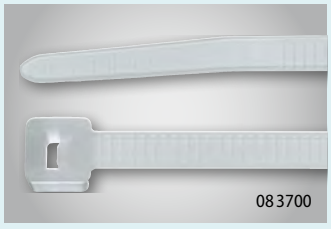


72 9955_1

Type		1
72B 72 9955	Plastic cable tie pliers	eShop
for cable ties up to width	mm	12
for cable ties up to thickness	mm	2.3
Weight	g	335

HellermannTyton Cable ties can be found from No. 08 3700

Made of polyamide, white.



083700

Made of polyamide, black.



083705

Made of stainless steel.



083710

Removable in polyamide, red



083730

HellermannTyton Cutting tool for plastic cable ties

The cutting tool consists of a light-weight plastic housing and an ergonomic non-slip handle for a comfortable and secure grip. With attachment eye for attaching a fall protection.
The tool includes eight interchangeable end caps for plastic cable ties of different widths and thicknesses.
Both the band and the head of the cable tie as well as KR series cable ties can be cut.

Advantage: The cable tie can be split at any point of the bundled cables without damaging the insulation or individual conductors.

Application: For flexible power cables, bundles and power/water lines as well as rigid bundled cables – wherever quality and effectiveness play an important role, especially in delicate cable harnesses.



72 9963



For safe removal of plastic cable ties without damaging insulation.



Manufacturer's designation		EVOCUT
76C 72 9963	Cutting tool **for plastic cable ties**	eShop
for cable ties up to width	mm	7.8
for cable ties up to thickness	mm	2.05
Weight	g	316

Cable cutter

Application: For cutting copper and aluminium cables.

Head with sickle-shaped blades. Scissors burnished, plastic coated handles.

Size 200 – Double blade gives particularly high cutting range.
73 0090 – Cuts smoothly and cleanly without crushing.
Size 225 – **Two cutting areas:** The stepped main cutting edge keeps smaller and larger cables close to the scissors at all times so that they do not slip during cutting; the front cutting edge is used for step-by-step cutting ("nibbling") of very large cables. **Enormous capacity:** cuts single-stranded copper or aluminium cables up to 35 mm², multi-stranded cables up to 70 mm² and fine-stranded cables up to 120 mm².
73 0095 – Less force required: separate cores or wires are cut through successively by the stepped blades. Cuts through solid copper and aluminium cables up to 5 × 4 mm².

Material: **Special tool steell**, drop-forged.



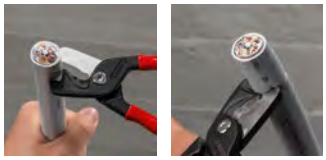
73 0090_165



73 0090_200



73 0090_225



Front cutting edge *for step-by-step cutting ("nibbling") of very large cables.*

overall length	mm	165	200	225
73F 73 0090 KNIPEX Cable cutter		eShop	eShop ■	eShop
Cutting capacity	mm²	50	70	120
Cutting capacity up to ∅	mm	15	20	23



73 0095

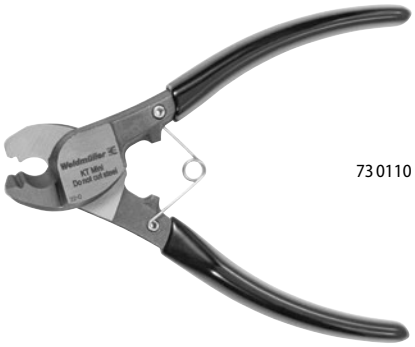


The graduations hold the cores in a suitable position: the ***cut is up to 40% easier*** *than for standard cable cutters of the same length.*

overall length	mm	160
73F 73 0095 KNIPEX Small cable cutter		eShop
Cutting capacity	mm²	50
Cutting capacity up to ∅	mm	15

"KT Mini" cable cutter

Head with sickle-shaped blades. Handles with plastic grips.
Cuts smoothly and cleanly without crushing.
Small and handy model, perfect for fine stranded copper wire machining.



73 0110

overall length	mm	125
73H 73 0110 Weidmüller "KT Mini" small cable cutter		eShop
Cutting capacity	mm²	25
Cutting capacity up to ∅	mm	7
Manufacturer's designation		KT Mini

Stainless steel cable cutters

Head with sickle-shaped blades. Handles with plastic grips.
Cuts smoothly and cleanly without crushing. Light stainless steel model.



73 0100_160

			NEW	
overall length		mm	125	160
72B **73 0100**	HOLEX	Small cable cutter	eShop	eShop
Cutting capacity		mm²	–	10
Cutting capacity up to ∅		mm	8	12

Cable cutters insulated to VDE

Handles with **insulation up to 1000 volts to DIN EN IEC 60900 / VDE 0682-201.**

73 0250 – Head with sickle-shaped blades. Handles with plastic grips. Cuts smoothly and cleanly without crushing.

Size 200 – Double blade gives particularly high cutting range.

73 0350 Size 225 – Head with sickle-shaped blades. Scissors gunmetal finish. Cuts smoothly and cleanly without crushing.
Two cutting areas: The stepped main cutting edge keeps smaller and larger cables close to the scissors at all times so that they do not slip during cutting; the front cutting edge is used for step-by-step cutting ("nibbling") of very large cables.
Enormous capacity: cuts single-stranded copper or aluminium cables up to 35 mm², multi-stranded cables up to 70 mm² and fine-stranded cables up to 120 mm².

73 0355 – Polished head with sickle-shaped blades. Cuts without crushing. Less force required: separate cores or wires are cut through successively by the stepped blades. Cuts through solid copper and aluminium cables up to 5 × 4 mm².

73 0350/0355 – Handles with multi-component coverings.

Size 165; 200 – Head with sickle-shaped blades. Handles with plastic grips. Cuts smoothly and cleanly without crushing.

Material: **Special tool steel,** drop-forged.





1) Initial cutting



2) Finish cutting



73 0350_165



73 0350_200

overall length		mm	165	200	225
73F **73 0350**	KNIPEX	Cable cutter with 2-component grips **VDE insulated**	eShop	eShop	eShop
Cutting capacity		mm²	50	70	120
Cutting capacity up to ∅		mm	15	20	23



73 0350_225



73 0355_160

overall length		mm	160
73F **73 0355**	KNIPEX	Small cable cutter with 2-component grips **VDE insulated**	eShop
Cutting capacity		mm²	50
Cutting capacity up to ∅		mm	15



*The graduations hold the cores in a suitable position: the **cut is up to 40% easier** than for standard cable cutters of the same length.*



73 0250_225

overall length		mm	185	225	245
73H **73 0250**	Weidmüller	Cable cutter, with 2-component handle **VDE insulated**	eShop	eShop	eShop
Cutting capacity		mm²	35	70	95
Cutting capacity up to ∅		mm	8	12	22
Manufacturer's designation			KT8	KT12	KT22



73 0250_245

Cable cutters, large

Head with sickle-shaped blades, tubular steel handles with plastic grips.

73 0400 – Head burnished, handles with multi-component coating.

73 0450 – Head polished, handles **dip insulated up to 1000 volts to DIN EN IEC 60900 / VDE 0682-201.**



73 0400



73 0450



overall length			mm	500
73F 73 0400	KNIPEX	Large cable cutter		eShop
73F 73 0450	KNIPEX	Large cable cutter **VDE insulated**		eShop
for multi-core cable ∅			mm	27
for single-core cable			mm²	150

Cable cutter with compound action

73 0500 – Head with sickle-shaped blades and compound action in cutter head, tubular steel handles with plastic grips.

Size 930 – Detachable handles.

Suitable for:

73 0510 – For cable cutter No. 730500.

Application: For cutting copper and aluminium cables.



73 0500 _570



73 0500_930

overall length			mm	570	930
76C 73 0500	KLAUKE	Cable cutter with compound action		eShop	eShop
76C 73 0510	KLAUKE	Spare head for cable cutters		eShop	eShop
for multi-core cable ∅			mm	26	38
for single-core cable			mm²	100	500



73 0510

Ribbon cable cutter

Interchangeable cutting pad for right-angled cutting, interchangeable standard blade (No. 844710 and 844715, size 10 in each case). Tool chrome plated, handles with plastic coating.

Application: Non-crushing cutting of ribbon cables up to 55 mm wide and 10 mm thick.



73 0900



Application example



For replacement blades see No. 844710 and 844715, size 10 in each case.

overall length			mm	215
76C 73 0900	LÖWE	Ribbon cable cutter		eShop
maximum cable width			mm	55

Cable cutter with compound action

Cutter head with sickle shaped blade and compound action (one handed operation). Double blades ensure square cut.

73 1071 – **GARANT** blades and important functional parts are additionally hardened and tempered.

73 1150 – **Insulation up to 1000 volts to DIN EN IEC 60900 / VDE 0682-201.**

Material: Special steel blade, coated sheet metal handles.

Application:

73 1071 – For clean cutting of aluminium and copper cables (even flex cables), **not suitable for fine-stranded cables.** Not for use on steel wire, hard aluminium alloys, hard drawn copper conductors.

73 1100/1150 – For clean cutting of aluminium and copper cables (even flex cables). Not for use on steel wire, hard aluminium alloys, hard drawn copper conductors.

Note:	On single-core cables the cutting force is around 30 % less.



73 1071_54



73 1100_52







73 1150_60

for cable ∅			mm	32	52	54	60
71B	73 1071	Garant	Cable cutter with compound action	eShop	–	eShop	–
73F	73 1100	KNIPEX	Cable cutter with compound action	eShop	eShop	–	eShop
73F	73 1150	KNIPEX	Cable cutter with compound action **VDE insulated**	eShop	eShop	–	eShop
Cutting capacity multi-core cable up to			mm²	240	380	480	600
overall length			mm	250	280	310	320

Ratchet cable cutter for steel-armoured cables (SWA cables)

Precision ground jaws and induction hardened blades.

73 1260 – **Insulation up to 1000 volts to DIN EN IEC 60900 / VDE 0682-201.**

Material: Special quality tool steel, drop-forged, oil-quenched.

Application: For cutting steel-armoured cables (SWA cables) using one and two hands. Ideal for use in restricted spaces.

Optional extras: Spare moving blade No. 731251.

Note:	Not suitable for cutting ACSR cables and wire cables.



73 1250



SWA cables



73 1260

overall length			mm	315
73F	73 1250		Ratchet cable cutter for steel-armoured cables (SWA cables)	eShop
73F	73 1260		Ratchet cable cutter for steel-armoured cables (SWA cables) **VDE insulated**	eShop
Cutting capacity			mm²	380
Cutting capacity up to ∅			mm	45

Ratchet cable cutter with telescopic handles

Effortless cutting due to optimum leverage and telescopic handles. The tool can be opened in any cutting position. Arm length extendable to multiple positions.

Size 630 – Adjustment range 600 to 810 mm.
Size 680 – Adjustment range 650 to 860 mm.

Material: Special quality tool steel, drop-forged, oil-quenched.

Application: For clean cutting of copper and aluminium cables. Suitable for cables with rubber or plastic sheathing and with steel strip armouring.

Note:	Not for steel wire and wire rope.





73 1230_630



73 1230_680

Overall length		mm	630	680
73F	**73 1230**	Ratchet cable cutter with telescopic handles	eShop	eShop
for multi-core cable ∅		mm	60	100
for single-core cable copper/aluminium		mm²	740 / 800	960 / 1085

Ratchet cable cutter with compound action

Cutter head with sickle-shaped blade and compound action. Double blades ensure square cut. Shears can be unlocked, i. e. opened, in any cutting position.

Material: Special steel blades.

73 1050 Size 300 – Handles of sheet metal with plastic grips.
73 1220 Size 430 – Handles of stainless steel tubing with plastic grips.

Advantage:

73 1220 – Compact design and low weight in relation to the cutting performance.

Application:

73 1050 – For clean cutting of copper and aluminium cables. Ideal for use in confined spaces in control cabinets and cable ducts.

73 1220 – For clean cutting of copper and aluminium cables. Also suitable for cables with steel strip armouring.



73 1050



73 1220

overall length		mm	300
76C	**73 1050**	Ratchet cable cutter	eShop
for multi-core cable ∅		mm	32
for single-core cable copper/aluminium		mm²	250 / 320

overall length		mm	430
76C	**73 1220**	Ratchet cable cutter	eShop
for multi-core cable ∅		mm	55
for single-core cable copper/aluminium		mm²	450 / 500

Cordless cable cutters can be found in our eShop



MC12CC cordless cable cutter.



M180NEHCC-201C ACSR cable cutter set.

Wire rope cutter

Sturdy design, drop-forged from solid steel. With screw joint and opening spring.
Cutter edge hardness 64 HRC. Handles with light PVC coating.

73 1550 – With integral opening spring and locking lever. Two integral compression profiles for Bowden cable end caps and wire rope end bushes.

73 1560 – with multi-component grips.

Material: Chrome vanadium special steel, oil-hardened.

Application: For cutting wire ropes, multi-core cables etc.


73 1500

overall length	mm	190
71B 73 1500 Garant Wire rope cutter		eShop
for wire ropes/round mild steel bar ∅	mm	8
for wire ropes (maximum 1600 N/mm²) ∅	mm	5
for round steel bar (maximum 1200 N/mm²) ∅	mm	4


73 1550

overall length	mm	190
73F 73 1550 KNIPEX Wire rope cutter		eShop ■
for piano wire ∅	mm	2.5
for wire ropes (maximum 1600 N/mm²) ∅	mm	5
for round steel bar (maximum 1200 N/mm²) ∅	mm	4



Overall length	mm	160
73F 73 1560 KNIPEX Wire rope cutter with grips		eShop
for wire ropes/round mild steel bar ∅	mm	6
for wire ropes (maximum 1960 N/mm²) ∅	mm	4


73 1560

BAUDAT Wire rope and cable cutters

Sickle-shaped jaws for safe and precise cutting.
PTFE-coated blades with specially hardened edges.

Material: Jaws made of hardened chrome vanadium steel. Handles of stainless steel tubing with plastic grips.

Advantage: Maximum stability at low weight.

Application: For cutting wire rope and round steel bar as well as copper and aluminium cables.




73 1720_350




73 1720_500

overall length	mm	350	500	720
76C 73 1720 Wire rope and cable cutter		eShop	eShop	eShop
for wire ropes/round mild steel bar ∅	mm	8	11	16
for wire ropes up to 1800 N/mm² up to ∅	mm	6	10	14
for cables up to	mm²	20	60	100

KNIPEX Compact bolt cutter CoBolt®

Special compound action allows excellent cutting performance with relatively low applied force.
Cutting edges induction hardened (approx. 64 HRC).

Material: Chrome vanadium electro-steel, drop-forged and oil-hardened.

73 1750 – Bolt cutter chemically blackened, plastic coated handles.

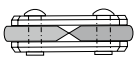
73 1752 – Jaws chemically blackened, plastic coated handles, blades with recess.

73 1755 – Bolt cutter chemically blackened, plastic coated handles.
Head 20° offset for flush cutting.


73 1750_160

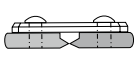
Centre cutting


73 1752_200



Centre cutting


73 1750_250



Side cutting


73 1755

overall length	mm	160	200	250
73F 73 1750 CoBolt® compact bolt cutter		eShop	eShop ■	–
73F 73 1752 CoBolt® compact bolt cutter with blade recess		eShop	eShop	eShop
73F 73 1755 CoBolt® compact bolt cutter with 20° angled head		–	eShop	–
for soft steel wire up to ∅	mm	5.3	6	–
for medium-hard steel wire up to ∅	mm	4.4	5.2	6
for piano wire up to ∅	mm	3	3.6	4.2

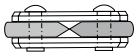
with multi-component grips

73 1740 – Jaws chemically blackened, handles with multi-component covering.

73 1745 – Jaws chemically blackened, handles with multi-component covering. **With opening spring** and integral lock.



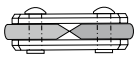
No. 73 1745– with opening spring



Centre cutting



73 1740



Centre cutting



73 1745

overall length		mm	200
73F 73 1740	CoBolt® compact bolt cutter with grips		eShop ■
73F 73 1745	CoBolt® compact bolt cutter with grips and opening spring		eShop ■
for soft steel wire up to ∅		mm	6
for medium-hard steel wire up to ∅		mm	5.2
for piano wire up to ∅		mm	3.6

VBW Small bolt cutter

High precision cutter head requiring up to 25 % less applied force.
Small, especially handy model with ergonomically optimised plastic grips.

Material: Blades made of chrome vanadium special steel, precision hardened.



73 1900

Centre cutting

overall length		mm	390
73L 73 1900	Small bolt cutter		eShop
for single bars up to 19 HRC and 800 N/mm²		mm	7
for single bars up to 40 HRC and 1200 N/mm²		mm	5
for single bars up to 48 HRC and 1600 N/mm²		mm	4

VBW Bolt cutter UNIBOLT®

73 3500 – Cutter head with compound action and universal jaws. Eccentric screws allow precise and easy adjustment of the blades. Drop forged, centre stop with extra-large shock-absorbing zone; painted tubular handles.

Material:

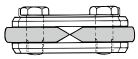
73 3500 – Special tool steel jaws, blades induction hardened.

Application:

73 3500 – For cutting normal and high-tensile steels up to 48 HRC (about 1600 N/mm² tensile strength).



73 3500_910



Centre cutting





73 4110

overall length		mm	460	610	760	910	1070
73L 73 3500	UNIBOLT® bolt cutter		eShop	eShop	eShop	eShop	eShop
73L 73 4110	Spare jaws complete with screws		eShop	eShop	eShop	eShop	eShop
for round steel bar up to 19 HRC and 800 N/mm² up to ∅		mm	8	9	11	13	16
for round steel bar up to 40 HRC and 1200 N/mm² up to ∅		mm	6	8	9	11	11
for round steel bar up to 48 HRC and 1600 N/mm² up to ∅		mm	5	7	8	9	10

KNIPEX Bolt cutter

73 3300 – Cutter head with compound action and universal jaws. Eccentric screws allow precise and easy adjustment of the blades. Forged centre stop with protective pads; powder-coated tubular handles with multi-component grips.

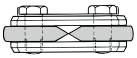
Material: Head of chrome-vanadium high performance steel, cutting edges additionally induction hardened (approx. 62 HRC).

Application:

73 3300 – For cutting normal and high-tensile steels up to 48 HRC (about 1600 N/mm² tensile strength).



73 3300_910



Centre cutting



73 3350

overall length		mm	460	610	760	910
73F 73 3300	Bolt cutter		eShop	eShop	eShop	eShop
73F 73 3350	Spare jaws complete with screws		eShop	eShop	eShop	eShop
for round steel bar up to 19 HRC and 800 N/mm² up to ∅		mm	8	9	11	13
for round steel bar up to 40 HRC and 1200 N/mm² up to ∅		mm	6	8	9	10
for round steel bar up to 48 HRC and 1600 N/mm² up to ∅		mm	5	7	8	9

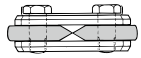


HOLEX Bolt cutter

73 2000 – Cutter head with compound action and adjusting screw. Sturdy, painted tubular handles with rubber grips.

Material:

73 2000 – Chrome alloy steel blade, blades additionally induction hardened.



Centre cutting



73 2000

overall length		mm	350	450	600	750	900
72B	73 2000	Bolt cutter	eShop	eShop	eShop	eShop	eShop
72B	73 2040	Spare jaws complete with screws	eShop	eShop	eShop	eShop	eShop
for round steel bar up to 19 HRC and 800 N/mm² up to ∅		mm	6	7	9	12	15
for single bars up to 40 HRC and 1200 N/mm²		mm	5	6	7	8	9



73 2040

VBW Bolt cutters with angled blades

73 3000 – Cutter head with **offset** blades and compound action. Eccentric screws allow precise and easy adjustment of the blades. Drop forged, centre stop with extra-large shock-absorbing zone; painted tubular handles with multi-component grips.

Material:

73 3000 – Special tool steel jaws, blades induction hardened.

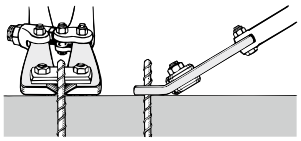
Application:

73 3000 – **For flush cutting** of reinforcing steel etc. up to a strength of 48 HRC (about 1600 N/mm² tensile strength).



73 3000

overall length		mm	610
73L	73 3000	Bolt cutter with angled blades	eShop
73L	73 3110	Spare jaws complete with screws	eShop
for round steel bar up to 19 HRC and 800 N/mm² up to ∅		mm	9
for round steel bar up to 40 HRC and 1200 N/mm² up to ∅		mm	8
for round steel bar up to 48 HRC and 1600 N/mm² up to ∅		mm	7





73 3110

VBW Steel grid and plate cutters

73 8000 – Compound action cutter head, drop forged middle section, centre stop with extra-large shock-absorbing zone; painted tubular handles with multi-component grips.

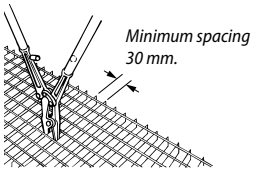
Material: Jaws of drop forged high-alloy steel, annealed and the blades induction hardened.

Application: Cutting flat bars in steel grid from 30×30 mm mesh pitch.



73 8000

overall length		mm	840
73L	73 8000	Steel grid and plate cutter	eShop
73L	73 8010	Spare jaws complete with screws	eShop
for flat steel strip up to 20 HRC		mm	40×4



Minimum spacing 30 mm.



73 8010



HOLEX Cut-resistant gloves 094606

Coating of PU-nitrile mixture

with elaborate finishing process
for the most demanding work



Cut protection level E

for protection against extreme cut hazards

Innovative multi-segmental design

of the protectors for maximum freedom of movement and reduction in hand fatigue

Protectors of thermoplastic elastomer

for protection against impacts and blows

STAHLWILLE® Ribbed chisels for metal and stone

Strong double T-profile shank, uniformly through hardened over entire length. Can be repeatedly reground without re-hardening.

Material: Tough special chisel steel, chrome-plated surface.

Advantage: The chisel will not jam when working in concrete, since the loose concrete spoil flows along the grooves in the chisel.



overall length		mm	150	200	250	300
73A 74 0100	Ribbed flat chisel		eShop	eShop	eShop	eShop
Blade width		mm	20	26	30	35



74 0100

Flat and cross-cut chisels for metal

Made of flat-oval steel, hardened and tempered. Blade uniformly through hardened; can be repeatedly reground without re-hardening. **Head specially annealed** to prevent splintering.

74 0900 – **Special quality,** i.e. highest possible tip hardness (approx. 59 HRC) with exceptional toughness.

Standard:

74 0500 – **DIN 6453.**

74 0600 – **DIN 6451**.

74 0500/0600 – **Safety tested to DIN 7255.**

Material:

74 0900 – Chrome vanadium special alloy, surface red, powder-coated.

74 0500/0600 – Chrome vanadium air hardened steel, painted surface.



74 0500

overall length		mm	100	125	150	175	200	250	300
73U 74 0500	RENNSTEIG	Flat chisel	eShop	eShop	eShop	eShop	eShop ■	eShop	eShop
73B 74 0900	SWISS TOOLS	Flat chisel	–	eShop	eShop	eShop	eShop	eShop	eShop
73U 74 0600	RENNSTEIG	Cross-cut chisel	–	eShop	eShop	eShop	eShop ■	eShop	eShop
Blade width (74 0500)		mm	15	18	18	21	24	25	26
Blade width (74 0900)		mm	–	18	22	25	28	28	28
Blade width (74 0600)		mm	–	5	6	7	8	9	9



74 0900



74 0600

SWISS TOOLS Chisels for metal

Fully hardened and tempered. Blade uniformly through hardened; can be repeatedly reground without re-hardening. **Head specially annealed** to prevent splintering. **Special quality,** i.e. highest possible tip hardness (approx. 59 HRC) with exceptional toughness.

Material: Chrome vanadium special alloy. Surface chrome-plated.

overall length		mm	120	130	150	165	180
73B 74 1000	Flat chisel special quality		eShop	eShop	eShop ■	eShop	eShop
73B 74 1100	Cross-cut chisel special quality		eShop	eShop	eShop	eShop	–
Blade width (74 1000)		mm	10	12	14	18	22
Blade width (74 1100)		mm	4	5	6	7	–



74 1000



74 1100

RENNSTEIG Slitting chisels for metal and stone

With flat blade. Blade uniformly through hardened; can be repeatedly reground without re-hardening. **Head specially annealed** to prevent splintering.

Standard: **Safety tested to DIN 7255.**

Material: Chrome vanadium air hardened steel, painted surface.



74 1200

overall length		mm	240	250
73U 74 1200	Slitting chisel		–	eShop
73U 74 1400	Slitting chisel		eShop	–
Blade width		mm	28	50

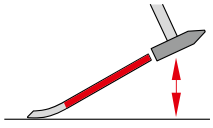


74 1400

SWISS TOOLS Slot chisel with curved shank

Extra slim and curved shank (26×7 mm) allowing **more room for the fingers** and thus safer working. With additional lateral cutting edge specially for cutting slots. Fully hardened and tempered. Blade uniformly through hardened; can be reground repeatedly without re-hardening. **Head specially annealed** to prevent splintering. **Special quality,** i.e. highest possible tip hardness (approx. 59 HRC) with exceptional toughness.

Material: Chrome vanadium special alloy, surface red, powder-coated.



overall length		mm	235
73B 74 1450	Slot chisel with curved shank		eShop
Length lateral blade		mm	30
Blade width		mm	26



74 1450

RENNSTEIG Grooving chisel for metalworking

Octagonal shank, through hardened blade, can be repeatedly reground without re-hardening. **Head specially annealed** to prevent splintering.

Standard: **Safety tested to DIN 7255.**

Material: Chrome vanadium air hardened steel, painted surface.

Cutter thickness		mm	3	4	5
73U 74 1500	Grooving chisel		eShop	eShop	eShop
overall length		mm		150	



74 1500

RENNSTEIG Stone chisel

Made of octagonal steel bar, hardened and tempered. Blade uniformly through hardened; can be repeatedly reground without re-hardening. **Head specially annealed** to prevent splintering.

Standard: **Safety tested to DIN 7255.**

74 2500 – **DIN 7254 (flat)**

74 2600 – **DIN 7256 (pointed)**

Material:

Size 200–500 – Chrome vanadium air hardened steel, gold dip painted.

Size 600; 1000 – Chrome vanadium air hardened steel, red dip painted.



74 2500



74 2600

overall length		mm	200	250	300	400	500	600	1000
73U 74 2500	Stone chisel **flat**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
73U 74 2600	Stone chisel **taper**		eShop	eShop	eShop	eShop	eShop	–	–
Blade width (74 2500)		mm	23	23	26	28	30	30	34
Shank ∅		mm	16	16	16	18	20	20	22

PEDDINGHAUS Universal chisel hand protector sleeve

Ergonomic 2-component chisel hand protector sleeve for universal and industrial chisels. Shock-absorbent design with non-slip surface.

Suitable for: Chisel with flat-oval shank.

Advantage: Protects the hands from injury.



74 2811

Type			1
76D 74 2811	Universal chisel hand protector sleeve		eShop
overall length		mm	120

74

PB SWISS TOOLS Electrician's flat chisel with handle

Made of octagonal section steel, with hand protection. Fully hardened and tempered. Can be repeatedly reground without re-hardening. Special quality, i.e. highest possible tip hardness (approx. 59 HRC) combined with exceptional toughness.

Material: Chrome vanadium special alloy. Surface chrome-plated.

overall length / shank ∅		mm	250/8	250/10
73B 74 3010	Electrician's chisel		eShop	eShop
Blade width		mm	10	12
Shank ∅		mm	8	10



74 3010

RENNSTEIG Electrician's chisel

Made of octagonal steel bar (slim design), hardened and tempered. Blade uniformly through hardened; can be repeatedly reground without re-hardening. **Head specially annealed** to prevent splintering.

Standard: **Safety tested to DIN 7255.**

Material: Chrome vanadium air hardened steel, painted surface.

overall length		mm	200	250	300
73U 74 3000	Electrician's chisel		eShop	eShop	eShop
Blade width		mm	10	12	14
Shank ∅		mm	8	10	12



74 3000

RENNSTEIG Wall grooving chisel

Strong, flat-oval shank with wedge-shaped blade. Blade bright finished, completely through hardened, can be reground many times.

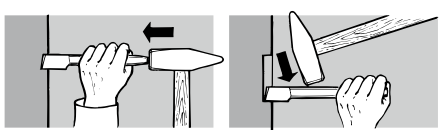
Standard: **Safety tested to DIN 7255.**

Material: Chrome vanadium air hardened steel, painted surface.



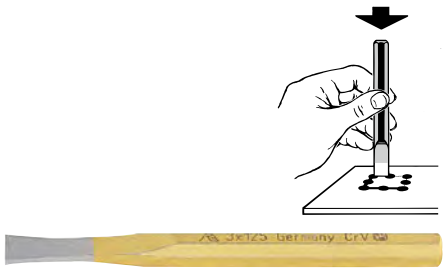
74 3300

overall length		mm	250
73U 74 3300	Wall grooving chisel		eShop
Blade width		mm	33
Shank cross section		mm	23×13



RENNSTEIG Mortise chisel

Made of octagonal steel bar, hardened and tempered. Blade uniformly through hardened; can be repeatedly reground without re-hardening.
Head specially annealed to prevent splintering.
Standard: **Safety tested to DIN 7255.**
Material: Chrome vanadium air hardened steel, painted surface.
Application: For chiselling between drill holes.



Blade	mm	10×2	10×3
73U 74 3400	Mortise chisel	eShop	eShop
Shaft length	mm	125	

RENNSTEIG Rivet snap setter and closer

Octagonal shank, bright finished head.
Head specially annealed to prevent splintering.
Standard: **Safety tested to DIN 7255.**
74 4610 – **DIN 6434.**
74 4710 – **DIN 6435.**
Material: Chrome vanadium air hardened steel, painted surface.



74 4610



74 4710

Number of tools		5
73U 74 4610	Rivet snap setter set in a plastic clip	eShop
Content: 1 rivet snap setter each		Size 2; 3; 4; 5; 6

Number of tools		5
73U 74 4710	Rivet snap closer set in a plastic clip	eShop
Content: 1 rivet snap closer each		Size 2; 3; 4; 5; 6

Chisel and taper pin punch set

Flat and cross-cut chisels for metal, and taper pin punches and centre punches with octagonal shanks, through hardened; chisels can be reground many times. **Head specially annealed** to prevent splintering.
74 5100 – **Special quality** = Highest possible point hardness – approx. 59 HRC – with exceptional toughness.
Standard:
74 5200 – **Safety tested to DIN 7255.**
Material:
74 5100 – Extra chrome vanadium steel, chrome-plated.
74 5200 – Chrome vanadium steel, painted surface.



74 5100_6



74 5100_11



74 5200

Number of tools		6	11
73B 74 5100	PB SWISS TOOLS Chisel and taper pin punch set in a plastic holder **special quality**	eShop ■	eShop
Content: Centre punch		1 pc. 120×12 mm	1 pc. each size 100×8; 120×10 mm
Taper pin punch		1 pc. each ∅ 4; 5 mm	1 pc. each ∅ 2; 4; 5 mm
Flat cold chisel		1 pc. each 165; 180 mm	1 pc. each 130; 165; 180 mm
Cross-cut cold chisel		1 pc. 165 mm	1 pc. each 130; 165 mm
Scriber, double-ended		—	1 pc.

Number of tools		6
73U 74 5200	RENNSTEIG Chisel and taper pin punch set in a plastic holder	eShop ■
Content: Flat cold chisel		1 pc. each 125; 150 mm
Cross-cut cold chisel		1 pc. 125 mm
Taper pin punch		1 pc. each size 120×2; 150×3 mm
Centre punch		1 pc. 120×4 mm

Safety glasses can be found in Vol. 4 from No. 09 6200



096200_CLEAR



096400_CLEAR



096859_CLEAR

HALDER Nylon punch and nylon drift rod

Steel central piece with exchangeable nylon faces.
Size 20; 30 – With steel shot, which achieves a dead-blow effect.

Note: Spare nylon inserts are available under No. 754910.



74 5250



74 5250_30

Head ∅		mm	10	12	15	20	30	40	50
76D 74 5250	Nylon punch and nylon drift rod, dead-blow		eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length		mm	168	170	175	150	155	160	165

FACOM Taper pin punches with handle

Round steel with tapered shaft, through hardened.
"Impact damping" safety handle for increased comfort and precision.
Head specially annealed to prevent splintering.



74 5800

Tip ∅		mm	2	3	4	5	6	8
73R 74 5800	Taper pin punch with handle		eShop	eShop	eShop	eShop	eShop	eShop
Shank ∅		mm	10	10	10	10	10	12
overall length		mm	185					

Taper pin punch

Octagonal shank with conical shaft, through hardened.
Head specially annealed to prevent splintering.

Highest possible tip hardness – approx. 59 HRC – with exceptional toughness.
Material: Special quality of extra chrome vanadium steel, chrome-plated.



74 5300

Tip ∅		mm	2	3	4	5	6	8	10
73B 74 5300	PB SWISS TOOLS Taper pin punch, special quality **chrome-plated**		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shank ∅		mm	10	10	10	10	10	14	16
overall length		mm	120	120	120	120	120	200	200

Heavy–duty type to DIN 6458 D. **Head annealed.**
Material: Standard quality of chrome vanadium steel, shank painted.



74 5500

Tip ∅		mm	2	3	4	5	6	7	8	10	12
73U 74 5500	RENNSTEIG Taper pin punch **heavy version**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Shank ∅		mm	12	12	12	12	12	12	12	12	16
overall length		mm	120	120	120	120	120	120	120	150	175

Material:
74 5310 – Special quality of extra chrome vanadium steel, chrome-plated.
74 5600/5700 – Standard quality of chrome vanadium steel, shank painted.



74 5310

Number of tools			6
73B 74 5310	PB SWISS TOOLS	Taper pin punch set, special quality **in a plastic holder**	eShop ■
73U 74 5600	RENNSTEIG	Taper pin punch set **in a plastic holder**	eShop
73U 74 5700	RENNSTEIG	Taper pin punch set **in a metal case**	eShop
Content: 1 each taper pin punch No. 745300 (74 5310)			Size 2; 3; 4; 5; 6
1 each taper pin punch No. 745500 (74 5600, 74 5700)			Size 2; 3; 4; 5; 6
1 centre punch No. 748900 (74 5310)			Size 120/10
1 centre punch No. 749000 (74 5600, 74 5700)			Size 120/12



74 5600



74 5700

Pin punch with handle

Sturdy octagonal shank with cylindrical shaft. Uniformly through hardened over the entire length. Head specially annealed to prevent splintering. Actual ∅ 0.05 - 0.5 mm less than nominal ∅, prevents the pin punch jamming in the hole.

Material: Special quality extra chrome vanadium steel (i.e. the highest possible peak hardness - approx. 59 HRC - combined with special toughness), chrome-plated. Hand grip with a non-allergenic elastomer coating.



Tip ∅		mm	2	3	4	5	6	8
73B 74 6940	Pin punch with handle		eShop	eShop	eShop	eShop	eShop	eShop
Pin length		mm	47	52	67	72	82	88
overall length		mm	140	145	175	180	205	210



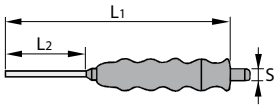
Number of pin punches		6
73B 74 6950	Pin punch set with handle in an ABS plastic box	eShop
Content: 1 each pin punch No. 746940		Size 2; 3; 4; 5; 6; 8

Pin punch with handle

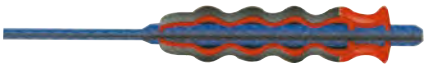
Round steel with cylindrical shaft, through hardened. "Impact damping" safety handle for increased comfort and precision. **Head specially annealed** to prevent splintering.



74 7100



Tip ∅		mm	3	4	5	6	8	10	12	14	16
73R 74 7100	Pin punch with handle		eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length L_1		mm	150	190	200	210	216	230	280	290	310
Mandrel length L_2		mm	45	60	70	80	86	100	130	140	160
Shank ∅ S		mm	8	10	10	12	12	14	16	18	18



Cut drawing



74 7110_5

Number of pin punches		4	5
73R 74 7110	Pin punch set with handle	eShop	eShop
Content: 1 each pin punch No. 747100		Size 10; 12; 14; 16	Size 3; 4; 5; 6; 8 in a plastic box

Pin punches with guide sleeve

Material: Chrome vanadium steel.

Slim design with knurled guide sleeve and hardened arbor. **Sizes 0.9 – 3.9** with loose guide sleeve – **sizes 4.9 + 5.9 with fixed shank.**



74 8000

Tip ∅		mm	0,9	1,4	1,8	2,4	2,8	3,4	3,9	4,9	5,9
72C 74 8000	Pin punch with guide sleeve		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop ■	eShop	eShop
Pin length		mm	15	17	20	21	24	27	30	34	35
overall length		mm	70	81	84	92	95	97	100	102	103



74 8201



74 8205

Number of pin punches		9
72C 74 8201	Pin punch set with guide sleeve **in plastic wallet**	eShop ■
72C 74 8205	Pin punch set with guide sleeve **in a metal case**	eShop
Content: 1 each pin punch with guide sleeve No. 748000		Size 0.9; 1.4; 1.8; 2.4; 2.8; 3.4; 3.9; 4.9; 5.9

Pin punches, sturdy design

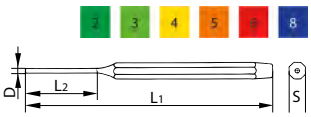
Sturdy octagonal shank with cylindrical shaft. Uniformly through hardened over the entire length.
Head specially annealed to prevent splintering.
Actual ∅ 0.05 - 0.5 mm less than nominal ∅, prevents the pin punch jamming in the hole.


74 6900



74 6920

Special quality, i.e. highest possible tip hardness – approx. 59 HRC – with exceptional toughness.
Material:
74 6900 – Special quality of extra chrome vanadium steel, chrome-plated.
74 6920 – Special quality, of extra chrome vanadium steel, chrome-plated and powder-coated.



Point ∅ D			mm	2	3	4	5	6	8	10	12	14	16
73B 74 6900	SWISS TOOLS	Pin punch, special quality **chrome-plated**		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
73B 74 6920	SWISS TOOLS	Pin punch, special quality **powder-coated**		eShop	eShop	eShop ■	eShop	eShop	eShop	–	–	–	–
overall length L_1			mm	150	150	150	150	150	150	200	220	240	260
Mandrel length L_2			mm	40	40	40	40	40	45	70	90	110	130
Shank ∅ S			mm	10	10	10	10	10	10	14	14	16	18

Standard: **DIN 6450.**
Safety tested to DIN 7255.
Material: Standard quality of chrome vanadium air hardening steel, painted.


74 7000

Point ∅ D			mm	2	3	4	5	6	8	10	12	14
73U 74 7000	RENNSTEIG	Pin punch, standard quality, painted		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop	eShop
overall length L_1			mm	150								
Mandrel length L_2			mm	30	40	50	50	50	50	50	50	50
Shank ∅ S			mm	10	10	10	10	10	12	12	14	16

74 6910/6930 – **Special quality**, i.e. highest possible tip hardness – approx. 59 HRC – with exceptional toughness.
Standard:
74 7200/7300 – **Safety tested to DIN 7255.**
Material:
74 6910 – Special quality of extra chrome vanadium steel, chrome-plated.
74 6930 – Special quality, of extra chrome vanadium steel, chrome-plated and **powder-coated**.
74 7200/7300 – Standard quality of chrome vanadium air hardening steel, painted.



74 6910 74 6930

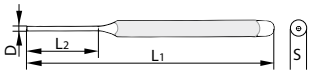

747200 74 7300

Number of pin punches			6
73B 74 6910	SWISS TOOLS	Pin punch set in a plastic clip, special quality **chrome-plated**	eShop ■
73B 74 6930	SWISS TOOLS	Pin punch set in a plastic clip, special quality **powder-coated**	eShop ■
73U 74 7200	RENNSTEIG	Pin punch set in a plastic clip, standard quality	eShop ■
73U 74 7300	RENNSTEIG	Pin punch set in a metal case, standard quality	eShop ■
Content: 1 each pin punch			2; 3; 4; 5; 6; 8 mm

SWISS TOOLS Mechanic's pin punch, slim shape, special quality

Round steel, exceptionally slim and handy. With knurled shank. Through hardened, **head specially annealed** to prevent splintering. Highest possible tip hardness (approx. 59 HRC) with exceptional toughness.
Actual ∅ 0.05 - 0.5 mm less than nominal ∅, prevents the pin punch jamming in the hole.
Material: Extra chrome vanadium steel, surface chrome-plated.


74 7500



Point ∅ D			mm	1	2	3	4	5	6	7	8	9
73B 74 7500		Mechanic's pin punch		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length L_1			mm	100	105	110	115	120	125	130	135	140
Mandrel length L_2			mm	15	20	25	30	35	40	40	45	45
Shank ∅ S			mm	6	6	7	8	8	10	10	11	12



Number of pin punches			11
73B 74 7700		Mechanic's pin punch set in a plastic stand	eShop
Content: 1 pc. each pin punch No. 747500			Size 1; 2; 3; 4; 5; 6; 7; 8; 9
1 pc. centre punch No. 749200			Size 90 and 100

Centre punches

Strong octagonal shank, bright finished point. Uniformly through hardened over the entire length. **Head specially annealed** to prevent splintering.

Special quality, i.e. highest possible tip hardness – approx. 59 HRC – with exceptional toughness.

Material: Chrome vanadium steel, chrome-plated.

74 9300 – With brazed-on **carbide tip.**

overall length		mm	100	120/10	120/12	140
73B **74 8900**		Centre punch, special quality, chrome-plated	eShop ■	eShop ■	eShop	eShop
73B **74 9300**	PB SWISS TOOLS	Centre punch, special quality, chrome-plated **Carbide tip**	eShop	eShop	eShop	–
Shank ∅		mm	8	10	12	14


74 8900


Carbide tip 74 9300

Standard: **DIN 7250**
Safety tested to DIN 7255.

Material: Chrome vanadium air hardening steel, painted. **Head annealed.**

overall length		mm	100	120/10	120/12	150
73U **74 9000**	RENNSTEIG	Centre punch, standard quality DIN 7250	eShop	eShop ■	eShop	eShop
Shank ∅		mm	8	10	12	16


74 9000

PB SWISS TOOLS Mechanic's centre punch

Made of round steel; knurled shank. Through hardened, **head specially annealed** to prevent splintering. **Special quality**, i.e. highest possible tip hardness – approx. 59 HRC – with exceptional toughness.

Material: Chrome vanadium steel, chrome-plated.

overall length		mm	90	100
73B **74 9200**		Mechanic's centre punch	eShop	eShop
Shank ∅		mm	8	



Automatic centre punch

74 9350/9400 – Sturdy knurled shank with hardened, replaceable pin and ergonomic end piece for high user comfort. The impact can be set as required by turning the end piece.

Material: Special tool steel.

overall length		mm	95	125	130
73U **74 9350**	RENNSTEIG	Automatic centre punch with pin	eShop ■	eShop ■	eShop ■
Shank ∅		mm	11	14	17
minimum impact force		N	20	60	180
maximum impact force		N	50	130	250


74 9350

∅×Length		mm	3,5×35	4×46	6×54
73U **74 9360**	RENNSTEIG	Spare centre punch pin	eShop	eShop ■	eShop ■
Suitable for: Automatic centre punch No. 749350			Size 95	Size 125	Size 130

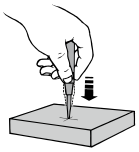

74 9360

overall length		mm	110	130	160
72C **74 9400**	HOLEX	Automatic centre punch with pin	eShop ■	eShop ■	eShop ■
Shank ∅		mm	10	13	16
minimum impact force		N	47	57	88
maximum impact force		N	78	127	176


74 9400

∅×Length		mm	3,5×40	4×45	6×50
72C **74 9410**	HOLEX	Spare centre punch pin	eShop	eShop ■	eShop
Suitable for: Automatic centre punch No. 749400			Size 110	Size 130	Size 160


74 9410


Impact individually adjustable.

RENNSTEIG Adjustable centre punch

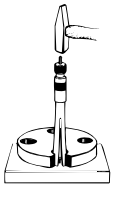
Consists of centre punch pin, guide sleeve, and split centring sleeve. Centre punch pin can be reground.

Application: Centre punching of component or template.



for hole ∅		mm	6-8	8-11	11-16
73U **74 9800**		Centre punch	eShop	eShop	eShop
overall length		mm	95	105	115

73U **74 9810**	Centre punch set 6 – 16 mm	eShop
Supplied with: 1 pc. each centre punch No. 749800		Size 6-8; 8-11; 11-16



Example:
4 flange holes are to be transferred to a baseplate.
1. Insert adjustable centre punches.
2. Widen until centring lobes touch the sides of the holes.
3. Strike the pin with a hammer.

Engineer's hammer

Hammer head drop-forged and ground to size. Carefully hardened and tempered. Head painted, face and peen bright finished.

Standard: Hammer head to **DIN 1041.**

Material: Special tool steel.

With **hickory handle** ergonomic shape, varnished.

75 0100 – From size 200 with steel handle protection sleeve.

75 0110 – With nylon handle protection sleeve. Size 200 – 1000 additionally with forged-on handle protection collar.

75 0115 – **SecuTec® safety hammer** with handle protection sleeve of steel with collar and secured **with PICARD wedge screw** (the pull-off values of the hammer head are many times greater than the DIN pull-off values).

Spare part:

75 0100 – Spare handle available under No. 752200, for size 50 under No. 751700 250 and for size 100 under No. 751700 260.

75 0110 – Spare handle available under No. 751650 and for size 100 available under No. 751700 size 200.

75 0115 – Spare handle available under No. 751680.



Cross section, PICARD wedge screw



75 0110



75 0115



75 0100



75 0125

Weight without handle		g	50	100	200	300	400	500	600	800	1000	1500	2000
71D 75 0110	Garant	Engineer's hammer with **handle protection collar**	–	eShop	eShop ■	eShop ■	eShop	eShop ■	eShop	eShop ■	eShop	eShop	eShop
76D 75 0115	PICARD	Engineer's hammer SecuTec® with **Handle protection sleeve**	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
73V 75 0100	PEDDINGHAUS	Engineer's hammer with **Handle protection sleeve**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
72D 75 0125	HOLEX	Engineer's hammer	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Handle length		mm	250	260	280	300	310	320	330	350	360	380	400

75 0300 – With steel handle and non-slip rubber grip. With forged-on handle protection sleeve.

75 0450 – With unbreakable **3-component handle** (aluminium core, polyamide and rubber components), forged on handle protection collar and additional handle protection sleeve. Unbreakable, ergonomic, non-slip, **vibration-free, protects the wrist.**

75 0500 – With unbreakable **"Ultratec"** glass fibre handle.

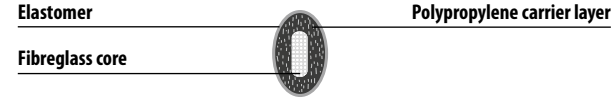
75 0530 – With virtually unbreakable glass fibre handle.



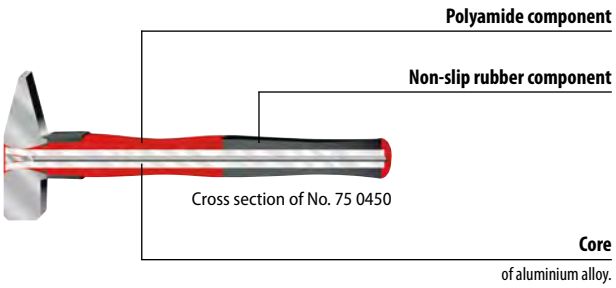
75 0300



75 0500



Ultratec handle cross section



Cross section of No. 75 0450



75 0450

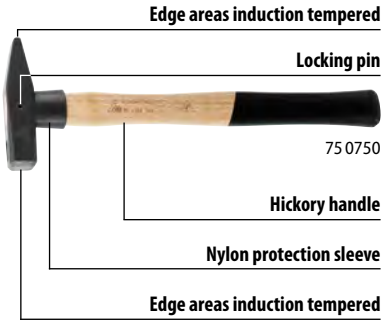


75 0530

Weight without handle		g	200	300	500	800	1000	1500	2000
73V 75 0300	PEDDINGHAUS	Engineer's hammer with steel tube handle	–	eShop	eShop	–	–	–	–
73V 75 0500	PEDDINGHAUS	Engineer's hammer with "Ultratec" handle	eShop	eShop	eShop	eShop	eShop	eShop	eShop
76D 75 0450	OSCA	Engineer's hammer with 3-component handle	–	eShop	eShop	–	eShop	eShop	eShop
72D 75 0530	HOLEX		eShop	eShop	eShop	eShop	eShop	–	–
Handle length (75 0300)		mm	–	260	275	–	–	–	–
Handle length (75 0500)		mm	258	285	315	320	325	360	365
Handle length (75 0450, 75 0530)		mm	280	300	320	350	360	360	400

OSCA Safety hammer

Hammer head drop-forged and ground to size. Carefully hardened and tempered. Head painted, face and peen bright finished.
Safety measures: Edges of peen and face are **induction hardened** to prevent splintering, nylon handle protection sleeve and head retaining pin. With **hickory handle** ergonomic shape, varnished.
Standard: Hammer head to **DIN 1041.**
Material: Special tool steel.



75 0750

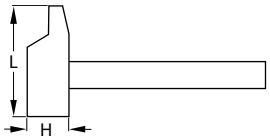
Weight without handle	g	300	500	800
76D 75 0750	Safety hammer	eShop	eShop	eShop
Handle length	mm	300	320	350

PEDDINGHAUS Engineer's hammer (French style)

Drop-forged, hardened and tempered. Head painted, face and peen bright finished.
75 0650 – With **hickory handle.**
75 0660 – With unbreakable **"Ultratec"** glass fibre handle.
Material: Special tool steel.


75 0650


75 0660



Weight without handle	g	200	300	500	800	1000	1500	2000
73V 75 0650	Engineer's hammer, French style **with hickory handle**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
73V 75 0660	Engineer's hammer, French style **with "Ultratec" handle**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Head length L	mm	75	85	98	109	117	137	142
Face height H	mm	25	28	32	40	42	50	55
Handle length	mm	260	300	320	360	360	360	400

OSCA Joiner's hammer

Forged hammer head, hardened and tempered. Surface painted black, working face bright finished. With ash wood handle.
Standard: **DIN 5109**
Material: Special tool steel.


75 0700

Rectangular head	mm	22	25	28
76D 75 0700	Joiner's hammer	eShop	eShop	eShop
Weight without handle	g	230	320	450
Handle length	mm	300	300	320

Sledgehammer

Forged hammer head, hardened, tempered, and ground on all faces. Surface painted black, working faces bright finished.
75 0811 – **With hickory handle.**
75 0900 – With unbreakable **"Ultratec"** glass fibre handle.
Standard: **DIN 1042**
Material: Special tool steel.


75 0811

Weight without handle	kg	3	4	5	6	8	10
72D 75 0811	HOLEX Sledge hammer **with hickory handle**	eShop	eShop	eShop	eShop	eShop	eShop
Handle length	mm	600	700	800	800	900	900


Ultratec glass fibre handle.
75 0900

Weight without handle	kg	3	4	5
73V 75 0900	PEDDINGHAUS Sledgehammer **with "Ultratec" handle**	eShop	eShop	eShop
Handle length	mm		900	

Club hammers (sledgehammers)

Drop-forged hammer head. Faces hardened and tempered. Head painted black, faces bright finished.

75 1010 – Club hammer with forged-on handle protection collar and additional nylon protection sleeve, with shaped **hickory handle.**

75 1015 – SecuTec® safety club hammer with handle protection sleeve of steel with collar, and with Picard wedge screw.

75 1020 – Sledgehammer with unbreakable **3-component handle** (aluminium core, polyamide and rubber components), forged-on handle protection collar and additional sleeve to protect the handle. Unbreakable, ergonomic, non-slip, **vibration-free, protects the wrist.**

75 1031 – Sledgehammer with shaped **hickory handle.**

75 1150 – Club hammer with unbreakable **"Ultratec"** glass fibre handle.

Standard:

75 1010–1055 – **DIN 6475**

Material: Special tool steel.



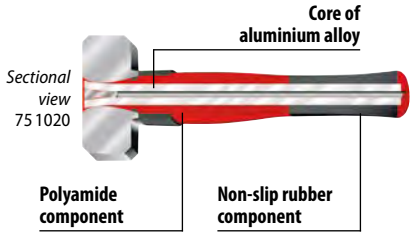
75 1010



75 1015



75 1020



Weight without handle		kg	1	1,25	1,5	2
71D 75 1010	Garant	Club hammer with handle protection collar	eShop	eShop	eShop	eShop
76D 75 1015	PICARD	SecuTec® club hammer with handle protection sleeve	eShop	eShop	eShop	eShop
76D 75 1020	OSCA	Club hammer with 3-component handle	eShop	eShop	eShop	eShop
73V 75 1150	PEDDINGHAUS	Club hammer with "Ultratec" handle	eShop	eShop	eShop	eShop
72D 75 1055	HOLEX	Club hammer, standard quality	eShop	eShop	eShop	eShop
Handle length (75 1010)		mm	260	260	280	300
Handle length (75 1015)		mm	260	270	280	300
Handle length (75 1020, 75 1055)		mm	260	260	280	280
Handle length (75 1150)		mm	255	255	260	265



75 1150



75 1031



75 1055

Weight without handle		kg	3	5	6	8
72D 75 1031	HOLEX	Sledgehammer	eShop	eShop	eShop	eShop
Handle length		mm	600	800	800	900

PEDDINGHAUS Engineer's hammer (English style)

Drop-forged, hardened and tempered. With round face and ball head. With **hickory handle.**

Material: Special tool steel.



75 1180

Weight without handle		lb	1/4	1/2	3/4	1	1.1/8	1.1/2	2
73V 75 1180	Engineer's hammer		eShop	eShop ■	eShop	eShop ■	eShop	eShop	eShop
Handle length		mm	270	290	320	350	340	370	400
Weight without handle		g	100	225	340	450	500	675	900

Copper hammer (club hammer)

Hammer head of copper bar material, edges broken.

75 1210 – With unbreakable **3-component handle** (aluminium core, polyamide and rubber components), and additional handle protection sleeve.

75 1200/1215 – With **hickory handle.**

Advantage:

75 1210 – Ergonomic, non-slip, **vibration-free, protects the wrist.**

Spare part:

75 1200 – Spare handle available under No. 751205.



75 1200

75 1210

75 1215

Weight without handle		g	250	500	750	1000	1500	2000	3000	5000
76D 75 1200	OSCA	Copper hammer **with hickory handle**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
76D 75 1210		Copper hammer **with 3-component handle**	–	eShop	eShop	eShop	eShop	eShop	–	–
72D 75 1215	HOLEX	Copper hammer **with hickory handle**	eShop	eShop	eShop	eShop	eShop	eShop	–	–
Handle length (75 1200)		mm	280	310	320	320	360	380	600	800
Handle length (75 1210)		mm	–	300	320	320	360	360	–	–
Handle length (75 1215)		mm	280	300	300	360	360	380	–	–

PEDDINGHAUS Mason's hammer "Berlin style" with tubular steel handle

Drop-forged hammer head, hardened, and tempered; head painted. With ground face, chisel edge and nail puller. Steel tube handle securely pressed in, unbreakable with non-slip rubber grip.

Material: Special tool steel.

Weight without handle		g	600
73V 75 1300	Mason's hammer		eShop
Handle length		mm	240


75 1300

PICARD Carpenter's claw hammer "American shape" with tubular steel handle

Drop-forged hammer head, hardened and tempered. With ground face and well-formed claw – American shape. 2-component handle with soft touch, ergonomic and vibration-reduced.

Material: Special tool steel.

Weight without handle		g	560
76D 75 1331	Carpenter's BlackGiant® claw hammer		eShop
Handle length		mm	310



75 1331

Carpenter's roofing hammer with tubular steel handle

Drop-forged hammer head, hardened and tempered. Well-formed claw and nail groove. **Magnetic nail holder.** Unbreakable securely fitted tubular steel handle and user-friendly rubber grip reduces the risk of accidents.

75 1350 – Polished head, chequered face.
75 1515 – Head painted, smooth and bright face.

Standard:
75 1515 – **DIN 7239**

Material: Special tool steel.

Advantage:
75 1350 – Low weight, therefore very lightweight and easy to hold, with high stability.



75 1350

Weight without handle		g	530	600
71D 75 1350	Garant	Carpenter's roofing hammer with magnetic nail holder	eShop	–
72D 75 1515	HOLEX		–	eShop ■
Handle length		mm	275	280



75 1515

PEDDINGHAUS Carpenter's roofing hammer XSTRIKER FIBERTEC

Drop-forged hammer head, hardened; head painted. With cross-hatched face. Well-formed claw and nail groove. Magnetic nail holder. Unbreakable fibre glass handle and plastic handle.

Material: Special tool steel.

Weight without handle		g	570
73V 75 1501	XSTRIKER carpenter's roofing hammer with magnetic nail holder		eShop
Handle length		mm	285



75 1501

PICARD Solid steel carpenter's roofing hammer

Solid steel carpenter's roofing hammer with leather grip of real core leather. Chequered face, precision claw, and nail groove with magnetic nail holder.

Material: Special tool steel.

Weight without handle		g	700
76D 75 1550	Solid steel carpenter's roofing hammer with magnetic nail holder		eShop
Handle length		mm	280



75 1550

PEDDINGHAUS Electric welder's chipping hammer

Forged hammer head, hardened and tempered. Handle and head painted; with cutting edge, chipping point, and tubular steel handle.

Material: Special tool steel.

Weight		g	500
73V 75 1600	Electric welder's chipping hammer		eShop
Handle length		mm	300


75 1600

Soft-faced hammer with exchangeable nylon inserts

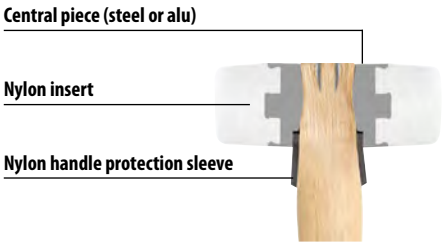
Sturdy metal central piece with handle of hickory, with nylon handle protection sleeve and ring wedge. The nylon inserts are impact resistant and wear-resistant, and are attached to the central piece by a double action system.

75 4120 – Central piece of steel.
75 4160 – Central piece of aluminium, black anodised.

Advantage:
75 4160 – Aluminium central piece = significant weight reduction. This permits precisely gauged working and also protects the wrist.

Application: For straightening or aligning components on machine tables or for application of light impacts in assembly work.

Spare part: Spare nylon insert available under No. 754180 and spare handle available under No. 751650.



Hammer head ∅		mm	22	27	32	40	50
71D 75 4120	Garant	Soft-faced hammer with nylon inserts **and steel central part**	eShop	eShop	eShop	eShop	eShop
Head length with inserts		mm	73	81	87	105	117
Handle length		mm	280	300	300	320	320
Weight		kg	0.188	0.269	0.357	0.578	0.89

Hammer head ∅		mm	22	27	32	40	50
71D 75 4160	Garant	Soft-faced hammer with nylon inserts **and aluminium central part**	eShop	eShop	eShop	eShop	eShop
Head length with inserts		mm	73	81	87	105	117
Handle length		mm	280	300	300	320	320
Weight		kg	0.147	0.2	0.237	0.354	0.48



With virtually unbreakable 3-component handle (aluminium core, polyamide and rubber components), forged-on handle protection collar and additional handle protection sleeve.
Sturdy metal central piece.

Advantage: Unbreakable, ergonomic, non-slip, **vibration-free, protects the wrist.**

Spare part: Spare nylon insert available under No. 754180.



Hammer head ∅		mm	27	32	40	50
76D 75 4170	OSCA	Soft-faced hammer with 3-component handle, nylon inserts **and steel central part**	eShop	eShop	eShop	eShop
Head length with inserts		mm	81	87	105	117
Handle length		mm	300	300	320	320
Weight		kg	0.358	0.454	0.738	0.98

Suitable for: Soft-faced hammer No. 754120 / 754160 / 754170.

Hammer head ∅		mm	22	27	32	40	50
71D 75 4180	Garant	Spare nylon insert, piece **white**	eShop	eShop	eShop	eShop	eShop


75 4180

Handles and other accessories

You can find the following products, for example, in our eShop and in our spare-parts list:

Ring wedges


75 2010

Soft-faced hammer housing


75 3310

Hammer wedges


75 2100

Hammer handles

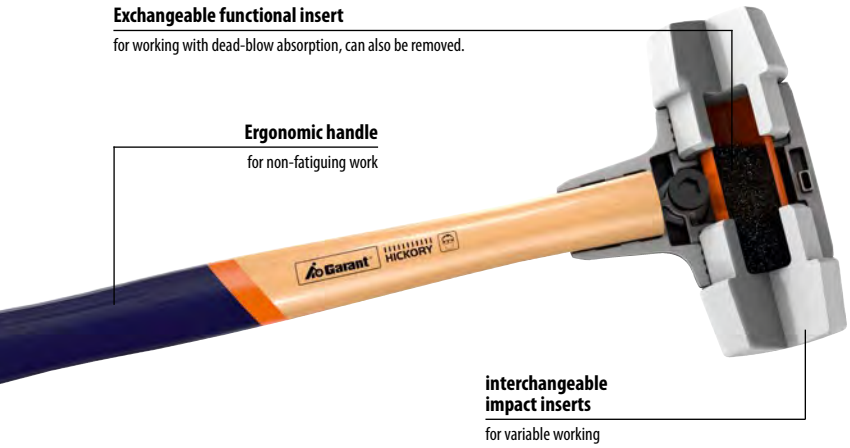


Garant Soft-faced hammer with dead-blow absorption and exchangeable inserts

Soft-faced hammer with dead-blow absorption and removable functional inserts to allow use as a normal soft-faced hammer. Sturdy two-piece precision cast housing of high-quality heat treatable steel. Inserts can be combined and exchanged. With handle of American hickory wood, varnished.

Application: For straightening or aligning components on machine tables or for application of light impacts in assembly work.

Spare part: Spare handle available under No. 752530 and spare inserts under No. 752540– 752560.





Housing ∅ / material		mm	30G	40G	50G	60G	80G
71D 75 2500	Soft-faced hammer with rubber inserts	black	eShop	eShop	eShop	eShop	eShop
71D 75 2510	Soft-faced hammer with plastic inserts	red	eShop	eShop	eShop	eShop	–
71D 75 2520	Soft-faced hammer with nylon inserts	natural	eShop	eShop	eShop	eShop	eShop
Head length with inserts		mm	92	116	138	149	175
Striking face ∅ of the inserts		mm	30	40	50	60	80
Handle length		mm	260	275	310	335	400
Overall length		mm	300	330	380	410	500
Weight without inserts		g	228	418	785	940	1895

Spare striking insert

Suitable for: Soft-faced hammer with dead-blow absorption No. 752500 / 752510 / 752520.

Application:

75 2540 – **Rubber insert** (polyurethane, black): Shock-absorbing and wear-resistant. Shore hardness 50D

75 2550 – **Plastic insert** (cellulose acetate, red): of transparent impact-resistant red plastic. Shore hardness approx. 75D.

75 2560 – **Nylon insert** (polyamide 6, natural): Highly wear-resistant, does not splinter. For very high impact force. Shore hardness approx. 80-85D.


75 2540


75 2550


75 2560

for soft-faced hammer			30	40	50	60	80
71D 75 2540	Rubber insert, soft	black	eShop	eShop	eShop	eShop	eShop
71D 75 2550	Plastic insert, medium hard	red	eShop	eShop	eShop	eShop	–
71D 75 2560	Nylon insert, hard	natural	eShop	eShop	eShop	eShop	eShop

There's more in it for you!

The entire tooling catalogues for the following brands are available from the Hoffmann Group – just ask for them!



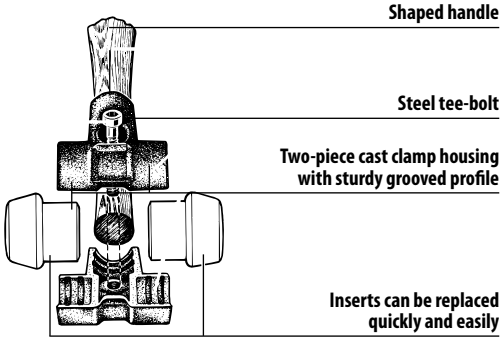
HALDER SIMPLEX soft-faced hammer with exchangeable inserts

Sturdy, two-piece clamp housing with two exchangeable striking inserts. Suitable inserts are available for various types of work.
All insert types can also be combined with each other.
Soft-faced hammers and driving mallets: Aluminium or annealed cast iron housing; wooden handle.
75 3100 Size 100G; 125G – **Sledgehammers:** Annealed cast iron housing; American hickory wood handle.

Application: Size **A** = **Aluminium housing:** For light work, e.g. positioning.
Size **G** = **Annealed cast iron housing:** For heavy, powerful blows, e.g. driving machine parts into position etc.

Spare part: Spare handle available under No. 753400 and soft-faced hammer housing under No. 753310.

Note: Size codes **A** = Aluminium housing; **G** = Annealed cast iron housing.
Size 40A; 50A – No soft metal inserts (Ho No. 754000) may be mounted in an aluminium housing.





75 2800



75 2900



75 3100

Body ∅ / Material		mm	30G	40A	40G	50A	50G	60G	80G	100G	125G
73W 75 2800	SIMPLEX soft-faced hammer with composite rubber inserts	black	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
73W 75 2900	SIMPLEX soft-faced hammer with plastic inserts	red	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
73W 75 3100	SIMPLEX soft-faced hammer with super-plastic inserts	white	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
73W 75 3200	SIMPLEX soft-faced hammer with soft metal inserts	silver	–	–	eShop	–	eShop	eShop	eShop	–	–
73W 75 3300	SIMPLEX soft-faced hammer without inserts, with handle		eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–
Head length with inserts		mm	90	110	110	135	135	145	165	200	215
Striking face ∅ of the inserts		mm	30	40	40	50	50	60	80	100	125
Handle length		mm	260	280	280	310	310	340	400	900	900
Overall length		mm	300	330	330	365	365	405	490	1000	1050
Weight (75 2800)		kg	0.345	0.405	0.66	0.74	1.15	1.55	2.87	–	–
Weight (75 2900)		kg	0.345	0.39	0.635	0.72	1.12	1.52	–	–	–
Weight (75 3100)		kg	0.32	0.36	0.61	0.675	1.04	1.44	2.66	5.2	7.7
Weight (75 3200)		kg	–	–	0.75	–	1.38	1.95	3.86	–	–

Spare striking insert

Application:

75 3450 – **Soft TPE plastic insert,** does not leave colour streaks. For laying tiles and parquet flooring, and installing windows and doors.

75 3500 – **Composite rubber insert** reinforced with textile fibres, hardness approx. 93 Shore; oil-resistant and non-ageing, for gentle positioning.

75 3600 – **Plastic insert:** Fairly hard, of transparent impact resistant red plastic.

75 3700 – **Super plastic insert:** Extremely impact resistant, unbreakable striking face with low wear. Will not break away. For gentle blows; particularly for blows to edges.

75 3750 – **Nylon insert**, hard, offers outstanding impact properties and guarantees maximum strength with maximum durability. Wear-resistant, durable and does not splinter even at minus temperatures. It is also oil-repellent and grease-repellent.

75 4000 – **Soft metal insert:** Of special alloy light metal with added copper. Does not damage the workpiece despite maximum impact effectiveness.

Note:
75 4000 Size 40–80 – Soft metal inserts must not be mounted in an aluminium housing.


75 3450



75 3500


75 3600


75 3700



75 3750



75 4000

for Hammer head ∅		mm	30	40	50	60	80	100	125
73W 75 3450	SIMPLEX soft-faced hammer, soft plastic TPE insert	blue	eShop	eShop	eShop	eShop	–	–	–
73W 75 3500	SIMPLEX soft-faced hammer, rubber composition insert	black	eShop	eShop	eShop ■	eShop	eShop	–	–
73W 75 3600	SIMPLEX soft-faced hammer, plastic insert	red	eShop	eShop	eShop	eShop	–	–	–
73W 75 3700	SIMPLEX soft-faced hammer, super-plastic insert	white	eShop	eShop	eShop	eShop	eShop	eShop	eShop
73W 75 3750	SIMPLEX soft-faced hammer, nylon insert	white	eShop	eShop	(eShop)	eShop	(eShop)	–	–
73W 75 4000	SIMPLEX soft-faced hammer, soft metal insert	silver	–	eShop	eShop	eShop	eShop	–	–

Spare striking insert

Article number	Type of insert		Colour	Characteristics	Area of application	Hardness
75 3450	TPE-Soft		blue	soft / free of abrasion	For very sensitive materials, tiles / slab laying, setting natural stone, furniture making, dry assembly, window making / door making, cabinet making	●○○○○
75 3500	Rubber composition		black	medium hard / damping / neutral smell / low-wear	Servicing / repair work, fence construction, scaffolding, tent construction, prefabricated house construction, carpentry, gardening / landscaping, masonry / installation of staircases	●●○○○
On request	TPE-Mid		grey	medium hard / free of abrasion	For delicate materials, dry assembly, furniture making, tile laying / slab laying, window making / door making, setting natural stones	●●○○○
75 3700	Superplastic		white	medium hard / very tough wear-resistant	Assembly of sharp-edged components, scaffolding, tent making, sheet metal work, house building, cabinet making, carpentry, gardening / landscaping, stone setting, fence making	●●●○○
75 3600	Plastic		red	hard / resistant to oil and grease	Installation / repair / maintenance work, sheet metal work, house building, carpentry, scaffolding, tent making	●●●●○
75 3750	Nylon		white	hard / very wear resistant no splintering (even at sub-zero temperatures) resistant to oils and greases / low-noise for very high impact forces	Joining of workpieces, assembly of sharp-edged components, casing assembly, mould making, system building, workshop building, fabrication, exhibition stand assembly, heet metal work, repair work, maintenance work	●●●●○
75 4000	Soft metal		silver	hard / heat-sensitive	For high impact force, alignment work, mould making, ystem building, installation / repair / maintenance work; replaces conventional lead hammers	●●●●●

Dead-blow hammer with exchangeable inserts

Dead-blow due to additional weights in the hammer body. Upon impact, the weights are thrown downwards and inhibit rebounding.

75 4700/4800 – Strong steel central piece (T-piece) with spigot and collar for holding the inserts. Inserts of wear-resistant nylon (medium hard).
75 4700/4810 – With handle of American hickory wood.
75 4800/4820 – With virtually unbreakable handle of SUPERGLASS glass fibre and black plastic grip.
75 4810/4820 – Strong steel central piece (T-piece) with collet and collar for holding the inserts. Inserts made of copper.

Application:

75 4700/4800 – For straightening or aligning components on machine tables or for application of light impacts in assembly work.
75 4810/4820 – For flush, precise blows and impacts for assembly work.

Spare part:

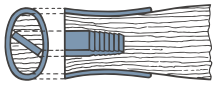
75 4700/4800 – For spare inserts see No. 754720 and 754730.
75 4700/4810 – See No. 754840 for spare blade.
75 4810/4820 – For spare inserts see No. 754760.



With hickory handle. 75 4700



With virtually unbreakable SUPERGLAS handle. 75 4800



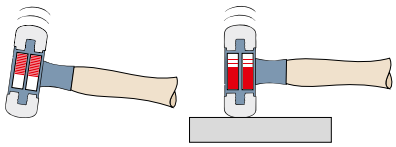
Unbreakable handle attachment in conically swaged extension tube.



With hickory handle. 75 4810



With virtually unbreakable SUPERGLAS handle. 75 4820



During the swing, the weights move upwards.
Upon impact, the weights are thrown downwards and inhibit rebounding.

Hammer head ∅	mm	22	27	32	35	40	50	60
73B 75 4700	Dead-blow hammer with nylon inserts **Hickory handle**	eShop ■	eShop	eShop	eShop ■	eShop	eShop	eShop
73B 75 4800	Dead-blow hammer with nylon inserts **Superglas handle**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Head length with inserts	mm	75	90	100	105	110	110	120
Handle length	mm	250	265	285	295	315	335	360
Overall length	mm	270	290	320	330	355	385	420
Weight (75 4700)	kg	0.167	0.274	0.391	0.466	0.695	1.05	1.47
Weight (75 4800)	kg	0.239	0.33	0.499	0.597	0.755	1.14	1.59

Hammer head ∅	mm	24	32	40
73B 75 4810	Dead-blow hammer with copper inserts **Hickory handle**	eShop	eShop	eShop
73B 75 4820	Dead-blow hammer with copper inserts **Superglas handle**	eShop	eShop	eShop
Head length with inserts	mm	81	106	121
Handle length	mm	265	295	335
Overall length	mm	290	325	380
Weight (75 4810)	kg	0.34	0.75	1.34
Weight (75 4820)	kg	0.41	0.85	1.38

Spare insert

Suitable for:

75 4760 – Dead-blow hammer No. 754810 / 754820.
75 4720/4730 – Dead-blow hammer No. 754700 / 754750 / 754800.



75 4720



75 4730



75 4760

Hammer head ∅	mm	22	27	32	35	40	50	60
73B 75 4720	Spare insert, nylon **flat**	eShop	eShop	eShop	eShop	eShop	eShop	eShop
73B 75 4730	Spare insert, nylon **convex**	eShop	eShop	eShop	eShop	eShop	eShop	eShop

Hammer head ∅	mm	24	32	40
73B 75 4760	Spare copper insert **flat**	eShop	eShop	eShop

PEDDINGHAUS "Ultratec Duo" combination hammer

75 4890 – Combined **engineer's hammer and soft hammer,** sides additionally with ground striking faces for working in confined spaces. Head made of highly tempered steel with an exchangeable set of inserts made of wear-resistant nylon – shore hardness approx. 68D. With unbreakable "Ultratec" glass fibre handle.

Spare part:

75 4890 – Nylon insert No. 754895.



75 4890



Exchangeable nylon insert for the soft hammer side. Shore hardness approx. 68D.

Hammer head ∅		mm	27	32	35	40	50
73V **75 4890**	Combination hammer		(eShop)	eShop	eShop ■	eShop	(eShop)
Hammer head dimensions		mm	27×27	31×31	34×34	38×38	50×50
Head length with inserts		mm	92	108	114	124	130
Overall length		mm	290	320	324	357	370
Weight		kg	0.49	0.53	0.66	1	1.87

Hammer head ∅			mm	27	32	35	40	50
73V **75 4895**	Spare insert, nylon	**white**		(eShop)	eShop	eShop	eShop	(eShop)



75 4895

HALDER Combination hammer "Ferroplex"

Combined **engineer's hammer and soft hammer.**
Head of highly tempered steel with an exchangeable set of inserts of wear-resistant nylon.
Steel tube handle with oil-resistant rubber grip.

Spare part: Nylon insert No. 754910 size 30.



75 4880

Hammer head ∅		mm	30
73W **75 4880**	Combination hammer		eShop ■
Head length		mm	104
Overall length		mm	290
Weight		kg	0.6

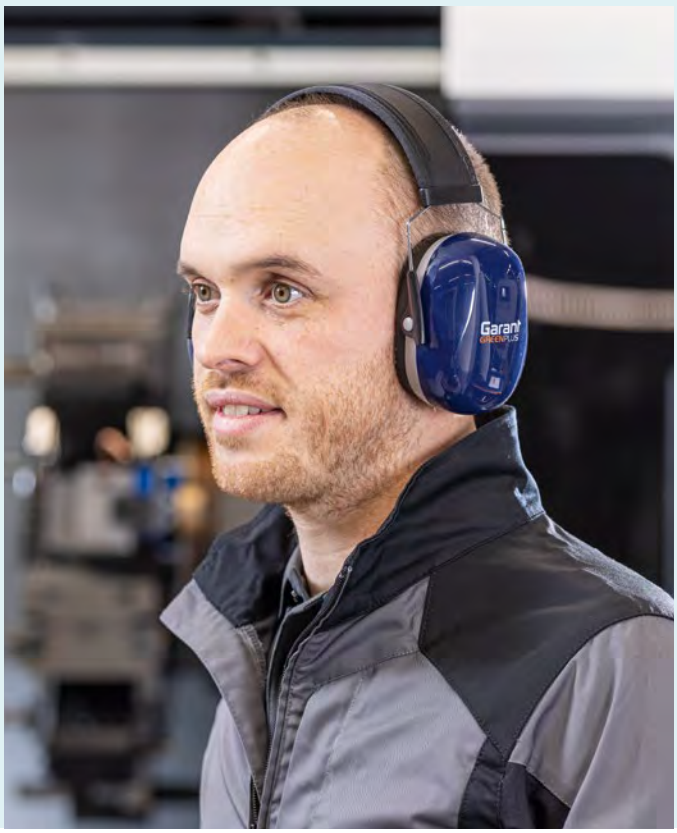
Volume 4 – occupational safety

So it doesn't fall on deaf ears.

Effective hearing protection is essential in many work environments. Our comprehensive range offers solutions that are optimally adapted to different work areas – from practical earplugs and robust ear defenders to custom-made otoplastics.



09 7772



All further product information can be found in our product group **hearing protection** in **volume 4** or in our **e-shop**.

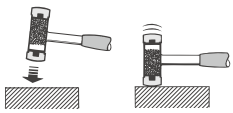
HALDER "Supercraft" nylon dead-blow hammer with exchangeable inserts

Sturdy steel T-piece with exchangeable top quality wear-resistant nylon faces. **Dead-blow** effect achieved by steel ball filling in hammer head.

75 4900 – Steel tube handle with oil-resistant rubber grip.
75 5001 – Unbreakable, non-slip 3-component handle with fibreglass core.
75 5100 – Handle of premium quality hickory wood.

Application: For straightening or aligning components on machine tables or for application of light impacts in assembly work.

Spare part: For spare nylon face see No. 754910.
75 5100 – See No. 755140 for spare blade.



During the swing, the loose filling moves upwards.

Upon impact, the steel ball weights are thrown downwards and inhibit rebounding.



75 4900

Hammer head ∅		mm	25	30	35	40	50	60	70
73W 75 4900	Dead-blow hammer with steel tube handle		–	–	eShop ■	eShop ■	eShop	eShop ■	–
73W 75 5001	Dead-blow hammer with fibre glass handle		–	–	–	eShop	eShop	eShop	–
73W 75 5100	Dead-blow hammer with hickory handle		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Head length with inserts		mm	105	110	110	115	120	145	150
Overall length (75 4900)		mm	–	–	295	300	310	325	–
Overall length (75 5001)		mm	–	–	–	365	375	385	–
Overall length (75 5100)		mm	305	330	335	360	370	370	370
Weight (75 4900)		kg	–	–	0.69	0.805	1.15	1.75	–
Weight (75 5001)		kg	–	–	–	0.79	1.04	1.625	–
Weight (75 5100)		kg	0.25	0.46	0.56	0.715	0.99	1.7	2.215



75 5001



75 5100

HALDER Dead-blow soft-faced hammer "Secural" with polyurethane inserts

Sturdy single-piece steel housing (patented). **Dead-blow effect** achieved by loose steel ball filling. Inserts of colour-fast wear-resistant polyurethane (medium hard). Ideal for sheet-metal work and for selective blows on corners and edges.



75 5210

Hammer head dimensions		mm	30×40
73W 75 5210	Dead-blow soft-faced hammer with polyurethane inserts		eShop
Head length with inserts		mm	117
Overall length		mm	300
Weight		kg	0.68

HALDER "Supercraft" dead-blow sledge hammer with exchangeable inserts

Sturdy steel T-piece with exchangeable top quality wear-resistant nylon faces. **Dead-blow** effect achieved by steel ball filling in hammer head. With handle of premium quality hickory wood.

Spare part: For spare nylon insert see No. 754910; for spare hickory handle see No. 755140.



75 5400

Hammer head ∅ (mm) / Weight (kg)			80/4	100/7
73W 75 5400	Dead-blow sledge hammer		eShop	eShop
Head length with inserts		mm	200	210
Striking face ∅ of the inserts		mm	80	100
Handle length		mm	800	900
Overall length		mm	880	1000
Weight		kg	4.41	7

HALDER Spare nylon insert for dead-blow hammer

Suitable for: Dead-blow hammer No. 754880, 754900, 755000 (to category 53), 755100 and 755400 and also nylon drift rod No. 745250.



75 4910

Hammer head ∅			mm	10	12	15	20	25	30	35	40	50	60	70	80	100
76D 75 4910	Spare insert, nylon	**white**		eShop	eShop	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	eShop

HOLEX Dead-blow soft-faced hammer, plastic coated

Hammer body of steel, dead-blow due to steel ball filling. Hammer fully sheathed in plastic. Temperature-resistant from –20 °C to 90 °C.


75 5260

Hammer head ∅	mm	30	35	45	50	60
72D 75 5260	Dead-blow soft-faced hammer, plastic coated	eShop	eShop	eShop	eShop	eShop
Head length	mm	80	90	90	100	115
Overall length	mm	280	290	305	325	380
Weight	kg	0.4	0.45	0.68	0.9	1.36

HAZET Adhesive fixing hammer

Sturdy angled plastic handle. Hammer head filled with **permanently elastic** compound for **material and surface protecting** impacts. Ideal for instance for fitting decorative strips and fittings.

Size 3 – Handle can be turned 90°.

Size 4 – White impact face for abrasion-free working without formation of streaks. Handle can be turned 90°.



Type		2	3	4
73E 75 5455	Adhesive fixing hammer	eShop	eShop	eShop
Impact body length	mm	70	140	140
Impact body width	mm		70	
Overall length	mm	260	280	280
Weight	g	770	1300	1300
Colour		black	black	white

HOLEX Rubber composition mallet

Made of tough rubber (90 Shore), non-rebound; with powerful impact. Worn faces can be reworked by turning on a lathe. With ash wood handle.

75 5500 Size B400 – With one convex and one flat face.

75 5550 – White rubber face for working without formation of streaks.

Standard: **DIN 5128**

Spare part: Spare handle available under No. 755600.


75 5500_A400


75 5500_B400


75 5550_A400

Type		A100	A200	A400	A600	A900	B400
72D 75 5500	Black rubber hammer	eShop	eShop	eShop	eShop	eShop	eShop
72D 75 5550	White rubber hammer	–	eShop	eShop	eShop	eShop	–
Head length	mm	80	90	115	130	140	115
Head ∅	mm	40	54	64	74	90	64
Handle length	mm	260	320	340	380	380	340
Weight	g	150	300	500	750	1150	500

Wooden hammer with metal casing

Hammer head of beech wood, with slightly convex faces. A metal band around the hammer head prevents splitting. With ash wood handle.

Standard: similar to **DIN 7462 B**


75 6000_90

Head ∅	mm	50	60	70	80	90
76D 75 6000	Wooden hammer	eShop	eShop	eShop	eShop	eShop
Head length	mm	100	120	140	160	180
Handle length	mm	280	300	320	350	380
Weight	g	220	370	560	810	1100

OSCA Light metal hammer

Cylindrical hammer body of annealed aluminium bar. With hickory handle.

Application: For sheet metal forming, beating out and assembly work.


75 6500

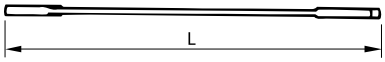
Weight	g	250	500	750	1000	1500
76D 75 6500	Light metal hammer	eShop	eShop	eShop	eShop	eShop
Head length	mm	80	100	100	130	140
Head ∅	mm	40	50	60	60	70
Handle length	mm	300	320	350	360	380

Non-sparking tools

Special Ampco alloy, corrosion-resistant and anti-magnetic.

Double open ended spanners, non-sparking

Standard: DIN 895
Material: Aluminium bronze.



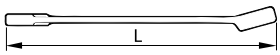

75 9710

Width across flats	mm	6×7	8×9	10×11	10×13	12×13	14×15	16×17	17×19
76E 75 9710	Double open ended spanner, non-sparking	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	95	110	125	135	145	155	170	185

Width across flats	mm	18×19	20×22	21×23	22×24	24×27	30×32	34×36	41×46
76E 75 9710	Double open ended spanner, non-sparking	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	185	200	220	220	240	285	310	375

Combination spanners, non-sparking

Standard: DIN 3113
Material: Aluminium bronze.




75 9715

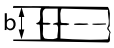
Width across flats	mm	8	10	11	12	13	14	15	16	17
76E 75 9715	Combination spanner, non-sparking	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	150	175	175	205	205	205	225	225	270

Width across flats	mm	18	19	21	22	24	27	30	32	36
76E 75 9715	Combination spanner, non-sparking	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
L	mm	270	270	295	295	325	355	390	430	475

Screwdrivers, non-sparking

Material: Copper-beryllium.


75 9720



Blade width b	mm	3	4	5	6	8	10
76E 75 9720	Slot-head screwdriver, non-sparking	eShop	eShop	eShop	eShop	eShop	eShop
Blade length	mm	60	70	100	150	150	200
overall length	mm	150	160	190	250	260	320

Engineer's hammer, non-sparking

Standard: DIN 1041
Material: Aluminium bronze.


75 9730

Weight without handle	g	200	300	500	1000
76E 75 9730	Engineer's hammer, non-sparking	eShop	eShop	eShop	eShop
Handle length	mm	280	300	320	360

Water pump pliers / adjustable spanners, non-sparking

Size 250 – With grips.
Size 300 – Without grips.

Standard: ISO 8976
Material: Copper-beryllium.


75 9737

overall length	mm	250	300
76E 75 9737	Water pump pliers, non-sparking	eShop	eShop
Hexagon across flats	mm	40	50
Jaw capacity for pipes	in	1.1/2	2.1/8

Material: Aluminium bronze.


75 9738

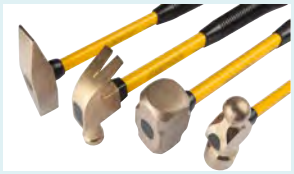
overall length	mm	200	250	300	380
76E 75 9738	Adjustable spanner, non-sparking	eShop	eShop	eShop	eShop
maximum width across flats	mm	25	30	36	44

Other non-sparking tools on request

AMPCO SAFETY TOOLS®







PB SWISS TOOLS Pry bars

Exceptional toughness and high hardness due to PB SWISS TOOLS special alloy. One end pointed. **For very heavy duties.**



75 9790

73B	**75 9790**	Pry bar with heel	eShop ■
	Hexagon shank	mm	18
	Length	mm	500

HEYCO Pry bars

Made of nickel-plated special steel; one side pointed.



75 9800



75 9810

76D	**75 9800**	Pry bar with heel	eShop ■
76D	**75 9810**	Pry bar with rolling head	eShop ■
	Thickness (75 9800)	mm	14×14
	Thickness (75 9810)	mm	∅ 14
	Length	mm	390

RENNSTEIG Angle bar (flange fitting bar)

Of round special tool steel, hardened, 90° angle, conical working tips annealed, painted.



75 9815

	Shank ∅	mm	14	16	20
76D	**75 9815**	Angle bar	eShop	eShop	eShop
	Arm length long end	mm	400	450	500
	Arm length short end	mm	120	130	150
	Length of conical section	mm	70	80	90
	Tip ∅	mm	6	6	7
	Weight	kg	0.5	0.8	1.5

RENNSTEIG Punch

Of special tool steel, hardened, impact head annealed, octagonal shank varnished.



75 9817

	Shank ∅	mm	20
76D	**75 9817**	Punch	eShop
	Tip ∅	mm	5
	overall length	mm	500
	Length of conical section	mm	170
	Weight	g	1035

Tyre lever

Drop-forged, precision formed blades.
Material: Chrome vanadium steel, nickel-plated.



75 9821



75 9825



75 9835

	overall length		mm	300	380	530	600	650
73E	**75 9821**	HAZET	Tyre lever cranked	–	–	–	eShop	–
72D	**75 9825**	HOLEX	Tyre lever	eShop ■	eShop ■	eShop ■	–	eShop
72D	**75 9835**	HOLEX	Tyre lever cranked	–	eShop	eShop	–	eShop

Wrecking bar (claw foot)

Made of forged spring steel, through hardened, ground to an extra slim shape, bright polished, wide ends. With precision nail puller.

Material: Special alloy spring steel, blue paint finish.



75 9840

overall length		mm	500	700
76D 75 9840	Wrecking bar (claw foot)		eShop	eShop
Hexagon shank		mm	15	18
Weight		kg	0.9	1.8

"Power BAR" wrecking bar

Forged with extremely robust, oval shank, and optimised application angle. Wide face and curved claw with nail puller. Hardened and painted black, ends bright polished.



75 9846

overall length		mm	350	600	900
76D 75 9846	„Power Bar" wrecking bar		eShop	eShop	eShop
Shank dimension (oval)		mm	22.5×12	30×16	30×16
Weight		kg	0.7	2.1	3.2

75

Wrecking bar

Wrecking bar with strong curved claw and slightly offset chisel blade, hardened and painted. Of oval steel profile.



75 9855



75 9856

overall length		mm	500	600	800
76D 75 9855	RENNSTEIG		eShop	eShop	eShop
72D 75 9856	HOLEX	Wrecking bar	eShop	eShop	eShop
Shank dimension (oval)		mm	20×12	23×13	23×13
Weight (75 9855)		kg	1	1.4	1.9
Weight (75 9856)		kg	1.3	1.6	2.1

Pry bar

Made of special steel, with angled blade and straight point.



75 9860

overall length		mm	1250	1500
76D 75 9860	Pry bar with blade and point		eShop	eShop
Shank ∅		mm	30	
Weight		kg	6.5	8

Hand snips, Berlin type

Drop-forged. Bright finished head and open handles, painted or dipped.

76 0100 – Made of **stainless steel,** blades induction hardened (HRC 60), also for stainless steel V2A sheet metal up to 1.0 mm.

76 0201 – Made of **tool steel**, blades induction hardened (HRC 58 – 60), also for stainless steel V2A sheet metal up to 1.0 mm.

Standard: Similar to **DIN 6438**

Application: For straight cutting.


76 0100


76 0201

overall length				mm	250
73X **76 0100**	Erdi	Hand snips **Stainless steel (INOX)**	**right-hand cutting**		eShop
72D **76 0201**	HOLEX	Hand snips **Tool steel**	**right-hand cutting**		eShop
Length cutter				mm	60

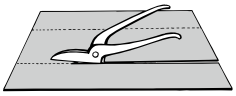
Tin snips, Pelican type

Drop-forged. Bright finished head and open handles, painted or dipped.

76 0500 – Made of **stainless steel,** blades induction hardened (HRC 60), also for stainless steel V2A sheet metal.

76 0601 – Made of **tool steel**, blades induction hardened (HRC 58 – 60), also for stainless steel V2A sheet metal.

Application: Especially for long and continuous cutting.




76 0500


76 0601

overall length				mm	300	350
73X **76 0500**	Erdi	Tin snips **Stainless steel (INOX)**	**right-hand cutting**		eShop	eShop
72D **76 0601**	HOLEX	Tin snips **Tool steel**	**right-hand cutting**		eShop	–
Length cutter				mm	62	65

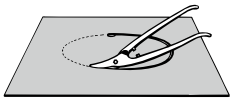
Hole snips

Drop-forged. Bright finished head, slim, tapered and open handles, painted or dipped.

76 1201 – Made of **tool steel**, blades induction hardened (HRC 58 – 60), also for stainless steel V2A sheet metal.

76 1000/1100 – Made of **stainless steel,** blades induction hardened (HRC 60), also for stainless steel V2A sheet metal.

Application: For curved cutting and short straight cutting.




76 1000


76 1201


76 1100

overall length				mm	230	250	275	300
73X **76 1000**	Erdi	Hole snips **Stainless steel (INOX)**	**right-hand cutting**		–	eShop	eShop	eShop
72D **76 1201**	HOLEX	Hole snips **Tool steel**	**right-hand cutting**		eShop	–	–	–
73X **76 1100**	Erdi	Hole snips **Stainless steel (INOX)**	**left-hand cutting**		–	eShop	eShop	eShop
Length cutter				mm	45	42	42	47

Erdi Curved blade tin snips

Drop-forged. Bright finished head, bent and open painted handles. Made of **stainless steel**, blades induction hardened (HRC 60), also for stainless steel V2A sheet metal.

Application: For circular and curved cutting.




76 1600

overall length			mm	275
73X **76 1500**	Curved blade tin snips	**right-hand cutting**		eShop
73X **76 1600**		**left-hand cutting**		eShop
Length cutter			mm	40

Erdi Ideal snips

Drop-forged. Bright finished head and open, painted handles.

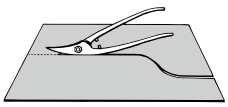
76 2000/2100 – Made of **stainless steel,** blades induction hardened (HRC 60), also for stainless steel V2A sheet metal.

76 2050/2150 – With **HSS blades (HRC 65).** Specially long blade service life (for all sheet metal; stainless steel sheet metal and hard sheet metal up to 1.0 mm).

Application: For continuous straight and shaped cutting.


76 2000


76 2150



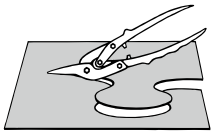
overall length			mm	260	280
73X 76 2000	Ideal snips **Stainless steel (INOX)**	**right-hand cutting**		eShop	eShop
73X 76 2050	Ideal snips **with HSS blades**	**right-hand cutting**		–	eShop
73X 76 2100	Ideal snips **Stainless steel (INOX)**	**left-hand cutting**		eShop	eShop
73X 76 2150	Ideal snips **with HSS blades**	**left-hand cutting**		–	eShop
Length cutter			mm	30	34

Patterns snips with compound action

Micro-serrated. Snip jaws made of **stainless steel** (HRC 58 – 60), handles of sheet steel, nickel plated. 2-component handle with non-slip insert of soft material, easy on the hand.

Cutting capacity: Metal sheets up to 1.8 mm, stainless steel sheets up to 1.2 mm.

Application: For continuous straight and shaped cutting.



overall length			mm	260
73X 76 7000	Erdi Patterns snips with 2-component handles	**right-hand cutting**		eShop
73X 76 7010		**left-hand cutting**		eShop
72D 76 7042	HOLEX	**right-hand cutting**		eShop
72D 76 7043		**left-hand cutting**		eShop
Length cutter			mm	40


76 7010


76 7043

overall length			mm	240
73X 76 7020	Erdi Patterns snips with 2-component handle	**right-hand cutting**		eShop
73X 76 7025		**left-hand cutting**		eShop
73X 76 7030		**straight cutting**		eShop
Length cutter			mm	40


76 7025

Supplied with: Patterns snips 767020 size 240, 767025 size 240 and 767030 size 240 in a textile wallet.


76 7035

73X 76 7035	Erdi Patterns snips set **3 pieces**		eShop

Erdi Small ideal snips with compound action

Drop-forged head; blades induction hardened.
Double compound action with integral return spring. Handles of sheet metal, nickel-plated.
2-component handle with non-slip insert of soft material, easy on the hand.

Cutting power: Sheet metal up to 1.2 mm, stainless steel sheet up to 1.0 mm.

76 4000 – Snip jaws of stainless steel (HRC 60), serrated cutters.

76 4050/4060 – Snip jaws of high quality steel-S (HRC 60 – 62), **25 % less force required.**

Application: For continuous straight and shaped cutting.

76 4050/4060 – For very tight radii and places where access is difficult.

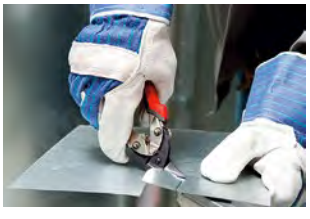

76 4000

Small, versatile, powerful


76 4050

overall length			mm	230
73X 76 4000	Ideal snips with 2-component handles **small**	**right-hand cutting**		eShop
Length cutter			mm	27

overall length			mm	180
73X 76 4050	Ideal snips with 2-component handles **very small**	**right-hand cutting**		eShop
73X 76 4060		**left-hand cutting**		eShop
Length cutter			mm	20



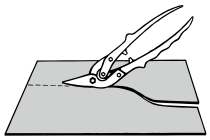
Ideal sheet metal shears with compound action

Drop-forged head, blades induction hardened.
Adjustable pivot pins, double leverage with integrated return spring.
Application: For continuous straight and shaped cutting.

Snip jaws made of **stainless steel** (HRC 60 – 62) with optimised, non-serrated blade geometry for high manoeuvrability and easy cutting using up to **25 % less force,** ideal for cutting decorative sheets. Handles of sheet metal, nickel-plated. 2-component handle with non-slip insert of soft material, easy on the hand.
Cutting capacity: Sheet metal up to 1.8 mm, stainless steel up to 1.2 mm.



76 5910



overall length			mm	260
73X 76 5900	Erdi	Ideal snips with 2-component handles	right-hand cutting	eShop
73X 76 5910			left-hand cutting	eShop
Length cutter			mm	33

Ultra-fine serrated. Snip jaws made of **stainless steel** (HRC 58 – 60), handles of steel plate, nickel plated. 2-component handle with non-slip insert of soft material, easy on the hand.
Cutting capacity: Sheet metal up to 1.8 mm, stainless steel up to 1.2mm.



76 6010



76 6043

overall length			mm	260
73X 76 6000	Erdi	Ideal snips with 2-component handles	right-hand cutting	eShop
73X 76 6010			left-hand cutting	eShop
72D 76 6042	HOLEX		right-hand cutting	eShop
72D 76 6043			left-hand cutting	eShop
Length cutter			mm	33

Ultra-fine serrated. Snip jaws made of high quality **stainless steel S** (HRC 60 – 62), forged solid steel non-slip handles.
Cutting capacity: Metal sheets up to 2.0 mm, stainless steel sheets up to 1.5 mm.
- Improved sheet metal clearance due to optimised cutting chamfer.
- Reduced opening angle of the handles and blade extension back to the pivot means less effort is required during cutting.



76 6200

overall length			mm	240
73X 76 6100	Erdi	Ideal snips	right-hand cutting	eShop
73X 76 6200			left-hand cutting	eShop
Length cutter			mm	24

Snip jaws with **HSS blades** (HRC 65). Particularly long blade service life. Handles of sheet steel, nickel-plated. 2-component handle with non-slip insert of soft material, easy on the hand.
Cutting capacity: Metal sheets up to 1.8 mm, stainless steel sheets up to 1.2 mm.



76 6360

overall length			mm	260
73X 76 6350	Erdi	Ideal snips with **HSS blades**	right-hand cutting	eShop
73X 76 6360			left-hand cutting	eShop
Length cutter			mm	33

There's more in it for you!

The entire tooling catalogues for the following brands are available from the Hoffmann Group – just ask for them!



Erdi Ideal snips with double compound action

Shears head in stainless steel (min. HRC 61). Compact shears head with partly recessed head screws. 2-component handle with non-slip insert of soft material, easy on the hand. Reduced handle opening angle for optimised handling whilst maintaining the cutting length. Central locking bar for simple operation without changing grip (for right-hand and left-hand operation). **Cutting power:** Metal sheets up to 1.8 mm, stainless steel sheets up to 1.2 mm.

Advantage: Extremely robust fabric with sintered steel inlay for easy and wear-resistant cutting. Minimal applied force thanks to small opening width of the handle and double leverage.



76 7055

Small opening width whilst maintaining the cutter length.



overall length			mm	230
73X 76 7050	Ideal snips with 2-component handle	right-hand cutting		eShop
73X 76 7055		left-hand cutting		eShop
Length cutter			mm	30

Erdi Universal continuous cutting snips

Blades of quenched and tempered high quality steel; offset to allow continuous cutting. Sturdy frame of glass fibre reinforced plastic with soft material insert, easy on the hand. Adjustable pivot pins, integral return spring and closure catch.

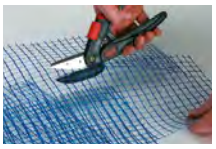
Cutting capacity: Aluminium / copper sheet metal up to 0.7 mm, standard sheet metal up to 0.6 mm.

Advantage: The offset jaws ensure the correct clearance between the hand and the material to be cut.

Application: Cuts materials up to medium thickness and hardness. For long and straight continuous cuts, and for large radius cuts.



76 7710





overall length			mm	235
73X 76 7710	Universal continuous cutting snips			eShop
Length cutter			mm	50

Erdi Continuous cutting tin snips with compound action

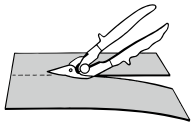
Similar to Ideal snips. Snip jaws made of **stainless steel** (HRC 60), handles of steel plate, nickel plated. 2-component handle with non-slip insert of soft material, easy on the hand.

Cutting capacity: Sheet metal up to 1.8 mm, stainless steel sheet up to 1.2 mm.

Application: For continuous straight cutting.



76 7600



overall length			mm	260
73X 76 7500	Continuous cutting tin snips	right-hand cutting		eShop
73X 76 7600		left-hand cutting		eShop
Length cutter			mm	32

Snip jaws made of **high quality steel** (HRC 60), offset for optimum hand freedom. Extra long, laterally offset blades for long, straight cutting. Handles of sheet steel, nickel-plated.

Cutting capacity: Aluminium / copper sheets up to 1.2 mm, standard metal sheets up to 1.0 mm, stainless steel (V2A) sheets metal up to 0.8 mm.

Advantage: The offset jaws ensure the correct clearance between the hand and the material to be cut.

Application: Particularly suitable for continuous long cuts and large radii in sheet metal, wire mesh, plastic screens, floor coverings, insulation materials, leather etc.



76 7700





overall length			mm	280
73X 76 7700	Universal tin snips			eShop
Length cutter			mm	64

Erdi Strap cutter

Flat lower section for easy insertion under tightly tensioned straps.

76 2800 – Simple action; anti-slip open handles.

76 2850 – Safety strap cutter with compound action. Cutter head of annealed precision casting, blades induction hardened. A **polymer restraint mechanism prevents the strap springing up** during cutting. With anti-slip 2-component handles. For hardened steel packaging straps **up to maximum 32×1 mm.**



76 2800



76 2850



A polymer restraint mechanism

prevents the strap springing up

overall length			mm	260
73X 76 2800	Strap cutter			eShop
Length cutter			mm	30

overall length			mm	260
73X 76 2850	Safety strap cutter			eShop
Length cutter			mm	38

Multi-purpose shears (general purpose shears)

Made of stainless steel, with return spring.

76 3030 – Straight shape, lower blade serrated.
76 3040 – Angled shape, lower blade serrated.
76 3050 – Straight jaws, plastic handles with soft inlay. **With wire cutting and stripping function for Ø 1 + 1.5 mm.**
76 3100 – Straight jaws, plastic coated handles.
76 3150 – Offset jaws, plastic coated handles.
76 3030/3040 – High-quality general purpose shears, with ergonomic 2-component handles and soft inlay. With sturdy wire-cutting capability up to 2.5 mm Ø. Various **handle openings can be set,** so those with small hands will find these most suitable.

Application: Widely applicable. Ideal for thin sheet metal, plastics, leather, cardboard, paper, cord, fabrics etc.



Small opening angle.



Large opening angle.



76 3030



76 3040

overall length			mm	140	190	205
71D 76 3030	Garant	Multi-purpose shears with 2-component handles **straight, with adjustable handle opening**		–	–	eShop
71D 76 3040	Garant	Multi-purpose shears with 2-component handles **angled, with adjustable handle opening**		–	–	eShop
73X 76 3050	Erdi	Multi-purpose shears with 2-component handles **straight**		–	eShop	–
72D 76 3100	HOLEX	Multi-purpose shears **straight**		eShop	eShop ■	–
72D 76 3150	HOLEX	Multi-purpose shears **angled**		–	eShop	–
Length cutter			mm	30	40	50



76 3050



76 3100

Electrician's and general-purpose scissors (phone wiring scissors)

One serrated blade, one smooth blade.

76 8810 – Snip jaws made of stainless steel, plastic grips.
76 8860 – Snip jaws made of special stainless steel. 2-component handle with soft components in the outer gripping area. For cutting and stripping copper and aluminium cables up to 35 mm². Crimping terminal sleeves (0.5 – 4 mm²). With adjustable screwed joint.
76 8870 – Sturdy angled design.
Cutter head made of stainless steel. Robust fibreglass-reinforced 2-component handle with angled cutting edge and optimised design for improved ergonomics. With tether attachment point for attaching a fall protection. Two crimp points for terminal sleeves (0.5 – 6 mm² and 10 – 25 mm²). With opening spring, can be locked for transport.
76 8802–8810/8850/8870/9005 – Lower blade has a **wire cutter notch.**
76 9005 – Nickel-plated.
76 8800–8810/8850/8855/8860/9005 – Short, sturdy design.
76 8800/8802 – Snip jaws made of stainless steel. Sturdy 2-component grip, non-slip and ergonomic due to soft inserts in grip area.
76 8850/8855 – Shears head of non-rusting stainless steel, **extremely long-life blades with TiN coating.** Precise cutting results thanks to the sturdy screwed joint. Very handy and pleasant 2-component handle, strong action with easy-grip **Haptoprene** surface.

Application: Cuts thin wires, cable, insulation sleeving, rubber, leather etc.

Supplied with:
76 8860 – Plastic transport protection.



76 8850



76 8870



76 8860



76 8802



76 8810



76 9005

overall length				mm	130	140	150	160
71D 76 8850	Garant	Electrician's scissors **with 2-component grip and wire cutter**	TiN		–	eShop	–	–
71D 76 8855	Garant	Electrician's scissors **with 2-component grip**	TiN		–	eShop	–	–
73F 76 8870	KNIPEX	Electrician's scissors **with 2-component grip and wire cutter**			–	–	–	eShop
76F 76 8860	intercable				–	–	eShop	–
72D 76 8800	HOLEX	Electrician's scissors **with 2-component grip**			–	eShop	–	–
72D 76 8802	HOLEX	Electrician's scissors **with 2-component grip and wire cutter**			–	eShop	–	–
72D 76 8810	HOLEX	Electrician's scissors **with wire-cutter**			–	eShop	–	–
72D 76 9005	HOLEX	Electrician's scissors nickel-plated **with wire-cutter**			eShop	–	–	–

Precision scissors

Made of quenched and tempered steel. Comfortable plastic handles with opening spring.

Application: For clean, precise cutting of a very wide range of materials and fibres.
Cuts soft metal up to 0.12 mm thickness.



763170

overall length		mm	130
76F 76 3170	Precision scissors		eShop
Length cutter		mm	14.5

Kevlar® scissors

Made of quenched and tempered steel. Comfortable plastic handles with opening spring.
Micro-pattern blades (57 – 59 HRC) prevent the fibres being pushed forward on cutting.

Application: Especially for cutting Kevlar® fibres (e. g. as strain relief in fibre optic cables).



763180

overall length		mm	150
76F 76 3180	Kevlar® scissors		eShop
Length cutter		mm	21.5

Kevlar® scissors

Of hardened high-tensile carbon steel. Large gripper loops in the plastic handles for easy working.
Precision-ground micro-serrated cutting edges ensure a clean cut and prevent the fibres slipping.

763182 – With 2-component handle and concealed screws.

Application: Especially for cutting Kevlar® fibres.



763182_140



763183_160



763185_160

overall length		mm	140	160
71D 76 3182	Garant		eShop	–
73F 76 3183	KNIPEX	Kevlar® scissors	–	eShop
72D 76 3185	HOLEX		–	eShop
Length cutter		mm	40	

Fabric scissors

Fabric shears with micro toothing and ergonomic 2-component handles.
Blades of stainless steel.

Application: Glass fibre, aramides, and many more



_200



_250

overall length		mm	200	250
76F 76 9540	Fabric scissors		eShop	eShop
Length blade			85	120

Garant General-purpose scissors with serrated lower blade and 2-component handles

Sturdy and handy universal general-purpose scissors with ergonomic 2-component handles.
Titanium coating on the blades (of non-rusting stainless steel) ensures very good cutting characteristics and long working life.

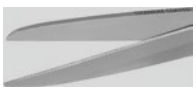
Application: Paper, card, leather, rubber, film, plastic, fabric, and much more.



_175



_235



The serrated lower blade prevents the material to be cut from slipping.

overall length		mm	135	175	210	235
71D 76 9240	General-purpose scissors with titanium coating		eShop	eShop	eShop ■	eShop ■

martor SECUMAX safety scissors with 2-component handle

Ergonomic 2-component handle. Blades of non-rusting stainless steel for very good cutting characteristics and long working life. The special profile of the blades protects against cutting injuries and rounded tips reduce the risk of puncture wounds.

Size 216 – With rotation notch especially for wires and cables, and with claws for untwisting of catches.

Size 285 – For higher transmission of force.

Application: Paper, cardboard, textiles, film, plastic strapping, and much more



overall length		mm	134	216	218	285
76F 76 9245	SECUMAX safety scissors with 2-component handle		eShop	eShop	eShop	eShop
Manufacturer's type designation			SECUMAX 363	SECUMAX 565	SECUMAX 564	SECUMAX 568

HOLEX General-purpose scissors with stainless steel blades, plastic handles

Ergonomic soft-grip handles of plastic. Blades of non-rusting stainless steel (52 - 54 HRC).

Application: Paper, cardboard, fabric, leather, rubber, cord, and much more.



overall length		mm	200	225	250
72D 76 9250	General-purpose stainless steel scissors		eShop	eShop	eShop

HOLEX General-purpose scissors with smooth blades (heavy-duty version)

Exceptionally strong tapered design with sturdy scissor blades. Smooth blades, strong handles with large finger holes. Strong adjustable screwed joint. Handles painted.

76 9510 – Scissor blades and joint bright finished.

76 9515 – Left-handed shears. Scissor blades and joint, nickel plated.

Application: Paper, cardboard, plastic sheeting, leather, and much more.

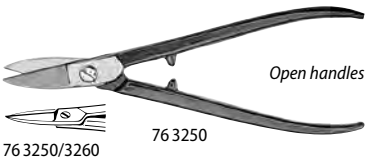


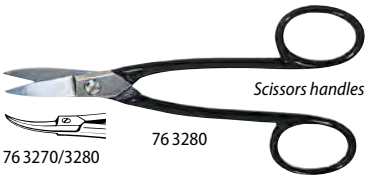
overall length		mm	200	250	300
72D 76 9510	Bright finished general-purpose scissors		eShop	eShop	eShop
72D 76 9515	Nickel-plated general-purpose scissors **for left-handed users**		eShop	–	–

HOLEX Jeweller's snips

Slim shape:
drop-forged from special tool steel and specially hardened. Bright finished head, painted handles.

Application: Handy universal snips for cutting thin sheet metal.





overall length		mm	180
72D 76 3250	Jeweller's snips **straight, with open handles**		eShop
72D 76 3260	Jeweller's snips **straight, with scissor handles**		eShop
72D 76 3270	Jeweller's snips **curved, with open handles**		eShop
72D 76 3280	Jeweller's snips **curved, with scissor handles**		eShop
Length cutter		mm	35

HOLEX Weaver's scissors

Scissors with a handy but still robust design, surface nickel-plated.

Application: For cutting paper, fabric, threads, cords, etc.

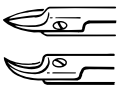


overall length		mm	100
72D 76 8405	Weaver's scissors		eShop

HOLEX Jeweller's snips

With short toothed blades; surface nickel-plated.

Application: Small cutters for precise trimming of very thin sheet metal and foil.





overall length			mm	110
72D 76 8505	Jeweller's snips	**straight**		eShop
72D 76 8605		**curved**		eShop

HOLEX Paper and fabric scissors

Strong but elegant cutter blades. Made of stainless steel.
Application: Paper, thin cardboard, thin leather, plastic sheeting, and much more.



overall length		mm	150	180
72D 76 9100	Paper and fabric scissors		eShop	eShop

HOLEX Paper scissors (wallpapering scissors)

Strong, long and slim blades. Made of stainless steel.
Application: Paper, fabric, thin material, and much more.



overall length		mm	200	250	300
72D 76 9200	Long paper scissors		eShop	eShop	eShop

HOLEX Demountable general-purpose scissors with serrated lower blade

Exceptionally strong tapered blades; serrated lower blade. Strong grips with large finger holes. With special joint; the scissors can be dismantled. Surface chrome-plated.
Application: Paper, cardboard, leather, linoleum, plastic, foil, and much more.



overall length		mm	210
72D 76 9305	General-purpose scissors, chrome-plated		eShop

76

Hose shears

76 9940 – Shears body of die-cast magnesium with ergonomic rubberised handles. The blade has a PTFE anti-stick coating, which gives it outstanding anti-friction properties.
76 9960 – Handles with plastic coating and slip protection. Sturdy zinc die-cast pad for the hose.
76 9980 – Shears body of die-cast zinc. Cutter with PTFE anti-friction coating.
76 9940/9960/9980 – Sturdy hose shears for clean cutting. Broad Vee pad for hoses or plastic pipes. Exchangeable, specially hardened blades. The shears are **spring loaded** when opening and can be locked.
Application: Clean cutting **without crushing** due to the Vee-shaped cutter. Ideal for cutting hoses and also for some plastic pipes.

Note:
76 9940/9960/9980 – For plastic pipe shears see No. 819670; 819681; 819700.



76 9940



76 9960

71D 76 9940	Garant	Hose shears	eShop ■
71D 76 9945	Garant	Spare blade	eShop ■
76F 76 9960	LÖWE	Hose shears	eShop ■
76F 76 9965	LÖWE	Spare blade	eShop
for Ø to (76 9940, 76 9960)		mm	28



76 9965



Application example 76 9960

for Ø to			14	22
72D 76 9980	HOLEX	Hose shears	eShop ■	eShop ■
72D 76 9985	HOLEX	Spare blade	eShop	eShop



76 9980

General purpose shears

Body of sheet metal, blade of special steel, **(PTFE non-stick coating),** blade pad (anvil) of light metal. Slightly dragging cut; handles coated with non-slip plastic; shears mirror-finish chrome-plated.

Application: For cutting rubber, leather, plastic, and wood sections up to approx. 15 mm cross section.

Note: See No. 769815 (spare parts list) for spare blades.





Application example

overall length		mm	175	200	245
76F 76 9805	General purpose shears		eShop	eShop ■	eShop
Length cutter		mm	25	42	75

General-purpose shears with trapezoidal blade

Body of sheet metal, blade pad (anvil) of light metal. Slightly dragging cut; handles coated with non-slip plastic, shears mirror-finish chrome-plated, including 1 trapezoidal blade.

Advantage: Quicker and also much more cost-effective changing of the **trapezoidal blade.**

Application: For cutting rubber, leather, plastic, and wood sections up to approx. 10 mm cross section.

Note: For replacement blades see No. 844710, 844715, 844730 and 844745, size 10 in each case.





Application example

overall length		mm	210
76F 76 9820	General-purpose shears with trapezoidal blade		eShop
Length cutter		mm	60

Mitre shears

Body of sheet metal, blade of high quality special steel **(PTFE anti-stick coated),** blade pad of light metal with 2× 45° stops and markings for 15°, 60° and 90°. Handles coated with plastic. Shears mirror-finish chrome-plated.

Application: For cutting mitred strips and sections in plastic, rubber or wood.

Note: See No. 769905 (spare parts list) for spare blades.





Application example

overall length		mm	210
76F 76 9900	Mitre shears		eShop
Length blade		mm	60

Cable channel shears

Shears body of sheet metal, blade of high quality special steel **(PTFE anti-stick coated),** sturdy and lightweight blade pad of hard plastic. Handles coated with plastic. Shears mirror-finish chrome-plated.

Application: For cutting strips and sections of hard plastic, such as cable channels and wiring channels.

Note: See No. 769925 (spare parts list) for spare blades.





Application example

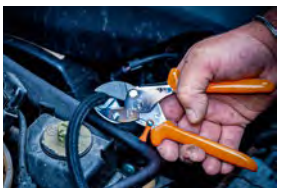
overall length		mm	245
76F 76 9920	Cable channel shears		eShop
for rectangular profiles up to		mm	40×40
for U profiles up to		mm	75×10
Length blade		mm	87

Profile shears

Body of sheet metal, blade of high-quality special steel, **(PTFE anti-stick coated),** blade pad of light metal. Handles coated with plastic. Shears mirror-finish chrome-plated.

Application: For cutting rectangular plastic profiles and plastic tubes or hoses.

Note: See No. 769952 (spare parts list) for spare blades.



Application example



76 9950_220

overall length		mm	175	220
76F	76 9950	Profile shears	eShop	eShop
for rectangular profiles up to		mm	15×15	25×45
Length blade		mm	34	60
for ∅ to		mm	15	32

Guillotine-type trimmer

Virtually unbreakable blade **(PTFE non-stick coating)** of high-quality special steel for long cuts. Sturdy lightweight design, can also be used as a table-mounted tool, including security locking. Blade pad with stops for 45° or 90° cuts.

Application: Easy cutting of strips and profiles of plastic, rubber, wood or composite materials.

Note: See No. 769957 (spare parts list) for spare blades.



Application example



76 9955

overall length		mm	580
76F	76 9955	Guillotine-type trimmer	eShop
Upper blade length		mm	130

Hand-operated shears

76 9930/9936 – Sturdy shears body of quenched and tempered steel. Moving blade guides free of play (with low friction losses), blades of special tool steel, specially hardened and ground. Lever arm with counterweight spring for protection in the event of accidents, all pivot pins adjustable, all models with steplessly adjustable clamping arm.
With compound action. Cuts sheet metals and round steel bar.

Colour:

76 9930/9936 – Red-brown.

Note:
- The following specifications are required for subsequent orders of spare blades: Make, model, and, if known, the machine number or accurate scale drawing.
- Please note: The indicated cutting performance is a maximum. If sustained use at the maximum cutting performance is required, we recommend the next larger model.
- Cutting performance specifications refer to materials of 450 N/mm² tensile strength.

76 9936 – For spare upper blade No. 769938 and spare lower blade No. 769939 see the spare parts list.



76 9930_1BR/5

Model			1BR/4	1BR/5	1BR/6
76L	76 9930	Hand-operated shears	eShop	eShop	eShop
76L	76 9932	Spare blade for sheet metal (upper blade)	eShop	eShop	eShop
76L	76 9934	Spare blade for sheet metal (lower blade)	eShop	eShop	eShop
Cutting capacity sheet thickness		mm	up to 4	up to 5	up to 6
Cutting capacity round steel bar ∅		mm	up to 10	up to 11	up to 13
Cutting capacity square steel bar		mm	–	–	–
Upper blade length (76 9930)		mm	149	173	211
Lower blade length (76 9930)		mm	120	150	180
Weight (76 9930)		kg	10.5	12	19

Model			4/300
76L	76 9936	Long-bladed hand-operated shears	eShop
Cutting capacity sheet thickness		mm	up to 4
Cutting capacity round steel bar ∅		mm	up to 13
Upper blade length		mm	355
Lower blade length		mm	300
Weight		kg	30



76 9936_4/300

GESIPA® Hand pop riveter "NTX" for pop rivets

First-class hand pop riveter of high-quality die-cast aluminium, handles of forged CrV steel. Pleasant to work with thanks to the reduced force requirement and damping when snapping off.

Supplied with: Nozzles 10/18, 10/24, 10/32.



74B 77 0205	"NTX" hand pop riveter		eShop
overall length		mm	260
for pop rivets aluminium, copper		mm	2.4 – 5
for pop rivets steel, stainless steel		mm	2.4 – 5
Tool stroke		mm	8
Weight		g	575

Hand pop riveter set for pop riveting "Rivet box NTX"

Supplied with: "NTX" hand pop riveter No. 770205 including nozzle 10/24 (in the working position) and 10/18, 10/32 (in the capture box) with 1 assembly key.
approx. 940 pop rivets of 12 different sizes:
approx. 430 pieces aluminium/steel ∅ 3 mm in 5 different lengths,
approx. 350 pieces aluminium/steel ∅ 4 mm in 5 different lengths,
approx. 90 pieces copper/steel ∅ 3 mm and
approx. 70 pieces copper/steel ∅ 4 mm.
In a sturdy plastic box.



77 0210

74A 77 0210	GESIPA® Pop riveter set **"Rivet box NTX"**		eShop
overall length (hand pop riveter)		mm	260
for pop rivets aluminium, copper		mm	2.4 – 5
for blind rivets stainless steel		mm	2.4 – 4
Weight (hand pop riveter)		g	575

HOLEX Hand pop riveter for pop riveting

Size HN35 – Reasonably priced universal pop riveter.
Size BZ44F – Sturdy model with complex lever mechanism.
Size S – Sturdy model with complex lever mechanism and swivel head (rotates through 360°). 1 pair spare jaws.

Application: For processing pop rivets (in all materials).
Spare part: Clamping jaws No. 770230, nozzle No. 770240.



77 0200_HN35



77 0200_BZ44F



77 0200_S

Type		HN35	BZ44F	S
72E 77 0200	Hand pop riveter	eShop	eShop	eShop
overall length	mm	265	255	280
for pop rivets aluminium, copper	mm		3 – 5	
for blind rivets steel	mm		3 – 4	
Weight	g	500	500	700

Supplied with: Comprising a high-quality hand pop riveter with lever action and an assortment of approx. 200 aluminium blind rivets, in a strong plastic case.



72E 77 0201	Pop riveter set	eShop
Content: Hand pop riveter No. 770200		Size BZ44F
50 each aluminium pop rivets D×L		2.4×5.5 / 3.2×6.3 4.0×6.3 / 4.8×6.0 mm

GESIPA® Large lever riveter for pop rivets

Die-cast aluminium body with tubular handles.
Supplied with: Nozzle No. 770640 size 29 - 45.
Spare part: Spare jaws No. 770630, spare nozzle No. 770640.



77 0600

Type		HN2
74B 77 0600	Lever riveter	eShop
overall length	mm	570
for pop rivets in all materials up to	mm	3 – 6.4
Weight	kg	1.85

GESIPA® Hand pop riveter FLIPPER® for pop riveting

Robust, sturdy pop riveter **with rivet pin capture box.** One-handed operation, approx. 30 % less force required. Feed mechanism retains the rivet pin after it has been snapped off - pushing the lever forwards releases the rivet pin.

Application: For processing pop rivets (in all materials).

Supplied with: Nozzle 10/24 (in working position) and 10/18, 10/29 (in capture box) with 1 assembly spanner on the capture box.



74A 77 0280	Hand pop riveter FLIPPER®		eShop
overall length		mm	212
for pop rivets aluminium, copper		mm	3 – 5
for pop rivets steel, stainless steel		mm	3 – 4
Weight		g	750

Supplied with: Comprising a Flipper® high quality hand pop riveter with and assortment of 250 PolyGrip aluminium/steel pop rivets, in strong plastic case.



74A 77 0285	Hand pop riveter set FLIPPER® box	eShop
Content: Hand pop riveter No. 770280		1 pc.
PolyGrip aluminium/steel pop rivets 3.2×8 mm		100 pcs.
PolyGrip aluminium/steel pop rivets 4.0×10 mm		100pcs.
PolyGrip aluminium/steel pop rivets 4.8×10 mm		50pcs.

GESIPA® Hand riveter for pop rivet nuts

Compact design for good access to the workpiece. Very good power transmission due to the ratchet function. Quick-change system for threaded spigots and nozzles – no tools required.

Supplied with: Nozzles / threaded spigots M5; M6; M8 and M10. In a sturdy plastic box.



Type			GBM40R
74A 77 0270	Hand riveter GBM 40-R		eShop
overall length		mm	212
for pop rivet nuts in all materials			M3 – M10
for pop rivet nuts steel/alu			M3 – M12
Weight		g	1250

GESIPA® Hand pop riveter set for pop rivet nuts

Hand pop riveter of high-quality die-cast aluminium, handles of forged CrV steel. Quick-change system for threaded spigots, no tools required.

Supplied with: "GBM 10" hand pop riveter for joining thicknesses from 0.25 to 3 mm. Supplied with a threaded spigot and nozzles M4, M5 and M6, pop rivet nuts in 4 sizes:
approx. 50 pcs. aluminium M4×6×11.0 mm
approx. 50 pcs. aluminium M5×7×11.5 mm
approx. 50 pcs. aluminium M5×7×13.5 mm
approx. 40 pcs. aluminium M6×9×15.5 mm.
In a sturdy plastic box.



74A 77 0290	Pop rivet box	eShop
for pop rivet nuts alu		M4 – M6
for pop rivet nuts steel, brass and stainless steel		M4 – M5

HOLEX Universal hand pop riveter with swivel head

Sturdy riveter body with complex lever mechanism. Riveting head swivels 360°.

Application: For processing pop rivets (in all materials). Not suitable for M6 steel pop rivets (only for aluminium).

Spare part: Threaded spigot No. 770301, clamping jaws No. 770305.



For pop rivets



For rivet nuts



For rivet screws



77 0310

72E 77 0310	Universal hand pop riveter with swivel head		eShop
Nozzle for pop rivets		mm	2.4; 3; 4; 5
Threaded spigot nozzle for rivet nuts			M3; M4; M5; M6
Insert for rivet screws			M4; M5; M6

HOLEX Universal lever riveter

Sturdy riveter body with extendable, automatically locating lever arms (low force required), 2-component handles, and container for rivet spigots.

Application: For processing pop rivets (in all materials).

Spare part: Threaded spigot No. 770401, clamping jaws No. 770405, rivet pin capture box No. 770402.



77 0410



For pop rivets



For rivet nuts



For rivet screws



72E 77 0410	Universal lever riveter		eShop
Nozzle for pop rivets		mm	3; 4; 5; 6.4
Threaded spigot nozzle for rivet nuts			M4; M5; M6; M8; M10
Insert for rivet screws			M4; M5; M6; M8

Milwaukee Electro-mechanical pop rivet tool

Cordless tool for flexible use.

Advantage:
- LED illumination of the working area.
- Integral belt clip.

M12BPRT

Supplied with:

Size M12BPRT – Supplied with Li-ion battery No. 073814 MB12 and charger in a plastic case, nozzles 2.4, 3.2, 4.0, 4.8 mm.

Note:

Size M12BPRT – See No. 073814, 073815, 073829, 073839 and 073840 for suitable spare batteries and chargers. A version without battery and without charger can be found under No. 770450 M12BPRT-0.

HD MB 12



77 0450

Type			M12BPRT
03L 77 0450	Cordless pop rivet tool **M12BPRT**		eShop
Tool stroke		mm	20.32
for pop rivets in all materials up to		mm	4.8
Setting force		N	9000
Battery capacity		Ah	2
Battery voltage		V	12
Weight including rechargeable battery		kg	2.1

M18ONEFPRT

Supplied with:

Size M18ONEFPRT – Supplied with 2 pcs. Li-ion battery No. 073827 size MB18 and charger in a plastic case, nozzles 4.8, 6.0, 6.4 and 7.0 mm.

Note:

Size M18ONEFPRT – See No. 073816, 073827, 073839 and 073840 for suitable batteries and chargers. A version without battery and without charger can be found under No. 770460 size ONEFPRT-0.Size ONEFPRT-0.

HD MB 18



77 0460

Type			M18ONEFPRT
03L 77 0460	Cordless pop rivet tool **M18ONEFPRT-202X**		eShop
Tool stroke		mm	30
for pop rivets in all materials up to		mm	6.4
Setting force		N	20000
Battery capacity		Ah	2
Battery voltage		V	18
Weight including rechargeable battery		kg	2.5

GESIPA® Electro-mechanical pop rivet tool

Cordless tool for flexible use.

Advantage: High operating speed combined with equally high performance; high reliability due to electronic control.

AccuBird®

Supplied with: Includes Li-ion battery No. 770527 and charger No. 770528 size 1 in a plastic case. Nozzles 17 / 24; 17 / 27; 17 / 29 and 17 / 32.



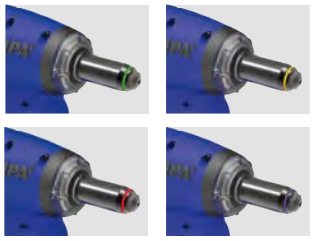
77 0500

74A 77 0500	Cordless pop rivet tool **AccuBird®**		eShop
Tool stroke		mm	20
for pop rivets in all materials up to		mm	5
Setting force		N	10000
Battery capacity		Ah	2
Battery voltage		V	14.4
Weight including rechargeable battery		kg	2

Birdie®

Advantage: Small, handy and only 900 g without the battery. Coloured nozzles make it easier to match them to the pop rivet used. Extremely easy and quick nozzle change-over and maintenance of the chuck jaws without the use of tools. The transparent collection container enables constant monitoring of the remaining rivet pin filling quantity. The new Click & Twist function means the container can be emptied quickly and easily.

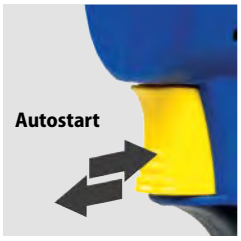
Supplied with: Includes Li-ion push-in battery No. 770524 and charger No. 770528 size CAS **in L-BOXX.** Nozzles 17 / 24; 17 / 27; 17 / 29 and 17 / 32.



Includes 4-colour-coded mouthpieces (blue 17 / 24 pre-assembled)



Transparent collection container with new click & twist function



Tap function ensures shorter setting cycle

CAS 18 L-BOXX

CAS CORDLESS ALLIANCE SYSTEM



77 0501_CAS

Type			CAS
74C 77 0501	Cordless pop rivet tool **Birdie®**		eShop
Tool stroke		mm	25
for pop rivets in all materials up to		mm	5
Setting force		N	10000
Battery capacity		Ah	2
Battery voltage		V	18
Weight including rechargeable battery		kg	1.3

AccuBird® Pro

Supplied with:

Size CAS – Includes Li-ion push-in battery No. 770524 and charger No. 770528 size CAS **in L-BOXX.** Nozzles 17 / 20; 17 / 24; 17 / 27; 17 / 29; 17 / 32; 17 / 36 and 17 / 40.

CAS 18 L-BOXX

CAS CORDLESS ALLIANCE SYSTEM



77 0504_CAS

Type			CAS
74C 77 0504	Cordless pop rivet tool **AccuBird® Pro**		eShop
Tool stroke		mm	25
for pop rivets in all materials up to		mm	6
Setting force		N	13000
Battery capacity		Ah	2
Battery voltage		V	18
Weight including rechargeable battery		kg	2.1

PowerBird® Pro Gold Edition

Supplied with: Includes Li-ion push-in battery No. 770524 and charger No. 770528 size CAS **in L-BOXX.** Nozzles 17 / 32; 17 / 36; 17 / 40 and 17 / 45.

Type		CAS
74C 77 0506	Cordless pop rivet tool **PowerBird® Pro Gold Edition**	eShop
Tool stroke	mm	25
for pop rivets in all materials up to	mm	6.4
Setting force	N	20000
Battery capacity	Ah	2
Battery voltage	V	18
Weight including rechargeable battery	kg	2.1



77 0506_CAS

GESIPA® Electro-mechanical setting tool for pop rivet nuts

Cordless tool for blind rivet nuts up to M10 aluminium, up to M8 steel and up to M6 stainless steel.

Advantage: Very powerful, large number of rivet nuts per battery charge. Easy and reliable twisting on of blind rivet nuts. Electronic control of the setting stroke used. Quick-change system for threaded spigots.

FireBird®

Supplied with: 1 each threaded spigot and nozzle M4, M5 and M6, 1 hexagon L-wrench, 2× double open-ended spanners size 24×27, Li-ion battery No. 770527, and battery charger No. 770528 size 1 in a plastic case.

74A 77 0520	Cordless pop rivet nut setting tool **FireBird®**	eShop
Setting force	N	13000
Battery capacity	Ah	2
Battery voltage	V	14.4
Weight including rechargeable battery	kg	2.1



77 0520


For rivet nuts

FireBird® Pro

Supplied with:

Size CAS – 1 each threaded spigot and nozzle M4, M5 and M6, 1 hexagon L-wrench, 1× double open-ended spanner size 24×27, Li-ion push-in battery No. 770524 and charger No. 770528 size CAS **in L-BOXX.**

Type		CAS
74C 77 0530	Cordless pop rivet nut setting tool **FireBird® Pro**	eShop
Setting force	N	15000
Battery capacity	Ah	2
Battery voltage	V	18
Weight including rechargeable battery	kg	2.4



77 0530_CAS

For rivet nuts

GESIPA® Battery and charger

Suitable for:

77 0524 – All products from the Cordless Alliance System (CAS) platform in the respective voltage class.

Capacitance	Ah	2,0	4,0
74C 77 0524	Li-ion quick-change battery, CAS	eShop	eShop
74A 77 0527	Li-ion quick-change battery	eShop	eShop
Number of rechargeable batteries contained		1	
Type of rechargeable battery		Lithium-ion	
Battery capacity	Ah	2	4
Battery voltage (77 0524)	V	18.0	
Battery voltage (77 0527)	V	14.4	
Suitable for: Pop rivet tool/pop rivet nut setting tool (77 0524)		No. 770501 size CAS; No. 770504 size CAS; No. 770506 size CAS; No. 770530 size CAS	
Pop rivet tool/pop rivet nut setting tool (77 0527)		No. 770500; 770505; 770520	



77 0527_2,0 77 0524_2,0

Suitable for:

Size CAS – All products from the Cordless Alliance System (CAS) platform in the respective voltage class.

Type		1	CAS
74A 77 0528	Battery charger	eShop	eShop
Charging time per battery	min	50 – 100	–
Input voltage	V	230	
Output voltage	V	14.4	12 – 36
Weight	kg	0.6	–
Suitable for: Li-ion quick-change battery		No. 770527	No. 770524



77 0528_1 77 0528_CAS

GESIPA® Pneumatic-hydraulic pop rivet tool TAURUS®

Operating pressure 5 – 7 bar. Removable rivet pin capture box.

Advantage: The **gripping jaw system** ensures very long tool life and a non-slip grip on the rivet spigot. Low compressed air consumption due to two-phase operation: for setting **and** for lifting away the broken-off tail. Very quick operating cycle.

Supplied with: Assembly spanners 12 / 14 AF and 14 / 17 AF.
1 bottle hydraulic oil 100 ml and 1 oil refill container.

Size 1 – Including nozzles 17/18, 17/20, 17/22.

Size 2 – Including nozzles 17/24, 17/27, 17/29, 17/32.

Size 3 – Inluding nozzles 17/ 36, 17/ 40, 17/ 45.



For pop rivets

Type		1	2	3
74A 77 0512	Pneumatic-hydraulic pop rivet tool **TAURUS®**	eShop	eShop	eShop
Tool stroke	mm	15	18	25
Setting force at 5 bar	N	4200	9000	14000
Air consumption per rivet	l	1	2.3	4.8
Hose connection	mm		6	
Hose connection	in		1/4	
maximum mandrel ∅	mm	2.5	3.2	4.5
for pop rivets in all materials up to	mm	3.2	5	6.4
for pop rivets steel / aluminium up to	mm	4	6	6.4
Weight	kg	1.3	1.6	1.9

GESIPA® Pneumatic-hydraulic setting tool FireFox® for pop rivet nuts

Operating pressure 5 – 7 bar. Automatic nut spinning procedure as soon as the pop rivet nut is gently pressed on to the threaded pin. Extremely productive operation due to quick spinning and lightning-fast setting process.

Size 2 – Combines in **one single** tool the capability of inserting pop rivet nuts to a set force or a set stroke.

Supplied with: Two assembly wrenches 24 / 27 AF, 1 hexagon bit driver 4 AF, 1 bottle of hydraulic oil 100 ml, 1 oil refill container.

Size 1 – Nozzle and threaded mandrel M3, M4, M5, M6.

Size 2 – Nozzle and threaded mandrel M4, M5, M6, M8.

Note: Spare nozzles are available under No. 770516.



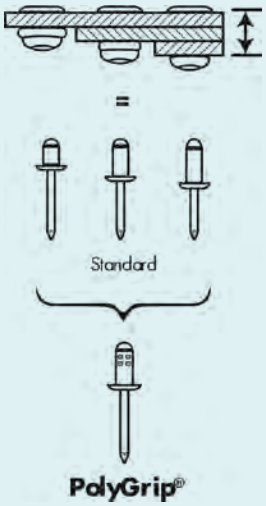
Single button operation *with automatic return and spinning back.*

Manual unspinning head *for defective or incorrect pop rivets.*

For pop rivet nuts.

Type		1	2
74A 77 0515	Pneumatic-hydraulic pop rivet nut setting tool **FireFox®**	eShop	eShop
Adjustable setting stroke, max.	mm	–	10
Stroke	mm	7.5	–
Setting force selectable, max. at 5 bar	N	12000	22000
Air consumption per setting operation (depending on the thread)	l	max. 2	2 – 4
Hose connection	mm	6	
Hose connection	in	1/4	
for pop rivet nuts in all materials		M3 – M6	M3 – M10
for pop rivet nuts steel/alu		M3 – M6	M3 – M12
Weight	kg	1.96	2.4

GESIPA® OUT OF THE BOX - PolyGrip® and PolyBulb®



POLYGRIP® MULTI-RANGE POP RIVETS



77 1010/_1020

Large clamping area

- One PolyGrip® dimension can replace up to five different dimensions of DIN standard pop rivets.

This provides the following advantages:

- Narrows down the types required
- Reduces the number of different types required in the warehouse.
- Reduces the risk of mix-ups, meaning fewer errors when working.

POLYBULB® POP RIVETS



77 1030

Advantages

- Large clamping area
- Large closing head
- Ideal for visible areas – aesthetically appealing appearance once installed.
- Controlled bearing stress – prevents stress whitening.
- Ideal for plastic riveting – high tensile strength and detachment force.
- Locked remaining mandrel – prevents rattling when in use.

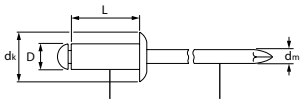
Fields of application

- HVAC – heating, ventilation, air conditioning
- Automation



GESIPA® Blind rivets

Blind rivets ensure a permanently secure joining of various and sensitive materials, even if they are only accessible on one side.
Head shape: Dome head = FK; large flange head = K.



Hollow rivet *Rivet mandrel*

Aluminium/steel blind rivet, standard, bulk pack

Material: Hollow rivet – aluminium alloy; rivet mandrel – steel, galvanized.

Rivet ∅ / shank length (D / L)	mm	3/6	3/8	3,2/6	3,2/8	3,2/10	4/6
74D 77 1000	Blind rivets aluminium / steel bulk pack	eShop	eShop	eShop	eShop	eShop	eShop
Head shape		FK					
Clamping range	mm	2.5 – 3.5	4.5 – 5	1.5 – 3.5	3.5 – 5	5 – 7	1.5 – 3
Hole diameter	mm	3.1	3.1	3.3	3.3	3.3	4.1
Number of rivets (pieces)		500					

Rivet ∅ / shank length (D / L)	mm	4/8	4/10	4,8/6	4,8/8	4,8/10
74D 77 1000	Blind rivets aluminium / steel bulk pack	eShop	eShop	eShop	eShop	eShop
Head shape		FK				
Clamping range	mm	4 – 5	5 – 6.5	2 – 2.5	2.5 – 4.5	4.5 – 6
Hole diameter	mm	4.1	4.1	4.9	4.9	4.9
Number of rivets (pieces)		500				



Dome head

Aluminium/steel multi-range blind rivet, PolyGrip®, bulk pack

Material: Hollow rivet – aluminium alloy; rivet mandrel – steel, galvanized.

Rivet ∅ / shank length (D / L)	mm	3,2/8	3,2/9,5	3,2/11	3,2/11K	4/10	4/10K	4/13
74D 77 1010	Blind rivets PolyGrip® aluminium / steel bulk pack	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Head shape		FK	FK	FK	K	FK	K	FK
Clamping range	mm	0.5 – 5	1.5 – 6.5	3 – 8	3 – 8	0.5 – 6.5	0.5 – 6.5	3.5 – 9.5
Hole diameter	mm	3.3	3.3	3.3	3.3	4.1	4.1	4.1
Number of rivets (pieces)		1000	1000	1000	1000	500	500	500

Rivet ∅ / shank length (D / L)	mm	4/17	4,8/10	4,8/10K	4,8/15	4,8/15K	4,8/17	4,8/25
74D 77 1010	Blind rivets PolyGrip® aluminium / steel bulk pack	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Head shape		FK	FK	K	FK	K	FK	FK
Clamping range	mm	7 – 13	0.5 – 6.5	0.5 – 6.5	4.5 – 11	4.5 – 11	6.5 – 13	11 – 19.5
Hole diameter	mm	4.1	4.9	4.9	4.9	4.9	4.9	4.9
Number of rivets (pieces)		500	500	250	500	250	500	250



Dome head



Large flange head

Steel/steel multi-range blind rivet, PolyGrip®, bulk pack

Material: Hollow rivet – steel, galvanized; rivet mandrel – steel, galvanized.

Rivet ∅ / shank length (D / L)	mm	3,2/8	3,2/9,5	4/10	4/13	4,8/10	4,8/15
74D 77 1020	Blind rivets PolyGrip® steel / steel bulk pack	eShop	eShop	eShop	eShop	eShop	eShop
Head shape		FK					
Clamping range	mm	1 – 5	2 – 6.5	1.5 – 6.5	4.5 – 9	1.5 – 6.5	6 – 11
Hole diameter	mm	3.3	3.3	4.1	4.1	4.9	4.9
Number of rivets (pieces)		1000	1000	500	500	500	250



Dome head

Aluminium/steel blind rivet, PolyBulb®, bulk pack

Material: Hollow rivet – aluminium alloy; rivet mandrel – steel, galvanized.

Rivet ∅ / shank length (D / L)	mm	4,8/11	4,8/16
74D 77 1030	Blind rivets PolyBulb® aluminium / steel bulk pack	eShop	eShop
Head shape		FK	
Clamping range	mm	1.5 – 6	6 – 10
Hole diameter	mm	4.9	
Number of rivets (pieces)		250	

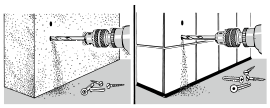
The entire GESIPA® catalogue range can be found in our eShop.



Dome head

Carbide | DIN 8039 | ISO 5468

Carbide masonry drill



Hammer drilling in concrete and tiles.

Drill tipped with hard and tough carbide inserts and brazed at high temperature. Asymmetrical flute profile for good transport of drill dust.
Hammer and rotary bits with strong carbide cutter tip.

Application: Primarily for **drilling fastening holes with hammer drills** in concrete, masonry, natural and synthetic stone.Also for rotary drilling in hard and soft wood, plastics, acrylic and ceramic.
Also suitable for drilling hardened steel due to corrected cutting edge.



78 6070_8



Size 14 – with reduced shank.

∅	mm	3	4	5	6	7	8	9	10	12	14
71C 78 6070 Garant Carbide masonry drill		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	30	40	50	60	60	80	80	80	85	85
Overall length	mm	60	75	85	100	100	120	120	120	150	150
Shank ∅	mm	3	4	5	6	7	8	9	10	12	10



78 6001_6

Size 13; 14 – With reduced shank.
Size 16–20 – With stepped shank with 3 drive flats.



78 6001_20

∅	mm	3	3,5	4	5	5,5	6	6,5	7	8
76G 78 6001 Milwaukee Carbide masonry drill		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	30	30	35	45	60	60	60	55	60
Overall length	mm	60	60	70	85	100	100	100	100	110
Shank ∅	mm	3	3.5	4	5	5.5	6	6.5	7	8

∅	mm	9	10	11	12	13	14	16	18	20
76G 78 6001 Milwaukee Carbide masonry drill		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	60	60	90	90	85	85	85	95	95
Overall length	mm	110	110	150	150	150	150	150	160	160
Shank ∅	mm	9	10	11	12	10	10	12.75	12.75	12.75

Carbide masonry drill set



78 6078_7

Number of drills		5	7
71C 78 6078 Garant Carbide masonry drill set		eShop	eShop
Content: Drill No. 786070		1 pc. each size 4; 5; 6; 8; 10	1 pc. each size 3; 4; 5; 6; 7; 8; 10



78 6081_5

Number of drills		5	7
76G 78 6081 Milwaukee Carbide masonry drill set		eShop	eShop
Content: Drill No. 786001		1 pc. each size 4; 5; 6; 8; 10	1 pc. each size 4; 5; 5.5; 6; 7; 8; 10

Carbide | max. 200 min^{-1}

Fine stoneware / tiles drilling set



78 7035

2 pieces. A drill with a **diamond-ground carbide tip** with a patented centring tip for highly accurate start positioning and exact holes without break-outs. With 10 mm shank. A carbide drill for use in standard drill chucks. With 1/4 inch (E 6.3) hexagon shank.

Application: For **very hard stoneware tiles** up to Mohs / scratch hardness class 9 and for glass and porcelain.

Note: Not suitable for hammer drills. Maximum spindle speed 200 rpm. No cooling required.



78 7035

1. Drill a hole in the tile



2. Drill a fastening hole into the masonry



∅	mm	5	6	8	10
76G 78 7035 Fine stoneware drill /tiles drill		eShop	eShop	eShop	eShop
Overall length	mm	105	115	120	120

Carbide

Garant

Carbide multi-purpose drill

Multi-purpose drill with **especially sharp carbide insert** for precise holes in different materials. Large-volume helical flute for **quick removal of dust and chips.** Shank of annealed special steel.

Application: For drilling various materials, including in a single operation:
- Bricks, porous concrete, lightweight materials, plastics.
- Tiles, ceramics, marble, glass.
- Metal and material combinations in a single operation, such as when fitting windows or when reinforcing concrete.

Note:
- **Caution: only for rotary use (without hammer action!)**
- **Faster drilling and more holes per battery charge than with hammer drill bits.**



The cutting edges must always be sharp. Sharpen blunt drills using a silicon carbide grinding wheel (e.g. No. 596100 - 596610_SC 80).



78 7070

∅ mm	3	4	5	6	8	10	12
71C **78 7070** Carbide-tipped multi-purpose drills	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length mm	30	40	50	60	80	80	85
Overall length mm	60	75	85	100	120	120	150

Carbide-tipped multi-purpose drill set



Number of drills	7
71C **78 7078** Carbide-tipped multi-purpose drill set	eShop
Content: Drill No. 787070	1 pc. each size 4; 5; 6; 6; 8; 8; 10

Carbide E 6.3

Milwaukee

Carbide multi-purpose drill

Carbide tip **with ground point and multi-purpose cutter angle. The centrally ground chisel edge** ensures accurate spot drilling also on hard surfaces. Shank of annealed special steel.

Application: For drilling various materials, in a single operation:
- Bricks, porous concrete, lightweight materials, plastics.
- Tiles, ceramics, marble, glass
- Reinforcing bars in concrete.

Note:
- **Attention: only for rotary use (without hammer action!)**
- **Faster drilling and more holes per battery charge than with hammer drill bits.**



The cutting edges must always be sharp. Sharpen blunt drills using a silicon carbide grinding wheel (e.g. No. 596100 - 596610_SC 80).



78 7001 E 6.3

∅ mm	3	4	5	6	8	10	12
76G **78 7001** Carbide-tipped multi-purpose drill, 1/4 inch (E 6.3)	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length mm	45	45	50	50	60	60	90
Overall length mm	90	90	100	100	120	120	150

Carbide-tipped multi-purpose drill set

PACKOUT-compatible plastic case.



Number of drills	8
76G **78 7012** Carbide-tipped multi-purpose drill set, 1/4 inch (E 6.3)	eShop
Content: Drill No. 787001	1 pc. each size 4; 5; 5; 6; 6; 8; 10; 12

78 7012

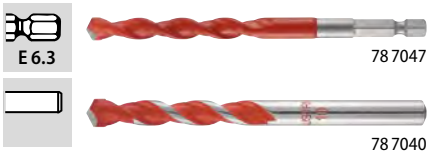
Carbide

Carbide multi-purpose drill

The carbide insert is diamond ground all round, giving **extra-sharp, super-hard cutting edges.**
Patented 4-step profile for quick removal of chips and swarf.

Application: Precise **drilling** in tiles, masonry and concrete, metal, wood, and plastics.

Note:	**Caution - only for rotary use (without hammer action!)**



78 7047

78 7040



78 7045

78 7047 – Carbide-tipped multi-purpose drill bit, 1/4 inch **(E 6.3).**

∅		mm	4	5	6	8	10	12
76G 78 7040	Carbide-tipped multi-purpose drill		eShop	eShop	eShop	eShop	eShop	eShop
76G 78 7045	Carbide-tipped multi-purpose drill **long**		–	–	eShop	eShop	eShop	eShop
76G 78 7047	Carbide-tipped multi-purpose drill bit, 1/4 inch (E 6.3)		eShop	eShop	eShop	eShop	eShop	–
Working length (78 7040, 78 7047)		mm	39	39	54	80	80	90
Working length (78 7045)		mm	–	–	300	300	300	300
Overall length (78 7040)		mm	75	85	100	120	120	150
Overall length (78 7045)		mm	–	–	400	400	400	400
Overall length (78 7047)		mm	100	100	100	120	120	–

Carbide-tipped multi-purpose drill set

78 7057 – Carbide-tipped multi-purpose drill bit, 1/4 inch **(E 6.3).**

∅		mm	4-10	6-12
76G 78 7050	Carbide-tipped multi-purpose drill set		eShop	–
76G 78 7055	Carbide-tipped multi-purpose drill set **long**		–	eShop
76G 78 7057	Carbide-tipped multi-purpose drill bit set, 1/4 inch (E 6.3)		eShop	–
Content: 1 each drill			Size (∅) 4; 5; 6; 8; 10 mm	Size (∅) 6; 8; 10; 12 mm



78 7050

78 7057

78

Milwaukee

Universal hole saw

Carbide teeth for a longer working life, even when drilling into dense materials. Wide and deep flutes for easy removal of the drilled core. Aggressive tooth geometry for up to 10x quicker drill progression in comparison to bi-metal hole saws. Ideal for use in the electronics area and installation area.

Application: For drilling larger holes and breaking throughs in various materials: masonry, lightweight materials, plastics, and wood. Unsuitable for use in hard materials such as concrete, granite, natural stone and hard tiles with a hardness greater than 30 N/mm².

Spare part:

78 8042 – Centre drills are available under No. 788051 and special adapters with centre drill are available under No. 788052.

Note:	**Use only with rotary drive (no impact).**

Carbide



78 8041

∅		mm	30	35	44	51	57	65	68	76	82	102
76G 78 8041	Universal hole saw without centre drill		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Number of cutting edges Z			2	2	2	3	3	3	3	3	3	3
maximum cutting depth		mm	60									
For use on			Sanitation and heating pipes, halogen lamps			Switch boxes, cavity wall boxes and distribution boxes, recessed lighting						Air extraction pipes and domestic waste pipes

Number of pieces		10
76G 78 8042	Universal hole saw set	eShop
Content: Universal hole saws No. 788041		1 pc. each size 35; 44; 51; 57; 68; 76
Centre drills No. 788051		2 pcs. size 115
Adapter with centre drill No. 788052		1 pc. size 115-6KT
Diamond file		1 pc.
Hexagon L-wrench		1 pc.
Presented in		Plastic case



78 8042

Carbide

Carbide masonry hole saw

Hole saw tipped with **diamond ground carbide cutter tips.**
With M16 internal thread for shank No. 788022.

Application: For drilling larger holes and break-throughs with **hammer or hammer drills** in concrete, masonry, natural stone etc.

Note: Matching SDS-plus drink shank is available under No. 788022 size 105 and centre drill under No. 788070 size 120.

Carbide



78 8000

∅		mm	35	50	68	82	90
76G 78 8000	Carbide masonry hole saw without centre drill		eShop	eShop	eShop	eShop	eShop
Overall length		mm	58	58	50	50	50

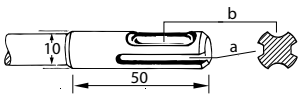
Carbide SDS PLUS

Carbide-tipped hammer drill – 2 cutting edges with SDS-plus shank

The 3 special Power Breaker projecting teeth of the M2 generate micro-cracks in the material being drilled, these promote quicker advance by the drill and faster removal of material.
The high quality carbide tip with particularly strong brazed joint guarantees long tool life, even in reinforced concrete.
The reinforced core flutes (KVS) are vibration-damping, so the impact energy is transmitted directly to the drilling tip.

Application: For drilling concrete, natural stone, and masonry.

Note: When using extra long drills (> 500 mm), first drill a pilot hole with a shorter drill of the same diameter (prevents bending and breakage).





Power Breaker



∅ × Overall length mm	76G 78 9000 Carbide-tipped hammer drill SDS-plus	Working length mm
4×110	eShop	50
5×110	eShop	50
5×160	eShop	100
6×110	eShop	50
6×160	eShop	100
6×260	eShop	200
6×310	eShop	250
6,5×210	eShop	150
7×160	eShop	100
8×110	eShop	50
8×160	eShop	100
8×210	eShop	150
8×260	eShop	200
8×310	eShop	250
8×460	eShop	400
9×210	eShop	150
10×110	eShop	50

∅ × Overall length mm	76G 78 9000 Carbide-tipped hammer drill SDS-plus	Working length mm
10×160	eShop	100
10×210	eShop	150
10×260	eShop	200
10×310	eShop	250
10×450	eShop	400
12×160	eShop	100
12×210	eShop	150
12×260	eShop	200
12×450	eShop	400
12×600	eShop	550
13×160	eShop	100
14×160	eShop	100
14×260	eShop	200
14×450	eShop	400
14×600	eShop	550
15×160	eShop	100
15×260	eShop	200

∅ × Overall length mm	76G 78 9000 Carbide-tipped hammer drill SDS-plus	Working length mm
16×210	eShop	150
16×310	eShop	250
16×450	eShop	400
16×600	eShop	550
18×200	eShop	150
18×450	eShop	400
20×200	eShop	150
20×300	eShop	250
20×450	eShop	400
22×250	eShop	200
22×450	eShop	400
24×250	eShop	200
25×250	eShop	200
25×450	eShop	400
26×450	eShop	400

Carbide-tipped hammer drill set in metal case

PACKOUT-compatible plastic case.



78 9021_10

Number of drills		7	10
76G 78 9021	Carbide-tipped hammer drill set	eShop	eShop
Content: Hammer drill No. 789000		1 pc. each size 5; 6 overall length 110 mm; size 5.5; 6; 7; 8; 10 overall length 160 mm.	1 pc. each size 5; 5; 6; 6 overall length 110 mm; size 6; 6; 8; 8; 10; 12 overall length 160 mm

Carbide | SDS PLUS

Garant

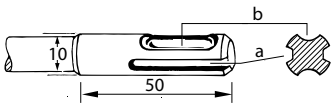
Carbide-tipped hammer drill – 2 cutting edges with SDS-plus shank

The distinctive and aggressive centre point permits active centring and optimum guidance during the drilling operation. Innovative head design with short straight lands for significantly faster drilling coupled with significantly improved stability, even in reinforced concrete. Vibration-optimised helical profile with reinforced core. The core diameter and the helix pitch of the drill are precisely matched to each other and ensure efficient transmission of force from the hammer drill to the carbide tip.

Advantage:
- **Short helical lands** and **concave rake faces** (scooping effect) ensure smooth evacuation of the drilling dust.
- **Wear marks:** for evaluation whether the tool is still suitable for drilling holes suitable for insertion of plugs.
- Additional **specially shaped core cutting edges:** efficient fragmentation of concrete.

Application: For drilling concrete, natural stone, and masonry - with very high drilling comfort.

Note: When using extra long drills (> 500 mm), first drill a pilot hole with a shorter drill of the same diameter (prevents bending and breakage).



2-cutter carbide head made from a single piece





_8x160



_16x210

∅ × Overall length mm	71C 78 9010 Carbide-tipped hammer drill SDS-plus	Working length mm
4×110	eShop	50
5×110	eShop	50
5×160	eShop	100
6×110	eShop	50
6×160	eShop	100
6×260	eShop	200
6×310	eShop	250
6,5×210	eShop	150
7×160	eShop	100
8×110	eShop	50
8×160	eShop	100
8×210	eShop	150
8×260	eShop	200
8×310	eShop	250
8×460	eShop	400
9×210	eShop	150
10×110	eShop	50
10×160	eShop	100

∅ × Overall length mm	71C 78 9010 Carbide-tipped hammer drill SDS-plus	Working length mm
10×210	eShop	150
10×260	eShop	200
10×310	eShop	250
10×350	eShop	290
10×450	eShop	390
12×160	eShop	110
12×210	eShop	160
12×260	eShop	210
12×450	eShop	400
12×600	eShop	550
13×160	eShop	110
14×160	eShop	110
14×260	eShop	210
14×450	eShop	400
14×600	eShop	550
15×160	eShop	110
15×260	eShop	210
16×210	eShop	160

∅ × Overall length mm	71C 78 9010 Carbide-tipped hammer drill SDS-plus	Working length mm
16×260	eShop	210
16×310	eShop	260
16×450	eShop	400
16×600	eShop	550
18×200	eShop	150
18×450	eShop	400
20×200	eShop	150
20×300	eShop	250
20×450	eShop	400
22×250	eShop	200
22×450	eShop	400
24×250	eShop	200
24×450	eShop	400
25×250	eShop	200
25×450	eShop	400
26×450	eShop	400

Carbide-tipped hammer drill set



∅ mm	5-12
71C 78 9015 Carbide-tipped hammer drill set	eShop
Content: Hammer drill No. 789010	1 pc. each Size 5; 6; 8 overall length 110 mm Size 6; 8; 10; 12 overall length 160 mm
Storage in	Plastic case

Carbide | SDS PLUS

Garant Carbide-tipped hammer drill – 4 cutting edges with SDS-plus shank

Drill head with square cross-section. **4×90° geometry** with specially developed **equal height tips** and stable shoulders ensure precisely dimensioned holes for professional setting of anchors and secure plug attachment. 4-flute drilling heads for smooth drilling with low vibration and optimum guidance in the drilled hole. **Radially** shaped **reinforcement protection**: prevents jamming when hitting reinforcements and increases the working life.

Advantage:
- **Short spiral starts** ensure a **smooth evacuation** of the drill dust.
- **Wear marks:** for evaluation whether the tool is still suitable for drilling holes suitable for insertion of plugs.
- 4×4 design permits a **precise radial run-out** and **minimise wear and loss of frictional grip.**

Application: For drilling concrete, natural stone, and masonry – with very high drilling comfort.

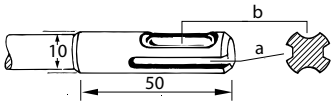
Size 5×110–28×450 – Sturdy **single-piece** carbide head with 4 cutters, inserted as a solid item in the core of the drill. Significantly reduced risk of breakage.
Size 30×450; 32×450 – **3-piece** sturdy carbide head with reinforced centre point. Sturdy auxiliary cutting edges support the advance and thus permit sustained high performance and constant precision.



Carbide head with 4 cutters, inserted as a solid item (drilling head up to size 28×450).



Carbide head with 3 cutters with auxiliary cutting edges (drilling head from size 30×450).





78 9040_8×160



78 9040_14×210

∅ × Overall length	mm	5×110	6×110	6×160	6,5×110	6,5×160	6,5×210	8×110	8×160	8×210	8×260	10×160	10×210	10×260	12×160	12×210
71C 78 9040	Carbide-tipped hammer drill SDS-plus	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	50	50	100	50	100	150	50	100	150	210	100	150	210	110	160

∅ × Overall length	mm	12×260	14×210	15×260	16×260	16×450	18×250	20×250	20×450	24×250	24×450	25×450	28×450	30×450	32×450
71C 78 9040	Carbide-tipped hammer drill SDS-plus	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	210	160	210	210	400	200	200	400	200	400	400	400	400	400

78

Carbide-tipped hammer drill set



78 9045

∅	mm	5-12
71C 78 9045	Carbide-tipped hammer drill set	eShop
Content: Hammer drill No. 789040		1 pc. each Size 5; 6; 8 overall length 110 mm; Size 6; 8; 10; 12 overall length 160 mm
Presented in		Plastic case

SDS MAX | SDS PLUS

Garant Adapter SDS-MAX to SDS-PLUS

Quick-change toolholder with click function for easy changing of the tool.

Application: For machines with SDS MAX holder for mounting drills with SDS PLUS shank, so that smaller drill ∅ can be used in heavy hammer drills.



78 9049

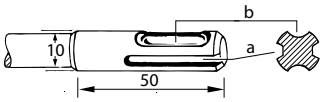
Type		1
71C 78 9049	Adapter SDS-MAX to SDS-PLUS	eShop
overall length		224
Drive		SDS-MAX
Drive profile		SDS-PLUS

Carbide | SDS PLUS

Carbide-tipped hammer drill – 4 cutting edges with SDS-plus shank

Drill head with square cross-section. Increased drilling speed due to 4-cutter head.
Double the service life compared to 2 cutters. Large-volume 4-flute design. Sharper angled tip:
more precision when drilling, no slipping along the surface, more aggressive in rebar and greater drilling speed.
PGM certified – verified precise and wall-plug-capable drill holes, both for chemical and for physical anchors.
Size 5×110–10×210 – 4-edged, welded-on carbide head.
Size 12×160–32×450 – 4-edged, slotted, robust and **one-part soldered-on** carbide insert.
New head design in combination with acute-angle tip permits optimum feed when encountering rebar.

Application: For drilling concrete, natural stone, and masonry – with very high drilling comfort.
Very smooth action, perfect for truly circular holes. 4-flute design for quick clearance of waste material, low vibration, and high stability. Less tiring for the operator and less load on the machine.



MX4


78 9050_8×160

Welded-on carbide head (up to ∅ 10 mm)




78 9050_24×250

∅ × Overall length	mm	5×110	6×110	6×160	8×160	8×210	9×160	10×160	10×210	12×160	12×210	14×210
76G 78 9050	Carbide-tipped hammer drill "MX4" SDS-plus	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	50	50	100	100	150	100	100	150	100	150	150

∅ × Overall length	mm	15×260	16×260	16×450	18×250	20×250	20×450	24×250	25×450	28×450	30×450	32×450
76G 78 9050	Carbide-tipped hammer drill "MX4" SDS-plus	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	200	200	400	200	200	400	200	400	400	400	400

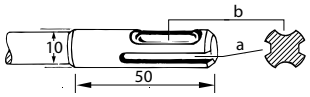
78

New generation **EXPERT SDS-Plus "7X"** with welded 4-edge solid carbide head.
Shaped cutters for high drilling performance, long working life and low wear.
No digging in when drilling in reinforced concrete.

Application: For drilling concrete, natural stone, and masonry – with very high drilling comfort.
Very smooth action, perfect for truly circular holes.
2+2 flute design for quick clearance of waste material, low vibration, and high stability.
Less tiring for the operator and less load on the machine.

4-cutter carbide head, welded






78 9058

∅ × Overall length	mm	5×115	6×115	6×165	8×165	8×215	10×165	10×215	12×165	12×215	14×215
76K 78 9058	BOSCH Carbide-tipped hammer drill **SDS-plus "7X"**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	50	50	100	100	150	100	150	100	150	150

∅ × Overall length	mm	15×265	16×265	16×465	18×250	20×250	20×450	24×450	25×450	28×450	30×450
76K 78 9058	BOSCH Carbide-tipped hammer drill **SDS-plus "7X"**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Working length	mm	200	200	400	200	200	400	400	400	400	400

Carbide-tipped hammer drill set

PACKOUT-compatible plastic case.



78 9062_7

Number of drills		5	7
76G 78 9062	Milwaukee Carbide-tipped hammer drill set "MX4"	eShop	eShop
Packaging		Plastic case	
Content: Hammer drill No. 789050		1 pc. each Size 5; 6 overall length 115 mm; Size 6; 8; 10 overall length 165 mm	1 pc. each Size 5; 6 overall length 115 mm; Size 6; 8; 8; 10 overall length 165 mm; Size 12 overall length 160 mm

Carbide | SDS MAX

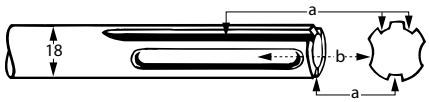
Carbide-tipped hammer drills with SDS-max shank

Drill head with square cross section from ∅ 16 mm.

Application: For drilling concrete, natural stone, and masonry.

Special carbide insert geometry for longer tool lives.
Sharper angled tip: More precise drilling, no slipping on the surface, aggressive drilling in concrete steel and faster drilling speed. PGM certified – verified precise and wall-plug-capable drill holes, both for chemical and for physical anchors. Large flute channels for quick evacuation of waste material, resulting in less friction.

Note: When using long drills > 500 mm, first drill a pilot hole at least 150 mm deep with a shorter drill (preferably of the same ∅).



Single-piece carbide head (up to ∅ 32 mm)



78 9200_12x340

Three-piece carbide head (from ∅ 35 mm)



78 9200_35x570

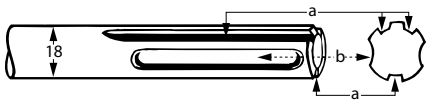
∅ × Overall length	76G 78 9200 Milwaukee Carbide-tipped hammer drill, SDS-max	Working length
mm		mm
12×340	eShop	200
12×540	eShop	400
14×340	eShop	200
14×540	eShop	400
15×340	eShop	200
15×540	eShop	400
16×340	eShop	200
16×540	eShop	400
18×340	eShop	200
18×540	eShop	400
20×320	eShop	200
20×520	eShop	400

∅ × Overall length	76G 78 9200 Milwaukee Carbide-tipped hammer drill, SDS-max	Working length
mm		mm
20×920	(eShop)	800
22×320	eShop	200
22×520	eShop	400
24×320	eShop	200
24×520	eShop	400
25×320	(eShop)	200
25×520	(eShop)	400
25×920	(eShop)	800
28×370	(eShop)	250
28×570	(eShop)	450
30×370	(eShop)	250
30×570	(eShop)	450

∅ × Overall length	76G 78 9200 Milwaukee Carbide-tipped hammer drill, SDS-max	Working length
mm		mm
32×370	(eShop)	250
32×570	(eShop)	450
32×920	(eShop)	800
35×570	(eShop)	450
38×570	eShop	450
40×370	(eShop)	250
40×570	(eShop)	450
40×920	(eShop)	800
45×570	(eShop)	450
52×570	(eShop)	450

Special carbide insert geometry for longer tool lives.
New generation **EXPERT SDS-max "8X"** with welded 4-edge solid carbide head.
Shaped cutters for high drilling performance, long working life and low wear.
No digging in when drilling in reinforced concrete.

Note: Generation SDS-max-7 drill (with embedded carbide cutting edges, soldered) in the size 35×520 – 52×520 under No. 789204.



4-cutter carbide head, welded



78 9206_12×340–32×920

∅ × Overall length	76K 78 9206 BOSCH Carbide-tipped hammer drill, SDS-max "8X"	Working length
mm		mm
12×340	eShop	200
12×540	eShop	400
14×340	eShop	200
14×540	eShop	400
16×340	eShop	200
16×540	eShop	400
18×340	eShop	200
18×540	eShop	400
20×320	eShop	200

∅ × Overall length	76K 78 9206 BOSCH Carbide-tipped hammer drill, SDS-max "8X"	Working length
mm		mm
20×520	eShop	400
20×920	(eShop)	800
22×320	eShop	200
22×520	eShop	400
24×320	eShop	200
24×520	eShop	400
25×320	(eShop)	200
25×520	(eShop)	400
25×720	(eShop)	600

∅ × Overall length	76K 78 9206 BOSCH Carbide-tipped hammer drill, SDS-max "8X"	Working length
mm		mm
25×920	(eShop)	800
28×320	(eShop)	200
28×520	(eShop)	400
30×320	(eShop)	200
30×520	(eShop)	400
32×320	(eShop)	200
32×520	(eShop)	400
32×920	(eShop)	800

Chisels with SDS-plus or SDS-max shank

Wear resistant, bead blasted surface.
Material: Special tool steel.
Application: For concrete, masonry, and natural stone.

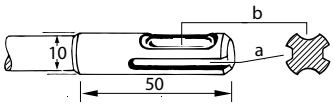


with SDS-plus shank

SDS PLUS

78 9530/9540 – High-quality fully annealed SDS-max steel for a long working life. The design and cutter geometry create a high removal rate.

Application:
78 9530/9551 – Ideal for removing tiles.
78 9540/9560 – Ideal for removing plaster.



Type			3
71C 78 9530	Garant	Tile chisel SDS-plus - 250 mm	eShop
71C 78 9540	Garant	Plaster chisel SDS-plus - 170 mm	eShop
76G 78 9551	Milwaukee	Tile chisel SDS-plus - 250 mm	eShop
76G 78 9560	Milwaukee	Plaster chisel SDS-plus - 165 mm	eShop
Blade width (78 9530)		mm	40
Blade width (78 9540)		mm	80
Blade width (78 9551)		mm	50
Blade width (78 9560)		mm	75

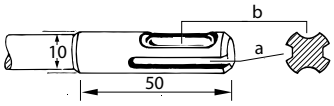


Type			1	2	3	5
72F 78 9500	HOLEX	Chisel SDS-plus – 250 mm	eShop	eShop	eShop	eShop
Blade width		mm	–	20	40	22



SDS PLUS

Supplied with:
78 9590 – 1 bolster chisel, blade width 30 mm
1 cold chisel, blade width 20 mm
1 pointed chisel
78 9591 – 1 spade chisel, blade width 40 mm
1 flat chisel, blade width 20 mm
1 pointed chisel



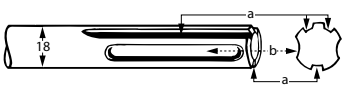
73U 78 9590	RENNSTEIG	Chisel set SDS-plus – 140 mm **3 pieces**	eShop

Number of tools			3
73U 78 9591	RENNSTEIG	Chisel set SDS-plus – 250 mm **3 pieces**	eShop



with SDS-max shank

SDS MAX



Type			1	2	3	5	7
72F 78 9650	HOLEX	Chisel SDS-max – 400 mm	eShop	eShop	eShop	eShop	eShop
Blade width		mm	–	20	50	60	75



Carpenter's mallet

Made of beech wood, quality varnished finish. Handle glued and wedged.



79 3800

Weight		g	950
76H 79 3800	Carpenter's mallet		eShop
Head length		mm	140
Impact head surface		mm	80×100

Mortise chisels (bevel edge)

Long style with wide chamfer; forged; ground bright finish. Each chisel is tested for hardness and edge holding properties.

Material: Top quality special steel with wooden handle.



79 4800

Blade width		mm	4	6	8	10	12	14	16	18	20	22	25	28	30
76H 79 4800	Mortise chisel with wooden handle		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
overall length		mm	210	215	220	235	235	250	250	260	260	260	275	275	275

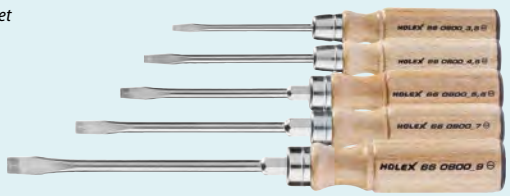


79 4850

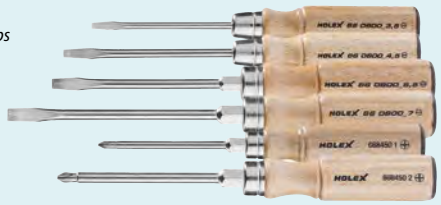
Number of chisels		5	7	9	11
76H 79 4850	Mortise chisel set with wooden handle	eShop	eShop	eShop	eShop
Supplied with: 1 each mortise chisel No. 794800		Size 8; 12; 16; 20; 25	Size 6; 8; 10; 12; 16; 20; 25	Size 6; 8; 10; 12; 14; 16; 20; 25; 30	Size 6; 8; 10; 12; 14; 16; 18; 20; 22; 25; 30

Other tools with beech wood:

Screwdriver set for slot-head No. 66 0810.



Screwdriver set for slot-head and Phillips No. 66 7360.



Screwdriver set for Phillips No. 66 8460.





Wooden hammer with metal casing No. 75 6000.

ERGO™ mortise chisel

Ergonomic, shock-resistant, and non-slip 2-component plastic handle.
Precision-ground, hardened, and tempered blade. With protective collar.



Blade width		mm	6	10	12	16	18	20	25	32
73P 79 4775	ERGO™ mortise chisel		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Blade length		mm	140							

ERGO™ mortise chisel set



Number of chisels		3
73P 79 4780	ERGO™ mortise chisel set, 3 pieces	eShop
Supplied with: 1 each mortise chisel No. 794775		Size 12; 18; 25

Carbide router bit set

With carbide inserts; two cutting edges, end / peripheral cutting, 8 mm shank.

Application: For routing grooves and profiles in hardwood, coated panels, plastic etc.

Supplied with:
- 1 chamfer router 45°
- 2 corner rounding router bits r6 + r9
- 3 rounding-over router bits r6 + r6.35 + r9.5
- 1 cornice router bit
- 3 router bits 8 + 12+ 16 mm
- 1 deburring router bit 14.3 mm
- 1 keyway router bit 11 mm/60°
- in a wooden case



79 5720

Number of milling cutters		12
76H 79 5720	Carbide router bit set	eShop

Auger drill (Lewis bit)

With threaded point and pre–cut blades. Shank suitable for 13 mm drill chuck.

Application: For drilling deep holes (e.g. beams, rafters).



79 5510

∅		mm	10	12	14	16	18	20
76H 79 5510	Auger bit 235 mm long		eShop	eShop	eShop	eShop	eShop	eShop
76H 79 5610	Auger bit 460 mm long		eShop	eShop	eShop	eShop	eShop	eShop
Working length (79 5510)		mm	165					
Working length (79 5610)		mm	390					
Shank ∅		mm	9	12	12	12	12	12
Hexagon shank		mm	8.4	11	11	11	11	11

For wood saws see part 5:



Jigsaw blades No. 58 8420



Pull-stroke saw, cross ground, No. 58 1730



Bi-metal hole saw set No. 58 9710



Carbide circular saw blade for wood, No. 58 4035

Forstner machine bit and carbide universal bit

Two-edged with cylindrical shank.

79 5150/5160 – Special steel; used for normal drilling in wood, to some extent also in hardwood. The sharp undercut blade ensures tear-free blind holes and at the same time reduces the risk of overheating.

79 5250/5260 – With **carbide inserts;** edges stay sharp for long tool life. For drilling in hardwood, plastics, coated panels etc.

Standard: **DIN 7483 G**

Application: For drilling tear-free and accurate blind holes and through holes.



79 5150

Carbide



79 5250

Drill ∅		mm	12	14	15	16	18	20	22	25	26	30	32	35	40	50	68
76H 79 5150	Forstner bit		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
76H 79 5250	Carbide universal bit		–	–	eShop	–	–	eShop	eShop	eShop	–	eShop	–	eShop	eShop	–	–
Overall length		mm	90														
Shank dimension (79 5150)		mm	6×30	8×30	8×30	8×30	8×30	8×30	8×30	8×30	8×30	8×30	10×30	10×30	10×30	10×30	10×30
Shank dimension (79 5250)		mm	–	–	10×30	–	–	10×30	10×30	10×30	–	10×30	–	10×30	10×30	–	–

Number of drills		5	6
76H 79 5160	Forstner bit set in a wooden case	eShop	eShop
76H 79 5260	Carbide universal bit set in a wooden case	eShop	–
Content: Drill No. 795150 (79 5160)		1 each size 15; 20; 25; 30; 35	1 each size 20; 25; 30; 35; 40; 50
Drill No. 795250 (79 5260)		1 each size 15; 20; 25; 30; 35	–



79 5160_5

Suitable for: Forstner drill No. 795150 size 14 - 68 and carbide plastic drill No. 795250.

for shank ∅		mm	8	10
76H 79 5270	Extension for drill		eShop	eShop
Overall length		mm	330	



79 5270

Jobber drills for wood (dowel drills)

Ground precision design with 2 cutting edges, 2 leading-edge cutters, and centring point.

79 5305/5315 – HSS jobber drill for wood, with high hardness. Special leading-edge cutters for clean hole walls, double flutes for perfect circularity.



79 5305



79 5300

∅		mm	3	4	5	6	8	10	12
76H 79 5305	FISCH Jobber drill for wood		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length		mm	70	75	85	95	117	133	151

∅		mm	3	4	5	6	8	10	12
76H 79 5300	Milwaukee Jobber drill for wood		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Overall length		mm	60	75	85	97	117	133	151

Number of drills		5
76H 79 5315	FISCH Jobber drill set for wood	eShop
76H 79 5310	Milwaukee Jobber drill set for wood	eShop
Content: Drill No. 795305 (79 5315)		1 each size 4; 5; 6; 8; 10
Drill No. 795300 (79 5310)		1 each size 4; 5; 6; 8; 10



79 5315



79 5310

8 Innovations – Hand and assembly tools

NEW

We use this symbol to tag new items in our range of catalogue products



Page **866**
Self-adjusting pliers wrench set
Joker 6006



Page **867**
HOLEX ratcheting adjustable spanner



Page **895**
GARANT safety knives



ECO by MARTOR

Page **895ff**
SECUMAX 350 SE
ECO by Martor
SECUNORM 610 XDR



Pages **907 /908**
HOLEX cutter knife with
snap-off blade 9 mm / 18 mm



Page **911**
Precision blade TiN-coated



Page **914**
Multi-Tool TRUSS



Page **935**
GARANT bearing installation tool set



Page **931**
Powerplate centre protector

Hand and assembly tools

The whole tooling catalogue of these brands is available from the Hoffmann Group – just ask us for it!

8



Garant, VBW, BAHCO, KNIPEX, STAHLWILLE, REMS, RUNPOTEC, RIDGID, HOLEX

Pipe wrenches, pliers wrenches, adjustable spanners, cable pulling rods, pipe cutters, installation tools

81 862–875



GRESSEL, RIDGID, GEDORE, REMS, HOLEX

Pipe threading tools, pipe bender angle bender

82 876 – 879



Garant, RENNSTEIG, martor, PB SWISS TOOLS, NOGA, BAHCO, STAHLWILLE, TAJIMA, HOLEX

Punch pliers, wad punches, sheet metal punches, scrapers, deburring tools

83 880 – 893



Garant, martor, TAJIMA, VICTORINOX, LUTZ BLADES, BESSEY, MOZART, GERBER, HOLEX

Safety knives, cable knives, universal knives, precision knives, spare blades, pocket tools

84 894 – 914

8



Garant, BESSEY, KUKKO, RIDGID, REMS, HOLEX

Screw clamps, lever clamps, grip and universal clamps, welder's angle clamps, hand vices, pipe vices

86 915 – 926

Note:
For vices, see Vol. 3 "Workstations and Storage Solutions" – Group 96.



Vices



Garant, simatool, KUKKO, FACOM

Bearing extractors and separators, ball bearing insertion and fitting kits, nut splitters, heating device

88 927 – 937

Pipe wrench

Swedish design, with broad 90° offset jaw.
Fully forged with captive adjustment nut.
Material: Special tool steel; quenched and tempered, jaws induction hardened.



81 0100_1.1/2
Handle with reinforcing ribs (up to size 2).

Pipe ∅		in	1	1.1/2	2	3	4
83E 81 0100	VBW	Pipe wrench	eShop	eShop	eShop	eShop	eShop
82A 81 0200	HOLEX	Pipe wrench (lighter version)	eShop	eShop	eShop	–	–
overall length		mm	300	410	560	685	815
Jaw capacity		mm	42	59	75.5	106	129



81 0200

Corner pipe wrench

Swedish design, with slim 45° offset jaw.
Fully forged with captive adjustment nut.
Material: Chrome vanadium steel; quenched and tempered, jaws induction hardened.



81 0300

Pipe ∅		in	1/2	1	1.1/2	2	3
83E 81 0300	VBW	Corner pipe wrench	eShop	eShop	eShop	eShop	eShop
82A 81 0400	HOLEX	Corner pipe wrench (light version)	–	eShop	eShop	eShop	–
overall length		mm	240	315	425	560	705
Jaw capacity		mm	29	45	59	76	102



81 0400

HOLEX Pipe wrench for one-handed operation

The spring-mounted floating jaw is adjustable by a knurled screw, quick pre-setting to the appropriate pipe ∅ by means of scale on the side faces.

81 0850 – Handle of pearlitic **malleable cast iron,** red paint finish.
81 0860 – Handle of **aluminium,** grey paint finish.
Around 40 % saving in weight compared to cast handles.

Application: Applicable like a ratchet due to spring-mounted floating jaw.
The jaws tighten themselves firmly on to the pipe when closing and free themselves automatically when the handle is released (one-handed operation).



81 0850



81 0860

Pipe ∅		in	1.1/2	2	2.1/2	3	5
82A 81 0850	Pipe wrench for one-handed operation, with cast iron handle		eShop	eShop	eShop	eShop	eShop
82A 81 0860	Pipe wrench for one-handed operation, with aluminium handle		eShop	eShop ■	eShop	eShop	eShop
overall length		mm	240	350	450	600	900
Jaw capacity		mm	49	61	77	90	141

There's more in it for you!

The entire tooling catalogues for the following brands are available from the Hoffmann Group – just ask for them!



Corner pipe wrench with S-form jaws

Swedish design, slim, specially formed jaws, self-tightening, offset 45°.
Fully forged with captive adjustment nut.

81 0500 – **HOLEX** with **S-form jaws** for 3-point pipe support.
Handles with **non-slip** plastic coating.

81 0700 – **VBW** for 3 and 4 point pipe grip.
Hexagon nuts and flat components can be gripped securely without deformation.
Handles with **non-slip** plastic coating.

81 0740 – **VBW** with **S–form jaws** for 3–point pipe support.

81 0745 – **KNIPEX** with S–form jaws for 3–point pipe support.

81 0600/0601 – **HOLEX** with **S-form jaws** for 3-point pipe support (economy version).

Material: Chrome vanadium steel; quenched and tempered, jaws induction hardened. Handles painted, jaws bright.



81 0700



Jaw design 81 0700



81 0740

Pipe ∅		in	1/2	1	1.1/2	2	3
83E 81 0700	VBW	Corner pipe wrench	eShop	eShop	eShop	eShop	eShop
overall length		mm	240	315	425	560	700
Jaw capacity		mm	39	55	75	100	120



81 0745

Pipe ∅		in	1/2	1	1.1/2	2	3
83E 81 0740	VBW	Corner pipe wrench with S-form jaws	–	eShop	eShop	eShop	eShop
86A 81 0745	KNIPEX		–	eShop	eShop	eShop	–
82A 81 0500	HOLEX		–	eShop	eShop	eShop	eShop
82A 81 0600	HOLEX		eShop	eShop	eShop	eShop	eShop
overall length (81 0740)		mm	–	320	440	560	675
overall length (81 0745)		mm	–	320	425	540	–
overall length (81 0500, 81 0600)		mm	240	320	420	560	630
Jaw capacity (81 0740)		mm	–	49	68	85	120
Jaw capacity (81 0745)		mm	–	42	60	70	–
Jaw capacity (81 0500, 81 0600)		mm	35	45	63	80	110



81 0500



81 0600



Jaw design
81 0500 / 81 0600 /
81 0740 / 81 0745



81 0601_3

Number of pieces			3
82A 81 0601	HOLEX	Corner pipe wrench set with S-form jaws	eShop
Supplied with: 1 each corner pipe wrench with S-form jaws No. 810600			Size 1; 1.1/2; 2

RENNSTEIG Corner pipe wrench with S-form jaws and quick adjustment

Swedish design, with slim 45° offset jaw. Forged throughout.
Extremely easy to use, with patented **time-saving quick adjustment** and integral trap protection to avoid pinching fingers.
S-form jaws for three-point pipe grip.
Handles with **non-slip plastic coating.**

Standard: **DIN 5234**

Material: Chrome vanadium steel; quenched and tempered; jaws induction hardened. Handles painted, jaws bright.



81 0750



Easy quick adjustment of the jaw aperture at the press of a button.

Pipe ∅		in	1	1.1/2	2
86A 81 0750	Corner pipe wrench with quick adjustment		eShop	eShop	eShop
overall length		mm	325	425	560
Jaw capacity		mm	42	60	70

Pipe grip pliers (connector and siphon wrench)

81 3051 – With serrated gripping jaws.
81 3051–3053 – 25-step adjustable box joint. Quick step adjustment by means of a spring-loaded push button. Plastic coated handles.
81 3052/3053 – With interchangeable 2-component plastic jaws.

Material:
81 3053 – Chrome vanadium electro-steel, drop forged. Surface chrome-plated.
81 3051/3052 – Chrome vanadium electro-steel, drop forged. Surface black atramentised.

Application:
81 3051 – For pipes, round nuts, oil filters etc.
81 3052/3053 – For threaded connectors and couplings and chrome-plated or polished components (fittings).


81 3051


81 3052


81 3053

overall length		mm	250
73F	81 3051	Pipe grip pliers with serrated gripping jaws **Surface chemically blacked**	eShop
73F	81 3052	Pipe grip pliers with plastic jaws **Surface black atramentised**	eShop
73F	81 3053	Pipe grip pliers with plastic jaws **Surface chrome-plated**	eShop ■
73F	81 3060	2-component spare plastic jaws, 2 pairs	eShop
Jaw capacity (81 3051)		mm	80
Jaw capacity (81 3052, 81 3053)		mm	75


81 3060





Light chain pipe wrench

Profiled handle with toothed face and strong steel chain.

Material: Chrome vanadium steel.
Spare part: Spare chain see No. 709910.



Pipe ∅		in	3/8-4
82A	81 1100	Light chain pipe wrench	eShop
Chain length		mm	410
Handle length		mm	300

Chain pipe wrench

81 1200 – With double-sided toothed jaws. Strong steel chain and solid lever handle. Body and jaws drop-forged.

Material:
81 1200 – Special tool steel; handle painted.


81 1200

Type			1/2-212	1-6
82A	81 1200	Chain pipe wrench	eShop	eShop
82A	81 1220	Spare chain with endpiece	eShop	eShop
Chain length		mm	420	765
Handle length (81 1200)		mm	685	1120
Pipe ∅ (81 1200)		in	1/2 – 2.1/2	1 – 6

Automatically tensioning belt wrenches (oil filter wrenches)

Handy shank with stainless steel belt. Moveable metal pressure piece with serrations for ratchet action.

Advantage: Working in very tight spaces. Quick and controlled tightening of the belt using the stop lever.
Application: For tightening / releasing round components (e.g. oil filters).





Quick release / slackening



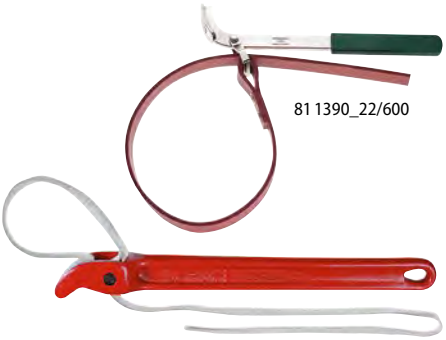
Band width / Band length		mm	11/350	11/480
83H	81 1550	Automatic tensioning belt wrench	eShop	eShop
Clamping capacity ∅		mm	66 – 105	106 – 145
Weight		kg	0.29	0.34

Strap wrenches with fabric strap

81 1390 – Non-slip rubber fabric strap.
81 1400/1500 – Profiled shank; strong, wear-resistant, non-slip fabric strap, exchangeable.

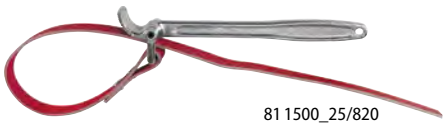
Application: For gripping round parts, especially those with larger ∅.
81 1390 – For oil and water filters and sensitive screws for ∅ up to 200 mm.
81 1400 – Particularly for components with chrome-plated, polished surfaces (fittings).

Spare part:
81 1390 – Spare fabric strap for strap wrench see No. 811395.
81 1400 – Spare strap for strap wrench see No. 811410.
81 1500 – Spare fabric strap for strap wrench see No. 811510.


81 1390_22/600

81 1400_27/930


81 1500_20/600


81 1500_25/820

Strap width / strap length			mm	20/600	22/600	25/820	27/930
83A 81 1390	STAHLWILLE	Strap wrench		–	eShop	–	–
82A 81 1400	HOLEX	Strap wrench		–	–	–	eShop
82A 81 1500	HOLEX	Strap wrench		eShop	–	eShop ■	–
overall length of the shank			mm	225	236	280	300
Clamping capacity ∅			in	–	–	–	1 – 8
Clamping capacity ∅			mm	160	200	220	230

Pliers wrench

Ratchet adjustment at the push of a button and clamping lever for high contact pressure at the jaws. The travel between the gripping faces is large enough to permit **release and grip on a ratchet basis.**
Parallel guided, **smooth** jaws; chrome-plated version.

Size 180–300 – **Laser engraved scale** (front face **metric** and rear face **imperial**), allows the width across flats to be pre-set.
81 3501 – User-friendly working due to ergonomically shaped handles with non-slip plastic coating, reducing the risk of slipping. Pliers wrench, chrome-plated.
81 3700 Size 100 – Pliers wrench, chrome-plated, handles embossed rough surface. **Single-handed fine adjustment by sliding, no push button required.**
81 3702 – Pliers wrench, chemically blacked, plastic coated handles.
81 3720 – Pliers wrench, chrome plated, multi-component handles.
81 3722 – Pliers wrench, chemically blacked, multi-component handles.
81 3700 Size 125–400 – Pliers wrench, chrome plated, plastic coated handles.

Application: Grips screws, nuts, chrome-plated fittings etc. **without damaging them.**

Note:
81 3700–3722 – Soft jaws available under no. 813725.


81 3501_250


81 3700_100


81 3700_250


81 3702_250


81 3720_250


81 3722_250

overall length			mm	100	125	150	180	250	300	400
81A 81 3501	Garant	Pliers wrench		–	–	–	eShop	eShop ■	eShop	–
83D 81 3700	KNIPEX	Pliers wrench		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop
83D 81 3702	KNIPEX	Pliers wrench		–	–	–	eShop ■	eShop ■	eShop ■	–
83D 81 3720	KNIPEX	Pliers wrench with 2-component grips		–	–	eShop	eShop ■	eShop ■	–	–
83D 81 3722	KNIPEX	Pliers wrench with 2-component grips		–	–	–	eShop ■	eShop ■	–	–
Jaw length (81 3501)			mm	–	–	–	23	30	32	–
Jaw length (81 3700, 81 3702, 81 3720, 81 3722)			mm	13	16	20	22	30	32	41
Jaw capacity			mm	0 – 21	0 – 23	0 – 27	0 – 40	0 – 52	0 – 68	0 – 85


Quick adjustment by pressing a button.


Works on the ratchet principle.


81 3735_2


81 3730_3

Number of pliers			2	3	5
83D 81 3730	KNIPEX	Pliers wrench set	–	eShop	eShop ■
83D 81 3735	KNIPEX	Mini set, **2 pieces**	eShop ■	–	–
Supplied with: 1 each pliers wrench			No. 813700 size 150	No. 813700 Size 125; 180; 250	No. 813700 size 125; 150; 180; 250; 300
1 each water pump pliers Cobra® (81 3735)			No. 705800 size 125	–	–
Presented in			Belt tool bag	Tool roll	Tool roll


81 3730_5

Pliers wrench, VDE insulated

- Handle **fully insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.**
- With scale for correct setting away from the workpiece.
- Parallel guided, smooth jaws; chrome-plated version.
- Ratchet adjustment at the push of a button and clamping lever for high contact pressure at the jaws.
- The travel between the gripping faces is large enough to permit release and grip on a ratchet basis.
- Pliers wrench, chrome-plated.
- Handles with multi-component covering.

Application: For use at voltages up to 1000 V.



81 3851



Face gripped without play.



Laser-marked scale for pre-setting.



Works on the ratchet principle.

Overall length		mm	250
83D 81 3851	Pliers wrench **VDE insulated**		eShop
Jaw length		mm	30
Jaw capacity		mm	0 – 52

Pliers wrench, self-adjusting

- Covers all **metric** and **imperial** dimensions in the respective application area.
- **Automatic and stepless** gripping of hexagon screws and nuts.
- Quick and secure screw fastening without removing the wrench, due to the mechanical **ratchet function.**
- Lever mechanism when gripping avoids slippage and damage.
- Particularly small **backswing angle** of only 30° due to the Vee profiles in the head across the corners.

81 3750/3755 – Individually tested tool in accordance with **DIN EN IEC 60900 / VDE 0682-201.** Safety is increased by the anti-slip protection at the front end of the handle. Additional protection through the sliding function for contactless and safe opening of the non-insulated jaws.

Material: Chrome molybdenum steel, matt chrome-plated.



Automatic and stepless self-adjustment.



Ratchet mechanism for quick working.



81 3740_L



81 3750_L

Type			XS	S	M	L	XL	XXL
63F 81 3740	Pliers wrench Joker 6004, **self-adjusting**		eShop	eShop	eShop	eShop	eShop	eShop
63F 81 3750	Pliers wrench Joker 6004, **self-adjusting, insulated to VDE**		eShop	eShop	eShop	eShop	–	–
Jaw capacity		mm	7 – 10	10 – 13	13 – 16	16 – 19	19 – 24	24 – 32
Jaw capacity		in	1/4 – 3/8	7/16 – 1/2	1/2 – 5/8	5/8 – 3/4	3/4 – 15/16	15/16 – 1.1/4
overall length (81 3740)		mm	117	154	188	224	256	322
overall length (81 3750)		mm	119	155	190	226	–	–



Size M/L from No. 813765_2



81 3745

81 3755



81 3765

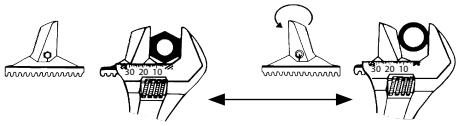
Number of pieces		2	4
63F 81 3745	Pliers wrench set Joker 6004, **self-adjusting**	–	eShop ■
63F 81 3755	Pliers wrench set Joker 6004, **self-adjusting, insulated to VDE**	–	eShop
63F 81 3765	Pliers wrench set Joker 6006, **self-adjusting**	eShop	–
Supplied with: 1 each pliers wrench No. 813740 (81 3745)		–	Size XS; S; M; L
1 each pliers wrench No. 813750 (81 3755)		–	Size XS; S; M; L
1 each pliers wrench No. 813760 (81 3765)		Size XS/S; M/L	–
Presented in		Textile folding wallet	

Adjustable spanners with scale

Adjustable spanners, centre adjustment

With ergonomic handle of thermoplastic elastomer. Jaw angle 15°.
Drop-forged, hardened and chromium plated.
By **reversing the rack jaw** the adjustable spanner **becomes a pipe wrench.**
The serrated jaw is induction hardened and guarantees a secure grip.

Standard: **ISO 6787; ASME B107.8M-2003**



Setting as an adjustable spanner. *Setting as a pipe wrench.*



81 3930

overall length		mm	205	255
83F 81 3930	BAHCO	Adjustable spanner with reversible jaw	eShop	eShop
maximum width across flats		mm	28	33
overall length		in	8	10



81 3961



81 4001

Slim design with double-T-profile shank. Jaw angle 22°.
Drop-forged and hardened.
With **scale** on the jaw.

81 3961 – With non-slip grip.
81 4002 – Adjustable spanner, phosphated.
81 3961/4001 – Adjustable spanner, chrome-plated.



81 4002

overall length			mm	100	150	200	250	300	375	450
82A 81 3961	HOLEX	Adjustable spanner with coated handle		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop ■
82A 81 4001	HOLEX	Adjustable spanner		eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop	eShop
82A 81 4002	HOLEX	Adjustable spanner		–	eShop	eShop	eShop	eShop	–	–
maximum width across flats			mm	13	19	24	30	34	44	55
overall length			in	4	6	8	10	12	15	18

Adjustable spanner insulated to VDE

Handles with multi-component covering, insulated up to 1000 V to DIN EN IEC 60900 / VDE 0682-201.



81 4006

overall length			mm	200	250
82A 81 4006	HOLEX	Adjustable spanner **VDE insulated**		eShop ■	eShop
maximum width across flats			mm	24	28
overall length			in	8	10

Adjustable spanner, centrally adjustable, with quick-adjustment system

Ergonomic shape, chrome-plated. Jaw angle 22.5°.
Quick time-saving adjustment mechanism.
With metric and imperial **scales** on the jaws.

Standard: **ISO 6787, DIN 3117, ASME B107.100**



81 3920



Quick adjustment by unlocking the movable jaw.

overall length			mm	110	150	200	255	300	375	450
83H 81 3920	FACOM	Adjustable spanner with quick adjustment		eShop	eShop	eShop ■	eShop	eShop	eShop	eShop
maximum width across flats			mm	17	23	33	38	41	50	63
overall length			in	4	6	8	10	12	15	18

Ratchet adjustable spanner

Ergonomic non-slip grips.

Advantage: The moveable jaw and head allow **ratchet working** in a tight working arc, saving time and effort. The locking lever locks the head to disable the ratchet; the tool can be used as a normal adjustable spanner with a fixed head.
Extremely large jaw capacity.



81 3971

overall length			mm	200	250
82A 81 3971	HOLEX	Ratchet adjustable spanner		eShop	eShop
maximum width across flats			mm	25	32
overall length			in	8	10

Raptor® nut wrench



Jaws chemically greyed, polished head, plastic coated handles. Box joint, **ratchet adjustment** at the press of a button, protection against trapping fingers. Self-clamping in the range 17 – 32 mm, the specific jaw opening is large enough to permit **release and grip on a ratchet basis.**

Standard: **DIN ISO 5743**

Application: Quick tightening and releasing of metric and imperial hexagon nuts, even when painted over and with rounded corners. Ideal for lock nuts.



Ideal as "2nd wrench" when tightening lock nuts.



Rapid adjustment by pressing a button.

overall length		mm	250
83D 81 3600	Raptor® nut wrench		eShop
Jaw capacity		in	3/8 – 1.1/4
Jaw capacity		mm	10 – 32

½″

Universal radiator valve key



For screwing in and unscrewing radiator valve nipples and return connectors. Stepped design, suitable for nipples 3/8 inch, 1/2 inch, 3/4 inch, and 1 inch, for nipples with **hexagon sockets** and nipples **with cams**. Square drive 1/2 inch.

Type			1/2
86A 81 4808	Universal radiator valve key **Set with reversible ratchet**		eShop
86A 81 4818	Universal radiator valve key **without ratchet driver**		eShop
Ratchet length (81 4808)		mm	290
overall length (81 4818)		mm	90



81 4808

POWER SPIN+ pipe cleaner with AUTOFEED®

The RIDGID Power Spin is the perfect tool for cleaning blocked waste pipes.

Application: For waste pipes from ∅ 12.6 – 40 mm. Screwing in and unscrewing the coil using the hand crank or with a drilling machine with variable speed (not included). This allows the speed to be increased to up to 500 rpm for additional force.



81 4841

Type			1
86A 81 4841	POWER SPIN pipe cleaner		eShop
Shaft length		m	7.6
Shaft ∅		mm	6.3

Suction and pressure cleaning tool

Professional suction / pressure cleaning tool with high-volume tube. Adjustable handle at the front for high application forces. Long and short sleeves for a variety of applications.

Application: For quick and easy unblocking of pipes.



81 4846

Short sleeve

Long sleeve

Type			1
86A 81 4846	PULL-PUSH suction / pressure cleaning tool		eShop
Length suction / pressure tube		mm	370
Pipe ∅		mm	75

Pressure test pump

The pressure test pump model 1450 enables installations which must be free of leakages to be tested accordingly. The pump enables testing of systems with up to 50 bar (725 PSI) pressure.

Application: Particularly suitable for use in heating installations, compressed-air systems, cooling systems, oil installations, sprinkler systems and other hydraulic pipework with a small diameter.



81 4891

Type			1
86A 81 4891	Pressure test pump 1450		eShop
maximum pressure		bar	50
Delivery per stroke		cm^3	37.7
Hose connection thread			1/2 inch BSPP
Hose length		m	1.83
Container volume		l	13.6
maximum temperature		°C	50
Weight		kg	6.4

Cable pulling rod

Plastic cable pulling rod

4 mm thick plastic cable pulling rod, particularly pliable, very abrasion-proof, and electrically non-conductive. The material is non-buckling, holds its form and slides well.

81 4862 – Pulling rod of nylon. One end with a crimped-on helical shaft and steel head; the other end with an eye.

81 4865 – Pulling rod of perlon. One end with a **flexible starting head (RUNPOGLIDER)** and pulling eye; the other end screwed with a pulling eye.


81 4862


81 4865

Band length			m	10	15	20	30
86A 81 4862	RUNPOTEC	Nylon cable pulling rod		eShop	eShop	eShop	eShop
86A 81 4865	RUNPOTEC	Perlon cable pulling rod Runpo 1		eShop	eShop	eShop	eShop
Maximum load on connection between cable pulling rod and sleeve (81 4862)			kN	1.1			
Maximum load on connection between cable pulling rod and sleeve (81 4865)			kN	1.7			

Fibreglass cable pulling rod with box

3 mm thick fibreglass rod **accepts pushing force** yet is **highly flexible**; ideal for pulling cables into complicated runs where conduit is already laid or where there are many bends in the conduit.

81 4869 – With integrated digital meter counter.

81 4870 – Adhesive-bonded ferrule at each end with an M5 thread for optional attachment of spring guide tips, pulling grips or pulling eyes. Possible up to a radius of 30 mm.

81 4867/4869 – Ergonomic holding and carrying handle. Patented guiding head with anti-twist and kink protection (2 pcs. external thread Ø RTG 6 mm). Automatic glide back protection. Anti-slip coating. Suitable for construction sites, splash-proof and dust-proof, shock-proof and break-proof. Possible up to a radius of 38 mm.
Also compatible with RUNPOCAM RC2 (No. 814878) and the basalt rods (No. 814877).

Supplied with:

81 4870 – Accessories securely stored in a plastic box: 2 spring guide tips Ø 7 and Ø 10 mm, 5 pulling eyes, 1 pulling grip for cable Ø 6 - 9 mm, 5 starting/end joints, 3 coupling joints, 1 special adhesive 3 g, 1 power disc.

81 4867/4869 – Accessories securely stored in a plastic box: 1 flexible guiding head (RUNPOGLIDE) with anti-twist protection, 1 anti-kink end sleeve RTG Ø 6 mm, 1 pull-in aid, 1 special adhesive 3 g, 1 cable pull loop (Ø 14 mm external), 6 adhesive sleeves Ø 3 mm, 3 pull eyes Ø 7 mm, 1 starting bulb Ø 11 mm, 1 connecting sleeve, 2 mounting wrenches, 1 CR2032 button battery.



81 4869
With integrated digital meter counter

Band length			m	20	30	50
86A 81 4867		GF3 fibreglass cable pulling rod in a plastic box		–	eShop	eShop
86A 81 4869	RUNPOTEC	GF3 fibreglass cable pulling rod in a plastic box **With integrated digital meter counter**		–	eShop	–
86A 81 4870	KATIMEX	Kati® Blitz compact fibreglass cable pulling rod in a plastic box		eShop	eShop	eShop
Maximum load on cable pulling rod (81 4867, 81 4869)			kN	–	4.5	4.5
Maximum load on cable pulling rod (81 4870)			kN		5	
Maximum load on connection between cable pulling rod and sleeve (81 4867, 81 4869)			kN	–	1.3	1.3
Maximum load on connection between cable pulling rod and sleeve (81 4870)			kN		1	



81 4870

Plastic cable pulling rod – twisted – in a plastic box

5.3 mm thick cable pulling rod of polyester, triple twisted. Each with a crimped-on reinforced **flexible starting head (RUNPOGLIDE)** with twist compensation and stainless steel pulling eye. Extremely flexible strip down to only 20 mm bending radius.

Advantage: Virtually unbreakable even at the tightest radii.

Application: For pipe diameters 16 – 40 mm.







81 4872_20

Band length			m	20	30
86A 81 4872	RUNPOTEC	RUNPO 5 cable pulling rod, twisted, in a plastic box		eShop	eShop
Maximum load on connection between cable pulling rod and sleeve			kN	2.7	

RUNPOTEC Basalt rod set in a textile bag

Flexible basalt rods each 1 m length with stainless steel thread at each end. The lengths can be determined individually by screwing the rods together.

Application: Ideal for working outside a pipe, such as in suspended ceilings or on studded walls.

Supplied with: 10 basalt rods 1 m long (5×Ø 7.5 mm (red / hard), 3×Ø 5.5 mm (black / medium hard), 2×Ø 4.5 mm (yellow / soft), 1 flexible guide tip, 1 extra powerful magnet, 1 ball chain, 1 ring head with ring, 1 arrestor hook, 1 threaded adapter, 1 stainless steel special slide hook, 1 LED lamp, 1 textile bag.



81 4877

	Number of rods		10
86A 81 4877	Basalt rod set Runposticks, 19 pieces		eShop

RUNPOTEC Multi-function camera RC2

Multi-function camera for visual inspection of places that are difficult to access. Compatible with all RUNPOTEC products with RTG Ø 6 mm, such as PowerRex (No. 814868), Runposticks (No. 814877), Runpo1 (No. 814865) and fibreglass rod (No. 814882).

- 3.5 inch TFT LCD colour display; focussing distance 30 mm – 80 mm.
- Camera head with 345000 pixels (640×480); image angle 64°.
- 6 pcs. LED incorporated in the camera head.
- Protection class IP 67 (camera head and cable).
- 230V or battery operation.

Application: Ideal for empty conduits (from internal Ø 14 mm), suspended ceilings, ducts and underfloor channels, maintenance and plant inspections.

Supplied with: 1 Runpocam RC2 with **cable (30 m)** incl. reel in carrying case, 1 each of 2-port USB charging plug 230 V and 12 V (car), 1 USB cable 3 m, 1 cordless LED high-performance lamp 320 lumens incl. charger cable, 1 micro-memory card 8 GB, 1 Runpoglider with front thread, 1 system slide, 1 magnetic fishing set, 1 connection thread set RTG Ø 6 mm, 1 fishing hook, 1 flexible attachment 12 cm, 1 thread attachment RC2.



Cavity wall inspection
– search and catch



81 4878

	Probe length	m	30
86A 81 4878	Multi-function camera RC2		eShop
	Image aperture angle	degrees	64
	Display size	in	3.5
	Camera resolution	px	640×480

RUNPOTEC Universal cable drum reel and dispenser

The compact X-BOARD – XB is a professional general-purpose cable drum for rolling up cables and unrolling them. It permits trouble-free and efficient working, without any risk of cable entanglement. The X-BOARD – XB is compact and light and is suitable for virtually any type of cable drum.

Size 300 – Load capacity up to 300 kg.
Size 500 – load capacity up to 800 kg. Height adjustable cover.

Advantage: 6 (size 300) or 12 (size 500) rubberised feet provide a secure, non-slip footing. Optimum for protection of surfaces on finished floor coverings.

Application: For all types of cables and conduits (cored cables, cable rings, cable drums, empty conduits, cords and cord drums). Especially suitable for damaged cable drums.

Note: Basalt rods No. 814877 can optionally be used as centring aids.



81 4879_500



The height-adjustable cover is perfectly designed to secure loose cables, cable rings or conduits in the X-BOARD XB500, thus preventing cables unwinding in an uncontrolled fashion.

	Diameter	mm	300	500
86A 81 4879	Universal cable drum reel and dispenser **X-BOARD**		eShop	eShop
	Height	mm	120	146
	Weight	kg	1.58	7.47

The multifunction mandrel can be combined with the cable unwinding system X-BOARD, XB300 and XB500. By placing it onto the central stainless steel mandrel and then unfolding the 4 side bars, loose cable bundles or single wires can also be unrolled. Telescopic central mandrel can be extended up to a maximum of 294 mm.



81 4881



Application example

	Type		1
86A 81 4881	Multifunction mandrel		eShop

REMS External/internal pipe deburrer

Body of anodised aluminium, deburring cone of hardened special steel.
Size 10-54E – Including external hexagon drive at each end – permits power deburring (up to 300 rpm).

Application: Professional internal and external deburring of stainless steel, steel, copper, plastic and aluminium pipes. **Ideal for stainless steel pipes.**

Type		8-35	10-54	10-54E
86A 81 4921	Stainless steel inner / outer deburrer	eShop	eShop	eShop
for pipe ∅ mm		8 – 35	10 – 54	10 – 54



Size 10-54E with hexagon



For internal ∅ *For external ∅*

NOGA Pipe deburrers

One side for internal deburring, the other side for external deburring. Plastic coating, cutter with 3 edges. For pipes of 4 – 42 mm ∅. For manual use.

Note: Particularly suitable **for copper pipes. Not for plastic pipes.**

			Length mm	∅ mm
86A 81 9550	Inner / outer pipe deburrer	eShop	50	50





81 9550

Pipe cutter for steel pipes

Pipe cutter with 1 cutter wheel and 2 guide rollers

Body of stainless steel drop-forged; wear-resistant spindle with plastic handle. **Cutter wheel** for steel pipes of stainless steel, accurately hardened for long tool life. **Guide rollers** of special steel; chromium-plated.

Application: For clean and right-angled cutting off of pipes.
The external burr is rolled over automatically when cutting. The cut pipe end is immediately ready for thread cutting.

for pipes up to		in	1.1/4	2	4
83A 81 5001	STAHLWILLE	Pipe cutter with 1 cutter wheel **for steel pipes**	eShop	eShop	–
82A 81 5030	HOLEX		eShop	eShop	eShop
Cutter wheel ∅		mm	25	31	41
Cutter wheel width		mm	14	19	23
Cutter wheel bore		mm	7.6	9	9.7
for pipe outer ∅		in	1/8 – 1.1/4	1/8 – 2	2 – 4



81 5001



81 5030

Pipe cutter with 3 cutter wheels

Body of stainless steel drop-forged; wear-resistant spindle with plastic handle. **Cutter wheel** for steel pipes of stainless steel, accurately hardened for long tool life. **Guide rollers** of special steel; chromium-plated.

Application: For clean and right-angled cutting off of pipes.
This pipe cutter permits work on pipes that have already been laid. A movement range of 120° is sufficient due to ratchet type operation.

for pipes up to		in	1.1/4	2
83A 81 5101	STAHLWILLE	Pipe cutter with 3 cutter wheels **for steel pipes**	eShop	eShop
Cutter wheel ∅		mm	25	
Cutter wheel width		mm	19	
Cutter wheel bore		mm	7.6	9
for pipe outer ∅		in	1/8 – 1.1/4	1/8 – 2



81 5101

Spare cutter wheel

Suitable for:

81 5201 – For pipe cutters No. 815001
81 5230 – For pipe cutters No. 815030

Pipe cutter		in	1.1/4	2	4
83A 81 5201	STAHLWILLE	Spare cutter wheel **for steel pipes**	eShop	eShop	–
82A 81 5230	HOLEX		eShop	eShop	eShop
Cutter wheel ∅		mm	25	31	41
Cutter wheel width		mm	14	19	23
Cutter wheel bore		mm	7.6	9	9.7



81 5201

Garant Pipe cutter Universal

Extremely sturdy design for very heavy duties. Clean and reliable cut thanks to 4 guide rollers in a row.

81 8100 – Die-cast magnesium body. With spare cutter wheel No. 818110.

81 8130/8150 – Die-cast aluminium body. Quick adjustment spindle with ratchet and spring retraction. With spare cutter wheel No. 818110.

Advantage: Long working lives due to **TiN coated** cutter wheel. Saves effort and time due to:

- Ergonomic handle
- Lightweight design
- **Needle** bearings on the guide rollers and cutter wheel
- Detachable manual deburrer with **TiN-coated** S20 blade.

Application: Multi-functional use for cutting stainless steel, aluminium, brass, and copper pipes.

Spare part: Spare cutter wheel No. 818110.



81 8100

81C	81 8100	Small pipe cutter universal	eShop
for pipe outer ∅		mm	3 – 35
Length		mm	165
Width		mm	65
Height		mm	40



81 8130

for ∅ to		mm	54
81C	81 8130	Pipe cutter universal	eShop
for pipe outer ∅		mm	6 – 54
Length		mm	220 – 280
Width		mm	85
Height		mm	40



81 8150

81C	81 8150	Pipe cutter universal	eShop
for pipe outer ∅		mm	6 – 76
Length		mm	245 – 325
Width		mm	100
Height		mm	40

STAHLWILLE Compact pipe cutter

Body of die-cast magnesium, with a spare wheel in the twist head. Twist head made of die-cast zinc. Cutter wheel can be changed without using tools. For optimally holding the pipe during cutting with 4 guide rollers.

Application: For cutting aluminium, copper and thin-walled steel pipes.

Spare part: For suitable spare cutter wheel see No. 818605 size 1.



81 8505

for ∅ to		mm	35
83A	81 8505	Compact pipe cutter	eShop
for pipe outer ∅		mm	3 – 35

KNIPEX TubiX® pipe cutter with quick adjustment

Lightweight and long-lasting metal housing of magnesium, with needle bearing guide rollers and cutter wheel. Manual deburrer can be retracted into the body. Supplied with spare cutter wheel.

Advantage: Automatic stop and clamping on to the pipe by **QuickLock quick adjustment**.

- Quick and precise positioning of the cutter wheel on different pipe diameters.

Application: General purpose for cutting **copper**, **aluminium**, **and thin-walled stainless steel pipes** (up to 2 mm wall thickness).

Spare part: For spare cutter wheel with needle bearing and quick-change pivot pin, see No. 818385.



81 8380_30



81 8380_35



81 8380_76





Quick adjustment

for ∅ to		mm	30	35	76
86A	81 8380	TubiX® pipe cutter with quick adjustment	eShop	eShop	eShop
for pipe outer ∅		mm	3 – 30	6 – 35	6 – 76

HOLEX Small pipe cutter Universal

Metal body, enclosed spindle and telescopic guide. 2 guide rollers with recess (allows cutting close to flange). Easy-to-use metal handle. With spare cutter wheel No. 819100.

Application: General purpose for cutting **copper, aluminium,** and **thin-walled stainless steel pipes.**

Spare part: Spare pin No. 818020 for cutter wheel, spare cutter wheel No. 819100.



81 8050

82A	**81 8050**	Small pipe cutter	eShop ■
for pipe outer ∅		mm	3 – 35

Die-cast magnesium body, enclosed spindle and precision telescopic guide. **4 guide rollers** (secure support even for large ∅) with recess. Ergonomic **handle with spare cutter wheel** No. 819100. Manual deburrer **retractable into the body.**

Application: General purpose for cutting **copper, aluminium,** and **thin-walled stainless steel pipes.**

Spare part: Spare pin No. 818020 for cutter wheel No. 819100.
See No. 838510 size S10 for blades for the manual deburrer.





81 8305

82A	**81 8305**	Small pipe cutter with 4 guide rollers	eShop
for pipe outer ∅		mm	3 – 35

HOLEX Miniature pipe cutter Universal

Particularly short and handy shape with 2 guide rollers; body of special die-cast alloy.

Application: Particularly suitable for cutting small pipes where **access is difficult.** For **copper, aluminium**, and **thin-walled stainless steel pipes.**

Spare part: Spare pin No. 818020 for cutter wheel, spare cutter wheel No. 819100.



81 9320



81 9350

82A	**81 9320**	Miniature pipe cutter	eShop
for pipe outer ∅		mm	3 – 16
82A	**81 9350**	Miniature pipe cutter	eShop ■
for pipe outer ∅		mm	3 – 30

Garant Plastic Pipe Cutter

Body of die-cast aluminium with 3 guide rollers, of which 1 roller is adjustable (1 position for pipes up to 110 mm and another for pipes 110 –127 mm) for optimum matching to the pipe ∅. **Quick adjustment spindle** with ratchet and spring retraction. Ergonomic handle. Cutter wheel with PTFE anti-friction coating for easier working, especially on thick-walled plastic pipes. Detachable manual deburrer with **TiN-coated** S20 blade.

Application: For cutting off PE, PP, VPE, PB, and PVDF pipes. **With a different cutter wheel also suitable for copper, aluminium, and thin-walled stainless steel pipes.** (Available as an option)



81 8160

81C	**81 8160**	Plastic pipe cutter	eShop
for pipe outer ∅		mm	50 – 127

HOLEX Plastic Pipe Cutter

Die-cast aluminium base body with 4 guide rollers and groove. **Quick adjustment spindle** with ratchet and spring retraction. Ergonomic handle with spare cutter wheel.

Application: For cutting off PE, PP, VPE, PB, and PVDF pipes.
With a different cutter wheel also suitable for copper, aluminium, and thin-walled stainless steel pipes. (Available as an option)

Spare part: For spare pins see No. 819630 and spare cutter wheel No. 819613; 819620.



81 9625

82A	**81 9625**	Plastic pipe cutter	eShop ■
for pipe outer ∅		mm	6 – 76

Garant Corrugated pipe cutter

Shears body of die-cast magnesium, with 2 cutting systems for transverse cutting and longitudinal cutting. Pipe guide system for perfect positioning of the pipe during cutting. Pipe support for better guidance of the pipe during longitudinal cutting. Concealed blades avoid injuries to the user and damage to the cutting edge. Blade for 4-way use.

Spare part: See No. 819757 for spare blades.



for ∅ to		mm	45
81C 81 9751	Corrugated pipe cutter		eShop

Plastic pipe shears

81 9670 – Shears body of ergonomic **magnesium die-casting with rubberised handles**. Positive cutter advance because rack and cutter are combined in one unit. The blade has a PTFE anti-stick coating, which gives it outstanding anti-friction properties. Quick-change system for changing blades - no tools required.

Size 63 – Additionally **with a switchable pipe stop** for pipes ≤ 50 mm ∅.

81 9681 – Handle with ergonomic recesses at 1/2 inch intervals for quick measurement of pipes. Ratchet mechanism and Teflon-coated (for size 63) X-CEL® blade for faster cutting with optimum pressure distribution on all plastic materials.

81 9670/9700 – Shears for easy cutting of plastic pipes. Broad pipe support for square cuts. Exchangeable, specially hardened blades.

81 9700 Size 42; 63 – Blade supported on both sides, with ratchet advance.

Application:

81 9670/9681/9700 –For cutting off PE, PP, VPE, PB, and PVDF pipes. (Limited capability where pipe walls are very thin). Particularly suitable as preparation for socket welding. Plastic pipe cutter for easy cutting.

Note:
81 9670/9681/9700 – For hose shears see No. 769940, 769960 and 769980.















for ∅ to			mm	26	42	63
81C 81 9670	Garant	Plastic pipe shears		–	eShop	eShop
81C 81 9675		Spare blades		–	eShop	eShop
86A 81 9681	RIDGID Peddinghaus	Plastic pipe shears		–	eShop	eShop
86A 81 9686		Spare blades		–	eShop	eShop
82A 81 9700	HOLEX	Plastic pipe shears		eShop	eShop	eShop
82A 81 9710		Spare blades		eShop	eShop	eShop

Plastic pipe shears with straight blades

81 9750 – Shears body of die-cast magnesium with 4 needle-bearing guide rollers and ergonomic rubberised handles. Automatic blade retraction. Integral cutter for protective corrugated pipe allows protective corrugated pipes (18-35 mm) to be cut without damaging the pipe within. With 4 three-edged blades. All blades have a PTFE anti-stick coating.

81 9770 – Ergonomic handle design and universal covering for right-angled positioning. Automatic opening by spring mechanism. Suitable for all generally-used pipes and hoses from 4 to 20 mm ∅ for liquids and pneumatic systems, including multi-layer pipes and hoses.

Spare part:

81 9750 – See under No. 819755 for replacement blades, and under No. 819756 for spare blades for corrugated pipe cutters.

81 9770 – See under No. 819775 for spare blades.







for ∅ to			mm	20	26
81C 81 9750	Garant	Plastic pipe shears **with integral corrugated pipe cutter**		–	eShop
86A 81 9770	RENNSTEIG	Plastic pipe shears **PerfectCut**		eShop	–

Plastic pipe cutter BiX®

Pipe cutter of sturdy reinforced plastic, blade block of die-cast zinc. Particularly easy to use, for cutting off pipes without burrs or swarf. Safe, correct cutting of drip sleeves during final installation – virtually flush with the wall (approx. 2 – 3 mm from the wall). Rotating blade block for cutting plastic pipes (central blade) and cutting drip sleeves and sealing sleeves (outer blade). Locking mechanism for safe transportation.

Application: Cuts objects including high-temperature waste water pipes, empty electrical conduits and non-reinforced plastic pipes with a wall thickness of up to 2.4 mm in next to no time.



81 9780

for ∅ to		mm	50
86A 81 9780	Plastic pipe cutter BiX® with 3 blades		eShop
for pipe outer ∅		mm	20 – 50

Pipe cutter DP50 for HT pipes, 2 in 1

Tool body of glass-fibre-reinforced plastic. Exchangeable blade of high-quality ball bearing steel, can be changed with no tools required. Optimum pipe guidance and easy cutting thanks to self-adjusting rollers with plain bearings. The spring-mounted cutting blade means there is no need for tedious adjustment whilst cutting.

Advantage: One tool, two functions, three diameters. **Easily and neatly cut and chamfer common plastic wastewater pipes in a single step.** Smooth cut: No adjustment, no deburring and a reduced risk of clogging or damage to the seal.

Application: Cuts HT pipes and many other plastic pipes with ∅ 32, 40 or 50 mm and a wall thickness of up to 2.4 mm. Easy to position thanks to clear view of the cut-off point. Final cuts or fine cuts are possible from a section length of approx. 10 mm.

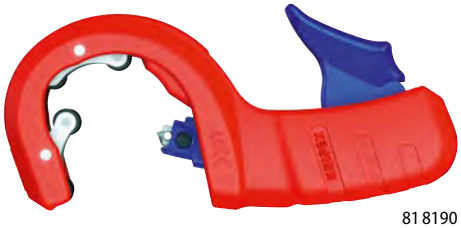
Spare part: For replacement blade see No. 818191 size 1 and replacement quick-change pivot pin No. 818192 size 1.

Pressing on the blue lever allows the tube to be inserted and the cutter blade to be positioned precisely.



Use the slider to set the appropriate tube size.




81 8190

Type			1
86A 81 8190	Pipe cutter DP50 for HT pipes		eShop
for pipe outer ∅		mm	32; 40; 50
Length		mm	202
Weight		g	294

Pipe cutter for composite and plastic pipes

For cutting composite and plastic pipes up to ∅ 26 mm. With ergonomic multi-component grips and locking mechanism for safe transport.

Material: Special quality chrome-vanadium electro-steel, oil-quenched.

Advantage:
- Up to 60% less force required: freely rotating cutting wheel allows for low-friction rotation of the pipe when cutting.
- Optimum cutting result: the rotational movement allows effortless penetration of the cutting wheel with minimal deformation of the tube.
- Wide plastic moulded pads allow perfectly rectangular sections.
- Allows very short correction cuts.
- Separates aluminum composite and plastic pipes more easily than conventional shears with fixed cutter tool.

Application: Also for composite pipes with increased aluminum layer thickness (such as Geberit Mepla).

Spare part: See No. 819461 size 1 for spare cutting wheel.







81 9460

for pipe outer ∅ up to		mm	26
86A 81 9460	Pipe cutter for composite and plastic pipes		eShop
Length		mm	210
Weight		g	391

RIDGID Stainless steel pipe cutter

Sturdy design for the heaviest duties and precise cutting using 6 or 12 guide rollers. Extremely quick and low-force operation due to **ball-bearing guide rollers and cutting wheel.** With spare cutter wheel.

Application: Specially for cutting stainless steel, and galvanised carbon steel pipes (up to 3 mm wall thickness), but also aluminium and copper pipes.

Quick-change cutting wheel using locking mechanism.



81 9470

83R	**81 9470**	Pipe cutter stainless steel (VA) / copper	eShop
Cutter wheel ∅		mm	22
for pipe outer ∅		mm	6 – 35

83R	**81 9475**	Pipe cutter stainless steel (VA) / copper	eShop
Cutter wheel ∅		mm	22
for pipe outer ∅		mm	6 – 65

REMS for Professionals Pipe cutter for stainless steel / copper

Robust design for high loadings and sturdy spindle guidance; 2 or 4 guide rollers and precise cutter wheel / guide roller bearings ensure accurate operation and a square cut.

Application: For cutting stainless steel and copper pipes up to max. 4 mm wall thickness.



81 9451

for pipe outer ∅ up to		mm	42
86A	**81 9451**	Pipe cutter stainless steel (VA) / copper	eShop
Cutter wheel ∅		mm	20
for pipe outer ∅		mm	6 – 42



81 9501

for pipe outer ∅ up to		mm	64
84A	**81 9501**	Pipe cutter stainless steel (VA) / copper	eShop
Cutter wheel ∅		mm	20
for pipe outer ∅		mm	6 – 64

REMS for Professionals One-hand pipe bender set

Robust bending drive of cast aluminium with mechanical rack advance (quick advance and quick withdraw), a universal slide carrier, and bending formers of glass fibre-reinforced polyamide. Bending angles of up to 180° achievable.

Application: For bending soft copper pipes, including sheathed ones, sheathed steel pipes of the mapress C-Stahl push-fitting system, soft precision steel pipes to DIN 2391 – 2394, plain or sheathed and connecting pipes of the push-fitting systems.





82 1201

Type			1
84C	**82 1201**	One-hand pipe bender set in a sheet steel case	eShop
Content: Bending drive			1 pc.
Universal slide			1 pc.
1 each bending segment for pipe external ∅			Size 12; 15; 18; 22 mm
Bending radius (centre of pipe)			Size 36; 55; 72; 86 mm

HOLEX One-hand pipe bending pliers with bending segments

Pipe bending pliers with rack mechanism and non-slip rubber handles. Forming segments are fastened by slipping on. An individual bending former is required for each pipe ∅ and the counter plate is adjusted to the required ∅, no tools required.

Application: For **copper pipes, composite pipes** with or without sheathing, from 10 to 22 mm.



82 1160

Type		1
82A 82 1160	One-hand pipe bending pliers with 7 bending segments	eShop
Supplied with: 1 each forming segment		Size 10; 12; 14; 16; 18; 20; 22
Pipe bending pliers		1 pc.
Plastic case L×W×H		390×318×114 mm

Hydraulic pipe bender

Sturdy hydraulic pipe bender with closed-loop hydraulic system and return spring for better piston control. Cast iron slide blocks and bending formers, high-performance piston with 450 bar working pressure. High-quality piston seals prevent leakage and extend the working life. Slide blocks feature bending angle indicator. Safe bending of pipes with closed-loop system. Special lever design prevents overloading. Supplied in a lockable wooden case.

Application: For bending galvanised and black steel pipes and also gas pipes (3/8 inch – 2 inch). Bending angles up to 90°, pipes up to maximum 5.5 mm wall thickness (2 inch pipe). User-friendly operation thanks to a long piston stroke for each pump stroke. General-purpose use in machine tool and plant installation, working on pipework systems, fitting work etc.



82 1150

Type		3/8-1.1/4	3/8-2
83R 82 1150	RIDGID Peddinghaus Hydraulic pipe bender	eShop	eShop
Bending radius (centre of pipe)	mm	45; 50; 65; 100; 130	45; 50; 65; 100; 130; 150; 200
Content: 1 each bending segment No. 821155		Size 3/8; 1/2; 3/4; 1; 1.1/4	Size 3/8; 1/2; 3/4; 1; 1.1/4; 1.1/2; 2
Slide block No. 821156		2 pcs.	
hydraulic pipe bender		1 pc.	
Support wheels		3 pcs.	

For soft copper pipes to EN 1057 up to 22 mm (including those with thermal insulation), and for precision mild steel pipes to EN 10305-3 (DIN 2394) up to 18×1.5 mm. With hydraulic drive for a low applied force. Bending angles up to 90°.

Supplied with: Hydraulic bending tool, 7 forming segments, 3 reaction pieces, plastic box.



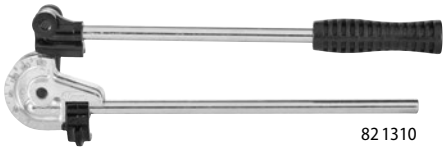
82 1250

63M 82 1250	GEDORE Manual pipe bender set hydraulic	eShop
Weight	kg	6.2
for pipe outer ∅	mm	10; 12; 14; 15; 18; 20; 22

HOLEX Copper pipe bending pliers

For bending angles up to 180° with smallest possible radius and no deformation of the pipe. Forming segment with graduations.
Lightweight design for non-fatiguing work. Non-slip handle.

Application: For bending soft copper pipes. Reverse curves can be bent in all directions, without transitions or shoulders, because the pliers can also be set in the middle of the pipe.



82 1310

for pipe outer ∅	mm	6	8	10	12	14	15	16
82A 82 1310	Copper pipe bending pliers	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Bending radius (centre of pipe)	mm	18	24	30	36	47	54	58

REMS for Professionals Pipe bender "Sinus"

Universal, robust hand-held pipe bender for cold draw bending of pipes. Forming segments and slide blocks are of **fibreglass-reinforced polyamide,** i.e. very resistant but at the same time lightweight. The bending formers can be exchanged to deal with various pipe ∅. The pipe bender can be fixed in a vice or held in the hand.

Application: For bending both soft and hard copper pipes, thermally insulated copper pipes, steel pipes as well as aluminium and stainless steel pipes in sizes 10 – 22 mm outside diameter (12 -18 mm for stainless steel pipes). Bending angles up to 180°. (Max. wall thickness of pipes 1.5 mm, soft copper up to 3 mm, stainless steel up to 1.5 mm.)

Supplied with: Bending drive of hardened steel, plug-in bolts, 4 bending formers, 4 slide blocks, and special bending spray, all in a sheet metal carrying case.



82 2011



for pipe outer ∅	mm	12-22
84C **82 2011**	Pipe bender "Sinus" with bending segments, in a carrying case	–
Content: Pipe bender		1 pc.
1 each bending segment for pipe external ∅		12; 15; 18; 22 mm
1 each slide block for pipe external ∅		12; 15; 18; 22 mm

REMS for Professionals Ratchet pipe-threading tool EVA Set R

Quick cutting head change due to easy insertion into the ratchet head with quick-release lock. Cutting heads with long pipe guide and exactly set threading dies. The dies are particularly wear-resistant and easy to exchange. Ratchet reversible for right- and left-hand threads. The threading dies can be reversed for thread cutting right up to a wall (for short pipe ends that are already in place). Not suitable for stainless steel pipes.

Suitable for: Whitworth pipe thread to DIN EN 10226 **taper 1:16.**

Application: A handy and light die stock for use on building sites. **The small head ∅ permits working in confined places.**

Note: The following items are also available as individual parts on request:
- Ratchet arm.
- Complete cutting heads with jaws, as well as spare jaws.

When ordering please state the desired size.



Individual view of ratchet arm



82 0301_1/2-1.1/4

Type		3/8-1.1/4	1/2-1.1/4	3/8-2	1/2-2
84B **82 0301**	Pipe-threading tool "EVA Set R" complete with sheet steel case	eShop	eShop	eShop	eShop
Content: associated cutting heads 1 pc. each (for Whitworth pipe thread)		3/8; 1/2; 3/4; 1; 1.1/4 inch	1/2; 3/4; 1; 1.1/4 inch;	3/8; 1/2; 3/4; 1; 1.1/4; 1.1/2; 2 inch	1/2; 3/4; 1; 1.1/4; 1.1/2; 2 inch
Ratchet arm		1 pc.			

GRESSEL Spanntechnik Precision angle bender

Easy to operate, powerful bending machine for precise bending of various profiles up to 180°. Positive and secure clamping of the profiles. Good repetition accuracy of the bend thanks to the precise bending and clamping jig. Integral **angle and length stops for quick working** with exact bending results. Smooth operation even with solid profiles due to a **needle-bearing turntable** (size 60 and 100).

Application: Precise and user-friendly hot and cold bending (bending angle 0 – 180°), both with angular bending edges and also with various bending radii.

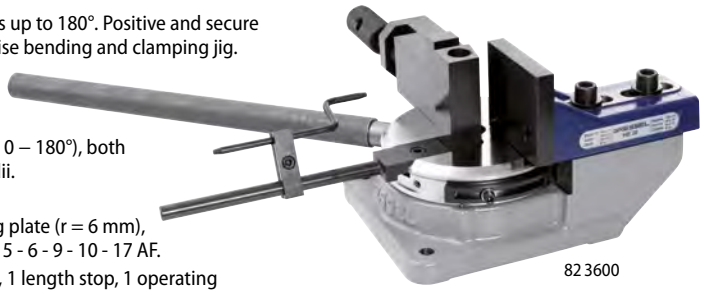
Supplied with:

Size 35 – 1 bending plate, sharp-edged, 90° No. 823601 size 0, 1 bending plate (r = 6 mm), 180°, 1 angle stop, 1 length stop, 1 operating handle, 1 wrench 5 - 6 - 9 - 10 - 17 AF.

Size 60 – 1 bending plate (r = 2 mm), 90° No. 823602 size 2, 1 angle stop, 1 length stop, 1 operating handle, 1 cover pin, 1 wrench 5 - 6 - 8 - 10 AF.

Size 100 – 1 bending plate (r = 2 mm), 90° No. 823603 size 2, 1 angle stop, 1 length stop, 1 operating handle.

Note: Further bending plates can be found under No. 823601 – 823604.



82 3600



Precise setting and bending, using the vernier angle scale.



Clamping and bending machine for tight radii and exact bending.

maximum component height		mm	35	60	100
86K 82 3600	Precision angle bender complete with accessories		eShop	eShop	eShop
Width		mm	280	335	465
Depth		mm	150	200	240
Height		mm	92	145	205
maximum bending capacity for flat material (cold)		mm	35×4 / 9×9	60×6 / 13×13	100×7 / 18×18
maximum bending capacity for flat material (hot)		mm	36×6 / 11×11	60×10 / 20×20	100×10 / 22×22
maximum bending capacity for round material (cold) ∅		mm	10	15	18
Weight		kg	9.3	22.4	43.9
Suitable for:			Vice	Vice / workbench	Workbench

Inspection punch pliers for inspection stickers

Solid steel design for exceptional durability. Quick and easy to handle for efficient working. The pliers produce a circular punched hole with ∅ 3 mm.

Material: Nickel-plated.

Application: For identification of inspection stickers and the like.

Note: Inspection stickers can be found in Vol. 4 under signs & markings.



83 1450

Punched hole ∅		mm	3
83U 83 1450	Inspection punch pliers		eShop
Length		mm	123
Jaw depth		mm	32

HOLEX Revolving punch pliers

Strong pressed steel shanks with rotating wheel and lock. With 6 different hollow punches (∅ 2.0; 2.5; 3.0; 3.5; 4.0 and 4.5 mm).

83 1550 – 70 % less force required due to efficient leverage. Ergonomically shaped plastic grips.

Note: For soft materials such as leather use an underlay to avoid damage when a lot of pressure is applied.



83 1505



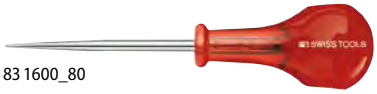
83 1550

			overall length mm
86C 83 1505	Revolving punch pliers	eShop	220
86C 83 1550	Compound action revolving punch pliers	eShop	250

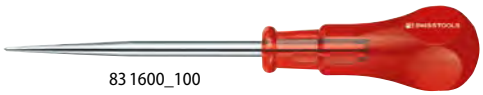
PB SWISS TOOLS Piercing awl

With shock-proof plastic handle and round chrome-plated blade.

Material: Chrome vanadium steel.



83 1600_80



83 1600_100

Blade length		mm	80	110
83B 83 1600	Piercing awl with plastic handle		eShop	eShop
Blade ∅		mm	5	7
overall length		mm	155	200

RENNSTEIG Steel wad punch

Strong, **forged** design, special tough varnish; taper section (cutting part) bright metal. Slight internal taper for releasing the cut pieces.

Application: For punching or manufacturing gaskets and gasket rings of rubber, leather, felt, plastic, cork, fabric or similar materials.

Note: Use an underlay of wood, leather etc. when punching to avoid damage.



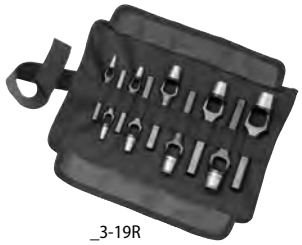
_26

for hole ∅	mm	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
86C 83 2001	Steel wad punch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

for hole ∅	mm	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
86C 83 2001	Steel wad punch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

for hole ∅	mm	34	35	36	38	40	42	44	45	46	48	50	55	60	65	70
86C 83 2001	Steel wad punch	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

Type		3-19R	2-20R	2-30
86C 83 2011	Steel wad punch set	eShop	eShop	eShop
Packaging		Tool roll		
Supplied with: 1 each steel wad punch ∅ No. 832001		9 pcs. size 3-19 (2 mm increment)	19 pcs. size 2-20 (1 mm increment)	15 pcs. size 2-30 (2 mm increment)


_3-19R

BOEHM Wad punch set in a case

2-component holder (up to size 3-20) with pistol handle with exchangeable precision ground punch cutters. For the production of gaskets two punch cutters of different ∅ are inserted together in the holder.

Application: For punching or manufacturing discs / rings in one operation. For rubber, leather, felt, plastic, cork, fabric or similar materials.

Note:
- Use an underlay of wood, leather etc. when punching to avoid damage.
- The following combinations are **not** possible: 20 (inner) with 22 (outer); 30 (inner) with 32 (outer); 40 (inner) with 42 (outer); 50 (inner) with 52 (outer).


_3-20


_3-30


_2-50

Punched diameter range	mm	3-20	3-30	2-50	2-60
86C 83 2100	Wad punch set complete in a case	eShop	eShop	eShop	eShop
Supplied with: 1 each punch cutter ∅ No. 832110		10 pcs. size 3; 4; 6; 8; 10; 12; 14; 16; 18; 20	15 pcs. size 3; 4; 6; 8; 10; 12; 14; 16; 18; 20; 22; 24; 26; 28; 30	29 pcs. size 2-50	34 pcs. size 2-60
Available combinations of punches inner : outer (mm)		3–10 inner with 12–20 outer	3–10 inner with 12–30 outer 12–20 inner with 22–30 outer	2–10 inner with 12–50 outer 12–20 inner with 22–50 outer 22–30 inner with 32–50 outer 32–40 inner with 42–50 outer	2–10 inner with 12–60 outer 12–20 inner with 22–60 outer 22–30 inner with 32–60 outer 32–40 inner with 42–60 outer 42–50 inner with 52–60 outer
Container length×width×height (mm)		Plastic 140×100×40	Plastic 275×205×50	Plastic 265×200×50	Sheet metal approx. 380×315×55
Centring point No. 832140		—	1 pc.	1 pc.	1 pc.
1 each circle cutter ∅		—	55–330 mm	—	55-420 mm

Spare wad punch cutter

for hole ∅	mm	2	3	4	5	6	7	8	9	10
86C 83 2110	Spare wad punch cutter	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

for hole ∅	mm	12	14	16	18	20	22	24	26	28
86C 83 2110	Spare wad punch cutter	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

for hole ∅	mm	30	32	34	36	38	40	42	44	46
86C 83 2110	Spare wad punch cutter	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop

for hole ∅	mm	48	50	52	54	56	58	60
86C 83 2110	Spare wad punch cutter	eShop	eShop	eShop	eShop	eShop	eShop	eShop


83 2110

HOLEX Sheet metal punch

Consisting of matrix, punch, and draw bolt.

83 4000 – **Without** ball thrust bearing.

83 4100 – **With** ball thrust bearing = for easier operation using a wrench. Friction between punch and screw is reduced, so less force is required.

83 4160 – **With** ball thrust bearing and **split punch,** which cuts the waste material into 3 pieces. The cut pieces easily fall out of the matrix.

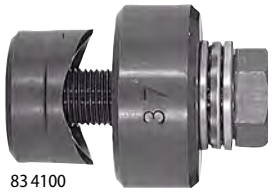
Material: Special tool steel, burnished.

Application: For punching holes into diverse materials such as sheet steel, sheet stainless steel, sheet aluminium, sheet copper etc. Particularly useful where access is difficult (e.g. large sheet metal plates, control cabinets, fuse boxes, junction boxes, dashboards, sink basins, bodywork etc.). Not suitable for pipework. It is imperative to grease the pressure screw and matrix before use.

Operation:
a) using a **wrench**
b) using **manual hydraulics** No. 834655 size 1.
c) using a **manual hydraulic drive** No. 834700. **From 50 mm Ø upwards the use of the manual hydraulic drive is recommended.**

Note:
- When using hydraulic tools, use draw bolt No. 834070 (optional accessory) instead of the pressure screw.
- Size 32 and 35 for holes in stainless steel sinks, to attach 1/2 inch sink fitments.


83 4000


83 4100


83 4160

Punch Ø (hole Ø)	mm	12,5	15,2	16,5	18,6	20	20,5	22	22,5	25,5
86C 83 4000	Round sheet metal punch without ball thrust bearing	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
86C 83 4100	Round sheet metal punch with ball thrust bearing	–	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
86C 83 4160	Gap sheet metal punch with ball thrust bearing	eShop	eShop	eShop	eShop	–	eShop	eShop	eShop	eShop
for metric threads to DIN EN 60423		M12×1,5	–	M16×1.5	–	–	M20×1.5	–	–	M25×1.5
for conduit threads to DIN 40430		PG7	PG9	–	PG11	–	PG13	–	PG16	–
Draw screw		M6×30	M8×1×35	M10×1×45						
hole Ø to be pre-drilled	mm	7	9	11	11	11	11	11	11	11
Draw screw size	mm	Hex socket size 5	13	17	17	17	17	17	17	17
for material thickness (sheet metal St 37)	mm	1.5	1.5	1.75	1.75	1.75	1.75	1.75	1.75	1.75
for stainless sheet steel depending on tensile strength up to	mm	1	1	1.25	1.25	1.25	1.25	1.25	1.25	1.25

Punch Ø (hole Ø)	mm	28,3	30	32	32,5	35	37	40,5	45
86C 83 4000	Round sheet metal punch without ball thrust bearing	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
86C 83 4100	Round sheet metal punch with ball thrust bearing	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
86C 83 4160	Gap sheet metal punch with ball thrust bearing	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–
for metric threads to DIN EN 60423		–	–	–	M32×1.5	–	–	M40×1.5	–
for conduit threads to DIN 40430		PG21	–	–	–	–	PG29	–	–
Draw screw		M10×1×55			M16×1.5×55			M16×1.5×70	
hole Ø to be pre-drilled	mm	11	11	11	17	17	17	17	17
Draw screw size	mm	17	17	17	24	24	24	24	24
for material thickness (sheet metal St 37)	mm	1.75	1.75	1.75	2.5	2.5	2.5	2.5	2.5
for stainless sheet steel depending on tensile strength up to	mm	1.25	1.25	1.25	1.75	1.75	1.75	1.75	1.75

Punch Ø (hole Ø)	mm	47	50,5	54	60	63,5	70	75	80
86C 83 4000	Round sheet metal punch without ball thrust bearing	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
86C 83 4100	Round sheet metal punch with ball thrust bearing	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
86C 83 4160	Gap sheet metal punch with ball thrust bearing	–	eShop	–	–	eShop	–	–	–
for metric threads to DIN EN 60423		–	M50×1.5	–	–	M63×1.5	–	–	–
for conduit threads to DIN 40430 (83 4000, 83 4100)		PG36	–	PG42	PG48	–	–	–	–
Draw screw		M20×1.5×70		M20×1.5×80			M20×1.5×90		
hole Ø to be pre-drilled	mm	21							
Draw screw size	mm	30							
for material thickness (sheet metal St 37)	mm	3							
for stainless sheet steel depending on tensile strength up to	mm	2							

Spare draw bolts

Suitable for:

83 4040 – Round sheet metal punch No. 834000.

83 4060 – Round sheet metal punches No. 834100 and 834160.


83 4040


83 4060

Thread Ø / Length	mm	6/30	8/35	10/45	10/55	16/55	16/70	20/70	20/80	20/90
86C 83 4040	Spare draw bolt for round sheet metal punches	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
86C 83 4060	Spare ball bearing draw bolt for round sheet metal punches	–	–	–	eShop	eShop	eShop	eShop	eShop	eShop
Screw dimensions		M6×30	M8×1×35	M10×1×45	M10×1×55	M16×1.5×55	M16×1.5×70	M20×1.5×70	M20×1.5×80	M20×1.5×90
Width across flats	mm	Hex socket size 5	13	17	17	24	24	30	30	30
suitable for round sheet metal hole punches Ø	mm	12.5	15.2	16.5 – 25.5	28.3 – 32	32.5 – 38	40.5 – 45	47 – 50.5	54 – 63.5	70 – 80

HOLEX Round sheet metal punch set to DIN EN 60423

for metric Ø

Supplied with: 1 each matrix punch and matrix (like round sheet metal punch No. 834000) for hole Ø 12.5 (M12×1.5); 16.5 (M16×1.5); 20.5 (M20×1.5); 25.5 (M25×1.5); 32.5 (M32×1.5); 40.5 (M40×1.5); 50.5 (M50×1.5); 63.5 (M63×1.5).
1 draw bolt (No. 834040 size 16/70).
4 ball thrust bearing draw bolts (No. 834060 size 10/55; 16/70; 20/90 and No. 834040 size 6/30 with ball thrust bearing).
1 step drill similar to No. 118320 (= Ø 7 - 21 mm).
1 sheet metal case size 335×230×55 mm.



83 4550

86C			
83 4550	Round sheet metal punch set "Metric" Ø 12.5 – 63.5 mm in a sheet metal case	eShop

"UNF" for metric Ø

Matrix punches and pressure screws with UNF fine thread. With ball thrust bearing draw bolts to reduce the friction. Compatible with all the main manufacturers of sheet metal punches with UNF threads.

Supplied with: 1 each punch and matrix for hole Ø 16.2 (for M16); 20.4 (for M20 and PG13); 22.5 (for M22 and PG16); 25.4 (for M25); 32.5 (for M32); 40.5 (for M40); 50.5 (for M50); 63.5 (for M63).
Ø 16.2 – 25.4 with 3/8 inch UNF thread and Ø 32.5 – 63.5 with 3/4 inch UNF thread.
2 ball bearing draw bolts **3/8 inch – UNF,** 40 mm.
1 ball bearing draw bolt **3/4 inch – UNF,** 52 mm.
1 ball bearing draw bolt **3/4 inch – UNF,** 65 mm.
1 HSS stepped drill (Ø 6 – 21 mm).
1 robust plastic case, size 340×280×90 mm.

Three edged sheet metal punch





83 4555

Type		1
86C 83 4555	Round sheet metal punch set "UNF" Ø 16.2 – 63.5 mm in a sheet metal case	eShop

HOLEX Manual hydraulic device

Manual hydraulic device with pressure rating up to approx. 600 bar, **with multiple movement cylinder** (can be rotated and swivelled through 360°), with 3/4–16 UNF thread suitable for draw bolts No. 834070. Aluminium pivot head and cylinder combination, very light in weight.
Punching power: For round sheet metal punches and swarf punches up to Ø 82 / thickness 3 mm / St 37 or larger for thinner and weaker materials. **Case L×W×H: 495×385×140 mm.**

Application: For powering sheet metal punches.

Note: When ordering the hydraulic device, please order the **draw bolts No. 834070 necessary** for the round sheet metal punches!



83 4655



Can be rotated and pivoted 360°.



Type		1
86C 83 4655	Manual hydraulic device with pivoting cylinder in a sheet metal case	eShop

Gap sheet metal punch set

Supplied with: 1 manual hydraulic device No. 834655.
1 each gap sheet metal punch (similar to No. 834160 but without ball thrust bearings) Ø 16.2 (M16); 20.4 (PG13 / M20); 22.5 (PG16 / M22); 25.4 (M25); 32.5 (M32); 40.4 (M40).
1 each draw bolt 3/4 inch – UNF / M10×1 or 3/4 inch – UNF / M16×1.5 with spacer washer.
1 plastic case, size 495×385×140 mm.



83 4855

Type		1
86C 83 4855	Gap punch set with manual hydraulic device	eShop

Draw bolts for round sheet metal punches

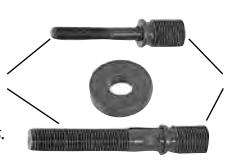
Connection thread 3/4 -16 UNF for hydraulic drives.

Suitable for: Hydraulic devices from No. 834655.

Note: For connection threads for punches see No. 834000 – 834160.

Type		1	2	3	4
86C 83 4070	Draw bolts with disc for round sheet metal punches	eShop	eShop	eShop	eShop
Thread Ø for punch mounting		M8×1	M10×1	M16×1.5	M20×1.5
overall length	mm	88	88	113	120
suitable for round sheet metal hole punches Ø	mm	15.2	16.5–32	32.5 – 45	47 – 80

Thread
M 8×1
M 10×1
M 16×1.5
M 20×1.5
for round holes.



Thread ¾ – 16 UNF for hydraulic device.

RENNSTEIG Spoon scraper with wooden handle

Three-edged blade of chrome vanadium steel; varnished wooden handle.



83 6620



83 6620

Blade length		mm	200
86D 83 6620	Spoon scraper, three-edged		eShop
Blade width		mm	16
overall length		mm	320

RENNSTEIG Triangular hollow-ground scraper with wooden handle

Three-square hollow section blade made of chrome vanadium steel, varnished wooden handle.

Standard: **DIN 8350 C**



83 6010



83 6010

Blade length		mm	100	125	150	200	250	300
86D 83 6010	Triangular hollow-ground scraper		eShop	eShop	eShop	eShop	eShop	eShop
Blade width		mm	14	14	14	16	16	16
overall length		mm	200	225	250	320	370	420

Precision mechanic's scraper

Slim triangular hollow-ground blade.

83 6200 – Chrome vanadium steel, plastic handle, plastic coated blade.
83 6220 – Chrome vanadium steel, plastic handle, plastic coated blade, with protective cap.
83 6320 – Chrome vanadium steel, wooden handle.



83 6200



83 6200



83 6220



83 6320

86D 83 6200	HEYCO Precision mechanic's scraper with plastic handle		eShop
86D 83 6220	RENNSTEIG		eShop
Blade length (83 6200)		mm	80
Blade length (83 6220)		mm	25
Blade width		mm	8
overall length (83 6200)		mm	185
overall length (83 6220)		mm	150
86D 83 6320	RENNSTEIG Precision mechanic's scraper with wooden handle		eShop
Blade length		mm	85
Blade width		mm	7
overall length		mm	175

NOGA Precision scraper with exchangeable blade

83 6400 – Light alloy holder (120 mm long) with collet chuck and interchangeable detachable triangular hollow-ground blade of **special tool steel** or **carbide.** Blade can be taken out and reground along its entire length.

Note:
83 6400 – See also scraper blades No. 839677; 839678.





83 6400



83 6410



83 6420



83 6425

83G 83 6400	Precision scraper with exchangeable blade **Tool steel**		eShop
83G 83 6410	Spare blade straight (80×4.2 mm) **Tool steel**		eShop
83G 83 6420	Spare blade straight (50×3.2 mm) **Carbide**		eShop
83G 83 6425	Spare blade straight (75×3.2 mm) **HSS**		eShop
Blade length (83 6400, 83 6410)		mm	80
Blade length (83 6420)		mm	50
Blade length (83 6425)		mm	75
Blade width (83 6400)		mm	4.2
overall length (83 6400)		mm	120

NOGA Universal scraper with exchangeable blade

83 6440 – Blade holder of plastic with spare blade compartment.
83 6441 – Blade holder of aluminium.
83 6440/6441 – Robust holder with exchangeable detachable triangular hollow-ground blade of **special tool steel.** Blade can be taken out and reground along its entire length.





83 6440



83 6441



83 6445

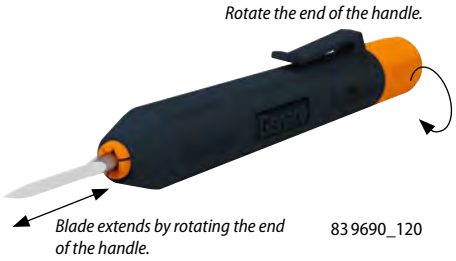
Overall length		mm	120
83G 83 6440	Universal scraper with exchangeable blade **Tool steel**		eShop
83G 83 6441			eShop
83G 83 6445	Spare blade straight (120×7.4 mm) **Tool steel**		eShop

Garant Universal scraper with retractable blade

Universal toolholder with 4-jaw chuck of plastic with exchangeable three-square blade. If required, a D-blade with shank ∅ 3.2 mm (No. 839676; 839677; 836420; 836425) or a T-blade with shank ∅ 4.2 mm (No. 836410) can be used in the holder. The holder also comes with a practical clip for mounting.

Advantage: Turning the rear part of the holder allows the blade to be retracted and extended. This reduces the risk of injury and protects the blade at the same time.

Supplied with: Holder incl. mini scraper blade, straight 3.2 × 50 mm (No. 839677).



83 9690_120



overall length		mm	120
83G 83 9690	Universal scraper with retractable blade		eShop
∅ holder		mm	17
Weight without blade		g	20

NOGA Universal toolholder

Universal toolholder with 3-jaw chuck. Robust, hardened clamping jaws (58 HRC). Comfortable to use and transmits high torques via the aluminium handle with non-slip plastic covering.

Advantage: 3-jaw chuck accepts various geometries (such as hexagonal tools / round tools).

Application: Quick and secure clamping of a wide variety of tools such as countersinks, scrapers, key files etc.



83G 83 6435	Universal toolholder with 3-jaw chuck		eShop
Clamping range ∅		mm	0.5 – 8
Weight		g	165

BAHCO Universal scraper with exchangeable carbide blade

83 7650 – Ergonomic 2–component handle with exchangeable **carbide blade.**
Size 25 – Blade with three sharp faces, including plastic case with belt clip.
Size 50 – Faces sharp on both sides.



83 7650_50


83 7650_25


83 7710

Blade width		mm	25	50
86D 83 7650	Universal scraper **with carbide blade**		eShop	eShop
overall length		mm	200	250

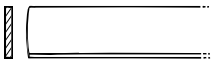
Blade width		mm	25	50
86D 83 7710	Spare carbide blade		eShop	eShop

RENNSTEIG Flat scraper with wooden handle

Blade of C125 tool steel; varnished wooden handle.

Standard: **DIN 8350 A**


83 7020



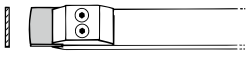
Blade length		mm	150	200	250	300
86D 83 7020	Flat scraper		eShop	eShop	eShop	eShop
Blade width		mm	20	20	25	25
overall length		mm	250	320	370	420

Flat scraper with exchangeable carbide insert and plastic handle

Strong flat steel bar with clamping mechanism and **exchangeable four-edged carbide scraper insert.** The carbide insert is ground ready for use, has 4 cutting edges and is reversible.

Note: Scraper inserts No. 837600 also fit electric hand scrapers.







Blade width		mm	20	25	30
86D 83 7520	RENNSTEIG Flat scraper with **Carbide insert**		eShop	eShop	eShop
86D 83 7600	Spare carbide scraper insert		eShop	eShop	eShop
Size of carbide insert		mm	20×25×2	25×25×2	30×25×2
overall length (83 7520)		mm	420	450	450

martor Scraper SCRAPEX

SCRAPEX ARGENTAX

Ergonomic scraper with rounded end to the handle, **for right-hand and left-hand users.**
Easy-change blade, no tools required (replacement blades No. 837745 / 837746).
Secure transport and storage, thanks to push-on protective cap.
Application: For removing residues, e.g. of labels, from smooth surfaces.


Application example

84D	**83 7740**	SCRAPEX ARGENTAX scraper with 1 blade	eShop
	Blade width	mm	39
	overall length	mm	165


83 7740

SCRAPEX CLEANY

Ergonomic scraper with rounded end to the handle, **for right-hand and left-hand users.**
Easy-change blade, no tools required (replacement blades No. 837745 / 837746).
Secure transport and storage, thanks to the retractable blade.
Application: For removing residues, e.g. of labels, from smooth surfaces.


Easy blade change

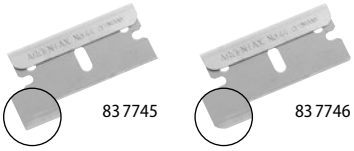
84D	**83 7741**	SCRAPEX CLEANY scraper with 1 blade	eShop
	Blade width	mm	39
	overall length	mm	106


83 7741

SCRAPEX ARGENTAX / CLEANY replacement blades

83 7746 – With **rounded** corners, to avoid damaging the working surface due to the blade digging in.
Suitable for: Scraper No. 837740 / 837741.

84D	**83 7745**	Pack of spare blades, **10 pieces**	eShop
84D	**83 7746**		eShop


83 7745 83 7746

TAJIMA Universal scraper with exchangeable snap-off blades

Handy lightweight universal scraper of cast aluminium with steel impact cap at the end of the handle.
Non-slip ergonomic plastic handle for safe and non-fatiguing working.
Scraper blade corresponds to a commercially-available 18 mm snap-off blade (No. 845010 10)
for sizes 1 - 3 and 22 mm (No. 845110 10) or 25 mm (No. 837755) for size 4,
which can be exchanged quickly and easily (clamping mechanism).
Supplied with: With 3 blades.

Note: Spare blades 25 mm No. 837755 without break points for scraper size 4.



83 7750_1
83 7750_2/_3/_4

Type		1	2	3	4
83L	**83 7750** Universal scraper with 3 snap-off blades	eShop	eShop	eShop	eShop
	Blade width mm	100	100	100	126
	overall length mm	200	300	600	1200

S/STL

TAJIMA Universal scraper with stainless steel blade

One-piece blade and striking head for direct impact transmission.
Ergonomic 2-component handle with hardened striking head. Blade thickness 1.8 mm.
Material: Stainless steel, heat treated, extremely wear-resistant.


83 7760_50

			50	75
	Blade width	mm		
83L	**83 7760**	Universal scraper with standard blade	eShop ■	eShop
	overall length	mm	235	245



			95
	Blade width	mm	
83L	**83 7765**	Universal scraper with fishtail blade	eShop
	overall length	mm	250


83 7765



			75
	Blade width	mm	
83L	**83 7770**	Universal scraper with multi-function blade	eShop
	overall length	mm	240


83 7770

STAHLWILLE Gasket scraper

Offset blade for multiple regrinding. Shock-resistant plastic handle.

Blade width		mm	23
83A 83 7800	Gasket scraper		eShop
overall length		mm	265



PB SWISS TOOLS Gasket scraper

Cranked blade of special spring steel (58 - 60 HRC), can be reground many times. Impact-resistant "multicraft" power grip.

Blade width / Blade length		mm	25/50	25/145
83B 83 7850	Gasket scraper with spring steel blade		eShop	eShop
overall length		mm	160	255



_25/50



_25/145

HOLEX Scraper and assembly set, 4 pieces

Offset scraper blade of chrome-vanadium steel (57 HRC). Roughening tool, sturdy gripper hook and offset gasket lifter, each of chrome-vanadium steel. Easy-grip 2-component handle.

Application: Many uses such as scraping, gripping, placing, assembling, and many more.

Number of tools		4
82F 83 7880	Scraper and assembly set	eShop



NOGA Ceramic scraper

Ergonomic 2-component plastic handle with **ceramic blade** (not replaceable). **Extremely long service life.** 90° cutting edge means it is very safe to use.

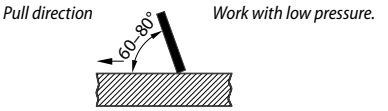
Application: For deburring almost any type of plastic and other soft materials. Application angle 60 - 80°, do not apply too much pressure.



83 6450

83G 83 6450	Ceramic scraper with fixed blade		eShop
overall length		mm	155





83 6465 – Plastic handle with 1 exchangeable ceramic blade for highly curved contours and narrow ribs.

Application:

83 6465 – For deburring almost any type of plastic and other soft materials. Application angle 60 - 80°, do not apply too much pressure.



83 6465

83G 83 6465	Ceramic scraper with exchangeable blade		eShop
overall length		mm	175
83G 83 6470	Ceramic blade concave		eShop
83G 83 6475	Ceramic blade convex		eShop





83 6470 83 6475

NOGA Mini ceramic scraper

For deburring almost any type of plastic and other soft materials.

83G 83 6480	Mini ceramic scraper with convex exchangeable blade		eShop
overall length		mm	145
83G 83 6490	Mini ceramic scraper with square exchangeable blade		eShop
overall length		mm	129
83G 83 6485	Ceramic blade, convex		eShop
83G 83 6495	Ceramic blade, square		eShop





83 6480





83 6490

83 6485 83 6495

Universal deburrers with ceramic blades

83 8150 – Handy 2-component handle with unique mounting for the ceramic blades. In conventional deburrers the blade rotates; here the blade mounting rotates. The result is smoother working, which is easier on the blade.

Application: Deburring holes and a wide variety of contours. Highly suitable not only **for** soft materials such as aluminium and plastics but also for **very abrasive plastics** such as fibreglass. Extremely wear-resistant: approx. **20 times the working life** of a HSS blade (when deburring plastics).



83 8150



83 8160

Cutting angle	degrees	65	75
83G 83 8150	Universal deburrer handle with ceramic blade	eShop	eShop

Cutting angle	degrees	65	75
83G 83 8160	Ceramic deburrer blade	eShop	eShop
Blade width	mm	4	
Blade thickness	mm	1.7	





Deburrer handle, individual

2-part plastic handle with spring-loaded lock for locking / unlocking blades / telescopic shank. Blades can be stored in the removable end cap.

Size S – Takes **S-blades Ø 3.2 mm.**
Size N – Takes **N-blades Ø 2.6 mm.**
Size T – Takes **telescopic shanks Ø 7 mm and hexagonal.**

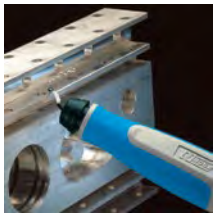


Type		S	N	T
83G 83 9890	Deburrer handle	eShop	eShop	eShop
overall length	mm	125		

Universal deburrer with N-blade Ø 2.6 mm

Handle with rotating, exchangeable blades. Very easy to use, the blade adapts itself automatically to the contours of the workpiece.

Application: For efficient deburring of different materials / contours.







83 9150



83 9120



83 9140



83 9170

83G 83 9150	Universal deburrer, aluminium handle with 1 blade (N1)	eShop
83G 83 9120	Universal deburrer, 2-component handle with 2 blades (N1, N2)	eShop
83G 83 9140	Universal deburrer, 2-component handle with telescopic shank and 2 blades (N1, N2)	eShop ■
overall length (83 9150)	mm	135
overall length (83 9120)	mm	140
overall length (83 9140)	mm	155 – 225
83G 83 9170	Telescopic shank for N-blades Ø 2.6	eShop

Universal blade shank Ø 2.6 mm



83 9010 83 9030 83 9040

Type			N1	N2	N3	N6	N10	N150	
83G 83 9010	Deburrer blade		eShop	eShop	eShop	eShop	eShop	eShop	1
83G 83 9030	Deburrer blade **HSS TiN coated**	TiN	eShop	eShop	–	–	–	–	1
83G 83 9040	Deburrer blade **HSS diamond coated**	Diamond	eShop	–	–	–	–	–	1
Shank Ø	mm		2.6						
overall length	mm		20	20	20	45	25	20	
Material (83 9010)			HSS	HSS	HSS	HSS	HSS-E	HSS	
Material (83 9030)			HSS-TiN	HSS-TiN	–	–	–	–	
Material (83 9040)			HSS diamond	–	–	–	–	–	
applicable			right-hand	right+left	right-hand	right-hand	right-hand	right-hand	
for deburring of			steel, aluminium	Brass, cast iron	2 edges in one operation for steel, aluminium	rear of workpieces for steel, aluminium	abrasive plastics, stainless steel, very long tool life	Alu, plastic, small holes from Ø 1.5 mm	

Universal deburrer with S-blade Ø 3.2 mm

Handle with rotating, exchangeable blades. Very easy to use, the blade adapts itself automatically to the contours of the workpiece.

Application: For efficient deburring of different materials / contours.

83G 83 8350	Universal deburrer, plastic handle with 1 blade (S150)	eShop
83G 83 8400	Universal deburrer, alu. handle with 1 blade (S10)	eShop
83G 83 8410	Universal deburrer, 2-component handle with 3 blades (S10, S20, S35)	eShop ■
83G 83 8420	Universal deburrer, 2-component handle with telescopic shank and 3 blades (S100, S20, S30)	eShop ■
overall length (83 8350) mm		140
overall length (83 8400) mm		150
overall length (83 8410) mm		145
overall length (83 8420) mm		170 – 240
83G 83 8430	Telescopic shank for S-blades Ø 3.2	eShop





Universal blade shank Ø 3.2 mm

Type			S10	S101	S20	S100	S30	S60	S35	S150	
83G 83 8510	Deburrer blade		eShop ■	eShop	eShop ■	eShop ■	eShop ■	eShop	eShop ■	eShop	1
83G 83 8520	Deburrer blade (for left-hand use)		eShop ■	eShop	–	–	–	–	–	–	1
83G 83 8530	Deburrer blade, TiN coated	TiN	eShop	eShop	eShop ■	eShop ■	eShop	–	eShop ■	eShop	1
83G 83 8550	Deburrer blade carbide		eShop	–	–	–	–	–	–	–	1
Shank Ø		mm	3.2								
overall length		mm	43	43	48	48	48	66	48	43	
Material (83 8510, 83 8520, 83 8530)			HSS	HSS	HSS	HSS-E	HSS	HSS	HSS	HSS	
Material (83 8550)			Carbide	–	–	–	–	–	–	–	
applicable (83 8510, 83 8530, 83 8550)			right-hand	right-hand	right+left	right-hand	right-hand	right-hand	right+left	right-hand	
for deburring of (83 8510, 83 8520, 83 8530)			steel, aluminium	steel, aluminium, fine cutting edge	Brass, cast iron	abrasive plastics, stainless steel, very long tool life	Steel, alu, 2 edges in one operation	steel, aluminium, stainless steels	almost all materials, only straight edges	Steel, aluminium, plastics, slim cutting edge	
for deburring of (83 8550)			hard steel, plastic	–	–	–	–	–	–	–	
Identification (surface) (83 8510)			black	black	bright finish	bright finish	black	black	black	black	

Universal deburrer set with S-blade Ø 3.2 mm

Supplied with:

83 9915 – Deburrer handle No. 839890 size S complete with 20 blades No. 838510 size S10.

83 9916 – Deburrer handle No. 839890 size S complete with 20 blades No. 838510 size S100.

83 9917 – Deburrer handle No. 839890 size S complete with 10 blades No. 838510 size S150.

Number of blades		10	20
83G 83 9915	Deburrer set with 20 blades S10	–	eShop
83G 83 9916	Deburrer set with 20 blades S100	–	eShop
83G 83 9917	Deburrer set with 10 blades S150	eShop	–

Supplied with: Deburrer handle No. 839890 size T complete with telescopic shank No. 838430 and 5 each of blades No. 838510 size S10 and size S20.

Type		5/5
83G 83 9935	Deburrer set with telescopic shank, 5 each of blades S10 and S20	eShop



ROTO-DRIVE deburrer

Handle with rotating, exchangeable deburring head. Easy to use due to crank system.

Application: For easy deburring, chamfering or reworking of holes, external diameters, threads, and grooves.



83 8605



83 8655

			overall length mm
83G 83 8605	ROTO-DRIVE deburrer with deburring head ∅ 10.4	eShop ■	155
83G 83 8655	ROTO-DRIVE deburrer with external deburring head ∅ 4 - 18	eShop	155

ROTO-DRIVE deburring head (patented) shank ∅ 3.2 mm

Deburring head ∅		mm	3,2	6,3	8,3	10,4	16,5	20
83G 83 8610	Hole deburring head HSS 90°, with shank		eShop	eShop	eShop	eShop	eShop	eShop
83G 83 8611	Hole deburring head, 90°, with shank HSS TiN coated	TiN	–	–	–	eShop	–	–







83 8610_3,2



83 8610_6,3–16,5



83 8610_20



83 8611_10,4

83G 83 8660	External deburring head HSS for ∅ 4–18 mm	eShop

Suitable for: Roto-Drive deburrer No. 838605.

Application: For cleaning up **dirty** and **damaged internal threads from M8.** For all standard thread forms.







83 8660



83 8710



83 8760

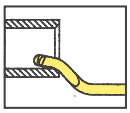
83G 83 8710	Internal thread cleaning blade HSS	eShop

Application: For deburring **grooves** to **maximum 3 mm width** (e.g. O-ring grooves) in internal bores.

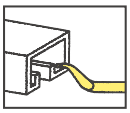
83G 83 8760	O-ring groove deburring blade HSS	eShop

Universal deburrer set

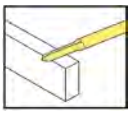
Supplied with: Aluminium handle with 1 each HSS blade No. 838510 sizes S20, S100, and S150, No. 839677 as well as 1 hole deburring head No. 838610 size 16.5, and 1 external deburring head No. 838660.



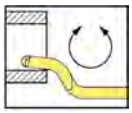
Long tool life even on abrasive materials.



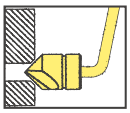
Finest deburring work, holes from ∅ 1.5 mm.



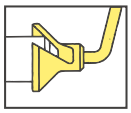
Deburring all contours.



Deburring brass, cast iron.



Hole countersinking, countersink head ∅ 16.5 mm.



External ∅ deburring 4 -18 mm.

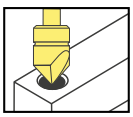


83 8960

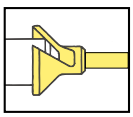
83G 83 8960	Universal deburrer set, in a plastic box **7 pieces**	eShop ■

Application: Shanks for direct fitting in electric screwdrivers.

Supplied with: 1 bit holder internal No. 839615 INT for deburring heads No. 839610 / 839611.
1 bit holder external for external deburring heads.
1 pc. each deburring head No. 839610 size 12; 20 and 30.
1 external deburring head for dia. 8 - 28 mm.



Hole countersinking, countersink head ∅ 12; 20 and 30 mm.



External ∅ deburring 8 -28 mm.

Number of pieces		6
83G 83 8961	Deburrer set, in a plastic box **6 pieces**	eShop



83 8961

Hole deburrers

83 9605 – 2-component handle with **hexagonal telescopic shank** and exchangeable deburring head HSS 90°, ∅ 20 mm. Suitable even for **deeply recessed** holes.



			overall length mm
83G 83 9605	Hole deburrer with deburring head HSS ∅ 20 mm	eShop	170 – 240



83 9605

Deburring head ∅		mm	12	20	30
83G 83 9610	Deburring head HSS, 90°		eShop	eShop	eShop
83G 83 9611	Hole deburring head, 90° HSS TiN coated	TiN	–	eShop	–



83 9610_12 _20 _30 83 9611

Type		INT	Suitable for: Deburring heads
83G 83 9615	Adapter for internal hole deburring heads with 1/4 inch shank	eShop	No. 839610; 839611



83 9615

		Suitable for: Deburring heads
83G 83 9620	Telescopic shank for deburring heads	eShop	No. 839610; 839611



83 9620

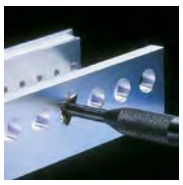
External and internal hole deburrers

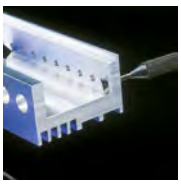
83 9650/9655 – By pushing the pressure bolt at the top of the handle, you can position the deburrer blade **vertically** for insertion into the drilled hole. The **cutting blade operates in both directions**. Rotating it 180° achieves easy deburring. The blade is exchangeable. A hexagon socket screwdriver for changing the blade is stored in the handle.

Material:

83 9660 Size 3HM – Of **carbide**.

Application: Ideal for external and internal hole deburring where access is difficult.







83 9650

Type			1	2	3	3HM
83G 83 9650	External and internal hole deburrer		eShop	eShop	eShop	–
83G 83 9660	Spare blade with screw		eShop	eShop	eShop	eShop
for hole ∅		mm	3 – 5.5	5 – 10	10 – 22	10 – 22
for maximum hole depth t (83 9650)		mm	15	17	52	–



83 9660_3HM



83 9655



83 9660_3

Type		3
83G 83 9655	External and internal hole deburrer set	eShop
Supplied with: 1 each external and internal hole deburrer No. 839650		Size 1; 2; 3

Mini scraper with exchangeable blade

2-component handle with **telescopic shank** and exchangeable scraper blades.

83 9670 – With straight mini scraper blade 2.5×50 mm for fine scraping work.

83 9675 – With cranked special scraper blade 2.7×50 mm for **deburring the back of holes** (from ∅ 4 mm).



83G 83 9670	Mini scraper with telescopic shank and mini scraper blade, straight		eShop
83G 83 9675	Mini scraper with telescopic shank and mini scraper blade, cranked		eShop
overall length		mm	170 – 240



83 9670



83 9675

83G 83 9676	Mini scraper blade, straight HSS TiN coated	TiN	eShop
83G 83 9677	Mini scraper blade, straight		eShop ■
83G 83 9678	Mini scraper blade, cranked		eShop
Blade length (83 9676, 83 9677)		mm	50
Blade length (83 9678)		mm	48
Shank ∅		mm	3.2



83 9676



83 9677



83 9678

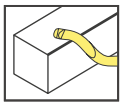
83G 83 9679	Telescopic shank for scraper blades	eShop
Suitable for: Scraper blades		No. 839676; 839677; 839678; 836420; 836425



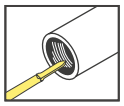
83 9679

Deburrer set in holder

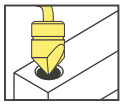
Supplied with: Fold-away handle with 1× HSS blade No. 838510 size S10,
1 hole deburring head No. 838610 size 10.4,
1 HSS blade No. 839010 size N2 and
1 mini-scraper blade No. 839677.



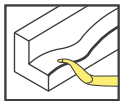
Deburring straight edges.



Scraping bushes.



Hole countersinking, countersink head ∅ 10.4 mm.



Deburring contours.



83 8970

83G **83 8970**	Deburrer set in a fold-away handle	eShop

Keyway deburrer

83 9705 – 2-component handle with **telescopic shank** and exchangeable insert.

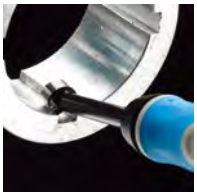
Application:

83 9705 – For deburring keyways in bores or shafts.



83 9705

83G **83 9705**	Keyway deburrer with telescopic shank and insert size 11		eShop	
overall length	mm		160 – 230	
for maximum width	mm	8	11	15
83G **83 9720**	Keyway deburring blade	eShop	eShop	eShop
Blade thickness	mm	4.5	4.5	6.8
for keyway width	mm	1.2 – 8	2.4 – 11	3 – 15
83G **83 9725**	Telescopic shank for inserts		eShop	
Suitable for: Inserts			No. 839720	





83 9720



83 9725

Sheet metal deburrer

83 9740 – 2-component handle with **telescopic shank** and exchangeable V-blade for material thickness from 1– 8 mm.

Application:

83 9740 – For **deburring both sides** of sheet metal, flat material or narrow ribs **in a single operation (2 edges simultaneously).**



83 9740





83 9745_2,5



83 9745_8

83G **83 9740**	Sheet metal deburrer with telescopic shank and V-blade size 8		eShop
overall length	mm		160 – 230
for maximum web width	mm	2,5	8
83G **83 9745**	Spare V-blade of HSS	eShop	eShop
for material thicknesses	mm	0 – 2.5	1 – 8
83G **83 9750**	Telescopic shank for V-blades		eShop
Suitable for: V-blades			No. 839745



83 9750

83 9860 – Holder with 2 reversible and exchangeable cutting discs for material thickness from 0 –12 mm. Worn cutter wheels can be indexed and reversed.
With shield to protect the hand against injury.

83 9880 – Of **HSS-E** (cobalt steel).

83 9860/9870 – Of **HSS.**



83 9860

83G **83 9860**	Sheet metal deburrer with 2 HSS cutting discs	eShop
83G **83 9870**	Spare cutting disc of HSS	eShop
83G **83 9880**	Spare cutting disc of HSS-E (cobalt steel)	eShop
overall length (83 9860)	mm	190
Abrasive disc ∅ (83 9870, 83 9880)	mm	12
Cutting disc thickness (83 9870, 83 9880)	mm	5





83 9870

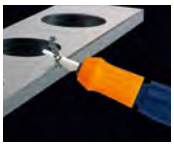
Garant Deburrer / scraper

Plastic handles with clip, each with 1 exchangeable blade.

Supplied with:

Size S10 – Blade for steel and aluminium No. 838510 size S10.
Size N1 – Blade for steel and aluminium No. 839010 size N1.
Size CR8 – Blade for plastic and soft materials No. 839902 size CR8.
Size D50 – Blade for fine scraping work No. 839677.







83 9901_S10


83 9901_N1


83 9901_CR8


83 9901_D50

Type		S10	N1	CR8	D50
83G 83 9901	Deburrer / scraper	eShop ■	eShop ■	eShop ■	eShop ■
overall length mm		140	133	138	145

Number of pieces		4
83G 83 9903	Deburrer / scraper set	eShop ■
Supplied with: 1 each deburrer / scraper No. 839901		Size S10; N1; CR8; D50


83 9903

NOGA Mini-deburrers / scrapers

Aluminium body with secure-grip plastic sheathing. **Non-replaceable blade.**


83 9941


83 9942


83 9943

83 9941/9943 – Rotating exchangeable blade.

Application:

83 9941 – Mini-deburrer for extra-fine work.
83 9942 – Mini three-edge scraper, ideal tool-making and mould-making.
83 9943 – Mini-deburrer and countersink for small holes 0 – 3.0 mm.


83 9941


83 9942


83 9943

83G 83 9941	Mini deburrer, extra fine (S150)	eShop
overall length mm		98
83G 83 9942	Mini three-edge scraper (D50)	eShop
overall length mm		105
83G 83 9943	Mini hole deburrer ROTO-DRIVE (3.2 mm)	eShop
overall length mm		109

Supplied with: 1 mini-deburrer No. 839941.
1 mini-three-edge scraper No. 839942.
1 mini-hole deburrer No. 839943.


83 9944

83G 83 9944	Mini deburrer/scraper set in a plastic box	eShop

NOGA Universal deburrer set

Supplied with: 4 deburrers for 4 applications, with colour coding. Plastic handles with clip, each with 1 exchangeable blade No. 838510.






Blade S100 – for steel
Blade S10 – for aluminium
Blade S20 – for brass
Blade S150 – for plastics


83 9945

83G 83 9945	Universal deburrer set (4 holders, each with 1 blade)	eShop

Multi-purpose deburrer / scraper set in a plastic box, 22 pieces

83G 83 9954	Multi-purpose deburrer /scraper set in a plastic box **22 pieces**	eShop
Supplied with: Sheet metal deburrer		1 pc. similar to No. 839150
Spare cutting disc		1 pc. No. 839870
Deburrer handle for telescopic shank		1 pc. No. 839890 size S
Deburrer blade HSS ∅ 3.2 mm		1 pc. each No. 838510 size S10, S20, S30; S150
ROTO-DRIVE deburring head HSS ∅ 10.4 mm		1 pc. No. 838610 size 10.4
ROTO-DRIVE external deburring head HSS ∅ 4 – 18 mm		1 pc. No. 838660
Deburrer handle for telescopic shank		1 pc. No. 839890 size T
Telescopic shank for S-blades ∅ 3.2 mm		1 pc. No. 838430
Telescopic shank for N-blades ∅ 2.6 mm		1 pc. No. 839170
Deburrer blade HSS ∅ 2.6 mm		1 pc. each No. 839010 size N1; N2
Telescopic shank for deburring heads		1 pc. No. 839620
Deburrer head HSS, 90°, ∅ 20 mm		1 pc. No. 839610 size 20
Telescopic shank for inserts		1 pc. No. 839725
insert for splines / keyways, 11 mm		1 pc. No. 839720 size 11
Telescopic shank for scraper blades		1 pc. No. 839679
Mini scraper blade		1 pc. No. 839677
Special scraper blade		1 pc. No. 839678
Aluminium deburrer handle for N-blades ∅ 2.6 mm		1 pc. similar to No. 839150



Multi-purpose deburrer / scraper set in a plastic box, 19 pieces

83G 83 9955	Multi-purpose deburrer /scraper set in a plastic box **19 pieces**	eShop
Supplied with: precision scraper with exchange blade		1 pc. No. 836400
Deburrer handle (without blade)		1 pc. No. 838350
Telescopic shank for S-blades ∅ 3.2 mm		1 pc. No. 838430
Deburrer blade HSS ∅ 3.2 mm		1 pc. each No. 838510 size S10, S20, S30; S150
ROTO-DRIVE deburring head HSS ∅ 10.4 mm		1 pc. No. 838610 size 10.4
Telescopic shank for N-blades ∅ 2.6 mm		1 pc. No. 839170
Deburrer blade HSS ∅ 2.6 mm		1 pc. each No. 839010 size N1; N2
Telescopic shank for deburring heads		1 pc. No. 839620
Deburrer head HSS, 90°, ∅ 20 mm		1 pc. No. 839610 size 20
Telescopic shank for scraper blades		1 pc. No. 839679
Mini scraper blade		1 pc. No. 839677
Special scraper blade		1 pc. No. 839678
Telescopic shank for inserts		1 pc. No. 839725
insert for splines / keyways, 11 mm		1 pc. No. 839720 size 11
Deburrer handle for telescopic shank		1 pc. No. 839890 size T



All-round deburrer / scraper set in a plastic box, 16 pieces

83G 83 9980	All-round deburrer / scraper set (7 holders with blades), in a plastic box **16 pieces**	eShop
Supplied with: universal deburrer with 3 blades (S100, S20, S30)		1 pc. No. 838420
Mini-scraper with special cranked scraper blade		1 pc. No. 839675
Spline / keyway deburrer with 1 cutting tip (2.4 – 11 mm)		1 pc. No. 839705
precision scraper with special interchangeable tool steel blade		1 pc. No. 836400
Sheet metal deburrer with deburrer blade (1 – 8 mm)		1 pc. No. 839740
Mini-scraper with straight scraper blade		1 pc. No. 839670
Hole deburrer with deburrer head (up to ∅ 20 mm)		1 pc. No. 839605



TAJIMA Allround knife

Strong multi-purpose knife for versatile applications. Fixed through-blade with 2-component handle, hard enduring end to the handle for impact applications. Supplied with a protective cap.

Application: All the following functions in a single tool: cutting, scraping, chiselling, roughening, cable stripping.



Blade length	mm	90
83M 84 4471	Allround knife	eShop
overall length	mm	235
Weight	g	167



Fixed blade cable knife / assembly knife

84 4410 – With protective cap, fully insulated to DIN EN 60900 / VDE 0682-201.
84 4455 – With hinged blade protector, fully insulated to DIN EN 60900 / VDE 0682-201.

82B 84 4300	HOLEX	Fixed blade cable knife	eShop ■
overall length		mm	175
86E 84 4410	KNIPEX	Cable knife fixed **fully insulated to VDE**	eShop
overall length		mm	180
86E 84 4455	intercable	Fixed blade cable knife, with blade protection **fully insulated to VDE**	eShop
overall length		mm	200


84 4300


84 4410


84 4455

Folding cable knife

84 4500 Size 1 – Wooden handle with blade.
Size 1F – Wooden handle with **self-locking** blade.
Size 2 – Wooden handle with straight and curved blade.
Size 3 – Wooden handle with blade, screwdriver and reamer.
84 4520 Size 1 – Plastic handle with blade.
Size 3 – Plastic handle with blade, screwdriver and reamer.
84 4525 Size 1F – Plastic handle with **self-locking** blade.
84 4610 Size 1 – Ergonomic handle made of robust and impact-resistant plastic. Sturdy blade made of stainless steel.


84 4500_1
84 4500_1F
Blade lock
84 4500_2
84 4520_1
84 4520_3
84 4500_3

Type			1	1F	2	3
86E 84 4610	KNIPEX	Electrician's fold-away knife	eShop	–	–	–
82B 84 4500	HOLEX	Cable knife with wooden handle, folding	eShop ■	eShop ■	eShop ■	eShop ■
82B 84 4520	HOLEX	Cable knife with plastic handle, folding	eShop ■	–	–	eShop
82B 84 4525	HOLEX	Cable knife with plastic handle, folding	–	eShop ■	–	–


84 4525_1F
Blade lock
84 4610_1

TAJIMA Folding knife with a wide blade

Fold-away knife in compact size with sturdy and stiff blade. The handle of die-cast aluminium and non-slip elastomer prevents slipping, even when wearing gloves. Extra-wide blade for tough tasks. However, the very sharp blade also allows delicate cutting tasks to be performed.



Blade length	mm	65
83M 84 4460 Folding knife with a wide blade		eShop
Handle length	mm	90
overall length	mm	185
Blade thickness	mm	3
Weight	g	107

HOLEX Single-hand knives

Lockable single-hand knife with stainless blade. Handle of aluminium with non-slip inlays and clip.

Advantage: Quick, easy opening and closing of the blade.

Note: Please comply with the relevant national offensive weapons regulations! Germany – WaffG § 42a Section 1 no. 3 permits the carrying of fixed-blade knives only for trade use, maintenance of traditions or participation in sports.


Belt clip


Blade lock

Type		1
82B 84 4620	Single-hand knife	eShop
Handle length	mm	90
Blade length	mm	70

Garant Safety knife made of recycled material

Our disposable safety knife made of at least **80% recycled plastic plus glass fibre reinforcement** provides an environmentally friendly and safe solution for your cutting needs.
The ergonomic handle is comfortable to hold and simplifies your work.
The **concealed blades** minimise the risk of injury and damage to the goods.
Suitable for piercing and cutting **film, adhesive tape and 1-ply cardboard**.



84 1000

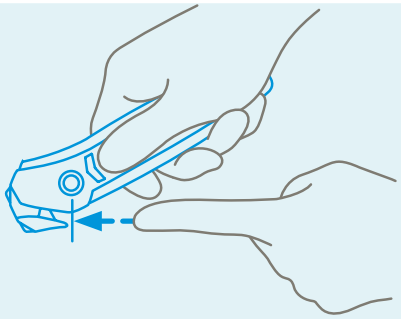

Concealed blade.


Safe working, e.g. when opening cardboard boxes.

number		10
81E 84 1000	Safety knife set made of recycled material **10 pieces**	eShop
Length	mm	162

martor SECUMAX: Highest level of safety due to covered blade

The blade is not open,
rather it is shielded from people and goods.
This provides maximum safety
against cuts and damage to goods.



martor Safety knives SECUMAX

SECUMAX 350 SE

Safety knife with **concealed blade** and exchangeable **2-in-1 blade head** (for 2-times use) for cutting and scoring, with **spare blade head** in the handle.
Safe and easy blade change. Handle housing made of at least 98% **recycled plastic.**

Size 1 – With SECUMAX universal blade.
Size 2 – With SECUMAX robust blade for more stubborn materials such as thicker films and strapping.

Application: For cutting all materials commonly used - be they film, plastic strapping, adhesive tape, 2-layer cardboard or bagged goods.

Spare part:
Size 1 – For replacement blades see No. 842012 Size 10.



84 2011_1


Spare blade in the handle.

Type		1	2
84D 84 2011	Safety knife SECUMAX 350 SE **with 2 blades.**	eShop	eShop
Length	mm	154	

SECUMAX 150

Disposable safety knife with **concealed blade** and **3-in-1 blade head** for cutting, scraping and scoring.
Ergonomic, lightweight handle (24 g) made from at least 80% **recycled plastic** plus glass fibre-reinforcement.

Application: For cutting all materials commonly used - be they film, plastic strapping, adhesive tape or 2-layer cardboard.



84 2015


Concealed blade including label scraper


Good guidance

number		10
84D 84 2015	SECUMAX 150 safety knife set **10 pieces**	eShop
Length	mm	148

SECUMAX 145

Disposable safety knife with **concealed blade** and **2-in-1 blade head** for cutting and piercing. Ergonomic, extremely lightweight handle (12 g) made of at least 60% **recycled plastic** plus glass fibre reinforcement.

Application: For cutting all materials commonly used - be they film, adhesive tape or 1-layer cardboard.



84 2016



Material protection due to use of a plastic-coated blade



Less effort required when cutting due to 1.5-mm flat cutting edge

number		10
84D 84 2016	SECUMAX 145 safety knife **10 pieces**	eShop
Length	mm	118

SECUMAX EASYSAFE

Large safety knife with **concealed blade** (4-way use) and additional adhesive tape scorer. Ergonomic handle of glass fibre-reinforced plastic. Safe and easy blade change. Access to the blade can also be locked using the **EASYSAFE locking key**.

Application: Specialist for film and paper, sacks, fabrics and plastic straps.

Spare part: For replacement blades see No. 842022 Size 10.



84 2020



Lockable blade

84D 84 2020	Safety knife SECUMAX EASYSAFE with 1 blade	eShop
Length	mm	207

SECUMAX 320

Large safety knife with **concealed blade** (4-way use) and additional adhesive tape scorer with two scoring depths (3.5 mm / 5.0 mm). Ergonomic handle made of at least 80% **recycled plastic** plus glass fibre-reinforcement, including soft grip. Safe and easy blade change.

Application: For all types of film (thick or thin), plastic straps, leather and belts.

Spare part: For replacement blades see No. 842038 Size 10.



84 2026



Blade change without tools



Reversible adhesive tape scorer

Type		1
84D 84 2026	Safety knife SECUMAX 320 with 1 blade	eShop
Length	mm	158

SECUMAX OPTICUT

Large safety knife with **concealed blade** (4-way use).
Ergonomic plastic handle with extremely **wear-resistant sliding foot** of Teflon-coated metal.
Integral plastic spring for compressing the material that is being cut. Safe and easy blade change.

84 2030 – For cutting **under tension**.
84 2035 – For cutting under **compression**.

Application: Ideal for all type of films and foam materials.

Spare part: For replacement blades see No. 842037 Size 10.



84 2030



84 2035



Easy blade change



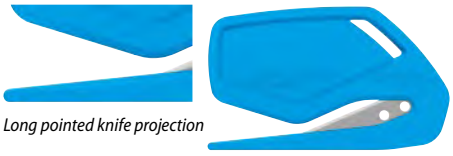
Integral plastic spring

84D 84 2030	Safety knife SECUMAX OPTICUT with 1 blade	eShop
84D 84 2035		eShop
Length	mm	112

SECUMAX POLYCUT

Disposable safety knife with **concealed blade**. Light-weight (7 g) and narrow (3 mm) cardboard knife, of plastic. With **longer pointed knife projection** which reliably leads the material being cut on to the blade.

Application: Ideal for films, even in narrow strips, and paper.



Long pointed knife projection

84 2041

number			10
84D 84 2041	Safety knife SECUMAX POLYCUT **10 pieces**		eShop
Length		mm	76

SECUMAX CARDYCUT

Disposable safety knife with **concealed blade**. With short knife projection for cutting tight radii. Stainless, **TiN-coated blade**.

84 2043 – Light-weight (5.5 g) and narrow (2 mm) box cutter, of plastic.

84 2045 – Light-weight (6.5 g) and narrow (3 mm) box cutter of **transparent plastic** for better visual checking whilst cutting.

Application:

84 2043 – Specialised for thin films and thin paper.

84 2043 – For use even in narrow slots, e.g. in the automotive industry.



Additional divider



84 2043



TiN-coated blade

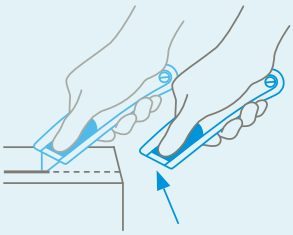


84 2045

number			10
84D 84 2043	Safety knife SECUMAX CARDYCUT **10 pieces**	TiN	eShop
84D 84 2045		TiN	eShop
Length		mm	71

martor SECUPRO: Fully automatic blade retraction

The intelligent cutting tools:
As soon as the blade exits the cut material it automatically retracts into the handle – without you doing anything.
We call this "enhanced safety".



martor Safety knives SECUPRO

SECUPRO 625

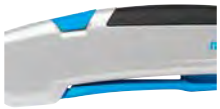
Safety knife with **21 mm depth of cut** and fully automatic blade retraction. Ergonomic pliers grip of aluminium (incl. soft-grip for optimum grip), with an easy-action lever to release the blade.
Safe and comfortable blade change, blade for 2 times use.

Application: Ideal for cardboard up to 3 layers, goods on rolls, rubber, PVC, carpeting and much more.

Spare part: For replacement blade see No. 842057 size 10 or ceramic blade No. 842059 size 2C.



84 2050



Outstanding ergonomics

84D 84 2050	Safety knife SECUPRO 625 with 1 blade		eShop
Length		mm	154

SECUPRO MEGASAFE

Safety knife with **17 mm depth of cut** and fully automatic blade retraction.
Ergonomic handle of aluminium with **slides on both sides for right-hand and left-hand users**.
Safe and comfortable blade change, blade for 2 times use.

Application: For cardboard up to 3 layers, goods on rolls, rubber, PVC and much more.

Spare part: For replacement blade see No. 842057 size 10 or ceramic blade No. 842059 size 2C.



84 2052



Easy blade change



Slides on both sides

84D 84 2052	Safety knife SECUPRO MEGASAFE with 1 blade		eShop
Length		mm	153

SECUPRO MAXISAFE

Safety knife **with 3-sided slide**, **16 mm depth of cut** and fully automatic blade retraction.
Optimised ergonomic handle of glass fibre-reinforced plastic and **metal element** underneath the blade slot, for **enhanced abrasion protection**.
Safe and comfortable blade change, blade for 2 times use.

Application: For cardboard up to 3 layers, plastic wrapping straps, adhesive tape, goods on rolls etc.

Spare part: For replacement blade see No. 842057 size 10 or ceramic blade No. 842059 size 2C.



84 2054



3-sided slide



Abrasion protection

Type		1
84D 84 2054	Safety knife SECUPRO MAXISAFE with 1 blade	eShop
Length	mm	148

SECUPRO MARTEGO

Safety knife with **9 mm depth of cut** and fully automatic blade retraction.
Ergonomic pliers grip of aluminium (incl. soft-grip for optimum grip), with an easy-action lever to release the blade. Safe and comfortable blade change, blade for 4 times use.

Application: For cardboard up to 2 layers, plastic wrapping straps, adhesive tape, goods on rolls, PVC and much more.

Spare part: For replacement blades see No. 842065 Size 10.



84 2060



Safe blade changing

84D 84 2060	Safety knife SECUPRO MARTEGO with 1 blade	eShop
Length	mm	155

SECUPRO MERAK

Light-weight safety knife with **9 mm depth of cut** and fully automatic blade retraction.
Ergonomic light-weight (59 g) pliers grip of glass fibre-reinforced plastic, with an easy-action lever to release the blade. Safe and comfortable blade change, blade for 4 times use.

Application: For cardboard up to 2 layers, plastic wrapping straps, adhesive tape, goods on rolls and much more.

Spare part: For replacement blades see No. 842065 Size 10.



84 2062

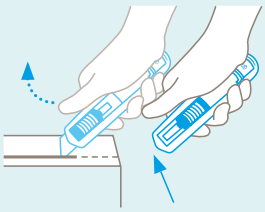


Prevents unintentional blade activity

84D 84 2062	Safety knife SECUPRO MERAK with 1 blade	eShop
Length	mm	128

martor SECUNORM: Automatic blade retraction

Thumbs up – for enhanced safety. As soon as you start cutting, release the slide.
This allows the blade to retract automatically back into the handle as soon as you finish the cut.



martor Safety knives SECUNORM

SECUNORM 380

Safety knife with **73 mm depth of cut** and automatic blade retraction.
Ergonomic handle of glass fibre-reinforced plastic (incl. soft-grip), with a sturdy metal rail for blade guidance.
Safe and easy blade change.
Left-handed users just switch over the high-quality blade in the handle.

Application: Cuts like a cutter knife but with even better safety - e.g. thicker materials such as expanded polystyrene or foam, insulating foam or insulating wool, cardboard up to 4 layers, sacking and all types of film.

Spare part: Replacement blade see No. 842072 size 10, blade with serrated edge No. 842073 size 10 or short blade No. 842077 size 10.



Easy blade change



Long blade extension



84 2070

84D 84 2070	Safety knife SECUNORM 380 with 1 blade	eShop
Length	mm	170.5

SECUNORM 500

Safety knife with **17 mm depth of cut** and automatic blade retraction.
Ergonomic and sturdy grip of aluminium incl. non-slip Soft-Grip on the slides - on both sides for right-handed and left-handed users. Safe and easy blade change. Blade for 2 times use.

Application: Ideal for all cut materials in general use, such as 3-layer cardboard, film, sacking, and plastic parcel strapping.

Spare part: For replacement blade see No. 842098 size 10, ceramic blade No. 842084 size 2C or pointed tips No. 842097 size 10.



84 2081



Blade change without tools. In addition a magnet prevents the blade falling out accidentally.



For right-handed and left-handed use

Type		1
84D 84 2081	SECUNORM 500 safety knife with 1 blade	eShop ■
Length	mm	143

SECUNORM 525

Safety knife with **18 mm depth of cut** and automatic blade retraction.
Ergonomic handle made from aluminium, including large soft-grip on the slide.
Safe and easy blade change. **Left-handed users just switch over the high-quality blade** in the handle. Blade for 2 times use.

Application: Ideal for all cut materials in general use, such as 3-layer cardboard, film, sacking, roll goods, foam, expanded polystyrene, PVC, etc.

Spare part: For replacement blade see No. 842085 size 10 or ceramic blade No. 842059 size 2C.



84 2079



For right handed and left-handed use

Type		1
84D 84 2079	SECUNORM 525 safety knife with 1 blade	eShop
Length	mm	143

SECUNORM 540

Safety knife with **36 mm depth of cut** and automatic blade retraction.
Ergonomic handle made from aluminium including large slide. Safe and easy blade change.
Left-handed users just switch over the high-quality blade in the handle.

Application: Ideal for all cut materials in general use, such as 3-layer cardboard, film, sacking, roll goods, foam, expanded polystyrene, PVC, etc.

Spare part: For replacement blades see No. 842077 Size 10.



84 2076



For right handed and left-handed use

Type		1
84D 84 2076	SECUNORM 540 safety knife with 1 blade	eShop
Length	mm	143

SECUNORM 175

Safety knife with **10 mm depth of cut** and automatic blade retraction.
Ergonomic handle of glass fibre-reinforced plastic with **slides on both sides for right-hand and left-hand users**. Safe and easy blade change. Blade can be used 4 times.

Application: Handy cardboard box opener which also cuts film, adhesive tape, plastic strapping and sacking without trouble.

Spare part: For replacement blades see No. 842022 Size 10.



84 2087



Easy blade change

84D 84 2087	Safety knife SECUNORM 175 with 1 blade	eShop
Length	mm	109.5

SECUNORM 300

Safety knife with **17 mm depth of cut** and automatic blade retraction.
Ergonomic light-weight handle with slide at both ends including non-slip soft-grip **for right-handed and left-handed users**.
Safe and easy blade change. Blade for 2 times use.
Handle made of at least 60% **recycled plastic** plus glass fibre reinforcement.

Application: Ideal for safe and trouble-free cutting of cardboard up to 2 layers, film, plastic strapping, adhesive tape, sacking and much more.

Spare part: For replacement blade see No. 842097 size 10 or ceramic blade No. 842084 size 2C.



84 2094



Easy blade change

Type		1
84D **84 2094**	SECUNORM 300 safety knife with 1 blade	eShop
Length	mm	140

SECUNORM MIZAR

Safety knife with **15 mm depth of cut** and automatic blade retraction.
Ergonomic light-weight (59 g) pliers grip of glass fibre-reinforced plastic, with an easy-action lever to release the blade. **Innovative 3-in-1 lock** for locking and unlocking the cutting tool, and for fitting a new blade. Blade for 2 times use.

Application: For all normal cutting tasks such as cutting cardboard up to 3 layers, film, plastic strapping, adhesive tape, sacking or textiles.

Spare part: For replacement blades see No. 842097 Size 10.



84 2095



Easy blade change



3-in-1 lock

84D **84 2095**	Safety knife SECUNORM MIZAR with 1 blade	eShop
Length	mm	139

SECUNORM 610 XDR

Safety knife with **32 mm depth of cut** and automatic blade retraction.
Unpainted aluminium handle with practical eyelet for secure attachment and open design for optimum operation – even when dirty.
Innovative **3-in-1 lock** for locking and unlocking the cutting tool, and for fitting a new blade.
With stainless, rounded trapezoidal blade. "XDR" = eXtra Dirt Resistant.

Size 1 – Supplied with universal trapezoidal blade.
Size 2 – Supplied with a large special blade.

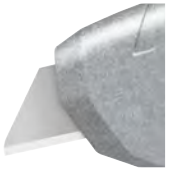
Application: The first universal bag opener that cuts efficiently and safely. It can open bags of any kind and thickness.



3-In-1 lock



84 2099_2



Detail view size 1.

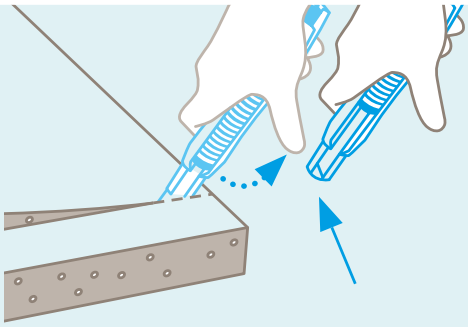


Detail view size 2.

Type		1	2
84D **84 2099**	Safety knife SECUNORM 610 XDR with 1 blade	eShop	eShop
Length	mm	158	

martor SECUBASE: Blade retraction and locking – optional safety

The automatic blade retraction function protects you from lacerations.
Prerequisite: As soon as you have started to cut, take your thumb off the slide.
Alternatively, you can also lock the slide and blade.
When you release the lock, the blade retracts as usual.



martor SECUBASE safety knife

Safety knife with **7 – 73 mm cutting depth** (7-step adjustment) and optional automatic blade retraction. Ergonomic handle made of glass fibre-reinforced plastic, with a sturdy metal rail on the inside for blade guidance. Safe and easy blade change. **Left-handed users just switch over the high-quality blade** in the handle.

Application: Cuts like a cutter knife but with even better safety - e.g. thicker materials such as expanded polystyrene or foam, insulating foam or insulating wool, cardboard up to 4 layers, sacking and all types of film.

Spare part: For spare blade see No. 842072 size 10 or blade with wave profile No. 842073 size 10.



Easy blade change



Long blade extension



Locking and retraction



For right handed and left-handed use



84 2100

Type		1
84D 84 2100	SECUBASE 383 safety knife with 1 blade	eShop
overall length	mm	170.5

martor Belt pocket

The sturdy belt pockets of hard-wearing nylon are sized exactly for the MARTOR knife and shears.
Fastening capability by clip or hook and loop fastening.
Size XXL – with removable strap.

Application examples



_S



_M



_L



_XXL

Type		S	M	L	XXL
84D 84 2200	Belt pocket with clip	eShop	eShop	eShop	eShop
Length	mm	215	215	215	180
Width	mm	53	60	68	130
Height	mm	23	28	40	48

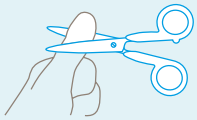


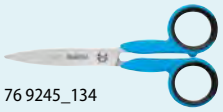
84 2200_M



84 2200_XXL

martor SECUMAX scissors from No. 76 9245 and SCRAPEX scraper from No. 83 7740





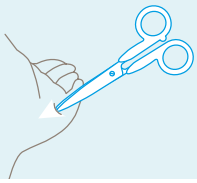
76 9245_134



76 9245_216



83 7740





76 9245_218



76 9245_285



83 7741

martor Cutting mat

Available in five different sizes, for insertion underneath all types of materials to be cut.

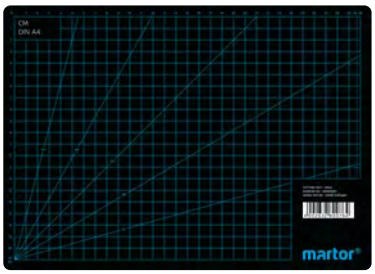
- Consisting of a fixed core and two wear-resistant outer faces.
- Self-healing: After the cut, the two outer faces immediately close up to one another again.

Size DINA5 – Printed grid with the MARTOR safety techniques:
German and English (front), French and Spanish (rear).
The type designation refers to the dimensions of the mat.

Size DINA1–DINA4 – Printed grid cm (front) and inch (rear).
The type designation refers to the size of the printed grid.



84 2210_DINA5



84 2210_DINA4

Type		DINA1	DINA2	DINA3	DINA4	DINA5
84D 84 2210	Cutting mat	eShop	eShop	eShop	eShop	eShop
Length	mm	870	620	440	320	210
Width	mm	620	440	320	230	148
Height	mm			3		
Legend		DIN A1	DIN A2	DIN A3	DIN A4	–

TAJIMA Safety cutter knife with aluminium die-cast handle

Robust, impact-resistant handle made of die-cast aluminium, powder-coated,
with **3 special-quality blades** (stored in the handle).
With automatic blade; the blade is spring mounted and
automatically retracts back into the handle on completion of the cutting operation.
Very good protection against injuries.

Advantage: Button allows blades to be changed **without using tools**.
No irritating dropping the blade when changing it, since it is held by a magnet.


Automatic blade retraction to prevent injuries.
84 4845

83M 84 4845	Safety cutter knife with die-cast aluminium handle, with automatic blade	eShop
overall length	mm	165
Number of blades		3

HOLEX Safety cutter knife with zinc die-cast handle

Sturdy handle made of die-cast zinc, powder-coated,
with 5 blades made of special steel (stored in the handle).
With **automatic blade.** The blade is spring mounted and
retracts **automatically** back into the handle when the cutting operation is finished.
Very good protection against injuries.


Automatic blade retraction to prevent injuries.
84 4850

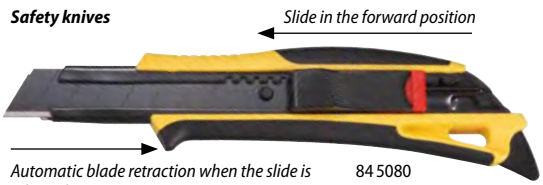
82B 84 4850	Safety cutter knife with die-cast zinc handle, with automatic blade	eShop
overall length	mm	150
Number of blades		5

TAJIMA Safety cutter knife with 2-component handle / snap-off blade Razar Black 18 mm

Blade extends and retracts in a precise metal guide. High quality blades, extremely sharp, with long service life.
Unique **safety cutter,** without kite mark, with ergonomic **2-component handle** and precision blade guide.
Multi-functional tip to the blade guide for opening tins, use as a screwdriver, opening cardboard boxes etc.
With an additional metal fin at the end of the handle for opening cardboard boxes.
With 1 snap-off blade (similar to No. 845021 size 10) with 8 segments. **18 mm wide.**

Advantage: Combines 2 types of knife in one: Safety knife **and** cutting knife.
- With the slide locked into position: high-quality cutting knife.
- With the slide pushed forward, becomes a fully-specified safety knife, i.e. when the slide is released the blade retracts back into the body.
  An extremely versatile knife!

Spare part: Spare blades see No. 845010 size 10 – 845019 size 50;
845021 size 10 and 845023 size 50.



Automatic blade retraction when the slide is released prevents injuries.
84 5080

Blade width	mm	18
83M 84 5080	QuickBack™ safety cutter knife with 2-component handle and work tip, **with 1 Razar Black snap-off blade**	eShop
Knife length without blade	mm	182
Blade length	mm	100
Blade thickness	mm	0.5
Number of snap-off points		8

Work tip can be used as a screwdriver or can opener.





Spare trapezoidal and hooked blades

The universal blade - **Lutz® experience**, the solution for all cutting work.

Description:

84 4710 – LUTZ spare blades / trapezoidal blades set, pack of 10, 61.0 × 18.7 × 0.63 mm

Note:

84 4720 – Not suitable for cutter knife No. 844845; 844850; 844890; 844895.

number			10
86E 84 4710	Spare blades set, 10 pieces, trapezoidal shape "experience"		eShop
86E 84 4720	Spare blades set, 10 pieces, hooked point "experience"		eShop



84 4710



84 4720

The hard blade - **Lutz® longlife** with **TiN-coated blade** for low blade wear and significantly longer working life. Depending on the material being cut this will result in a 2 - 8 times longer blade life.

Note:

84 4725 – Not suitable for cutter knife No. 844845; 844850; 844890; 844895.



84 4715

number			10
86E 84 4715	Spare blades set, 10 pieces, trapezoidal shape "longlife"	TiN	eShop
86E 84 4725	Spare blades set, 10 pieces, hooked point "longlife"	TiN	eShop



84 4725

Unbreakable **bimetal blade.** High quality tool steel as backing material with TiN-coated HSS blade up to 5 times longer tool life compared to conventional standard trapezoidal blades.

Advantage: Reduced risk of injury, permits special cutting operations in confined areas.



Conventional standard blade.



Unbreakable bi-metal blade.

number			10
86E 84 4730	Spare blades set, 10 pieces, trapezoidal shape bimetal	TiN	eShop



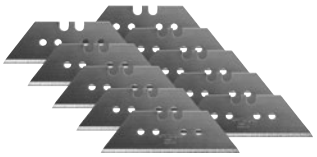
84 4730

The black blade - **Lutz® multisharp**, premium hardened blades with ultra-sharp ground edges.

Application: Optimised for plasterboard and for all cutting work.

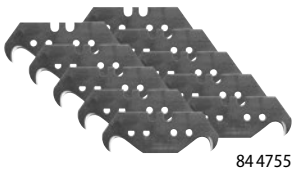
Note:

84 4755 – Not suitable for cutter knife No. 844845; 844850; 844890; 844895.



84 4745

number		10
86E 84 4745	Spare blades set, 10 pieces, trapezoidal shape "multisharp"	eShop
86E 84 4755	Spare blades set, 10 pieces, hooked point "multisharp"	eShop



84 4755

Spare snap-off blades 9 mm

84 4915 – TiN-coated blades.

84 4916/4918 – **Pointed 30° blade,** 7 sections – for fine and clean cuts.

84 4917/4918 – Extra-fine and ultra-sharp ground blade.

Suitable for:

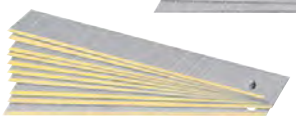
84 4910/4915/4917 – Cutter knife No. 844900; 844905; 844920; 844955; 845022; 844975; 845037.

84 4916/4918 – Cutter knife No. 844900; 844905; 844920; 844955.

number			10
86E 84 4910	Snap-off "experience" blades set, 10 pieces, 9 mm		eShop
86E 84 4915	Snap-off "longlife" blades set, 10 pieces, 9 mm	TiN	eShop
86E 84 4916	Snap-off "experience" blades set , 10 pieces, 9 mm, 30° tip		eShop
86E 84 4917	Snap-off "multisharp" blades set, 10 pieces, 9 mm		eShop
86E 84 4918	Snap-off "multisharp" blades set, 10 pieces, 9 mm, 30° tip		eShop
Blade length (84 4910, 84 4915, 84 4917)		mm	80
Blade length (84 4916, 84 4918)		mm	73
Blade width		mm	9
Blade thickness		mm	0.4
Number of snap-off points (84 4910, 84 4915, 84 4917)			13
Number of snap-off points (84 4916, 84 4918)			7



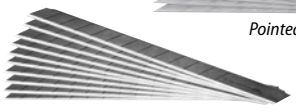
84 4910



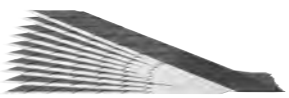
84 4915



Pointed 30° blade. 84 4916



84 4917



Pointed 30° blade. 84 4918

Spare snap-off blades 18 mm

84 5012 – With wave profile and TiN-coated blades.
84 5016 – **Without** snap off points.
84 5015/5019 – TiN-coated blades.
84 5018/5019/5023 – 50-piece pack in a sturdy special safety dispenser.
84 5021/5023 – Extra-fine and ultra-sharp ground blade.
Suitable for: Cutter knife No. 845000 – 845035 and 845039 – 845080.

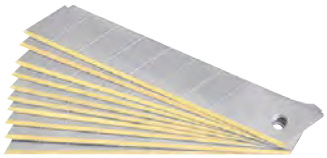


84 5018_50 / 84 5019_50
Pivot mechanism ensures safe blade withdrawal.

number			10	50
86E 84 5010	Snap-off "experience" blades set, 10 pieces, 18 mm		eShop ■	–
86E 84 5015	Snap-off "longlife" blades set, 10 pieces, 18 mm	TiN	eShop	–
86E 84 5012	Snap-off "longlife" blades set, 10 pieces, 18 mm **with wave profile**	TiN	eShop	–
86E 84 5016	"experience" blades set, 10 pieces, 18 mm, not snap-off		eShop	–
86E 84 5018	Snap-off "experience" blades set, 50 pieces, 18 mm		–	eShop
86E 84 5019	Snap-off "longlife" blades set, 50 pieces, 18 mm	TiN	–	eShop
86E 84 5021	Snap-off "multisharp" blades set, 10 pieces, 18 mm		eShop	–
86E 84 5023	Snap-off "multisharp" blades set, 50 pieces, 18 mm		–	eShop
Blade length		mm	100	
Blade width		mm	18	
Blade thickness		mm	0.5	
Number of snap-off points (84 5010, 84 5015, 84 5012, 84 5018, 84 5019, 84 5021, 84 5023)			8	



84 5010



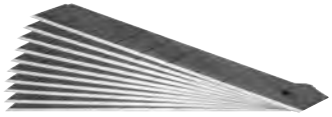
84 5015



Wave profile 84 5012



84 5016



84 5021

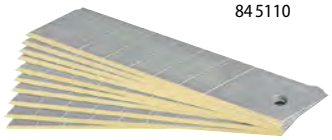
Spare snap-off blades 22 mm

84 5115 – TiN-coated blades.
Suitable for: Cutter knife No. 845100.

number			10
86E 84 5110	Snap-off "experience" blades set, 10 pieces, 22 mm		eShop
86E 84 5115	Snap-off "longlife" blades set, 10 pieces, 22 mm	TiN	eShop
Blade length		mm	100
Blade width		mm	22
Blade thickness		mm	0.65
Number of snap-off points			8



84 5110

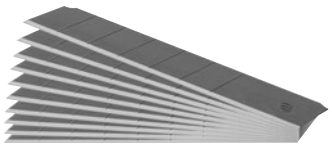


84 5115

Spare snap-off blades 25 mm

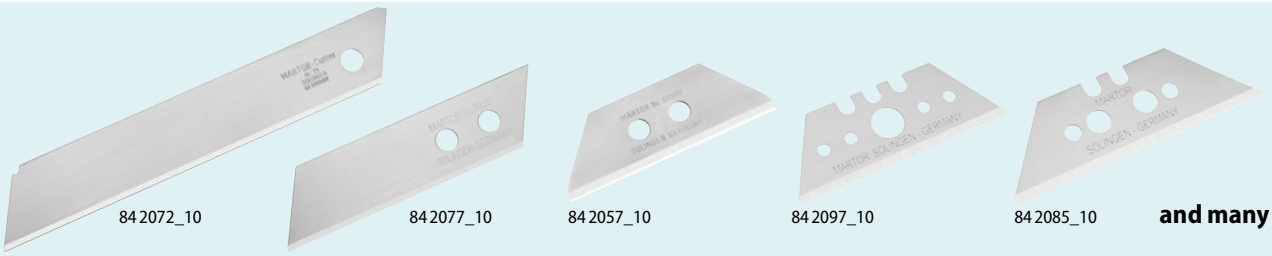
Extra-fine and ultra-sharp ground blade.
Suitable for: Cutter knife No. 845120 / 845121.

number			10
86E 84 5125	Snap-off "multisharp" blades set, 10 pieces, 25 mm		eShop
Blade length		mm	100
Blade width		mm	25
Blade thickness		mm	0.7
Number of snap-off points			7



84 5125

martor Spare blades can be found in the eShop or in the spare parts list.



84 2072_10 84 2077_10 84 2057_10 84 2097_10 84 2085_10 **and many more!**

TAJIMA Cutter knife with die-cast aluminium handle

Robust, impact-resistant handle made of die-cast aluminium, powder-coated, with **3 special-quality blades** (stored in the handle).
With **multi-section adjustable** blade. Blade can be fully retracted into the handle (protection from injury).

Advantage: Quick-change screw allows blades to be changed **without using tools**. No irritating dropping the blade when changing it, since it is held by a magnet.

Spare part: For spare blades see No. 844710 size 10 – No. 844755 size 10.



Adjustable blade 84 4840

83M 84 4840	Cutter knife with die-cast aluminium handle and retractable blade		eShop
overall length		mm	145
Number of blades			3

HOLEX Cutter knife with zinc die-cast handle

Sturdy handle made of die-cast zinc, powder-coated, **with 5 blades** made of special steel (stored in the handle).

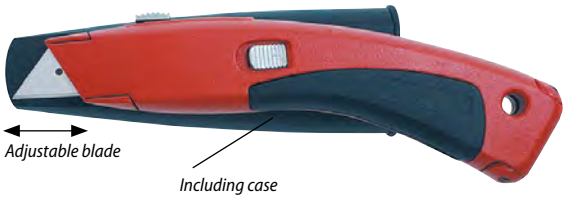
84 4700 – With **fixed** blade.
84 4750 – With **fixed** blade, in storage **case with belt clip.** Knife can be opened (without tools), with **magnetic blade mounting** and **spare blades storage** in the handle. Ergonomic **2-component handle.**
84 4830 – With spare blades in the handle (can be opened without tools). With ergonomic **2–part handle** and storage **case with belt clip.**
84 4800/4830 – With **multi-section adjustable** blade. Blade can be fully retracted into the handle (protection from injury).

Spare part: For spare blades see No. 844710 size 10 – No. 844755 size 10.


84 4700


Including case 84 4750


Adjustable blade 84 4800


Adjustable blade *Including case* 84 4830

82B 84 4700	Cutter knife with zinc die-cast handle and fixed blade		eShop
overall length		mm	135
Number of blades			5

82B 84 4750	Cutter knife with zinc die-cast handle and fixed blade, **with storage case**		eShop
overall length		mm	170
Number of blades			5

82B 84 4800	Cutter knife with zinc die-cast handle and retractable blade		eShop ■
overall length		mm	150
Number of blades			5

82B 84 4830	Cutter knife with zinc die-cast handle and retractable blade, **with storage case**		eShop
overall length		mm	200
Number of blades			5

LUTZ BLADES exactly Collection boxes for used blades

Collection box for safe storage and disposal of used blades.
As soon as the box is completely full, the cover is closed. The integral locking mechanism then ensures that the Safebox cannot be opened again. The full collection box can then be disposed of safely.

Application: For used blades such as snap-off blade segments, trapezoidal blades, and hook blades, scalpel blades etc.


84 5130

86E 84 5130	Collection box for used blades		eShop ■
Width		mm	100
Height		mm	210
Depth		mm	100

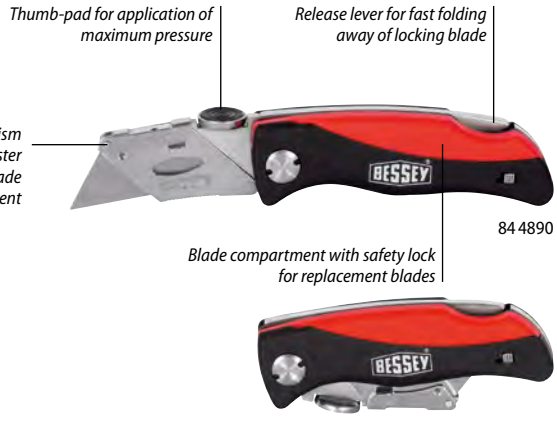
Cutter knife, fold-away blade

Sturdy cutter knife for trapezoidal blades (exchangeable). **Blade folds away**, reducing the risk of injury.

With comfortable plastic handle, storage for spare blades and belt clip.
Thumb-pad on handle for application of maximum pressure.

Supplied with: With 5 spare blades.

Spare part: For replacement blades see No. 844710 size 10; No. 844715 size 10; No. 844730 size 10 and No. 844745 size 10.



84 4890

86E 84 4890	BESSEY	Cutter knife with fold-away blade	eShop ■
length when folded away		mm	93
overall length		mm	160

Size 150 – With wood / metal combination handle and belt clip.
Size 165 – With comfortable plastic handle, storage for spare blades and belt clip. Thumb-pad on handle for application of maximum pressure.

Supplied with:
Size 165 – With 5 spare blades.

Spare part: For replacement blades see No. 844710 size 10; No. 844715 size 10; No. 844730 size 10 and No. 844745 size 10.



84 4895_150



84 4895_165

overall length		mm	150	165
82B 84 4895	HOLEX	Cutter knife with fold-away blade	eShop	eShop
length when folded away		mm	93	97

Cutter knife set

Supplied with: 1 cutter knife with fold-away blade No. 844890
15 trapezoidal blades
5 hooked blades
2 linoleum blades
2 cut-out blades



84 4891

Number of pieces			20
86E 84 4891	BESSEY	Cutter knife with fold-away blade	eShop
Storage in			Nylon bag

Safe cutting

CUTTING:
- Before performing cutting, the user must familiarise themselves with the product and the operation of the safety technology.
- The user must always cut away from the body and wear safety gloves.

KEEPING SAFE:
- No knives in your trouser pockets - keep even safety knives in a belt bag.
- If there is a catch to secure a slide or lever, this should also be used.

CLEANING:
- A safety knife - just like any other tool - must be cleaned and looked after so that it always performs correctly.
- For thorough and safe cleaning the blade must first be taken out and put aside.

CHANGING THE BLADE:
- Blunt or damaged blades must always be changed in good time. If you carry on using a knife when the blade is blunt, you have to apply significantly more force.
  Damaged blades can disable the safety arrangement and thus increase the risk of injuries.
- Dispose of used blades in a secure and lockable container (for example: No. 84 5130).
  Under no circumstances should they end up loose in paper or residual waste.


09 4445


09 4438


84 5065


Application example No. 84 2200


84 5130

Cutter knife with snap-off blade 9 mm

Blade extends and retracts in precise metal guide, stops automatically. High quality blades, extremely sharp, with long service life.

84 4900 – Impact-resistant plastic handle, with 3 snap-off blades (similar to No. 844910 size 10) with 13 segments, **9 mm wide.**

84 4905 – With 3 snap-off blades (similar to No. 844916 size 10) with 7 segments, **9 mm wide, 30°.** Slim stainless steel knife for very fine and clean cutting.

84 4920 – Slender and ergonomic **2-component handle** for powerful but also precise cutting. Easy-grip **Haptoprene** coating with a core of specially tough, impact-resistant polypropylene. Safe working, since the risk of slipping is minimised, even with wet or oily hands. Automatic blade stop. With 3 snap-off blades (similar to No. 844910 size 10) with 13 segments, **9 mm wide.**

84 4955 – Impact-resistant plastic handle, with 3 snap-off blades (similar to No. 844910 size 10) with 13 segments, **9 mm wide.** Integral locking mechanism in the slide.

84 4975 – High-quality plastic handle, with 3 snap-off blades (similar to No. 844910 size 10) with 13 segments, **9 mm wide.**

Spare part:

84 4975 – For spare blades see No. 844910 size 10; 844915 size 10 and 844917 size 10.

84 4900–4955 – For spare blades see No. 844910 size 10 – No. 844918 size 10.



84 4920



84 4900



84 4905

Blade width		mm	9
81B 84 4920	Garant	Cutter knife with 2-component handle **with 3 snap-off blades**	eShop
83M 84 4900		Cutter knife with 1-component handle **with 3 snap-off blades**	eShop
83M 84 4905	TAJIMA	Cutter knife made of stainless steel **with 3 snap-off blades 30°**	eShop
83M 84 4955		Cutter knife with 1-component handle and lockable slider, **with 3 snap-off blades**	eShop
82B 84 4975	HOLEX	Cutter knife with 1-component handle **with 3 snap-off blades**	eShop
Knife length without blade (84 4920)		mm	145
Knife length without blade (84 4900, 84 4955, 84 4975)		mm	130
Knife length without blade (84 4905)		mm	120
Blade length (84 4920, 84 4900, 84 4955, 84 4975)		mm	80
Blade length (84 4905)		mm	73
Blade thickness		mm	0.4
Number of snap-off points (84 4920, 84 4900, 84 4955, 84 4975)			13
Number of snap-off points (84 4905)			7



84 4955

Detail No. 84 4955



Blade can be moved.



Blade locked – accidental movement of the blade virtually impossible.



84 4975

TAJIMA Cutter knife with snap-off blade Razar Black 9 mm

Blade extends and retracts in precise metal guide, stops automatically. High quality blades, extremely sharp, with long service life.

84 4960 – Slim stainless steel knife in black for very fine and clean cutting. With 1 snap-off blade (similar to No. 844918 size 10) with 7 segments, **9 mm wide, 30°.**

84 4970 – Handy **2-component handle** with comfortable elastomer coating. **Multi-functional tip** to the blade guide for opening tins, use as a screwdriver, opening cardboard boxes etc. With 1 snap-off blade (similar to No. 844917 size 10) with 13 segments, **9 mm wide.**

Spare part: For spare blades see No. 844910 size 10 – 844918 size 10.



84 4960



84 4970

Blade width		mm	9
83M 84 4960	Cutter knife made of stainless steel, **with 1 30° Razar Black snap-off blade**		eShop
83M 84 4970	Cutter knife with 2-component handle and work tip, **with 1 Razar Black snap-off blade**		eShop
Knife length without blade		mm	160
Blade length (84 4960)		mm	73
Blade length (84 4970)		mm	80
Blade thickness		mm	0.4
Number of snap-off points (84 4960)			7
Number of snap-off points (84 4970)			13

Cutter knife with snap-off blade 18 mm

Blade extends and retracts in a precise metal guide. High quality blades, extremely sharp, with long service life.

- 84 5000 – Impact-resistant plastic handle, with 3 snap-off blades (similar to No. 845010 size 10) with 8 segments, **18 mm wide.**
- 84 5020 – Comfortably rounded but slender **2-component handle** for powerful but also precise cutting. Easy-grip **Haptoprene** coating with a core of specially tough, impact-resistant polypropylene. Safe working, since the risk of slipping is minimised, even with wet or oily hands. Automatic blade stop. With **3** snap-off blades (similar to No. 845010 size 10) with 8 segments, **18 mm wide.**
- 84 5030 – Ergonomic **2-component handle** with rubber coating for safe working. Absolutely secure blade fixing, with a **knurled clamping screw.** With 1 snap-off blade (similar to No. 845010 size 10) with 8 segments, **18 mm wide.**
- 84 5055 – Impact-resistant plastic handle with integral locking mechanism in the slide. With 3 snap-off blades (similar to No. 845010 size 10) with 8 segments, **18 mm wide.**
- 84 5070 – Handy **2-component handle** with comfortable elastomer coating. Automatic blade stop. **Multi-functional tip** to the blade guide for opening tins, use as a screwdriver, opening cardboard boxes etc. With 3 snap-off blades (similar to No. 845010 size 10) with 8 segments, **18 mm wide.**
- 84 5075 – High-quality plastic handle, with 3 snap-off blades (similar to No. 845010 size 10) with 8 segments, **18 mm wide.**

Spare part: For spare blades see No. 845010 size 10 – 845019 size 50; 845021 size 10 and 845023 size 50.



84 5020



84 5030

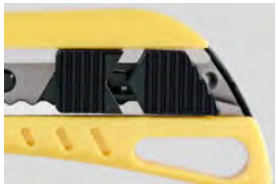

84 5070


84 5000


84 5055

Details No. 84 5055.


Blade can be moved.


Blade locked – accidental movement of the blade virtually impossible.



84 5075

Blade width			mm	18
81B 84 5020	Garant	Cutter knife with 2-component handle, **with 3 snap-off blades**		eShop
83M 84 5030	TAJIMA	Cutter knife with 2-component handle, **with 1 snap-off blade**		eShop
83M 84 5070		Cutter knife with 2-component handle and work tip, **with 3 snap-off blades**		eShop
83M 84 5000		Cutter knife with 1-component handle, **with 3 snap-off blades**		eShop
83M 84 5055		Cutter knife with 1-component handle and lockable slider, **with 3 snap-off blades**		eShop
82B 84 5075	HOLEX	Cutter knife with 1-component handle, **with 3 snap-off blades**		eShop
Knife length without blade (84 5020, 84 5030, 84 5000, 84 5055)			mm	160
Knife length without blade (84 5070)			mm	170
Knife length without blade (84 5075)			mm	165
Blade length			mm	100
Blade thickness			mm	0.5
Number of snap-off points				8

TAJIMA Cutter knife with 2-component handle / snap-off blade Razar Black 18 mm

Ergonomic 2-component handle with blade that extends and retracts in a precise metal guide.
High-quality blade, extremely sharp, with long service life.
Multi-functional tip to the blade guide for opening tins, use as a screwdriver, opening cardboard boxes etc. With an additional metal fin at the end of the handle for opening cardboard boxes.
With 1 snap-off blade (similar to No. 845021 size 10) with 8 segments.
18 mm wide.

84 5090 – Absolutely secure blade fixing, with a **knurled clamping screw.**
84 5095 – Automatic blade stop.

Spare part: For spare blades see No. 845010 size 10 – 845019 size 50; 845021 size 10 and 845023 size 50.


84 5090


84 5095

Blade width		mm	18
83M 84 5090	Cutter knife with 2-component handle and work tip, **with 1 Razar Black snap-off blade**		eShop
83M 84 5095			eShop
Knife length without blade		mm	182
Blade length		mm	100
Blade thickness		mm	0.5
Number of snap-off points			8

HOLEX Cutter knife with zinc die-cast handle / snap-off blade

High-quality, retractable blade with extreme sharpness and long service life in precise metal guidance, locks automatically.

Advantage: Zinc die-cast handle: High load capacity and hardness, yet very light. Outstanding corrosion resistance, non-sparking and non-magnetic.

Spare part:

84 5037 – For spare blades see No. 844910 size 10; 844915 size 10 and 844917 size 10.
84 5039 – For spare blades see No. 845010 size 10– 845019 size 50; 845021 size 10 and 845023 size 50.


84 5037


84 5039

Blade width		mm	9
82B 84 5037	Cutter knife with zinc die-cast handle **with 1 snap-off blade**		eShop
Knife length without blade		mm	130
Blade length		mm	80
Blade thickness		mm	0.4
Number of snap-off points			13

Blade width		mm	18
82B 84 5039	Cutter knife with zinc die-cast handle **with 1 snap-off blade**		eShop
Knife length without blade		mm	160
Blade length		mm	100
Blade thickness		mm	0.5
Number of snap-off points			8

TAJIMA "Aluminist" cutter knife with die-cast aluminium handle / snap-off blades 18 mm

High quality professional version of die-cast aluminium, powder-coated.
Blade extends and retracts in a precise metal guide.
With 3 snap-off blades with 8 segments, **18 mm wide.**
Quality blades, extremely sharp, with long working life.

84 5040 – **Blade stops automatically.**
84 5045 – With **clamping screw** for stopping the blade.

Spare part: For spare blades see No. 845010 size 10– 845019 size 50; 845021 size 10 and 845023 size 50.



84 5040



84 5045

Blade width		mm	18
83M 84 5040	"Aluminist" cutter knife with die-cast aluminium handle and automatic locking, **and 3 snap-off blades**		eShop
83M 84 5045	"Aluminist" cutter knife with die-cast aluminium handle and locking screw, **and 3 snap-off blades**		eShop
Knife length without blade		mm	170

Cutter knife CutiX® with magnesium handle / snap-off blade 18 mm

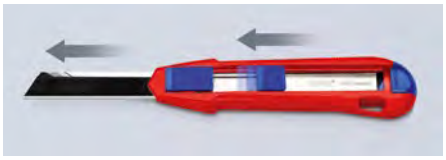
Reliable companion with unique blade stabilisation.
Innovative stabilisation rail with variable extension functionality.
Sturdy, long-life magnesium body.
As light as plastic, as strong as die-cast aluminium.
Attachment eye for securing the tool.
With 3 snap-off blades with 8 segments, 18 mm wide.

Advantage:
- Separate flat and ergonomic slider for blade and stabilisation rail. No accidental actuation of the slider.
- Unique blade stabilisation. Apply targeted pressure without risk of injury. No accidental bending or breaking of the blade.

Spare part: For spare blades see No. 845010 size 10 – 845019 size 50; 845021 size 10 and 845023 size 50.



84 5051



Innovative stabilisation rail that is variably extendible



Reduced risk of injury:
*On the left – **with** extendible stabilisation rail.*
*On the right – **without** extendible stabilisation rail.*

Blade width		mm	18
86E 84 5051	Cutter knife CutiX® with magnesium handle, **with 3 snap-off blades**		eShop
Knife length without blade		mm	165
Blade length		mm	100
Blade thickness		mm	0.5
Number of snap-off points			8

Cutter knife with feed magazine / snap-off blade 18 mm

Robust, **non-slip elastomer handle** for ergonomically optimised working with anti-slip control.
Blade extends and retracts in precise metal guide, stops automatically.
With 3 snap-off blades with 8 segments, **18 mm wide.**

Advantage: Extremely quick and safe working, due to **automatic reload magazine** for up to 6 blades.

Spare part: For spare blades see No. 845010 size 10 – 845019 size 50; 845021 size 10 and 845023 size 50.



Blade width		mm	18
83M 84 5035	Cutter knife with automatic feed magazine, **with 3 snap-off blades**		eShop
Knife length without blade		mm	170
Blade length		mm	100
Blade thickness		mm	0.5
Number of snap-off points			8



Remove the old blade.



Adjust the new blade.



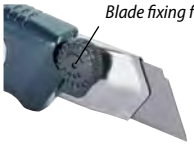
Magazine for 6 blades.

Cutter knife with die-cast aluminium handle / snap-off blade 22 mm

High quality professional version of die-cast aluminium, powder-coated.
Blade extends and retracts in precise metal guide, stops automatically.
Additional blade clamping with knurled screw for precise cutting.
With 3 snap-off blades with 8 segments, **22 mm wide.**
Quality blades, extremely sharp, with long working life.

Spare part: For spare blades see No. 845110 size 10 and No. 845115 size 10.





Blade fixing for precise cuts.

Blade width		mm	22
83M 84 5100	Cutter knife with die-cast aluminium handle, **with 3 snap-off blades**		eShop
Knife length without blade		mm	170
Blade length		mm	100
Blade thickness		mm	0.65
Number of snap-off points			8

Safety holster for cutter knife

Sturdy ergonomic holster of polypropylene with soft elastomer inlays.
Safe and comfortable storage of cutter knives, e.g. on the belt.

Suitable for: All cutter knives (with 18 mm and 22 mm snap-off blade) No. 845000 – 845100, but also other comparable cutter knives.



Application example



83M 84 5065	Holster for cutter knives		eShop
overall length		mm	180

TAJIMA Cutter knife with 2-component handle / snap-off blade Razar Black 25 mm

Handy **2-component handle** with comfortable elastomer coating. Blade extends and retracts in a precise metal guide. Quality blades, extremely sharp with a long working life. With 1 snap-off blade, with 7 sections.

84 5120 – Automatic blade stop.

84 5121 – Absolutely secure blade fixing, with a **knurled clamping screw.**

Blade width		mm	25
83M 84 5120	Cutter knife with 2-component handle **with 1 Razar Black snap-off blade**		eShop
83M 84 5121			eShop
Knife length without blade (84 5120)		mm	230
Knife length without blade (84 5121)		mm	235
Blade length		mm	100
Blade thickness		mm	0.7
Number of snap-off points			7



84 5120



84 5121

Insulation knife

84 5150 – Sturdy handle of die-cast zinc, powder-coated, with 1 extra long fixed blade of special steel. Simple handle opening to change the blade without additional tools.

Application: For clean cutting of insulation material boards, saving time and effort.



84 5150

82B 84 5150	HOLEX Insulation knife with 1 blade, 140 mm long		eShop
86E 84 5155	LUTZ BLADES exactly Insulation knife blades set, 5 pieces, 140 mm long		eShop
Blade length		mm	140
Blade width		mm	19
Blade thickness		mm	0.9
overall length with blade (84 5150)		mm	285



84 5155

MOZART FINEST IN CUTTING Precision knife (scalpel)

Precision knife with exchangeable blade for very fine cutting. Protective cap with integral hex key for changing the blades. 100% made in Germany.

Size P1A – Powerful, ergonomic knife for fine cuts. Handle coated with TPE for optimum grip.

Size P2A – Slim knife for very fine cuts. Handle of die-cast zinc with TPE insert for optimum grip.

Application: For deburring plastic parts and for all precise cutting tasks.

Supplied with: Handle including 1 universal blade No. 845355 size 50 and protective cap with integral hex key.



84 5350_P1A



84 5350_P2A

Type			P1A	P2A
86E 84 5350	Precision knife **with 1 blade**		eShop ■	eShop
Knife length without blade		mm	138	118



Protective cap with integral hex key for changing the blades.

Precision blades

Dimensionally stable blades of high-alloy carbon steel with edges of outstanding and sustainable sharpness.

Size 53 – Ultra-pointed shape for very fine cutting tasks.

Size 50 – Universal shape, precision ground.

Size 52 – Rounded shape for preventing puncture wounds.

84 5356 – With TiN-coated HSS cutting edge.

Suitable for: Mozart precision knife No. 845350.

Supplied with: 100 blades in safety dispenser.



Precision blades in safety dispenser.

84 5355



84 5355_50



84 5355_52



84 5355_53



84 5356_53

Type			50	52	53
86E 84 5355	Precision blades set **100 pieces**		eShop	eShop	eShop
86E 84 5356	Precision blades set **100 pieces**	TiN	–	–	eShop
Blade length		mm	32.8	31.1	32.8
Blade width		mm		5.7	
Blade thickness		mm		0.5	

Garant Swiss Pocket Tool

Original Swiss pocket tool in unmatched quality, precision, practicality, and functionality.
Length 110 mm with **locking blade, ball-point pen,**and tweezers with scale of length.

Application: An all-purpose tool and "friend in need", a must-have for every tool cabinet and every toolbox.



81B 84 6000	Pocket tool	eShop ■
overall length	mm	110
Number of functions		14

Swiss Pocket Tool

Original Swiss pocket tool in unmatched quality, precision, practicality, and functionality. **Length 58 mm**. With knife blade, nail file with screwdriver, scissors, tweezers, tooth pick and key ring.

Application: As a "friend in need", this pocket tool will be your companion during your working life and leisure time.



Type		60
80N 84 6010	Pocket tool	eShop ■
overall length	mm	58
Number of functions		7

VICTORINOX Swiss Pocket Tool / Swiss Tool

Original Swiss pocket and multi-function tool in unmatched quality, precision, practicality, and functionality.

Application: An all-purpose tool and "friend in need", a must-have for every tool cabinet and every toolbox.

Note: Please comply with the relevant national offensive weapons regulations!
Germany - WaffG § 42a Section 1 no. 3 permits the carrying of fixed-blade knives only for trade use, maintenance of traditions or participation in sports.



84 6050_90



84 6050_60L



84 6050_120R



84 6050_90C



84 6050_90A



84 6050_90E



84 6050_90X

Type		60L	90	90A	90C	90E	90X	120R
83O 84 6050	Pocket tool	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop
overall length	mm	58	91	93	91	93	93	111
Number of functions		10	12	2	32	7	9	14

VICTORINOX Swiss Pocket Tool / Swiss Tool

Original Swiss pocket and multi-function tool in unmatched quality, precision, practicality, and functionality.

Application: An all-purpose tool and "friend in need", a must-have for every tool cabinet and every toolbox.

Supplied with: Leather case.

Note:
84 6100 Size TOOL-K – The multi-function tool is additionally equipped with a set of bits and a corkscrew.



84 6100_TOOL



84 6100_TOOL-K

Type		TOOL	TOOL-K
830 84 6100	Multi-function tool	eShop	eShop
overall length	mm	115	
Number of functions		28	39



84 6150_SPIRIT

Type		SPIRIT
830 84 6150	Multi-function tool	eShop
overall length	mm	105
Number of functions		26

BESSEY Multitool

Handy multi-function tool with the most popular functions:
Scissors, knife, saw, file, and various screwdrivers.
All tools of stainless steel, non-slip handles with soft inlays.
Including belt pocket.





84 6075

86E 84 6075	Multi-function tool	eShop
overall length	mm	175
Number of functions		7

There's more in it for you– Tool assortments and textile bags

Discover a diverse selection of practical tool assortments for any situation in product group 68 (from page 692 onwards), as well as the robust, practical textile bags – the ideal companion for everyday life.
With plenty of storage space and a contemporary design, they offer perfect functionality for any application.
Further versions can be found in product group 69 (from page 709 onwards).



68 0132_21



68 0157_20



69 2267_1



68 0135_21



69 2230_1

GERBER Multi-Tool DUAL-FORCE

General-purpose multi-function tool.
Pliers with 2-way adjustable sliding joint and 2 times higher pliers strength thanks to multi-layer design.
12 functions in a compact, non-rusting stainless steel design.

Function:
- Wire stripper
- Wire cutter
- 2-position sliding joint pliers: small and large gripping pliers, flat-nose pliers
- Bit screwdriver holder with centred axis
- Cutter tool with smooth blade (length 8.2 cm)
- Straight edge
- Saw
- File milled on three sides
- Chisel
- Suspension eye
- Cross-head screwdriver bit PH1
- Cross-head screwdriver bit PH2
- Slot-head screwdriver bit 1.0×4.77 mm

Application: The mobile toolbox in a practical belt holster.
Supplied with: Incl. sturdy belt holster.

Note: Please comply with the relevant national offensive weapons regulations! Germany – WaffG § 42a Section 1 no. 3 permits the carrying of fixed-blade knives only for trade use, maintenance of traditions or participation in sports.



84 6080



12 lockable functions



Supplied in a sturdy belt holster

Type		DUAL-FORCE
86E 84 6080	Multi-Tool	eShop
overall length	mm	196
Number of functions		12
Weight	g	340

GERBER Multi-Tool TRUSS

Compact multifunctional tool for full range of functions.
Pliers with butterfly opening mechanism and locking mechanism for the external tools.
17 functions in a compact, non-rusting stainless steel design.

Function:
- Wire cutter
- Wire stripper
- Long nose pliers, spring-supported
- Small gripping pliers
- Knife blade with smooth edge (length 5.7 cm)
- Knife blade with serrated edge (length 5.7 cm)
- Straight edge
- Saw
- File
- Scissors
- Can opener
- Bottle opener
- Awl
- Cross-head screwdriver PH2
- Flat-slotted screwdriver large / medium / small

Application: General-purpose multi-function tool.
Supplied with: Incl. sturdy belt holster.

Note: Please comply with the relevant national offensive weapons regulations! Germany – WaffG § 42a Section 1 no. 3 permits the carrying of fixed-blade knives only for trade use, maintenance of traditions or participation in sports.



17 lockable functions.

84 6085



Supplied in a sturdy belt holster.

Type		TRUSS
86E 84 6085	Multi-Tool	eShop
overall length	mm	165
Number of functions		17
Weight	g	248

Malleable cast iron screw clamps

High quality malleable cast iron clamping arms; strong prismatic steel slide beam, knurled, electro-galvanised. Smooth running steel spindle, burnished with trapezoidal thread and movable jaw. Instant (high speed) adjustment, reliable clamping.

Standard: **DIN 5117**

Size 100–400 – With plastic protective cover on the clamping jaw.
Size 500–2500 – **Without protective cap**.
86 0050 – Moving jaw with integral **spindle locking prevents the release** of the spindle even in case of vibrations. Maximum force transfer due to **power grip** with easy-grip Haptoprene surface and impact-resistant PP core. Surface structure is anti-slip even with wet, oily hands.
86 0000 Size 100–400 – Clamping force of up to 6000 N.
86 0000 Size 500–2500 – Clamping force of up to 7000 N.
86 0050/0000 – Movable clamping arm **with anti-slip protection,** preventing inadvertent release of the clamp. Movable pressure pad from size 160 can be exchanged without tools.

Spare part:
86 0000 – Protective cap No. 860115.
86 0050 – Protective cap No. 860051.



Spindle locking in the unloaded state.



Spindle locking loaded.



Anti-slip protection 860000 / 860050

Malleable cast iron deep throat steel clamps are still available online under No. 86 0300.





Quality feature:
strong prismatic section steel sliding rails.





Jaw capacity		mm	100	120	160	200	250	300	400	500
81D 86 0050	Garant	Malleable cast iron screw clamp	–	–	eShop	eShop	eShop	eShop	eShop	eShop
83J 86 0000	BESSEY		eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
82C 86 0100	HOLEX		eShop	–	eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	15×5	20×5	25×6	27×7	29×9	32×10	32×10	35×11
Throat		mm	50	60	80	100	120	140	175	120

Jaw capacity		mm	600	800	1000	1250	1500	2000	2500
81D 86 0050	Garant	Malleable cast iron screw clamp	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
83J 86 0000	BESSEY		eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
82C 86 0100	HOLEX		eShop	eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
Cross section of the slide rail		mm	35×11						
Throat		mm	120						

Lightweight malleable cast iron screw clamp

Jaw capacity		mm	150	200/60	200/80	250	300	400	500
82C 86 0200	HOLEX	Lightweight malleable cast iron screw clamp	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	15×5	20×5	25×6	27×7	29×9	29×9	29×9
Throat		mm	50	60	80	100	120	120	120

BESSEY One-hand clamp "EHZ" with 2-component handle

Clamp body of quenched and tempered steel. Housing and lever of glass fibre reinforced polyamide. Flexible plastic protective covers for gentle clamping. **Fast clamping** of components **using only one hand** due to lever advance. Can be operated using the **2-component handle** or from the rail side. **Positive clamping** (and releasing) by means of trapezoidal thread spindle as with normal all-steel clamps. Ergonomic release button for easy slide bar movement. Clamping force up to 3500 N.

Application: **Universally useful,** in particular, where the **user has only one hand free for clamping,** e.g. when holding strips, profiles, cables, pipes etc. Also advantageous for **overhead work** and **springy** or **yielding components.**





Jaw capacity		mm	300	600
83K 86 0250	One-hand clamp "EHZ" with 2-component handle		eShop	eShop
Cross section of the slide rail		mm	19.5×9.5	
Throat		mm	100	

“DuoKlamp” one-hand clamp for clamping and spreading

Rails of drawn steel, burnished. Sliding jaw, fixed jaw, body, and pump handle of glass fibre reinforced polyamide (unbreakable).
Large flat clamping faces permit clamping all round the rail.
Handy **rotary button** for quick **change-over** from clamping to spreading.
With release handle for quick adjustment.

Application: For general purpose use, easy to use one-handed for low clamping pressures (up to 1200 N).
Clamping and spreading with quick change-over.





86 0280

Jaw capacity		mm	160	300	450	650
83K 86 0280	One-hand clamp, reversible “DuoKlamp DUO”		eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	20×5			
Spreading width		mm	75 – 235	75 – 380	75 – 535	75 – 685
Throat		mm	85			

One-hand clamp “EZ360”, for clamping and spreading with rotating handle

Upper and lower part of glass-fibre reinforced polyamide. Hollow profile rail made of burnished steel. The plastic housing protects the grip mechanism from dust and chips. The handle can be positioned in such a way that an optimal pumping position and thus better force application is achieved. The handle can also be swivelled out of the working area after the clamping process. This allows the use of several clamps in a very small space.

- 2-component plastic handle with pump lever.
- Innovative 360° rotating mechanism allows the grip unit to be placed around the rail.
- 12-step detent mechanism to securely hold the grip position.
- Large clamping faces with removable protective caps.
- Clamping force of up to 1400 N.
- Tool-free changeover from clamping to spreading.
- One-handed operation without effort.







86 0288

Jaw capacity		mm	150	300	450	600
83K 86 0288	Reversible one-hand clamp “EZ360” with 360° rotating handle		eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	18×5			
Spreading width		mm	195 – 315	195 – 465	195 – 615	195 – 765
Throat		mm	80			
Weight		kg	0.78	0.87	0.96	1.06

EZ360 ONE-HAND CLAMP WITH FULLY ROTATABLE HANDLE UNIT

Thanks to the innovative 360° rotating mechanism, the handle position can be perfectly adapted to the working situation. No matter whether the clamp needs to be positioned high up, down, in a confined space or from the opposite side,
the new EZ360 is a very convenient solution in all situations.







One-hand clamp for clamping and spreading

Ergonomically shaped 2-component plastic handle, burnished rail of drawn steel.
No tools required for conversion to spreading, thanks to intelligent release mechanism in the upper part, **reversible**. With release handle for quick adjustment.

Application: General purpose use, easy to use one-handed for clamping pressures (up to 2000 N).


86 0285


86 0286

Jaw capacity		mm	150	300	450	600
83K 86 0285	BESSEY	One-hand clamp, reversible	eShop	eShop	eShop	eShop
82C 86 0286	HOLEX		eShop	eShop	eShop	eShop
Cross section of the slide rail (86 0285)		mm	19×6			
Cross section of the slide rail (86 0286)		mm	20×6			
Spreading width (86 0285)		mm	170 – 360	170 – 510	170 – 660	170 – 810
Spreading width (86 0286)		mm	200 – 415	200 – 565	200 – 715	200 – 865
Throat (86 0285)		mm	80			
Throat (86 0286)		mm	90			



"GearKlamp GK" geared clamp

Ergonomically shaped 2-component plastic handle, burnished rail of drawn steel.
Fibreglass-reinforced plastic body, smooth-running spindle with trapezoidal thread and tiltable pressure pad.
With release handle for quick adjustment.

Application: Enormously flexible and suitable for use even in the tightest spaces, for clamping forces up to 2000N.


Capable of clamping components even in very restricted spaces.

Driving mechanism protected from dust



Fixed jaw with cross prism





Jaw capacity		mm	150	300	450	600
83K 86 0271	"GearKlamp GK" geared clamp		eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	19×6			
Throat		mm	60			

The clever GearKlamp GK











The **GearKlamp GK** from BESSEY is much smaller compared with classic screw, lever or one-hand clamps. Its patent-pending mechanism enables the handle to be separated from the spindle and positioned around the rail. This makes it simple to master clamping tasks perfectly – even in the tightest spaces – with up to 200 kg of clamping force.

The **GearKlamp GK** is:
- Uniquely compact in its design.
- Ergonomic in its use.
- Robust in its technology.

Further information can be found on the Bessey website.

86

"Revo KRE" body clamp for clamping and spreading

Beam of bright drawn steel, electro-galvanised. Moving jaw with double anti-slip protection. Smooth running steel spindle with trapezoidal thread, burnished. Metal, reinforced plastic housing. Clamping forces up to **8000 N.**

Application: The jaws surround the beam, thus can be used to clamp at the sides and the rear. This allows access to clamping positions inaccessible to conventional clamps. Can be converted to spreading, **no tools required.**

Note:	**Successor product to No. 860290.**

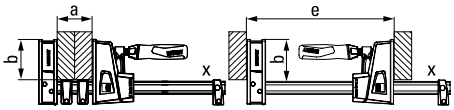






Jaw capacity a	mm	600	800	1000	1250
83K 86 0291 "Revo KRE" body clamp		eShop	eShop	eShop	eShop
Cross section of the slide rail	mm	29×9			
Spreading width e	mm	255 – 730	255 – 930	255 – 1130	255 – 1355
Throat b	mm	95			
Weight	kg	2.76	3.1	3.45	3.87

Clamping / spreading



Spring clamp

Lightweight and handy version with ergonomic handles.
Movable contact faces which adjust optimally to the various contours.
Size 35; 50; 75 – With ergonomic 2-component handles.


86 0350_25


86 0350_50


86 0351_50

Jaw capacity	mm	25	35	38	50	75
83K 86 0350 BESSEY Spring clamp		eShop	eShop	–	eShop	eShop
82C 86 0351 HOLEX Spring clamp		–	–	eShop	eShop	eShop
Throat (86 0350)	mm	30	37	–	50	70
Throat (86 0351)	mm	–	–	30	45	65

Type		25SET
82C 86 0352 HOLEX Spring clamp set, 4 pieces		eShop
Throat	mm	20


86 0352_25SET

"STE" ceiling and assembly support

Extremely stable structure thanks to high-tensile steel pipe and non-slip PVC contact surfaces.
Single-handed operation thanks to 2-component plastic handle with pump mechanism.
Pushbutton for quick extension and retraction of the telescopic rod.
Holding force adjustable by twisting the support on the grip.
Up to **maximum 160 kg (size 250) or 110 kg (size 300) load capacity when the telescopic rod is fully retracted**.
The contact surfaces can also be **pivoted steplessly** for use at angles **-45° to 45°**.

Application: For fixing plasterboard, wooden boards, panels, roof laths, metal strips, foils and luminaires at a height of up to 3.00 m.
Can also be used without problems at angles due to the pivoted and non-slip PVC contact surfaces.



2-component plastic handle with quick adjustment button and pump mechanism.


9×7 cm size contact surfaces with a pivoting angle of -45° to 45°.


When used at an angle, load capacity is limited to max. 40 kg.



NO. Z1A 111445 0001

maximum length	cm	250	300
83K 86 1780 "STE" ceiling and assembly support		eShop	eShop
overall length	cm	145 – 250	170 – 300
maximum load capacity	kg	160	110
Weight	kg	3.1	3.5

All-steel clamp

Beam / fixed jaw made of bright drawn steel, moving jaw of forged steel, each hardened and electro galvanised. Smooth running steel spindle with trapezoidal thread, burnished.

86 0492 – All-steel clamp with fold-out handle. Quick approach and clamping of the workpiece with the handle engaged in the vertical position. **Powerful and convenient working with the handle folded out.**

86 0500 – Movable pressure pad from size 160 can be exchanged without tools. Clamping force of up to 6000 N.

86 0482/0492 – Moving jaw with integral **spindle locking prevents the release** of the spindle even in case of vibrations. Maximum force transfer due to **power grip** with easy-grip Haptoprene surface and impact-resistant PP core. Surface structure is anti-slip even with wet, oily hands.



Spindle locking in the unloaded state.



Spindle locking loaded.



With folding handle.

86 0492



86 0482



86 0492

Jaw capacity		mm	100	120	160	200	250	300
81D 86 0482	Garant	All-steel clamp	eShop	eShop	eShop	eShop	eShop	eShop
81D 86 0492	Garant	All-steel clamp with fold-out handle	–	–	–	eShop	eShop	eShop
83K 86 0500	BESSEY	All-steel clamp	eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail (86 0482, 86 0492)		mm	11.5×5.7	13.5×6.5	16.5×7.5	19.5×9.5	22×10.5	25×12
Cross section of the slide rail (86 0500)		mm	15×6	15×6	17.5×6.8	22×8.5	24.5×9.5	28×11
Throat		mm	60	60	80	100	120	140

Jaw capacity		mm	400	500	600	800	1000	1250
81D 86 0482	Garant	All-steel clamp	eShop	eShop	eShop	eShop	eShop	eShop
81D 86 0492	Garant	All-steel clamp with fold-out handle	eShop	–	eShop	–	–	–
83K 86 0500	BESSEY	All-steel clamp	eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail (86 0482, 86 0492)		mm	25×12	25×12	25×12	27×13	27×13	27×13
Cross section of the slide rail (86 0500)		mm	28×11					
Throat		mm	120					



86 0500

HOLEX All-steel clamp

Beam / fixed jaw made of bright drawn steel, moving jaw of forged steel, each hardened and electro galvanised. Smooth running steel spindle with trapezoidal thread and moving jaw anvil. Spindle burnished. With plastic protective cap.



86 0550

Jaw capacity		mm	160	200	250	300
82C 86 0550	All-steel clamp		eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	15.5×7.5	22×10.5	22×10.5	25.5×12
Throat		mm	80	120	120	120

Jaw capacity		mm	450	600	800	1000
82C 86 0550	All-steel clamp		eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	25.5×12	25.5×12	29.5×14	29.5×14
Throat		mm	120			

Edge clamp “KT5” for all clamps with steel profile slide beam

Yoke with wing screw for mounting on the steel clamp slide beam. Burnished spindle with movable jaw.

Suitable for: Steel clamps with maximum slide beam cross section 45×12 mm.

Application: In conjunction with steel clamps for clamping on to face strips and edge strips as well as for clamping from three sides. Also supports the slide beam when clamping with very long steel clamps to stabilise the clamping pressure.



86 0400



83K 86 0400	Edge clamp “KT5”		eShop
overall length		mm	225

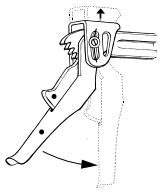
All-steel lever clamp

Beam / fixed jaw made of bright drawn steel, moving jaw of forged steel, each hardened and electro galvanised. Clamping lever with self-locking ratchet clamping mechanism. Opens by releasing the ratchet. Movable pressure pad, clamping lever powder coated.

86 0600 – Maximum clamping force of up to 8500 N. Eccentric made of sintered steel is particularly wear-resistant, low friction due to harder surface.

Application: For **fast** and easy **clamping with high clamping pressure.**

Jaw capacity		mm	120	160	200	250	300	500
83K 86 0600	BESSEY All-steel lever clamp		eShop	eShop	eShop	eShop	eShop	eShop
82C 86 0650	HOLEX All-steel lever clamp		eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail (86 0600)		mm	15×6	17.5×6.8	22×8.5	24.5×9.5	28×11	28×11
Cross section of the slide rail (86 0650)		mm	13.5×6.5	16×7.5	19.5×9.5	22×10.5	25×12	25×12
Throat		mm	60	80	100	120	140	120
Weight (86 0600)		kg	0.5	0.65	1.1	1.5	2.3	2.6
Weight (86 0650)		kg	0.5	0.68	1.15	1.5	2.31	3



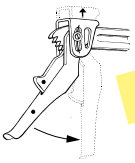


86 0650

“KliKlamp KLI” magnesium lever clamp

Moving jaw and fixed jaw of **magnesium** (die-cast), **high strength and extremely light.** Beam of bright drawn steel, electro-galvanised. Clamping lever, movable jaw and locking pawl of **glass fibre reinforced plastic, unbreakable.** Fixed jaw with removable plastic cap with a cross Vee for clamping round parts underneath. Clamping lever with self-locking ratchet clamping mechanism. Opens by releasing the ratchet.

Application: For **fast** and easy **clamping with medium clamping pressure.**







Fixed jaw with cross prism.

Jaw capacity		mm	120	160	200	250	300	400
83K 86 0750	“KliKlamp KLI” magnesium lever clamp		eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	20×5					
Throat		mm	80					
Weight		kg	0.26	0.29	0.32	0.355	0.38	0.45

86 0750

All-steel high-performance clamp “SGU” in U-shape

Beam and fixed jaw of steel section, tempered and electro-galvanised. Slide jaw drop-forged, tempered, and electro-galvanised. Wear-resistant smooth-running steel spindle with trapezoidal thread and movable (up to 35°) special pressure pad, spindle tempered and burnished with adjustable clamp handle.

Application: For clamping T-beams, RSJs, and steel channel as well as for gripping around profiles / over profiles and webs. **Maximum clamping pressure up to approx. 12000 N.**







86 1000

Jaw capacity		mm	300
83K 86 1000	All-steel high-performance clamp “SGU” in U-shape with special pressure pad		eShop
Cross section of the slide rail		mm	30×15
Reach depth of the U-jaw		mm	100
Throat		mm	140
Weight		kg	3.7

All-steel high-performance clamp

Beam and fixed jaw made of bright steel section (special profile), tempered and electro-galvanised.
Slide jaw made of steel, drop-forged, tempered, and electro-galvanised.
Wear-resistant smooth-running steel spindle with trapezoidal thread.
Long working life due to heat-resistant special pressure pad with sintered steel inlay, can tilt through 35°.
Spindle tempered and burnished with adjustable clamp handle.

Application: For heaviest duty clamping of workpieces in steel construction, blacksmith's shops, HGV bodywork, machine tool manufacture etc.
The movable special pressure pad permits clamping diagonal workpieces up to 35°.
Maximum clamping pressure up to approx. 12000 N.





86 1100

Jaw capacity		mm	250	300	500	800	1000	1500
83K 86 1100	BESSEY	All-steel high-performance clamp "SGM" with special pressure pad	eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	34×13					
Throat		mm	140					
Weight		kg	2.5	2.9	3.4	4.4	4.9	6.5



Quality features: strong steel profile slide rails.

Jaw capacity		mm	250	300	500	800	1000	1500
82C 86 1120	HOLEX	All-steel high-performance clamp with special pressure pad	eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	30×15					
Throat		mm	140					
Weight		kg	2.8	3	3.7	4.6	5.2	6.7



Quality features: strong steel profile slide rails.



86 1120

Heavy all-steel high-performance clamp

Beam and fixed jaw made of bright steel section (special profile), tempered and electro-galvanised.
Slide jaw made of steel, drop-forged, tempered, and electro-galvanised.
Wear-resistant smooth-running steel spindle with trapezoidal thread.
Long working life due to heat-resistant special pressure pad with sintered steel inlay.
Spindle tempered and burnished with adjustable clamp handle.

86 1310 – Can tilt through 35°.
86 1320 – Can tilt through 30°.

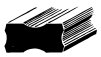
Application: For heaviest duty clamping of workpieces in steel construction, blacksmith's shops, HGV bodywork, machine tool manufacture etc.
The movable special pressure pad permits clamping diagonal workpieces.
Maximum clamping pressure up to approx. 22000 N.





86 1310

Jaw capacity		mm	300	400	500	600	800	1000	1500
83K 86 1310	BESSEY	Heavy all-steel high-performance clamp with special pressure pad	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
82C 86 1320	HOLEX		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Cross section of the slide rail		mm	40×20						
Throat		mm	175						
Weight (86 1310)		kg	5.6	6.1	6.7	7.2	8.4	9.4	12.2
Weight (86 1320)		kg	5.5	6	6.6	6.8	8.5	9.4	12



Quality feature: strong Vee profile steel slide rails.

BESSEY Extra-heavy all-steel high-performance clamp "STBS"

Beam and fixed jaw made of bright steel section (special profile), tempered and electro-galvanised.
Slide jaw made of steel, drop-forged, tempered, and electro-galvanised.
Wear-resistant smooth-running steel spindle with metric thread.
Long working life due to heat-resistant special pressure pad with sintered steel inlay, can tilt through 35°.
Spindle tempered and burnished with adjustable clamp handle.

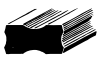
Application: For heaviest duty clamping of workpieces in steel construction, blacksmith's shops, HGV bodywork, machine tool manufacture etc.
The movable special pressure pad permits clamping diagonal workpieces up to 35°.
Maximum clamping pressure up to approx. 35000 N.





86 1400

Jaw capacity		mm	300	500	1000
83K 86 1400		Extra-heavy all-steel high-performance clamp "STBS" with special pressure pad	eShop	eShop	eShop
Cross section of the slide rail		mm	50×25		
Throat		mm	200		
Weight		kg	10.5	12.2	17.3



Quality feature: strong Vee profile steel slide rails.

C-clamp "SC"

C-shape, forged steel, tempered. Strong spindle with trapezoidal thread and movable special jaw anvil.

Application: **Maximum clamping pressure up to 22,000 N.**



86 1550

Jaw capacity	mm	40	60	80	100	120	150	200
83K 86 1550	C-clamp "SC"	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Throat	mm	40	55	65	75	85	95	105

Claw beam clamp

86 1600 – Fixed beam of bright drawn steel (special profile), electro-galvanised.
Sliding jaw of steel with trapezoidal thread spindle and jaw anvil that can tilt up to 30°.
The clamp can be used for **spreading tasks** (exerting outwards pressure) by reversing the sliding jaw.

86 1605 – For spreading from the inside outwards. Flat clamping face.
With Vee-slot for clamping round and oval workpieces.

Suitable for:

86 1605 – Claw beam clamp No. 861600.

Application:

86 1600 – **Maximum clamping pressure up to approx. 7500 N.**



Spreading components



86 1600



86 1605

Jaw capacity	mm	300	600	1000
83K 86 1600	Claw beam clamp "GRA"	eShop	eShop	eShop
Cross section of the slide rail	mm		28×11	
Throat	mm		120	
Weight	kg	2.4	3.1	3.8

83K 86 1605	Pressure piece "GRD"	eShop

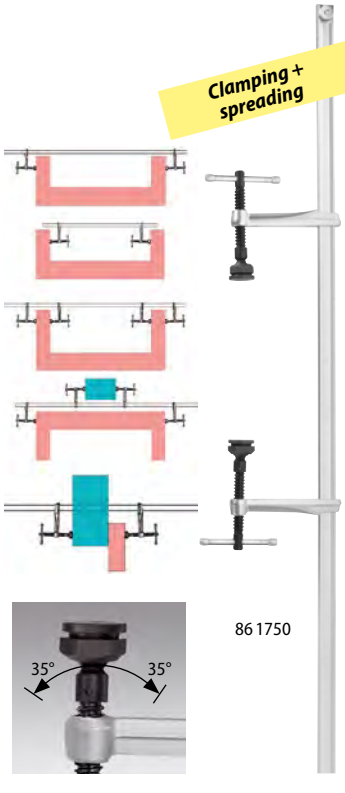
Variable high-performance clamp "SLV"

Variable screw clamp – new flexibility with large spans up to 2 m! Beam of drawn profile steel, galvanised. End stops at each end can be removed without using tools. Slide jaw made of heat treatable steel, drop-forged. Wear-resistant smooth running steel spindle with trapezoidal thread and movable (up to 35°) special pressure pad. Spindle tempered and burnished with adjustable clamp handle.

Application: Modular principle gives many different application possibilities in woodworking and metalworking. The moving jaws can be replaced with other ones or also further ones added.
The switch from clamping to spreading requires no tools.
Clamp can also be inserted through an opening in the workpiece.
Central positioning on the workpiece prevents tipping.
The movable special pressure pad permits clamping diagonal workpieces up to 35°.
Maximum clamping pressure up to approx. 6500 N.







86 1750

Note:	See spare parts list for No. 861756 (clamping handle), 861757 (wooden handle) or 861758 (lever handle) for spare sliding jaws.

Jaw capacity	mm	1000	1500	2000
83K 86 1750	Variable high-performance clamp "SLV" with special pressure pad and 2 clamp handles	eShop	eShop	eShop
Cross section of the slide rail	mm		27×13	
Throat	mm		120	
Weight	kg	4.78	5.97	7.15

Clamping elements for welding tables

For machine table quick clamps and adjustable clamps for welding tables see Vol. 1 from No. 37 7065.



377065_BS



377065_GRS



37 7152_16/100



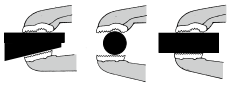
37 7150_28/160



Parallel grip pliers “GRZ”

Heat-treated steel profile beam; **quick adjustment; steplessly adjustable clamp jaw;**
jaws parallel over the range of opening any span (adjustment up to ± 9° available); clamping faces serrated;
clamping force adjustable (maximum 4000 N).





86 1800

Jaw capacity		mm	100	200
83K 86 1800	Parallel grip pliers “GRZ”		eShop	eShop
overall length		mm	260	
Throat		mm	65	

Universal clamp (clamping hand)

With trapezoidal thread spindle and 2 swing clamping jaws. Each clamping jaw has 3 smooth faces and a cross-Vee face; can be used for **clamping the most diverse components.**

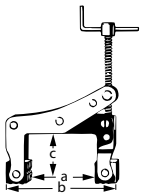
Material: Spindle and clamping block of burnished steel.

Application: For **internal** and **external clamping** of the most diverse workpiece shapes.



86 1900_100

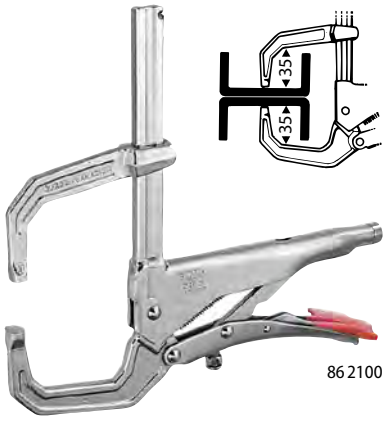
86 1900_75



max. capacity in compression		mm	25	50	75	100	150
82C 86 1900	Universal clamp (clamping hand)		eShop ■	eShop	eShop	eShop ■	eShop
Capacity in compression a		mm	0 – 25	0 – 50	0 – 75	0 – 100	0 – 150
Capacity in tension b		mm	20 – 48	32 – 82	40 – 115	50 – 150	50 – 200
Clamping depth c		mm	15	30	50	60	100
maximum clamping force		N	1000	2000	2500	3000	3500

C-grip pliers “GRZC”

Quenched and tempered profile steel beam; **quick adjustment;**
steplessly adjustable clamp jaw;
clamping force adjustable (maximum 4000 N).
With C-shaped yoke arms for clamping profiled material with high flanges.



86 2100

			Jaw capacity mm	Throat mm
83K 86 2100	C-grip pliers “GRZC”	eShop	110	80

Pipe grip pliers “GRZRO”

Quenched and tempered profile steel beam; **quick adjustment;**
steplessly adjustable clamp jaw;
clamping force adjustable (maximum 4000 N).
With Vee jaws for holding round bodies of the same diameter.
(Including plastic protective jaws, temperature-resistant to 200 °C.)



86 2150

			Jaw capacity mm	Throat mm
83K 86 2150	Pipe grip pliers “GRZRO” with plastic protective jaws	eShop	110	65

Pole welding clamp "TP" with wing screw

High quality malleable cast iron clamping arms with eyelet for electric welding cable on upper clamping arm.
Strong spindle with ball-mounted captive pad.
Clamp bright galvanised.



86 2310

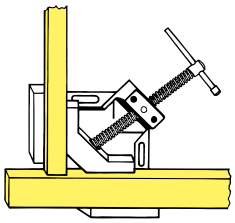
Type		1	2
83K 86 2310	Pole welding clamp "TP" with wing screw	eShop	eShop
Slide beam cross section	mm	25×6	30×8
Jaw capacity	mm	150	
Throat	mm	80	60
for maximum current	A	400	600

Welders' angle clamp

Malleable cast iron base body with strong cleanly machined support faces (clamping angle 90°).
Clamping jaws movable for **different material cross-sections.**
Application: For clamping components at the correct angle during welding and/or assembly work.



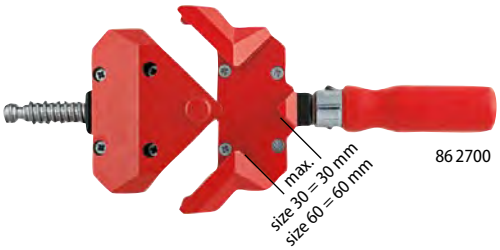
86 2500



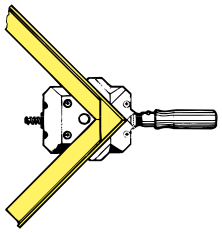
maximum clamping range	mm	90	120
83K 86 2500	Welders' angle clamp "WSM"	eShop	eShop
maximum aperture	mm	60	100
Jaw height	mm	35	61
Weight	kg	3.8	7.8

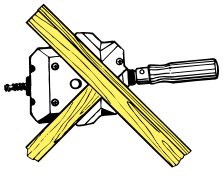
Lightweight angle clamp

Metal body with plastic coating, clamping angle 90°.
Clamping jaws movable, allowing **different thicknesses of material** to be clamped.
Application: For clamping flat material, profiles etc. at the correct angle for bolting, gluing together etc. Not for use as a welding clamp.
Size 60 – Quick adjustment feature.



86 2700



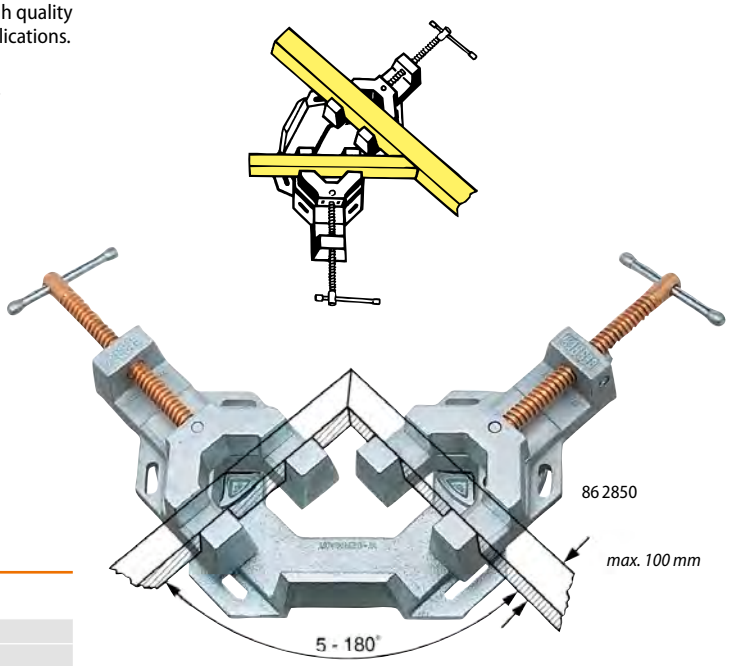


maximum aperture	mm	30	60
83K 86 2700	Angle clamp "WS", light version	eShop	eShop
maximum aperture	mm	30	60
Jaw height	mm	30	36
Clamping range for 2 identical components	mm	45 / 45	100 / 100
Clamping range for 2 non-identical components	mm	23 / 63	25 / 140

Adjustable angle clamp “SM10”

Consisting of base plate and 2 adjustable clamps; base plate and clamps are high quality castings, spindles copper plated, therefore particularly suitable for welding applications. Slotted holes permit mounting on welding benches or jigs.

Application: For clamping components during welding or assembly work.
Clamping angle adjustable from 5° - 180°.

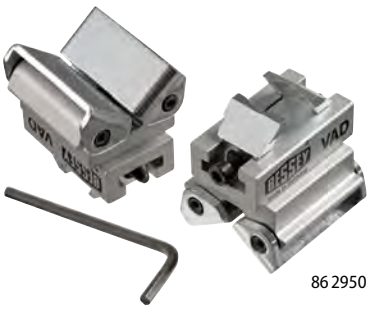


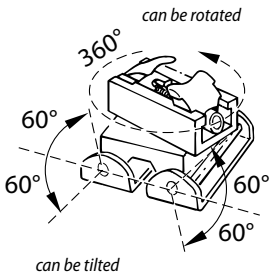
83K 86 2850	Adjustable angle clamp “SM10”	eShop
Jaw capacity	mm	2×0 – 100
Jaw height	mm	35
Weight	kg	10.7
Clamping angle	degrees	5 – 180

Multi angle pads “VAD” for screw clamps

Clamping faces can be rotated and moved to accommodate components from 60° internal angle to 60° external angle.

Application: As an add-on for screw clamps No. 860000 from size 200 and 860500 from size 200.
For use in pairs or individually.





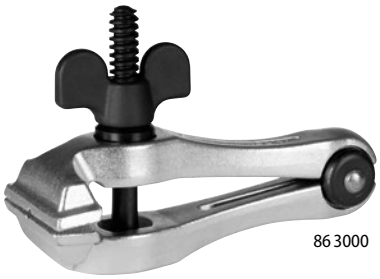


83K 86 2950	Pair of multi angle pads “VAD”	eShop
Clamping face	mm	50×50

Hand vice

Arms made from high-tensile alloy heat-treatable steel, galvanised.
Wide jaw with Vee groove. Reinforced shank with secure hinge guide and enclosed special spring.
Size 130 – Spindle with trapezoidal thread and hex nut.
Size 100; 120; 145; 160; 180; 200 – Spindle with trapezoidal thread and butterfly nut.

Spare part: Spare spindle No. 863100. Indicate size of hand vice when ordering.

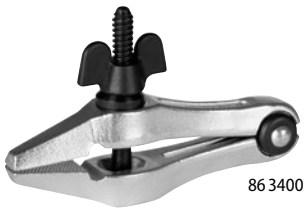


overall length	mm	100	120	130	145	160	180	200
86F 86 3000	Hand vice	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Jaw width	mm	40	45	48	52	58	60	65
Jaw capacity	mm	18	22	25	28	35	40	45

Tapered hand vice

Arms made from high-tensile alloy heat-treatable steel, galvanised. Narrow jaws. Reinforced shank with secure hinge guide and enclosed special spring. Spindle with trapezoidal thread and strong butterfly nut.

Spare part: Spare spindle No. 863100 size 120.


86 3400

overall length		mm	120
86F 86 3400	Tapered hand vice		eShop
Jaw width		mm	13
Jaw capacity		mm	20

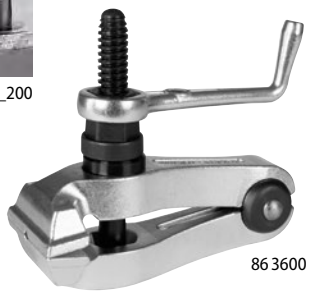
Heavy-duty hand vice

Particularly sturdy design. Arms made from high-tensile alloy heat-treatable steel, galvanised. Wide jaws with Vee groove; strong arms with secure hinge guide and enclosed jaw spring. Spindle with trapezoidal thread, hexagon nut and crank lever.

Size 200 – With flat jaws (without prism) especially for pipe bending.

Spare part: Spare spindle No. 863700. Indicate size of the machine vice when ordering spare parts.


_200


86 3600

overall length		mm	160	180	200	250
86F 86 3600	Heavy-duty hand vice		eShop	eShop	eShop	eShop
Jaw width		mm	65	70	80	90
Jaw capacity		mm	40	40	50	60

Hinged pipe vice

Entirely of steel, unbreakable. Hinged design with automatically closing securing hook. Drop forged movable jaw. Movable jaw and fixed jaw exchangeable. Gripping surfaces milled and hardened. Strong spindle with adjustable T-bar handle.


86 8600

Capacity for pipes up to		in	2	3	4
83S 86 8600	Hinged pipe vice		eShop	eShop	eShop
Jaw capacity		mm	60	90	120
Weight		kg	4.3	6.5	10

Sturdy "Aquila WB" chain clamp for pipes

Sturdy chain clamp for pipes for attaching to a workbench. For easy secure clamping of pipes using special serrated Vee-shaped clamping jaws and a sturdy clamping chain with a quick-release fastener.

- Sturdy distortion-free cast design of the baseplate, with integral chain clamp vice, pipe support and bending machine.
- Specially serrated and hardened double vice jaws, easily exchanged, Vee-shaped for secure clamping of pipes.
- Clamping chain with sturdy chain links, easily clamped with quick-release fastener and trapezoidal thread spindle.
- For attachment to a workbench – **please ensure compliance with the workbench load capacity.**

Application: Secure clamping of pipes and solid materials, 1/8 inch – 6 inches (10 – 165 mm).

Note: Adjustable material stand can be found under No. 919904 and workbenches from No. 921001.



86 8651

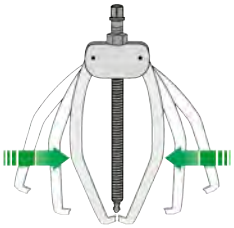

Application example

Capacity for pipes up to			6
84B 86 8651	"Aquila WB" chain clamp for pipes		eShop
Jaw capacity		mm	10 – 165
Weight		kg	21

Universal extractor

The clamping force increases proportionally to the extraction force due to the self-clamping extractor legs.

Application: The spring effect and the slim design permit extractions even where access is difficult.



Self–clamping (spring–mounted)



Optimum matching of the spindle to the shaft thanks to the 2-ended spindle tips.

83U 88 0020	Two-leg universal extractor		eShop
83U 88 0030	Three-leg universal extractor		eShop
External clamping range (88 0020)		mm	20 – 150
External clamping range (88 0030)		mm	20 – 150
Depth of reach up to		mm	150

			Content: consisting of extractors
83U 88 0050	Universal extractor set, 2 pieces	eShop	No. 880020 / 880030



88 0020



88 0030

Heavy universal extractor

With reversible extraction legs **(for external and internal extraction).**
Extraction legs adjustable on cross beam for different workpiece ∅.
Extraction legs and cross beam of high-quality tool steel;
sturdy double-ended spindle (ball end and point end).

Application: Universally applicable for extracting bearings, discs, gear wheels etc. On model 880100 size 5 the depth of reach can be extended from 400 mm (normal) up to 700 mm by adjusting the legs.



for external



for internal



88 0100

Type		1	10	2	20	3	30	4	5
83U 88 0100	Two-leg extractor	eShop	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
External clamping range	mm	30 – 90	30 – 120	40 – 160	40 – 200	65 – 250	65 – 350	80 – 520	105 – 750
Internal capacity	mm	70 – 140	70 – 180	100 – 220	100 – 260	180 – 340	180 – 440	200 – 590	340 – 1000
Depth of reach up to	mm	100	100	150	150	200	200	200	700

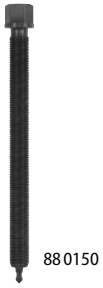


88 0130

Type		1	10	2	20	3	4	5	6
83U 88 0130	Three-leg extractor	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
External clamping range	mm	27 – 90	27 – 130	35 – 160	35 – 200	46 – 250	170 – 375	190 – 520	220 – 650
Internal capacity	mm	70 – 140	70 – 180	100 – 220	100 – 260	180 – 340	200 – 500	280 – 600	290 – 740
Depth of reach up to	mm	100	100	150	150	200	200	200	200

Spare pressure spindle

Type		1	2	3	4
83U 88 0150	Spare pressure spindle	eShop	eShop	eShop	eShop
overall spindle length	mm	160	220	300	400
Thread		M14×1.5	G1/2 inch	G3/4 inch	G1 inch
Suitable for: Extractor 880100		Size 1; 10	Size 2; 20	Size 3; 30	Size 4
Extractor 880130		Size 1; 10	Size 2; 20	Size 3	Size 4
Extractor 880450		Size 1; 10	Size 2; 20	Size 3; 30	–



88 0150

Hydraulic pressure spindle

Application: The hydraulic spindle is very advantageous for seized-on parts due to its high pressure performance.
The spindle is screwed in until the pressure part is seated firmly on the shaft.
Then the hydraulics are operated by turning the upper spindle.
Suitable for bearing extractor No. 880100 size 4 as well as for No. 880130 sizes 4 - 6.

Type		1	2
83U 88 0170	Hydraulic pressure spindle	eShop	eShop
Hydraulic power		150 kN (15 t)	200 kN (20 t)
Hydraulic stroke	mm	10	
Suitable for: Extractor 880100		Size 4	–
Extractor 880130		Size 4	Size 5; 6



88 0170

Spare extractor leg

Type / Clamping depth	mm	1/100	2/150	3/200
88 0200	Pair of spare extractor legs	eShop	eShop	eShop
88 0220	Spare extractor legs (3 pieces)	eShop	eShop	eShop
Suitable for: Extractor 880100		Size 1; 10	Size 2; 20	Size 3; 30; 4
Extractor 880130		Size 1; 10	Size 2; 20	Size 3; 4; 5; 6



88 0200

Extended extractor legs

Application: In order to reach larger depths, the normal extractor legs can be exchanged for extended extractor legs.
Size 4/500 – Adjustable for depths of reach up to 300 mm and with adjusted legs up to 500 mm.

Type / Clamping depth	mm	1/200	2/300	3/300	3/400	4/500
88 0300	Pair of extended extractor legs	eShop	eShop	eShop	eShop	eShop
88 0320	Extended extractor legs (3 pieces)	eShop	eShop	–	–	eShop
Suitable for: Extractor 880100		Size 1; 10	Size 2; 20	Size 3; 30; 4	Size 3; 30; 4	Size 3; 30; 4
Extractor 880130		Size 1; 10	Size 2; 20	–	–	Size 3; 4; 5; 6



88 0300

Heavy-duty two-leg universal extractor with quick adjustment

Spindle head
with collar = protection against slipping.

Crossbeam
with hexagon drive for safe counter holding.

Quick adjustment without tools



88 0400

With knurled grip for **quick loosening and moving** of the extractor legs **without additional tools**.
Application: Universally capable of extracting bearings, gear wheels etc.
Can be used as external and internal extractor.



Optimum matching of the spindle to the shaft thanks to the 2-ended spindle tips.



Type		1	10	2	20	3	30
88 0400	Two-leg extractor with quick adjustment	eShop	eShop	eShop	eShop ■	eShop	eShop
External clamping range	mm	30 – 90	30 – 120	40 – 160	40 – 200	65 – 250	65 – 350
Internal capacity	mm	70 – 140	70 – 180	100 – 220	100 – 260	180 – 340	180 – 440
Depth of reach up to	mm	100	100	150	150	200	200

Spindle head
with collar = protection against slipping.

Crossbeam
with hexagon drive for safe counter holding.

Quick adjustment without tools



88 0450

With **extremely slender extractor legs.**
Application: Very suitable for working in tight spaces and places where access is difficult.



For confined spaces





Type		1	10	2	20	3	30
88 0450	Two-leg extractor with quick adjustment, slender extractor legs	eShop	eShop	eShop	eShop	eShop	eShop
External clamping range	mm	30 – 90	30 – 120	40 – 160	40 – 200	65 – 250	65 – 350
Internal capacity	mm	70 – 140	70 – 180	100 – 220	100 – 260	180 – 340	180 – 440
Depth of reach up to	mm	100	100	150	150	200	200

Extractor set for 2 clamping depths, with quick adjustment, in a plastic case

With **slender extractor legs** for confined spaces and with knurled grip for **quick loosening** and **moving** of the extractor legs.

Application: Universally capable of extracting bearings, gear wheels etc.
Can be used as external and internal extractor.

Content: 1 each two-leg and three-leg cross beam and 3 each extractor legs with different clamping depths and with knurled quick adjustment grip, in plastic case (275×230×83 mm) with foam inlay.



Optimum matching of the spindle to the shaft thanks to the 2-ended spindle tips

88 0505

83U 88 0505	Extractor set for 2 depths with quick adjustment		eShop
Jaw capacity		mm	90
Depth of reach up to		mm	100 / 200

L-BOXX

Extractor set for 3 depths in KUKKO L-BOXX®

With **slender extractor legs** for confined spaces in 3 clamping depths.

Application: For easy extraction of bearings, plates, gear wheels etc.
Ideal for use under difficult space conditions such as very narrow components or housings.
Can be used as external and internal extractor.

Content: 1 each two-leg and three-leg cross beams and 3 each extractor legs each with a different depth completely in KUKKO L-BOXX® size 136 with foam inlay.



88 0550

83U 88 0550	Extractor set for 3 depths		eShop
Jaw capacity		mm	120
Depth of reach up to		mm	100 / 200 / 250

Two-leg extractor

With reversible extractor legs **(for external and internal extraction),** strong cross beam and powerful spindle. The desired span is adjusted simply by moving the extraction legs.

Application: A quick adjustment extractor for gear wheels, bearings, discs, etc., which can be adjusted to the required span.



88 0930

Type			1	10	2	20	3	4
83U 88 0930	Two-leg extractor		eShop	eShop	eShop	eShop	eShop	eShop
External clamping range		mm	100 – 100	120	160	200	250	350
Internal capacity		mm	55 – 105	55 – 105	80 – 170	90 – 215	95 – 265	195 – 365
Depth of reach up to		mm	100	100	150	175	200	250

FACOM

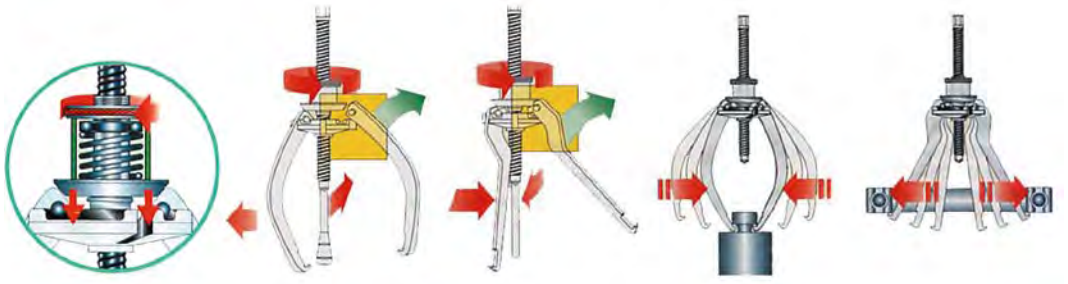
Internal / external extractors

With two sets of exchangeable extractor legs for **internal and external extraction,** allowing either 2 or 3 extractor legs to be used.

Supplied with: Basic body with spindle and 3 internal and external extractor legs each.



88 0850



■ ***Secure***
Full extractor leg locking with a knurled screw.

■ ***Practical***
Extractor legs can easily be added or removed.

■ ***Automatic***
self-tightening and self-centring.

■ ***Spindle nose***
with force limiter - the shear pin will fracture at overload.



83H 88 0850	Internal / external extractor		1 eShop	2 eShop
External clamping range		mm	7 – 140	10 – 180
Internal capacity		mm	23 – 130	50 – 170
Depth of reach up to		mm	140	190

Three-leg extractor with pre-adjustable clamping range

Powerful extractor with high clamping force and excellent clamping. Using the adjustment wrench, the symmetrical clamping legs are easily set to the necessary spread. The part to be extracted is **positively gripped**, the **gripper jaws** cannot **jump or slip.**

88 0950 – For external extraction only.

88 0960 – For external **and** internal extraction.

Application: For extracting tightly seized ball bearings, gear wheels, pulleys and similar parts.


880950

880960

Type		1	2	3	4	5
83U 88 0950	Three-leg extractor with pre-adjustable clamping range	eShop	eShop	eShop	–	–
83U 88 0960		–	–	–	eShop	eShop
External clamping range	mm	20 – 100	35 – 150	50 – 200	20 – 250	30 – 350
Internal capacity	mm	–	–	–	225 – 325	300 – 425
Clamping depth	mm	–	–	–	50	50
Depth of reach up to	mm	100	125	165	225	275

Self-centring extractor

Very handy design with **jointed spread adjustment.** The extractor legs automatically grip the part to be extracted with a force that increases as the spindle pressure is applied. Extractor legs made from high-quality tool steel.


88 1000_0

88 1000_1–4

Type		0	1	2	3	4
83U 88 1000	Self-centring two-leg extractor	eShop	eShop	eShop	eShop	eShop
External clamping range	mm	10 – 60	12 – 100	18 – 120	23 – 160	23 – 250
Depth of reach up to	mm	50	100	120	160	200

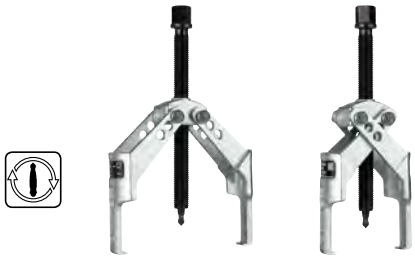

88 1010_0

88 1010_1–4

Type		0	1	2	3	4
83U 88 1010	Self-centring three-leg extractor	eShop	eShop	eShop	eShop	eShop
External clamping range	mm	10 – 60	12 – 100	18 – 120	23 – 160	23 – 250
Depth of reach up to	mm	50	100	120	160	200

Adjustable extractor

The self-locking pins allow individual selection of the clamping range and depth of reach. The extractor is self-clamping and simple to use due to the special design. Extremely large span range due to variable configuration of extractor legs (see diagram).


88 1100

83U 88 1100	Adjustable extractor	eShop
External clamping range	mm	6 – 100
Depth of reach up to	mm	85

Two-leg extractor with lateral clamp

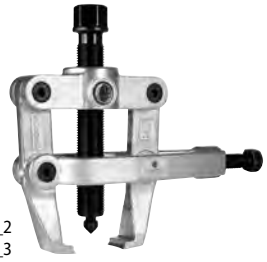
Specially shaped gripping faces on the extractor legs, which operate with a clamp to loosen the bearing (No. 881180).

Application:

88 1180 – For extracting **flush fitted** ball bearings, rings, bushes etc.

88 1200 – For extracting gear wheels, pinions, steering arms etc.


88 1180_1

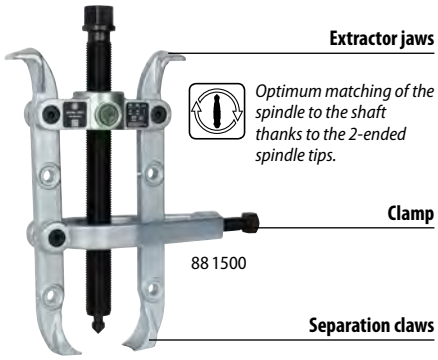

88 1180_2
88 1200_3

Type		1	2	3
83U 88 1180	Bearing extractor with lateral clamp	eShop	eShop	–
83U 88 1200	Extractor with lateral clamp	–	–	eShop
External clamping range	mm	12 – 50	40 – 90	50 – 150
Depth of reach up to	mm	70	100	140

Separator / extractor

One side with separation claws for loosening flush fitted parts, the other side with normal extractor jaws. To free the bearing the separation claws are pressed between bearing and bearing seat by closing the clamp. The bearing is then fully removed by use of the spindle.

Application: For extracting ball races, pinions and so on, where access is difficult. For many jobs where normal extractors cannot be used due to lack of space.



Type		1	2	3
83U 88 1500	Separator / extractor two legs	eShop	eShop	eShop
Jaw capacity	mm	95	135	150
Depth of reach up to	mm	170	270	325

"Powerplate" centre protector for use with extractors

Advantage: Rotating centre permits higher tensile forces. Easy extraction even where the centring hole is too large or is absent. Adheres magnetically to the desired position.

Application: Perfect **protection of the centre** when extracting ball bearings, sleeves, pulleys and gears. Extracting the components **without damage**(protects the end of the shaft and the spindle)





Rotating centre = easy rotation.



88 1552_48

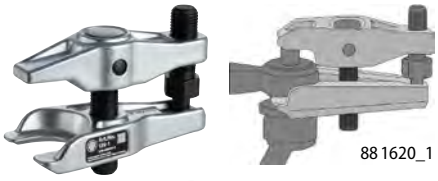
Magnet for securing to the end of the shaft.

External ∅	mm	18	28	38	48
83U 88 1552	"Powerplate" centre protector for shafts for extractors	eShop	eShop	eShop	eShop

Ball joint separator

Sturdy body with pressure frame and strong spindle. Of high-quality tool steel. Simple and quick application: simply the push extractor frame between the ball joint and tighten the screw. The joint will separate easily.

Application: For pressing out the ball studs when disassembling ball joints. Also as extractor for track rod ends.



88 1620_1



88 1620_0

Type		1	0
83U 88 1620	Ball joint separator	eShop	eShop
for ball joints of nominal size	mm	19 – 27	27 – 30
Lever travel capacity	mm	50	
Fork aperture	mm	18 – 22	20

Hydraulic ram

Steel body with hydraulic mechanism and automatic return. Easy handling: the ram is used between extractor spindle and shaft. Clamp ram with extractor spindle and tighten ram spindle (hydraulics come into effect). If the travel is insufficient, release the ram spindle and repeat the procedure.

Application: For increasing the power of mechanical extractors from Size 3. Even tightly seized parts can easily be freed.



88 1800



Hydraulic ram between shaft and extractor spindle.

Type		1	2	3
83U 88 1800	Hydraulic ram	eShop	eShop	eShop
Construction height	mm	62	90	113
Ram cylinder ∅	mm	14	23	39.5
Body ∅	mm	37	50	80
Stroke	mm	10	15	7
maximum permissible torque	Nm	35	50	40
maximum permissible extraction force	kN	100	150	300

Extractor set with a sliding hammer in a plastic case

Sturdy extractor (galvanised) with ergonomically shaped sliding hammer.

Application: For extracting and pulling off parts with internal threads (taper pins or dowel pins) and ball bearings. The appropriate adapter or internal extractor is attached to the part to be extracted, which is then pulled off by firm strikes with the sliding hammer.

Supplied with:

88 2000 – Pin extractor in a plastic case (275×230×80 mm) with 6 threaded inserts (M3 – M10), 3 adapters for internal extractors No. 882600. For M12 the slide bar is used without a threaded insert. Accepts threaded inserts to DIN 913.

88 2020 – Pin and ball bearing extractor in a plastic case (370×320×75 mm) with 10 threaded inserts (M3 - M18), 2 adapters for internal extractors and 5 internal extractors (∅ 6 - 19 mm).



88 2000



88 2020

83U	88 2000	Pin extractor set		eShop ■
Adapter for internal extractor				M7×M12, M10×M12, 15-16G×M12
Hammer mass			kg	0.9
Hammer travel			mm	230
suitable for threads				M3; M4; M5; M6; M8; M10; M12

83U	88 2020	Pin and ball bearing extractor set		eShop
Adapter for internal extractor				M7×M12; M10×M12
Hammer mass			kg	0.9
Hammer travel			mm	150
Internal extractor for ∅			mm	6 – 10; 8 – 12; 10 – 14; 12 – 16; 14 – 19
suitable for threads				M3; M4; M5; M6; M8; M10; M12; M14; M16; M18

Sliding hammer

Sturdy extractor jig (galvanised) with ergonomically shaped sliding hammer.

Advantage: Very suitable for use on deep-seated components.

Application: For extraction and pulling off ball bearings in combination with internal extractors (No. 882600), using special adapters. Very versatile device for a wide variety of components. Energetic use of the sliding hammer pulls the components off.

Supplied with: Extractor jig with appropriate adapters to suit various internal extractors.

Note:

Size 5 – Optional additional weights can be screwed on to increase the impact.



88 2050_0,5



88 2050_1,7



88 2050_5

Hammer mass		kg	0,5	1,7	5
83U	88 2050	Sliding hammer	eShop	eShop	eShop
Adapter for internal extractor			M7×M10	15-16 G×G1/2, 15-16 G×M10	G3/4×G1/2
Hammer travel		mm	150	230	340
Total weight		kg	0.7	2.5	6.5

Extractor set in KUKKO L-BOXX®

Composed of the most frequently used extractors for the most diverse extraction applications.

Size 24A – Particularly suitable for automobile technicians.



88 2700_24B

Type		24A	24B	24C
83U	88 2700 Extractor set in KUKKO L-BOXX®	eShop	eShop	eShop
Storage in		2 KUKKO L-BOXX® size 136	2 KUKKO L-BOXX® size 136	3 KUKKO L-BOXX® size 136
Content: 1 each two-leg extractor No. 880100		Size 1	Size 1; 2	Size 1; 2
1 each two-leg extractor No. 881000		Size 0		
1 each pulling chuck		5–32 mm		
1 each internal extractor No. 882600		Size 1–6	Size 1–8	size 1–7; 10
1 each support brace No. 882800		Size 1; 2	Size 1; 2	Size 1; 2; 4

Internal extractor set in KUKKO L-BOXX®

Consisting of internal bearing extractor and centre reaction piece.
Internal bearing extractor with 2-piece jaws and spreader.
Centre reaction piece of high-quality tool steel, with sturdy spindle, tightening nut, and clamping handle.
Internal thrust bearing for easy operation of the support brace nut (Size 1 without thrust bearing).
The sets are supplied in a KUKKO L-BOXX® size 136.

Application: For trouble-free extraction of ball bearings etc.
Even close flush-fitted ball bearings are gripped securely and pulled out quickly.
(The spindle of the support brace is screwed on to the wedge spindle of the internal bearing extractor for extraction.)



88 2500

Type		25A	25B	25C
83U 88 2500	Internal extractor set in KUKKO L-BOXX®	eShop	eShop	eShop
for bores mm		12 – 46	12 – 70	12 – 110
Weight including box kg		6.4	9.3	15.2
Content: 1 each internal extractor No. 882600		Size 1-6	Size 1–8	Size 1–7 and 10
1 each support brace No. 882800		Size 1 and 2	Size 1 and 2	Size 1; 2 and 4

Internal extractor single

2-part clamps and spreader made of premium tool steel.


88 2600



Type		01	02	1	2	3	4
83U 88 2600	Internal extractor single	eShop	eShop	eShop	eShop	eShop	eShop
for bores mm		8 – 12	10 – 14	12 – 16	14 – 19	18 – 23	20 – 30

Type		5	6	7	8	9	10
83U 88 2600	Internal extractor single	eShop	eShop	eShop	eShop	eShop	eShop
for bores mm		28 – 40	35 – 46	45 – 58	56 – 70	70 – 100	56 – 110

Counter supports single

Integral thrust bearing for easy operation of the support brace nut (size 1 without thrust bearing).



No frictional resistance due to the integral thrust bearing.

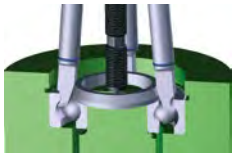

88 2800_3

Type		1	2	3	4
83U 88 2800	Counter support, single	eShop	eShop	eShop	eShop
for bores mm		8 – 40	18 – 70	35 – 100	56 – 110
Suitable for: Internal extractor No. 882600		Size 01–5	Size 3–8	Size 6–9	Size 10

Ball bearing extractor set in KUKKO L-BOXX®

Extractor set in KUKKO L-BOXX® size 136, consisting of one base body with spindle (120 mm long) and 3 each narrow and wide extractor hooks (each 70 mm long) and one base body with spindle (240 mm long) and 4 each narrow and wide extractor hooks (each 156 mm long).

Application: For non-destructive extraction of grooved ball bearings from a housing on a shaft by gripping them between inner and outer ball races.







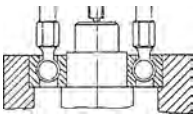
88 3000

Type		K70C
83U 88 3000	Ball bearing extractor set in KUKKO L-BOXX®	eShop
Suitable for: Ball bearings to ISO		6000 – 6020; 6200 – 6212; 6300 – 6311; 6403 – 6408

Universal ball bearing extractor set in KUKKO L-BOXX®

Extractor set in KUKKO L-BOXX® consisting of 1 traverse, 1 spindle, 2 draw bolts and 3 pairs (sizes 69-A and 69-B) / 6 pairs pullers (size 69-C). Strong design of special steel, specially shaped pullers for precise seating in the ball bearing.

Application: For easy and quick extraction of **ball bearings of all types** which are seated in a housing on a shaft. Very versatile – covers many repair and service applications in the automobile and manufacturing trades and much more.





88 3100_69-A

Type		69-A	69-B	69-C
83U 88 3100	Ball bearing extractor set in KUKKO L-BOXX®	eShop	eShop	eShop
Clamping range	mm	20 – 110	40 – 110	56 – 240
Suitable for: Ball bearings to ISO		6004 – 6013; 6201 – 6206; 6300 – 6305	6011 – 6020; 6206 – 6212; 6305 – 6309; 6403 – 6407	6021 – 6032; 6213 – 6230; 6310 – 6321; 6406 – 6417

Sealing ring extractor set in KUKKO L-BOXX®

Slide hammer base unit, extraction lever, and bradawl with 2-component handle. Quick and easy extraction of sealing rings using the momentum of the mass on the slide unit. The extraction lever has a sturdy blade for gently levering out sealing rings.

Application: Gentle, quick, and easy but at the same time powerful removal / extraction of Simmerring seals, seals, oil seals, sealing sleeves, sealing rings, bearing seals, and many more.

Content: 1 base unit (including a slide hammer), 2 extensions (100 mm and 250 mm), 1 universal extraction lever, 1 bradawl (for easier insertion of the special screws), 1 spare blade for the extraction lever, 50 self-tapping special screws in KUKKO L-BOXX® size 136.



88 3900

83U 88 3900	Sealing ring extractor set in KUKKO L-BOXX®	eShop

simatherm Induction heating device

The patented **portable** induction heater operates in the high-frequency range and thus is very efficient. Integral timer and temperature control. The temperature control ensures even warming of the workpiece.

Advantage: Portable high-performance induction heater, very light-weight and handy (3.5 kg). **No** yoke necessary, simply lay the workpiece on the heater.

Application: Quick and selective heating of roller bearings, gear wheels, sleeves etc. For gentle and safe installation of shafts, pins etc.

Supplied with: Heater, temperature probe, thermal protection gloves, and carrying case.



88 3960

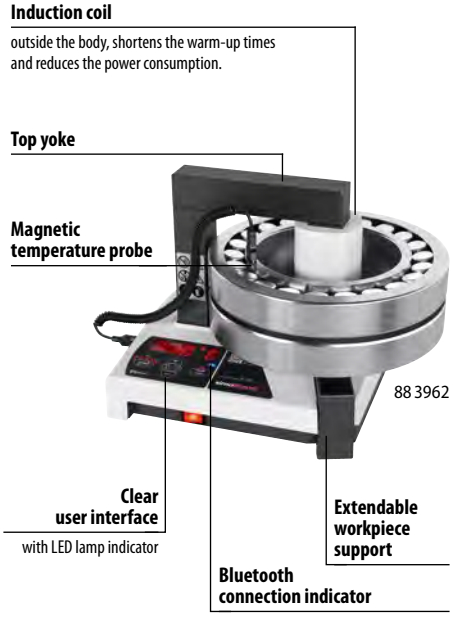




86H 88 3960	Induction heating device IH 025 VOLCANO	eShop
Voltage	V	230
Power	kW	1.5
Workpiece internal ∅ from	mm	20
Workpiece external ∅ up to	mm	160
maximum component weight	kg	10
Temperature control range	°C	20 – 180

The compact simatherm® induction heating device for rolling bearings and other ring-shaped metal parts for bore diameters from 20 to 310 mm. Roller bearings and other ring-shaped metal parts can be brought up to the 110 °C specified by the manufacturer under automatic control of time and temperature. Particularly compact design – only 17 kg in weight including 3 yokes. Remote control possible via Bluetooth® mobile devices (only with free app "World of Maintenance")

Supplied with: Heating device, 3 yokes, temperature probe and thermal protection gloves.



88 3962

Size		45
86H 88 3962	Induction heating device IH 045	eShop
Voltage	V	230
Power	kW	2.1
Workpiece internal ∅ from	mm	20
Workpiece external ∅ up to	mm	310
maximum component weight	kg	45
Temperature control range	°C	20 – 180
Length	mm	320
Width	mm	268
Height	mm	293

L-BOXX

Garant Ball bearing insertion and fitting set in plastic modular case L-BOXX®

Installation set for installing bearings without damaging axles, bearing housings or sealing rings.
Light but very robust aluminium impact sleeves in combination with 33 striking rings made of impact-resistant polyoxymethylene for bearing external Ø from 26 - 110 mm and internal Ø from 10 - 50 mm.
Supplied with dead-blow-absorbing soft-faced hammer in sturdy plastic L-Boxx® system case.

Application: Quick, precise, and safe installation of (roller) bearings thanks to **even application of force** on the bearing. Also suitable for fitting of bushes, sealing rings, and pulleys.

Supplied with: 37-piece set in plastic system case L-Boxx® No. 693330 size 136
3 impact sleeves, 25; 40; 60 mm
1 set of impact rings inner Ø 10 mm (outer Ø 26; 30; 35 mm)
1 set of impact rings inner Ø 12 mm (outer Ø 28; 32; 37 mm)
1 set of impact rings inner Ø 15 mm (outer Ø 32; 35; 42 mm)
1 set of impact rings inner Ø 17 mm (outer Ø 35; 40; 47 mm)
1 set of impact rings inner Ø 20 mm (outer Ø 42; 47; 52 mm)
1 set of impact rings inner Ø 25 mm (outer Ø 47; 52; 62 mm)
1 set of impact rings inner Ø 30 mm (outer Ø 55; 62; 72 mm)
1 set of impact rings inner Ø 35 mm (outer Ø 62; 72; 80 mm)
1 set of impact rings inner Ø 40 mm (outer Ø 68; 80; 90 mm)
1 set of impact rings inner Ø 45 mm (outer Ø 75; 85; 100 mm)
1 set of impact rings inner Ø 50 mm (outer Ø 80; 90; 110 mm)
1 soft-faced hammer with dead-blow absorption similar to No. 752500 size 40G with 1 rubber and plastic inserts each.





Number of pieces		37
81G 88 4050	Bearing installation tool set for ball bearings in L-Boxx®	eShop

simatool® smart tools Ball bearing insertion and fitting set in a plastic case

Light but very robust aluminium impact sleeves in combination with 33 extremely impact resistant striking rings for bearing external Ø from 26 - 110 mm and internal Ø from 10 - 50 mm.
Dead-blow hammer with nylon inserts.
Supplied in a plastic case.

Application: Quick, precise, and safe installation of (roller) bearings thanks to **even application of force** on the bearing. Also suitable for fitting of bushes, sealing rings, and pulleys.

Content: 3 impact sleeves, Ø 25; 40; 60 mm.
1 set striking rings internal Ø 10 mm (external Ø 26; 30; 35 mm)
1 set striking rings internal Ø 12 mm (external Ø 28; 32; 37 mm)
1 set striking rings internal Ø 15 mm (external Ø 32; 35; 42 mm)
1 set striking rings internal Ø 17 mm (external Ø 35; 40; 47 mm)
1 set striking rings internal Ø 20 mm (external Ø 42; 47; 52 mm)
1 set striking rings internal Ø 25 mm (external Ø 47; 52; 62 mm)
1 set striking rings internal Ø 30 mm (external Ø 55; 62; 72 mm)
1 set striking rings internal Ø 35 mm (external Ø 62; 72; 80 mm)
1 set striking rings internal Ø 40 mm (external Ø 68; 80; 90 mm)
1 set striking rings internal Ø 45 mm (external Ø 75; 85; 100 mm)
1 set striking rings internal Ø 50 mm (external Ø 80; 90; 110 mm).

Spare part: Spare striking rings No. 884005.



86H 88 4000	Ball bearing installation set in a plastic case	eShop

Bearing separator and extractor set in KUKKO L-BOXX®

L-BOXX

Bearing separator of high-quality tool steel.
Separator: The quick-release semicircular jaws are symmetrically tensioned by a screw. This causes the wedge-shaped jaws to insert themselves between bearings and shaft.
Extractor: Used in conjunction with the separator to extract bearings from their seating (for this the draw bolts are screwed into the threaded holes in the separation jaws).

Size K–B – In KUKKO L-BOXX® size 136.
Size C – In a sheet metal case.

Application: For the separation of tightly wedged ball bearings, gears, etc., if the gap is too small for normal extraction arms.



Optimum matching of the spindle to the shaft thanks to the 2-ended spindle tips.



88 4500

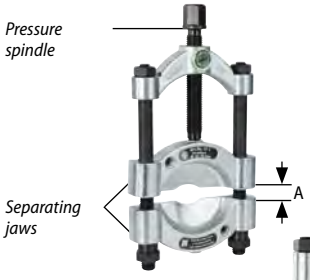
Set		K	A	B	C
83U 88 4500	Bearing separator and extractor set	eShop	eShop	eShop	eShop
Clamping range	mm	5 – 60	12 – 75	22 – 115	25 – 155
Weight including box	kg	4.3	5.6	8.6	14.2
Content: 1 bearing separator No. 884600		Size 0	Size 1	Size 2	Size 3
1 extractor No. 884700		Size 0	Size 1	Size 2	Size 3
1 pair of extension bolts		Size 0 / 1	Size 0 / 1	Size 2	Size 3



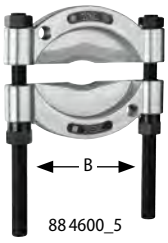
Application example

Bearing separator individual

Size 5 – The separation jaws are tensioned by tightening the nuts on the side spindles.
Size 0–3 – The semicircular separation jaws are symmetrically tensioned by a quick-release pressure spindle.



88 4600_1



88 4600_5

Type		0	1	2	3	5
83U 88 4600	Bearing separator individual	eShop	eShop	eShop	eShop	eShop
Clamping range dimension A	mm	8 – 60	12 – 75	22 – 115	25 – 155	30 – 250
Spacing of side pins dimension B	mm	60	75	115	155	250
Connection thread for bearing extractor		M10	M10	M14×1.5	M18×1.5	G3/4

Bearing extractor individual for bearing separators No. 884600



88 4700

Type		0	1	2	3	5
83U 88 4700	Bearing extractor individual	eShop	eShop	eShop	eShop	eShop
Length of draw bolt	mm	180	270	280	360	530
Clamping depth	mm	120	200	190	260	370
Connection thread		M10	M10	M14×1.5	M18×1.5	G3/4
Suitable for: Bearing separator No. 884600.		0	1	2	3	5

88

There's more in it for you!

The entire tooling catalogues for the following brands are available from the Hoffmann Group – just ask for them!



FACOM Centring tool for seals and bearing cages

Handle with mounted steel impact cap. Adjustable jaws of aluminium, secured using the hexagonal 3 AF socket supplied (4 AF for size 90).
3 steps per jaw for adjustment to suit all types of seals and bearing cages.

Size 50 – 9.5 – 23.5 mm; 23.5 – 36.5 mm; 36.5 – 50 mm.

Size 90 – 18 – 53 mm; 41 – 76 mm; 54 – 90 mm.

Application: Easily adjustable diameter for positioning and centring seals, bearings etc. For use on most vehicles including motor bikes.



88 4110_90



88 4110_50



Application example



Application example

Head ∅		mm	50	90
83H 88 4110	Seal centring tool		eShop	eShop
Diameter		mm	9.5 – 50	18 – 90
overall length		mm	175	210
Weight		g	280	834

Nut splitters

Mechanical nut splitter from splitting seized or overtightened nuts (up to strength class 6) without damaging the bolt thread. The splitter chisel (with hardened blade) slides easily, without sticking.



88 4850

for nuts			M2-M6	M6-M12	M12-M18	M18-M24
83U 88 4850	Mechanical nut splitter		eShop	eShop	eShop	eShop
Chisel edge width		mm	8	12	14	16
Total length without spindle screw		mm	58.5	80	105	125
Jaw capacity		mm	4 – 10	10 – 18	19 – 27	27 – 36

Nut splitter with hydraulic ram

With hydraulic ram for splitting jammed or seized nuts (grade 5 – 10) without damaging the bolts. Double curved, allowing operation even where access is difficult. With hardened chisel edge blade. Actuated by tightening the pressure screw. After the nut has been split, unscrew the nut pressure screw and push the chisel back to the stop. Size M18 – M30 for stainless steel nuts - up to M30 in strength class 8, up to M24 in strength class 10.

Note:

88 4900 – The pressure screw may be tightened to a **maximum of 60 Nm** for sizes M4 – M14 to a **maximum of 70 Nm** for sizes M14 – M24 and to a **maximum of 50 Nm** for sizes M18 – M30. Do not exceed the tightening torques; excessive torque can break the tool and cause accidents.



88 4900_M18-M30

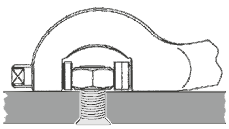
Normal application method





88 4900_M4-M14

Space-saving method (chisel blade turned 90°).





88 4900_M14-M24

for nuts			M4-M14	M14-M24	M18-M30
83U 88 4900	Nut splitter		eShop	eShop	eShop
83U 88 4910	Spare chisel edge bit		eShop	eShop	eShop
Chisel edge width		mm	18	30	37
Total length without spindle screw (88 4900)		mm	185	350	210
Jaw capacity (88 4900)		mm	7 – 24	22 – 36	27 – 46



88 4910

EFORM – THE ONLINE CONFIGURATION TOOL



Further information about our **eForm Online configurator** and our rigid foam inlays can be found in our brochure or online at **https://www.hog.tools/brochures**

The **eForm Online configurator** with its many technical refinements offers you the ideal basis for designing your tailor-made rigid foam inlays. As it has done for many years.

Individual on-line planning:

Our on-line configurator allows you to design your own individual rigid foam inlays. You determine where each tool is placed.

Easy handling:

No complicated software. Use drag-and-drop to select your items from more than 55,000 tools or tool contours in the familiar Hoffmann Group item classes, insert them and position them as you wish.

Cost transparency:

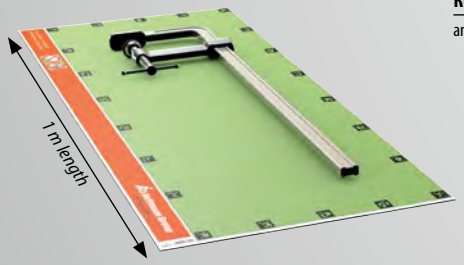
Online calculation, quotation, consistent scanning costs and a project archive. Ready configured rigid foam inlays can be re-ordered without problems, at a top price-performance ratio.

Individual stock tools

So you wish to plan your tools within rigid foam inlays? No problem!

Just place the tools on a Hoffmann Group scanning pad (DIN A3 scanning pad for one tool No. KD5009), photograph them, arrange them – done!





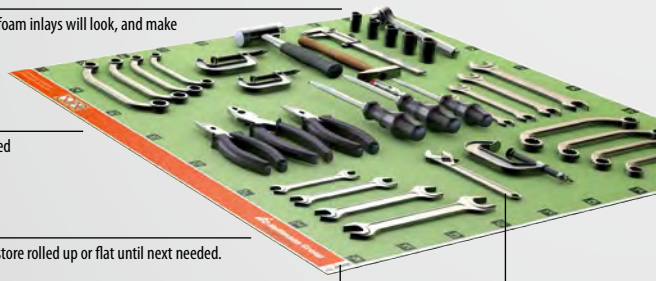
You can also do this for extra-large tools:
***XXL scanning pad** 1000×400 mm, No. KD5013.*

***Multiple scanning pad** 600×600 mm, No. KD5011.*

See immediately
how the subsequent rigid foam inlays will look, and make adjustments directly.

All products
on the template are scanned simultaneously.

Reusable
and space-saving. Simply store rolled up or flat until next needed.



Special coding
recognisable by eForm software.

Simple and convenient
Determine the position of the individual objects on the mat.

3D milling steps even for your individual tools!

Do you need the perfect depth in 3D rigid foam to suit your existing tools? Various milled depths in the foam define the ideal positioning of the tools.

A 3D foam inlay can be created for each of your existing tools via the online configuration tool, without long tool downtime.





Garant RIGID FOAM INLAYS FOR GARANT GRIDLINE

GRID LINE

This is how to find your desired foam inlay:

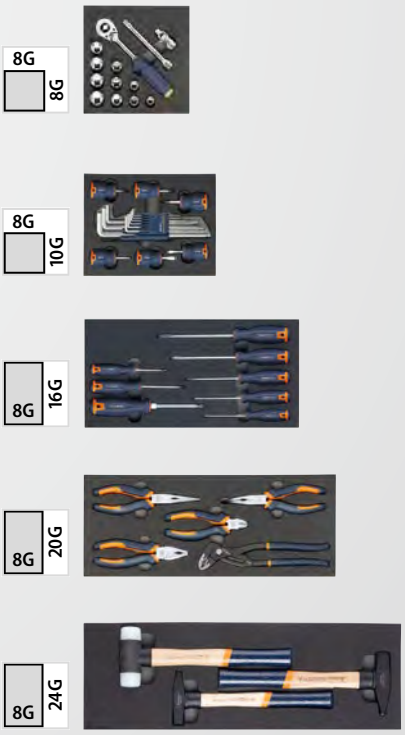
1. Seek out suitable tools for your requirements

- **Rigid foam inlays for workbenches, tool cabinets and other cabinets**
  - Rigid foam inlays **for measuring tools** p. 941
  - Rigid foam inlays for **files** p. 942
  - Rigid foam inlays for **spanners (ring spanners and open-ended spanners)** p. 944
  - Rigid foam inlays for **sockets** p. 948
  - Rigid foam inlays for **hexagon key L-wrenches** p. 950
  - Rigid foam inlays for **screwdrivers for Torx® screws** p. 951
  - Rigid foam inlays for **screwdrivers** (slot-head and Phillips) p. 955
  - Rigid foam inlays for **socket sets** p. 959
  - Rigid foam inlays for **torque wrenches / impact wrenches** p. 965
  - Rigid foam inlays for **pliers** p. 967
  - Rigid foam inlays for **cable processing tools** p. 970
  - Rigid foam inlays for **tools fully insulated to VDE standards** p. 971
  - Rigid foam inlays for **impact tools** p. 974
  - Rigid foam inlays for various **tool selections** p. 976
  - Rigid foam inlay basic set **for one complete drawer of the roller cabinet 20×16G** p. 982
  - Rigid foam inlay basic set **for several drawers of the roller cabinet 20×16G** p. 984
  - Rigid foam inlay basic set for **one complete drawer 20×20G** p. 985
- **Rigid foam inlays for shadowboards**
  - Shadowboard **depth 115 mm** p. 986
  - Shadowboard **depth 176 mm** p. 988

2. Seek out the desired size

Available sizes of foam inlays:
The new GridLine foam inlays are available in 3 widths:

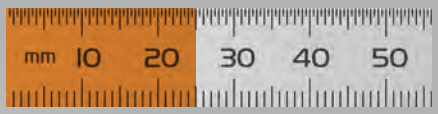
Note: Drawer front height must be at least 75 mm. Check the respective article to determine if a different front height such as 100 mm is required.

6 G	8 G	10 G
		
Depths: 8, 10, 16, 20 and 24 G	**Depths: 8, 10, 16, 20 and 24 G**	**Depths: 10, 16, 20 and 24 G**

The foam inlay depths **16G**, **20G** and **24G** match the depths of the available drawers.
This makes it easier to fill the drawers with rigid foam inlays.

New size concept – 1 G = 25 mm:

The colour markings of the size fields for drawer internal dimensions can also be seen on the drawers for tool cabinets and other cabinets, thus clearly indicating which dividing material fits which drawers.

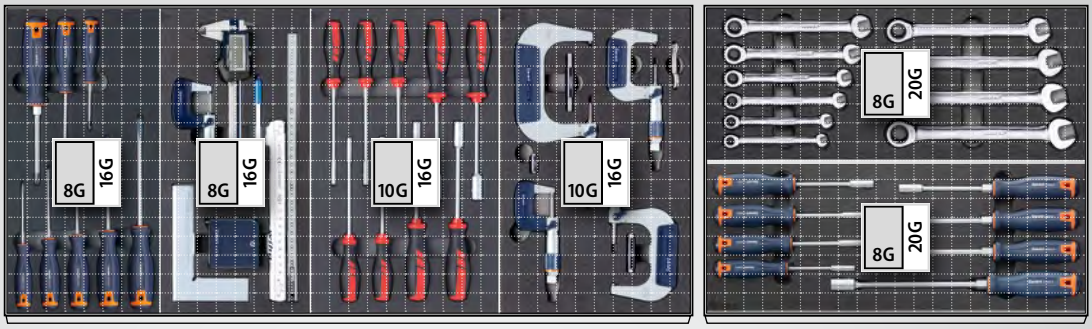


1 G = 25 mm

Here we give you examples of how to fill the various drawer sizes:

Usable drawer depth

16 G
(400 mm)

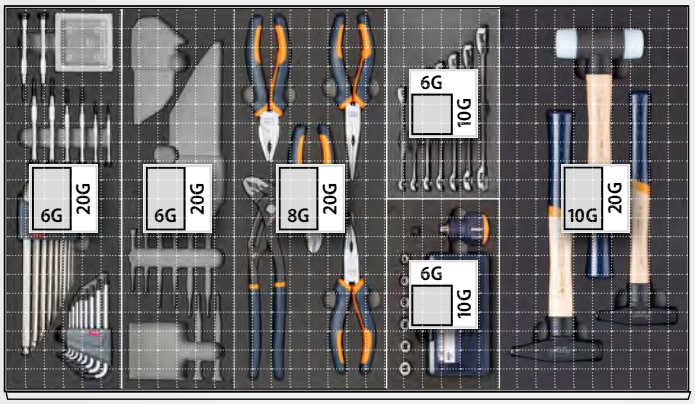


Drawer usable width × usable depth in G

16×16 G
26×16 G
36×16 G
20×16 G

Usable drawer depth

20 G
(500 mm)

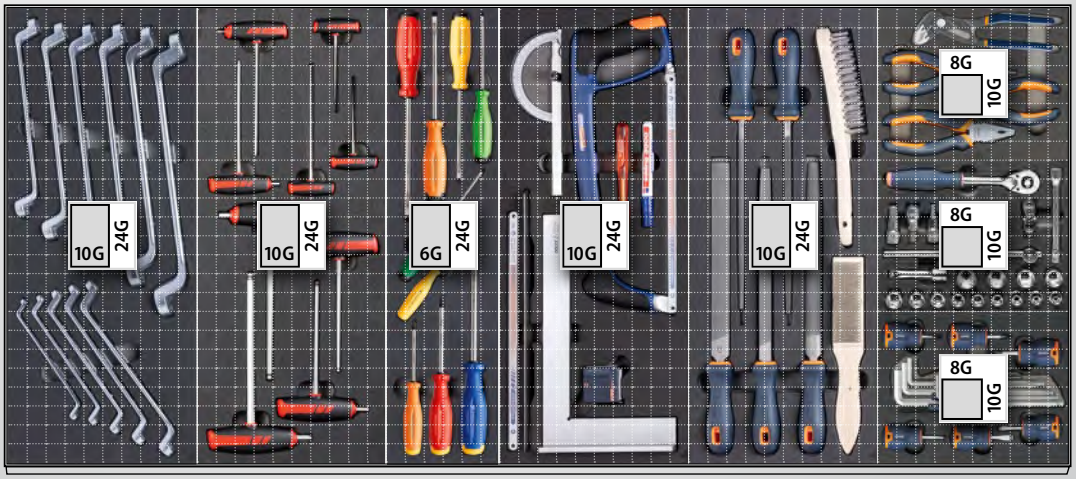


Drawer usable width × usable depth in G

12×20 G
20×20 G
26×20 G
36×20 G

Usable drawer depth

24 G
(600 mm)



Drawer usable width × usable depth in G

20×24 G
26×24 G
36×24 G
46×24 G
56×24 G

LD 45 / 30

Rigid foam inlay for measuring tools

GRID LINE

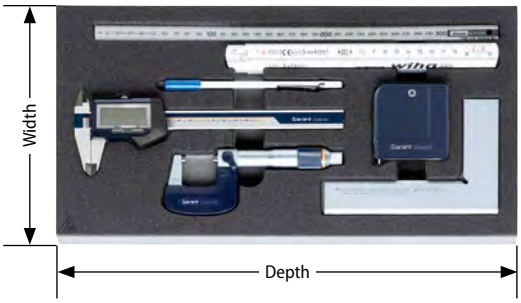
6G 24G | 100 mm

Number of tools		7
91A **95 2048**	Measuring tools set	eShop
Width	mm	150
Depth	mm	600
Width in G		6
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 952048		1 pc.
HOLEX vernier caliper No. 410200 size 150		1 pc.
HOLEX try square No. 452600 size 150×100		1 pc.
HOLEX carbide scriber No. 458800 size HM		1 pc.
HOLEX steel rule No. 461805 size 300		1 pc.
GARANT tape measure No. 462201 size 2.5		1 pc.
WIHA folding rule No. 466200 size 2		1 pc.
HOLEX aluminium spirit level No. 467435 size 400		1 pc.



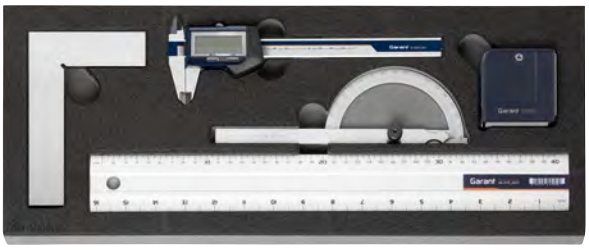
8G 16G

Number of tools		7
91A **95 2070**	Measuring tools set	eShop
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 952070		1 pc.
GARANT digital caliper No. 412680 size 150		1 pc.
GARANT external micrometer No. 420402 size 0-25		1 pc.
GARANT bevel edge square No. 450010 size 150×100		1 pc.
HOLEX carbide scriber No. 458800 size HM		1 pc.
GARANT steel rule No. 461770 size 300		1 pc.
GARANT tape measure No. 462210 size 3		1 pc.
WIHA plastic folding rule No. 466200 size 2		1 pc.



8G 20G

Number of tools		5
91A **95 2072**	Measuring tools set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952072		1 pc.
GARANT digital caliper No. 412680 size 150		1 pc.
GARANT stock square No. 451030 size 150×100		1 pc.
HOLEX protractor No. 453000 size 120×150		1 pc.
GARANT workshop straight edge No. 461170 size 400		1 pc.
GARANT tape measure No. 462210 size 3		1 pc.



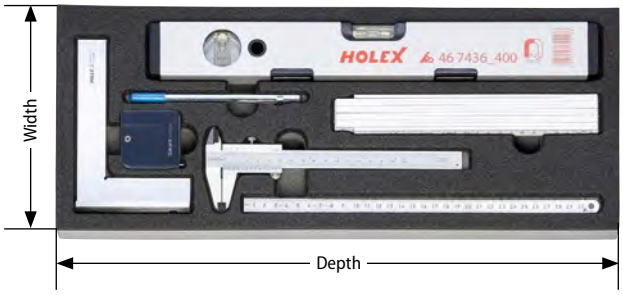
8G 20G

Number of tools		6
91A **95 2073**	Measuring tools set	eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952073		1 pc.
GARANT digital caliper No. 412680 size 150		1 pc.
GARANT external micrometer No. 420402 size 0-25		1 pc.
GARANT bevel edge square No. 450010 size 150×100		1 pc.
HOLEX protractor No. 453000 size 120×150		1 pc.
GARANT workshop straight edge No. 461170 size 400		1 pc.
GARANT tape measure No. 462210 size 3		1 pc.



8G 20G

Number of tools		7
91A **95 2078**	Measuring tools set	eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952078		1 pc.
HOLEX caliper No. 410200 size 150		1 pc.
HOLEX try square No. 452600 size 150×100		1 pc.
HOLEX carbide scriber No. 458800 size HM		1 pc.
HOLEX steel rule No. 461805 size 300		1 pc.
GARANT tape measure No. 462201 size 2.5		1 pc.
WIHA plastic ruler 2 m No. 466200 size 2		1 pc.
HOLEX spirit level No. 467436 size 400		1 pc.



8G 24G

Number of tools		8
91A **95 2083**	Measuring tools set	eShop
Width	mm	200
Depth	mm	600
Width in G		8
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 952083		1 pc.
HOLEX vernier caliper No. 410200 size 150		1 pc.
HOLEX try square No. 452600 size 150×100		1 pc.
HOLEX protractor No. 453000 size 120×150		1 pc.
HOLEX carbide scriber No. 458800 size HM		1 pc.
HOLEX steel rule No. 461805 size 300		1 pc.
GARANT tape measure No. 462201 size 2.5		1 pc.
WIHA plastic folding rule No. 466200 size 2		1 pc.
HOLEX spirit level with magnet No. 467436 size 400		1 pc.



10G 16G

Number of tools		4
91A **95 2095**	Garant External micrometer set	eShop
Width	mm	250
Depth	mm	400
Width in G		10
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 952095		1 pc.
GARANT external micrometer No. 420402 size 0-25; 25-50; 50-75; 75-100		1 pc. each



LD 45 / 30

Rigid foam inlay for files

GRID LINE

8G 16G

Number of tools		5
91A **95 2205**	Garant Workshop file set	eShop ■
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 952205		1 pc.
GARANT set of files, 5 pieces, No. 517411 size 200		1 pc.



8G 20G

Number of tools		5
91A **95 2211** HOLEX Workshop file set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952211		1 pc.
HOLEX set of files, 5 pieces, No. 517420 size 250		1 pc.



8G 20G

Number of tools		5
91A **95 2215** Workshop file set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952215		1 pc.
Workshop files set, 5 pieces, No. 517200 size 250		1 pc.



8G 20G

Number of tools		10
91A **95 2218** Workshop file set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952218		1 pc.
Key file set 6 pieces, No. 518970		1 pc.
Wire brush No. 575000 size 3		1 pc.
File brush No. 576000 size 100×25		1 pc.
PUK saw, adjustable No. 581200		1 pc.
Pack of PUK saw blades, 12 pieces, metal No. 581250		1 pc.



10G 20G

Number of tools		6
91A **95 2253** File set		eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952253		1 pc.
Set of files, 5 pieces, No. 517411 size 250		1 pc.
File brush No. 576000 size 100×25		1 pc.



10G 24G

Number of tools		7
91A **95 2263** Workshop file set		eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 952263		1 pc.
Set of files, 5 pieces, No. 517411 size 250		1 pc.
Wire brush No. 575000 size 3		1 pc.
File brush No. 576000 size 115×40		1 pc.



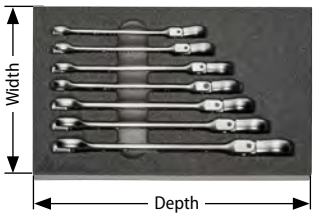
LD 45 30

Rigid foam inlay for spanners (ring spanners and open ended spanners)

GRID LINE

6G 10G

Number of tools		7
91A 95 2319 Garant Open ended / ratchet ring spanner set		eShop
Width	mm	150
Depth	mm	250
Width in G		6
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 952319		1 pc.
GARANT open ended / ratchet ring spanner No. 614812 size 8; 9; 10; 11; 13; 14; 16		1 pc. each



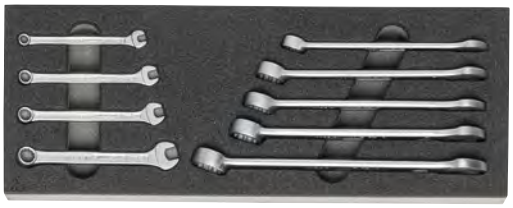
6G 10G

Number of tools		7
91A 95 2316 Garant Open ended / ratchet ring spanner set		eShop
Width	mm	150
Depth	mm	250
Width in G		6
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 952316		1 pc.
GARANT open ended / ratchet ring spanner No. 614770 size 8; 9; 10; 11; 13; 14; 16		1 pc. each



6G 16G

Number of tools		9
91A 95 2325 Garant Combination spanner set		eShop
Width	mm	150
Depth	mm	400
Width in G		6
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 952325		1 pc.
GARANT combination spanner set No. 613610 size 9 (5.5; 7; 8; 10; 13; 16; 17; 18; 19)		1 pc.



6G 24G

Number of tools		11
91A 95 2366 Garant Open ended / ratchet ring spanner set		eShop
Width	mm	150
Depth	mm	600
Width in G		6
Depth in G		24
Supplied with: Rigid foam inlay No. 952001 size 952366		1 pc.
GARANT open ended/ratchet ring wrench No. 614770 size. 8; 9; 10; 11; 12; 13; 14; 16; 17; 18; 19		1 pc. each



8G 20G

Number of tools		10
91A 95 2422 Garant Double open ended spanner set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952422		1 pc.
GARANT double open-ended spanner set No. 610610 size 10 (6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×24; 27×30)		1 pc.



8G 20G

Number of tools		10
91A **95 2426**	Garant Ratchet ring spanner set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952426		1 pc.
GARANT open ended / ratchet ring spanner No. 614770 size 8; 9; 10; 11; 13; 14; 16; 17; 18; 19		1 pc. each



8G 20G

Number of tools		12
91A **95 2427**	Garant Open ended / ratchet ring spanner set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952427		1 pc.
GARANT open ended spanner / ratchet ring spanner with swivel head No. 614812 size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19		1 pc. each



8G 20G

Number of tools		19
91A **95 2428**	Garant Combination spanner set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952428		1 pc.
GARANT combination spanner set, No. 613610 size 19 (5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24)		1 pc.



8G 20G

Number of tools		10
91A **95 2432**	HOLEX Double open ended spanner set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952432		1 pc.
HOLEX double open-ended spanner set No. 610960 size 10 (6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×24; 27×30)		1 pc.



8G 20G 100 mm

Number of tools		19
91A **95 2435**	HOLEX Combination spanner set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952435		1 pc.
HOLEX combination spanner set, No. 613960 size 19 (5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24)		1 pc.



8G 20G

Number of tools		11
91A 95 2440	Wera JOKER ratchet ring spanner set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952440		1 pc.
WERA ratchet ring spanner No. 614870 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19		1 pc. each



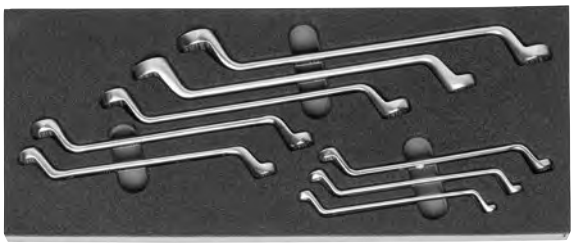
8G 20G

Number of tools		8
91A 95 2443	Garant Double-ended ring spanner set, cranked	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952443		1 pc.
GARANT double-ended ring spanner deep cranked no. 615600 size 6×7; 8×9; 10×11; 12×13; 14×17; 16×18; 19×22; 24×27		1 pc. each



8G 20G

Number of tools		8
91A 95 2445	HOLEX Double-ended ring spanner set, cranked	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952445		1 pc.
GARANT double-ended ring spanner deep cranked no. 615950 size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×21; 19×22		1 pc. each



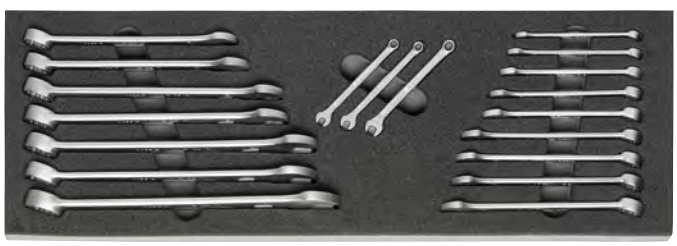
8G 20G

Number of tools		11
91A 95 2447	HOLEX Double-ended ring spanner set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952447		1 pc.
HOLEX double-ended ring spanner set No. 617960 size 11 (6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×24; 27×32; 30×34)		1 pc.



8G 24G 100 mm

Number of tools		19
91A 95 2452	Garant Combination spanner set	eShop
Width	mm	200
Depth	mm	600
Width in G		8
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 952452		1 pc.
GARANT combination spanner No. 613600 size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24		1 pc. each



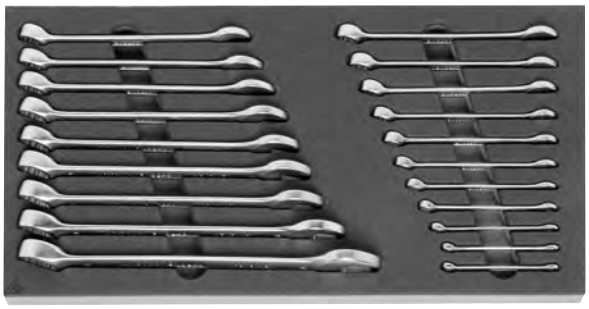
10G
10G

Number of tools		9
91A 95 2462 Garant Combination spanner set		eShop
Width	mm	250
Depth	mm	250
Width in G		10
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 952462		1 pc.
GARANT combination spanner No. 613600 size 5.5; 7; 8; 10; 13; 16; 17; 18; 19		1 pc. each



10G 20G 100 mm

Number of tools		20
91A 95 2505 HOLEX Combination spanner set		eShop ■
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952505		1 pc.
HOLEX combination spanner No. 613950 size 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24; 27		1 pc. each



10G 20G 100 mm

Number of tools		19
91A 95 2508 STAHLWILLE Combination spanner set		eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952508		1 pc.
STAHLWILLE combination spanner set, no. 613510 size 19 (5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 24)		1 pc.



10G 24G

Number of tools		11
91A 95 2523 Garant Double open ended spanner set		eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 952523		1 pc.
GARANT double open ended spanner No. 610600 size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×23; 24×27; 30×32		1 pc. each



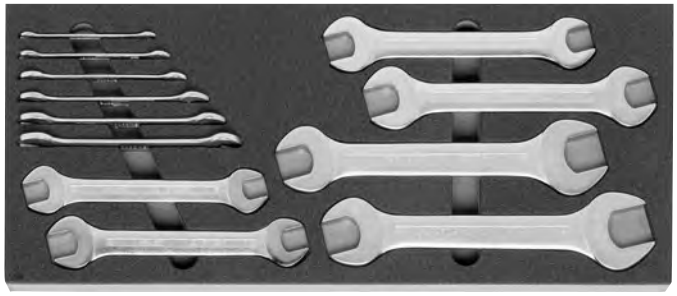
10G 24G

Number of tools		11
91A 95 2525 Garant Double-ended ring spanner set, cranked		eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 952525		1 pc.
GARANT double-ended ring spanner, deep cranked No. 615600 size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×23; 24×26; 27×30		1 pc. each



10G 24G

Number of tools		12
91A 95 2535 HOLEX Double open ended spanner set		eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 952535		1 pc.
HOLEX double open ended spanner set No. 610960 size 12 (6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19; 20×22; 21×23; 24×26; 27×32; 30×34)		1 pc.



For shadowboards No. 92 8220, you will find suitable foam inlays in depths 115 and 176 mm from page 986.





LD 45 30

GRID LINE

Rigid foam inlay for nut spinners

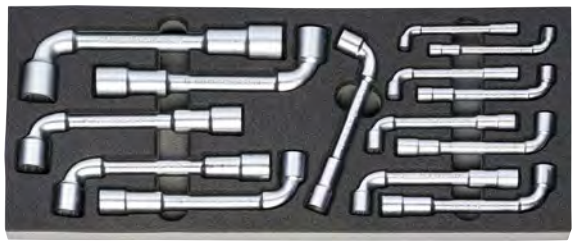
6G 24G

Number of tools		9
91A 95 2625 HOLEX Nut spinner set		eShop
Width	mm	150
Depth	mm	600
Width in G		6
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 952625		1 pc.
HOLEX nut spinner set with handle No. 622211 size 9 (4; 4.5; 5; 5.5; 6; 7; 8; 9; 10)		1 pc.



8G 20G

Number of tools		14
91A 95 2652 HOLEX Tubular socket wrench set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952652		1 pc.
HOLEX socket wrench, angled No. 621341 size 6; 7; 8; 9; 10; 11; 12; 13; 14; 16; 17; 18; 19; 22		1 pc. each



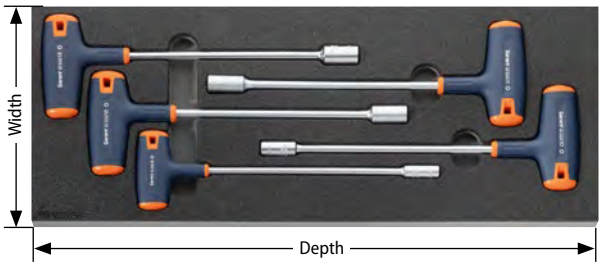
8G 20G

Number of tools		8
91A 95 2655 Garant Nut spinner set		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952655		1 pc.
GARANT nut spinner set No. 622156 size 8 (5; 5.5; 6; 7; 8; 9; 10; 13)		1 pc.



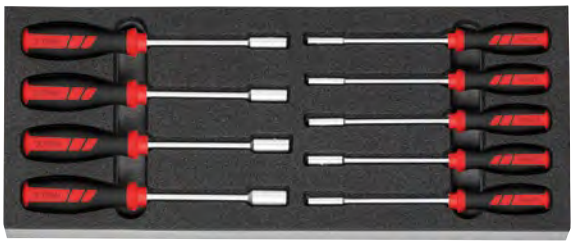
8G 20G

Number of tools		5
91A 95 2658	Garant Nut spinner set with T-handle	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952658		1 pc.
GARANT nut spinner No. 622552 size 8; 10; 11; 12; 13		1 pc. each



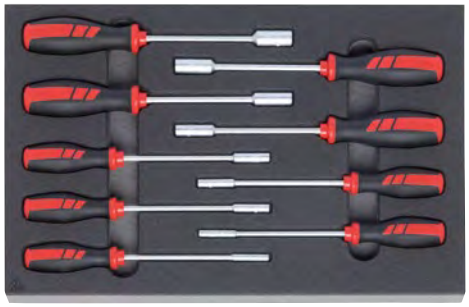
8G 20G

Number of tools		9
91A 95 2661	HOLEX Nut spinner set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952661		1 pc.
HOLEX nut spinner set No. 622211 size 9 (4; 4.5; 5; 5.5; 6; 7; 8; 9; 10)		1 pc.



10G 16G

Number of tools		9
91A 95 2725	HOLEX Nut spinner set	eShop
Width	mm	250
Depth	mm	400
Width in G		10
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 952725		1 pc.
HOLEX nut spinner set No. 622211 size 9 (4; 4.5; 5; 5.5; 6; 7; 8; 9; 10)		1 pc.



Garant FOAM INLAYS FOR ROLLER CABINETS

Foam inlays that fill a complete drawer of the roller cabinet can be found on page 982.
They make it even easier to equip the drawers with tools.



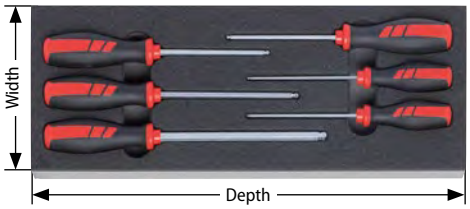
LD 45 30

Rigid foam inlay for hexagon screwdrivers

GRID LINE

6G 16G

Number of tools		6
91A 95 2835 HOLEX Hexagon ball-point screwdriver set		eShop
Width	mm	150
Depth	mm	400
Width in G		6
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 952835		1 pc.
HOLEX hexagon ball point screwdriver No. 627511 size 2.5; 3; 4; 5; 6; 8		1 pc. each



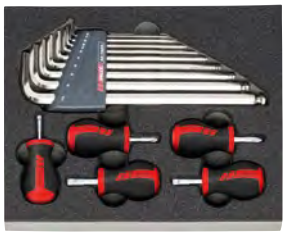
8G 10G

Number of tools		15
91A 95 2892 Garant Hexagon key L-wrenches / short screwdrivers		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 952892		1 pc.
GARANT hexagon key L-wrench set No. 627132 size 9		1 pc.
GARANT short screwdriver for slot-head No. 664122 size 4; 5.5; 6.5		1 pc. each
GARANT stub screwdriver for Phillips No. 667722 size 0; 1; 2		1 pc. each



8G 10G

Number of tools		14
91A 95 2896 HOLEX Hexagon key L-wrenches / short screwdrivers		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 952896		1 pc.
HOLEX hexagon key L-wrench set, No. 627225 size 9		1 pc.
HOLEX stub screwdriver for Phillips No. 668471 size 1; 2		1 pc. each
HOLEX short screwdriver for slot-head No. 664201 size 4; 5.5; 6.5		1 pc. each



8G 20G

Number of tools		17
91A 95 2919 HOLEX Hexagon key L-wrenches / screwdriver set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952919		1 pc.
HOLEX hexagon key L-wrench set, No. 627225 size 9		1 pc.
HOLEX slot-head screwdriver No. 660701 size 2.5; 3.5; 5.5; 7; 8		1 pc. each
HOLEX screwdriver for Phillips No. 668401 size 0; 1; 2		1 pc. each



8G 20G

Number of tools		7
91A 95 2922 Garant Hexagon screwdriver set with T-handle		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952922		1 pc.
GARANT hexagon screwdriver No. 627702 size 2.5		1 pc.
GARANT hexagon screwdriver No. 627712 size 3; 4; 5; 6; 8; 10		1 pc. each



8G 20G

Number of tools		7
91A 95 2926	HOLEX Hexagon screwdriver set with T-handle	eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952926		1 pc.
HOLEX hexagon screwdriver No. 627481, size 2; 2.5		1 pc. each
HOLEX hexagon screwdriver No. 627484 size 3; 4; 5; 6; 8		1 pc. each



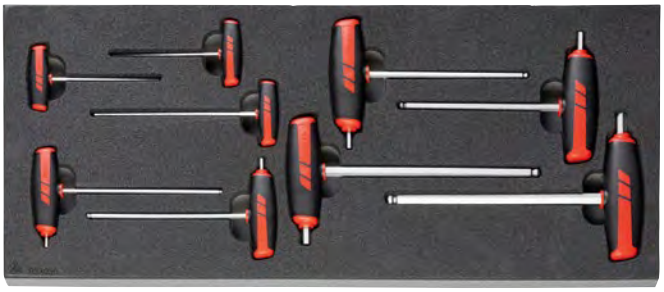
8G 20G

Number of tools		8
91A 95 2931	PB SWISS TOOLS 3-way hexagon screwdriver set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 952931		1 pc.
PB SWISS TOOLS 3-way hexagon screwdriver No. 627391 size 2; 2.5; 3; 4; 5; 6; 8; 10		1 pc. each



10G 24G

Number of tools		9
91A 95 3035	HOLEX Hexagon screwdriver set with T-handle	eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953035		1 pc.
HOLEX hexagon screwdriver with T-handle No. 627481, size 2; 2.5; 3		1 pc. each
HOLEX hexagon screwdriver with T-handle and ball point No. 627484 size 3; 4; 5; 6; 8; 10		1 pc. each



LD 45 30

Rigid foam inlay for screwdrivers for Torx® screws

GRID LINE

6G 8G

Number of tools		5
91A 95 3063	Garant Screwdriver set for Torx®	eShop
Width	mm	150
Depth	mm	200
Width in G		6
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 953063		1 pc.
GARANT screwdriver for Torx® No. 625332 size TX6; TX7; TX8; TX9; TX10		1 pc. each



6G 24G

Number of tools		9
91A 95 3116	Garant Screwdriver set for Torx®	eShop
Width	mm	150
Depth	mm	600
Width in G		6
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953116		1 pc.
GARANT screwdriver set for Torx® No. 625332 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX30		1 pc. each



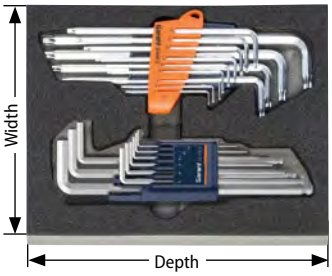
6G 24G

Number of tools		9
91A 95 3121 Garant Screwdriver set for Torx®, with T-handle		eShop
Width	mm	150
Depth	mm	600
Width in G		6
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953121		1 pc.
GARANT screwdriver for Torx® with T-handle No. 625152 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX30		1 pc. each



8G 10G

Number of tools		22
91A 95 3141 Garant L-wrenches for Torx® and hexagon key L-wrenches		eShop ■
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953141		1 pc.
GARANT hexagon key L-wrench set No. 627132 size 9		1 pc.
GARANT L-wrench set for Torx® no. 625025 size 13 (TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45)		1 pc.



8G 10G

Number of tools		17
91A 95 3145 PB SWISS TOOLS L-wrenches for Torx® and hexagon key L-wrenches		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953145		1 pc.
PB SWISS TOOLS L-wrench No. 627140 size 1.5; 2; 2.5; 3; 4; 5; 6; 8; 10		1 pc. each
PB SWISS TOOLS Torx® key L-wrench No. 624850 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25		1 pc. each



8G 10G

Number of tools		17
91A 95 3147 HOLEX L-wrenches for Torx® and hexagon key L-wrenches		eShop ■
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953147		1 pc.
HOLEX hexagon key L-wrench set, No. 627225 size 9		1 pc.
HOLEX L-wrench set for Torx® no. 624921 size 8 (TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40)		1 pc.



8G 10G

Number of tools		7
91A 95 3152 Garant Screwdrivers for Torx®		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953152		1 pc.
GARANT screwdriver for Torx® No. 625332 size TX6; TX7; TX8; TX9; TX10; TX15; TX20		1 pc. each



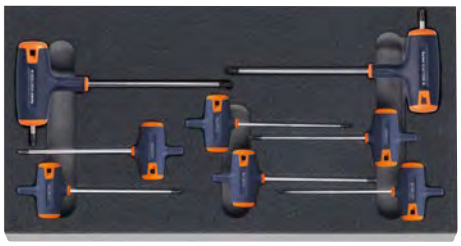
8G 10G

Number of tools		6
91A 95 3155 PB SWISS TOOLS Screwdrivers for Torx®		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953155		1 pc.
PB SWISS TOOLS screwdriver for Torx® No. 625406 size TX8; TX9; TX10; TX15; TX20; TX25		1 pc. each



8G 16G

Number of tools		8
91A 95 3171 Garant Screwdriver set for Torx®, with T-handle		eShop
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 953171		1 pc.
GARANT screwdriver for Torx® with T-handle No. 625152 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25		1 pc. each



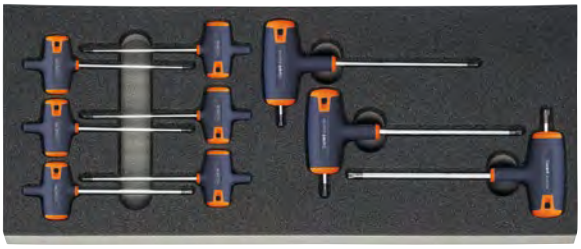
8G 20G

Number of tools		15
91A 95 3182 Garant Screwdrivers for Torx® and hexagon screwdrivers		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953182		1 pc.
GARANT hexagon screwdriver, No. 627722, size 2; 2.5		1 pc. each
GARANT hexagon screwdriver No. 627742 size 3; 4; 5; 6; 8		1 pc. each
GARANT screwdriver for Torx® No. 625332 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25		1 pc. each



8G 20G

Number of tools		9
91A 95 3186 Garant Screwdrivers for Torx® with T-handle		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953186		1 pc.
GARANT screwdriver for Torx® with T-handle No. 625152 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX30		1 pc. each



8G 20G

Number of tools		14
91A 95 3190 HOLEX Screwdrivers for Torx® and hexagon screwdrivers		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953190		1 pc.
HOLEX hexagon screwdriver No. 627511 size 2.5; 3; 4; 5; 6; 8		1 pc. each
HOLEX screwdriver for Torx® No. 625701 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25		1 pc. each



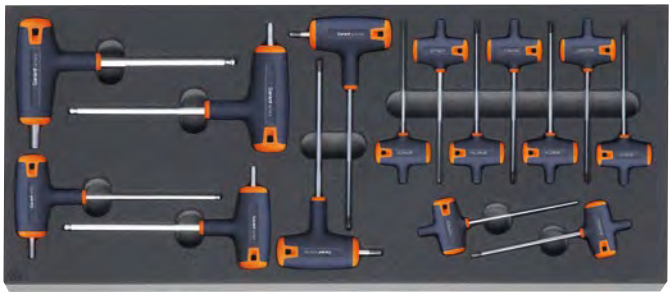
8G 24G

Number of tools		31
91A **95 3202**	Garant Screwdriver set	eShop
Width	mm	200
Depth	mm	600
Width in G		8
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953202		1 pc.
GARANT screwdrivers for Torx® No. 625025 size 13 (TX5; TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45)		1 pc.
GARANT hexagon key L-wrench set No. 627132 size 9 (1.5; 2; 2.5; 3; 4; 5; 6; 8; 10)		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2; 2.5; 3.5; 4; 5.5		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 00; 0; 1; 2		1 pc. each



10G 24G

Number of tools		15
91A **95 3286**	Garant Screwdriver set for Torx®, with T-handle	eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953286		1 pc.
GARANT screwdriver for Torx® with T-handle No. 625152 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25		1 pc. each
GARANT hexagon screwdriver with T-handle No. 627702 size 2; 2.5; 3; 4; 5; 6; 8		1 pc. each



Seek out the desired size

Available sizes of foam inlays

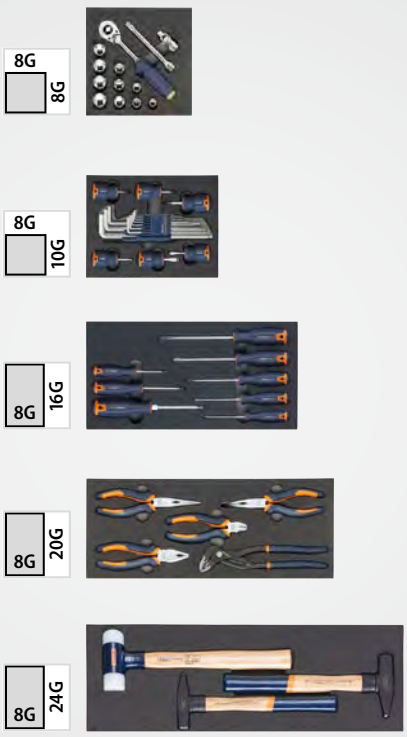
The new GridLine foam inlays are available in 3 widths:

6 G



Depths: 8, 10, 16, 20 and 24 G

8 G



Depths: 8, 10, 16, 20 and 24 G

10 G



Depths: 10, 16, 20 and 24 G

The foam inlays **16**, **20** and **24 G** match the corresponding drawer depths.
This facilitates the filling of drawers with rigid foam inlays.

95

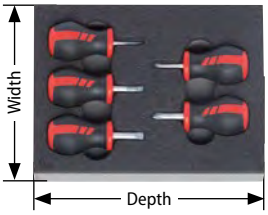
LD 45 / 30

Rigid foam inlay for screwdrivers (slot-head and Phillips)

GRID LINE

6G / 8G

Number of tools		5
91A 95 3307 HOLEX Screwdriver set		eShop
Width	mm	150
Depth	mm	200
Width in G		6
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 953307		1 pc.
HOLEX short slot-head screwdriver No. 664201 size 4; 5.5; 6.5		1 pc. each
HOLEX short screwdriver for Phillips No. 668471 size 1; 2		1 pc. each



6G / 16G

Number of tools		6
91A 95 3326 Garant Screwdriver set		eShop
Width	mm	150
Depth	mm	400
Width in G		6
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 953326		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2.5; 3.5; 4; 5.5; 6.5; 8		1 pc. each



6G / 24G

Number of tools		10
91A 95 3370 Wera Screwdriver set		eShop
Width	mm	150
Depth	mm	600
Width in G		6
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953370		1 pc.
WERA slot-head screwdriver No. 662200 size 2.5; 3; 3.5; 4; 5.5; 6.5		1 pc. each
WERA screwdriver for Phillips No. 668260 size 0; 1; 2; 3		1 pc. each



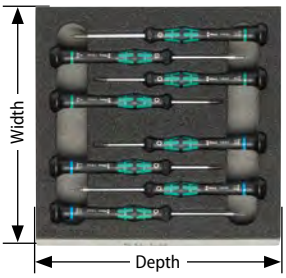
6G / 24G

Number of tools		9
91A 95 3373 PB SWISS TOOLS Screwdriver set		eShop
Width	mm	150
Depth	mm	600
Width in G		6
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953373		1 pc.
PB SWISS TOOLS slot-head screwdriver No. 660042 size 3.5; 4; 5.5; 6.5; 8		1 pc. each
PB SWISS TOOLS screwdriver for Phillips No. 667795 size 0; 1; 2; 3		1 pc. each



8G / 8G

Number of tools		8
91A 95 3386	Wera Electronics screwdriver set	eShop
Width	mm	200
Depth	mm	200
Width in G		8
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 953386		1 pc.
WERA electronics screwdriver for Torx® No. 625770 size TX5; TX6; TX8; TX10		1 pc. each
WERA electronics screwdriver Kraftform Micro No. 627470 size 0.9; 1.3; 1.5; 2		1 pc. each



8G / 10G

Number of tools		9
91A 95 3392	Garant Screwdriver set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953392		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2; 2.5; 3.5; 4; 5.5		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 00; 0; 1; 2		1 pc. each



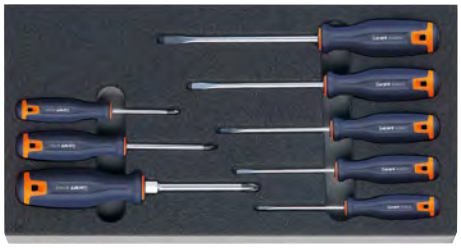
8G / 10G

Number of tools		11
91A 95 3396	Wera Micro screwdriver set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953396		1 pc.
WERA hexagon electronics screwdriver No. 627470 size 0.9; 1.3; 1.5; 2; 2.5		1 pc. each
WERA electronics screwdriver for slot-head No. 664600 size 1.2; 1.5; 2; 2.5		1 pc. each
WERA electronics screwdriver for Phillips No. 668800 size 00; 0		1 pc. each



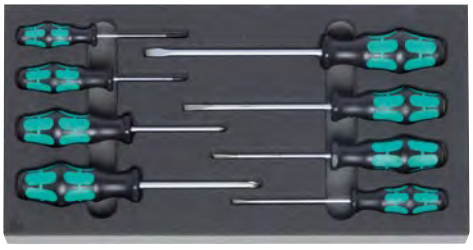
8G / 16G

Number of tools		8
91A 95 3416	Garant Screwdriver set	eShop
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 953416		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2.5; 3.5; 4; 5.5; 6.5		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 0; 1; 2		1 pc. each



8G / 16G

Number of tools		8
91A 95 3420	Wera Screwdriver set	eShop
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 953420		1 pc.
WERA slot-head screwdriver No. 662200 size 2.5; 3.5; 4; 5.5; 6.5		1 pc. each
WERA screwdriver for Phillips No. 668260 size 0; 1; 2		1 pc. each



8G 16G

Number of tools		6
91A 95 3422 Wera Screwdriver set		eShop
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay No. 952001 size 953422		1 pc.
WERA screwdriver for slot-head No. 662200 size 8; 10		1 pc. each
WERA screwdriver for Phillips No. 668260 size 1S; 2S; 3		1 pc. each
WERA magnetiser No. 666451 size 1		1 pc.



8G 16G

Number of tools		7
91A 95 3423 Wera Screwdrivers with impact cap		eShop
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 953423		1 pc.
WERA screwdriver for slot-head No. 660300 size 3.5; 4.5; 5.5; 7		1 pc. each
WERA screwdriver for Phillips No. 668300 size 1; 2		1 pc. each
GARANT easyPick small parts storage bin No. 951211 size 3×3/1		1 pc.



With impact cap



8G 20G

Number of tools		13
91A 95 3432 Garant Screwdriver set		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953432		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2; 2.5; 3.5; 4; 5.5; 6.5; 8; 10		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 00; 0; 1; 2; 3		1 pc. each



8G 20G

Number of tools		10
91A 95 3436 PB SWISS TOOLS Screwdriver set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953436		1 pc.
PB SWISS TOOLS screwdriver for slot-head No. 660042 size 3.5; 4; 5.5; 6.5; 8; 10		1 pc. each
PB SWISS TOOLS screwdriver for Phillips No. 667795 size 0; 1; 2; 3		1 pc. each



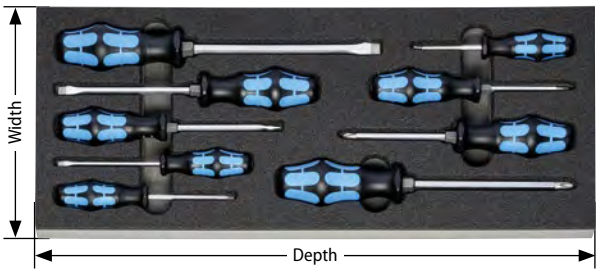
8G 20G

Number of tools		11
91A 95 3438 Wera Screwdriver set		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953438		1 pc.
WERA screwdriver for slot-head No. 662200 size 2.5; 3; 3.5; 4; 5.5; 6.5; 8		1 pc. each
WERA screwdriver for Phillips No. 668260 size 0; 1; 2; 3		1 pc. each



8G 20G

Number of tools		9
91A 95 3441 Wera Screwdriver set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953441		1 pc.
WERA slot-head screwdriver No. 660100 size 3.5; 4; 5.5; 7; 10		1 pc. each
WERA screwdriver for Phillips No. 667700 size 0; 1; 2; 3		1 pc. each



8G 20G

Number of tools		11
91A 95 3444 HOLEX Screwdriver set		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953444		1 pc.
HOLEX screwdriver for slot-head No. 660701 size 2.5; 3; 3.5; 5.5; 7; 8; 10		1 pc. each
HOLEX screwdriver for Phillips No. 668401 size 0; 1; 2; 3		1 pc. each



8G 20G

Number of tools		8
91A 95 3447 Wera Screwdrivers with impact cap		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953447		1 pc.
WERA screwdriver with impact cap for slot-head No. 660300 size 3.5; 4.5; 5.5; 7; 10		1 pc. each
WERA screwdriver with impact cap for Phillips No. 668300 sizes 1; 2; 3		1 pc. each

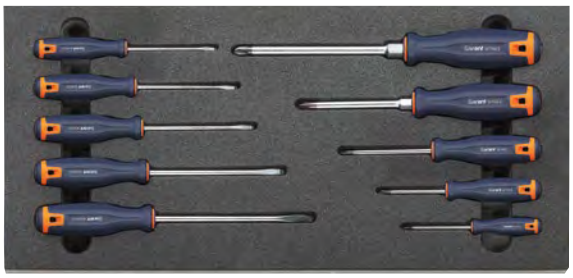


With impact cap



10G 20G

Number of tools		10
91A 95 3522 Garant Screwdriver set		eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953522		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2.5; 3.5; 4; 5.5; 6.5		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 00; 0; 1; 2; 3		1 pc. each



10G 24G

Number of tools		17
91A 95 3551 HOLEX Screwdriver set		eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953551		1 pc.
HOLEX slot-head screwdriver No. 660701 size 2.5; 3; 3.5; 4; 5.5; 7; 8; 10		1 pc. each
HOLEX short screwdriver for slot-head No. 664201 size 4; 5.5; 6.5		1 pc. each
HOLEX screwdriver for Phillips No. 668401 size 0; 1; 2; 3		1 pc. each
HOLEX stub screwdriver for Phillips No. 668471 size 1; 2		1 pc. each



LD 45 30

Rigid foam inlay for socket sets

GRID LINE

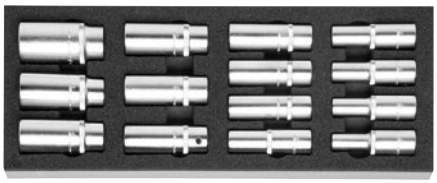
6G 16G ¼″

Number of tools		28
91A **95 3624**	Garant Socket set 1/4 inch	eShop
Width	mm	150
Depth	mm	400
Width in G		6
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 953624		1 pc.
GARANT ratchet No. 632025 size 1/4		1 pc.
GARANT extension No. 632429 size 100; 150		1 pc. each
GARANT spinner handle No. 632829 size 146		1 pc.
GARANT T-handle No. 633029 size 116		1 pc.
GARANT universal joint No. 633529 size 1/4		1 pc.
GARANT hexagon key L-wrench set No. 627132 size 9		1 pc.
GARANT hexagon socket No. 631029 size 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13		1 pc. each



6G 16G ½″

Number of tools		14
91A **95 3635**	HOLEX Expansion set 1/2 inch	eShop
Width	mm	150
Depth	mm	400
Width in G		6
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 953635		1 pc.
HOLEX bi-hexagon socket, deep, No. 642520 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27		1 pc. each



8G 8G ⅜″

Number of tools		13
91A **95 3690**	Garant Socket set 3/8 inch	eShop
Width	mm	200
Depth	mm	200
Width in G		8
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 953690		1 pc.
GARANT ratchet No. 635025 size 3/8		1 pc.
GARANT extension No. 635429 size 125		1 pc.
GARANT universal joint No. 636229 size 3/8		1 pc.
GARANT hexagon socket No. 637125 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19		1 pc. each



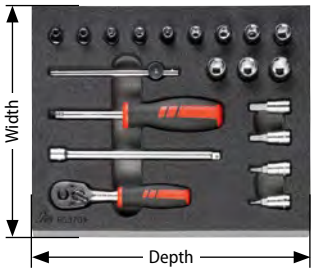
8G 10G ¼″

Number of tools		22
91A **95 3701**	Garant Socket set 1/4 inch	eShop ■
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953701		1 pc.
GARANT hexagon socket No. 631029 size 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13		1 pc. each
GARANT hexagon screwdriver bit No. 631729 size 3; 4; 5; 6		1 pc. each
GARANT reversible ratchet, No. 632025 size 1/4		1 pc.
GARANT extension No. 632429 size 150		1 pc.
GARANT spinner handle No. 632829 size 146		1 pc.
GARANT T-handle No. 633029 size 116		1 pc.
GARANT universal joint No. 633529 size 1/4		1 pc.



8G 10G ¼″

Number of tools		20
91A **95 3704** HOLEX Socket set 1/4 inch		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953704		1 pc.
HOLEX hexagon socket No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13		1 pc. each
HOLEX hexagon screwdriver bit No. 631720 size 3; 4; 5; 6		1 pc. each
HOLEX reversible ratchet, No. 632090 size 1/4		1 pc.
HOLEX extension No. 632420 size 150		1 pc.
HOLEX spinner handle No. 632840 size 150		1 pc.
HOLEX T-handle No. 633029 size 116		1 pc.



8G 10G ⅜″

Number of tools		24
91A **95 3707** Garant Socket set 3/8 inch		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953707		1 pc.
GARANT hexagon socket No. 637125 size 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19		1 pc. each
GARANT hexagon screwdriver bit No. 637629 size 3; 4; 5; 6; 7; 8; 10		1 pc. each
GARANT reversible ratchet, No. 635025 size 3/8		1 pc.
GARANT extension No. 635429 size 75; 125		1 pc. each
GARANT T-handle No. 635729 size 200		1 pc.
GARANT universal joint No. 636229 size 3/8		1 pc.



8G 10G ⅜″

Number of tools		24
91A **95 3710** HOLEX Socket set 3/8 inch		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953710		1 pc.
HOLEX hexagon socket No. 637220 size 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19		1 pc. each
HOLEX hexagon screwdriver bit No. 637620 size 3; 4; 5; 6; 8; 10		1 pc. each
HOLEX reversible ratchet, No. 635090 size 3/8		1 pc.
HOLEX extension No. 635420 size 75; 125		1 pc. each
HOLEX T-handle No. 635720 size 200		1 pc.
HOLEX universal joint No. 636220 size 3/8		1 pc.



8G 10G ⅜″

Number of tools		17
91A **95 3714** HOLEX Expansion set 3/8 inch		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 953714		1 pc.
HOLEX bi-hexagon socket No. 637320 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22		1 pc. each
HOLEX hexagon screwdriver bit extra long No. 637613 size 4; 5; 6; 8; 10		1 pc. each



8G 20G 3/8″

Number of tools		37
91A **95 3741**	Garant Socket set 3/8 inch	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953741		1 pc.
GARANT hexagon socket No. 637125 size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24		1 pc. each
GARANT screwdriver bit for Torx® No. 637560 size TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40; TX45		1 pc. each
GARANT hexagon screwdriver bit No. 637629 size 3; 4; 5; 6; 7; 8; 10		1 pc. each
GARANT reversible ratchet, No. 635025 size 3/8		1 pc.
GARANT extension No. 635429 size 75; 125; 240		1 pc. each
GARANT T-handle No. 635729 size 200		1 pc.
GARANT universal joint No. 636229 size 3/8		1 pc.



8G 20G 1/4″

Number of tools		46
91A **95 3743**	Socket set 1/4 inch	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953743		1 pc.
GARANT hexagon socket No. 631225 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14		1 pc. each
GARANT socket for Torx® No. 631515 size E4; E5; E6; E7; E8; E10		1 pc. each
HOLEX screwdriver bit for slot-head No. 631613 size 3.5; 4; 5.5; 8		1 pc. each
HOLEX screwdriver bit for Phillips No. 631623 size 1; 2; 3; 4		1 pc. each
GARANT hexagon screwdriver bit No. 631729 size 2.5; 3; 4; 5; 6		1 pc. each
HOLEX screwdriver bit for Torx®, long No. 631773 size TX8; TX9; TX10; TX15; TX20; TX25; TX30; TX40		1 pc. each
GARANT reversible ratchet, No. 632025 size 1/4		1 pc.
GARANT extension No. 632429 size 50; 150		1 pc. each
GARANT spinner handle No. 632829 size 146		1 pc.
GARANT T-handle No. 633029 size 116		1 pc.
GARANT universal joint No. 633529 size 1/4		1 pc.



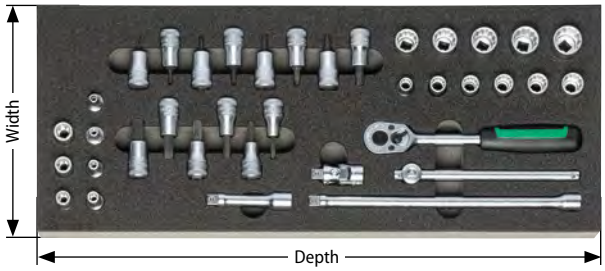
8G 20G 1/2″

Number of tools		30
91A **95 3747**	Garant Socket set 1/2 inch	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953747		1 pc.
GARANT hexagon socket No. 642325 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32		1 pc. each
GARANT hexagon screwdriver bit No. 643229 size 4; 5; 6; 8; 10; 12; 14		1 pc. each
GARANT reversible ratchet, No. 640025 size 1/2		1 pc.
GARANT extension No. 641029 size 75; 125; 250		1 pc. each
GARANT T-handle No. 641329 size 295		1 pc.
GARANT universal joint No. 641629 size 1/2		1 pc.



8G 20G ⅜″

Number of tools		37
91A **95 3748**	STAHLWILLE Socket set 3/8 inch	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay No. 952001 size 953748		1 pc.
STAHLWILLE bi-hex socket 3/8 inch No. 637000 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19		1 pc. each
STAHLWILLE hexagon screwdriver bit 3/8 inch No. 637600 size 4; 5; 6; 7; 8; 10		1 pc. each
STAHLWILLE socket 3/8 inch No. 637450 size E5; E6; E7; E8; E10; E12; E14		1 pc. each
STAHLWILLE socket 3/8 inch No. 637560 size TX9; TX10; TX15; TS20; TX 25; TX27; TX30; TX40		1 pc. each
STAHLWILLE reversible ratchet, 3/8 inch No. 635000 size 3/8		1 pc.
STAHLWILLE extension No. 635400 size 75; 240		1 pc. each
STAHLWILLE T-handle No. 635700 size 165		1 pc.
STAHLWILLE universal joint No. 636200 size 3/8		1 pc.



8G 20G ½″ 100 mm

Number of tools		31
91A **95 3749**	STAHLWILLE Socket set 1/2 inch	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953749		1 pc.
STAHLWILLE bi-hex socket 1/2 inch No. 642100 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32		1 pc. each
STAHLWILLE hexagon screwdriver bit 1/2 inch No. 643200 size 4; 5; 6; 7; 8; 10; 12; 14		1 pc. each
STAHLWILLE reversible ratchet, 1/2 inch No. 640100 size 1/2		1 pc.
STAHLWILLE extension No. 641000 size 75; 130; 255		1 pc. each
STAHLWILLE T-handle No. 641300 size 300		1 pc.
STAHLWILLE universal joint No. 641600 size 1/2		1 pc.



8G 20G ½″ 100 mm

Number of tools		30
91A **95 3751**	HOLEX Socket set 1/2 inch	eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953751		1 pc.
HOLEX bi-hexagon socket No. 642120 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32		1 pc. each
HOLEX hexagon screwdriver bit No. 643220 size 4; 5; 6; 8; 10; 12; 14		1 pc. each
HOLEX reversible ratchet, No. 640190 size 1/2		1 pc.
HOLEX extension No. 641020 size 75; 125; 250		1 pc. each
HOLEX T-handle No. 641320 size 295		1 pc.
HOLEX universal joint No. 641620 size 1/2		1 pc.



8G 20G ½″

Number of tools		23
91A **95 3755**	HOLEX Expansion set 1/2 inch	eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953755		1 pc.
HOLEX bi-hexagon socket No. 642520 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32		1 pc. each
HOLEX hexagon screwdriver bit No. 643313 size 5; 6; 7; 8; 10; 12; 14		1 pc. each



10G 20G ½″

Number of tools		32
91A **95 3821**	Garant Socket set 1/2 inch	eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953821		1 pc.
GARANT reversible ratchet, No. 640025 size 1/2		1 pc.
GARANT extension No. 641029 size 75; 125; 250		1 pc. each
GARANT T-handle No. 641329 size 295		1 pc.
GARANT universal joint No. 641629 size 1/2		1 pc.
GARANT hexagon socket No. 642229 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34		1 pc. each
GARANT hexagon screwdriver bit No. 643229 size 4; 5; 6; 7; 8; 10; 12; 14		1 pc. each



10G 20G ¼″ ½″

Number of tools		37
91A **95 3828**	Garant Socket set 1/4 inch and 1/2 inch	eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953828		1 pc.
GARANT hexagon socket 1/4 inch No. 631029 size 4; 5; 5.5; 6; 7; 8; 9; 10; 11; 12		1 pc. each
GARANT reversible ratchet, 1/4 inch No. 632025 size 1/4		1 pc.
GARANT extension 1/4 inch No. 632429 size 50; 150		1 pc. each
GARANT T-handle 1/4 inch No. 633029 size 116		1 pc.
GARANT universal joint 1/4 inch No. 633529 size 1/4		1 pc.
GARANT reversible ratchet, 1/2 inch No. 640025 size 1/2		1 pc.
GARANT extension 1/2 inch No. 641029 size 75; 250		1 pc. each
GARANT T-handle 1/2 inch No. 641329 size 295		1 pc.
GARANT universal joint 1/2 inch No. 641629 size 1/2		1 pc.
GARANT bi-hex socket 1/2 inch No. 642129 size 13; 16; 17; 18; 19; 21; 22; 24; 27		1 pc. each
GARANT hexagon screwdriver bit 1/2 inch No. 643229 size 4; 5; 6; 7; 8; 10; 12; 14		1 pc. each



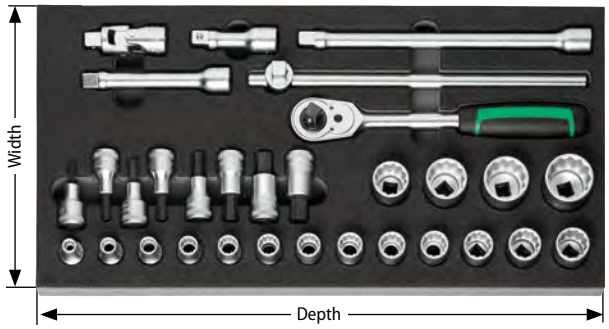
10G 20G ¼″ ½″

Number of tools		38
91A **95 3829**	STAHLWILLE Socket set 1/4 inch and 1/2 inch	eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay No. 952001 size 953829		1 pc.
STAHLWILLE hexagon socket 1/4 inch No. 631000 size 4; 5; 5.5; 6; 7; 8; 9; 10; 11		1 pc. each
STAHLWILLE hexagon screwdriver bit 1/4 inch No. 631700 size 3; 4; 5		1 pc. each
STAHLWILLE reversible ratchet, 1/4 inch No. 632000 size 1/4		1 pc.
STAHLWILLE extension 1/4 inch No. 632400 size 50; 150		1 pc. each
STAHLWILLE spinner handle 1/4 inch No. 632800 size 150		1 pc.
STAHLWILLE T-handle 1/4 inch alloy No. 633000 size 116		1 pc.
STAHLWILLE universal joint 1/4 inch No. 633500 size 1/4		1 pc.
STAHLWILLE reversible ratchet, 1/2 inch No. 640100 size 1/2		1 pc.
STAHLWILLE extension 1/2 inch No. 641000 size 130; 255		1 pc. each
STAHLWILLE T-handle 1/2 inch alloy No. 641300 size 300		1 pc.
STAHLWILLE universal joint 1/2 inch alloy No. 641600 size 1/2		1 pc.
STAHLWILLE bi-hex socket 1/2 inch No. 642200 size 13; 16; 17; 18; 19; 21; 22; 24; 27; 30		1 pc. each
STAHLWILLE hexagon screwdriver bit 1/2 inch No. 643200 size 6; 8; 10; 12; 14		1 pc. each



10G 20G ½″ 100 mm

Number of tools		31
91A **95 3831**	STAHLWILLE® Socket set 1/2 inch	eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953831		1 pc.
STAHLWILLE reversible ratchet, 1/2 inch No. 640100 size 1/2		1 pc.
STAHLWILLE extension 1/2 inch No. 641000 size 75; 130; 255		1 pc. each
STAHLWILLE T-handle 1/2 inch No. 641300 size 300		1 pc.
STAHLWILLE universal joint 1/2 inch No. 641600 size 1/2		1 pc.
STAHLWILLE bi-hex socket 1/2 inch No. 642100 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32		1 pc. each
STAHLWILLE hexagon screwdriver bit 1/2 inch No. 643200 size 4; 5; 6; 7; 8; 10; 12; 14		1 pc. each



10G 20G ¼″ ½″

Number of tools		39
91A **95 3833**	HOLEX Socket set 1/4 inch and 1/2 inch	eShop ■
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953833		1 pc.
HOLEX hexagon socket 1/4 inch No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 13		1 pc. each
HOLEX hexagon screwdriver bit 1/4 inch No. 631720 size 3; 4; 5; 6		1 pc. each
HOLEX reversible ratchet, 1/4 inch No. 632090 size 1/4		1 pc.
HOLEX extension 1/4 inch No. 632420 size 50; 150		1 pc. each
HOLEX spinner handle 1/4 inch No. 632840 size 150		1 pc.
HOLEX T-handle 1/4 inch No. 633029 size 116		1 pc.
HOLEX universal joint 1/4 inch No. 633520 size 1/4		1 pc.
HOLEX reversible ratchet, 1/2 inch No. 640190 size 1/2		1 pc.
HOLEX extension 1/2 inch No. 641020 size 125		1 pc.
HOLEX T-handle 1/2 inch No. 641320 size 295		1 pc.
HOLEX universal joint 1/2 inch No. 641620 size 1/2		1 pc.
HOLEX bi-hex socket 1/2 inch No. 642120 size 13; 14; 15; 16; 17; 18; 19; 21; 22; 24		1 pc. each
HOLEX hexagon screwdriver bit 1/2 inch No. 643220 size 6; 8; 10; 12; 14		1 pc. each



95

10G 24G ½″ 100 mm

Number of tools		32
91A **95 3857**	Garant Socket set 1/2 inch	eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953857		1 pc.
GARANT reversible ratchet, No. 640025 size 1/2		1 pc.
GARANT extension No. 641029 size 75; 125; 250		1 pc. each
GARANT T-handle No. 641329 size 295		1 pc.
GARANT universal joint No. 641629 size 1/2		1 pc.
GARANT hexagon socket No. 642229 size 8; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32; 34		1 pc. each
GARANT hexagon screwdriver bit No. 643229 size 4; 5; 6; 7; 8; 10; 12; 14		1 pc. each



10G 24G | ¼″ | ½″

GRID LINE

Number of tools		41
91A 95 3860	HOLEX Socket set 1/2 inch and 1/4 inch	eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 953860		1 pc.
HOLEX hexagon socket 1/4 inch No. 631020 size 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 13		1 pc. each
GARANT hexagon screwdriver bit 1/4 inch No. 631720 size 3; 4; 5; 6		1 pc. each
HOLEX ratchet, 1/4 inch No. 632090 size 1/4		1 pc.
HOLEX extension 1/4 inch No. 632420 size 50; 150		1 pc. each
HOLEX spinner handle 1/4 inch No. 632840 size 150		1 pc.
HOLEX T-handle 1/4 inch No. 633029 size 116		1 pc.
HOLEX universal joint 1/4 inch No. 633520 size 1/4		1 pc.
HOLEX ratchet, 1/2 inch No. 640190 size 1/2		1 pc.
HOLEX extension 1/2 inch No. 641020 size 125; 250		1 pc. each
HOLEX T-handle 1/2 inch No. 641320 size 295		1 pc.
HOLEX universal joint 1/2 inch No. 641620 size 1/2		1 pc.
HOLEX bi-hex socket 1/2 inch No. 642120 size 13; 14; 15; 16; 17; 18; 19; 21; 22; 24; 27; 30; 32		1 pc. each
HOLEX screwdriver socket, inside hexagon, 1/2 inch No. 643220 size 6; 8; 10; 12; 14		1 pc. each



LD 45 30 | 8G 20G

Garant Rigid foam inlay for torque wrenches

Number of tools		22
91A 95 3961	Torque wrench set 60 Nm 3/8 inch	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953961		1 pc.
GARANT hexagon socket No. 637125 size 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19		1 pc. each
GARANT hexagon screwdriver bit No. 637629 size 3; 4; 5; 6; 8; 10		1 pc. each
GARANT extension No. 635429 size 75; 125; 240		1 pc. each
GARANT torque wrench with reversible ratchet No. 656050 size 60		1 pc.

3/8″



Number of tools		23
91A 95 3966	Torque wrench set 120 Nm 1/2 inch	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 953966		1 pc.
GARANT hexagon socket No. 642325 size 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 21; 22; 24		1 pc. each
GARANT hexagon screwdriver bit No. 643229 size 5; 6; 8; 10; 12; 14		1 pc. each
GARANT extension No. 641029 size 75; 125; 250		1 pc. each
GARANT torque wrench with reversible ratchet No. 656050 size 120		1 pc.

½″



CLEANING

GARANT rigid foam inlays are easy to clean. Wash them out with a neutral soap solution using a soft hand brush. Then rinse them off under running water and allow them to dry.



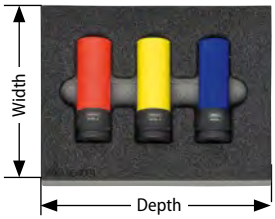
LD 45 30

Rigid foam inlay for impact wrench sockets

GRID LINE

6G 8G ½″

Number of tools		3
91A **95 4001**	IMPACT socket set	eShop
Width	mm	150
Depth	mm	200
Width in G		6
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 954001		1 pc.
HOLEX IMPACT hexagon socket, 1/2 inch No. 651220 size 17; 19; 21		1 pc. each



8G 8G ⅜″

Number of tools		11
91A **95 4015**	IMPACT socket set	eShop
Width	mm	200
Depth	mm	200
Width in G		8
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 954015		1 pc.
HOLEX IMPACT hexagon socket, 3/8 inch with magnet No. 650135 size 7; 8; 10; 13; 14; 15; 16; 17; 19		1 pc. each
HOLEX IMPACT extension, 3/8 inch No. 650400 size 100		1 pc.
HOLEX IMPACT universal joint, 3/8 inch No. 650600		1 pc.



8G 10G ½″

Number of tools		12
91A **95 4018**	IMPACT socket set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954018		1 pc.
HOLEX IMPACT hexagon socket, 1/2 inch with magnet No. 651005 size 10; 13; 14; 15; 16; 17; 18; 19; 22; 24		1 pc. each
HOLEX IMPACT extension 1/2 inch No. 651400 size 125		1 pc.
HOLEX IMPACT universal joint, 1/2 inch No. 651600		1 pc.



eForm – the online configuration tool

95



ESD foam inlays can be found in Group 97, Volume 3, workstations and storage



Further information about our **eForm Online configurator** and our rigid foam inlays can be found in our brochure or online at **https://www.hog.tools/brochures**

The **eForm online configurator** with its many technical refinements offers you the ideal basis for designing your tailor-made rigid foam inlays. It will serve you well over many years.

Individual on-line planning:

Our on-line configurator allows you to design your own individual rigid foam inlays. You determine where each tool is placed.

Easy handling:

No complicated software. Use drag-and-drop to select your items from more than 54,400 tools or tool contours in the familiar Hoffmann Group item classes, insert them and position them as you wish.

Cost transparency:

Online calculation, quotation, consistent scanning costs and a project archive. Ready configured rigid foam inlays can be re-ordered without problems, at a top price-performance ratio.

LD 45 / 30

Rigid foam inlay for pliers

GRID LINE

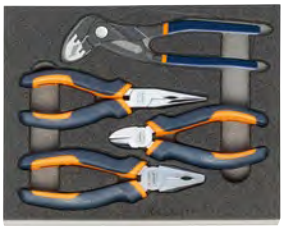
8G / 8G

Number of tools		3
91A **95 4177** HOLEX Pliers set		eShop
Width	mm	200
Depth	mm	200
Width in G		8
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 954177		1 pc.
HOLEX combination pliers, vanadium No. 702995 size 160		1 pc.
HOLEX snipe-nose pliers, angled No. 713595 size 160		1 pc.
HOLEX side cutters No. 725245 size 160		1 pc.



8G / 10G

Number of tools		4
91A **95 4171** Garant Pliers set		eShop ■
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954171		1 pc.
GARANT combination pliers No. 700940 size 160		1 pc.
GARANT water pump pliers No. 706001 size 180		1 pc.
GARANT snipe-nose pliers No. 713040 size 160		1 pc.
GARANT side cutter No. 724840 size 140		1 pc.



8G / 16G

Number of tools		4
91A **95 4183** Garant Pliers set		eShop
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 954183		1 pc.
GARANT combination pliers No. 700940 size 180		1 pc.
GARANT water pump pliers No. 706001 size 250		1 pc.
GARANT snipe-nose pliers No. 713040 size 200		1 pc.
GARANT side cutter No. 724840 size 160		1 pc.



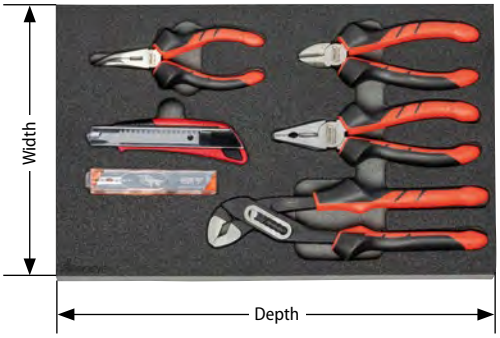
8G / 16G

Number of tools		5
91A **95 4188** KNIPEX Pliers set		eShop ■
Width	mm	200
Depth	mm	400
Width in G		8
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 954188		1 pc.
KNIPEX combination pliers No. 701500 size 160		1 pc.
KNIPEX snipe-nose pliers No. 713150 size 160		1 pc.
KNIPEX side cutters No. 724900 size 160		1 pc.
KNIPEX water pump pliers No. 705800 size 125; 250		1 pc. each



10G 16G

Number of tools		4
91A 95 4275 HOLEX Pliers set		eShop
Width	mm	250
Depth	mm	400
Width in G		10
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 954275		1 pc.
HOLEX water pump pliers No. 706145 size 250		1 pc.
HOLEX vanadium combination pliers No. 702995 size 180		1 pc.
HOLEX snipe-nose pliers, angled No. 713595 size 160		1 pc.
HOLEX side cutters No. 725245 size 160		1 pc.
HOLEX general-purpose knife No. 845039 size 160		1 pc.
Snap-off blades set, No. 845010 size 10		1 pc.



8G 20G

Number of tools		5
91A 95 4201 Garant Pliers set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954201		1 pc.
GARANT combination pliers No. 700940 size 180		1 pc.
GARANT water pump pliers No. 706001 size 250		1 pc.
GARANT snipe-nose pliers No. 713040 size 200		1 pc.
GARANT snipe-nose pliers, angled No. 713440 size 200		1 pc.
GARANT side cutter No. 724840 size 160		1 pc.



8G 20G

Number of tools		5
91A 95 4204 Pliers wrench set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954204		1 pc.
HOLEX universal grip wrench No. 708005 size 225		1 pc.
HOLEX long nose grip wrench No. 708401 size 175		1 pc.
GARANT pliers wrench No. 813501 size 250		1 pc.
HOLEX adjustable spanner No. 814001 size 100; 200		1 pc. each



8G 20G

Number of tools		5
91A 95 4208 HOLEX Pliers set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954208		1 pc.
HOLEX vanadium combination pliers No. 702995 size 180		1 pc.
HOLEX water pump pliers No. 706145 size 250		1 pc.
HOLEX snipe-nose pliers No. 713195 size 200		1 pc.
HOLEX snipe-nose pliers, angled No. 713595 size 200		1 pc.
HOLEX side cutters No. 725245 size 160		1 pc.



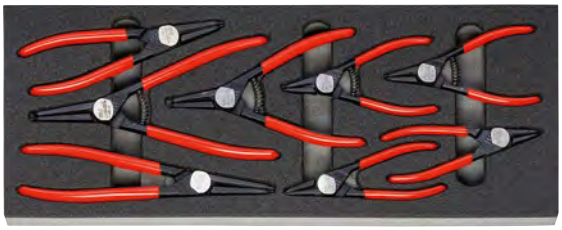
8G 20G

Number of tools		8
91A 95 4210 Garant Precision circlip pliers set		eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954210		1 pc.
GARANT precision circlip pliers No. 719770 size J0; J1; J2; J3		1 pc. each
GARANT precision circlip pliers No. 719870 size A0; A1; A2; A3		1 pc. each



8G 20G

Number of tools		8
91A **95 4214**	HOLEX Precision circlip pliers set	eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954214		1 pc.
HOLEX precision circlip pliers No. 719805 size J0; J1; J2; J3		1 pc. each
HOLEX precision circlip pliers No. 719905 size A0; A1; A2; A3		1 pc. each



8G 20G

Number of tools		8
91A **95 4217**	Garant Precision circlip pliers set **internal**	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954217		1 pc.
GARANT precision circlip pliers No. 719770 size J0; J1; J2; J3; J01; J11; J21; J31		1 pc. each



8G 20G

Number of tools		8
91A **95 4220**	Garant Precision circlip pliers set **external**	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954220		1 pc.
GARANT precision circlip pliers No. 719870 size A0; A1; A2; A3; A01; A11; A21; A31		1 pc. each



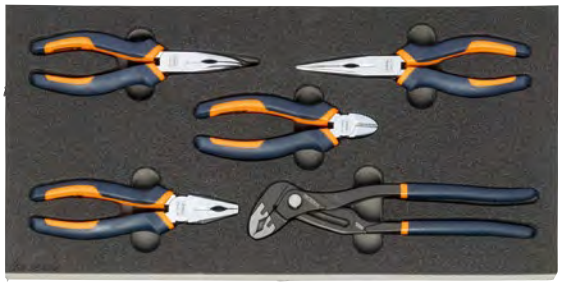
8G 24G

Number of tools		5
91A **95 4231**	Garant Pliers set	eShop
Width	mm	200
Depth	mm	600
Width in G		8
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 954231		1 pc.
GARANT combination pliers No. 700940 size 180		1 pc.
GARANT water pump pliers No. 706001 size 250		1 pc.
GARANT snipe-nose pliers No. 713040 size 200		1 pc.
GARANT snipe-nose pliers, angled No. 713440 size 200		1 pc.
GARANT side cutter No. 724840 size 160		1 pc.



10G 20G

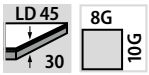
Number of tools		5
91A **95 4295**	Garant Pliers set	eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954295		1 pc.
GARANT combination pliers No. 700940 size 180		1 pc.
GARANT water pump pliers No. 706001 size 250		1 pc.
GARANT snipe-nose pliers No. 713040 size 200		1 pc.
GARANT snipe-nose pliers, angled No. 713440 size 200		1 pc.
GARANT side cutter No. 724840 size 160		1 pc.





Number of tools		5
91A **95 4306** HOLEX Pliers set		eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954306		1 pc.
HOLEX vanadium combination pliers No. 702995 size 180		1 pc.
HOLEX water pump pliers No. 706145 size 300		1 pc.
HOLEX snipe-nose pliers No. 713195 size 200		1 pc.
HOLEX snipe-nose pliers, angled No. 713595 size 200		1 pc.
HOLEX side cutters No. 725245 size 160		1 pc.





Rigid foam inlay for cable processing

Number of tools		4
91A **95 4386** Wire stripping tool set		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954386		1 pc.
GARANT voltage tester No. 665022 size 2.5		1 pc.
GARANT side cutter No. 725310 size 140		1 pc.
JOKARI cable stripper No. 728065 size 8 -13		1 pc.
GARANT wire stripper No. 728613 size 6		1 pc.

Number of tools		2
91A **95 4389** Crimping tool / cable knife set		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954389		1 pc.
HOLEX crimping pliers No. 729720 size 6IS		1 pc.
KNIPEX fixed blade cable knife No. 844410		1 pc.





eForm – the online configuration tool

Virtual planning. Tailor-made solution. Perfect organisation. Individual rigid foam inlays.



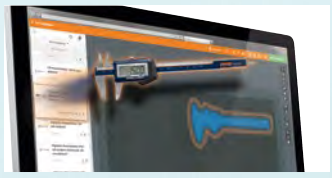
1. Can be individually planned

You determine where each tool is placed.



2. More than 14,000 tools

and 50,000 tool contours in machining and clamping technology together with 3400 contours from Stahlwille. Simple choice from the familiar Hoffmann Group item list.



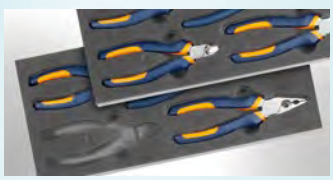
3. Easy to use

Insert tools and position them using drag-and-drop.



4. Adding new tools

Individual tools can be added by scanning - without tool downtime costs.



5. Safety

The 2-colour foam immediately indicates when a tool is missing.



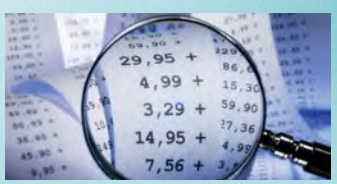
6. Easy care

Particularly easy to clean.



7. Protection

Positive retention of the tool in the cabinet by means of the high clamping force.



4. Cost transparency

Online calculation, quotation, consistent scanning costs and a project archive.

LD 45 / 30

Rigid foam inlay for VDE tools, fully insulated

GRID LINE

6G 16G

Number of tools		3
91A 95 4475 HOLEX Pliers set, fully insulated		eShop ■
Width	mm	150
Depth	mm	400
Width in G		6
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 954475		1 pc.
HOLEX combination pliers, vanadium No. 701852 size 180		1 pc.
HOLEX snipe-nose pliers No. 713351 size 200		1 pc.
HOLEX side cutter No. 725351 size 140		1 pc.



6G 20G

Number of tools		4
91A 95 4486 HOLEX Pliers / scissors set fully insulated		eShop
Width	mm	150
Depth	mm	500
Width in G		6
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954486		1 pc.
HOLEX combination pliers No. 701852 size 180		1 pc.
HOLEX snipe-nose pliers No. 713351 size 200		1 pc.
HOLEX side cutter No. 725351 size 140		1 pc.
HOLEX electrician's scissors with 2-component grip No. 768800 size 140		1 pc.



6G 24G

Number of tools		9
91A 95 4495 HOLEX Screwdriver set, fully insulated		eShop ■
Width	mm	150
Depth	mm	600
Width in G		6
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 954495		1 pc.
HOLEX slot-head screwdriver No. 663301 size 2.5; 3; 3.5; 4; 5.5; 6.5		1 pc. each
HOLEX screwdriver for Phillips No. 668631 size 0; 1; 2		1 pc. each



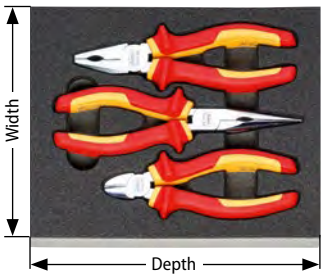
8G 10G

Number of tools		5
91A 95 4511 Wera Electrician's screwdrivers fully insulated		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 915500 size 915210		1 pc.
WERA electrician's screwdriver for slot-head No. 663200 size 3.5; 4; 5.5		1 pc. each
WERA electrician's screwdriver for Phillips No. 668620 size 1; 2		1 pc. each



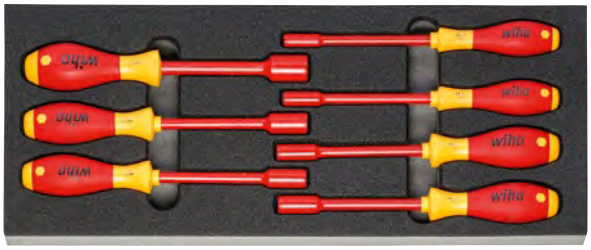
8G 10G

Number of tools		3
91A 95 4515	Garant Pliers set, fully insulated	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954515		1 pc.
GARANT vanadium combination pliers No. 701710 size 180		1 pc.
GARANT snipe-nose pliers No. 713310 size 200		1 pc.
GARANT side cutter No. 725310 size 160		1 pc.



8G 20G

Number of tools		7
91A 95 4532	wiha Nut spinner set, fully insulated	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954532		1 pc.
WIHA nut spinner No. 622500 size 5.5; 6; 7; 8; 9; 10; 13		1 pc. each



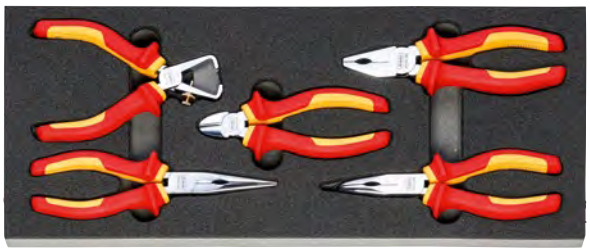
8G 20G

Number of tools		11
91A 95 4534	HOLEX Electrician's screwdrivers fully insulated	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954534		1 pc.
HOLEX electrician's screwdriver for slot-head No. 663301 size 2.5; 3; 3.5; 4; 5.5; 6.5; 8		1 pc. each
HOLEX electrician's screwdriver for Phillips No. 668631 size 0; 1; 2; 3		1 pc. each



8G 20G

Number of tools		5
91A 95 4537	Garant Pliers set, fully insulated	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954537		1 pc.
GARANT vanadium combination pliers No. 701710 size 180		1 pc.
GARANT snipe-nose pliers No. 713310 size 200		1 pc.
GARANT snipe-nose pliers, angled No. 713710 size 200		1 pc.
GARANT side cutter No. 725310 size 160		1 pc.
GARANT wire stripper No. 728755 size 160		1 pc.



8G 20G

Number of tools		5
91A 95 4539	HOLEX Pliers set, fully insulated	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954539		1 pc.
HOLEX combination pliers, vanadium No. 701852 size 180		1 pc.
HOLEX water pump pliers No. 705746 size 250		1 pc.
HOLEX snipe-nose pliers No. 713351 size 200		1 pc.
HOLEX side cutter No. 725351 size 160		1 pc.
HOLEX wire stripper No. 728761 size 160		1 pc.



10G 24G

Number of tools		12
91A **95 4585**	Electrician's tool set, fully insulated	eShop ■
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 954585		1 pc.
WERA electrician's screwdriver for slot-head No. 663100 size 2.5; 3.5; 4; 5.5		1 pc. each
Voltage tester No. 665050 size 3		1 pc.
WERA screwdriver for Phillips No. 668600 size 1; 2		1 pc. each
GARANT combination pliers, fully insulated, No. 701710 size 180		1 pc.
GARANT snipe-nose pliers, fully insulated, No. 713310 size 200		1 pc.
GARANT side cutters, fully insulated, No. 725310 size 160		1 pc.
Cable stripping knife No. 728010 size 8-28		1 pc.
GARANT wire stripper No. 728613 size 6		1 pc.



12G 20G

Number of tools		12
91A **95 4586**	Electrician's tool set, fully insulated	eShop
Width	mm	300
Depth	mm	500
Width in G		12
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954586		1 pc.
WERA electrician's screwdriver for slot-head No. 663100 size 2.5; 3.5; 4; 5.5		1 pc. each
Voltage tester No. 665050 size 3		1 pc.
WERA screwdriver for Phillips No. 668600 size 1; 2		1 pc. each
GARANT combination pliers, fully insulated, No. 701710 size 180		1 pc.
GARANT snipe-nose pliers, fully insulated, No. 713310 size 200		1 pc.
GARANT side cutters, fully insulated, No. 725310 size 160		1 pc.
Cable stripping knife No. 728010 size 8–28		1 pc.
GARANT wire stripper No. 728613 size 6		1 pc.



Our inclined shelves for cabinets No. 94 0560 and No. 94 2550, and inclined shelves for upright cabinets with pull-out frames No. 94 3162 and No. 94 3163 are perfect for use with the rigid foam inlays.





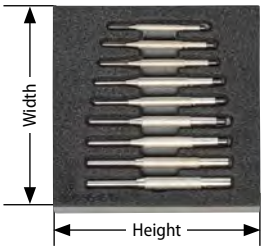
LD 45 / 30

Rigid foam inlay for striking tools

GRID LINE

6G / 6G

Number of tools		9
91A 95 4645 HOLEX Pin punch set with guide sleeve		eShop
Width	mm	150
Depth	mm	150
Width in G		6
Depth in G		6
Supplied with: Rigid foam inlay, empty No. 952001 size 954645		1 pc.
HOLEX pin punch with guide sleeve No. 748000 size 0.9; 1.4; 1.8; 2.4; 2.8; 3.4; 3.9; 4.9; 5.9		1 pc. each



8G / 10G

Number of tools		10
91A 95 4652 Chisel, taper pin punch, and pin punch set		eShop ■
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954652		1 pc.
Flat cold chisel No. 740500 size 200		1 pc.
Cross-cut chisel No. 740600 size 200		1 pc.
Taper pin punch No. 745500 size 3; 4		1 pc. each
Pin punch No. 747000 size 2; 3; 4; 5; 6; 8		1 pc. each



8G / 10G

Number of tools		5
91A 95 4655 Pin punch set with handle		eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954655		1 pc.
FACOM pin punch with handle No. 747100 size 3; 4; 5; 6; 8		1 pc. each



8G / 20G

Number of tools		3
91A 95 4666 Garant Hammer set		eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954666		1 pc.
GARANT engineer's hammer No. 750110 size 300; 500		1 pc. each
GARANT soft-faced hammer No. 754120 size 40		1 pc.



Application example in the tool cabinet.



8G 20G

Number of tools		15
91A 95 4668	Hammer / taper pin punch / pin punch set	eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954668		1 pc.
GARANT engineer's hammer No. 750110 size 300		1 pc.
Flat cold chisel No. 740500 size 200		1 pc.
Cross-cut chisel No. 740600 size 200		1 pc.
Taper pin punch No. 745500 size 3; 4		1 pc. each
Pin punch No. 747000 size 2; 3; 4; 5; 6; 8		1 pc. each
Centre punch No. 749000 size 100; 120/10; 120/12; 150		1 pc. each



8G 24G

Number of tools		3
91A 95 4673	Garant Hammer set	eShop
Width	mm	200
Depth	mm	600
Width in G		8
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 954673		1 pc.
GARANT engineer's hammer No. 750110 size 300; 500		1 pc. each
GARANT soft-faced hammer No. 754120 size 40		1 pc.



10G 10G

Number of tools		10
91A 95 4678	Chisel, taper pin punch, pin punch set	eShop ■
Width	mm	250
Depth	mm	250
Width in G		10
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954678		1 pc.
Flat cold chisel No. 740500 size 200		1 pc.
Cross-cut chisel No. 740600 size 200		1 pc.
Taper pin punch No. 745500 size 3; 4		1 pc. each
Pin punch No. 747000 size 2; 3; 4; 5; 6; 8		1 pc. each



10G 20G

Number of tools		3
91A 95 4691	Garant Hammer set	eShop ■
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954691		1 pc.
GARANT engineer's hammer No. 750110 size 300; 500		1 pc. each
GARANT soft-faced hammer No. 754120 size 40		1 pc.



10G 20G

Number of tools		3
91A 95 4696	Hammer set	eShop
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954696		1 pc.
HOLEX engineer's hammer No. 750530 size 300; 800		1 pc. each
Halder dead-blow plastic hammer No. 754900 size 40		1 pc.



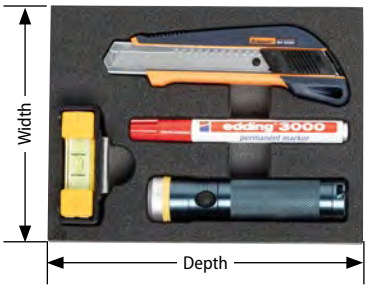
LD 45 30

Rigid foam inlay for tool sets

GRID LINE

6G 8G

Number of tools		4
91A **95 4730**	Workshop accessories assortment	–
Width	mm	150
Depth	mm	200
Width in G		6
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 954730		1 pc.
GARANT LED torch No. 081505 size 125		1 pc.
EDDING permanent marker No. 085130 size R		1 pc.
STABILA pocket spirit level No. 467482 size 70		1 pc.
GARANT universal knife No. 845020		1 pc.



6G 8G

Number of tools		5
91A **95 4735**	HOLEX Tweezers set	eShop
Width	mm	150
Depth	mm	200
Width in G		6
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 954735		1 pc.
HOLEX tweezers, pointed tips, No. 727520 size AMB		1 pc.
HOLEX tweezers, rounded tips, No. 727550 size AMB		1 pc.
HOLEX tweezers, narrow tips, angled, No. 727600 size AMB		1 pc.
HOLEX tweezers, wide flat tips, No. 727610 size AMB		1 pc.
HOLEX tweezers, sickle shaped, No. 727631 size AM		1 pc.



6G 8G ¼″

Number of tools		69
91A **95 4749**	Screwdriver bits set	eShop
Width	mm	150
Depth	mm	200
Width in G		6
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 954749		1 pc.
HOLEX hexagon socket 1/4 inch No. 631020 size 6; 7; 8; 9; 10; 11		1 pc. each
GARANT bits set 61 pieces No. 676040		1 pc.
GARANT magnetic bit-holding screwdriver with magazine No. 676602 size 30		1 pc.
HOLEX adapter with 1/4 inch C 6.3 hexagon shank No. 676950 size 4/4		1 pc.



6G 8G

Number of tools		4
91A **95 4758**	Garant Deburrer set	eShop
Width	mm	150
Depth	mm	200
Width in G		6
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 954758		1 pc.
Deburrer set (4 holders with 1 blade each) No. 839901 size CR8; D50; N1; S10		1 pc. each



6G 8G

Number of tools		4
91A **95 4754**	Deburrer set	eShop
Width	mm	150
Depth	mm	200
Width in G		6
Depth in G		8
Supplied with: Rigid foam inlay, empty No. 952001 size 954754		1 pc.
Universal deburrer set (4 holders, each with 1 blade) No. 839945		1 pc.



6G 20G

Number of tools		26
91A **95 4785**	Workshop accessories assortment	eShop
Width	mm	150
Depth	mm	500
Width in G		6
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954785		1 pc.
HOLEX offset screwdriver set for Torx® no. 624921 size 8 (TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40)		1 pc.
HOLEX hexagon key L-wrench set, No. 627225 size 9		1 pc.
HOLEX watchmaker's screwdriver for slot head No. 669005 size 1; 1.5; 1.8; 2.3; 3; 3.5		1 pc. each
HOLEX watchmaker's screwdriver set for Phillips No. 669015 size 0; 1		1 pc. each
GARANT easyPick small parts storage bin No. 951211 size 3×3/1		1 pc.



6G 20G

Number of tools		4
91A **95 4795**	HOLEX Scraper and assembly set	eShop
Width	mm	150
Depth	mm	500
Width in G		6
Depth in G		20
Supplied with: Rigid foam inlay No. 952001 size 954795		1 pc.
HOLEX scraper and assembly set No. 837880 size 4		1 pc.



8G 10G

Number of tools		14
91A **95 4844**	Garant Screwdriver and workshop accessories set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954844		1 pc.
GARANT LED torch No. 081505 size 140		1 pc.
GARANT hexagon key L-wrench set No. 627132 size 9		1 pc.
GARANT short screwdriver for slot-head No. 664122 size 5.5; 6.5		1 pc. each
GARANT stub screwdriver for Phillips No. 667722 size 1; 2		1 pc. each



Application examples

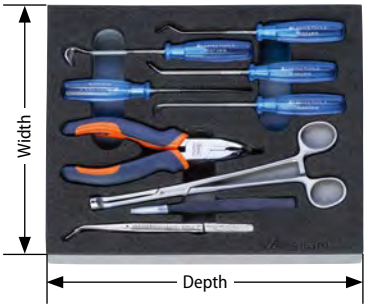






8G 10G

Number of tools		8
91A **95 4847**	Assembly set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954847		1 pc.
GARANT snipe-nose pliers, angled No. 713440 size 160		1 pc.
HOLEX tweezers pointed No. 727520 size N		1 pc.
HOLEX tweezers, angled No. 727600 size N		1 pc.
HOLEX assembly forceps No. 727950 size 200		1 pc.
PB SWISS TOOLS Pick set, 5 pieces, No. 727990 size 5		1 pc.



8G 10G

Number of tools		5
91A **95 4850**	Inspection tool set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954850		1 pc.
GARANT LED torch No. 081448 size 200		1 pc.
Claw retriever No. 081610 size 500		1 pc.
HOLEX telescopic inspection mirror No. 081630 size 30		1 pc.
Telescopic inspection lamp No. 081665		1 pc.
HOLEX tweezers, rounded tips, No. 727550 size AM		1 pc.



8G 10G

Number of tools		5
91A **95 4854**	Workshop accessories set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954854		1 pc.
GARANT LED torch No. 081448 size 200		1 pc.
EDDING permanent marker No. 085130 size R		1 pc.
GARANT comfort safety glasses No. 096200 size CLEAR		1 pc.
GARANT general-purpose knife No. 845020 size 18		1 pc.
Snap-off blades, pack of 10, No. 845010 size 10		1 pc.



8G 10G

Number of tools		4
91A **95 4855**	Squares set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954855		1 pc.
HOLEX stock square No. 452590 size 150×100		1 pc.
HOLEX try square No. 452600 size 200×130		1 pc.
HOLEX protractor No. 453000 size 120×150		1 pc.
Plastic folding rule No. 466200 size 1		1 pc.



8G 10G 100 mm

Number of tools		4
91A **95 4857**	Marking out, drilling, deburring	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954857		1 pc.
GARANT jobber drill set HSS No. 115120 size 1-13KB		1 pc.
GARANT hand deburrer 90° No. 150400 size 16.5		1 pc.
HOLEX carbide scriber No. 458800 size HM		1 pc.
Centre punch special quality No. 748900 size 120/10		1 pc.



8G 10G

Number of tools		14
91A **95 4860**	Precision mechanics set	eShop
Width	mm	200
Depth	mm	250
Width in G		8
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954860		1 pc.
Watchmaker's eye glass No. 490702 size 10		1 pc.
HOLEX watchmaker's screwdriver for slot head No. 669005 size 1; 1.5; 1.8; 2.3; 3.0; 3.5		1 pc. each
HOLEX watchmaker's screwdriver set for Phillips No. 669015 size 0; 1		1 pc. each
Precision pliers No. 716100 size 125		1 pc.
GARANT precision engineer's side cutter No. 725390 size 110		1 pc.
HOLEX tweezers pointed No. 727520 size N		1 pc.
HOLEX tweezers flat tip No. 727550 size N		1 pc.
HOLEX tweezers, angled No. 727600 size N		1 pc.



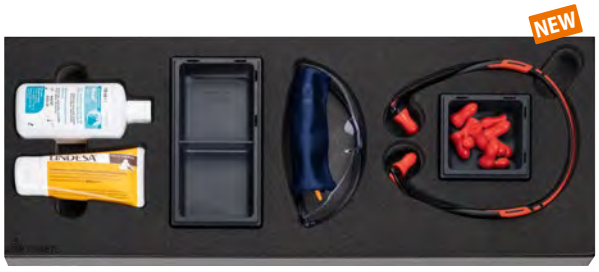
10G 10G

Number of tools		12
91A **95 4864**	Garant Hexagon key L-wrench and workshop accessories set	–
Width	mm	250
Depth	mm	250
Width in G		10
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954864		1 pc.
GARANT LED torch No. 081448 size 200		1 pc.
GARANT comfort safety glasses No. 096200 size CLEAR		1 pc.
GARANT hexagon key – L-wrench set, 9 pieces, No. 627132 size 9		1 pc.
GARANT universal knife No. 845020		1 pc.



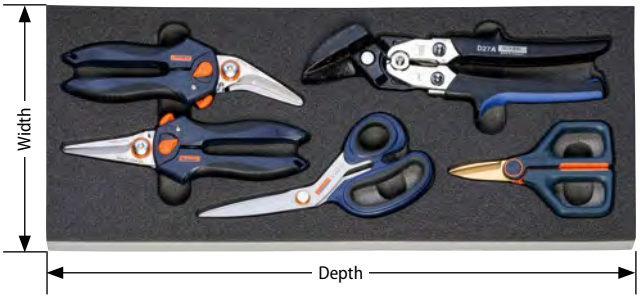
8G 20G

Number of tools		7
91A **95 4876**	Personal protective equipment set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954876		1 pc.
Skin disinfectants Myxal® Sept Gel No. 095820 size 100		1 pc.
LINDESA® PROFESSIONAL skin conditioning cream No. 095720 size 50		1 pc.
GARANT safety glasses No. 096200 size CLEAR		1 pc.
HOLEX banded earplugs No. 097688 size 32		1 pc.
HOLEX spare earplugs set No. 097689 size 32		10 pc.
GARANT easyPick small parts storage bin No. 951210 size 3×3/1		1 pc.
GARANT easyPick small parts storage bin No. 951210 size 3×6/2		1 pc.



8G 20G

Number of tools		5
91A 95 4883	Shears set	eShop
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954883		1 pc.
GARANT multi-purpose shears No. 763030 size 205		1 pc.
GARANT multi-purpose shears No. 763040 size 205		1 pc.
Ideal snips No. 766000 size 260		1 pc.
GARANT electrician's scissors No. 768850 size 140		1 pc.
GARANT heavy duty scissors No. 769240 size 210		1 pc.



8G 20G

Number of tools		8
91A 95 4890	Marking out and sawing	eShop ■
Width	mm	200
Depth	mm	500
Width in G		8
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954890		1 pc.
EDDING permanent marker No. 085130 size R		1 pc.
GARANT caliper No. 410100 size 150		1 pc.
Carbide scriber No. 458760 size HM		1 pc.
HOLEX precision steel rule No. 461600 size 300		1 pc.
GARANT steel tape measure No. 461992 size 3		1 pc.
Pocket spirit level No. 467482 size 70		1 pc.
GARANT hacksaw frame No. 580400		1 pc.
GARANT hacksaw blades No. 582500 (pack of 10)		1 pc.



10G 10G

Number of tools		6
91A 95 4925	Garant Electronics pliers set	eShop ■
Width	mm	250
Depth	mm	250
Width in G		10
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954925		1 pc.
GARANT electronics side cutter, normal, No. 726210 size 125		1 pc.
GARANT electronics side cutter, pointed, No. 726250 size 125		1 pc.
GARANT electronics snipe-nosed pliers No. 727170 size 140		1 pc.
GARANT easyPick small parts storage bin No. 951211 size 3×3/1		3 pcs.



10G 10G

Number of tools		7
91A 95 4930	Logistics set	eShop
Width	mm	250
Depth	mm	250
Width in G		10
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954930		1 pc.
EDDING permanent marker No. 085130 size B		1 pc.
MARTOR safety scissors No. 769245 size 134		1 pc.
MARTOR scraper No. 837740		1 pc.
MARTOR safety knife with 2 blades No. 842011 size 1		1 pc.
MARTOR set of spare blades No. 842012 size 10		1 pc.
MARTOR safety knife No. 842041 size 10		1 pc.
MARTOR safety knife with 1 blade No. 842050		1 pc.



10G
10G

Number of tools		7
91A **95 4935**	MARKAL Pen set	–
Width	mm	250
Depth	mm	250
Width in G		10
Depth in G		10
Supplied with: Rigid foam inlay, empty No. 952001 size 954935		1 pc.
MARKAL deep hole marker No. 085012 size 096260		1 pc.
MARKAL spare leads No. 085013 size 096262		1 pc.
MARKAL deep hole marker No. 085152 size BL		1 pc.
MARKAL permanent marker No. 085154 size B		1 pc.
MARKAL paint marker No. 085160 size W; Y		1 pc. each
MARKAL tubular marker No. 085178 size W		1 pc.



10G 16G

Number of tools		3
91A **95 4955**	Scraper set	eShop
Width	mm	250
Depth	mm	400
Width in G		10
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 954955		1 pc.
Universal scraper with standard blade No. 837760 size 50		1 pc.
Universal scraper with splayed blade No. 837765 size 95		1 pc.
Universal scraper with multi-function blade No. 837770 size 75		1 pc.



10G 20G

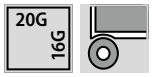
Number of tools		8
91A **95 4895**	Marking out and sawing	–
Width	mm	250
Depth	mm	500
Width in G		10
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 954895		1 pc.
EDDING permanent marker No. 085130 size B		1 pc.
HOLEX try square No. 452600 size 300×175		1 pc.
HOLEX protractor No. 453000 size 120×150		1 pc.
PB straight carbide scriber No. 458760 size HM		1 pc.
HOLEX precision steel rule No. 461600 size 300		1 pc.
GARANT tape measure No. 462201 size 2.5		1 pc.
GARANT hacksaw frame No. 580400		1 pc.
GARANT hacksaw blades No. 582500 (pack of 10)		1 pc.



10G 24G

Number of tools		9
91A **95 4989**	Workshop accessories set	eShop
Width	mm	250
Depth	mm	600
Width in G		10
Depth in G		24
Supplied with: Rigid foam inlay, empty No. 952001 size 954989		1 pc.
GARANT LED torch No. 081448 size 200		1 pc.
Claw retriever No. 081610 size 500		1 pc.
HOLEX telescopic inspection mirror No. 081630 size 30		1 pc.
EDDING permanent marker No. 085130 size R		1 pc.
GARANT safety glasses No. 096200 size CLEAR		1 pc.
HOLEX tweezers, rounded tips, No. 727550 size AM		1 pc.
Snap-off blades set, No. 845010 size 10		1 pc.
GARANT general-purpose knife No. 845020 size 18		1 pc.
Telescopic inspection lamp No. 081665		1 pc.



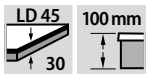


Rigid foam inlay basic set (for one complete drawer of the roller cabinet)



Suitable for: Roller cabinets No. 914520 – 914582.





Number of tools		23
91A **95 5002** Garant Workshop set		eShop
Width	mm	500
Depth	mm	400
Width in G		20
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 955002		1 pc.
GARANT IP54 digital caliper No. 412680 size 150		1 pc.
GARANT tape measure No. 462210 size 3		1 pc.
GARANT light metal spirit level No. 467020 size 250		1 pc.
GARANT combination spanner No. 613600 size 5.5; 7; 8; 10; 13; 16; 17; 18; 19		1 pc. each
GARANT screwdriver for slot-head No. 660032 size 3.5; 5.5; 6.5		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 1; 2; 3		1 pc. each
GARANT combination pliers No. 700940 size 180		1 pc.
GARANT water pump pliers No. 706001 size 250		1 pc.
GARANT snipe-nose pliers No. 713040 size 200		1 pc.
GARANT side cutter No. 724840 size 160		1 pc.
GARANT general-purpose knife with 2-component handle with 3 blades No. 845020 size 18		1 pc.





Number of tools		34
91A **95 5009** Garant Workshop set		eShop
Width	mm	500
Depth	mm	400
Width in G		20
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 955009		1 pc.
GARANT combination spanner No. 613600 size 5.5; 7; 8; 10; 13; 16; 17; 18; 19		1 pc. each
GARANT reversible ratchet, No. 640025 size 1/2		1 pc.
GARANT extension 1/2 inch No. 641029 size 125; 250		1 pc. each
GARANT T-handle 1/2 inch No. 641329 size 295		1 pc.
GARANT universal joint No. 641629 size 1/2		1 pc.
GARANT hexagon socket No. 642325 size 13; 14; 15; 16; 17; 18; 19; 21; 22; 24		1 pc. each
GARANT bi-hex socket, long, No. 642529 size 17; 19; 21		1 pc. each
GARANT screwdriver for slot-head No. 660032 size 3.5; 5.5		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 1; 2		1 pc. each
GARANT engineer's hammer No. 750110 size 300		1 pc.
GARANT combination pliers No. 700940 size 180		1 pc.
GARANT water pump pliers No. 706001 size 250		1 pc.



LD 45 30

Number of tools		23
91A 95 5015 HOLEX Workshop set		eShop
Width	mm	500
Depth	mm	400
Width in G		20
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 955015		1 pc.
HOLEX caliper No. 410200 size 150		1 pc.
HOLEX locking tape measure No. 462010 size 3		1 pc.
HOLEX aluminium spirit level No. 467435 size 300		1 pc.
HOLEX combination spanner No. 613950 size 5.5; 7; 8; 10; 13; 16; 17; 18; 19		1 pc. each
HOLEX screwdriver for slot-head No. 660701 size 3.5; 5.5; 7		1 pc. each
HOLEX screwdriver for Phillips No. 668401 size 1; 2; 3		1 pc. each
HOLEX combination pliers, vanadium No. 703000 size 180		1 pc.
HOLEX water pump pliers No. 706151 size 250		1 pc.
HOLEX snipe-nose pliers, angled No. 713600 size 200		1 pc.
HOLEX side cutter No. 725250 size 160		1 pc.
HOLEX general-purpose knife No. 845039 size 18		1 pc.



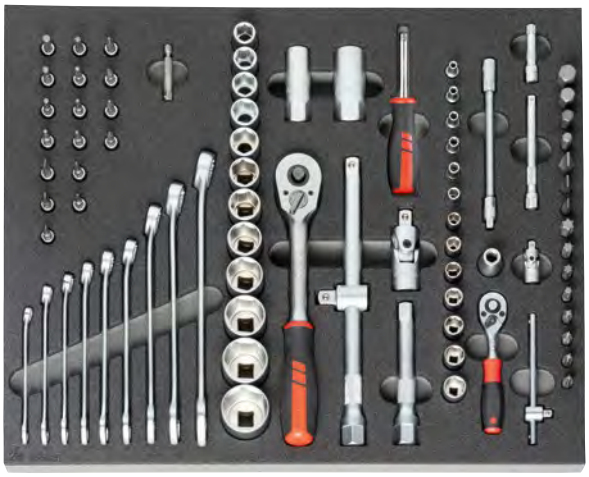
LD 45 30 ½″

Number of tools		36
91A 95 5018 HOLEX Workshop set		eShop
Width	mm	500
Depth	mm	400
Width in G		20
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 955018		1 pc.
HOLEX combination spanner No. 613950 size 5.5; 7; 8; 10; 13; 16; 17; 18; 19		1 pc. each
HOLEX reversible ratchet, 1/2 inch No. 640190 size 1/2		1 pc.
HOLEX extension 1/2 inch No. 641020 size 125; 250		1 pc. each
HOLEX T-handle 1/2 inch No. 641320 size 295		1 pc.
HOLEX universal joint 1/2 inch No. 641620 size 1/2		1 pc.
HOLEX bi-hex socket 1/2 inch No. 642120 size 13; 14; 15; 16; 17; 18; 19; 21; 22; 24		1 pc. each
HOLEX bi-hex socket long 1/8 inch No. 642520 size 17; 19; 21		1 pc. each
HOLEX screwdriver for slot-head No. 660701 size 3.5; 5.5		1 pc. each
HOLEX short screwdriver for slot-head No. 664201 size 5.5		1 pc.
HOLEX screwdriver for Phillips No. 668401 size 1; 2		1 pc. each
HOLEX stub screwdriver for Phillips No. 668471 size 2		1 pc.
HOLEX combination pliers, vanadium No. 703000 size 180		1 pc.
HOLEX water pump pliers No. 706151 size 250		1 pc.
HOLEX engineer's hammer No. 750125 size 300		1 pc.



LD 45 30 ½″ ¼″

Number of tools		82
91A 95 5025 HOLEX Socket set 1/4 inch and 1/2 inch		eShop ■
Width	mm	500
Depth	mm	400
Width in G		20
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 955025		1 pc.
HOLEX socket set No. 630002 size 82		1 pc.







Application example



LD 45 50 | 125 mm

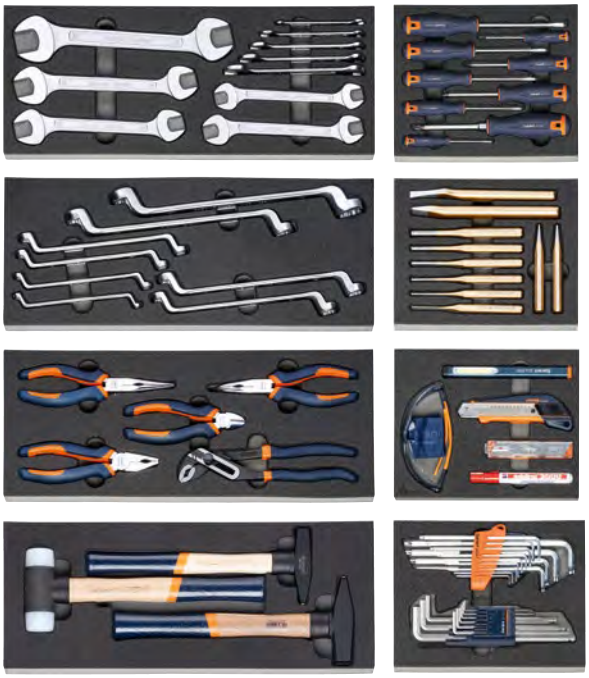
Number of tools		62
91A **95 5028**	Garant Universal cordless screwdriver set	eShop
Width	mm	500
Depth	mm	400
Width in G		20
Depth in G		16
Supplied with: Rigid foam inlay, empty No. 952001 size 955028		1 pc.
GARANT bits set 61 pieces No. 676040		1 pc.
GARANT easyPick small parts storage bin No. 951211 size 3×3/1		2 pcs.

20G 16G

Rigid foam inlay basic sets (for several drawers of the roller cabinet)

Suitable for: Roller cabinets No. 914520 – 914582.





Type		G3
91A **95 5051**	Garant Tool organiser system **for 3 drawers**	eShop
number of drawers filled		3
Supplied with: Double open-ended spanner set No. 952422 size 10		1 pc.
Double-ended ring spanner set No. 952443 size 8		1 pc.
Screwdriver set No. 953392 size 9		1 pc.
Pliers set No. 954201 size 5		1 pc.
Hammer set No. 954666 size 3		1 pc.
Chisel, taper pin punch, pin punch set No. 954652 size 10		1 pc.
Workshop accessory set No. 954854 size 5		1 pc.
Hexagon key L-wrenches for Torx® No. 953141 size 22		1 pc.



Type		H2
91A **95 5061**	HOLEX Tool organiser system **for 2 drawers**	eShop
Supplied with: Combination spanner set No. 952435 size 19		1 pc.
Screwdriver set No. 953444 size 11		1 pc.
Pliers set No. 954208 size 5		1 pc.
Socket set No. 953704 size 20		1 pc.
Hexagon key L-wrench set No. 953147 size 17		1 pc.

LD 45 30 | 20G 20G | 100 mm

GRID LINE

Rigid foam inlay basic set (for one complete drawer, usable area 20×20G)

Suitable for: GridLine Ready-to-go workbenches,
GridLine Vario workbenches with 24G casing,
GridLine 24G casing,
GridLine 24×24G tool cabinets,
GridLine 20×20G drawers,
GridLine XL ToolCar No. 914590.







¼″

Number of tools		22
91A **95 5072** Garant Workshop set		eShop
Width	mm	500
Depth	mm	500
Width in G		20
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 955072		1 pc.
GARANT caliper No. 410100 size 150		1 pc.
GARANT external micrometer No. 420402 size 0–25		1 pc.
GARANT tape measure No. 462201 size 2.5		1 pc.
GARANT spirit level No. 467010 size 250		1 pc.
GARANT double open ended spanner No. 610600 size 8×9; 10×11; 12×13; 14×15; 17×19		1 pc. each
GARANT hexagon key L-wrench with retention ball No. 627132 size 9		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2.5; 4; 5.5		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 1; 2		1 pc. each
GARANT torch No. 081505 size 125		1 pc.
GARANT combination pliers No. 700940 size 160		1 pc.
GARANT side cutter No. 724840 size 160		1 pc.
GARANT engineer's hammer No. 750110 size 200		1 pc.
GARANT heavy duty scissors No. 769240 size 175		1 pc.
GARANT pliers wrench No. 813501 size 180		1 pc.
GARANT general-purpose knife No. 845020 size 18		1 pc.



Number of tools		26
91A **95 5081** HOLEX Workshop set		eShop
Width	mm	500
Depth	mm	500
Width in G		20
Depth in G		20
Supplied with: Rigid foam inlay, empty No. 952001 size 955081		1 pc.
HOLEX LED torch No. 081437 size BLACK		1 pc.
HOLEX digital caliper ABS No. 412821 size 150		1 pc.
HOLEX external micrometer No. 420200 size 0–25		1 pc.
HOLEX locking tape measure No. 462010 size 3		1 pc.
HOLEX spirit level No. 467435 size 300		1 pc.
HOLEX double open-ended spanner No. 610950 size 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×21; 19×22		1 pc. each
HOLEX hexagon key L-wrench set, No. 627225 size 9		1 pc.
HOLEX screwdriver for slot-head with power grip No. 660701 size 3.5; 5.5; 8		1 pc. each
HOLEX short screwdriver for slot-head No. 664201 size 5.5		1 pc.
HOLEX screwdriver for Phillips with power grip No. 668401 size 1; 2; 3		1 pc. each
HOLEX stub screwdriver for Phillips No. 668471 size 2		1 pc.
HOLEX combination pliers, vanadium No. 702995 size 160		1 pc.
HOLEX water pump pliers No. 706145 size 250		1 pc.
HOLEX snipe-nose pliers No. 713195 size 160		1 pc.
HOLEX engineer's hammer No. 750125 size 300		1 pc.



Garant

TOOL ORGANISER SYSTEM FOR GARANT SHADOWBOARDS.

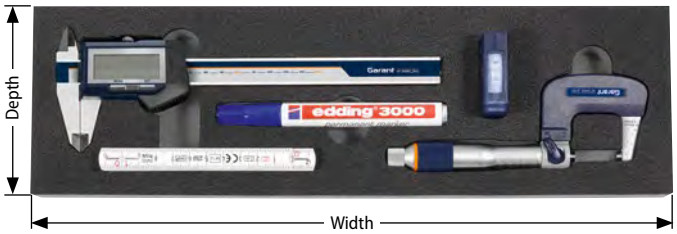
Popular tool sets in two-colour moulded PE rigid foam inlays.
The closed-pore foam is **oil-resistant** and does not absorb liquids of any sort.
The upper layer is anthracite, the underlying **contrast colour is** grey, thereby indicating **any missing tools.**
Suitable for: GARANT shadowboards No. 92 8220 size 115 and size 176.



LD 45 / 30 — 115

Rigid foam inlay for measuring tools

Number of tools			5
91A 95 5110	Measuring tool set		eShop
Width		mm	383
Depth		mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955110			1 pc.
EDDING permanent marker No. 085130 size B			1 pc.
GARANT digital caliper No. 412680 size 150			1 pc.
GARANT external micrometer No. 420402 size 0–25			1 pc.
Plastic folding rule No. 466200 size 1			1 pc.
GARANT tape measure No. 462201 size 2.5			1 pc.

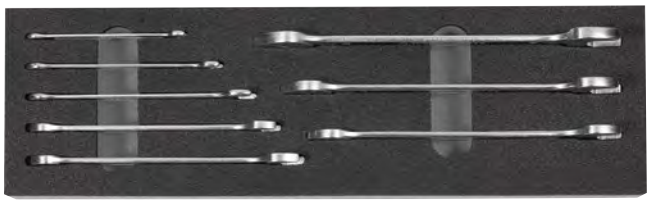


LD 45 / 30 — 115

Garant

Rigid foam inlay for spanners (ring spanners and open ended spanners)

Number of tools			8
91A 95 5115	Double open ended spanner set		eShop
Width		mm	383
Depth		mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955115			1 pc.
GARANT double open ended spanner No. 610600 size 4×5; 6×7; 8×9; 10×11; 12×13; 14×15; 16×17; 18×19			1 pc. each

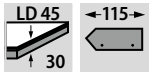


Number of tools			10
91A 95 5120	Combination spanner set		eShop
Width		mm	383
Depth		mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955120			1 pc.
GARANT combination spanner No. 613600 size 5.5; 6; 7; 8; 9; 10; 13; 16; 17; 19			1 pc. each



Number of tools			8
91A 95 5126	Open ended/ratchet ring spanner set		eShop
Width		mm	383
Depth		mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955126			1 pc.
GARANT open ended / ratchet ring spanner No. 614770 size 8; 9; 10; 11; 12; 13; 16; 17			1 pc. each





Rigid foam inlay for screwdrivers

Number of tools		16
91A 95 5130	PB SWISS TOOLS L-wrench set, "Rainbow"	eShop
Width	mm	383
Depth	mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955130		1 pc.
L-wrench for Torx® No. 624850 size TX6; TX7; TX8; TX9; TX10; TX15; TX20; TX25		1 pc. each
Hexagon key L-wrench with ball point No. 627140 size 1.5; 2; 2.5; 3; 4; 5; 6; 8		1 pc. each



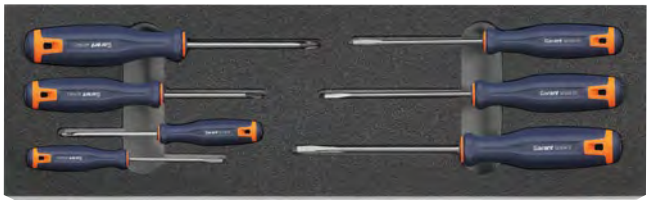
Number of tools		7
91A 95 5136	Garant Screwdriver set for Torx®	eShop
Width	mm	383
Depth	mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955136		1 pc.
GARANT screwdriver for Torx® No. 625332 size TX6; TX7; TX8; TX9; TX10; TX15; TX20		1 pc. each



Number of tools		9
91A 95 5140	Wera Electronics screwdriver set	eShop
Width	mm	383
Depth	mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955140		1 pc.
Electronics screwdriver for Torx® No. 625770 size TX5; TX6; TX8; TX10		1 pc. each
Hexagon electronics screwdriver No. 627470 size 0.9; 1.3; 1.5; 2; 2.5		1 pc. each



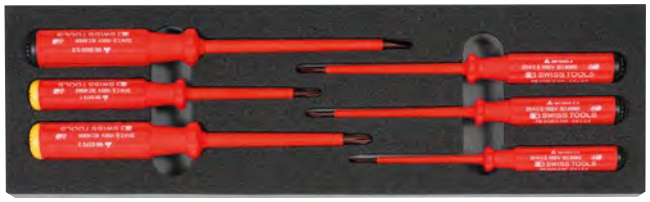
Number of tools		7
91A 95 5146	Garant Screwdriver set	eShop
Width	mm	383
Depth	mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955146		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2; 2.5; 3.5; 4		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 00; 0; 1		1 pc. each



Number of tools		7
91A 95 5151	Wera Electronics screwdriver set	eShop
Width	mm	383
Depth	mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955151		1 pc.
Electronics screwdriver for slot-head No. 664600 size 1.2; 1.5; 2; 3.5		1 pc. each
Electronics screwdriver for Phillips No. 668800 size 00; 0; 1		1 pc. each



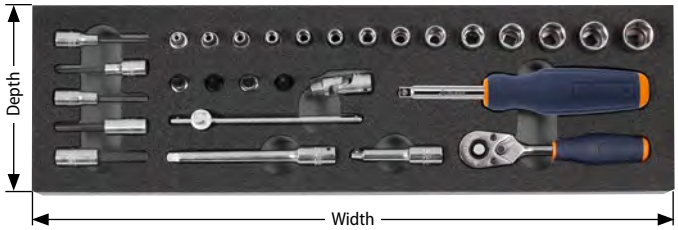
Number of tools		6
91A 95 5156	PB SWISS TOOLS Screwdriver set **fully insulated**	eShop
Width	mm	383
Depth	mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955156		1 pc.
Electrician's screwdriver for slot-head No. 663000 size 2.5; 3.5; 4; 5.5		1 pc. each
Electrician's screwdriver for Phillips No. 668370 size 1; 2		1 pc. each



LD 45 30 | ¼" | 115

Rigid foam inlay for socket sets

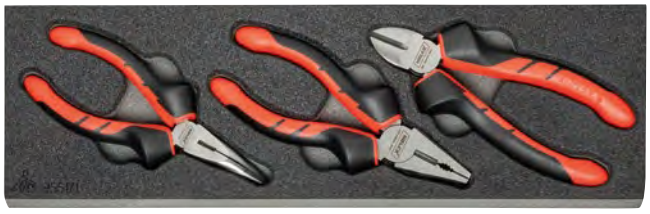
Number of tools		29
91A 95 5161	Socket set 1/4 inch	eShop
Width	mm	383
Depth	mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955161		1 pc.
GARANT hexagon socket 1/4 inch No. 631029 size 3.5; 4; 4.5; 5; 5.5; 6; 7; 8; 9; 10; 11; 12; 13; 14		1 pc. each
HOLEX screwdriver bit for slot-head, 1/4 inch No. 631613 size 3.5; 5.5		1 pc. each
HOLEX screwdriver bit for Phillips 1/4 inch No. 631623 size 1; 2		1 pc. each
GARANT hexagon screwdriver bit 1/4 inch long No. 631729 size 2.5; 3; 4; 5; 6		1 pc. each
GARANT reversible ratchet, 1/4 inch No. 632025 size 1/4		1 pc.
GARANT extension 1/4 inch No. 632429 size 50; 100		1 pc. each
GARANT spinner handle 1/4 inch No. 632829 size 146		1 pc.
GARANT T-handle 1/4 inch No. 633029 size 116		1 pc.
GARANT universal joint 1/4 inch No. 633529 size 1/4		1 pc.



LD 45 30 | 115

HOLEX Rigid foam inlay for pliers

Number of tools		3
91A 95 5171	Pliers set	eShop
Width	mm	383
Depth	mm	115
Supplied with: Rigid foam inlay, empty No. 952001 size 955171		1 pc.
HOLEX combination pliers, vanadium No. 702995 size 160		1 pc.
HOLEX snipe-nose pliers, angled No. 713595 size 160		1 pc.
HOLEX side cutters No. 725245 size 160		1 pc.



LD 45 30 | 176

Rigid foam inlay for GARANT shadowboards, depth 176 mm

Number of tools		10
91A 95 5211	Garant Open ended/ratchet ring spanner set	eShop
Width	mm	383
Depth	mm	176
Supplied with: Rigid foam inlay, empty No. 952001 size 955211		1 pc.
GARANT open ended / ratchet ring spanner No. 614770 size 8; 9; 10; 11; 13; 14; 16; 17; 18; 19		1 pc. each



Number of tools		22
91A 95 5215	HOLEX Hexagon key L-wrenches / short screwdrivers	eShop
Width	mm	383
Depth	mm	176
Supplied with: Rigid foam inlay, empty No. 952001 size 955215		1 pc.
HOLEX L-wrench set with ball point for Torx® No. 624921 size 8 (TX9; TX10; TX15; TX20; TX25; TX27; TX30; TX40)		1 pc.
HOLEX hexagon key L-wrench set, long, with ball point, 9 pieces, 1.5 – 10 mm, No. 627225 size 9		1 pc.
HOLEX short screwdriver for slot-head No. 664201 size 4; 5.5; 6.5		1 pc. each
HOLEX stub screwdriver for Phillips No. 668471 size 1; 2		1 pc. each



Number of tools		8
91A 95 5221 Garant Screwdriver set		eShop
Width	mm	383
Depth	mm	176
Supplied with: Rigid foam inlay, empty No. 952001 size 955221		1 pc.
GARANT screwdriver for slot-head No. 660032 size 2.5; 3.5; 4; 5.5; 6.5		1 pc. each
GARANT screwdriver for Phillips No. 667702 size 0; 1; 2		1 pc. each



Number of tools		4
91A 95 5230 Garant Pliers set		eShop
Width	mm	383
Depth	mm	176
Supplied with: Rigid foam inlay, empty No. 952001 size 955230		1 pc.
GARANT water pump pliers No. 706001 size 250		1 pc.
GARANT side cutter No. 724840 size 160		1 pc.
GARANT snipe-nose pliers No. 713040 size 200		1 pc.
GARANT combination pliers No. 700940 size 180		1 pc.



Number of tools		2
91A 95 5236 Garant Hammer set		eShop
Width	mm	383
Depth	mm	176
Supplied with: Rigid foam inlay, empty No. 952001 size 955236		1 pc.
GARANT soft-faced hammer No. 754120 size 40		1 pc.
GARANT engineer's hammer No. 750110 size 500		1 pc.



Number of tools		11
91A 95 5240 Chisel, taper pin punch, and pin punch set		eShop
Width	mm	383
Depth	mm	176
Supplied with: Rigid foam inlay, empty No. 952001 size 955240		1 pc.
Cold chisel 200 mm No. 740500 size 200		1 pc.
Cross-cut chisel 200 mm No. 740600 size 200		1 pc.
Taper pin punch No. 745500 size 3; 4		1 pc. each
Pin punch No. 747000 size 2; 3; 4; 5; 6; 8		1 pc. each
GARANT engineer's hammer No. 750110 size 300		1 pc.



Number of tools		5
91A 95 5255 Marking out, drilling, deburring		eShop
Width	mm	383
Depth	mm	176
Supplied with: Rigid foam inlay, empty No. 952001 size 955255		1 pc.
GARANT jobber drill set HSS No. 115120 size 1–13		1 pc.
GARANT hand deburrer 90° No. 150400 size 12.4		1 pc.
Carbide scriber No. 458760 size HM		1 pc.
GARANT workshop straight edge No. 461170 size 300		1 pc.
Centre punch special quality No. 748900 size 120/10		1 pc.



Number of tools		9
91A 95 5260 Precision key files / PUK saw set		eShop
Width	mm	383
Depth	mm	176
Supplied with: Rigid foam inlay, empty No. 952001 size 955260		1 pc.
Key file set 6 pieces, No. 518970		1 pc.
Diamond wet stone No. 559100 size D25		1 pc.
PUK saw, adjustable No. 581200		1 pc.
Pack of PUK saw blades, 12 pieces, metal No. 581250		1 pc.



0 Innovations

NEW

We use this symbol to tag new items in our catalogue range

Power tools and pneumatic tools



Page **1009**
Bosch industrial drill/driver



Page **1012**
Milwaukee ONE-KEY
impact wrench/driver



Page **1034**
Metabo angle grinder



Page **1027**
Pferd RCK system



Page **1054**
AEG hand-held circular saw



Page **1064**
Metabo LiHDX rechargeable battery

Factory equipment



Page **1094**
HOLEX digital tyre inflator



Page **1113**
Ledlenser P Series



Page **1120**
HOLEX headlamp



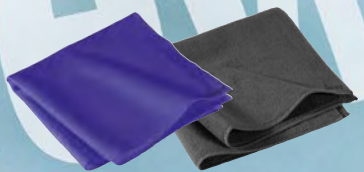
Page **1127**
GARANT
screw extractor set



Page **1131**
Elma drying unit



Page **1136**
GARANT
multi-function oil



Page **1194**
GARANT GreenPlus and
GARANT microfibre cloths

Power tools, compressed air technology, technical chemistry, factory equipment



Power tools, pneumatic tools, vacuum cleaners, compressors, accessories

0

07 993 – 1085



Compressed air accessories, hoses, hose reels

080 1086 – 1095



Electrical accessories, cable drums, lighting, torches, batteries, inspection tools

081 1096 – 1123



Soldering, thread repairing, extractors, ultrasonic cleaning baths, ultrasonic cleaning agents

082 1124 – 1131



Technical sprays, sealants, adhesives, nebulisers, containers, oilers, grease guns, adhesive tapes, cable ties

083 1132 – 1155



Grease guns, grease gun accessories, grease cartridges, oil absorbent fleeces

084 1156 – 1161



Lettering, marking, labelling, punches, padlocks, magnets, welding aids

085 1162 – 1178



Chain hoists, high-pressure hydraulics, hoists, chain slings, back-stops, machine supports, lever presses

086 1179 – 1190



Painter's supplies, brooms, shovels, trowels, scrapers

087 1191 – 1194

0



Cleaning wipes dispensers, cleaning wipes

089 1195 – 1199

Pictograms and guidelines

Pictograms

MB 18 Battery management system

L-BOXX Supplied in LBOXX. Modular cases with easy connection to each other.

Supplied in a transport case.

HD HD modular case of ABS with easy connection facility between them. Supplied in an HD box (modular case).

Wireless charging. Wireless transmission of inductive energy for charging cordless tools

ONE-KEY. Wireless device settings, stock management and device reporting using an app via Bluetooth.

META Supplied in a metaBox. System cases with easy connection option to one another.

45° Chamfer angle

Transport and delivery notes

For some products we are prevented by law from offering express delivery (by air freight) outside Germany.
Certain products cannot be delivered to some countries in Europe. These products are indicated by a special note in the catalogue.
The background to this are EU directives regarding carriage of hazardous goods. These directives require labelling of the product and a safety data sheet in the respective national language. In particular the labelling requirement applies to goods which are oxidising, explosive, and hazardous to health.

Note:
Not available in all countries.
Express delivery not available.

The following items in our range fall into these categories:
■ Li-ion batteries ■ Technical sprays ■ Adhesives and sealants ■ Cutting oils ■ Batteries ■ Magnets

Pneumatic tools

Lubrication: Pneumatic tools may only be used with a service unit (e.g. No. 08 0012) consisting of water separator, oiler and pressure reducer, and on long pneumatic hoses an additional supplementary oil atomiser such as No. 08 0022 (except for oil-free tools).

Performance data: All services are provided in accordance with the standards in force and also apply to new or well–maintained used pneumatic tools. They relate to a dynamic pressure of 6.3 bar and the recommended hose sizes.
1/4 inch BSP thread is equivalent to a tapered R 1/4 inch thread.

Warranty conditions (only with proof of purchase by invoice or delivery note)

Note: *** Warranty conditions do not apply for accessories such as rechargeable batteries and wearing parts. Some extended warranty conditions are applicable only after registration via the manufacturer's web page. These may differ from country to country.**

Manufacturer	Warranty conditions*	Terms and conditions / auxiliary service
BOSCH	3 years on electric tools.* 2 years on devices powered by Li-ion batteries, including the batteries and their chargers	**Online registration within the first 4 weeks after purchase.** See user manual or www.bosch-pt.com/warranty
metabo	3 years on electric tools.* 3 years on Li-ion batteries and corresponding chargers	**Online registration within the first 4 weeks after purchase.** See user manual or www.metabo.com Metabo offers a 3-year warranty on battery packs without limiting the charging cycles
fein	3 years on electric tools.* 1 year on high-frequency and ACCU TECH tools. 3 years on Li-ion batteries.	**Online registration within the first 6 weeks after purchase.** See user manual or www.fein.com Li-ion batteries: Application for the Fein Plus warranty.
AEG	6 years on electric tools.* 3 years on Red Li-ion batteries.	**Online registration within the first 4 weeks after purchase.** See user manual or www.aeg-powertools.de
Milwaukee	3 years on electric tools.* 2 years on Red Li-ion batteries.	**Online registration within the first 4 weeks after purchase.** See user manual or www.milwaukeetool.de – for additional registration for 1 year full service (including wearing parts) for electric tools (only in Germany and Austria).
KÄRCHER	1 year standard 2 years *	**Online registration within the first 6 weeks after purchase.** See user manual or www.kaercher.com
Reichmann	1 year.*	See www.reichmann.com
Nilfisk	2 years on electric appliances for private use * 1 year for standard use.	See www.nilfisk.com
ALZMETALL	2 years warranty with single-shift working.*	**Online registration within the first 4 weeks after purchase.** See the operating instructions or www.alzmetall.com/service/produktregistrierung.
steinel	1 year on electric appliances.*	www.steinel-professional.de
Atlas Copco	1 year on pneumatic tools.*	See user manual or www.atlascopco.com
ata tools	1 year on pneumatic tools.*	See www.atagroup.com
LEDLENSER	2 years*	If **you register online within 12 weeks of purchase,** the warranty is extended to 7 years. See www.ledlenser.com
SCANGRIP	3 years on lights* excl. LITE lights	**Online registration within the first 4 weeks after purchase.** See www.scangrip.com
DYMO	2 years on types LM, MOBILE, and RHINO. 3 years on type XTL.	**Online registration** See the instruction manual or www.dymo.com/register Warranty extension by 12 months available.

Tool selection, vibration values

Tool selection: When selecting cordless tools the critical factor is the intended application.
All cordless screwdrivers in the catalogue are divided into 4 categories to ensure a long working life:

L	Light	Light-duty screwdriving applications
M	Medium	Medium drilling and screwdriving applications
S	Strong	Heavy screwdriving and drilling applications
HD	Heavy Duty	Heavy-duty application, very high torques

Vibration directive: The European directive 2002/44/EC regulates the maximum permissible exposure of the body to vibration hazardous to health which occurs when using hand-held power tools.
The measured values listed are 3-axis measured values for hand-arm vibration in m/s^2.

The stated value applies to cutting discs. Higher values apply to rough grinding discs.

Vibration exposure m/s^2	< 2.5 (threshold value)	2.5 – 5	> 5 (exposure limit value)
Duties of the employer	No preventative measures necessary.	Avoidance of increased exposure of the employee to vibration.	Reduction of the exposure to vibration.

18V cordless combi drill

2-Speed cordless combi drill with brushless motor.

- Electronic speed control for smooth, safe starts to drilling and screwdriving; reversible.
- 2-speed all-metal gearbox with selectable hammer drive in metal, stone and masonry.
- Multi-stage torque adjustment and removable drill chuck.

07 0100 – ■ With QuickIN all-metal drill chuck (120 Nm) with carbide-coated jaws and high clamping forces.

07 0229 Size BSB18C2×42 – Compact and powerful 18V cordless impact wrench for the most demanding applications. Drill chuck is removable.

Size BSB18SBL22 – Sub-Compact drill/driver, for the ultimate in user productivity and ergonomics. Suitable for use in confined spaces.

Supplied with:

07 0100 Size 71040761 – **Without battery and without charger.**

07 0229 Size BSB18C2×42 – Supplied with 2 pcs. 18 V / 2.0 Ah PRO Li-ion rechargeable battery, charger and carrying case.

Size 7104076H3; 71040761 – Supplied with 1 pc. QuickIN drill chuck (120 Nm), 1 pc. belt clip, 1 pc. L-BOXX.

Note:

07 0100 – See from No. 073851 and No. 073863 – 073867 for suitable replacement batteries, starter sets and chargers.

07 0229 – See No. 073841 – No. 073848 for suitable batteries and chargers.



_7104076H3
_71040761



_BSB18SBL22



_BSB18C2×42

Type		7104076H3	71040761	BSB18C2×42	BSB18SBL22
03F 07 0100	Cordless combi drill	eShop	eShop	–	–
07A 07 0229	AEG Cordless compact combi drill	–	–	–	–
Manufacturer's designation		ASB 18 Q AS	ASB 18 Q AS Select	BSB18C2XLI-402CA	BSB 18SBL2-202C
Battery capacity	Ah	4	–	4	2
Battery voltage	V	18			
Motor design		Brushless			
maximum torque soft	Nm	38	38	32	32
maximum torque hard	Nm	60	60	60	65
maximum speed 1st speed	min^{-1}	0 – 450	0 – 450	0 – 550	0 – 450
maximum speed 2nd speed	min^{-1}	2000	2000	1800	1750
Quick-clamping chuck range	mm	1.5 – 13			
maximum twist drill size ∅ in steel	mm	13			
maximum twist drill size ∅ in wood	mm	50	50	40	40
maximum twist drill size ∅ in concrete	mm	13			
maximum vibration to EN with hammer drill function	m/s^2	13	130	–	–
maximum vibration to EN without hammer drill function	m/s^2	<2.5	<2.5	< 2.5	<2.5
Weight	kg	1.8	1.5	1.7	1.4
typical application		Heavy Duty			

FEIN QuickIn accessories

QuickIN accessories for extension of all FEIN cordless drill / drivers with a QuickIN interface in the application areas of screwdriving and tapping.

Supplied with:

Size 711301 – Metal angular head, nut spinner adapter 1/2 inch, bit holder 1/4 inch, tapping adapter with two collets for shank ∅ 4.5 and 6 mm.



_711301



_6420302H1

Type		711301	6420302H1
03G 07 0208	Accessories for drill / drivers **Quick-In**	–	eShop

HD

Cordless hammer drill / driver

- Powerful cordless 2-speed hammer drill /screwdriver with **multi-stage torque setting.**
- **REDLITHIUM-ION™** Red Li-ion batteries with single-cell monitoring and charge display.
- **Sturdy metal gearbox** for long working life.
- **FIXTEC metal quick-change chuck** with spindle lock.
- Handle with Softgrip coating for comfortable use.
- LED illumination of the working area.
- **Brushless POWERSTATE™**-motor (not size M18BPD4) for very high efficiency. Very low wear and **up to 10 times the working life** of standard DC motors.
- **REDLINK PLUS™** electronics overload protection and power management.

07 0102 Size M18OPD3-5 – FUEL™ ONE-KEY™ – latest generation of the FUEL™ devices with **integral Bluetooth® technology for individual configuration, online stock management and device reporting.**

07 0110 Size M18BPD4 – With low-maintenance 4-pole DC motor.

Size M12FPD2XK – FUEL™ compact cordless hammer drill/driver with **6-in-1 drilling system**. **Removable drill chuck system with 3 attachments for maximum flexibility.**

Size M18FPD3-2; M18FPD3-5 – Cordless hammer drill / driver with high torque of 158 Nm and a total length of only 175 mm.

Size M12FPD2-2–M12FPD2-6 – FUEL™ compact cordless hammer drill/driver with only 152 mm tool length. 13-stage electronic torque adjustment plus drill step plus hammer drill mode.

Supplied with:

07 0110 Size M12FPD2XK – Supplied with 2 pcs. Li-ion batteries, charger, transport case (HD box) and belt clip, 13 mm quick-change chuck, eccentric attachment, offset screwdriving attachment.

07 0111 – Zero version – without battery, without charger, with carrying case.

07 0102 Size M18OPD3-5/0110 Size M12FPD2-2; M12FPD2-4; M12FPD2-6; M18FPD3-5; M18BPD4 – Supplied with 2 pcs. Li-ion batteries, charger, transport case (HD box) and belt clip.

Note: See No. 073801 – No. 073840 for suitable batteries and chargers. The suitable Bluetooth® tracking module can be found under No. 070103 size BTT-1.



07 0110_M18FPD3-5

07 0102 _M18OPD3-5



07 0110_M18BPD4

07 0110_M18FPD3-2



07 0110_M12FPD2-2 | 07 0110_M12FPD2-4 | 07 0110_M12FPD2-6 | 07 0110_M12FPD2XK

Type		M18OPD3-5	M18FPD3-2	M18FPD3-5	M18BPD4	M12FPD2-2	M12FPD2-4	M12FPD2-6	M12FPD2XK
07 0102	ONE-KEY™ cordless hammer drill / driver	eShop	–	–	–	–	–	–	–
07 0110	Cordless hammer drill / driver	–	eShop	eShop	eShop	eShop	eShop	eShop	eShop
07 0111	Cordless hammer drill / driver without battery or charger	–	eShop	–	–	–	–	–	–
Manufacturer's designation		M18ONE-PD3-502X	M18 FPD3	M18FDP3-502X	M18BPD-402X	M12FPD-202X	M12FPD-402X	M12FPD-602X	M12FPDX-KIT-202X
Battery capacity	Ah	5		5	4	2	4	6	2
Battery voltage	V	18	18	18	18	12	12	12	12
Motor design		FUEL™	FUEL™	FUEL™	4-pin	FUEL™	FUEL™	FUEL™	FUEL™
maximum torque	Nm	158	158	158	60	37	45	45	37
maximum speed 1st speed	min^{-1}	0 – 500	0 – 500	0 – 500	0 – 450	0 – 450	0 – 450	0 – 450	0 – 450
maximum speed 2nd speed	min^{-1}	2100	2100	2100	1800	1550	1550	1550	1700
Quick-clamping chuck range	mm	1.5 – 13							
maximum twist drill size ∅ in steel	mm	16	16	16	13	13	13	13	13
maximum twist drill size ∅ in wood	mm	89	89	89	38	35	35	35	35
maximum twist drill size ∅ in concrete	mm	16	16	16	16	13	13	13	13
maximum vibration to EN with hammer drill function	m/s^2	11.3	11.3	11.3	13	15.7	15.7	15.7	30.8
maximum vibration to EN without hammer drill function	m/s^2	1.5	1.85	1.85	0.95	<2.5	<2.5	<2.5	<2.5
Weight	kg	2.2	2.1	2.2	2.1	1.1	1.5	1.5	1.2
typical application		Heavy Duty	Heavy Duty	Heavy Duty	Strong	Strong	Strong	Strong	Strong

BOSCH Cordless hammer drill / driver

Bosch cordless hammer drill / driver for very heavy-duty screwdriving, drilling and hammer drilling applications.

- **Electronic Cell Protection (ECP)** protects the battery against overheating and deep discharge.
- **Electronic Motor Protection (EMP)** protects the motor against overloading.
- Mechanical multi-stage **torque cut-out.**
- Handy **belt clip** (not 070104).
- Integral **LED light, battery charge indicator.**
- Quick-clamping drill chuck.

07 0104 – Sturdy and handy cordless drill / driver, only **1 kg** in weight.

07 0105 – Robust cordless screwdriver with powerful motor.

Size GSB1890C; GSB18110C – With motor brake.

07 0106/0113 – With **brushless EC motor.**
Kick-back control with automatic shut-down if jammed, together with unique precision clutch. Compact design, very short head length (only 184 mm) for perfect handling (size GSB1890C), therefore ideal for working in restricted spaces. Can be retrofitted with a connectivity module.

Supplied with:

07 0104 – Supplied with 2× Li-ion batteries, charger and transport bag.

07 0105 – Supplied with 2 pcs. 18V / 3.0 Ah Li-ion battery, charger and L-BOXX.

07 0106 – Supplied with 2 pcs. ProCORE 18V / 4.0 Ah Li-ion battery, charger and L-BOXX.

07 0113 – **Without battery,** without charger and with L-BOXX.

Note:	Suitable replacement batteries and chargers can be found under No. 073851 – No 073866.



07 0104_GSB1215B _GSB1235



07 0105_GSB18V45



07 0113_GSB1865



07 0106_GSB1890C



07 0106_GSB18110C

Type		GSB1215B	GSB1235	GSB18V45	GSB1865	GSB1890C	GSB18110C
03B 07 0104	Cordless hammer drill / driver	eShop	eShop	–	–	–	–
03B 07 0105		–	–	eShop	–	–	–
03B 07 0106	Cordless hammer drill / driver **ProCORE**	–	–	–	–	eShop	eShop
03B 07 0113	Cordless hammer drill / driver without battery or charger	–	–	–	eShop	eShop	–
Manufacturer's designation		GSB 12V-15	GSB 12V-35	GSB 18V-45	GSB 18V-65	GSB 18V-90 C	GSB 18V-110C
Number of rechargeable batteries contained (07 0104, 07 0105, 07 0106)		2	2	2	–	2	2
Number of rechargeable batteries contained (07 0113)		–	–	–	0	0	–
Type of rechargeable battery		Lithium-ion					
Battery capacity	Ah	2	3	3	–	4	4
Battery voltage	V	12	12	18	18	18	18
Motor design		Motor with brushes	Brushless motor	Brushless motor	Brushless motor	Brushless motor	Brushless motor
maximum torque soft	Nm	15	20	21	31	36	47
maximum torque hard	Nm	30	35	45	65	64	85
maximum speed 1st speed	min^{-1}	0 – 380	0 – 460	0 – 500	0 – 605	0 – 630	0 – 480
maximum speed 2nd speed	min^{-1}	1300	1750	1900	2300	2100	2100
maximum hammer rate	min^{-1}	–	–	–	27000	28500	–
Quick-clamping chuck range	mm	1 – 10	1 – 10	1.5 – 13	1.5 – 13	1.5 – 13	1.5 – 13
maximum twist drill size ∅ in steel	mm	10	10	10	13	13	13
maximum twist drill size ∅ in wood	mm	19	32	35	35	68	82
maximum twist drill size ∅ in concrete	mm	10	10	10	13	13	16
maximum vibration to EN with hammer drill function	m/s^2	10.5	10.5	12.2	11	11.8	12.5
maximum vibration to EN without hammer drill function	m/s^2	<2.5	<2.5	<2.5	1.5	1.5	2.5
Weight	kg	1	1	1	1.1	1.2	2.1
typical application		Medium	Medium	Medium	Strong	Strong	Heavy Duty

EXPERIENCE A NEW LEVEL OF PERFORMANCE.

Thanks to tabless cell technology, the ProCORE18V+ 8.0Ah gives your BITURBO devices a longer runtime and greater performance than the ProCORE18V 8.0Ah, so you can complete challenging tasks more easily in future.

More information on the **ProCORE18V+** and other rechargeable battery systems can be found in our brochure **"Battery platforms - The widest selection".**



07 3860_8

META CAS 18

CAS CORDLESS ALLIANCE SYSTEM

metabo 18V cordless hammer drill

Cordless hammer drill with brushless motor and two-speed gearbox.
Choose between a complete set of 2 battery packs, charger and sturdy plastic case or the machine without accessories in a box if you already have a few batteries.
Of course, you can also buy battery packs and chargers separately.
By the way, all Metabo battery packs come with a 3-year warranty, irrespective of the number of charging cycles.
Further details such as the bright LED work light and the handy belt hook ensure even more comfort when working.

Size 613157500 –
- Cordless impact drill/driver with extremely compact design for universal applications.
- Impact drilling function for drilling in masonry.

Size SB18LTBL –
- Cordless hammer drill with optimum performance for demanding applications.
- High-performance impact mechanism for best work results.

Size 602360650 –
- Cordless impact drill/driver with maximum power for the most demanding applications.
- Selectable pulse mode for unscrewing jammed screws and spot drilling on smooth surfaces.
- Precision Stop: more precise electronic torque coupling for exact, sensitive working.
- Electronic safety shut-off: no kick-back when the drill is blocked – for high user protection.

Supplied with:

07 0121 Size SB18LTBL – Includes quick-clamping drill chuck, 2× LiHD rechargeable batteries, charger and metaBox.

07 0122 – Supplied with quick-change chuck; without rechargeable battery, charger and transport case.

07 0121 Size 613157500; 602360650 – Supplied with quick-change chuck, 2 pcs. Li-ion rechargeable battery, charger and metaBox.

Note: See No. 073870 – 073890 for suitable batteries and chargers.



070121_613157500



070121_602360650

07 0121_SB18LTBL

Type		613157500	SB18LTBL	602360650
03D 07 0121	Cordless hammer drill with Li-ion battery	eShop	eShop	eShop
03D 07 0122	Cordless hammer drill without battery	–	eShop	eShop
Manufacturer's designation		SB 18 L BL	SB 18 LT BL	SB 18 LTX BL I
Number of rechargeable batteries contained (07 0121)			2	
Number of rechargeable batteries contained (07 0122)		–	0	0
Type of rechargeable battery			Lithium-ion	
Battery capacity (07 0121)	Ah	2	4	5.2
Battery voltage	V		18	
Motor design			brushless	
maximum torque soft	Nm	28	34	65
maximum torque hard	Nm	65	75	130
No load speed		0 – 500; 0 – 1700	0 – 600; 0 – 2100	0 – 550; 0 – 2000
maximum hammer rate	min^{-1}	25500	31950	38000
Quick-clamping chuck range	mm		1.5 – 13	
maximum twist drill size ∅ in steel	mm		13	
maximum twist drill size ∅ in wood	mm	40	38	68
maximum twist drill size ∅ in concrete	mm	13	13	16
Weight without battery	kg	0.9	1.2	2.5
typical application		Medium	Strong	Heavy Duty



L-BOXX B 18

BOSCH Cordless drill / driver 18 V

- Compact, powerful cordless drill with forward/reverse operation.
- LED light to illuminate the working area and **battery charge display**.
- **Multi-stage torque setting** for precise screw driving.
- **Electronic speed control** for precise drilling and screw driving.
- **Softgrip**.

07 0245/0246/0107 –Can be retrofitted with a **connectivity** module.

07 0107 Size GSR1890FCS – Full flexibility: With many adjustable attachments, the **FlexiClick** system is the optimum solution for all working situations.

07 0243 – Outstanding available and comfortable handling due to **compact design**. **Motor brake** for precise working.

07 0245 – **Kick-back control** with automatic shut-down if jammed, together with unique precision clutch and motor brake. 13 mm auto-lock metal drill chuck. High torque.

Supplied with:

07 0243 Size GSR18V45 – Supplied with 2× Li-ion batteries, charger and L-BOXX.

07 0246 Size GSR18V150C – Including L-BOXX and additional handle, **without** battery and charger.

07 0107 Size GSR1890FCS/0246 Size GSR1890C – Including L-BOXX **without** battery and charger.

07 0245 Size GSR1890C; GSR18110C – Supplied with 2× Li-ion batteries, quick charger and L-BOXX.

Note:	See No. 073851 – No. 073866 for suitable batteries and chargers.



07 0243_GSR18V45



07 0246_GSR1890C



07 0245_GSR1890C



07 0245_GSR18110C



07 0107_GSR1890FCS



07 0246_GSR18V150C

Type		GSR18V45	GSR1890C	GSR1890FCS	GSR18110C	GSR18V150C
03B 07 0243	Cordless drill / driver	eShop	–	–	–	–
03B 07 0245	Cordless drill / driver **ProCORE**	–	eShop	–	eShop	–
03B 07 0246	Cordless drill / driver without battery	–	eShop	–	–	eShop
03B 07 0107	Cordless drill / driver without battery **FlexiClick system**	–	–	eShop	–	–
Manufacturer's designation		GSR 18V-45	GSR 18V-90 C	GSR 18V 90 FC	GSR 18V-110C	GSR18V-150C
Number of rechargeable batteries contained (07 0243, 07 0245, 07 0107)		2	2	0	2	–
Number of rechargeable batteries contained (07 0246)		–	0	–	–	0
Type of rechargeable battery		Lithium-ion				
Battery capacity (07 0243, 07 0245)	Ah	3	4	–	4	–
Battery voltage	V	18				
Motor design		Brushless motor				
maximum torque soft	Nm	21	36	36	47	84
maximum torque hard	Nm	45	64	64	110	150
Speed range 1st speed	min^{-1}	0 – 500	0	0 – 630	0 – 480	0 – 550
Speed range 2nd speed	min^{-1}	0 – 1900	0 – 2100	0 – 2100	0 – 2100	0 – 2200
Quick-clamping chuck range	mm	1.5 – 13				
maximum twist drill size ∅ in steel	mm	10	13	13	13	16
maximum twist drill size ∅ in wood	mm	35	68	68	82	150
Weight	kg	0.9	1.1	1.1	2.2	2.1
maximum vibration to EN	m/s^2	<2.5	<2.5	<2.5	<2.5	2.5
typical application		Medium	Strong	Strong	Heavy Duty	Heavy Duty

THE WIDEST SELECTION. MAXIMUM POWER

**Did you know that you can run your Fein power tools with a Bosch AmpShare rechargeable battery?
Or you can run a Steinel heat gun with a Metabo CAS rechargeable battery?
Try it out and reap the benefits of rechargeable battery systems today!**



How you benefit from cross-brand rechargeable battery systems:

Full compatibility	**Full flexibility**	**Saves space and hassle**
Saves time and money	**Conserves resources**	**You use leading rechargeable battery technologies**



07

We offer you **four rechargeable battery platforms** that enable you to run **multiple tools on the same battery**. This means for you: You save money and become **more flexible and efficient** at your industrial workplace.



Browse our range now and benefit from greater flexibility and cost effectiveness when using power tools.

"Did you know?"
In our **eShop** you can find the **entire range of power tools** from all our partners!
https://hog.tools/akku_powertools

07

B 12

BOSCH Cordless drill / driver 12 V

Bosch cordless drill / driver

- Compact, powerful **12 V cordless drill** with forward/reverse operation.
- With **Electronic Motor Protection (EMP)** and **Electronic Cell Protection (ECP).**
- LED light to illuminate the working area and **battery charge display**.
- **Multi-stage torque setting** for precise screw driving.
- **Electronic speed control** for precise drilling and screw driving.
- **Softgrip**.

07 0241 – **Top power-weight ratio** with up to 20 Nm torque for powerful screwdriving, yet low weight and very short head 163 mm.
Long service life thanks to **brushless EC motor.**

07 0242/0244 – Precise operation even where access is difficult due to compact size **with bit holder** or interchangeable **angle drilling attachment or eccentric drilling attachment.** Flexible working thanks to the quick-change system with four different **FlexiClick**-heads. Comfortable to use: Attachments remain for simply setting 16 different positions on the device.

Advantage:

Size GSR1215B – Compact design ideal for restricted places.

Size GSR1215FC – Versatile, 4 drill chuck options for selection.

Supplied with:

07 0240 – Supplied with charger and transport bag.

Size GSR1235 – Supplied with charger and L-BOXX.

Size GSR1235HX – Including 2× 12 V / 3.0 Ah Li-ion battery, charger, L-BOXX, belt clip, bit holder, 1/2 L-BOXX inlay for device and charger, 1/2 L-BOXX inlay, accessories.

07 0244 – **Without battery,** without charger (cordless concept), supplied with eccentric option, chuck, angle option, bit-holder.

Size GSR1215FC; GSR1235FCF – Supplied with charger, eccentric option, drill chuck, angle option, bit holder and L-BOXX.

Note: See No. 073851 – No. 073866 for suitable batteries and chargers.



07 0240_GSR1215B



07 0242_GSR1215FC



07 0241_GSR1235

Lockable HX 1/4 inch bit holder



07 0241_GSR1235HX



07 0242_GSR1235FCF



07 0244_GSR1235FCS

Type		GSR1215B	GSR1215FC	GSR1235	GSR1235HX	GSR1235FCF	GSR1235FCS
03B 07 0240	Cordless drill / driver	eShop	–	–	–	–	–
03B 07 0241		–	–	eShop	eShop	–	–
03B 07 0242	Cordless drill/driver with exchangeable drill chuck	–	eShop	–	–	eShop	–
03B 07 0244		–	–	–	–	–	eShop
Manufacturer's designation		GSR 12V-15	GSR 12V-15FC	GSR 12V-35	GSR 12V-35 HX	GSR 12V-35 FC	GSR 12V-35 FC
Motor design		2-pole motor	2-pole motor	Brushless motor	Brushless motor	2-pole motor	2-pole motor
Battery capacity	Ah	2	2	3	3	3	–
Battery voltage	V	12					
maximum torque soft	Nm	15	15	15	15	20	20
maximum torque hard	Nm	30	30	30	30	35	35
Speed range 1st speed	min^{-1}	0 – 380	0 – 400	0 – 400	0 – 400	0 – 460	0 – 460
Speed range 2nd speed	min^{-1}	0 – 1300	0 – 1300	0 – 1750	0 – 1750	0 – 1300	0 – 1300
Quick-clamping chuck range	mm	0 – 10					
maximum twist drill size ∅ in steel	mm	10					
maximum twist drill size ∅ in wood	mm	19	19	19	19	32	32
Weight	kg	1	0.8	0.8	0.8	0.8	0.8
maximum vibration to EN	m/s^2	<2.5	< 1.9	<1.9	< 1.9	<1.9	<1.9
typical application		Medium	Strong	Strong	Strong	Strong	Strong

CAS 18

CAS CORDLESS ALLIANCE SYSTEM

metabo Cordless drill / driver 18 V

Cordless drill/driver with and without Metabo Quick system.
The **Quick system saves a lot of time** if you frequently need to change between drilling and screwdriving. In just a few seconds, the drill chuck with drill can be replaced with a bit holder and a bit, without the need for any tools.

07 0271 Size BSLTX3BLQI –
- Extremely powerful 3-speed drill/driver with high speed for extended use and even faster drilling progress, especially in heavy metal applications.
- Powerful drill chuck with post-tensioning function to prevent slippage of the insert tool and maximum concentricity.

07 0281 – The **patented thread-cutting function** of the fully-fledged cordless drill/driver enables fast and uninterrupted drilling and cleaning of threads by automatically switching the direction of rotation.

Size GBLTXBLQI –
- Quick-change tapping chuck for mounting taps with square and cylindrical drill bits.
- Very durable and long tool life for the taps thanks to intelligent torque monitoring.

07 0271 Size BSLTX3BLQI; 613156850/0281 Size GBLTXBLQI –
- Selectable pulse operation for unscrewing fixed screws and spot drilling on smooth surfaces.

07 0271 Size BSLTX3BLQI; 613156850/0281 Size GBLTXBLQI –
- Precision stop: electronic torque coupling with increased precision for precise and sensitive working.

Supplied with:

07 0259 – Supplied with quick-change chuck, 2 pcs. LiHD rechargeable battery, chargers and metaBOX.

07 0260 – Supplied with quick-change chuck, 2 pcs. rechargeable battery, charger and metaBOX.

07 0261 – With quick-clamping drill chuck, without battery, without charger.

07 0271 – With quick-change drill chuck, without battery, without charger.

07 0281 – Including quick-change tapping chuck M4-M6, M8-M12, additional handle and without rechargeable battery and charger.

Note:	See No. 073870 – 073890 for suitable batteries and chargers.


070260_613155500


070271_613156850


07 0259_BSLTBL


070260_602358650


07 0271_BSLTX3BLQI


07 0281_GBLTXBLQI

Type		613155500	613156850	BSLTBL	602358650	BSLTX3BLQI	GBLTXBLQI
03D 07 0259	Cordless drill/driver with LiHD rechargeable battery	–	–	eShop	–	–	–
03D 07 0260	Cordless drill/driver with Li-ion rechargeable battery	eShop	–	–	eShop	–	–
03D 07 0261	Cordless drill / driver without rechargeable battery	–	–	eShop	eShop	–	–
03D 07 0271	Cordless drill / driver without rechargeable battery **with Quick System**	–	eShop	–	–	eShop	–
03D 07 0281	Cordless tapper without rechargeable battery **with Quick System**	–	–	–	–	–	eShop
Manufacturer's designation		BS 18 L BL	BS 18 L BL Q	BS 18 LT BL	BS 18 LTX BL I	BS 18 LTX-3 BL Q I	GB 18 LTX BL Q I
Number of rechargeable batteries contained (07 0259, 07 0260, 07 0271, 07 0281)		2	0	2	2	0	0
Number of rechargeable batteries contained (07 0261)		–	–	0	0	–	–
Type of rechargeable battery		Lithium-ion					
Battery capacity (07 0259, 07 0260)	Ah	2	–	4	5.2	–	–
Battery voltage	V	18					
Motor design		brushless					
maximum torque soft	Nm	28	28	34	65	65	65
maximum torque hard	Nm	65	65	75	130	130	130
No load speed	min^{-1}	0 – 500; 0 – 1700	0 – 500; 0 – 1700	0 – 600; 0 – 2100	0 – 550; 0 – 2000	0 – 450; 0 – 2000; 0 – 4000	0 – 550; 0 – 2000
maximum twist drill size ∅ in steel	mm	13	13	13	13	16	13
maximum twist drill size ∅ in wood	mm	40	40	38	68	68	68
Quick-clamping chuck range	mm	1.5 – 13	1.5 – 13	1.5 – 13	1.5 – 13	1.5 – 13	–
Weight without battery	kg	0.9	0.9	1.2	1.7	2	1.8
typical application		Medium	Medium	Strong	Heavy Duty	Heavy Duty	Heavy Duty

L-BOXX B 18

AMPShare Powered by BOSCH

Cordless drill / driver 18 V

07 0200 – **Cordless drill/driver**

- For **precise** drilling and screwdriving results.
- **Electronic speed control** for smooth, safe starts to drilling and screw driving; reversible.
- **Sturdy metal gearbox** for long working life.
- **Good weight balance and ergonomics** with softgrip inserts for non-tiring continuous work.
- Maximum work progress with **AMPShare 18V ProCore rechargeable batteries:** COOLPACK 2.0 technology provides 135% longer battery life. State-of-the-art cell technology and intelligent battery management provide 87% more power than conventional batteries.

07 0205 – **2- and 4-speed cordless drill/driver**

- For **precise** drilling and screwdriving results.
- **Electronic speed control** for smooth, safe starts to drilling and screwdriving; reversible.
- **Sturdy metal gearbox** for long working life.
- **Good weight balance and ergonomics** with softgrip inserts for non-tiring continuous work.
- Maximum work progress with **AMPShare 18V ProCore batteries:** COOLPACK 2.0 technology delivers 135% longer battery life. State-of-the-art cell technology and intelligent battery management deliver 87% more power than conventional batteries.



07 0200_71161461

Size 71161461H1; 71161461 – Small and light 4-speed cordless drill/driver with brushless motor and QuickIN interface. Perfectly suited to universal drilling and screwdriving work up to 8 mm.

- Solid metal 4-speed gearbox for optimum cutting speeds for drilling in metal and self-tapping screwdriving work up to 6 mm.
- Brushless FEIN PowerDrive motor with 30% higher efficiency and long working life.
- Mechanical torque setting.
- Extensive user protection features include restart protection, electronic overload protection and brake.

Size 7113246H1; 71132461 – **2-speed cordless drill/driver with brushless motor and QuickIN interface.** Perfectly suited to drilling and tapping up to 10 mm.

- Mechanical torque setting.
- Compact design.
- Brushless FEIN PowerDrive motor with 30% higher efficiency and long working life.



07 0200_71132461

Size 71161561H1; 71161561 – **4-speed cordless drill/driver with brushless motor and QuickIN MAX interface.** No compromise on performance when drilling and tapping up to 13 mm.

- 4-speed all-metal gearbox. With rotational speeds of up to 4000 rpm for optimum cutting speeds in metal when working on any bore from 1.5 to 80 mm.
- The powerful brushless **FEIN PowerDrive motor**, with up to 30% higher efficiency, enables a longer service life.
- Safe and controlled working thanks to **kickback control, restart protection, overload protection and extendable additional handle.**
- The innovative reset function enables screwdriving work in wood at a reduced speed for perfect results.
- **Intuitive control panel** with dimmable LED to perfectly illuminate the work area depending on the material.



07 0200_71161561

Supplied with:

07 0200 – Without battery and charger.

07 0205 – Supplied with battery and charger.

07 0200 Size 71132461; 71161461/0205 Size 7113246H1 – QuickIN drill chuck, belt clip, bit holder, L-BOXX

Size 71161561H1; 71161561 – QuickIN drill chuck, belt clip, handle, bit holder, L-BOXX

Note:

07 0200 – See No. 073851 - 073866 for suitable rechargeable batteries and chargers.

Type		71161461H1	71161461	7113246H1	71132461	71161561H1	71161561
03F 07 0205 / 03F 07 0200	Cordless drill/driver	eShop / –	– / eShop	eShop / –	– / eShop	– / –	– / eShop
Manufacturer's designation		ASCM 18 QSW AS	ASCM 18 QSW AS Select	ABS 18 Q AS	ABS 18 Q AS Select	ASCM 18-4 QM AS	ASCM 18-4 QM AS Select
Type of rechargeable battery		Lithium-ion					
Battery capacity	Ah	4	–	4	–	4	–
Battery voltage	V	18					
maximum torque soft	Nm	30	30	38	38	45	45
maximum torque hard	Nm	40	40	60	60	90	90
maximum speed 1st speed	min^{-1}	400	400	450	450	430	430
maximum speed 2nd speed	min^{-1}	700	700	2000	2000	850	850
maximum speed 3rd speed	min^{-1}	1400	1400	–	–	2000	2000
maximum speed 4th speed	min^{-1}	2500	2500	–	–	4000	4000
Quick-clamping chuck range	mm	1.5 – 13					
maximum twist drill size ∅ in steel	mm	13					
maximum twist drill size ∅ in wood	mm	40	40	50	50	60	60
Weight	kg	1.8	1.3	1.7	1.4	1.8	1.3
maximum vibration to EN	m/s^2	<2.5					
typical application		Medium	Medium	Strong	Strong	Heavy Duty	Heavy Duty

HD MB 18

Cordless drill / driver 18 V

MILWAUKEE – Cordless drill / driver Powerful cordless 2-speed drill / driver, reversible.
REDLITHIUM™ rechargeable batteries with **single-cell monitoring** and **charge status display.**
Sturdy **metal gearbox** for long working life. **FIXTEC metal quick-clamping drill chuck** with spindle lock.
LED illumination of the working area. Handle with Softgrip coating for comfortable use.

07 0212 Size M18ODD3-5 – M18 FUEL™ **ONE-KEY™** Cordless drill / driver with high torque.

07 0210 Size M18FDD3-2; M18FDD3-5/0211 Size M18FDD3-2/0212 Size M18ODD3-5 –
Top model FUEL™ with **brushless POWERSTATE™ motor** for very high efficiency.
Very low wear and up to 10 times the working life of standard DC motors. The high efficiency and the enhanced battery capacity permit **up to 2× longer operating times** (compared to other Li-ion technologies). **REDLINK PLUS™ electronics** – for unique power management:

- With **system communication** between the drive machine and battery.
- With **overload protection** for longer working life of the battery, motor, and gearbox.

Supplied with:

07 0211 – Version **without rechargeable battery, charger.** Includes transport case.

07 0212 – Supplied with 2× M18 Red-Li-ion rechargeable batteries, M12-18 FC charger, belt clip, HD box (carrying case).

07 0210 Size M18FDD3-2; M18FDD3-5/0211 Size M18FDD3-2/0212 Size M18ODD3-5 –
Supplied with additional handle for easier support of the torque forces.

07 0210 Size M18FDD3-2–M18BLDDRC5 – Supplied with 2× M18 Red-Li-ion rechargeable batteries, M12-18 FC charger, belt clip, HD box (carrying case).

Note:
See No. 073801– No. 073840 for suitable batteries and chargers.



_M18ONEDD3-5



_M18FDD3-2



_M18FDD3-5



_M18BLDDRC2



_M18BLDDRC5

Type		M18ODD3-5	M18FDD3-2	M18FDD3-5	M18BLDDRC2	M18BLDDRC5
03L 07 0210	Cordless drill / driver	–	eShop	eShop	eShop	eShop
03L 07 0211	Cordless drill/driver without battery or charger	–	eShop	–	–	–
03L 07 0212	ONE-KEY™ cordless drill / driver	eShop	–	–	–	–
Manufacturer's designation		M18 ONEDD3-502X	M18 FDD3	M18 FDD3-502X	M18 BLDDRC-202C	M18 BLDDRC-502C
Number of rechargeable batteries contained (07 0210, 07 0212)		2				
Type of rechargeable battery		Lithium-ion				
Battery capacity	Ah	5	2	5	2	5
Battery voltage	V	18				
Motor design		Brushless motor				
maximum torque hard	Nm	158	158	158	60	60
maximum speed 1st speed	min^{-1}	0 – 500	0 – 550	0 – 500	0 – 550	0 – 550
maximum speed 2nd speed	min^{-1}	2100	2100	2100	1700	1700
Quick-clamping chuck range	mm	1.5 – 13	1.5 – 13	1.5 – 13	1.5 – 15	1.5 – 15
maximum twist drill size ∅ in steel	mm	16	16	16	13	13
maximum twist drill size ∅ in wood	mm	89	89	89	52	52
Weight (07 0210, 07 0212)	kg	2.1	1.8	2.1	1.5	1.8
Weight (07 0211)	kg	–	1.4	–	–	–
maximum vibration to EN	m/s^2	<2.5	<2.5	<2.5	< 2.5	< 2.5
typical application		Heavy Duty	Heavy Duty	Heavy Duty	Strong	Strong

HD MB 12

Cordless drill / driver 12 V

MILWAUKEE – Cordless power drill Powerful cordless 2-speed drill / driver, reversible. REDLITHIUM™ rechargeable batteries with **single-cell monitoring** and **charge status display.** Sturdy **metal gearbox** for long working life. **FIXTEC metal quick-clamping drill chuck** with spindle lock. LED illumination of the working area. Handle with Softgrip coating for comfortable use.

Size M12BLDDRC2 – ■ Extremely compact design with a length of only 132 mm, perfect for use in confined spaces.
■ Mechanical slip clutch with 13 torque levels.

Size M12FDDXK2 – Cordless compact drill / screwdriver with quick-change drill chuck.
■ 4-in-1 exchangeable head system with four different attachments.
■ **Only 185 mm overall.**

Size M12FDD2-6 – ■ Brushless POWERSTATE™ motor for more power and a compact shape (151 mm in length).
■ REDLINK PLUS™ electronics for intelligent power management and overload protection.
■ 16-step electronic torque limit setting, plus drill steps.

Size M12FDD2-2; M12FDD2-4 –
■ Brushless POWERSTATE™ motor for more power and a compact shape (168 mm in length).
■ REDLINK PLUS™ electronics for intelligent power management and overload protection.
■ 16-Step electronic torque limit setting, plus drill steps.

Supplied with:

Size M12FDDXK2 – Kit with 10-mm metal drill chuck, offset screwdriving attachment, eccentric attachment, 6-mm HEX attachment, including 2 pcs. 12V / 2.0 Ah Li-ion battery M12 B2, charger, HD Box.

Size M12FDD2-4 – Supplied with 2 pcs. 12 V / 4.0 Ah Li-ion batteries, charger, belt clip, HD box.

Size M12FDD2-6 – Supplied with 2 pcs. 12 V / 6.0 Ah Li-ion batteries, charger, belt clip, HD box.

Size M12BLDDRC2; M12FDD2-2 – Supplied with 2 pcs. 12 V / 2.0 Ah Li-ion batteries, charger, belt clip, HD box.

Note:	See No. 073816, No. 073827 and No. 073840 ff. for suitable replacement batteries and chargers.



M12FDDXK2



M12BLDDRC2



M12FDD2-2



M12FDD2-4



M12FDD2-6

Type		M12BLDDRC2	M12FDDXK2	M12FDD2-2	M12FDD2-4	M12FDD2-6
03L 07 0215	Cordless drill / driver	eShop	eShop	eShop	eShop	eShop
Manufacturer's designation		M12 BLDDRC-202C	M12 FDDXKIT-202X	M12 FDD-202X	M12FDD-402X	M12FDD-602X
Number of rechargeable batteries contained				2		
Type of rechargeable battery				Lithium-ion		
Battery capacity	Ah	2	2	2	4	6
Battery voltage	V			12		
Motor design				Brushless motor		
maximum torque hard	Nm	40	34	44	44	44
maximum speed 1st speed	min^{-1}	0 – 470	0 – 400	0 – 450	0 – 450	0 – 450
maximum speed 2nd speed	min^{-1}	1550	1600	1700	1700	1700
Quick-clamping chuck range	mm	1.5 – 10	1.5 – 13	1.5 – 13	1.5 – 13	1.5 – 13
maximum twist drill size ∅ in steel	mm	10	10	13	13	13
maximum twist drill size ∅ in wood	mm	22	34	35	35	35
Weight	kg	2.8	0.9	1.2	1.4	1.5
maximum vibration to EN	m/s^2	<2.5	<2.5	<2.5	<2.5	<2.5
typical application		Medium	Medium	Strong	Strong	Strong

Cordless drill / driver 12V and 18V

AEG – Cordless drill / driver

- Sturdy and handy cordless 2-speed drill / screwdriver, reversible.
- **FIXTEC quick-change chuck** with spindle lock.
- Handle with Softgrip coating for comfortable use.
- LED illumination of the working area.

Size BS12C2 –
- Extremely compact - **only 176 mm overall length.**
- 17-step torque limit adjustment, plus drill steps.
- 10 mm quick-change chuck.
- Metal gearbox casing, electronic overload protection.

Size BS18SBL2-2 – Brushless **subcompact** motor with up to 65 Nm of torque. 24-step torque adjustment.

Size BS18C2X –
- 23-step torque limit adjustment, plus drill steps.
- 13 mm quick-change chuck.
- 4-pole motor for maximum power within a compact design.

Supplied with:

Size BS12C2 – Supplied with 2 pcs. 12 V / 2.0 Ah battery, charger, transport case.

Size BS18SBL2-2 – Supplied with 2 pcs. 18 V / 2.0 Ah battery, charger, transport case.

Size BS18C2X – Supplied with 2 × 2.0 Ah batteries, charger, transport case.

Note:	See No. 073841 - No. 073848 for suitable rechargeable batteries and chargers.



_BS12C2



_BS18SBL2-2



_BS18C2X

Type		BS12C2	BS18SBL2-2	BS18C2X
07A 07 0221 AEG Cordless drill / driver		–	–	–
07A 07 0222		–	–	–
Manufacturer's designation		BS 12 C2	BS 18 SBL2	BS 18 C2X
Battery capacity	Ah	2		
Battery voltage	V	12	18	18
Motor design		2-pole motor	Brushless subcompact motor	4-pole motor
maximum torque hard	Nm	34	65	50
maximum speed 1st speed	min^{-1}	0 – 350	0 – 450	0 – 450
maximum speed 2nd speed	min^{-1}	1500	1750	1800
Quick-clamping chuck range	mm	1.5 – 10	1.5 – 13	1.5 – 13
maximum twist drill size ∅ in steel	mm	10	13	13
maximum twist drill size ∅ in wood	mm	20	40	45
Weight	kg	1.1	1.3	1.7
maximum vibration to EN	m/s^2	< 2.5	<2,5	< 2.5
typical application		Medium	Strong	Strong

Offset screwdriving attachment, 1/4 inch

Size OSD2 – 1/4 inch magnetic hexagon socket, suitable for all standard bits 25 mm (C 6.3) and ball-lock bits (E 6.3).

Size SHW; OSD2 – Offset screwdriving / drill attachment is the ideal solution for all screw fastenings in restricted and inaccessible places.

Supplied with:

Size SHW – Offset screwdriving attachment together with 10×25 mm SHOCKWAVE™ screwdriver bits.

Size WB1 – Includes 10-piece bit set.


_SHW


_OSD2


_WB1

Type		SHW	WB1	OSD2
07A 07 3920	Offset screwdriving attachment	eShop	eShop	eShop
maximum torque	Nm	225	11	40

Cordless special drill / driver

07 0223 – **Bosch – cordless right angle drill**

- Bosch premium lithium-ion technology.
- **Battery charge display.**
- **Very compact:** short, **5-way adjustable head** with **10 mm auto-lock drill chuck.**
- **High speed** from 0-1300 rpm for fast work progress – optimal for holes, motor brake.

Size M4D2 – Li-ion cordless **compact drill / screwdriver with swivel joint** allowing use as a straight baton or as a pistol grip. REDLINK™ electronic overload protection for a long working life. 21-step torque adjustment with electronic switch-off function, drill step, battery charge display in the device, forwards/reverse running, **1/4 inch hex bit** arbor (E 6.3).

Size M12FHIR14 – Compact high-speed cordless ratchet screwdriver with sensitive speed controller.

Size M12FIR12-0 – Compact design for quick access for all applications, such as working on engines or gearboxes.
Brushless POWERSTATE™ motor with heavy-duty gearbox and casing for a long working life. REDLINK PLUS™ electronics for intelligent power management.

Size M12FHIR14L – High-speed, **long** cordless ratchet screwdriver allows users better access in confined spaces.

- REDLINK™ PLUS electronics and brushless POWERSTATE™ motor

07 0225/0228 – **MILWAUKEE – cordless right angle drill and ratchet**

- REDLINK™ electronics with stepless speed control, reversible running and overload protection.
- LED illumination of the working area.

Size C12RAD; C18RAD-0 – Lightweight and handy compact **right angle** drill / driver for places where access is difficult, very compact – **only 95 mm width across head.** 10-stage electronic torque adjustment plus drill step, **FIXTEC** quick-release chuck. A red LED indicates the torque that has been reached.

Supplied with:

Size GWB1210 – Including charger, L-BOXX 102, 1/2 L-BOXX inlay for accessories, 1/2 L-BOXX inlay for device.

Size M12FIR12-0 – Supplied with 1/2 inch to 3/8 inch adapter.

Size M4D2/0225 Size C12RAD – Includes a battery, charger and transport case.

Size C18RAD-0/0228 Size M12FIR12-0; M12FHIR14; M12FHIR38/0234 Size M12FHIR14L – **Without battery and without charger.**

Note:

07 0223 – See No. 073851 – No. 073866 for suitable batteries and chargers.
07 0224 – For the suitable rechargeable battery see No. 073814 size MB4.
07 0225 – See No. 073801 – No. 073840 for suitable batteries and chargers.

MB 4


_M4D2

B 12
L-BOXX


_GWB1210

MB 12


_C12RAD

MB 18


_C18RAD-0

MB 12


_M12FHIR14

MB 12


_M12FHIR38

MB 12


_M12FIR12-0

MB 12


_M12FHIR14L

Type			M4D2	GWB1210	C12RAD	C18RAD-0	M12FHIR14	M12FHIR38	M12FIR12-0	M12FHIR14L
03B 07 0223	BOSCH	Cordless special drill / driver	–	eShop	–	–	–	–	–	–
03L 07 0224		Cordless special drill / driver	eShop	–	–	–	–	–	–	–
03L 07 0225			–	–	eShop	eShop	–	–	–	–
03L 07 0228	Milwaukee	Cordless ratchet	–	–	–	–	eShop	eShop	eShop	–
03L 07 0234		Cordless ratchet, long version	–	–	–	–	–	–	–	eShop
Manufacturer's designation			M4D-202B	GWB1210	C12RAD-202B	C18RAD-0	M12FHIR14	M12FHIR38	M12FIR12-0	M12FHIR14LR
Number of rechargeable batteries contained			2	2	2	0	0	0	0	0
Type of rechargeable battery			Lithium-ion							
Battery capacity		Ah	2	2	2	–	2	2	–	–
Battery voltage		V	4	12	12	18	12	12	12	12
maximum torque hard		Nm	5	11	12	20	47	47	81	47
maximum speed 1st speed		min^{-1}	0 – 200	0 – 1300	0 – 800	0 – 1500	0 – 450	0 – 450	0 – 175	0 – 450
maximum speed 2nd speed		min^{-1}	0 – 600	–	–	–	–	–	–	–
Toolholder			E 6.3	∅ 1.0 – 10 mm	∅ 1.0 – 10 mm	∅ 1.0 – 10 mm	Square 1/4 inch	Square 3/8 inch	Square 1/2 inch	Square 1/4 inch
Format			Compact drill / driver	Right angle drill / driver			Impact ratchet			
maximum twist drill size ∅ in steel		mm	3	10	10	10	–	–	–	–
maximum twist drill size ∅ in wood		mm	6	10	25	28	–	–	–	–
Weight		kg	0.5	1.2	1.1	1.9	1	1.4	1.5	1.1
maximum vibration to EN		m/s^2	–	–	< 2.5	< 2.5	<2.5	<2.5	<2.5	<2.5
typical application			Medium	Medium	Medium	Strong	Strong	Strong	Strong	Strong

Cleco Cordless torque shut-off nutrunner

The cordless Cleco® CellClutch™ assembly tools are smart yet simple to use, and bring programming functionality to the assembly line along with a classic counting function. Precision and repetition accuracy with a CMK value > 1.67 (at a tolerance of ±10% in conjunction with ISO 5393).

- **Easy to program:** Program speeds and multi-stage screw tightening procedures to avoid errors and improve productivity.
- **Tried-and-tested Cleco coupling:** For reliability and a long service life in the production line.
- **Operator status light:** Colour display for screw tightening and batch counting status.
- **Multi-colour LED:** Work light for additional "OK/NOK" user feedback whilst also illuminating your workpiece.
- **Programmable screwdriving strategies:** Eliminate damage to the thread and errors when screwdriving thanks to programmable speeds and strategies.
- **Uniform battery platform.**

Supplied with: Without socket, without rechargeable batteries and without charger.

Note: You can find suitable batteries and chargers under No. 073827 size MB18; 073816 size MB18 and under No. 073840. A pre-setting device is necessary for setting the torque; these can be found from No. 654381.

CellClutch cordless nutrunner, right angle, with shut-off clutch



07 1142

Type		CLBA083	CLBA123	CLBA203	CLBA303	CLBA403	CLBA653
035 07 1142	Cordless nutrunner, right angle	(eShop)	(eShop)	eShop	eShop	eShop	eShop
Battery voltage	V	18					
Torque range	Nm	2.2 – 8	3.3 – 12	8.3 – 21	8.3 – 30	15.1 – 41	16 – 65
Speed range	min^{-1}	92 – 915	65 – 650	36 – 360	26 – 255	19 – 190	12 – 115
Weight without battery	kg	1.46	1.46	1.73	1.73	1.83	1.93

CellClutch cordless nutrunner, pistol, with shut-off clutch



07 1143

Type		CLBP04Q	CLBP08Q	CLBP12Q
035 07 1143	Cordless nutrunner, pistol	eShop	eShop	eShop
Battery voltage	V	18		
Torque range	Nm	1.1 – 4	2.1 – 8	3.2 – 12
maximum speed	min^{-1}	1770	985	700
maximum torque	Nm	4	8	12
Toolholder		Quick-change chuck		
Weight without battery	kg	1.04		

CellClutch™ AT A GLANCE



07 1142

Operator status light
Clear and simple display of the screw tightening status and the counting function on the colour display.

Standardised battery platform
For all new tools, ensuring a simple and cost-effective stock of batteries.
100% compatible with the Milwaukee M18 system.

Tried-and-tested Cleco clutch
Unsurpassed reliability and durability for assembly tasks.

Multi-colour LED display
Additional „OK/NOK" operator feedback with improved illumination of the workpiece.

Programmable screw tightening profiles
Avoid thread damage and screw tightening mistakes.

07

ACCU TEC torque shut-off screwdrivers to DIN ISO 5393, VDI / VDE 2647

FEIN ACCU TEC shut-off screwdrivers are designed for the most demanding applications requiring **precise screw tightening in series production.**

- **Brushless EC motors** with working life extended by a factor of several times and **up to 80 % lower maintenance costs.**
- **Restart delay** after the screw tightening, to avoid "follow-up".
- **Restart inhibit** if the remaining battery charge is insufficient to perform the screw tightening.
- **Tight screw tightening tolerances** for high screw tightening quality.
- **Precise and consistent tightening torques** in any screw tightening application.
- Testable screwdrivers, CmK-value > 1.67 ±10% (based on 6 sigma) to ISO 5393 VDI/VDE 2647.

The release torque is 25 % above the tightening torque.
Torque shut-off screwdriver with ParameterControl for easy and individual programming on a PC , using the programming adaptor (No. 071135 size 92604163).
Freely programmable parameters: Speed, direction of rotation, angle of rotation, torque threshold and time.
Up to 5 programmable steps. Precise configuration for each screw tightening application. **Final switch-off by mechanical clutch.**
Ideal for optimising the process and time. **Shut-off screwdriver, takes a Li-ion battery. Maintenance-free** up to 500,000 screw fastenings.

Supplied with: Just the screwdriver itself is supplied, **without battery, charger or setting tool and angle head.**
Please order the battery, charger, setting tool and angle head specifically for the device.

Note:
See No. 654300 ff. for torque analysers.
See No. 654381 for torque sensors / rotational angle sensors.
Calibration service on request.
See No. 073832 ff. for suitable rechargeable batteries and chargers.

ACCU TEC torque shut-off screwdriver with ParameterControl

FE 12 FE 18




07 1120


07 1111

Type		71126660	71126860	71127060	71126260	71126360	71126460	7112776	7112786	7112796
03F 07 1111	Torque shut-off screwdriver with ParameterControl **Centre handle screwdriver**	–	–	–	–	–	–	eShop	eShop	eShop
03F 07 1120	Torque shut-off screwdriver with ParameterControl **Baton offset screwdriver**	eShop	(eShop)	eShop	eShop	(eShop)	eShop	–	–	–
Manufacturer's designation		ASW 18-6 PC	ASW 18-12 PC	ASW 18-18 PC	ASW 18-30 PC	ASW 18-45 PC	ASW 18-60 PC	ASM 18-3 PC	ASM 18-8 PC	ASM 18-12 PC
Battery voltage	V	12; 18	12; 18	12; 18	12; 18	12; 18	12; 18	12; 18	12; 18	12; 18
Torque range	Nm	1.2 – 6	3 – 12	6 – 18	12 – 30	20 – 45	25 – 60	0.5 – 3	1 – 8	4 – 12
Speed range	min^{-1}	100 – 1340	75 – 1020	65 – 900	30 – 420	25 – 310	20 – 230	110 – 1200	110 – 1200	80 – 900
Toolholder		–	–	–	–	–	–	1/4 inch HEX (E 6.3)		
Format		Baton offset screwdriver						Centre handle screwdriver		
Weight including rechargeable battery	kg	1	1	1.2	1.7	1.7	1.7	0.8	0.8	0.8
suitable angle head		071133 18020; 21020; 14010	071133 18020; 21020; 14010	071133 17010	071133 15010	071133 15010	071133 16010	–	–	–

Accessories for ACCU TEC shut-off screwdriver


_14010


_17010


_16010

Type		21020	14010	18020	17010	15010	16010
03G 07 1133	Angle head for ASW 18	eShop	eShop	eShop	eShop	eShop	eShop
Tool arbor drive profile		QuickIN	External square drive				
Tool arbor size	in	1/4	1/4	3/8	3/8	3/8	1/2
suitable for drive	Nm	6 – 12	12	6 – 12	18	45	60

Type		ESTW
03G 07 1119	ACCU TEC setting tool	eShop


07 1119

Programming adaptor for all AccuTec parameter control models (No. 071111 and 071120).
To connect the machine to the PC, in addition to the software (Download from FEIN), the programming adaptor is required with the associated USB cable.
Supplied with: Programming adaptor, USB connecting cable and guide for downloading the software.

Type		92604163
03G 07 1135	Programming adaptor	eShop


07 1135

BOSCH

Bosch industrial drill/drivers are designed for use in industrial applications with high demands on service life, consistency and accuracy.

- Extreme durability with extended service life for optimal operation without downtime.
- Outstanding performance consistency and torque accuracy.
- Ergonomic industrial design with a slim handle, light weight and short head length to minimise fitter fatigue and maximise application flexibility.

Note: Bosch industrial screwdrivers are not classified in category A, B or C.



BOSCH Cordless industrial drill/driver

07 4800 – Consistent, reliable and affordable 18V smart solution for industrial assembly lines.
- **Precision coupling:** No oversteer when a set torque is reached. (Reduces coupling wear).
- **Industrial ergonomics:** Extreme compactness for high flexibility. Optimized handle size and light weight for industrial mounting.

07 4801 – Industrial impact wrench with constant, pre-selectable output torque.
- 9 levels of specific tightening torque with +/-15% consistency to each bolt.
- Tightening indicator light.
- **Durable Hall sensor switch:** Switching cycle is maximised for 2-5 times longer life compared to traditional products.

Note:	See No. 073851 – No. 073866 for suitable batteries and chargers.



_ISR18V30P



_ISR1830PHX



_IDS18V200T

Type		ISR18V30P	ISR1830PHX	IDS18V200T
03B 07 4800	Industrial cordless drill/driver	eShop	eShop	–
03B 07 4801	Industrial cordless impact wrench	–	–	eShop
Manufacturer's designation		ISR 18V-30 P	IRS 18V-30 P-HX	IDS 18V-200 T
Number of rechargeable batteries contained		0		
Type of rechargeable battery		Lithium-ion		
Battery voltage	V	18		
maximum torque	Nm	30	30	300
No load speed	min^{-1}	0 – 1400	0 – 1400	0 – 2500
Number of impacts	min^{-1}	–	–	0 – 3500
Tool arbor drive profile		Quick-clamping chuck	Internal hexagon drive	External square drive
Tool arbor size	in	–	–	1/2
Weight	kg	0.7	0.7	1.2
maximum vibration to EN	m/s^2	<2.5	<2.5	11.6
typical application		Heavy Duty		

BOSCH Cordless impact wrench / drivers

L-BOXX B 12

Cordless impact wrench / impact driver.
- Reversible.
- Battery charge display.

Compact impact screwdrivers for **high precision.**
- Perfect handling thanks to the short overall length.
- Higher precision: **2-stage power control** to avoid overdriving smaller screws.
- Longer motor life thanks to **brushless EC motor technology.**
- **LED light** for illuminating the working area, even in dark areas.



_GDS12115



_GDR12110

Type		GDR12110	GDS12115
03B 07 4054	Cordless impact wrench / impact driver	–	eShop
Manufacturer's designation		GDR 12V-110	GDS 12V-115
Number of rechargeable batteries contained		2	
Type of rechargeable battery		Lithium-ion	
Battery capacity	Ah	3	
Battery voltage	V	12	
maximum torque hard	Nm	110	115
Number of impacts	min^{-1}	0 – 3100	
Tool arbor drive profile		Internal square drive	External square drive
Tool arbor size	in	1/4	3/8
maximum speed 1st speed	min^{-1}	1200	
maximum speed 2nd speed	min^{-1}	2600	
Weight	kg	0.9	
maximum vibration to EN	m/s^2	10	
typical application		Strong	

L-BOXX B 18

BOSCH Cordless impact wrench / driver

Cordless impact wrench / impact driver.

- Reversible.
- Battery charge display.

07 4052 Size GDR18V200 – Compact 18V impact wrench / driver with 1/4 inch bit holder.

- High torque and high impact rate (4000 impacts/minute) for rapid progression of work when tightening screws in metal (up to M16) and wood.
- Very short body for perfect handling even in confined spaces and overhead.

Size GDX18V210C – Powerful impact wrench with 2 operating modes for metal and wood and **Bluetooth® connectivity.**

- Special tool arbor combining **1/2 inch square and 1/4 inch hexagon.**
- **3-stage PowerControl** – for different torques to suit different applications.
- Further parameters and operating modes can be set individually using the **Toolbox app**.

Size GDS18450HC – 1/2-inch impact wrench with Bluetooth® connectivity.

- 2 operating modes for metal and wood. Further parameters can be set individually using the Toolbox app.

Size GDS18750C – Powerful 1/2" cordless impact screwdriver combines performance with a compact design.

- Break-away torque of 1000 Nm combined with a head length of only 156 mm.
- Ideal for metal workshops/locksmiths, industrial metalworking, vehicle maintenance and construction.

Size GDS18V1000 – Powerful 18V impact wrench with **BITURBO** brushless technology, for the **most demanding** screw tightening in metal.

- 3 speed/torque settings for excellent control of speed and torque.

Size GDS1050HC – 3/4 inch impact wrench with **BITURBO** brushless technology and **Bluetooth® connectivity.**

- 3 speed/torque settings.
- 2 operating modes for metal and wood.
- Further parameters can be set individually using the Toolbox app.

Size GDS1600HC – Exceptional cable-free performance: 3/4" impact screwdriver with high traction power thanks to BITURBO brushless technology.

- Strong impact screwdriver with a tightening torque of 1,600 Nm and break-away torque of 2,200 Nm.
- Auto Bolt Release (ABR) mode ensures convenient handling by preventing metal bolts or union nuts from falling off and being lost.

Supplied with:

07 4051 – Version without battery and without charger, including L-BOXX.

07 4052 – Supplied with 2× Li-ion batteries, charger, L-BOXX

Note:	Suitable replacement batteries and chargers can be found under No. 073851 – 073867.



_GDR18V200



_GDX18V210C



_GDS18450HC



_GDS18750C



_GDS18V1000



_GDS1050HC



_GDS1600HC

Type		GDR18V200	GDX18V210C	GDS18450HC	GDS18750C	GDS18V1000	GDS1050HC	GDS1600HC
03B 07 4051	Cordless impact wrench / impact driver **without battery**	–	eShop	–	–	–	–	–
03B 07 4052	Cordless impact wrench / impact driver	eShop	eShop	eShop	–	–	–	–
Manufacturer's designation		GDR 18V-200	GDX 18V-210C	GDS 18V-450 HC	GDS 18V-750 C	GDS 18V-1000	GDS 18V-1050HC	GDS 18V-1600HC
Number of rechargeable batteries contained (07 4052)		2						
Type of rechargeable battery		Lithium-ion						
Battery capacity	Ah	4	4	4	8	8	8	8
Battery voltage	V	18						
Torque settings		1	3	–	–	3	3	–
maximum torque hard	Nm	200	210	450	750	1000	1050	1600
Number of impacts	min^{-1}	0	0 – 4100	0 – 3300	0 – 3000	0 – 2600	0 – 2600	0 – 2350
Tool arbor drive profile		Internal hexagon drive	Internal hexagon drive, external square drive	External square drive	External square drive	External square drive	External square drive	External square drive
Tool arbor size	in	1/4	1/2; 1/4	1/2	1/2	1/2	3/4	3/4
maximum speed 1st speed (07 4052)	min^{-1}	–	–	1500	1500	–	–	800
maximum speed 2nd speed (07 4052)	min^{-1}	–	–	2300	3000	–	–	1750
Weight	kg	1.1	1.2	2.1	2.1	2.9	2.9	3.2
maximum vibration to EN	m/s^2	14	9.8	14.5	13.5	13.5	13.5	14
typical application		Strong	Strong	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty

Cordless impact wrench / driver

L-BOXX B 18

AMP Share Powered by BOSCH

Powerful cordless impact wrench with **brushless motor and torque adjustment in 6 steps.**
Robust all-metal impact drive and ergonomic handling thanks to soft-grip coating.

Size 71151061 –
- Brushless motor has 10% higher torque for anti-clockwise rotation to release stubborn stuck screws.
- Touch protection on the gear head.
- Compact design.

Size 71151161 –
- Brushless motor with 30% higher efficiency and long working life.
- 1/4 inch hexagon socket toolholder for holding bits and sockets.
- 10% higher torque for anti-clockwise rotation to release stubborn stuck screws.

Size 71151261 –
- Brushless FEIN PowerDrive motor with 30% higher efficiency and long working life.
- Impact nut is securely connected to the drive output square with a positive connection and form fit.

Supplied with: **Version without battery and without charger,** including L-BOXX.1 pc. belt clip, 1 pc. bit holder.

Note: See No. 073851 – No. 073866 for suitable batteries and chargers.


_71151061


_71151161


_71151261

Type		71151061	71151161	71151261
03F 07 4000	Cordless impact wrench / driver	eShop	eShop	eShop
Manufacturer's designation		ASCD 18-300 W2 AS	ASCD 18-200 W4 AS	ASCD 18-1000 W34 AS
Number of rechargeable batteries contained			0	
Type of rechargeable battery			Lithium-ion	
Battery voltage	V		18	
maximum torque	Nm	290	210	1050
maximum screw ∅ (8.8 - 12.9)		M18	M18	M27
Number of impacts	min^{-1}	0 – 3400	0 – 3000	0 – 2200
Tool arbor drive profile		External square drive	HEX	External square drive
Tool arbor size	in	1/2	1/4	3/4
Weight	kg	1.2	1.2	3.1
maximum vibration to EN	m/s^2	6	6	12.9
typical application			Heavy Duty	

Cordless impact wrench / impact driver 12 V

HD MB 12

- Robust and **powerful FUEL™ cordless impact screwdriver** with **brushless POWERSTATE™ EC motor.**
- Long motor service life and high energy efficiency.
- Sturdy **metal gearbox casing** and ergonomic **central handle with soft-grip coating.**
- Battery charge display.
- LED illumination of the working area.
- Reversible, with electronic speed control.
- **REDLINK PLUS™ electronics** – for unique power management.
- DRIVE CONTROL™ permits quick switching between the available settings with different speeds and torques.

Size M12FID2-2 – Compact impact wrench (127 mm long) with 1/4 inch HEX bit holder.

Size M12FQID – When performing fastening work in wood, the M12 **FUEL-DRIVE™ SURGE™** cordless impact driver is the quietest impact driver in the M12™ range (at 76 dB(A)).

Size M12CIWF125; M12CIWF385 – With friction ring.

Supplied with: Supplied with 2× Li-ion high-power batteries, charger, HD box.

Note: See No. 073801 – 073840 for suitable batteries and chargers.


_M12FID2-2



_M12FQID



_M12CIWF125



_M12CIWF385

Type		M12FID2-2	M12FQID	M12CIWF125	M12CIWF385
03L 07 4014	Cordless impact wrench / impact driver	eShop	eShop	eShop	eShop
Manufacturer's designation		M12 FID2-202X	M12FQID-202X	M12FCIWF12G3-502X	M12FCIWF38G3-502X
Number of rechargeable batteries contained			2		
Type of rechargeable battery			Lithium-ion		
Battery capacity	Ah	2	2	5	2
Battery voltage	V		12		
maximum torque 1st step	Nm	170	50	542	542
maximum screw ∅ (8.8 - 12.9)		M14	M14	M16	M16
Number of impacts 1st stage	min^{-1}	0 – 1700	0 – 950	0 – 1500	0 – 1500
Number of impacts 2nd stage	min^{-1}	0 – 2900	0 – 2200	0 – 3000	0 – 3000
Number of impacts 3rd stage	min^{-1}	0 – 3600	0 – 3400	0 – 3300	0 – 3300
Tool arbor drive profile		HEX (E 6.3)	HEX (E 6.3)	External square drive	External square drive
Tool arbor size	in	1/4	1/4	1/2	3/8
Weight	kg	0.9	1.1	1	1
maximum vibration to EN	m/s^2		1.5		
typical application		Strong	Strong	Heavy Duty	Heavy Duty

HD

Cordless impact wrench / driver



_M18ONEFF34

Robust and **powerful FUEL™ cordless impact wrench** with **brushless POWERSTATE™ EC motor**, for long motor service life and high energy efficiency. Sturdy **metal gearbox casing** and ergonomic **central handle with soft-grip coating.** Stage of charge display, LED illumination of the working area. Reversible, with electronic speed control. **REDLINK PLUS™ electronics** – for unique power management:

- With **system communication** between the drive machine and battery.
- With **overload protection** for longer working life of the battery, motor, and gearbox.

DRIVE CONTROL™ permits quick switching between the 4 available settings with different speeds and torques.

Size M18ONEFF34 – Cordless impact wrench / impact driver with snap ring provides up to 1627 Nm of tightening torque and replaces wired and pneumatic devices. DRIVE CONTROL enables quick switching between the 4 available settings with different speeds and torques.

Size M18ONEFHIW – The **1 inch 18 V cordless impact wrench FUEL™** delivers up to 2033 Nm torque from a compact tool and needs neither a cable nor compressed air to do it. Integral impact rate adjustment increases the reproducible results for the chosen torque setting. With new **Forge™** 8.0 Ah rechargeable battery.

Size M18ONEF1DS – With 18 FUEL™ ONEKEY™ 1 inch cordless impact wrench with snap ring, provides up to 2576 Nm of tightening torque and replaces wired, petrol and pneumatic devices. DRIVE CONTROL enables quick switching between the 4 available settings with different speeds and torques.



_M18ONEFF12

Size M18FIW2F12 – **18 V / 5.0 Ah compact cordless impact driver** with only 124 mm overall length.

Size M18FID3 – **M18 FUEL™ 1/4 inch hex cordless impact wrench.**

- Extremely compact, only 113 mm long.
- DRIVE CONTROL enables quick switching between the 4 available settings with different speeds and torques.
- Improved illumination of the work area by 3 LEDs.

Size M18ONEFF12; M18FMT2F12; M18ONEFF34; M18FIW2F12 –

- Compact design.
- Stage 4 for an optimum mix of power and precision when undoing screws.

Size M18ONEFF12; M18ONEFF34 –

- ONE KEY™ app for individualising the tool settings.
- ONE KEY™ tool tracker & security permits amongst other things a display of the latest position of the device.



_M18ONEFHIW

Supplied with:

Size M18ONEFHIW; M18ONEF1DS – Includes 1× M18 Forge™ 12 Ah, charger, HD box.

Size M18ONEFF34; M18ONEFF12; M18FMT2F12; M18FIW2F12; M18FID3
Supplied with 2× Li-ion batteries, charger, HD box, belt clip.

Note:	See No. 073801 – No. 073840 for suitable batteries and chargers.



_M18FMT2F12



_M18FIW2F12



_M18FID3



_M18ONEF1DS

Type		M18ONEFF34	M18ONEFF12	M18ONEFHIW	M18ONEF1DS	M18FMT2F12	M18FIW2F12	M18FID3
03L 07 4010	Cordless impact wrench / impact driver	eShop	eShop	–	–	eShop	eShop	eShop
Manufacturer's designation		M18ONEFHI-WF34-502X	M18ONEFHI-WF12-502X	M18ONEFHI-WF1-802X	M18ONEFHI-WF1DS-121C	M18FMT2F12	M18 FIW2F12	M18 FID3
Number of rechargeable batteries contained		2	2	2	1	2	2	2
Type of rechargeable battery		Lithium-ion						
Battery capacity	Ah	5	5	8	12	5	5	5
Battery voltage	V	18						
maximum torque 1st step	Nm	250	130	530	1180	475	102	40
maximum torque 2nd step	Nm	500	400	1020	1254	610	203	–
maximum torque 3rd step	Nm	1627	1356	1800	1966	745	339	226
maximum torque 4th setting	Nm	1627	1356	2033	2576	47	34	–
maximum screw ∅ (8.8 - 12.9)		M33	M33	M42	M42	M22	ASCD18-300W2	M16
Number of impacts 1st stage	min^{-1}	0 – 850	0 – 950	0 – 1350	0 – 750	0 – 900	0 – 1000	0 – 1750
Number of impacts 2nd stage	min^{-1}	0 – 1850	0 – 1750	0 – 1650	0 – 930	0 – 2100	0 – 2400	0 – 3000
Number of impacts 3rd stage	min^{-1}	0 – 2400	0 – 2100	0 – 2100	0 – 1200	0 – 3100	0 – 3400	0 – 4400
Number of impacts 4th setting	min^{-1}	0 – 2400	0 – 2100	0 – 2500	0 – 1440	–	–	0 – 4400
Tool arbor drive profile		External square drive	External square drive	External square drive	External square drive	External square drive	External square drive	HEX (E 6.3)
Tool arbor size	in	3/4	1/2	1	1	1/2	1/2	1/4
Weight	kg	3.2	3.3	5.9	11.1	6.3	5.9	1.7
typical application		Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty	Heavy Duty	Strong	Strong

Cordless impact wrench / driver

07 4013 Size M18BRAIW/0 – **Cordless angle impact wrench M18 BRAIW-0** with 3/8 inch hex socket.
- Compact angle impact wrench, only 307 mm long.

07 4016 – Powerful 18 V cordless impact wrench with 1/2 inch square toolholder.
- LED illumination of the working area.
- Handle with soft-grip coating.
- Belt hook.

Size BSS18S12BL –
- brushless **subcompact motor**.
- extremely compact design.

Size BSS18MTF12 –
- torque adjustment in 4 stages including auto-stop for optimum tightening and releasing of wheel nuts.
- brushless motor.

Size BSS18HTF12 –
- Torque adjustment in 4 stages including auto-stop for optimum tightening and releasing of wheel nuts.
- Brushless motor.

Supplied with: Without battery and without charger, in a cardboard box.

Note:
07 4013 – See 073801 – 073840 for suitable rechargeable batteries and chargers.
07 4016 – See 073841 – 073848 for suitable rechargeable batteries and chargers



_BSS18S12BL



_BSS18MTF12



_BSS18HTF12



_M18BRAIW/0

Type		BSS18S12BL	BSS18MTF12	BSS18HTF12	M18BRAIW/0
03L 07 4013	Cordless right angle impact driver	–	–	–	–
07A 07 4016	Impact wrench	–	–	–	–
Manufacturer's designation		BSS18S12BL	BSS18MTF12	BSS 18HTF12BL-0	M18BRAIW-0
Battery voltage	V	18			
maximum torque	Nm	280	785	1220	–
Tool arbor size	in	1/2	1/2	1/2	3/8
Tool arbor drive profile		External square drive			
Number of impacts	min^{-1}	0 – 3000	0 – 3800	0 – 1900	0 – 2400
Weight	kg	1	1.65	3.05	1.1
typical application		Strong	Heavy Duty	Heavy Duty	Strong

META CAS 18

metabo Cordless impact wrench 18V

High torques for heavy-duty screwdriving applications.
The LTX-class cordless impact wrenches are available with a maximum torque of 300 Nm, 800 Nm or 1750 Nm. Perfectly suited for power-intensive screwdriving in all performance ranges. They are also equipped with an Automatic Power Shift (APS) mode:
- Unscrewing in APS mode: prevents the screw/nut from falling through automatic reduction of speed after loosening.
- Bolting in APS mode: prevents overtightening of the screw/nut through automatic switching off after the first impact.

By the way, all Metabo battery packs come with a 3-year warranty, irrespective of the number of charging cycles.
Further details such as the bright LED work light ensure even more comfort when working.

Supplied with:
07 4060 – Supplied with 2× LiHD rechargeable batteries, charger and metaBOX.
07 4061 – Without battery, charger or transport case.

Note: See No. 073870 – 073890 for suitable batteries and chargers.



_18LTX300

Type		18LTX300	18LTX800	18LTX1750
03D 07 4060	Cordless impact wrench including LiHD rechargeable battery	–	–	eShop
03D 07 4061	Cordless impact wrench without rechargeable battery	–	–	eShop
Manufacturer's designation		SSW 18 LTX 300 BL	SSW 18 LTX 800 BL	SSW 18 LTX 1750 BL
Number of rechargeable batteries contained (07 4060)		2		
Number of rechargeable batteries contained (07 4061)		0		
Type of rechargeable battery		Lithium-ion		
Battery capacity (07 4060)	Ah	4	5.5	5.5
Battery voltage	V	18		
Torque settings		12		
maximum torque	Nm	300	800	1750
No load speed	min^{-1}	0 – 2650	0 – 2575	0 – 1650
maximum hammer rate	min^{-1}	3750	3300	2450
maximum break-away torque	Nm	480	1200	2100
Toolholder		External square drive		
Tool arbor size	in	1/2	1/2	3/4
Weight without battery	kg	1.1	1.95	3
typical application		Heavy Duty		



_18LTX800



18LTX1750

Single speed hand-held power drills

07 5110 – **Fein hand-held power drill –**
- Precision drill chuck with full metal body.
- Stepless electronic speed control for a gentle start to drilling.

Size 720552 – Compact, high speed.

Size 720553 – Versatile use for drilling, countersinking and tapping.

07 5210 – **Milwaukee hand-held power drill –**
- **13 mm power drill with 94 Nm torque.**
- Electronic speed control.
- FIXTEC spindle lock for quick drill change.

Supplied with:

07 5110 Size 720552 – 1 quick-clamping drill chuck 0.5 – 10 mm **with clamping force protection.**

Size 720553 – 1 quick-clamping drill chuck 1.5 – 13 mm **with clamping force protection.**

07 5210 – Supplied with 1.5 - 13 mm metal quick-change chuck, additional handle, QUIK-LOK cable (4 m), HD box.



_720552
_720553



_HDE13RQX

Type		720552	720553	HDE13RQX
03F 07 5110 / 03M 07 5210	Single-speed power drill	eShop / –	eShop / –	– / eShop
Manufacturer's designation		BOP-6	BOP-10	HDE13RQX
Power consumption	W	500	500	950
Drill chuck adapter			1/2 inch – 20 UNF	
Chuck clamping range	mm	0.5 – 10	1.5 – 13	1.5 – 13
Speed range	min^{-1}	0 – 4000	0 – 1500	0 – 850
maximum twist drill size ∅ in steel	mm	6	10	13
maximum twist drill size ∅ in wood	mm	20	30	38
Weight	kg	1.7	1.8	2
maximum vibration to EN	m/s^2		< 2.5	
Reversible			yes	

Tapper and accessories

- Electronic speed control for responsive starting.
- Sustained power for reliable performance.
- **Integral reversing gear** and quick backing out.
- FEIN **sensitive handle** for non-fatiguing and safe working.
- Integral switch for ease of use.

Size 720938 – Mains adaptor 220V.

Supplied with: **Without drill chuck.** With additional handle. A collet chuck (No. 075580 size 063012) or a jaw chuck (No. 075580 size 019009) is required for operation.



07 5550

Type		720938
03F 07 5550	Tapper up to M10	eShop
Manufacturer's designation		GWP 10
Power consumption	W	450
maximum speed	min^{-1}	0 – 450
Toolholder		B12
maximum machine tap ∅ in steel		M10
Weight	kg	1.6
maximum vibration to EN	m/s^2	< 2.5

Accessories

Supplied with:

Size 063012 – Collet chuck supplied with collets for taps to DIN 374 / 376, ∅ 3.5×square 2.7 / ∅ 4.5×square 3.4 / ∅ 6×square 4.9.

Size 019009 – Universal jaw chuck, including chuck key.

Size 009013 – Drifts, pack of 2.



_063012



_019009



_009013

Type		063012	019009	009013
03G 07 5580	Thread tapping accessories	eShop	eShop	eShop

Drills

07 5120 – **FEIN angle drill –**
- Gearbox only 96 mm high including drill chuck, **width across the head 17 mm.**
- Integral switch with clockwise / anticlockwise switch for ease of use.
- Hollow shaft **taper arbor** for precise concentricity.

07 5150 –
- **Compact 2-speed power drill** for drilling, countersinking, tapping, and screwdriving.
- Stepless electronic speed control for gentle starts to drilling and screwdriving.
- Integral switch with clockwise / anticlockwise switch for ease of use.

07 5155 – Powerful power drill with speed control for flexible use in metal construction.
- Reversible for thread tapping up to M12.
- High-quality SUPRA SK Röhm metal quick-release chuck.
- With torque slip clutch.
- 1200 W high-power motor with stable torque.

07 5156 – Universal **four-speed hand drill** for drilling holes up to 32 mm. Reversible, speed pre-set, MT3 tool arbor for heavy-duty drilling operations.

Supplied with:

07 5120 – 1 special rim gear drill chuck 0.8 – 10 mm.

07 5150 – Quick-clamping drill chuck with locking force safety device, 1 additional handle.

07 5155 – Quick-clamping drill chuck 3 – 16 mm, additional handle.

Note: Suitable jobber drills can be found from No. 114000.
07 5156 – suitable magnetic drill stands available on request.


07 5120_720551


07 5150_720554


07 5155_720547


07 5156_720251

Type		720554	720555	720551	720547	720549	720251
03F 07 5150	Two-speed power drill	eShop	eShop	–	–	–	–
03F 07 5120	Angle drill	–	–	–	–	–	–
03F 07 5155	Heavy-duty power drill	–	–	–	eShop	eShop	–
03F 07 5156	Four-speed hand drill	–	–	–	–	–	–
Manufacturer's designation		BOP 10-2	BOP 13-2	WBP10	BOS 16	BOS 16-2	BOZ 32-4 M
Power consumption	W	500	550	500	1200	1200	1800
maximum speed	min^{-1}	–	–	0 – 1830	–	–	–
Speed range 1st speed	min^{-1}	0 – 700	0 – 680	–	0 – 520	0 – 520	0 – 140
Speed range 2nd speed	min^{-1}	0 – 2250	0 – 2200	–	–	0 – 1600	0 – 480
Drill chuck adapter		1/2 inch – 20 UNF	1/2 inch – 20 UNF	B10	1/2 inch – 20 UNF	1/2 inch – 20 UNF	MT3
Chuck clamping range	mm	1.5 – 13	1.5 – 13	0.8 – 10	3 – 16	3 – 16	–
Maximum twist drill size ∅ in steel 1st speed	mm	10	13	10	16	16	32
maximum twist drill size ∅ in steel 2nd speed	mm	8	10	–	–	10	20
maximum twist drill size ∅ in wood 1st speed	mm	35	37	25	50	50	60
maximum twist drill size ∅ in wood 2nd speed	mm	25	27	–	–	50	70
Weight	kg	2	2	1.5	3.5	3.7	7.5
maximum vibration to EN	m/s^2	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	<2.5

BOSCH Drills, impact drills

Drills

Size GBM10RE – Hand-held power drill with 600-W motor and high torque for holes up to 10 mm in steel.
- Quick-release chuck for high precision and long working life.
- **Compact design** and low weight.
- Control electronics for exact starts to holes.
- Reversible.
- Softgrip.

Size GBM132REK – Hand drill with powerful 750-W motor and high torque for bores up to 13 mm in steel.
- **2-speed gearbox**.
- Ball and roller bearings for precise work and a long service life.
- Small size of 29 mm across corners.
- Stepless speed pre-selection with control wheel.
- Control electronics for precise spot drilling.
- **Overload clutch** to protect both user and machine.
- Spindle neck ∅ 43 mm (European standard) – can be used in a drill stand.
- Reversible.
- Softgrip.

Supplied with:

Size GBM10RE – Including quick-clamping drill chuck, 10 mm.

Size GBM132REK – Supplied with 13-mm quick-change chuck, additional handle, depth stop 210 mm, box.



_GBM10RE


_GBM132REK

Type		GBM10RE	GBM132REK
03B 07 5420 Drill		–	–
Manufacturer's designation		GBM 10 RE	GBM 13-2 RE
Power consumption	W	600	750
maximum speed 1st speed	min^{-1}	2600	1000
maximum speed 2nd speed	min^{-1}	–	3200
Drill chuck adapter		1/2 inch – 20 UNF	
Chuck clamping range	mm	1 – 10	1.5 – 13
Maximum twist drill size ∅ in steel 1st speed	mm	10	13
maximum twist drill size ∅ in steel 2nd speed	mm	–	8
maximum twist drill size ∅ in wood 1st speed	mm	25	32
maximum twist drill size ∅ in wood 2nd speed	mm	–	20
Weight	kg	1.7	2.4
maximum vibration to EN	m/s^2	4.8	7.5

Impact drills

Impact drill with high-performance motor with high torque for very heavy duty applications (drilling, working with drills, masonry hole saws and hole saws) as well as screwdriving and smoothing.
- New safety handle with innovative fastening and softgrip for secure holding of the machine.
- Sturdy metal gearbox for long working life.
- Mechanical **overload clutch** Anti-rotation for high working security even for the toughest applications
- Single-sleeve **quick-change chuck with auto-lock** for quick tool-changing using only one hand.
- Rotatable brush plate for equal torque in clockwise and anti-clockwise directions.
- Spindle neck ∅ 43 mm (European standard) – can be used in drill stands.
- **2-speed gearbox.**

Size GSB242 – ■ Enhanced user protection by **KickBack Control.**

Size GSB212RCTK – ■ **Torque Control** for high precision: Speed pre-selection for even driving of screws.
- **Constant-speed electronics** for comfortable work: Maintains constant speed under load.

Supplied with:

Size GSB242 – Supplied with 13-mm quick-change chuck, additional handle, depth stop 210 mm, carrying case.

Size GSB212RCTK – With additional handle, depth stop 210 mm, quick-clamp drill chuck 13 mm, carrying case.


_GSB242


_GSB212RCT

Type		GSB242	GSB212RCTK
03B 07 5720 Impact drill		eShop	–
Manufacturer's designation		GSB 24-2	GSB 21-2 RCT
Power consumption	W	1100	1300
maximum torque	Nm	40	43
maximum speed 1st speed	min^{-1}	900	
maximum speed 2nd speed	min^{-1}	3000	
maximum hammer rate	min^{-1}	15300	
Drill chuck adapter		1/2 inch – 20 UNF	
Quick-clamping chuck range	mm	1.5 – 13	
maximum twist drill size ∅ in steel	mm	16	
maximum twist drill size ∅ in wood	mm	40	
maximum twist drill size ∅ in concrete	mm	22	
Weight	kg	2.9	
maximum vibration to EN	m/s^2	14.6	

AEG (Cordless) hammer drill

07 5535 – ■ Brushless 18 V cordless rotary hammer with sturdy metal gear housing and SDS-plus tool holder.
■ Safety shut-off.
■ **Impact action can be switched off** for drilling wood and metals.
■ **Zero rotation** for easy chisel work.
■ Handle with **anti-vibration system.**

07 5610 – Powerful **impact drill**
■ Reversible.
■ Safety shut-off.
■ **FIXTEC** metal quick-change chuck.
■ 2-speed planetary gearbox for high torque and optimum adaptation to the material.

Size SB2E1100RV – Compact and powerful 1100 W impact drill with anti-vibration system (AVS).

07 5620 – ■ **1010 W** combi hammer with **FIXTEC adapter,** for lightning-fast changeover between SDS-plus chuck and quick-clamping drill chuck.
■ **Pneumatic hammer mechanism.**
■ **Electronic controls** with stepless pre-selection of speed and impact.
■ **Safety clutch.**
■ 2-speed planetary gearbox.
■ **Zero rotation** and 16 possible chisel positions for **easy chisel work.**
■ **Anti-vibration system** AVS and soft-grip for maximum user comfort.
■ Soft-Grip for very good user comfort.

Supplied with:

07 5535 – Includes 2 pcs. 18 V / 5.0 Ah Li-ion batteries, charger, and transport case.
07 5610 – Metal quick-change chuck 1.5 - 13 mm, additional handle, drilling depth stop, transport case.
07 5620 – FIXTEC adapter, quick-clamping chuck 1.5 - 13 mm, SDS-plus bit holder, additional handle, drilling depth stop, transport case.



_SB2E1100RV



_KH28SXE



_BBH18BL2-5

Type		SB2E1100RV	KH28SXE	BBH18BL2-5
07A 07 5610	Impact drill	–	–	–
07A 07 5620	Hammer drill	–	–	–
07A 07 5535	Cordless rotary hammer	–	–	–
Manufacturer's designation		SB2E1100RV	KH28SXE	BBH18BL2
Number of rechargeable batteries contained		–	–	2
Type of rechargeable battery		–	–	Lithium-ion
Battery capacity	Ah	–	–	5
Battery voltage	V	–	–	18
maximum speed 1st speed	min^{-1}	1000	0 – 1500	0 – 1500
maximum twist drill size ∅ in steel	mm		13	
maximum twist drill size ∅ in wood	mm	40	30	30
maximum twist drill size ∅ in concrete	mm	22	28	26
maximum hammer rate	min^{-1}	–	5000	5000
Impact energy	J	–	2.8	2.5
Power consumption	W	1100	1010	–
Weight	kg	2.9	2.8	3
maximum vibration to EN	m/s^2	13.7	15.4	18.3
maximum torque	Nm	60	–	–
maximum speed 2nd speed	min^{-1}	3200	–	–
Quick-clamping chuck range	mm	1.5 – 13	1.5 – 13	–

Drill stand

Industrial drill stand for power drills / impact drills.
With precision adjustable dovetail slide and solid base plate.

Supplied with:

07 5912 – Including gravity coolant feed with 500 ml coolant tank, flexible jointed hose and 43 mm reducer.


07 5910
07 5912

Type		ZBS100	IBS16
07E 07 5910	Industrial drill stand	–	–
03F 07 5912		–	eShop
Clamping neck ∅	mm	43	43 / 53
Spindle stroke	mm	195	145
Overall stroke range	mm	195	295
Height	mm	297	400

metabo Drills, impact drills

Drills

The right drill for every hole diameter.
Each drill has an optimum speed range for specific drilling diameters, as well as a spindle with hexagon socket for screwdriver bits for use even without a drill chuck.

Size BE650; BE850-2 – The Futuro Plus quick-clamping drill chuck ensures exact drilling results by means of automatic retightening during drilling.

Size BE850-2; BEV1300-2 –
- Robust die-cast aluminum gear housing for optimum heat dissipation and durability.
- Rotating carbon brush bridge for maximum performance even in anti-clockwise rotation, e.g. for unscrewing stuck screws.
- Metabo S-automatic safety clutch: mechanical decoupling of the drive when the drill is blocked for safe working.

Size BEV1300-2 –
- Selectable pulse operation for unscrewing fixed screws and spot drilling on smooth surfaces.
- Vario-Tacho-Constamatic (VTC) full-wave electronics for working with material-appropriate speeds that remain constant under load.

Supplied with:

Size BE650 – Includes Futuro Plus quick-clamping drill chuck.
Size BE850-2 – Includes Futuro Plus quick-clamping drill chuck and additional handle.
Size BEV1300-2 – Includes key chuck, chuck key and additional handle.



07 5070_BE650



07 5070_BE850-2

Type		BE650	BE850-2	BEV1300-2
03D 07 5070	Drill	–	–	–
Manufacturer's designation		BE 650	BE 850-2	BEV 1300-2
Power consumption	W	650	850	1300
maximum speed 1st speed	min^{-1}	1500	1100	1100
maximum speed 2nd speed	min^{-1}	–	3100	3100
Chuck clamping range	mm		1.5 – 13	
Maximum twist drill size ∅ in steel 1st speed	mm	13	13	16
maximum twist drill size ∅ in steel 2nd speed	mm	–	8	10
maximum twist drill size ∅ in wood 1st speed	mm	30	40	40
maximum twist drill size ∅ in wood 2nd speed	mm	–	25	25
Weight	kg	1.8	2.6	2.7
Reversible			yes	



07 5070_BEV1300-2

Impact drills

Impact drilling with high user protection.
The impact drills are equipped with the Metabo S-automatic safety clutch. When the drill is blocked, the drive is immediately mechanically decoupled to minimise the reverse torque to the user.
- Metabo Marathon motor with dust protection for long life.
- Spindle with hexagon socket for screwdriver bits enables use without a drill chuck.

Size SBE800-2 – Adjusting wheel for preselecting the speed.

Size SBEV1300-2 –
- Restart protection: Prevents unintentional start-up after power interruption.
- Selectable pulse mode for unscrewing jammed screws and spot drilling on smooth surfaces.
- Adjusting wheel for preselecting the speed.

Supplied with:

Size SBE800-2 – Includes quick-clamping chuck, additional handle, depth stop and plastic case.
Size SBEV1300-2 – Includes quick-clamping chuck, additional handle, depth stop and metaBOX.



07 5710_SBE800-2



07 5710_SBEV1300-2

Type		SBE800-2	SBEV1300-2
03D 07 5710	Impact drill	–	–
Manufacturer's designation		SBE 800-2	SBEV 1300-2
Power consumption	W	800	1300
maximum torque	Nm	10; 26	16; 44
maximum speed 1st speed	min^{-1}	1200	1100
maximum speed 2nd speed	min^{-1}	3200	3100
maximum hammer rate	min^{-1}	51200	58900
Chuck clamping range	mm	1.5 – 13	1 – 13
maximum twist drill size ∅ in steel	mm	8; 13	10; 16
maximum twist drill size ∅ in wood	mm	25; 40	
maximum twist drill size ∅ in concrete	mm	20	22
Weight	kg	2.3	2.8

BOSCH (Cordless) hammer drills

07 5510 Size GBH540DCE – Large all-purpose hammer drill with powerful impact mechanism (8.8 J impact energy) and **SDS-max tool holder.**

- **Vibration control** vibration damping ensures pleasant working, even on time-consuming tasks.

Size GBH540DCE –
- Automatic switch lock for maximum operator convenience during continuous chiselling work.
- Constant electronics, service display and standby display for maximum working convenience.
- Adjustment wheel for setting the rotation speed and impact rate, for optimum performance.

07 5515 Size GBH18V24C – Cordless hammer drill with integrated Bluetooth® connectivity module.

- Kickback Control and Vibration Control.
- User interface for selecting the tool mode (Auto/Favourite).

Size GBH18V-26F – Cordless hammer drill ideal for everyday use.
- Full control thanks to KickBack Control and Electronic Precision Control.

Size GBH18V-26F –
- Clean working made possible through combination with the optional GDE 18V-16 dust extraction system.

07 5515 – **18-V cordless hammer drill** with **SDS-plus tool mounting** and brushless motor.

- Overload clutch to protect both user and machine.
- Reversible.

Size GBH221–GBH228F – Sturdy hammer drill with **SDS-plus arbor** and high drill feed rate.

- Overload clutch to protect both user and machine.
- Stepless speed control for responsive starts to drilling.
- Versatile application possibilities using the chisel function (zero rotation).
- Reversible, for releasing jammed drills.

Size GBH226F; GBH228F –
- **Exchange chuck** for quick changeover between hammer drilling in concrete and hammer-free drilling in wood and steel.



_GBH221



_GBH226F



_GBH228F

Supplied with:

07 5510 Size GBH221 – Supplied with 210 mm depth stop and carrying case.

Size GBH226F – Supplied with 13mm quick-change chuck, SDS-plus chuck, 210 mm depth stop, carrying case.

Size GBH228F – Supplied with 13mm quick-change chuck, SDS chuck, 210 mm depth stop, L-BOXX 136.

Size GBH540DCE – Including tube of grease, additional handle, machine cloth and case.

07 5510 – With additional handle, machine cloth.

07 5515 Size GBH18V24C – Including 2× 18V / 5.0 Ah Li-ion batteries, charger, depth stop, 1/1 L-BOXX inlay for device and charger and L-BOXX.

Size GBH18V-26F – Supplied with 2 pcs. 18 V / 8.0 Ah **ProCore battery,** charger, 13 mm quick-change drill chuck, depth stop, additional handle, L-Boxx 136.

Note:

07 5510 – Suitable carbide hammer drills can be found from No. 787000.

07 5515 – Suitable spare batteries and chargers can be found under No. 073851– 073866.



_GBH540DCE



_GBH18V24C



_GBH18V-26F

Type		GBH221	GBH226F	GBH228F	GBH540DCE	GBH18V24C	GBH18V-26F
03B 07 5510	Hammer drill	eShop	eShop	eShop	eShop	–	–
03B 07 5515	Cordless hammer drill	–	–	–	–	eShop	–
Manufacturer's designation		GBH 2-21 D	GBH 2-26 F	GBH 2-28 F	GBH 5-40 DCE	GBH 18V-24 C	GBH 18V-26 F
Number of rechargeable batteries contained		–	–	–	–	2	2
Type of rechargeable battery		–	–	–	–	Lithium-ion	Lithium-ion
Battery capacity	Ah	–	–	–	–	5	8
Battery voltage	V	–	–	–	–	18	18
maximum twist drill size ∅ in steel	mm	13	13	13	–	13	13
maximum twist drill size ∅ in wood	mm	30	30	30	–	30	30
maximum twist drill size ∅ in concrete	mm	20	26	28	40	24	26
maximum hammer rate	min^{-1}	–	4000	4000	3050	4350	4350
Impact energy	J	2	2.7	3.2	8.8	2.4	2.6
Power consumption	W	650	830	880	1150	–	–
Weight	kg	2.3	2.9	3.1	6.8	2.9	3.6
maximum vibration to EN	m/s^2	13.5	16.5	11	10.5	16	13

(Cordless) hammer drills

SDS PLUS

07 5520 Size PLH32XE – **Mains combination hammer drill with high impact energy for drilling holes up to 32 mm in concrete.** Power cable 4 m.

Size M12FHAC – **12 V / 5.0 Ah FUEL™ cordless combination hammer with brushless POWERSTATE motor.** Optimised for holes from ∅ 4 – 10 mm in concrete and masonry. Redlink Plus electronics - overload protection to ensure a long working life for the rechargeable battery, motor and gearbox

Size M18FHX – **18 V / 5.0 Ah Red Li-ion cordless hammer drill** with brushless POWERSTATE™ EC motor, optimised for drilling in concrete and masonry. Redlink Plus™ electronics – overload protection for long working life of the battery, motor and gearbox.

Size M18FHM121C – M18 FUEL™ SDS-MAX cordless rotary hammer with brushless POWERSTATE™ motor. REDLINK PLUS™ electronics with new FORGE™ 12.0 Ah battery.

Size M18FHPX – Integral **ONE-KEY™** technology and stop switch for continuous operation. Long anti-vibration back handle minimises vibration.

07 5520 Size PLH32XE/5530 Size M18FHX/5532 Size M18FHX; M18FHPX –

- **FIXTEC tool quick-change system** for switching between the SDS-Plus chuck and the quick-release metal drill chuck, without using tools.
- **Zero rotation** for easy chisel work.
- **Safety clutch** protects user and machine if the drill jams.
- **AVS anti-vibration system.**

Supplied with:

07 5520 – FIXTEC SDS-plus adapter, quick-change chuck 1.5 – 13 mm, additional handle with depth stop, drilling grease, transport case.

Size M18FHX – Supplied with FIXTEC SDS-Plus adapter, quick-change chuck 1.5 – 13 mm, additional handle with depth stop, quick charger, 2 pcs. 18 V battery, carrying case.

Size M18FHM121C – Supplied with charger, 1× 18 V / 12 Ah FORGE™ battery, case

07 5532 – **Zero-speed version – without battery, charger and case.**

Size M12FHAC – Supplied with quick charger, 2 pcs. 12 V / 5 Ah High-Output battery, HD box.

Note: Suitable carbide hammer drills can be found from No. 787000.

07 5530/5532 – See No. 073801 – No. 073840 for suitable batteries and chargers.



07 5520_PLH32XE

MB 18 HD

NEW



_M12FHAC

MB 18 HD



_M18FHX



MB 18 HD

_M18FHPX

NEW



MB 12 HD

_M18FHM121C

Type		PLH32XE	M12FHAC	M18FHX	M18FHM121C	M18FHPX
03M 07 5520	Hammer drill 230 V	eShop	–	–	–	–
03L 07 5530	Cordless hammer drill	–	–	–	–	–
03L 07 5532	Cordless hammer drill **without battery, charger or case**	–	–	–	–	–
Manufacturer's designation (07 5520, 07 5530)		PLH32XE	M12 FHAC16-502X	M18ONEFHX-552X	M18FHM-121C	M18ONEFHPX-552X
Manufacturer's designation (07 5532)		–	M12 FHAC16-0	M18ONEFHX-0	–	M18ONE FPHX
Number of rechargeable batteries contained (07 5530)		–	2	2	1	2
Number of rechargeable batteries contained (07 5532)		–	0	0	–	0
Type of rechargeable battery		–	Lithium-ion	Lithium-ion	Lithium-ion	Lithium-ion
Battery capacity (07 5530)	Ah	–	5	5.5	12	5.5
Battery voltage	V	–	12	18	18	18
Speed range	min^{-1}	0 – 800	0 – 1200	0 – 1330	0 – 380	0 – 800
maximum twist drill size ∅ in steel	mm	16	10	13	–	13
maximum twist drill size ∅ in wood	mm	40	13	28	–	30
maximum twist drill size ∅ in concrete	mm	32	13	26	45	30
maximum hammer rate	min^{-1}	4500 – 4500	4410	4800	2900	4600
Impact energy	J	3.8	1.1	2.5	11	4.2
Power consumption	W	900	–	–	–	–
Weight	kg	3.6	1.9	4.5	10.2	5.2
maximum vibration to EN	m/s^2	22	10.5	8.9	9.4	8.6
Quick-clamping chuck range	mm	1.5 – 13	1.5 – 13	1.5 – 13	–	1.5 – 13

metabo (Cordless) hammer drills

SDS PLUS

Power packs for hammer drilling.
The hammer drill has a high-performance hammer action with a precise pneumatic impact mechanism that generates impacts with maximum impact energy with minimal pressure.

Size BHLTX16 – ■ Electronic safety shutdown of the motor when the tool is blocked for safe working.

07 5559 Size BHLTX16 –Hammer drill with 2 functions: **hammer drilling and drilling**.

07 5576 Size UHEV2860-2 – Multi-hammer with 4 functions: **hammer drilling, drilling in two gears and chiselling**.

07 5559/5560/5561 – ■ Metabo VibraTech (MVT): health-friendly, low-fatigue working even in continuous use.

07 5559/5560/556/5576 –
■ Vario-Tacho-Constamatic (VTC) full-wave electronics for working with material-appropriate speeds that remain constant under load.

Size KHLTXBL24; KHLTXBL28Q – Combination hammer drill with 3 functions: **hammer drilling, drilling and chiselling**.

07 5560/5561/5576 – ■ Safety shut-off: mechanical decoupling of the drive when the drill is blocked for safe working.

Size KHLTXBL28Q; UHEV2860-2 – **Metabo Quick**: fast, tool-free chuck change.

Supplied with: With additional handle and depth stop.

07 5561 – **Without** battery and charger.

07 5559/5560 – Includes 2× batteries, charger and MetaBOX.

Size KHLTXBL28Q; UHEV2860-2 – Including hammer chuck and quick-clamping drill chuck.

Note:
07 5559–5561 – See No. 073870 – 073890 for suitable batteries and chargers.

META

CAS 18



07 5559_BHLTX16



07 5560_KHLTXBL24



07 5560_KHLTXBL28Q



07 5576_UHEV2860-2

		BHLTX16	KHLTXBL24	KHLTXBL28Q	UHEV2860-2
03D 07 5559	Cordless hammer drill with Li-ion rechargeable battery	eShop	–	–	–
03D 07 5560	Cordless hammer drill with LiHD rechargeable battery	–	eShop	eShop	–
03D 07 5561	Cordless hammer drill without rechargeable battery	–	eShop	eShop	–
03D 07 5576	Hammer drill	–	–	–	–
Manufacturer's designation		BH 18 LTX BL 16	KH 18 LTX BL 24	KH 18 LTX BL 28 Q	UHEV 2860-2 Quick
Number of rechargeable batteries contained (07 5559, 07 5560)		2	2	2	–
Number of rechargeable batteries contained (07 5561)		–	0	0	–
Type of rechargeable battery		Lithium-ion	Lithium-ion	Lithium-ion	–
Battery capacity (07 5559, 07 5560)	Ah	2	4	5.5	–
Battery voltage	V	18	18	18	–
No load speed	min^{-1}	0 – 730	0 – 1280	0 – 1000	0 – 900; 0 – 2100
maximum twist drill size ∅ in steel	mm	13	13	13	13; 6
maximum twist drill size ∅ in wood	mm	20	30	30	35; 30
maximum twist drill size ∅ in concrete	mm	16	24	28	28
maximum hammer rate	min^{-1}	5250	4750	4470	4500
Impact energy	J	1.3	2.2	3	3.4
Power consumption	W	–	–	–	1100
Weight without battery	kg	1.6	2.7	3.4	–
Weight	kg	–	–	–	3.3

Compact core drilling machine

L-BOXX

Extremely small and light-weight single-speed compact magnetic core drilling machine with minimal dimensions for use in confined spaces in the workshop and on the building site.

- Fixed upright drilling motor for working in confined spaces.
- Space-saving ratchet operation from both sides.
- Optimal view of the drilling site.
- Unique centre feed for cutting depths up to 35 mm.

Supplied with: Supplied with 1 pc. 1/2 inch ratchet, 1/2 inch socket extension, coolant pump, lashing strap, swarf hook, centring pin, guard, additional handle, internal hex socket 5 mm, internal hex socket with T handle 5 mm, L-Boxx.

		72732361
03F 07 6527	Compact core drilling machine	–
Manufacturer's designation		KBC 36 MAGFORCE
Power consumption	W	1200
maximum speed	min^{-1}	130 – 520
Tool arbor shape		Weldon
Tool arbor size		19 mm (3/4 inch)
maximum core drill ∅ in steel	mm	36
maximum machine tap ∅ in steel	mm	M12
maximum twist drill size ∅ in steel	mm	16
maximum countersink ∅	mm	32
Length of magnetic base	mm	175
Width of the magnetic base	mm	80
Working stroke	mm	46
Weight	kg	8.5
Height	mm	169


07 6527_72732361

Core drilling machines



Swivel Base variant with adjustment facility (No. 07 6536).

- Integral internal lubrication system, magnetic indicator for monitoring the magnetic clamping force.
- Integral cutting oil container, complete cable routing within the casing.
- Oil bath gearbox.

07 6535 Size MABASIC200 – Single-speed magnetic core drilling machine for drill ∅ up to 32 mm. With 19 mm (3/4 inch) Weldon arbor.

Size MAB455 – Sturdy magnetic core drilling machine for all material types. With MT2 tool arbor and **keyless quick-change drilling system. Supplied with core drills dia. 14 / 18 / 22 mm,** cutting depth 30 mm.

Size MAB825 – The heavy-duty power package. Core drills up to ∅ 100 mm. **Thread tapping up to maximum M30** using the adapter supplied. MT3 tool arbor with **keyless quick-change clamping system.** Thermal cut-out and clutch protect machine and tool. Motor with 4-speed gearbox, full wave electronic controls and torque limit cut-out permits best speed settings with no loss of power. **Supplied with core drills dia. 17.5 / 21 / 24 mm,** cutting depth 55 mm; **thread tapping adapters** M20 / M24 / M27.

Size MAB1300 – The most powerful magnetic core drilling / broaching machine on the market, with 2300-Watt motor, **core drilling up to ∅ 130 mm and thread tapping up to M42.** Motor with wide range of speeds (30 – 550 rpm), 3-coil magnet for extremely high clamping force. New counterholder for easy conversion between core drills and twist drills. **Servo-support** for drilling with almost no applied force. **Supplied with core drills dia. 17.5 / 21 / 24 mm,** cutting depth 55 mm. **Thread tapping adapters** M20 / M24 / M27.

07 6536 Size MAB845 – The heavy-duty power package. Core drills up to ∅ 100 mm. **Thread tapping up to maximum M30** using the adapter supplied. MT3 tool arbor with **keyless quick-change clamping system.** Thermal cut-out and clutch protect machine and tool. Motor with 4-speed gearbox, full wave electronic controls and torque limit cut-out permits best speed settings with no loss of power. **Supplied with core drills** ∅ 17.5 / 21 / 24 mm, cutting depth 55 mm; **thread tapping adapters** M20 / M24 / M27.

07 6536 – Core drilling machine with **Swivel Base,** an **adjustment option with the magnet switched on.** Swivel range up to 20° to either side and a stepless forwards and backwards adjustment (15 mm).

Size MAB485; MAB525 – Powerful all-round machine for all material types, for drilling, **tapping,** reaming, and countersinking. **Reversible,** full wave electronic controls, toolholder with **keyless quick-change clamping system** and thermal overload protection allow for a wide variety of applications. **Supplied with core drills dia. 14 / 18 / 22 mm,** cutting depth 30 mm; **with quick-release drill chuck** SSBF 1 – 16 mm. **Thread tapping adapters** M10 / M12 / M16.

Application:

Size MAB485– MAB1300 – The stepless speed control through the high ratio reduction gearbox permits the use of taps, jobber drills, reamers, countersinks and core drills for all material grades.

Supplied with:

07 6535 Size MABASIC200 – Carrying case, core drill holder, ejector pin for core drills, safety chain, lubrication system, and operating tools.

07 6536 – Includes case, core drill holder, ejector pin for core drill, safety chain, **magnetic swarf hook,** lubrication system and operating tool.

07 6535 Size MAB455–MAB1300 – Includes case, core drill holder, ejector pin for core drill, safety chain, **magnetic swarf hook,** lubrication system and operating tool.

Note:
- See No. 118782 to 118922 for core drills.
- Core drilling machines with **automatic feed, vacuum clamping plate and pipe clamping fixtures available on request.**
- Pneumatic core drilling machines with ATEX standard available on request.

The small MAB155 (076535_MAB155) can be found in the eShop.


_MABASIC200


_MAB455 / _MAB485


_MAB525


_MAB845 / _MAB825


_MAB1300

Type		MABASIC200	MAB455	MAB485	MAB525	MAB845	MAB825	MAB1300
07E 07 6535	Core drilling machine	–	–	–	–	–	–	–
07E 07 6536	SB core drilling machine	–	–	–	–	–	–	–
Power consumption	W	900	1150	1150	1600	1800	1800	2300
maximum speed 1st speed	min^{-1}	450	–	–	–	–	–	–
Speed range 1st speed	min^{-1}	–	250	50 – 250	70 – 280	40 – 110	40 – 110	30 – 80
Speed range 2nd speed	min^{-1}	–	450	100 – 450	180 – 580	65 – 175	65 – 175	50 – 120
Speed range 3rd speed	min^{-1}	–	–	–	–	140 – 360	140 – 360	130 – 350
Speed range 4th speed	min^{-1}	–	–	–	–	220 – 600	220 – 600	210 – 550
Tool arbor shape		–	MT2	MT2	MT3	MT3	MT3	MT4
Tool arbor size		19 mm Weldon	19 mm Weldon	19 mm Weldon	19 mm Weldon	19 mm, 32 mm Weldon	19 mm, 32 mm Weldon	19 mm, 32 mm Weldon
maximum core drill ∅ in steel	mm	32	40	40	50	100	100	130
maximum machine tap ∅ in steel		–	–	M16	M20	M30	M30	M42
maximum twist drill size ∅ in steel	mm	13	18	18	20	31.75	31.75	45
maximum countersink ∅	mm	–	–	40	50	50	50	80
maximum reamer ∅	mm	–	–	18	20	31.75	31.75	50
Length of magnetic base	mm	84	84	84	90	110	110	120
Width of the magnetic base	mm	168	168	168	180	220	220	360
Working stroke	mm	160	160	160	160	255	255	310
Weight	kg	12	13	13	16	25	25	51
Length	mm	260	295	295	295	370	370	495
Width	mm	160	175	175	171	240	240	255
Height	mm	360	440	440	492	475	475	560

Core drilling machines

- High magnetic clamping force and safety circuit ensure safe working in any position.
- Integral coolant supply for clean cut and long tool life.
- Convenient **magnetic clamping force display.**
- Reversible (even for thread tapping).
- Weight-optimised design.

Size 727053 – **Compact lightweight single-speed magnetic core drilling machine** with high functionality and tilt sensor.

Size 72705761 – **Compact lightweight 2-speed magnetic core drilling machine. Very narrow magnetic base only 70 mm wide.** Ideal for machining T-section profiles. High functionality and tilt sensor.

Size 727041 – Lightweight core drilling machine, very easy to use, for efficient drilling in the workshop and on site.

Size 727040 – Universal core drilling machine for flexible work in the workshop and on site. With an **MT3 shaft** as a universal tool arbor.

Size 727042 – Saves time and cost by **digitally controlled drilling feed** and tilt sensor.

Size 727043 – High-power core drilling machine for universal and efficient work in the workshop. **MT3 shaft** and **fine adjustment** for precise alignment with the magnetic base activated.

Size 727060 – High-performance **4-speed universal** magnetic core drilling machine with powerful lift. Extra-high lift range for all mobile drilling operations such as core drilling, twist drilling, thread tapping, countersinking and reaming.

Size 727040; 727042; 727043; 727041 – **2-speed magnetic core drilling machines**

- Feed rate wheel can be switched from one side to the other.
- Increased magnetic clamping force.
- 5-stage speed adjustment and **speed setting memory.**

Supplied with: Supplied with cooling lubricant tank, lashing strap, 1× centring pin, swarf hook, carrying case.

Optional extras: On request.

Note: See from No. 119000 for carbide core drills and arbors. Suitable QuickIN-Max arbor and carbide core drills max. DM 100 mm available on request.



QuickIN quick change system for quick tool changing without using tools.



Simple and easy-to read control panel in the direct field of view (not size 72 7060).



Vacuum plate / vacuum pump for embossed surfaces available on request.



_727053



_727041 /
Illustration similar to _727040



_727042



_727043



_727060

Type		727053	72705761	727041	727040	727042	727043	727060
03F 07 6520	Core drilling machine	eShop	eShop	eShop	eShop	(eShop)	eShop	(eShop)
Manufacturer's designation		KBU35Q	KBU35-2Q	KBM50Q	KBM50U	KBM50auto	KBM65U	KBU110-4M
Power consumption	W	1100	1100	1200	1200	1200	1300	1700
Speed range 1st speed	min^{-1}	130 – 520	130 – 520	130 – 260	130 – 260	130 – 260	120 – 240	60 – 120
Speed range 2nd speed	min^{-1}	–	400 – 1600	260 – 520	260 – 520	260 – 520	260 – 520	90 – 170
Speed range 3rd speed	min^{-1}	–	–	–	–	–	–	150 – 300
Speed range 4th speed	min^{-1}	–	–	–	–	–	–	230 – 430
Tool arbor shape		QuickIN	QuickIN	QuickIN	QuickIN / MT3	QuickIN / MT3	QuickIN / MT3	MT4
maximum core drill ∅ in steel	mm	12 – 35	12 – 35	12 – 50	12 – 50	12 – 50	12 – 65	110
maximum machine tap ∅ in steel	mm	M14	M14	M16	M16	M16	M20	M36
maximum twist drill size ∅ in steel	mm	16	16	16	23	23	25	40
maximum countersink ∅	mm	31	31	31	50	50	50	60
maximum reamer ∅	mm	16	16	16	23	23	25	36
Length of magnetic base	mm	175	186	195	195	195	205	240
Width of the magnetic base	mm	80	70	90	90	90	95	120
Working stroke	mm	135	135	145	145	145	145	400
Weight	kg	10.6	11	13.2	13.9	16.2	16.1	39
Length	mm	311	311	311	311	311	320	460
Width	mm	198	198	198	198	198	198	215
Height	mm	603	603	730	730	730	770	810
AC supply voltage	V				230			

Cordless core drilling machines

Cordless universal magnetic core drilling machine up to 35 mm

B 18

Small single-speed magnetic core drilling machine with powerful lift and brushless EC motor. Very high functionality for mobile work around the building site.

- For maximum performance, an 18-V **AMPShare ProCore battery** is recommended.
- Reversible.
- Extra-narrow permanent magnet with magnetic bias.
- Flexibility for all mobile drilling operations such as core drilling, twist drilling, thread tapping, countersinking and reaming.
- Simple and clear operating concept in the user's field of view.

Supplied with: AKBU 35 PMQ Select **without battery, incl.** coolant pump, lashing strap, swarf hook, centring pin, guard, drive-out drift, carrying case.

Note: See from No. 073851 and No. 073863 – 073867 for suitable replacement batteries, starter sets and chargers.



07 6525

Type			71700361
03F 07 6525		Cordless core drilling machine	eShop
Manufacturer's designation			AKBU 35 PMQ AS
Manufacturer ID			71700361
Battery voltage		V	18
maximum speed		min^{-1}	130 – 520
Tool arbor shape			QuickIN / MT2
maximum machine tap ∅ in steel			M14
maximum twist drill size ∅ in steel		mm	18
Boring depth		mm	Core drills in steel maximum 50
maximum countersink ∅		mm	30
maximum reamer ∅		mm	18
Length of magnetic base		mm	195
Width of the magnetic base		mm	70
Height		mm	450
Working stroke		mm	135
Weight		kg	12.2

Cordless magnetic core drilling system up to 38 mm

MB 18

Size M18FMDP – **M18 FUEL™ rechargeable battery** magnetic core drilling machine with LED illumination.

- Core drilling up to 38 mm.
- 2-speed gearbox: optimised speed for drilling with core drills (400 rpm) and jobber drills (690 rpm).
- Strong permanent magnet with holding force of 8890 N.
- Version with REDLINK PLUS™ electronics AUTOSTOP™.
- Integral magnetic coolant container.

Supplied with:

Size M18FMDP – 2 x M18 B5 battery packs, M12-18 FC charger, carrying case.

Note:

Size M18FMDP – Suitable carbide core drills can be found from No. 118782. See No. 073801– No. 073840 for suitable batteries and chargers.



07 6528

Type			M18FMDP
03L 07 6528		Cordless core drilling machine	eShop
Manufacturer's designation			M18 FMDP-0C
Battery capacity		Ah	5
Battery voltage		V	18
maximum speed		min^{-1}	400 – 690
Tool arbor shape			19 mm Weldon
maximum twist drill size ∅ in steel		mm	13
Boring depth		mm	Core drills in steel maximum 50
maximum countersink ∅		mm	38
maximum reamer ∅		mm	18
Length of magnetic base		mm	170
Width of the magnetic base		mm	65
Height		mm	552
Working stroke		mm	146
Weight		kg	13.9



ALZMETALL we drive productivity Bench drill

High-speed, durable and precise bench drill. Multi-touch display with scratch-resistant glass surface for optimum readability. Simple and coherent user guidance via pictograms on display. Digital drill depth display with reference zero orientation.

Fitted as standard:

- 5-inch TFT LCD display with touch function: Manual input spindle speed target value, actual value speed display, integral drill depth display with touch zero point transmission, virtual drilling depth scale on display, machine status display and warning instructions in the display, service information, choice of user languages: DE/ EN/ FR/ ES/ IT/ NL/ RU.
- **AC motor** 230 volts, 50 Hz.
- **Connection plug** ready assembled, cable length 3 m.
- **Speed adjustment** steplessly by potentiometer.
- **Three separate buttons for clockwise rotation - anticlockwise - stop** (spindle stop with braking function).
- Spindle guard with electrical interlock.
- Mushroom-head pushbutton (latching) for EMERGENCY STOP.
- Main switch, lockable.
- Paint finish: DD textured paint, signal white RAL 9003, PANTONE 7545c, black.

Size 6–12 – With height-adjustable and swivelling drill head.

Size 14; 16 – With rigid and height-adjustable and swivelling machine table.

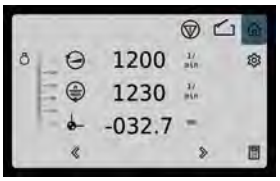
Function: IP54: Protected against splashed water from all directions and protected against penetration of dust into the inside (protected against dust), also completely protected against touching.

Note: Further bench drills and optional equipment such as LED machine lamps, technology computers etc. are available on request.

Size 14; 16 – Available with optional thread cutting device.



Alztronic i14 and i16 are now also available with an optional thread cutter.



5 inch TFT LCD display with touch function & optional technology computer.



07 6563_6
07 6563_9
07 6563_12



07 6563_14
07 6563_16

maximum drill ∅ in steel	mm	6	9	12	14	16
03P **07 6563** ALZTRONIC bench drill		–	–	–	–	–
Manufacturer's designation		ALZTRONIC i6	ALZTRONIC i9	ALZTRONIC i12	ALZTRONIC i14	ALZTRONIC i16
Power consumption	W			700		
maximum speed	min^{-1}	700 – 10000	390 – 6500	250 – 5000	230 – 4000	100 – 2000
Toolholder		B16	B16	B16	MT2	MT2
maximum machine tap ∅ in steel		M6	M8	M10	M10	M12
Spindle stroke	mm	40	40	40	80	80
Feed				manual		
Distance spindle-base plate minimum	mm	110	110	110	437	437
Distance spindle-base plate maximum	mm	250	250	250	437	437
Distance spindle-machine table minimum	mm	–	–	–	75	75
Distance spindle-machine table maximum	mm	–	–	–	357	357
Throat	mm	200	200	200	190	190
Column ∅	mm	50	50	50	65	65
Drill head height adjustment		Handwheel	Handwheel	Handwheel	–	–
Machine table width of usable area	mm	–	–	–	300	240
Machine table length of usable area	mm	–	–	–	240	300
Machine baseplate width of usable area	mm			300		
Machine baseplate height of usable area	mm			240		
Machine table height adjustment		–	–	–	Hand crank	Hand crank
T-slot nominal size	mm			12		
Number of T-slots				2		
T-slot pitch	mm			80		
Weight	kg	64	64	64	83	83

NAKANISHI Micro grinding system

Emax EVOlution grinding and polishing system

Size EV410 – Complete set EV410-230 **Emax** EVOlution 40,000 rpm, with hand-piece IR-310.

Supplied with: Control unit, micro-motor incl motor cable 1.5 m, hand-piece incl. collet (Ø 2.35 mm and 3.0 mm), digital speed display, On/Off switch on the motor, mains cable, reversible, motor speed recognition, 1 each hand-piece and hand-piece storage shelf.

Type		EV410
03T 07 8140	Micro-motor system **Emax EVOlution**	–
Manufacturer's designation		EV 410
Power consumption	W	73
Speed range	min^{-1}	1000 – 40000
AC supply voltage	V	230
Weight	kg	3.3



07 8140



_RG01 _HG200 _IC300 _KC300

Additional item for No. 078140 EV410:

Size ENK250T – Micro-motor ENK-250T
Size RG01 – Reducer gearbox 1/4 RG-01
Size HG200 – Hand-piece
Size IC300 – Angle hand-piece IC-300/90°
Size KC300 – Angle hand-piece KC-300/50°
Size NLS110 – Luster NLS-110 hand filing machine
Size KBS101 – Linishing machine KBS-101
Size FC64 – Foot control FC-64



_ENK250T _KBS101 _NLS110



_FC64

Type		ENK250T	RG01	HG200	IC300	KC300	NLS110	KBS101	FC64
03T 07 8141	Micro-motor	eShop	–	–	–	–	–	–	–
03T 07 8142	Reducing gearbox	–	eShop	–	–	–	–	–	–
03T 07 8143	Hand-piece	–	–	eShop	eShop	eShop	eShop	eShop	–
03T 07 8144	Foot controller	–	–	–	–	–	–	–	eShop

ESPERT 500 grinding and polishing system

High precision manual abrasive system equipped with an extremely high-speed micro-motor **ESPERT 500.** The system was designed especially for high precision, very fine deburring, abrasion and for various further applications. The speed is steplessly controllable via the control unit.

Size ES50T-HR – Complete set ES50T-HR ESPERT 500, 200 Watt.

Type		ES50T-HR
03T 07 8150	Micro-motor system **ESPERT 500**	–
Power consumption	W	200
Speed range	min^{-1}	1000 – 50000
Weight	kg	4.1



07 8150

07 8151 – Additional item for No. 078150 ES50T-HR
Size ENK500C – Micro-motor ENK-500C-HR, incl. motor cable 1.5 m. On-Off switch on the motor cable.
Size ERG01B – Reducer gearbox 1/4 ERG-01B
Size EHG400 – Hand-piece EHG-400
Size EIC300 – Angle hand-piece EIC-300/90°
Size EKC300 – Angle hand-piece EKC-300/50°
Size ERA270 – Angle hand-piece ERA-270/90°
Size FC40 – Foot controller FC-40, steplessly adjustable
07 8152–8154 – Additional item for No. 078150 ES50T-HR:



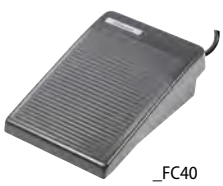
_ENK500C



_ERG01B _EHG400



_EIC300 _EKC300



_FC40



_ERA270

Type		ENK500C	ERG01B	EHG400	EIC300	EKC300	ERA270	FC40
03T 07 8151	Micro-motor	eShop	–	–	–	–	–	–
03T 07 8152	Reducing gearbox	–	eShop	–	–	–	–	–
03T 07 8153	Hand-piece	–	–	eShop	eShop	eShop	eShop	–
03T 07 8154	Foot controller	–	–	–	–	–	–	eShop

PFERD Drive system RCK

The RCK drive system with continuous speed control is an innovative solution that combines maximum productivity with significant ergonomic advantages.
The system generates less noise and vibration than conventional drives.
The combination of the mobile control unit and various handpieces makes the system particularly light, comfortable and flexible during use.
In addition, the handpieces allow the use of a wide variety of tools in almost all industries.
The system is designed for continuous use at constant speed and can be used with a powerful rechargeable battery in addition to power supply operation.



Advantages:

- Increases productivity by up to 50% thanks to constant speed.
- Comfortable, ergonomic working with fast, optimal results.
- Can be used with power supply or rechargeable battery (mobile operation) for a wide range of industrial applications.
- Control unit that enables precise control of various handpieces.

Control unit that enables precise control of various hand-pieces.
Achieves a maximum speed of 80,000 RPM and keeps it stable when in use.

Type		STG10/800
07P 07 8146	RCK STG 10/800 control unit	eShop
Power consumption	W	1560
Weight	kg	3.3



07 8146

Size RCK-BAT – High-performance rechargeable battery with 50.4 volts nominal voltage.
Size RCK-SL – Rapid charger with universal low-power plug.
Size RCK-NT – Electronic power supply unit with universal low-power plug and dust-protected housing.
Size RCK-FU-R – Vario footswitch for controlling the speed.
Size RCK-E/A-FU – On/off footswitch.
Size RCK-AK-2 – 2-metre connecting cable.
Size RCK-AK-5 – 5-metre connecting cable.



07 8147_RCK-BAT



07 8147_RCK-SL



07 8147_RCK-NT



07 8148_RCK-FU-R



07 8148_E/A-FU

Type		RCK-BAT	RCK-SL	RCK-NT	RCK-FU-R	RCK-E/A-FU	RCK-AK-2	RCK-AK-5
07P 07 8147	Drive	eShop	eShop	eShop	–	–	–	–
07P 07 8148	Foot switch	–	–	–	eShop	eShop	–	–
07P 07 8149	Connecting cable	–	–	–	–	–	eShop	eShop



07 8149_RCK-AK-5

The RCK hand-pieces feature a brushless motor with very stable speed and improved ergonomics.
Size RCK-800SP – Straight hand-piece with a speed range of 40,000 - 80,000 rpm and 3 mm collet.
Size RCK-WS45 – 45° angle hand-piece with a speed range of 15,000 - 30,000 rpm and 3 mm collet.
Size RCK-WS90 – 90° angle hand-piece with a speed range of 15,000 - 30,000 rpm and 3 mm collet.
Size RCK-GS100 – Robust hand-piece with a speed range of 5,000 - 10,000 rpm and 6 mm collet.
Size RCK-GS400 – Robust hand-piece with a speed range of 20,000 - 40,000 rpm and 6 mm collet.



07 8155_800SP



07 8155_WS45



07 8155_WS90



07 8155_GS100



07 8155_GS400

Type		RCK-800SP	RCK-WS45	RCK-WS90	RCK-GS100	RCK-GS400
07P 07 8155	Hand-piece	eShop	eShop	eShop	eShop	eShop

Deburring and chamfering machine



Chamfering machine with smooth start-up and thermal overload protection for machining straight edges, internal and external radii and holes from 22 mm ∅. Fine adjustment permits light chamfering for deburring and also wide chamfering. With improved cutter head for reduced cutting forces.

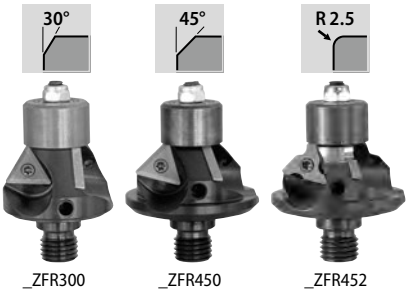
Size EKF300 – Chamfer 30° – width stepless 0 - 5 mm.
Size EKF450 – Chamfer 45° – width stepless 0 - 6 mm.
Size EKF452 – Radius R 2.5 mm.

Supplied with: Milling head, **3 carbide** inserts, swarf hook No. 084520 and transport case.

Note: A component edge height of at least 2 mm is necessary to provide guidance.



Type		EKF300	EKF450	EKF452
07E 07 8121	Deburring and chamfering machine	–	–	–
Power consumption	W	1500		
maximum speed	min^{-1}	6000		
Length	mm	310		
Width	mm	138		
Height	mm	295		
AC supply voltage	V	230		
Chamfer		30°	45°	–
Radius	mm	–	–	2.5



_ZFR300 _ZFR450 _ZFR452

Milling tools

3-edged milling tools, without inserts.

Type		ZFR300	ZFR450	ZFR452
07E 07 8133	Milling tool **3-cutter**	(eShop)	(eShop)	(eShop)
suitable for		078121		
Chamfer	degrees	30°	45°	–
Radius	mm	–	–	2.5

Carbide milling insert set

Type		SHM200	SHM202
07E 07 8128	Carbide insert set, 3 pieces, SHM 200 **for steel**	eShop	–
07E 07 8131	Carbide insert set, 3 pieces, SHM 202 **for steel radius 2.5 mm**	–	eShop
suitable for		ZFR 300, ZFR 450	ZFR 452



_SHM200



_SHM202

Deburring and chamfering machine

For producing chamfers and radii on flat materials, sheet metal and containers, internal and external edges, contour profiles and for rounding off holes.

07 8123 – Powerful cordless beveller for optimum preparation of coatings for flexible working in the workshop and on the construction site.
Size AKFH18-5AS – Cordless beveller up to 5 mm.
07 8126 – Metal beveller for chamfer heights up to 15 mm for weld seam preparation.

- **Tool-free setting of the cutting depth in 0.1 mm steps.** (From 0 mm – 15 mm)
- Precise adjustment of the chamfer angle.
- Controlled working by means of large-area guide plates.
- Electronic overload protection, soft start and restart protection.

Supplied with:

07 8123 Size AKFH18-5AS – **Without battery and charger**, 1 machine incl. 45° milling head (without guide roller, without indexable inserts), 3 clamping screws, 1 copper paste, 1 hexagon L-wrench 4 mm, 1 Torx screwdriver TX 15, 1 plastic tool case.
07 8126 – 3 universal carbide inserts, stop roller, 2 screwdrivers, open-ended spanner size 10, bow-type handle, metaBox.

Note:
07 8123 – The required accessories can be found under No. 078136 – 078138.
See No. 073851 – 073866 for suitable rechargeable batteries and chargers.
07 8126 – The required accessories can be found under No. 078132 and 078134.

AMP Share
Powered by BOSCH

B 18



07 8123_AKFH18-5AS

META



07 8126_KFMV17-15F

Type		AKFH18-5AS	KFMV17-15F
03F 07 8123	Cordless beveller **handheld**	(eShop)	–
03D 07 8126	metabo Beveller **handheld**	–	–
No load speed	min^{-1}	2400 – 7500	6200 – 12000
Power consumption	W	–	1700
Support table ∅	mm	98	100
Battery voltage	V	18	–
Chamfer angle	degrees	45	0 – 90
Radius	mm	2.5	–
Cable length	m	–	3.9

Angle grinder Ø 115 mm

07 7103 – **1000 W** motor, spindle locking, restart inhibit.

07 7104 – Light-weight and powerful **115 mm one-hand angle grinder** in **handy compact design**, drive head can be rotated in 90° steps, quick adjustment of protective cover, M14 grinding spindle thread.

07 7105 – **Cordless angle grinder 115mm** with POWERSTATE™ motor (brushless) for very heavy-duty use. The REDLINK PLUS™ electronics offers advanced digital overload protection for machine and battery and delivers constant power even under load. With dead man's switch.

07 7107 – Dust-resistant and powerful 18V AMPShare cordless angle grinder for effective cutting, grinding and deburring work in assembly applications. Double the productivity – up to 45% more cuts than the previous system thanks to the perfect combination of a powerful machine and a **highly efficient** ProCORE battery system. Durable and robust thanks to completely closed motor housing. This protects the motor from aggressive ceramic and mineral dusts. Innovative cooling ribs ensure optimum cooling, including temperature monitoring.

- Electronic speed pre-selection.

07 7109 – **720 watt** 115 mm angle grinder with small handle circumference, offers optimised ergonomics for low-fatigue working.

- Speed preselection enables a wide range of applications.

Supplied with:

07 7105 Size M18FSAGV – **Without battery, without charger.** With cardboard box.

07 7107 Size 71221561 – **Without battery, without charger.** Supplied with protective hood, tool-less quick-clamping nut, anti-vibration handle, wrench, L-BOXX.

07 7109 – Supplied with torsion-resistant protective hood, clamping set, additional handle.

07 7103 Size AG10-115EK/7104 Size WS8-115S – Supplied with protective hood, clamping set and additional handle.

Note:

07 7105 Size M18FSAGV – Suitable starter set can be found from No. 073826.

07 7107 Size 71221561 – See No. 073863 – 073867 for a suitable starter set.

L-BOXX | B 18 | AMPShare Powered by BOSCH



_71221561

HD | MB 18



_M18FSAGV



_7-115E



_AG10-115EK



_WS8-115S

Type		71221561	M18FSAGV	7-115E	AG10-115EK	WS8-115S
03F 07 7107	Angle grinder **Cordless**	eShop	–	–	–	–
03L 07 7105		–	eShop	–	–	–
03C 07 7109	BOSCH Angle grinder GWS	–	–	eShop	–	–
03M 07 7103	Angle grinder	–	–	–	eShop	–
07A 07 7104		–	–	–	–	–
Manufacturer's designation		CCG18-115-12 AS	M18 FSAGV115XPDB-0	GWS 7-115E	AG10-115EK	WS8-115S
Battery voltage	V	18	18	–	–	–
Speed range	min^{-1}	2500 – 8500	8500	2800 – 11000	11000	12000
maximum disc Ø	mm			115		
maximum cutting depth	mm	25	28	28	28	28
Weight	kg	2	2.7	1.9	2.1	1.9
maximum vibration to EN	m/s^2	3.7	2.1	6.5	8.3	4.2
Power consumption	W	–	–	720	1000	800
Restart block				yes		

Clamping nut for angle grinders

Size FIXTEC – M14 quick-clamping nut for quick disc changing without using tools. Low overall height, less than 8 mm. For washers up to Ø 150 mm

Size NUT – M14 flanged nut for disc Ø 115 - 230 mm.

Type		FIXTEC	NUT
07A 07 3930	Clamping nut M14	eShop	eShop



_FIXTEC



_NUT

BOSCH X-Lock angle grinder ∅ 125 mm

L-BOXX B 18

XLOCK





Size GWX1810SC – The angle grinder has a Bluetooth® connectivity module and user interface, as well as Drop Control, X-Brake and restart protection. It is possible to change accessories quickly and conveniently thanks to the keyless X-LOCK click system.

Size 18V15C; 18V15SC – **Cordless angle grinder** with **BITURBO brushless technology** with X-Lock.

- Has the same amount of power as a corded device with 1000 to 1800 watts.
- Ensures quicker cutting and more metal removal than with previous cordless grinders.
- Increased safety thanks to intelligent braking system, kick-back and drop control.

Size 18V15SC – ■ Selection of individual speed settings equipped with user interface and Bluetooth® connectivity.

Supplied with:

Size GWX1810SC; 18V15C – Supplied with additional vibration control handle, safety guard, L-BOXX 136.

Size 18V15SC – **Without batteries and without charger.** Supplied with additional vibration control handle, safety guard, L-BOXX 136.



Connectivity module



_GWX1810SC



_18V15C



_18V15SC

Biturbo

Type		GWX1810SC	18V15C	18V15SC
03C 07 7011	GWX angle grinder **without battery**	eShop	eShop	eShop
Manufacturer's designation		GWX 18V-10 SC	GWX 18V-15 C	GWX 18V-15 SC
Number of rechargeable batteries contained			0	
Type of rechargeable battery			Lithium-ion	
Battery voltage	V		18	
Speed range	min^{-1}	4500 – 9000	9800	3400 – 9800
Toolholder			X-LOCK system	
maximum disc ∅	mm		125	
Weight	kg	2	2.3	2
Restart block			yes	
Kick-back stop			yes	
Special features		Variable speed; restart protection; Drop Control	BITURBO; Kickback Control; Drop Control	BITURO; Kickback Control; Drop Control

Size 9-125S – 125-mm angle grinder with 900 W motor. **X-Lock system.**

Size 14-125 – 125-mm angle grinder with 1,400 W motor. **X-Lock system.**

Size 19-125S – 125-mm angle grinder with 1,900 W motor. **X-Lock system.**

Supplied with:

Size 19-125S – Including additional vibration control handle, safety guard and package.

Size 9-125S; 14-125 – Including additional handle, safety guard and package.



_9-125S



_14-125



_19-125S

Type		9-125S	14-125	19-125S
03C 07 7050	GWX angle grinder	eShop	eShop	eShop
Manufacturer's designation		GWX 9-125S	GWX 14-125	GWX 19-125 S
Power consumption	W	900	1400	1900
Speed range	min^{-1}	2800 – 11000	11000	2800 – 11500
maximum disc ∅	mm		125	
Weight	kg	2.1	2.3	2.5
Restart block			yes	
Special features		Variable speed	Soft start	Variable speed; Kickback Control

Garant Grinding media suitable for the X-Lock:

Rough grinding disc Universal



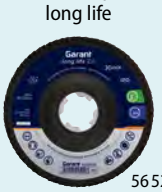
56 0011

Cutting disc, high-performance version



56 3273

Abrasive flap disc long life



56 5279

Cordless angle grinder ∅ 125 mm

07 7139 Size 4933478438 – Powerful M18 FUEL™ **flat head** angle grinder for working in restricted spaces.

- Flat head design permits working at angles up to 42°.
- Integral **FIXTEC** quick-release clamping nut for changing discs without using tools.
- **RAPIDSTOP™** for quick braking of the disc in less than 2 seconds.

07 7140 – 18 V / 5.0 Ah FUEL™ Milwaukee cordless angle grinder:

- long-life **brushless motor,** spindle locking, quick adjustment of the safety guard.
- Integral **FIXTEC** quick-release system for changing discs without using tools.

Size 4933493416 – M18™ HIGH OUTPUT™ cordless angle grinder with a diameter of 125 mm and a power equivalent to that of a 1750 W grinder.

07 7143 – Compact M18 FUEL™ cordless angle grinder with **controllable speed**.

- **5 speed settings** for the best results when machining stainless steel and aluminium as well as rust and paint removal.
- **RAPIDSTOP™** for quick braking of the disc in less than 2 seconds for high user protection.

Size 4933478437 – Version with **dead man's switch** for high user safety.

07 7149 Size 71221661 – Powerful and robust angle grinder with low-maintenance Fein Power Drive motor.

- Electronic speed pre-selection.

Size 71222061 – **Fein Protago safety angle grinder** with a unique operating concept.

- Safe guidance and **two-hand operation** by means of an **additional handle with contact switch that can be adjusted in 6 positions and cannot be dismantled.**
- Completely enclosed motor housing protects the motor from aggressive dust.

Supplied with:

07 7149 – **Without batteries and without charger.** Supplied with protective hood, tool-less quick-clamping nut, anti-vibration handle, wrench, L-BOXX.

07 7139/7143 – **Without rechargeable batteries or charger.** Comes with anti-vibration handle, safety guard, dust-protection grille, clamping set and HD box.

Size M18FSAGB; M18FSAGDB – Supplied with charger, safety guard, 2 dust-protection grilles, clamping set, anti-vibration handle, HD box.

Note:

07 7149 – Suitable spare batteries and chargers can be found under No. 073851 – 073859.

07 7139/7143 – See 073801 – 073840 for suitable rechargeable batteries and chargers.

MB 18 HD



_4933478438

MB 18 HD



_M18FSAGB

MB 18 HD



_M18FSAGDB

MB 18 HD NEW



_4933493416

MB 18 HD



_4933478436

B 18 L-BOXX



_71221661

Protago

Safety angle grinder
with a unique operating concept

B 18 L-BOXX



_71222061

MB 18 HD



_4933478437

Type			71221661	71222061	4933478438	M18FSAGB	M18FSAGDB	4933493416	4933478436	4933478437
03F 07 7149		Angle grinder **Cordless**	eShop	eShop	–	–	–	–	–	–
03L 07 7139		Flat-head angle grinder **Cordless**	–	–	eShop	–	–	–	–	–
03L 07 7140		Angle grinder **Cordless**	–	–	–	eShop	eShop	–	–	–
03L 07 7143			–	–	–	–	–	–	eShop	eShop
Manufacturer's designation			CCG18-125-12S AS	CCG18-125-12PD-SEC AS	M18FSAG-F125XB-0X	M18 ONEF-SAG125X-PDB-502X	M18FSAGDB	M18FH-SAG125XB2-802X	M18F-SAGV125XB-0X	M18FSAG-F125XPDB-0X
Number of rechargeable batteries contained			0	0	0	2	2	1	0	0
Type of rechargeable battery			Lithium-ion							
Battery capacity		Ah	–	–	–	5	5	8	–	–
Battery voltage		V	18							
maximum speed		min^{-1}	2500 – 8500	2500 – 8500	8500	8500	8500	9000	3500 – 8500	3500 – 8500
maximum disc ∅		mm	125							
maximum cutting depth		mm	25	25	–	34	33	33	33	33
Weight		kg	2	2.3	2.6	2.5	2.7	3.5	2.7	2.7
maximum vibration to EN		m/s^2	5	4.9	4.86	3.4	3.4	3.4	5.01	5.01
Overload protection			yes							
Dead man's circuit			no	yes	no	no	yes	no	no	yes
Soft start			yes							
Restart block			yes							
Kick-back stop			no	yes	yes	no	no	yes	yes	yes

Cordless angle grinder ∅ 125 mm

07 7120 Size 18V-8 – **Extremely powerful 18 V cordless angle grinder** in compact design.

Size 18V-11S – Powerful **18 V cordless angle grinder.**

- Same performance as a wired 1100 watt grinder thanks to brushless motor and ProCORE 18 V rechargeable battery.
- Drop Control, KickBack Control, Intelligent Brake System and restart protection for maximum user protection and comfort.
- Balanced design for a wide range of applications that allows for fast cutting and efficient grinding under overload.

Size 18V15C –

- Thanks to the new **BITURBO technology,** 50% faster cutting and metal removal. Equivalent to the performance of an angle grinder with cable.
- **Increased safety** thanks to intelligent braking system, soft start, kick-back and drop control.
- Possibility to retrofit the connectivity module.

07 7126 Size BEWS18BLPX – Brushless and high-performance 18 V angle grinder in a compact design.

- Quick adjustment of the safety guard.
- Paddle switch for greater control and safety.
- LED warning lamp for protection against overloading.

07 7127 Size WL9-125 – Robust 18 V angle grinder with powerful motor and slim design.

Size WLT11-125 – Brushless 18 V angle grinder with the highest efficiency, as powerful as a 1100 Watt cabled device.

- Battery pack can be rotated in 90° increments.
- Electronic overload protection, soft start and restart protection.

Size WVBLT11125 – Speed-adjustable, brushless 18 V angle grinder with maximum efficiency.

- Battery pack can be rotated in 90° increments.
- Fast braking system and safety shut-off.
- M-Quick system for tool-free disc change.

Size WBLTX15125 – Brushless 18 V angle grinder, extremely powerful yet very easy to use.

- Battery pack can be rotated in 90° increments.
- Fast braking system and safety shut-off.
- M-Quick system for tool-free disc change.

Supplied with:

07 7120 Size 18V15C – Without rechargeable battery and charger, including safety guard, mounting flange, clamping nut, additional handle.

07 7126 – Without battery and charger.

07 7127 – Includes rechargeable battery, charger and metaBOX.

Note:

07 7120 – See No. 073851 – 073866 for suitable rechargeable batteries and chargers.

07 7126 – See No. 073841 – 073848 for suitable rechargeable batteries and chargers.

07 7127 – See No. 073870 – 073890 for suitable batteries and chargers.



_18V-8



_18V-115



_18V15C

BITURBO
Brushless technology



_WL9-125



_WLT11-125



_WVBLT11125



_WBLTX15125



_BEWS18BLPX

Type		18V-8	18V-11S	18V15C	WL9-125	WLT11-125	WVBLT11125	WBLTX15125	BEWS18BLPX
03C 07 7120	BOSCH Cordless angle grinder GWS	eShop	eShop	eShop	–	–	–	–	–
03D 07 7127	metabo Cordless angle grinder with rechargeable battery	–	–	–	eShop	eShop	eShop	eShop	–
07A 07 7126	AEG Cordless angle grinder without rechargeable battery	–	–	–	–	–	–	–	–
Manufacturer's designation		GWS 18V-8	GWS 18V-11 S	GWS 18V-15 C	W 18 L 9-125 Quick	W 18 LT BL 11-125	WVB 18 LT BL 11-125 Quick	WB 18 LTX BL 15-125 Quick	BEWS18-125BLPX2-0
Number of rechargeable batteries contained		0	0	0	3	2	2	2	0
Type of rechargeable battery		Lithium-ion							
Battery capacity	Ah	–	–	–	4	4	5.5	5.5	–
Battery voltage	V	18							
maximum speed	min^{-1}	11000	–	9800	8500	10000	2800 – 10000	10000	8500
maximum disc ∅	mm	125							
maximum cutting depth	mm	34	34	34	–	27	27	–	26
Weight	kg	2.3	2	2.2	2.3	2.5	2.8	3	2.16
maximum vibration to EN	m/s^2	7	6	4	5	8	8	7.1	5.4
Overload protection		yes							
Dead man's circuit		no	no	no	no	no	no	no	yes
Soft start		yes	no	no	yes	yes	yes	yes	no
Restart block		yes							
Kick-back stop		yes	yes	yes	yes	yes	yes	yes	no

BOSCH Angle grinder ∅ 125 mm

Size 7-125 – **Handy compact angle grinder** with narrow handle circumference.
- 720 Watt motor and only 1.9 kg weight, optimised air inlets (direct cooling) for longer working life, restart inhibit.
- **Very small handle circumference** (176 mm) compared to other angle grinders in its wattage class, flat gearbox head permits use in inaccessible places.

Size 9-125S – **Handy compact angle grinder** with a narrow handle circumference.
- Strong 900 W motor for fast work, high overload capacity, durability.
- With speed-control electronics, ideal for instance for grinding stainless steel.

Size 14-125 – Kickback control, soft start, restart inhibit, overload protection and vibration damping.

Size GWS17125SB – **Powerful angle grinder with a compact design** with improved power-to-grip ratio, speed pre-selection and intelligent braking system
- with speed pre-selection
- Intelligent braking system for bring disc to a standstill quickly when tool is deactivated and Drop Control.
- KickBack Control, restart inhibit and side handle with Vibration Control for high user protection.

Size 17-125PSB – **Powerful angle grinder in a compact design** with safety switch
- The GWS 17-125 PSB Professional features a new protection switch for maximum comfort at work and an ergonomic, slim handle
- Speed preselection, constant speed, soft start and overload protection
- Intelligent braking system

Size 17125SINOX – 1700 W motor with speed-control electronics, ideal for instance for **grinding stainless steel.**

Size 19-125CI; 19-125CIE – **Very powerful 1900 W angle grinder for maximum productivity and very good user protection**
- Long working life due to motors with direct **motor cooling, constant-speed electronics, overload protection and long-life carbon brushes.**
- Easy to use due to slim body with Softgrip surface for a secure grip.
- Additional handle for 40 % reduction in vibration, ensuring non-fatiguing working (EN 60745).
- Top user protection due to **kick-back stop**, **restart inhibit**, torsion-resistant protective hood and reduced vibration.

Supplied with: Supplied with torsion-resistant protective hood, clamping set, additional handle.



_7-125



_9-125S



_14-125
_GWS17125SB
_17125SINOX



_17-125PSB



_19-125CI
_19-125CIE

Type		7-125	9-125S	14-125	GWS17125SB	17-125PSB	17125SINOX	19-125CI	19-125CIE
03C 07 7109 Angle grinder GWS		–	–	eShop	eShop	eShop	eShop	–	–
Manufacturer's designation		GWS 7-125	GWS 9-125 S	GWS 14-125	GWS 17-125 SB	GWS 17-125 PSB	GWS 17-125 S INOX	GWS 19-125 CI	GWS 19-125 CIE
Power consumption	W	720	900	1400	1700	1700	1700	1900	1900
Speed range	min^{-1}	11000	2800 – 11000	11500	2800 – 11500	2800 – 11500	1900 – 7800	11500	2800 – 11500
maximum disc ∅	mm	125							
maximum cutting depth	mm	34	34	–	–	–	–	34	34
Weight	kg	1.9	1.9	2.3	2.3	2.5	2.4	2.4	2.4
maximum vibration to EN	m/s^2	6.5	6	–	–	4.8	–	6	6
Restart block		yes	yes	yes	–	yes	yes	yes	yes
Special features		Narrow handle circumference	Electronic speed control.	Kickback Control, soft start	Intelligent braking system	Disc brake	Kickback Control, restart inhibit	Maximum power	Electronic speed control

metabo Angle grinder Ø 125 mm

You set the limit – not your machine.
With devices from 850 to 2,000 watts, you can find the right angle grinder for every requirement and application.

07 7132 Size W850-125 – **Handy compact angle grinder** for light work.
- Powerful motor with good overload capability.
- Restart protection after power interruption.

Size WEV11-125 – Compact angle grinder with **speed control** and **the smallest grip circumference in its performance class** for perfect ergonomics.

Size WEV15-125 – Robust, **powerful angle grinder** with speed control for good work progress.

Size WEA17-125 – 1,700 watt angle grinder with the power of a large grinder and the manageability of a small grinder for the fastest material removal.
- **Integrated auto-balancer for up to 50% less hand-arm vibrations,** longer machine life and up to twice the tool life of the grinding wheels.

Size WEPBA19125 – Equipped for industrial use with powerful 1,900 watts and M-Brush technology (**service-free carbon brushes** with a 3-fold service life **for an entire machine life**).
- **Integrated auto-balancer** for up to 50% less hand-arm vibrations, longer machine life and up to twice the tool life of the grinding wheels.
- Ergonomic **paddle switch with dead man function.**
- Fastest braking system for maximum user protection: The patented **mechanical disc brake** stops the disc within 2 seconds after switching off, even in the event of a power failure.
- Steel eyelet for securing when working at high altitudes.

Size WEBA20125Q –
- Handy 2000-watt angle grinder for industrial use: with brushless motor for maximum productivity and unmatched service life.
- Highly efficient, service-free Marathon brushless motor: patented cooling and innovative dust protection for 3 times the service life of brush motors.

07 7133 Size WEV17-125 – Extremely robust angle grinder with high gear reduction and **highly reduced,** adjustable **speed** for cool grinding. Perfect **for use on stainless steel.**

07 7136 Size WEF15-125 – Powerful **flat head** angle grinder for fast working at sharp angles up to 43° and hard-to-reach areas.
- Designed to remove welding slag, rust or paint in tight frame designs and for work in strained positions.

07 7132 Size WEV11-125–WEPBA19125/7133 Size WEV17-125/7136 Size WEF15-125 –
- Metabo S-automatic mechanical safety shut-off: Minimizes kick-back when the disc is blocked.
- Electronic overload protection, soft start and restart protection.
- Gear housing can be mounted in 90° increments for left-handed operation or for cutting.
- Constant speed under load.

Supplied with: Supplied with torsion-resistant protective hood, clamping set, additional handle and two-pin wrench.



_W850-125



_WEV11-125
_WEV15-125
_WEA17-125



_WEPBA19125



WEBA20125Q



_WEF15-125



_WEV17-125

Type		W850-125	WEV11-125	WEV15-125	WEA17-125	WEPBA19125	WEBA20125Q	WEV17-125	WEF15-125
03D 07 7132	Angle grinder	–	–	–	–	–	–	–	–
03D 07 7133	Angle grinder **Stainless steel**	–	–	–	–	–	–	–	–
03D 07 7136	Angle grinder **Flat head**	–	–	–	–	–	–	–	–
Manufacturer's designation		W 850-125	WEV 11-125 Quick	WEV 15-125 Quick	WEA 17-125 Quick	WEPBA 19-125 Q DS	WEBA 20-125 Quick BL	WEV 17-125 Quick Inox	WEF 15-125 Quick
Power consumption	W	850	1100	1550	1700	1900	2000	1700	1550
No load speed	min^{-1}	11500	2800 – 10500	2800 – 11000	11000	11000	11000	2000 – 7600	11000
Connection thread		M14	M14	M14	M14	M14	–	M14	M14
maximum disc Ø	mm	125	125	125	125	125	–	125	125
Weight	kg	1.8	2.1	2.5	2.5	2.7	2.6	2.5	2.7
Cable length	m	2.5	4	4	4	4	4	–	4
Restart block		yes	yes	yes	yes	yes	–	yes	yes
Special features		Restart inhibit	Quick-change system	Quick-change system	Quick-change system	Quick-change system	Quick-change system	Quick-change system	Quick-change system

Compact angle grinder ∅ 125 mm

07 7111 – **FEIN – Compact angle grinder ∅ 125 mm.**
- Robust, powerful motor for everyday use.
- High level of protection for the user thanks to recoil monitoring, restart inhibit and anti-vibration handle.
- High overload capability thanks to direct motor cooling; grinding head can be rotated in 90° steps (optimum switch position for the application).
- Grinding media can be changed quickly without the need for tools thanks to the quick-release clamping nut.

07 7121 – **AEG – Compact angle grinder ∅ 125 mm.** Powerful and ergonomic **angle grinder** in compact slim design.
- Safety spindle lock.
- Power cable 4 m.
- Dustproof bearings and switch.
- Grinding head can be rotated in steps of 90° for left-hand and right-handed use.
- Restart inhibit.

Size WS10-125S – Single-hand operation angle grinder 1000 W / ∅ 125 mm.

Size WS13125SXE – One-handed angle grinder 1300 W / ∅ 125 mm, constant-speed electronics with no-load speed limitation and overload protection. **FIXTEC** clamping nut.

07 7131 – **MILWAUKEE – Compact angle grinder ∅ 125 mm.** Compact, powerful angle grinder with large cutting depth due to flat metal gearbox head.
- Power cable 4 m.
- **Spindle lock** for quick disc change.
- **Quick adjustment of protective cover.**
- Restart inhibit.

Size AGV10125EK – 1000 W / 125 mm angle grinder, **short body.** Clamping set.

Size AGV13-125X – 1250 W / 125 mm angle grinder, **short body,** with soft start, overload protection, **anti-kickback function,** and large **dead man's switch.** Disc change without tools, thanks to integral **FIXTEC** quick-change system. Anti-vibration handle (AVS).

Supplied with:

07 7111 – Handle, safety guard, clamping nut, wrench.

07 7131/7121 – Handle, safety guard, clamping nut.

Note:

07 7131/7121 – All compact angle grinders with lockable switch have no dead man's switch.


_7222936


_7222896023


_72250660


_7222906023
_7222916023


_AGV10125EK


_WS10-125S


_WS13-125SXE


_AGV13-125X

Type		7222936	7222896023	72250660	7222906023	7222916023	AGV10125EK	AGV13-125X	WS10-125S	WS13125SXE
03F 07 7111	Compact angle grinder	eShop	–	eShop	–	–	–	–	–	–
03M 07 7131		–	–	–	–	–	eShop	–	–	–
07A 07 7121		–	–	–	–	–	–	–	–	–
Manufacturer's designation		CG10-125	CG14-125V	CG15-125BL	CG17-125	CG17-125INOX	AGV10-125EK	AGV13-125XSPDE/ dead-man's switch	WS10-125S	WS13125SXE
Power consumption	W	1000	1400	1500	1700	1700	1000	1250	1000	1300
maximum speed	min^{-1}	11000	2800 – 11500	3800 – 9000	11500	2200 – 7500	11000	12000	11500	2600 – 11000
maximum vibration to EN	m/s^2	8.5	6	5.1	6	5	2.6	7.8	6	7.5
maximum disc ∅	mm	125								
maximum cutting depth	mm	35	35	35	35	35	33	33	32	32
Weight	kg	2.1	2.3	2.2	2.4	2.4	2.2	2.3	2.4	2.4
Restart block		yes								
Special features		short body	Electronic speed control	Brushless motor	short body	Electronic speed control	short body	M14, FIXTEC	M14	M14, FIXTEC

Angle grinders ∅ 125 / ∅ 150 mm

Milwaukee angle grinder with smooth start-up, **restart inhibit** and overload protection.

Size AGS15-125 – 1500 W special angle grinder with throttled speed **for use with flap discs** with constant speed electronics. Including clamping set.

Size AGV15-125 – 1550 W / 125 mm angle grinder with **constant-speed electronics,** anti-vibration handle, anti-kickback function for very high user protection, **FIXTEC** disc change without using tools.

Size AGV17-125 – 1750 W / 125 mm angle grinder with **electronic speed control,** anti-kickback function and soft start. **Anti-vibration handle,** disc change without using tools. **FIXTEC** clamping nut.

Size AGV17-150 – 1750 W / 150 mm angle grinder with **constant-speed electronics,** anti-kickback function, **anti-vibration handle,** disc change without using tools. **FIXTEC** clamping nut.

Supplied with: Additional handle, guard cover, 4 m power cable.


_AGS15-125


_AGV15-125


_AGV17-125
_AGV17-150

Type		AGS15-125	AGV15-125	AGV17-125	AGV17-150
03M 07 7141	Angle grinder	eShop	eShop	eShop	eShop
Manufacturer's designation		AGS15-125CProTector	AGV15-125XCProTector	AGV17-125XEProTector	AGV17-150XCProTector/dead-man's switch
Power consumption	W	1500	1550	1750	1750
maximum speed	min^{-1}	7600	11000	2600 – 11000	9500
maximum vibration to EN	m/s^2	5.5	4.7	9.5	8.7
maximum disc ∅	mm	125	125	125	150
maximum cutting depth	mm	33	33	33	45
Weight	kg	2.4	2.6	2.8	3

Angle grinder ∅ 180 mm

07 7120 Size 18V-180P – **Small and light 180 mm 18 V cordless angle grinder:**

- Thanks to the 180 mm grinding disc and small gear head, it offers the same cutting depth as a large 230 mm angle grinder, but is up to 35% lighter.
- Biturbo Brushless technology for fast cutting into a wide range of materials.
- PROtection switch, KickBack Control, intelligent brake system.

07 7146 Size 27-180JR – **Powerful 180 mm angle grinder:**

- Powerful **2700 W** motor with soft start and starting current limiter.
- High protection of the user by vibration control on the main and auxiliary handles, kick-back stop and restart inhibit.
- Bow handle rotates 90° for optimum grinding and cutting.

07 7147 – **Powerful 180 mm angle grinder:**

- Dust-proof **1750 W** ProTector motor with constant-speed electronics, smooth start-up, and overload protection.
- Vibration-damped AVS additional handle, anti-kick-back function and restart inhibit for comprehensive user protection.
- Changing discs without using tools due to the spindle lock and **FIXTEC** clamping nut (supplied).

07 7148 – **Powerful 180 mm angle grinder with the cutting depth of a 230 mm angle grinder.**

- Reduced vibrations minimise fatigue when working thanks to Metabo VibraTech (MVT) additional handle and integrated autobalancer.
- Electronic soft start and restart protection.
- Gear housing can be mounted rotated in steps of 90°.

Supplied with:

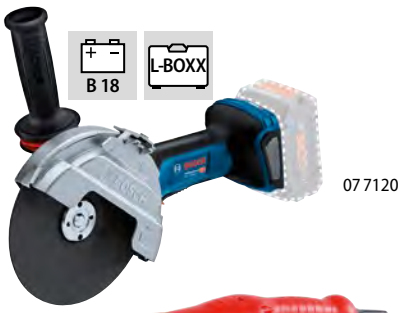
07 7120 Size 18V-180P – Including safety guard, additional handle, cutting discs, L-BOXX. Without battery and charger.

07 7146 – Includes quick-adjustable safety guard, additional handle, two-pin wrench, mounting flange, clamping nut. In a box.

07 7147 – Supplied with protective hood, additional handle, 4 m power cable.

07 7148 – Supplied with protective hood, additional handle, M-Quick clamping nut.


07 7146



07 7120


07 7147


07 7148

Type			27-180JR	18V-180P	AGV17-180	WEA19-1800
03C 07 7146	BOSCH	Angle grinder GWS	eShop	–	–	–
03C 07 7120	BOSCH	Cordless angle grinder GWS	–	eShop	–	–
03M 07 7147	Milwaukee	Angle grinder	–	–	–	–
03D 07 7148	metabo	Angle grinder	–	–	–	–
Manufacturer's designation			GWS 27-180 JR	GWS 18V-180P	AGV17-180XC ProTector/dead-man's switch	WEA 19-180 Quick RT
maximum speed	min^{-1}		6900 – 8500	6100	7600	8200
maximum disc ∅	mm		180			
maximum cutting depth	mm		35	61	58	60
Weight	kg		6.1	2.8	3.1	2.7
maximum vibration to EN	m/s^2		5.5	4.1	7.4	4.9
Power consumption	W		2700	–	1750	1900
Special features			Rotatable loop handle	Dead man's switch	Constant-speed electronics, FIXTEC	Large cutting depth; M-Quick System

Angle grinder Ø 230 mm

07 7135 – **Cordless** two-hand angle grinder Ø 230 mm. Version with a dead man's switch and restart inhibit.

07 7150 – Strong 230-mm angle grinder with Metabo Marathon motor with patented dust protection to ensure a long service life:
- Electronic safety shut-off function: reduces kick-back when the disc is blocked, providing excellent protection for the operator.
- Electronic overload protection and restart inhibit.

07 7153 – **Powerful 230 mm angle grinder:**
- Powerful motor with constant-speed electronics, smooth start-up and inrush current limitation.
- High protection of the user by vibration control on the main and auxiliary handles, kick-back stop and restart inhibit.
- Adjustable grasp handle for optimum grinding and cutting.

07 7155 – **2200 W / 230 mm angle grinder** with soft start and restart inhibit.

07 7161 –
- Vibration-damped adjustable handle.
- Spindle locking pin.

Size AGVM26-230 – **2600 W** motor. With B-Guard anti-kickback **safety shut-off**, **FIXTEC** clamping nut and auto-balancer.

07 7162 – Version with dead-man's switch, which switches the machine off immediately the trigger is released.

Size AGVM26-230 – **2600 W** motor. With B-Guard anti-kickback **safety clutch** and **FIXTEC** clamping nut.

Size AGVKB24 – Angle grinder with **RAPIDSTOP™** brake and safety shut-off.

07 7161/7162 – **Powerful 230 mm angle grinder:**
- Dust-proof PROtector motor with smooth start-up and inrush current limitation.
- Safeguard against accidental restart.

Supplied with:

07 7135 Size M18FLAG230 – Supplied with 1 pc. 18 V / 12 Ah **FORGE™** Li-ion rechargeable battery, charger M12-18 FC, safety guard piece, AVS side handle, Fixtec quick clamping nut, 2 pcs. exchangeable dust-protection grilles, carrying case.

07 7150 – Supplied with protective hood, additional handle, quick-clamping nut.

07 7153 – With SDS quick-clamping nut.

07 7153–7162 – Supplied with protective hood, additional handle.



_M18FLAG230

MB 18



_4935431730


_30-230PB



_WE26-230


_AGV24–230
_AGVM26–230
_AGVKB24–230

Type			M18FLAG230	4935431730	AGVM26-230	30-230PB	WE26-230	AGV24-230	AGVKB24
03L 07 7135	Milwaukee	Cordless angle grinder **18 V**	–	–	–	–	–	–	–
03C 07 7153	BOSCH	Angle grinder GWS	–	–	–	–	–	–	–
07A 07 7155	AEG	Angle grinder	–	–	–	–	–	–	–
03M 07 7161	Milwaukee	Angle grinder	–	–	eShop	–	–	eShop	–
03M 07 7162	Milwaukee	Angle grinder Deadman	–	–	eShop	–	–	–	eShop
03D 07 7150	metabo	Angle grinder	–	–	–	–	–	–	–
Manufacturer's designation			M18FLAG230XP-DB-121C	WS 22-230	AGVM26-230GEX-ProTector	GWS 30-230 PB	WE 26-230 MVT Quick	AGV24-230GEPro-Tector	AGVKB-24-230 EKX DMS
maximum speed		min^{-1}	6600	6600	6600	6500	6600	6600	6500
maximum disc Ø		mm	230						
maximum cutting depth		mm	65	68	68	59	65	68	68
Weight		kg	5.2	5.2	5.8	5.9	6.3	5.5	5.9
maximum vibration to EN		m/s^2	8.7	8.7	2.5	5	6.4	2.7	2.7
Restart block			yes						
Special features			Dead man's switch; FIXTEC	Soft start; Restart inhibit; Dead man's switch	Autobalancer; FIX-TEC; Dead man's switch; adjustable handle	Braking system; PROtection switch	Restart inhibit; Soft start	Autobalancer	Dead man's switch; FIXTEC

VersaMAG

Compact and powerful permanent magnet with vice for clamping various components on magnetic surfaces without the need for any tools.
- Optimises every workstation: clean and reliable working with versatile application options.
- Secure clamping of components for further machining with various power tools, e.g. angle grinders, drill/drivers, saws, MULTIMASTER.
- Up to 7800 N of holding force for reliable clamping on all magnetic surfaces thanks to an innovative 2-rotor system – even when working with thin sheet metal (from a thickness of 4 mm).

Supplied with: 1 pc. permanent magnet, 1 pc. mounting plate, 1 pc. vice, 1 pc. 3 mm hexagon L-wrench, 1 pc. lashing strap.



Type			VERSA-01
03F 07 5917	Magnetic vice set **VersaMAG**		eShop
A		mm	212
B		mm	70
Jaw width		mm	100
Jaw height		mm	40
Magnet retaining force		N	7800
Weight		kg	7.25

“Rutscher” orbital sander

07 7322 – **Ergonomic cordless orbital sander with brushless motor:**
- Optimum control on large surfaces thanks to excellent tool balance.
- Quicker rate of progress thanks to the brushless motor and Bosch Professional 18V system.
- Intuitive operation, with three interchangeable sanding pads.

07 7328 – **Handy low-vibration 300 W** orbital sander with **speed pre-selection:**
- Ergonomically shaped holding surfaces with softgrip permit perfect handling.
- Very low vibration thanks to decoupling of the motor casing.
- Precise seating of abrasive paper sheets, be they clamp fitting or hook and loop fastener fitting.
- Integral dust extraction through 8-hole abrasive paper.
- Direct connection to micro-filter box or external dust extraction system.

07 7332 – **Lightweight, handy 210 W orbital sander with perfect ergonomics:**
- Handle area with non-slip softgrip surface.
- Excellent surface finish without grinding rings and grooves for professional surface treatment.
- Suction option by connecting an all-purpose vacuum cleaner.

Supplied with:

07 7328 – Supplied with micro-filter box, abrasive plate, additional handle.

07 7332 – Supplied with dust bag, carrying case.

Note:

07 7328/7332 – For a suitable hook and loop fastener sanding paper see No. 557576.



07 7322



07 7328



07 7332

		GSS18V-13	230AVE	SR2185
03C 07 7322	BOSCH Cordless orbital sander	–	–	–
03C 07 7328	BOSCH GSS orbital sander	–	eShop	–
03D 07 7332	metabo Orbital sander	–	–	–
Battery voltage	V	18	–	–
Manufacturer’s designation		–	230AVE	SR 2185
Abrasive paper length (hook and loop)	mm	100	184	184
Abrasive paper width (hook and loop)	mm	110	92	92
Abrasive paper length (clamped)	mm	100	230	230
Abrasive paper width (clamped)	mm	110	92	92
Power consumption	W	–	300	210
Orbital stroke	mm	1.6	2.4	2
Speed of oscillation	min^{-1}	20000	22000	22300
Hole pattern			8-fold	
Weight	kg	1.1	2.4	1.5
maximum vibration to EN	m/s^2	<2.5	< 2.5	< 4

MIRKA Rotary sander

Mirka® DEROS RS 600 is designed for heavy-duty, coarse grinding work.
Despite its robust properties, this machine remains remarkably quiet during operation and offers a quiet and easy-to-manoeuvre solution for machining coarse materials.
- Powerful & lightweight.
- Very low noise level and minimal vibration.
- RPM LED display.
- When grinding with a protective pad, a cover (supplied) guides the dust in the correct direction.
- Safety in the spotlight: Switch with push button function.

Supplied with: Includes transport case.

Note: Suitable abrasive discs..... wheels can be found under No. 567803 and No. 567902.



07 7337

Type		RS600
07E 07 7337	Rotary sander **DEROS RS 600**	–
Power consumption	W	750
Speed	min^{-1}	700 – 2500
Backing pad ∅	mm	150
Weight	kg	1.8
maximum vibration to EN	m/s^2	<2,5

(Cordless) random orbital sander

07 7321 –
- Powerful **random orbital sander** with 440 W motor.
- Electronic speed pre-selection. **Hook and loop fastening** ensures quick and simple abrasive paper replacement.
- **2 pre-selection values for orbital stroke** 3.2 mm / 6.4 mm.
- Integral dust extraction through 6 hole universal backing pad. Connection for external extraction system.

07 7333 – Lightweight, handy grinder with perfect ergonomics for low vibrations when working.
- Vario (V) electronics ensure you work at speeds that are suitable for the material.
- Multi-hole sanding pad for effective extraction.

07 7335 – Random orbital sander with **brushless electric motor.**
- Low power consumption. Especially compact, quiet, lightweight and powerful.
- 20% more powerful motor than DEROS I, maintains constant speed under heavy load.
- WLAN connectivity and enhanced Bluetooth connectivity.
- RPM LED indicator on the speed controller + on/off button and lockable speed.
- Can be connected to an external extraction system.

Supplied with:

07 7321 – 150 mm ∅ backing pad for orbital sanders, additional handle, sanding disc, dust bag, extraction adapter.

07 7333 – "multi-hole" sanding pad with hook-and-loop fastener, hexagon key, textile dust bag.

Note:

07 7333 – Matching grinding disc article no. 567745.

07 7335 – Suitable backing pad article No. 567990 size 150.

07 7335/7321 – Suitable 6-hole abrasive disc, item No. 567775, 15-hole item No. 567558 and ABRANET item No. 567800.



07 7333_SXE3125



07 7321


07 7335_625
07 7335_650

Type			SXE3125	EX150ES	625	650
03D 07 7333	metabo	Random orbital sander	–	–	–	–
07A 07 7321	AEG		–	–	–	–
07E 07 7335	MIRKA	Random orbital sanders **DEROS II**	–	–	–	–
Speed of oscillation		min^{-1}	8000 – 24000	4000 – 10000	4000 – 10000	4000 – 10000
Orbital stroke		mm	3.0	3.2 / 6.4	2.5	5
maximum vibration to EN		m/s^2	4.9	8.5	<2.5	3.4
Power consumption		W	310	440	400	400
Backing pad ∅		mm	125	150	150	150
Weight		kg	1.5	2.8	1	1.1

Cordless random orbital sander

07 7317 – Flat cordless random orbital sander with ergonomic design and low weight for low-fatigue working.
- Pleasant, near-surface guidance of the grinder due to the low height.
- Stepless speed control ensure you work at speeds that are suitable for the material.

07 7319 – M18 FUEL™ cordless random orbital sander with 2.5 mm orbit and 12,000 rpm, which enables a fast and efficient material removal rate. The sander comes with a suction function as well as improved ergonomics and grip.

07 7325 – **Brushless cordless spot repair sander** with 5.0mm stroke for flexible cordless machining. For wet and dry grinding. Optimum ergonomic design.
- Quick disc change due to Quick-Lock system.
- Up to 16 hours operating time for industrial applications.
- Quick battery charge time 45 min.
- Low noise level and low vibration level.

Supplied with:

07 7317 – Includes sanding disc, 1 pc. sandpaper, dustbag, hexagon key, without battery and charger.

07 7319 – Supplied with 2×5.0 Ah Li-ion battery, dust bag, extraction adapter, extension adapter, 2× abrasive paper.

07 7325 – 2 × 10.8 V / 2.5 Ah battery, charger and 32 mm backing pad.

Note:

07 7325 – Suitable grinding discs can be found under No. 567803 and No. 567902 in Group 56.

07 7317/7319 – Suitable 8-hole abrasive disc item No. 567745 and ABRANET item No. 567802.



07 7317_SXALTX125



07 7319_M18FROS125



07 7325_AROS-B

Type			M18FROS125	SXALTX125	AROS-B
03D 07 7317	metabo	Cordless random orbital sander without rechargeable battery	–	eShop	–
03L 07 7319	Milwaukee	Cordless random orbital sander with rechargeable battery	eShop	–	–
07E 07 7325	MIRKA	Compact cordless random orbital sander **AROS-B 150NV**	–	–	eShop
Battery capacity		Ah	5	–	2.5
Battery voltage		V	18	18	10.8
Speed of oscillation		min^{-1}	6000 – 12000	4000 – 10000	–
Orbital stroke		mm	2.4	2	–
maximum vibration to EN		m/s^2	1.5	1.1	1.9
Backing pad ∅		mm	125	125	–
Weight		kg	1.9	1.1	0.6

Cordless straight die grinder

07 7258 – FUEL™ cordless straight die grinder (overall length 262 mm). **DRIVE-CONTROL** 3-speed setting.

07 7260 – Cordless compact grinder for 50 mm discs. Variable speed trigger switch and five different speed modes provide optimum speed control.

Supplied with:

07 7258 – 1 pc. 2.0 / 1 pc. 4.0 Ah battery packs, C12 C charger, 1 pc. each of collet 6 mm and 8 mm, tool bag.

07 7260 – Without battery and charger, 1 pc. 6 mm collet.

Note: Suitable grinding discs (CER) can be found from No. 554012, for cleaning discs and coarse cleaning discs see No. 554050; 554051; 554054 and 554055.

MB 12



07 7258



07 7260

B 12

Type		M12FDGS422	GWG12V-50
03L 07 7258	Milwaukee Straight die grinder **Cordless**	eShop	–
03C 07 7260	BOSCH Angled die grinder **Cordless**	–	eShop
Manufacturer's designation		M12FDGS-422B	GWG 12V-50 S
Number of rechargeable batteries contained		2	0
Type of rechargeable battery		Lithium-ion	
Battery capacity	Ah	2; 4	–
Battery voltage	V	12	
Speed range	min^{-1}	0 – 21000	5000 – 15000
maximum disc ∅	mm	50	
maximum collet ∅	mm	6 – 8	6
Weight	kg	1	0.53
Dead man's circuit		–	no

metabo Straight die grinder

The straight die grinders from Metabo® are among the slimmest and most compact machines on the market. The powerful motors of the mains-operated and cordless straight die grinders offer maximum productivity with high precision in all applications.

07 7264 – ■ Precise collar for stationary use.
■ Pre-selectable speed levels.
■ Electronic safety shutdown of the motor when the tool is blocked to ensure safe working.

Size GE710C – Particularly short, **compact design** for working on inner curves or other narrow points.

Size GE950GP – With **reduced speed range** for powerful grinding with flap grinding wheels.

07 7272 – Cordless straight die grinder with high (and variable) speed for heavy-duty grinding applications even in tight places.
■ Restart protection: Prevents unintentional startup after battery change.
■ Spindle lock for easy tool change.

Size GE710P; GE950GP – The straight grinders with a **long grinding spindle** are **ideal for deburring** or grinding weld seams in hard-to-reach places.

Supplied with:

07 7264 Size GE710C – Collet 6 mm, 2 open-ended spanners.

Size GE710P – Collet 6 mm, rubber protection cap, 1 open-ended spanner.

Size GE950GP – Collet 6 mm, rubber protection cap, additional handle, 1 open-ended spanner.

07 7272 – **Without battery and charger**, including collet 6 mm, rubber cap, dust filter, open-ended spanner.

Note: See No. 073870 – No. 073890 for suitable batteries and chargers.



07 7264_GE710C



07 7264_GE710P



07 7264 _ GE950GP

CAS 18



07 7272_ GVB18LTXBL

Type		GE710C	GE710P	GE950GP	GVB18LTXBL
03D 07 7264	Straight die grinder	–	–	–	–
03D 07 7272	Cordless straight die grinder without rechargeable battery	–	–	–	eShop
Manufacturer's designation		GE 710 Compact	GE 710 Plus	GE 950 G	GVB18LTX-BL11-28
Number of rechargeable batteries contained		–	–	–	0
Battery voltage	V	–	–	–	18
Speed range	min^{-1}	13000 – 34000	10000 – 30500	2500 – 8700	8000 – 28000
maximum collet ∅	mm	6			
Weight	kg	1.4	1.6	1.7	1.4
Power consumption	W	710	710	950	–
electronic speed pre-selection		yes			
maximum vibration to EN	m/s^2	6.8	5.6	< 2.5	–

Straight die grinder

07 7263 Size GGS18V23 – **Cordless straight die grinder** with sturdy and heavy-duty brushless motor.
- with long neck and performance equal to that of a main cable model (equivalent to 1000 Watt).

07 7265 – Handy compact straight die grinder for versatile grinding operations.
- **Constant-speed electronics** maintain constant speed even at high loads.
- New clamping system for zero-play fixing of the grinding points for precise working.
- **Soft start** and **Kick-Back stop:** If the machine senses a jam, it switches off immediately.
- Switch-off carbon brushes for high protection of the motor.
- Long working life thanks to **direct cooling** and double **sealed ball bearings.**
- 6-speed pre-selection to cater for different materials.

Size GGS28CE – ■ **With short spindle neck,** permits stationary use (43 mm clamp).

Size GGS30LS – Ideal for demanding metalwork and for grinding stone, even in confined spaces.

Size GGS8CE – ■ **With long slim grinding spindle** – particularly suitable for use in inaccessible places.

Size GGS8CE – ■ **High-torque** 750 Watt motor for a high rate of progression of the work.
■ **Reduced speed,** suitable also for grinding stainless steel.

07 7267 Size GGS18V-20 – Compact **cordless straight grinder** with brushless motor, overload protection and restart protection.

07 7271 Size GSL600E – **Universal** straight die grinder with electronic speed control.
- Extra long grinding spindle and slender thermally insulated gearbox neck for working where access is difficult.
- Robust metal gearbox with double bearing. 4 m power cable.

07 7280 Size M18FDGRB – Powerful 18 V / 5.0 Ah cordless straight grinder with brushless POWERSTATE™ motor.
- REDLINK PLUS™ electronics with digital overload protection, for more power.
- REDLITHIUM-ION™ rechargeable battery with single cell monitoring.
- Universal holder for all standard 6 and 8 mm accessories.
- Very slim design for increased user comfort.
- Interchangeable dust grilles protect the motor and increase its service life.
- Spindle neck with rubber pad for extra user comfort.
- Safeguard against accidental restart.

Supplied with:

07 7263 Size GGS18V23 – **Without battery, without charger.** Supplied with 6 mm collet, 2× AF 13 and AF 19 tightening wrenches, L-BOXX.

07 7265 Size GGS8CE – Including collet 6 mm, 2 single open ended spanner AF 13 and AF 19.

07 7267 Size GGS18V-20 – **Without battery, without charger.** Including 2 open-ended spanners AF 19.

07 7271 Size GSL600E – Includes 6 mm ∅ collet, tightening spanner AF 15/17.

07 7280 Size M18FDGRB – Supplied with charger, 6 mm collet, 8 mm collet, open ended spanners AF 15 / AF 17, 2× dust-protection grilles, HD box.

Size GGS28CE; GGS30LS – Supplied with 6 mm collet, 2× AF 19 tightening wrenches.


_GGS28CE


_GGS30LS


_GGS8CE

B 18
L-BOXX


_GGS18V23

B 18


_GGS18V-20


_GLS600E

MB 18
HD


_M18FDGRB

Type			GGS28CE	GGS30LS	GGS8CE	GGS18V23	GGS18V-20	GSL600E	M18FDGRB
03C 07 7265		Straight die grinder	–	–	–	–	–	–	–
03C 07 7263	BOSCH	Straight die grinder **Cordless**	–	–	–	eShop	–	–	–
03B 07 7267			–	–	–	–	eShop	–	–
07A 07 7271	AEG	Straight die grinder	–	–	–	–	–	–	–
03L 07 7280	Milwaukee	Straight die grinder **Cordless**	–	–	–	–	–	–	eShop
Manufacturer's designation			GGS 28 CE	GGS 30 LS	GGS 8 CE	GGS18 V-23 LC	GGS 18V20	GSL600E	M18 FDGRB
Battery capacity		Ah	–	–	–	–	–	–	5
Battery voltage		V	–	–	–	18	18	–	18
Speed range		min^{-1}	10000 – 28000	7000 – 33000	2500 – 8000	22000	24000	10000 – 29000	27000
maximum collet ∅		mm	6	6	6	8	8	6	6 – 8
Weight		kg	1.4	1.7	1.7	1.8	1.2	1.9	2
maximum vibration to EN		m/s^2	8.0	3	< 2.5	3.5	–	3	–
Power consumption		W	650	750	750	–	–	600	–
electronic speed pre-selection			yes	yes	yes	no	no	yes	–

Straight die grinder

- Exceptionally handy straight die grinder.
- Quiet running due to multiple spindle bearings.
- Powerful motor with high cutting power.
- Due to speed regulation, outstandingly suitable for cutting stainless steel, and also for grinding and polishing work.
- Suitable for grinding points and carbide milling cutters.

Size 722324; 722325; 722322 – Universal straight die grinder for working where access is difficult. Handy, slim neck enables internal grinding.

Size 722317; 722322 – Powerful, handy straight die grinder with **short spindle neck.** Also suitable for semi-stationary use.

Size 722322 – With FEIN **ErgoGrip** for non-fatiguing work thanks to ergonomically designed handle.

Supplied with:

Size 722324–722320 – Collet ∅ 6 mm, 2 chuck wrenches 13 AF and 17 AF.

Size 722322 – Including collet ∅ 8 mm, 2 chuck wrenches 13 AF and 17 AF.

Note:	Straight die grinders are approved for use with burrs up to a ∅ of 12 mm.



Type		722324	722325	722317	722319	722320	722322
03F 07 7261	Straight die grinder	eShop	eShop	eShop	eShop	eShop	eShop
Manufacturer's designation		GSZ4-280EL	GSZ4-90EL	GSZ8-280PE	GSZ8-280PEL	GSZ8-90PEL	GSZ11-320PERL
Power consumption	W	350	350	750	750	710	1010
Speed range	min^{-1}	13000 – 28000	3500 – 8500	8500 – 28000	8500 – 28000	2500 – 9000	9500 – 32500
maximum collet ∅	mm	6	6	6	6	6	8
Weight	kg	1.5	1.5	1.4	1.8	1.8	2.1
maximum vibration to EN	m/s^2	< 2.5					
Cable length	m	4					
electronic speed pre-selection		yes					

B 18 L-BOXX

AMP Share Powered by BOSCH

- Dust-resistant and powerful cordless straight die grinder.
- Maintenance-free brushless EC motor with innovative cooling ribs for optimum cooling, including temperature monitoring.
- Ideal for every application. Optimum speeds, tailored to a large number of abrasives and materials thanks to stepless, electronic speed pre-selection.

Size 71230461 – Compact with short spindle neck.

Size 71230561; 71230661 – Long spindle neck. The long, slim neck makes deep plunging into workpieces possible (for example, internal grinding of pipes).

Supplied with: Supplied with 6 mm ∅ collet, 1 pc. 13 AF and 1 pc. 17 AF spanner, carrying case. **Without battery and charger.**

Note:	Straight die grinders are approved for use with burrs up to a ∅ of 12 mm. Suitable batteries can be found under No. 073856 – 073858 or starter set under No. 073863 – 073867.


_71230461

Type		71230461	71230561	71230661
03F 07 7259	Straight die grinder **Cordless**	eShop	eShop	eShop
Manufacturer's designation		AGSZ 18-280 BL AS	AGSZ 18-280 LBL AS	AGSZ 18-90 LBL AS
Battery voltage	V	18		
Speed range	min^{-1}	9000 – 28000	9000 – 28000	2900 – 9000
maximum collet ∅	mm	8		
Weight	kg	1.4	1.6	1.6
maximum vibration to EN	m/s^2	< 2.5		
electronic speed pre-selection		yes		


_71230561
_71230661
Similar to the illustration

Collet ∅	mm	6	8	suitable for
03G 07 7268	Collet for straight grinder	eShop	eShop	077261; 077262



L-BOXX

AMPShare Powered by BOSCH

Oscillator – multi-tools



Market-leading oscillating tools in three different performance classes (SuperCut, MultiMaster, MultiTalent) in a new version with **Starlock tool arbor** (improved torque transmission of up to 35 % greater rate of progression of the work).

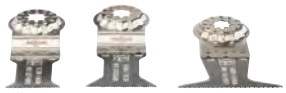
- Virtually unlimited application possibilities (sawing, grinding, scraping, cutting, rasping) due to the oscillating mode of movement (low generation of dust).
- **Stepless electronic speed control** for optimum working.
- Very high quality and stability thanks to the **metal gearbox** and use of ball bearings and needle bearings throughout.
- Optimum handling due to ergonomic design with soft-grip inlays and low weight.

Thanks to the Starlock Plus tool arbor, you have access to around 100 FEIN accessories from the Starlock and Starlock Plus performance classes.
MultiTool for interior work and renovation with the basic equipment for sawing wood, metals, plasterboard and plastics.

Supplied with: 1× plastic tool case, 1× E-Cut long-life saw blade (35 mm), 1× E-Cut long-life saw blade (65 mm), 1× E-Cut universal saw blade (44 mm).



07 7824_72297264



Type		72297264
03F 07 7824	MultiMaster MM 300 Plus Start	eShop
Manufacturer's designation		MM 300 Plus Start
Toolholder		Starlock, Starlock Plus
Speed of oscillation	min^{-1}	11000 – 20000
Amplitude (oscillation movement)	degrees	2 × 1.6
Power consumption	W	250
Weight	kg	1.4
Cable length	m	5

Powerful MultiTool for rapid work progress (for interior work and renovation) with more than 30 accessories for sawing wood and metal, cutting tiles, and more.

Supplied with: 30-piece accessories set, dust extractor and L-BOXX.
07 7816 – Includes charger and 2× AMPShare Li-ion battery packs (18 V / 4 Ah).

Note:
07 7816 – See No. 073851 – 073858 for suitable batteries.



07 7814_72296770

Type		72296770	71293861
03F 07 7814	MultiMaster MM 500 Plus Top	eShop	–
03F 07 7816	MultiMaster AMM 500 Plus Top **Cordless**	–	eShop
Manufacturer's designation		MM 500 PLUS TOP	AMM 500 PLUS TOP
Toolholder		Starlock, Starlock Plus	
Battery voltage	V	–	18
Battery capacity	Ah	–	4
Speed of oscillation	min^{-1}	10000 – 19500	11000 – 18500
Amplitude (oscillation movement)	degrees	2 × 1.7	
Power consumption	W	350	–
Weight	kg	1.4	1.8
Cable length	m	5	–

B 18



07 7816_71293861

Most suitable MultiTool for rapid work progress (for interior work and renovating) with bi-metal saw blade for wood, metal and plastics. Thanks to the StarlockMax arbor, you have access to around 180 FEIN accessories from the Starlock, StarlockPlus and StarlockMax performance classes.

Supplied with:
07 7804 – 1× E-Cut universal saw blade (44 mm), L-BOXX.
07 7806 – 60-piece accessory set, charger, 2× AMPShare Li-ion rechargeable battery (18 V / 4 Ah), dust extractor, L-BOXX.

Note:
07 7806 – See No. 073851 – 073858 for suitable batteries.



07 7804_72296863

Type		72296863	71293661
03F 07 7804	MultiMaster MM 700 Max	eShop	–
03F 07 7806	MultiMaster MM 700 Max Top **Cordless**	–	eShop
Manufacturer's designation		MM 700 MAX	AMM 700 Max TOP
Toolholder		StarlockMax	
Battery voltage	V	–	18
Battery capacity	Ah	–	4
Speed of oscillation	min^{-1}	10000 – 19500	
Amplitude (oscillation movement)	degrees	2 × 2.0	
Power consumption	W	450	–
Weight	kg	1.6	1.8
Cable length	m	5	–

B 18



07 7806_71293661

Accessories for MULTIMASTER MM, AMM / MultiTalent / SuperCut

Sawing, parting off, filing with SLM mounting only for Fein MM 700 and AMM 700

07 7884 – E-Cut long life saw blade, bi-metal with offset tooth profile for wood.
07 7885 – E-Cut diamond saw blade for perfectly clean cut edges in CRP/GRP, without delamination.
07 7893 – E-Cut **Carbide Pro** TiN-coated solid carbide plunging saw blade 75x35 mm with extremely high wear resistance.

Suitable for: Only **Fein MM 700 and AMM 700,** No. 077805 and No. 077804.

Width of cut mm		32	42	44	35	Contents	for material
03G 07 7884	E–Cut saw blade, bi-metal, long-Life	eShop	eShop	–	–	1	Wood, plastics
03G 07 7885	E–Cut saw blade, diamond	–	–	eShop	–	1	CRP, GRP
03G 07 7893	E–Cut saw blade, Carbide Pro	–	–	–	eShop	1	Wood, CRP, GRP
Toolholder		SLM					


07 7884


07 7885

Carbide-PRO

07 7893

Extra long working life. Suitable for very hard epoxy or cement joints.
07 7887 – Extra thin version. Cutting width 1.2 mm.

Suitable for: Only MULTIMASTER MM 700 and AMM 700 with StarlockMAX arbor.

			for material
03G 07 7886	E-Cut saw blade, diamond, 2.2 mm	eShop	Marble, epoxy resin, cable tray joints
03G 07 7887	E-Cut saw blade, diamond, 1.2 mm	eShop	Marble, epoxy resin, cable tray joints
Toolholder		SLM	


07 7887

For roughing, can be used with dust extraction and perforated.

Suitable for: Only MULTIMASTER MM 700 and AMM 700 with StarlockMAX arbor.

			Toolholder	Material
03G 07 7888	Carbide rasp, 3-square	eShop	SLM	Concrete, wood


07 7888

Sawing, cutting, filing with SL and SLP holder

Suitable for: **All FEIN multi-tools and all other popular multi-tools on the market.**


07 7840 / 44 / 50 / 56 / 57


07 7870

Cutting width mm		10	20	30	35	44	50	65	Contents	for material
03G 07 7844	E–Cut saw blade, standard	–	–	–	eShop	–	–	eShop	1	Wood, plastics
03G 07 7840	E-Cut saw blade,standard, 5 pieces	–	–	–	eShop	–	–	eShop	5	Wood, plastics
03G 07 7870	E–Cut saw blade, curved	–	–	–	eShop	–	eShop	eShop	1	Wood, plastics
03G 07 7847	E–Cut saw blade, bi-metal, Long-Life	eShop	eShop	–	eShop	–	–	eShop	1	Wood, plastics
03G 07 7850	E–Cut saw blade, bi-metal, Precision	–	–	–	eShop	–	–	eShop	1	Wood, plastics
03G 07 7856	E–Cut saw blade, bi-metal, Universal	–	–	–	–	eShop	–	–	1	Metal, aluminium, wood, plastic etc.
03G 07 7857	E–Cut saw blade, bi-metal, Fine	–	–	eShop	–	–	–	–	1	Aluminium, GRP, plastics
03G 07 7858	E-Cut saw blade, carbide, SLP mount	–	–	–	eShop	–	–	–	1	CRP, GRP
03G 07 7849	E-Cut saw blade, diamond, SLP mount	–	–	–	eShop	–	–	–	1	CRP, GRP
03G 07 7891	E–Cut saw blade, Carbide Pro	–	–	–	eShop	–	–	–	1	Wood, CRP, GRP
Toolholder (07 7844, 07 7840, 07 7847, 07 7850, 07 7856, 07 7857, 07 7891)		SL	SL	SL	SL	SLP	–	SLP		
Toolholder (07 7870)		–	–	–	SL	–	SL	SL		
Toolholder (07 7858, 07 7849)		–	–	–	SLP	–	–	–		


07 7847


07 7858


07 7849

Carbide-PRO

07 7891

Sawing, cutting, filing with SL and SLP holder

07 7848 – 6 pieces, E-Cut plunging saw blades for sawing wood and metal.

Suitable for: **All FEIN multi-tools and all other popular multi-tools on the market.**

Supplied with:

07 7848 – 2 pcs. each of E-Cut Long-Life saw blades (50×35 mm, 50×65 mm), 1 pc. each of E-Cut Universal saw blade (55×28 mm, 55×44 mm).

07 7859 – 1 pc. general-purpose in width 44 mm as well as 1 pc. each of long-life in 35 mm and 65 mm.



07 7848



07 7859

Version		SET
03G 07 7848	E-Cut saw blade set, wood + metal **6 pieces**	eShop
03G 07 7859	E-Cut saw blade set, MiniCut **3 pieces**	eShop
Toolholder		SLP

Suitable for: **All FEIN multi-tools and all other popular multi-tools on the market.**

Saw blade ∅ mm		75	85	90	100	Contents	for material
03G 07 7834	Saw blade, solid HSS	–	eShop	–	–	1	Sheet metal up to 1mm, plastics, GRP, wood, sealant, non-ferrous metals
03G 07 7835	Saw blade, solid HSS, 5 pieces	–	eShop	–	–	5	Sheet metal up to 1mm, plastics, GRP, wood, sealant, non-ferrous metals
03G 07 7836	Segmented saw blade, solid HSS	–	eShop	–	–	1	Sheet metal up to 1mm, plastics, GRP, wood, sealant, non-ferrous metals
03G 07 7838	Saw blade, bi-metal HSS	–	eShop	–	eShop	1	Sheet metal up to 1mm, plastics, GRP, wood, sealant, non-ferrous metals
03G 07 7839	Saw blade, bi-metal HSS, 5 pieces	–	eShop	–	eShop	5	Sheet metal up to 1mm, plastics, GRP, wood, sealant, non-ferrous metals
03G 07 7827	Segmented saw blade, bi-metal HSS	–	–	–	eShop	1	Sheet metal up to 1mm, plastics, GRP, wood, sealant, non-ferrous metals
03G 07 7868	Segmented saw blade, diamond	–	–	eShop	–	1	CRP, GRP
03G 07 7828	Segmented saw blade, carbide	–	–	eShop	–	1	CRP, GRP
03G 07 7865	Segmented saw blade, carbide, 2.2 mm	eShop	–	eShop	–	1	Tile grout, plaster, porous concrete
03G 07 7829	Segmented saw blade, carbide, 1.2 mm	eShop	–	eShop	–	1	Tile grout, plaster, porous concrete
03G 07 7867	Segmented saw blade, diamond, 2.2 mm	eShop	–	eShop	–	1	Marble, epoxy resin, cable tray joints
03G 07 7830	Segmented saw blade, diamond, 1.2 mm	eShop	–	eShop	–	1	Marble, epoxy resin, cable tray joints
Toolholder		SL	SL	SLP	SLP		



07 7834 / 35 07 7836

07 7838 / 39 07 7827

07 7868 07 7828

07 7829 / 65 07 7830 / 67

There's more in it for you

FEIN original accessories are suitable for use anywhere, any time.

	STARLOCK	STARLOCK PLUS	STARLOCK MAX
Compatibility	■ All Fein devices with SL, SLP, SLM mounting. ■ Old generation Fein Multimaster and MultiTalent (–03/2016). ■ Old generation SuperCut (–03/2016) only with adapter. ■ Bosch, Milwaukee, AEG, Makita, Hitachi, Metabo, Einhell, Ryobi, Skill, etc.	■ All Fein devices with SLP, SLM mounting. ■ Old generation Fein Multimaster and MultiTalent (–03/2016). ■ Old generation SuperCut (–03/2016) only with adapter. ■ Bosch GOP 30-28, 40-30, 18V-28 PMF 350 CES, 55-36.	■ All Fein devices with SLP mounting (SuperCut). ■ Old generation SuperCut (–03/2016) only with adapter. ■ Bosch GOP 55-36.



Open the clamping lever, eject the accessory …

… Close the clamping lever …

… Position the new accessory and click it into place … done!



Sanding, polishing with SC and SLP holder

07 7851 – For rough cutting of putty, tile cement, cement, stone and wood. Triangular shape, edge length 80 mm, perforated, can also be used with vacuum dust extraction.

07 7852 – For rough cutting of putty, tile cement, cement, stone and wood.
For use in very narrow and deep locations, in corrugations, slots, openings and folds.
Also suitable for mould making, on curvatures and in hollows.

Suitable for: **All FEIN multi-tools and all other popular multi-tools on the market.**



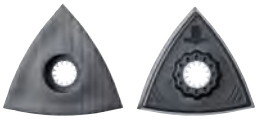
07 7851



07 7852



07 7864



07 7862



07 7876

			Toolholder
03G 07 7851	Carbide rasp 3-square	eShop	SL
03G 07 7852	Carbide rasp round	eShop	SLP
03G 07 7862	Set of hook and loop sanding pads, unperforated, 2 pieces	eShop	SL
03G 07 7864	Set of hook and loop sanding pads, sanding finger, 2 pieces	eShop	SL

Grit		40	60	80	120	180	240	suitable for
03G 07 7846	Set of hook and loop abrasive sheets, unperforated, 50 pieces	eShop	eShop	eShop	eShop	eShop	eShop	077862
03G 07 7876	Set of hook and loop abrasive sheets, sanding finger, 20 pieces	–	eShop	–	eShop	–	–	077864

63-piece accessory set, for sanding in corners and on edges.

Suitable for: **All FEIN multi-tools and all other popular multi-tools on the market.**

Content: 2× sanding pads, unperforated (80 mm), 1× sanding finger,
10× each sanding sheets K60, K80 and K120 for sanding pad and sanding finger.



07 7869

		SET	Toolholder
03G 07 7869	Sanding set, Best of Starlock SANDING	eShop	SL

For polishing metal parts, and for polishing and creation of special effects on stone and stone products.
Plastic carrier plate to avoid damage and marks on the workpiece.

Suitable for: **All FEIN multi-tools and all other popular multi-tools on the market.**



07 7861

			Toolholder
03G 07 7861	Felt polishing plate set, 2 pieces	eShop	SL

Cutting, scraping

For removal of stubborn old paint, adhesive residues, carpet flooring, tile adhesive and underfloor coatings.

Suitable for: **All FEIN multi-tools and all other popular multi-tools on the market.**



07 7874_61

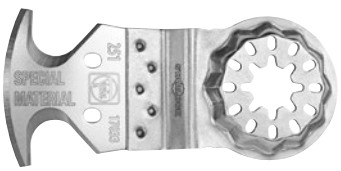


07 7874_68

Scraper length	mm	61	68
03G 07 7874	Scraper fixed	eShop	eShop
Toolholder		SL	SLP

For cutting, carpets, PVC floor covering, cardboard, bitumen shingles and roofing felt. With 3 cutting edges.

Suitable for: **All FEIN multi-tools and all other popular multi-tools on the market.**



07 7889

Type	251210
03G 07 7889 Multi-purpose knife, 3 mm blades	eShop
Toolholder	SL

Polisher / burnishing machine

Polisher

- Stepless electronic **speed control** for optimum tool use.
- With spigot also applicable as a fully functional **burnishing machine** for longitudinal jobs.
- Very high **speed stability** at any load over the entire range.
- Automatic **start inhibit** against uncontrolled restart after power supply interruption.

Optional extras: Standard set for flat surfaces, No. 077718 size F, burnishing set for profiles, No. 077718 size S, tube set, No. 077718 size R.


_72214900

Type		72214900	72214950
03F 07 7712	Angle polisher WPO	eShop	eShop
Manufacturer's designation		WPO 14–25 E	WPO starter set – stainless steel
Power consumption	W	1200	
Speed range	min⁻¹	900 – 2500	
Toolholder		M14	
maximum polishing tool ∅	mm	250	
Weight	kg	2.4	
maximum vibration to EN	m/s²	3.5	


_72214950

Size M18FAP180 – M18 FUEL™ **cordless polisher** with 8-stage speed pre-selection (range from 360 – 2200 rpm).
Electronic speed control with soft start for optimum control.

Supplied with:

Size M18FAP180 – Supplied with 2 pcs. batteries 18 V / 5 Ah, charger, AVS additional handle, grasp handle and polishing pad.

Type		M18FAP180
03L 07 7773	Cordless polisher	eShop
Manufacturer's designation		M18 FAP180-502X
Power consumption	W	1400
Speed range	min⁻¹	360 – 2200
Toolholder		M14
maximum polishing tool ∅		180
Weight	kg	2


07 7773_M18FAP180

metabo Burnishing machine / fillet weld grinder

07 7754 Size SE17-200 – High-performance burnishing machine with powerful 1700-watt motor for grinding, satin finishing, brushing and high-gloss polishing.

- Slim grip area for optimal guidance.
- Metabo Marathon motor with patented dust protection to ensure a long service life.
- Spindle lock and tool-free clamping nut for quick accessory changes.
- Quick and tool-free adjustment of the guard and additional handle.
- Smooth-running, form-fitting mounting arbor for an even surface finish.
- Overload protection, soft start and restart protection.
- Switch-off carbon brushes to protect the motor.
- Vario-Tacho-Constamatic (VTC) full-wave electronics with adjustment wheel: for working with material-appropriate speeds that remain constant under load.

07 7765 Size KNSE9-150 – Very flat 950-watt fillet weld grinder for machining stainless steel fillet welds in tight spaces.

- Double-reduction gear for efficient working.
- Removable protective hood, can be adjusted without using tools.
- Overload protection, soft start, restart protection.
- Switch-off carbon brushes to protect the motor.
- Vario-Constamatic (VC) full-wave electronics with adjustment wheel: for working with material-appropriate speeds that remain virtually constant under load.


077754_se17-200

Supplied with:

07 7754 Size SE17-200 – With additional handle.

07 7765 Size KNSE9-150 – Protective hood, additional handle,
1 pc. fleece compact disc (150×6×25.4 mm; medium),
1 pc. fleece compact disc (150×6×25.4 mm; very fine),
2 pcs. fleece compact discs (150×3×25.4 mm; medium),
1 pc. polishing file including 2 abrasive paper strips and sheet metal case.


077765_KNSE9-150

Type		KNSE9-150	SE17-200
03D 07 7754	Burnishing machine	–	–
03D 07 7765	Fillet weld grinder	–	–
Manufacturer's designation		KNSE 9-150	SE 17-200 RT
Power consumption	W	950	1700
Speed range	min⁻¹	900 – 3800	800 – 3000
Torque	Nm	–	17
Toolholder		–	M 14
Disc ∅	mm	150	–
Sander roller ∅	mm	–	100 – 200
Sander roller length	mm	–	50 – 100
Weight	kg	2.7	2.9
Cable length	m	4	

metabo Belt file

Size BFE9-20 – Powerful, compact belt file for grinding, burnishing and deburring in hard-to-reach places.

- Vario-Constamatic (VC) full-wave electronics with adjustment wheel: for working with material-appropriate speeds that remain virtually constant under load.
- Linishing attachment can be pivoted through 270° without using tools, enabling it to adjust to any working position.
- Profiled drive roller: reduces slipping of the linishing belt.
- Linishing belt can be changed without using tools; adjustable belt guide.
- Electronic soft start.

Supplied with:

Size BFE9-20 – Additional handle, sheet metal carrying case, linishing belt arm (6, 13, 19 mm), 10 linishing belts (6×457 mm; P60), 10 linishing belts (6×457 mm; P120), 10 linishing belts (19×457 mm; P60), 10 linishing belts (19×457 mm; P120), 4 non-woven belts.



Type		BFE9-20
03D 07 7720	Electronic belt file	–
Manufacturer's designation		BFE 9-20
Power consumption	W	950
maximum belt speed	m/s	9 – 20
Tape width	mm	6 – 19
Band length	mm	457
Weight	kg	1.8
Cable length	m	4

(Cordless) belt files

High performance belt file with **comprehensive starter set.** Covers all important applications, with access to corners, edges, pipes, and profiles.

- Very high metal removal rates **in very small spaces.**
- Optimal speeds for grinding belts, fleece belts and polishing belts, using **adjustable speed range.**
- Maximum reach 165 mm.
- Belt widths from 3 to 20 mm.
- **Reliable belt guidance,** even for the narrowest belts.

Supplied with: 1 belt file BF 10-280 E in a plastic case, 3 grinding arms, 10 each grinding belts 3, 6, and 20 mm (120 grit) and 5 fleece belts 6 mm (medium grit).

Note:	Metal contact roller available on request.



Type			72280551
03F 07 7716		Hand-held belt file BF10-280E **Starter set**	eShop
Manufacturer's designation			BF 10-280E
Power consumption		W	800
Speed range		min^{-1}	10000 – 28000
Tape width		mm	3; 6; 20
Band length		mm	520
Weight		kg	2.1
maximum vibration to EN		m/s^2	< 2.5

MB 12

Extremely light cordless belt file (only 1.0 kg or 1.1 kg with a 2 Ah battery) for fatigue-free working.

- Two speed modes + variable speed controller.
- Reverse mode – allows the user to select the belt orientation to control the direction of sparks/chips.
- 360° head adjustment without the need for tools.
- One-handed operation – enables the user to work in confined areas and is ideal for overhead working.

Supplied with: Without battery and without charger.

Note:	See 073814 ff. for suitable batteries and chargers.



Type			M12FBFL10	M12FBFL13
03L 07 7717	Milwaukee	Cordless belt file	eShop	eShop
Manufacturer's designation			M12 FBFL10	M12 FBFL13
Type of rechargeable battery			Lithium-ion	
Battery voltage		V	12	
Speed range			0 – 14500	
Belt speed		m/min	0 – 1110	0 – 1105
Linishing belt width		mm	10	13
Linishing belt length			330	457
Weight		kg	1	1.1
maximum vibration to EN		m/s^2	2.16	1.69

Pipework linishers

Pipework linisher with **extremely high stock removal rate.**
Ideal for **working on pipes and pipe elbows**, cleaning up, removal of colouration, grinding weld seams, preparation for polishing, and polishing to mirror finish.
Speed range variable for grinding, linishing, and polishing belts. **Improved belt guidance.**
Tube grinder for narrow radii, continuously adjustable speed for grinding, satin finishing and high-gloss polishing.
Minimum wall distance 50 mm.

Size 72227561 – The starter set covers all standard applications for pipes and elbows: cleaning, removal of mill scale and scratches, creating desired grinding pattern, best satin finish.

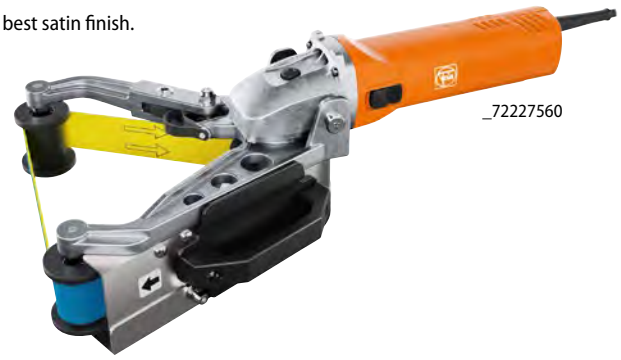
Supplied with:

Size 72227560 – Pipework grinder FEIN RS 17-70 E.

Size 72227560 – Supplied without accessories in a box.

Size 72227561 –
- Pipework grinder FEIN RS 17-70 E.
- 2×10 abrasive belts, 20×815 mm, P120 / P180.
- 2×10 abrasive belts, 40×815 mm, P120 / P180.
- 5 fleece belts, 20×820 mm, very fine.
- 1 metal tool case.

Note: Linishing belts can be found from No. 558011.



_72227560

Type		72227560	72227561
03F 07 7715	Pipework linisher	eShop	eShop
Speed range	min⁻¹	2700 – 8500	
Manufacturer's designation		RS 17-70 E	RS17-70 E Start-Set
Power consumption	W	1700	
Tape width	mm	20; 40	
Band length	mm	815	
pipework ∅ for linishing	mm	8 – 80	
Weight	kg	4.64	
maximum belt speed	mm/s	9 – 27	



_72227561

MB 18 MHB 18

Cordless linishing machine

Powerful M18 cordless belt linisher with brushless POWERSTATE™ motor for quick material removal and reduced heat generation.
- Equivalent alternating current power 900 watt.
- Running time up to 20 minutes with a 5.0 Ah battery.
- The tool-less adjustment knob permits optimum handling of the grinder for all applications.
- "Flush To Wall" allows the linishing machine to be used close to a vertical surface or in narrow corners.
- Can be used with dust bag or external extraction.

Supplied with: Without battery and without charger, including dust bag, in a box.

Note: Suitable replacement batteries and chargers can be found under No. 073808 – No 073840. Suitable linishing belts can be found under No. 558014.



_M18FBTS75

Type		M18FBTS75
03L 07 7331	Cordless linishing machine	eShop
Type of rechargeable battery		Lithium-ion
Battery voltage	V	18
Belt speed	m/min	230 – 410
Grinding area	mm	90 × 135
Weight without battery	kg	3.9
Linishing belt width	mm	75
Linishing belt length		457

GKS belt linishing machines

Powerful compact linishing machine for deburring metal.
- Very high operator safety, thanks to control of flying sparks.
- Very cost-effective as a procurement proposition, with optimum price-performance ratio.
- For immediate use. No setting up or installation necessary.

Supplied with: Supplied with 1x linishing belt 75×2000mm (K 36 R).

2/3 less space required than on conventional machines, thanks to minimalist design concept

Powerful motor for high material removal rate



_790503004

Type		790502004	790503004	790502002
03H 07 7608	GKS compact linishing machine	–	–	(eShop)
Manufacturer's designation		GKS 75		
AC supply voltage	V	400	400	230
Power consumption	W	1500	3000	1500
maximum speed	min⁻¹	3000		
Tape width	mm	75		
Band length	mm	2000		
Weight	kg	45		

Belt linishing machines

GX linishing machines

Powerful linishing machines with modular extensions for small series production.

- Removable dust collector.
- Connection facility to external extraction system.

Size 790132 – With two pre-selectable speeds, optimum for linishing stainless steel (1500 rpm) and other metals (3000 rpm).

Note: For linishing belts see No. 558310 and No. 558453-56.



_790131

Type		790131	790132
03H 07 7610	Linishing machine GX	(eShop)	(eShop)
Manufacturer's designation		GX 75	GX 75 2H
maximum speed 1st speed	min^{-1}	3000	1500
maximum speed 2nd speed	min^{-1}	–	3000
Tape width	mm	75	
Band length	mm	2000	
Weight	kg	75	

GIS linishing machines (without modular design); GI, GI 2H (modular design)

GRIT GI linisher range for demanding industrial applications: **Sturdy design**, with **extremely power motors**.

- High efficiency due to best removal rate.
- Powerful 4 kW motor (400 V, 3 ~, 50 Hz).
- Patented belt-tensioning system,
- **High operational safety:** Stop, linishing gap, and eye protection are individually adjustable.

07 7612 – The ideal solution for all those who need a linishing machine only (i.e. without any expansion options). Sturdy compact design and easy operation ensure first-class results. Easily adjustable working height, chip collector.

07 7613 – The **basic module** for industrial belt linishing.

- Easy to use, low-vibration running.
- With **constant** speed for high metal removal rates.
- Can be connected to a central vacuum system.

Application:

07 7613 – As a **linishing machine**, **when mounted on machine mount** No. 077614, **with extension modules for radial, longitudinal, surface, and centreless grinding and deburring.**

Supplied with:

07 7612 – Machine base, CEE plug (16 A), 1 linishing belt 2000 mm; 36 grit.

07 7613 – CEE plug (16 A), 1 linishing belt.

Note: For linishing belts see No. 558310 ff and No. 558453-56.



_790229

Type		790229	790230
03H 07 7612	Linishing machine GIS	(eShop)	(eShop)
Manufacturer's designation		GIS 75	GIS 150
maximum speed	min^{-1}	3000	
Tape width	mm	75	150
Band length	mm	2000	
Weight	kg	74	86



_790201

Type		790201	790202	790204	790205
03H 07 7613	Linishing machine GI	(eShop)	(eShop)	(eShop)	(eShop)
Manufacturer's designation		GI 75	GI 75 2H	GI 150	GI 150 2H
maximum speed 1st speed	min^{-1}	3000	1500	3000	1500
maximum speed 2nd speed	min^{-1}	–	3000	3000	3000
Tape width	mm	75	75	150	150
Band length	mm	2000			
Weight	kg	65	65	82	82



_790204

Machine mount GIB, suction mount GIBE

The working height can be adjusted easily by means of gas pressure springs. Great stability due to robust construction.

Size 99001004 –

- Machine mount with integral motor for highly effective **double extraction.**
- Cassette filter for effective air cleaning
- The flexible, heat-resistant **steel extraction tubes** and the integral **metal chip collection box** are resistant to red-hot sparks.



_99001003

_99001004

Type		99001003	99001004
03H 07 7614	Machine mount	(eShop)	(eShop)
Manufacturer's designation		Machine mount GIB	Suction mount GIBE
Power consumption	W	–	350
Weight	kg	17	55

The complete Rema catalogue range (deburring, grinding, and cutting machines) and customised special machines are available on request.

Bench grinder

Single-phase AC bench grinder with a **low-noise and maintenance-free motor. Generously-sized eye protection shields** ensure user safety. Workpiece rests can be **adjusted without tools.**

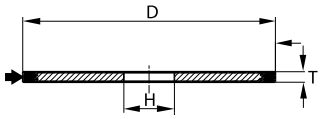
Supplied with: With regular aluminium oxide grinding wheels NK36 and NK60.

Note: Suitable grinding wheels can be found under No. 596100 and No. 568733.
Suitable machine stand No. 077513 size DS04 with adapter plate No. 077515 size ECO.



07 7502

Type			W150	W175
035 07 7502	Bench grinder ECO, 230 V		–	–
Power consumption		W	520	
maximum speed		min^{-1}	2900	
Abrasive disc ∅ D		mm	150	175
Abrasive disc width T		mm	20 – 25	
Abrasive disc hole ∅ H		mm	32	
Weight		kg	16	18



The **extremely smooth-running** motor ensures a long working life, even when run **continuously. Supplied without grinding wheels.**

07 7511 – With 25.4 mm shaft.

Note: Suitable grinding wheels can be found from No. 596100.



07 7511

Type			DS04/150	DS04/175	DS07/200	DS12/250	DS15/300
035 07 7511	Bench grinder DS, 400 V		–	–	–	–	–
035 07 7512			–	–	–	–	–
Power consumption		W	250	250	500	730	1100
maximum speed		min^{-1}	2900	2900	2900	1450	1450
Abrasive disc ∅ D		mm	150	175	200	250	300
Abrasive disc width T		mm	25	25	25	32	40
Abrasive disc hole ∅ H (07 7511)		mm	25.4	–	–	–	–
Abrasive disc hole ∅ H (07 7512)		mm	51	51	51	51	76
Weight		kg	14	15	30	47	80

Sturdy low-vibration support stand with water dip bath for DS Rema bench grinder.



07 7513

suitable for machine			DS04	DS07	DS12	DS15
035 07 7513	Support stand		–	–	–	–
Weight		kg	28	28	37	38

Bench grinder with extraction system incorporated in the base.

Note: Suitable grinding wheels can be found from No. 596100.



07 7514

Type			DS04/175A	DS07/200A	DS12/250A	DS15/300A
035 07 7514	Bench grinder DS with dust extraction, 400 V		–	–	–	–
Power consumption		W	250	500	730	1100
maximum speed		min^{-1}	2900	2900	1450	1450
Abrasive disc ∅ D		mm	175	200	250	300
Abrasive disc width T		mm	25	25	32	40
Abrasive disc hole ∅ H		mm	51	51	51	76
Extraction conveying volume		m^3/min	6	6	6	10
Weight		kg	83	95	115	160

Solid tool mounting plate with angle adjustment stop. Adjustable between -5° and +15°. Angle stop adjustable 2×90°.

Note: A hollowed grinding wheel (such as shape 5) is necessary if used with a tool mounting plate. See No. 077509 for suitable protective shields. Incompatible with bench grinder DS with dust extraction No. 077514.



07 7519

Type		AT1	AT2
035 07 7519	Tool mounting plate left-hand	–	–
035 07 7525	Tool mounting plate right-hand	–	–
suitable for machine		DS04-DS12	DS15

metabo Bench grinder

07 7541 Size DSD200P –
- Bench grinder with three-phase motor offers particularly high torque and is suitable for high loads.
- Extraction connection on both sides, suitable for common coupling bushes.
- Large, tilting tool support with handy V-groove for sharpening welding needles.

07 7530/7541/ 7550 – Bench grinder for grinding, sharpening, deburring and, if using a steel wire brush, also removing rust on steel and metals. The integrated LED light optimally illuminates the working area. Durable discs and very smooth running thanks to the high-quality mounting flanges.
- Workpiece rests can be adjusted without tools.

07 7550 Size BS200P – The universal combo bench grinder with sanding belt and grinding wheel is ideal for processing wood and metal.
- Large belt sanding arm can be continuously tilted by 90° for two common grinding belt lengths.
- Tool-free pitch adjustment of the belt sanding arm.
- Extraction connection on the belt sanding arm, suitable for standard coupling bushes.



_DS150P
_DS200P

Supplied with:

07 7550 – Includes standard aluminium oxide grinding wheel 60 N, fabric sanding belt K 60, spark protection glass, workpiece rest and hexagon key.

07 7530/7541 – Includes standard aluminium oxide grinding wheels 36 P and 60 N, spark protection glass, workpiece rest and hexagon key.

Note:	Suitable grinding wheels can be found under No. 596100 and No. 568733.



_DSD200P

Type		DS150P	DS200P	DSD200P	BS200P
03D 07 7530	Bench grinder 230 V	–	–	–	–
03D 07 7541	Bench grinder 400 V	–	–	–	–
03D 07 7550	Combo bench grinder 230 V	–	–	–	–
Manufacturer's designation		DS 150 Plus	DS 200 Plus	DSD 200 Plus	BS 200 Plus
Power consumption	W	400	600	750	600
maximum speed	min^{-1}	2980			
Abrasive disc ∅ D	mm	150	200	200	200
Abrasive disc width T	mm	20	25	25	25
Abrasive disc hole ∅ H	mm	20	32	32	32
Linishing belt width	mm	–	–	–	50
Linishing belt length	mm	–	–	–	1000; 1020
Weight	kg	10.2	17.5	17.8	16.9



_BS200P

metabo (Cordless) hand-held and metal circular saws

META CAS 18

07 8186 Size KS18LTX66 – Powerful, lightweight cordless portable circular saw for universal use on construction sites. Compatible with guide rails.
- Integrated LED work light to optimally illuminate the interface.

07 8188 Size MKS18LTXBL – Powerful cordless metal hand-held circular saw with chip capture box for cold sawing on metals. Compatible with guide rails.
- Run-out brake for maximum safety as saw blade is stopped fast (< 1 sec.).
- Fast and precise cutting of pipes, profiles, ducts, metal lattices and sheets. No sparks or burrs.

Supplied with:

07 8186 – Includes 2 pcs. LiHD rechargeable batteries, quick charger, metaBOX, carbide circular saw blade (18 teeth), parallel stop and hexagon key.

07 8188 – Without rechargeable battery and charger, metaBOX, including carbide circular saw blade for metal (40 teeth), parallel stop, hexagon key and guide rail adapter.

Note:	See No. 073870 – 073890 for suitable batteries and chargers.



07 8186_KS18LTX66

Type		KS18LTX66	MKS18LTXBL
03D 07 8186	Cordless hand-held circular saw with LiHD rechargeable battery	–	–
03D 07 8188	Cordless metal cutting circular saw without rechargeable battery	–	–
Manufacturer's designation		KS 18 LTX 66 BL	MKS 18 LTX BL 58
Type of rechargeable battery		Lithium-ion	
Number of rechargeable batteries contained		2	0
Battery capacity	Ah	8	–
Battery voltage	V	18	
maximum speed	min^{-1}	4800	–
Saw blade ∅	mm	165	
Saw blade bore ∅	mm	20	
maximum cutting depth 90°	mm	66	58
maximum cutting depth 45°	mm	43	–
Weight including rechargeable battery	kg	4.5	3.8



07 8188_MKS18LTXBL

Cordless small angle grinder / cordless multi-cutter

07 7100 Size 12-76 – Extremely handy 12 V / 3.0 Ah **cordless small angle grinder** for cutting using **small cutting discs Ø 76 mm** (hole diameter 10 mm) in restricted places. With powerful EC motor, spindle locking.

07 8204 Size M12FCOT-0 – FUEL **cordless multi-material cutter** with 76 mm blade for 16.3 mm depth of cut.

Supplied with:

07 7100 Size 12-76 – Supplied with L-BOXX, L-BOXX inlay 1/2 for battery and charger, GAL 12V-40 Professional quick charger, 2 × synthetic resin-bonded cutting discs, 1 × carbide cutting disc, Expert for Inox, 76×10×1 mm, safety guard.

07 8204 Size M12FCOT-0 – **Without battery and without charger.** 1 × diamond disc for tiles, 1 × carbide abrasive disc, 1 × metal cutting wheel, 1 × adjustable dust extraction.

Note:

07 7100 Size 12-76 – See from No. 563050 for suitable small cutting discs and clamping mandrels. See 073851 – 073866 for suitable rechargeable batteries and chargers.

07 8204 – See 073801 – 073840 for suitable rechargeable batteries and chargers. For a suitable cutting disc see No. 563050 size 75.

L-BOXX MB 12



_12-76

B 12



_M12FCOT-0

Type			M12FCOT-0	12-76
03C 07 7100	BOSCH	GWS small angle grinder **Rechargeable battery**	–	–
03L 07 8204	Milwaukee	Cordless multi-material cutter	eShop	–
Manufacturer's designation			M12FCOT-0	GWS 12V-76
Number of rechargeable batteries contained			0	2
Type of rechargeable battery			Lithium-ion	
Battery capacity		Ah	–	3
Battery voltage		V	12	
maximum speed		min^{-1}	20000	19500
maximum disc ∅		mm	76	
Saw blade bore ∅		mm	10	
maximum cutting depth		mm	16.3	16
maximum vibration to EN		m/s^2	2.9	13.5
Weight		kg	1	0.9

(Cordless) hand-held and metal-cutting circular saw

07 8181 Size GKS55GCE – **Powerful portable circular saw** in a light-weight, compact design.

07 8183 Size GKM18V50 – **Cordless metal-cutting circular saw** for fast and precise cuts, virtually no sparks.

- Integrated, robust chip collection box for excellent occupational safety and clean surfaces.
- Precise cuts thanks to cutting line indicator, viewing window and integrated LED light.
- Mountable parallel stop to perfectly guide longitudinal cuts.

Size GKS1226 – Handy 12 V / 3.0 Ah **cordless portable circular saw.**

- The most compact design in its class, for perfect handling.
- Outstanding view of the line of cut, thanks to the bright LED.

Size GKS18V68C – Powerful 18 V **cordless circular saw with BITURBO technology.**

- **Integrated VAC adaptor** for easy manoeuvring. Adaptor can be rotated 360°.

Supplied with:

07 8181 Size GKS55GCE – Including hex socket, carbide saw blade (Speedline Ø 165 × 1.7/1.2 × 20 × 12T), mitre ruler, vacuum adapter, parallel stop, L-BOXX 238.

07 8183 Size GKM18V50 – Includes 2 pcs. 18 V 5 Ah rechargeable battery, charger, parallel stop and L-BOXX.

Size GKS1226 – Supplied with charger, saw blade for wood, parallel stop / guide rail adapter, extraction adapter, hexagon L-wrench and L-BOXX 238.

Size GKS18V68C – Including saw blade, parallel guide.



L-BOXX

_GKS55GCE



L-BOXX B 18

07 8183_GKM18V50



L-BOXX B 12

_GKS1226



L-BOXX B 18

_GKS18V68C

Type			GKS55GCE	GKM18V50	GKS1226	GKS18V68C
03B 07 8181	BOSCH	Hand-held circular saw	–	–	–	–
03B 07 8183	BOSCH	Cordless hand-held circular saw	–	eShop	eShop	eShop
Manufacturer's designation			GKS 55+ GCE	GKM 18V-50	GKS12V-26	GKS 18V-68 C
Type of rechargeable battery			–	Lithium-ion	Lithium-ion	Lithium-ion
Number of rechargeable batteries contained			–	2	2	0
Battery capacity		Ah	–	5	3	–
Battery voltage		V	–	18	12	18
Version			Hand-held circular saw	Metal-cutting circular saw	Hand-held circular saw	Plunging circular saw
maximum speed		min^{-1}	4700	4250	1400	6250
Saw blade ∅		mm	165	136	85	190
Saw blade bore ∅		mm	20	20	15	30
maximum cutting depth 90°		mm	63	50	–	57
maximum cutting depth		mm	–	–	26.5	–
maximum vibration to EN		m/s^2	4	–	< 2.5	< 2.5
Weight		kg	3.8	2.2	1.4	4.7
Power consumption		W	1350	–	–	–

Size M12FCS442 – **M12 FUEL™ cordless circular saw with brushless POWERSTATE™ motor.**
- Magnesium shoe reduces the weight and maximises the service life.
- Built-in dust blower keeps the cutting line clear.
- LED light illuminates the cutting line for better visibility.

Size M18FMCS – **Handy and powerful 18 V / 5.0 Ah cordless metal-cutting circular saw** for cutting pipes, profiles, threaded rods and cable ducts.
- **Brushless POWERSTATE™ motor** for higher cutting speeds.
- **REDLINK PLUS™ electronics with digital overload protection,** for more power.

Size M18FCS66GR – **Handy and powerful 18 V / 5.0 Ah cordless metal-cutting circular saw** for cutting pipes, profiles, threaded rods and cable ducts.
- **Brushless POWERSTATE™ motor** for higher cutting speeds.
- **REDLINK PLUS™ electronics with digital overload protection,** for more power.

Size M18-FMCS66 – Cordless circular saw for metal 66 mm.
- Large metal swarf collector catches the residue created during cutting and provides the necessary clear view.
- Dry cutting technology permits quick, clean and burr-free metal cutting.

07 8209 – **Compact cordless hand-held metal-cutting circular saw** for fast, precise cold cutting of sheet metal, pipes and profiles with a cutting depth of up to 57 mm.
- Manual speed setting.
- Large swarf collecting vessel.
- Dead man's switch, restart protection and temperature-based shutdown.

07 8221 – **Compact cordless hand-held metal-cutting circular saw** for fast, precise cold cutting of sheet metal, pipes and profiles with a cutting depth of up to 57 mm.
- Manual speed setting.
- Large swarf collecting vessel.
- Dead man's switch, restart protection and temperature-based shutdown.

Supplied with:

07 8207 – Includes rechargeable battery, charger, transport case.

07 8209 – Without battery and charger. Includes L-BOXX, circular saw blade, chip catcher, guide rail adapter.

07 8221 – Without battery and charger.

Note:

07 8207 – See from No. 073814 and No. 073839 for suitable spare batteries and starter kits.

Size M18FMCS – For a suitable circular saw blade see No. 078212 size 150X20T34.

07 8209 – See from No. 073857 and No. 073858 for suitable spare batteries and starter kits.

Size M18FCS66GR; M18-FMCS66 – For a suitable circular saw blade see from No. 584075.

MB 12 HD



_M12FCS442

MB 18



_M18FMCS

MB 18



_M18FCS66GR

MHB 18



_M18FMCS66

AMP Share Powered by BOSCH

B 18



_71360461

NEW

AS 18



_BKS18SBL

Type		BKS18SBL	71360461	M12FCS442	M18FMCS	M18FCS66GR	M18-FMCS66
03L 07 8207	Milwaukee	–	–	eShop	eShop	–	–
03F 07 8209	Cordless circular saw	–	eShop	–	–	–	–
07A 07 8221	AEG	–	–	–	–	–	–
Manufacturer's designation		F-IRONCut57AS	F-IRONCut57AS	M12 FCS442 502X	M18FMCS-502X	M18FMCS-502X	M18FMCS-502X
Type of rechargeable battery		Lithium-ion					
Number of rechargeable batteries contained		0	0	2	2	1	1
Battery capacity	Ah	–	–	5	5	12	12
Battery voltage	V	18	18	12	18	18	18
Version		Hand-held circular saw	Metal-cutting circular saw	Hand-held circular saw	Hand-held circular saw	Hand-held circular saw	Hand-held circular saw
maximum speed	min^{-1}	5000	2800	3600	3900	6000	4000
Saw blade ∅	mm	165	150	140	150	190	203
Saw blade bore ∅	mm	20	20	20	20	20	16
maximum cutting depth 90°	mm	57	57	44	57	68	66
maximum vibration to EN	m/s^2	<2.5	<2.5	1.5	< 2.5	< 2.5	< 2.5
Weight	kg	2.9	3.05	2.5	2.8	3	7.3

Guide rail 1400 mm long.

Suitable for: Cordless hand-held circular saw 078207 size M18FCSG66 and size M18FMCS66, as well as circular saws with holders for common guide rails from other manufacturers.

Type		GR1400
07A 07 8208	Milwaukee Guide rail	eShop
Manufacturer's designation		GR1400



07 8208

Metal chop saw

Semi-stationary chop saw for efficient and quick cutting of components both in the workshop and on the construction site.

Application:
- Sawing of steel and metal profiles.
- Production of separating and mitre cuts.
- Machining of pipes, metal bolts, angle irons, bar material.

Supplied with: 1 pc. chop saw, 1 pc. saw blade for structural steel, 1 pc. combination wrench: Hex socket, 6 mm and Phillips head PH 2, 1 pc. hex socket 8 mm.



07 8244

Type			72365460
03F 07 8244	Metal chop saw		eShop
Manufacturer's designation			MKAS 355
Power consumption		W	1800
maximum speed		min^{-1}	1300
Saw blade ∅		mm	355
maximum cutting depth 90°		mm	120
maximum cutting depth 45°		mm	90
Weight		kg	24.4
AC supply voltage		V	230
Mains frequency		Hz	50

metabo Oscillating saw and mitre saw

Oscillating saw and mitre saw with **pull function** and **speed control.**

Note: See 584004 – 593930 for suitable circular saw blades.

Size KGSV216M –
- Speed control for extended range of applications, e.g. for sawing aluminium profiles and plastics.
- Integral cutting line laser and LED workplace illumination for precise cutting.
- Extendable table extensions, can also be removed to support extremely long workpieces.
- Effective chip extraction via integrated chip collection funnel.

Supplied with: Carbide saw blade (60 teeth), 2 integrated table extensions, cut-to-length stop, material clamp, tool for changing saw blades, cable reel and chip capture bag.



07 8192

Type			KGSV216M
03D 07 8192	Oscillating saw and mitre saw	∅ 216 mm	–
Manufacturer's designation			KGSV 216 M
Power consumption		W	1350
maximum speed		min^{-1}	5500
Saw blade ∅		mm	216
Saw blade bore ∅		mm	30
maximum cutting depth 90°		mm	65
maximum cutting depth 45°		mm	36
Width of cut		mm	305 / 205
maximum inclination angle left		degrees	47
maximum inclination angle right		degrees	2
maximum mitre angle left		degrees	47
maximum mitre angle right		degrees	47
Weight		kg	13.5
Cable length		m	2

Size KGS315P –
- Large cutting capacity up to 320×120 mm at 90°.
- Maximum flexibility when sawing thanks to table that rotates on both sides and saw head that tilts on both sides.
- Speed control for extended range of applications, e.g. for sawing aluminium profiles and plastics.
- Metabo Quick to change saw blades without the need for any tools.
- Soft start ensures safe working and a long service life for the motor and gear.

Supplied with: Carbide saw blade (84 teeth), 2 integrated table extensions, material clamp, transition fitting 35/58 mm.



07 8193

Type			KGS315P
03D 07 8193	Oscillating saw and mitre saw	∅ 315 mm	–
Manufacturer's designation			KGS 315 Plus
Power consumption		W	1600
maximum speed		min^{-1}	4100
Saw blade ∅		mm	315
Saw blade bore ∅		mm	30
maximum cutting depth 90°		mm	120
maximum cutting depth 45°		mm	76
Width of cut		mm	320 / 223
maximum inclination angle left		degrees	46
maximum inclination angle right		degrees	46
maximum mitre angle left		degrees	47
maximum mitre angle right		degrees	60
Weight		kg	27.2
Cable length		m	2.1

Oscillating saw and mitre saw

Oscillating saw and mitre saw **with pull function.**

- Large cutting capacity up to 305×90 mm at 90°.
- Integral cutting line laser and LED workplace illumination for precise cutting.
- Fine adjustment of the mitre angle up to 50° with a stop.
- Power cable 3 m.
- Integral dust extraction captures 80 % of all dust particles.

Supplied with: Workpiece clamp, extraction hose and cover, 48 tooth carbide saw blade (saw blade/ bore ∅: 254 / 30 mm), tool for changing the blade.

Note:	Suitable saw blades can be found under No. 078227ff.



07 8229

Type		PS254L
07A **07 8229**	**AEG** Oscillating saw and mitre saw	–
Manufacturer's designation		PS254L
Power consumption	W	2000
maximum speed	min^{-1}	4500
maximum inclination angle left	degrees	47
maximum inclination angle right	degrees	-2
maximum mitre angle left	degrees	50
maximum mitre angle right	degrees	50
Weight	kg	19.5

High-quality pull-out work table.

- Height-adjustable support leg for secure standing.
- Comfortable working height of 0.85 m.
- Light-weight and stable design, up to 180 kg support load.


07 8240

Type		PSU1000
07A **07 8240**	**AEG** Work table for PS254L	–
suitable for		078229
Safe working load	kg	180
Weight	kg	14
Height	mm	850

B 18

Cordless pivoting saw and mitre saw.

- Excellent cutting capacity with a large cutting depth of 70 mm.
- Best mobility thanks to its low weight and outstanding ergonomics.
- User interface for speed pre-selection.
- Tool-free saw blade change.

Supplied with: Saw blade ∅ 216 mm, hold-down clamp, SDS nut, GCY 42 Bluetooth module.



07 8232_GCM18216DC

Type		GCM18216DC
03B **07 8232**	**BOSCH** Oscillating saw and mitre saw BITURBO **Cordless**	eShop
Manufacturer's designation		GCM 18V-216 DC
Number of rechargeable batteries contained		0
Type of rechargeable battery		Lithium-ion
Battery voltage	V	18
maximum speed	min^{-1}	4500
maximum inclination angle left	degrees	47
maximum inclination angle right	degrees	47
maximum mitre angle left	degrees	52
maximum mitre angle right	degrees	60
Weight	kg	15.3

Support frame for the GCM 18V-216 DC pivoting saw and mitre saw from Bosch.

- Comfortable working height of 0.82 m.
- Light-weight and stable design, up to 160 kg support load.


07 8241

Type		GTA2600
03B **07 8241**	**BOSCH** Transport table and work table **GTA 2600**	eShop
suitable for		078232
Safe working load	kg	160
Weight	kg	21.6
Height	mm	820

(Cordless) jigsaws

07 8185 Size ST18L90 – The everyday helper for your sawing tasks: handy cordless jigsaw for cuts in wood of up to 90 mm.
- Chip blowing function for a clear view of the interface.
- Extraction capability, restart protection.

07 8200 Size GST150BCE – Jigsaw with **D-shape handle.**
- High power reserves, even in hard and thick beams, thanks to powerful 780-watt motor with overload capability.
- Extremely robust and distortion-resistant base plate for the heaviest duties.

Size GST160CE – Jigsaw with **straight handle.**
- Highly precise saw blade guidance thanks to patented double roller which minimises saw blade bending – for outstanding precision of cutting.
- Powerful 800 Watt motor with constant speed electronics, with power in reserve even when cutting hard materials.

07 8201 Size GST1270 – Lightweight and compact **cordless jigsaw** with a straight handle.
- **Electronic Motor Protection (EMP)** protects the motor against overloading and ensures a long working life.
- Bosch **Electronic Cell Protection (ECP)**: Protects the battery against overheating and deep discharge.
- Switchable LED for bright illumination of the cutting area.

07 8210 Size 71360561 – Cordless jigsaw, for metal and wood. Optimal control due to slim straight handle for precise cuts. The speed and orbital stroke are adjustable.

07 8211 – **Cordless jigsaw,** brushless POWERSTATE™ motor for high cutting power. Switch for 6 speed settings, with soft start. LED illumination of the working area.

07 8213 – 700 W jigsaw with variable speed preselection and tool-free saw blade change.
- Connection for dust removal system.

Supplied with:

07 8185 – Without battery and charger, including suction nozzle, protective glass and hexagon key.

07 8200 Size GST150BCE – Including 1× saw blade, protective cover, slide shoe, extraction adapter, suction nozzle, transport case.

Size GST160CE – Including 3 × saw blade, extraction adapter, L-BOXX 136, 1/1 L-BOXX inlay.

07 8201 Size GST1270 – Including 2 pcs. 12 V / 3.0 Ah Li-ion rechargeable battery, charger, 2 pcs. saw blade, chip break guard, extraction set, slide shoe, extraction adapter, L-BOXX 102 and L-BOXX inlay.

07 8185/8211/8213 – Supplied with chip break guard.

07 8211 – Supplied with charger, 2 pcs. 18 V / 5 Ah Li-ion rechargeable battery, 1 pc. saw blade, adapter for dust extraction, dust cover, plastic sole plate and HD box.

07 8213 – Supplied with 2 × saw blades, extraction adapter, sole plate, mains cable 4 m, carrying case.

Note:

07 8185 – See No. 073870 – No. 073890 for suitable batteries and chargers.

07 8211 – See No. 073808 – No. 073840 for suitable batteries and chargers.

07 8201/8210 – See No. 073851 – No. 073866 for suitable batteries and chargers.


_GST150BCE


_GST160CE


_GST1270


_ST18L90


_M18FBJS-5


_STEP100X


_71360561

Type		GST150BCE	GST160CE	GST1270	ST18L90	M18FBJS-5	STEP100X	71360561
03D 07 8185	metabo Cordless jigsaw without rechargeable battery	–	–	–	eShop	–	–	–
03B 07 8200	BOSCH Jigsaw	eShop	eShop	–	–	–	–	–
03B 07 8201	BOSCH Cordless jigsaw	–	–	eShop	–	–	–	–
03L 07 8211	Milwaukee Cordless jigsaw	–	–	–	–	eShop	–	–
07A 07 8213	AEG Jigsaw	–	–	–	–	–	–	–
03F 07 8210	Cordless jigsaw	–	–	–	–	–	–	eShop
Manufacturer's designation		GST150BCE	GST160CE	GST 12V-70	ASTS 18-26 AS	M18FBJS-502X	STEP100X	F-IRON Jig 26 AS
Number of rechargeable batteries contained		–	–	2	0	2	–	0
Type of rechargeable battery		–	–	Lithium-ion	Lithium-ion	Lithium-ion	–	Lithium-ion
Battery capacity	Ah	–	–	3	–	5	–	–
Battery voltage	V	–	–	12	18	18	–	18
Rate of strokes	min^{-1}	500 – 3100	800 – 3000	1500 – 2800	750 – 3000	800 – 3500	1000 – 3200	700 – 3000
maximum sawn thickness steel	mm	10	10	3	10	10	10	12
maximum sawn thickness wood	mm	150	160	70	90	100	100	150
Mitre angle adjustment		yes	yes	yes	yes	yes	–	yes
Orbital stroke		4-way	4-way	3-way	4-fold	5-way	4-fold	4-fold
Weight	kg	2.7	2.2	1.5	1.9	2.8	2.3	2.1
maximum vibration to EN	m/s^2	7.0	7.5	5.5	8.7	6.3	10,5	8.1
Power consumption	W	780	800	–	–	–	700	–
Format		D-shape handle	Straight handle	Compact straight handle	Straight handle	Straight handle	D-shape handle	Straight handle
Special features		Robust	High-power, LED	LED	Small handle circumference	general purpose use	general purpose use	Small handle circumference
tool change without tools		yes, SDS system	yes, SDS system	yes, SDS system	Yes, Metabo Quick	yes, FIXTEC system	yes, FIXTEC system	yes

(Cordless) sabre saws

07 8214 Size GSA1832-0 – Two-speed setting for different materials.

07 8217 Size GSA18VLIC – **Variable cutting speed control**, low vibration thanks to integral **vibration balancing system.**

Size GSA18VLIC – With LED workplace illumination.

07 8219 – **Milwaukee compact cordless sabre saw** for working in difficult to access places.

- Electronic controls with **steplessly variable stroke length** and **overload protection.**
- Tool-less **FIXTEC** saw blade quick-release clamping system.

07 8220 Size M18ONEFSZ – Version M18FSZ but with **ONE-KEY™** technology.

- Up to 3 individual profiles can be saved on the internal memory of the device.

07 8215/8217 – **Bosch cordless sabre saw** with **SDS system** for quick and convenient changing of saw blades.

- Bosch Professional Lithium-ion technology for long working life and outstanding battery performance.
- **Electronic Cell Protection (ECP)** protects the battery against overloading, overheating and deep discharge.
- Ergonomic soft-grip handle.
- With LED workplace illumination.

07 8215 Size GSA1214/8217 Size GSA18VLIC – **Compact lightweight sabre saw** and small handle circumference, suitable also for overhead work and one-handed use.

07 8219 Size M12CHZ2/8220 Size M18FHZ; M18FSX – With **powerful brushless POWERSTATE™ motor.**

Size M18FSZ; M18ONEFSZ – Cordless sabre saw.

- New generation of the brushless POWERSTATE™ motor for greater efficiency.
- Patented clutch protection prevents the tool jerking when the saw blade jams.
- Controllable soft start for maximum speed and control.
- Tool-less FIXTEC saw blade quick-release clamping system.
- Tiltable and adjustable saw base plate, permits optimisation of the cutting position.

Supplied with:

07 8214 – Cordless sabre saw, without batteries, without charger.

07 8219 – Supplied with a carrying case / carrying wallet, 2 batteries, quick charger and saw blade.

07 8220 Size M18FHZ – Supplied with HD box carrying case, 2 pcs. 18 V batteries, quick charger, and saw blade.

Size M18FSX – Supplied with HD box carrying case, 2 pcs. 18 V batteries, quick charger, and saw blade.

07 8215/8217 – Supplied with carrying case, 2 pcs. saw blades, 2 pcs. batteries, quick charger.

Size M18FSZ; M18ONEFSZ – Variant in HD box **without battery, without charger.**

Note: Sabre saw blades can be found from No. 588600.

07 8214–8217 – See 073851 – 073866 for suitable rechargeable batteries and chargers.

07 8219/8220 – See 073801 – 073840 for suitable rechargeable batteries and chargers.

B 18



_GSA1832-0

B 12 L-BOXX



_GSA1214

B 18 L-BOXX



_GSA18VLIC

MB 12 HD



_M12CHZ2

MB 18 HD



_M18FHZ

MB 18 HD



_M18FSZ

MB 18 HD



_M180NEFSZ

MB 18 HD NEW



_M18FSX

Type		GSA1832-0	GSA1214	GSA18VLIC	M12CHZ2	M18FHZ	M18FSZ	M180NEFSZ	M18FSX
03B 07 8214	Cordless sabre saw **without battery**	eShop	–	–	–	–	–	–	–
03B 07 8215	BOSCH	–	eShop	–	–	–	–	–	–
03B 07 8217	Cordless sabre saw	–	–	eShop	–	–	–	–	–
03L 07 8219	Milwaukee	–	–	–	eShop	–	–	–	–
03L 07 8220		–	–	–	–	eShop	eShop	eShop	–
Manufacturer's designation		GSA 18 V-32	GSA 12 V-14	GSA 18 V-LIC	M12CHZ-202X	M18FHZ-502X	M18 FSZ	M18 ONE FSZ	M18FHZ-502X
Number of rechargeable batteries contained		0	2	2	2	2	0	0	1
Type of rechargeable battery		Lithium-ion							
Battery capacity	Ah	–	3	5	2	5	5	5	12
Battery voltage	V	18	12	18	12	18	18	18	18
Stroke length	mm	32	14.5	21	16	22	32	32	28.6
Rate of strokes	min^{-1}	0 – 2500	0 – 3000	0 – 3050	0 – 3000	0 – 3000	0 – 3000	0 – 3000	0 – 3000
Weight	kg	3.5	1.2	2.5	1.5	2.6	8	7.9	5.5
maximum vibration to EN	m/s^2	10	12	8.8	6.5	9.9	9.9	9.9	22.2
Special features		SDS	SDS, LED	SDS, LED	FIXTEC, LED	FIXTEC, LED	FIXTEC, LED	FIXTEC, LED	FIXTEC, LED

(Cordless) sabre saws

Note: Sabre saw blades can be found from No. 588600.

Cordless sabre saws

07 8216 – Very compact 18V cordless sabre saw. The sub-compact design permits pleasant working - even with just one hand.
- Saw blade quick-change system without using tools.
- Compact brushless 18V motor.
- LED lighting.

07 8223 – Powerful cordless sabre saw with low weight and angled softgrip handle for high working comfort.
- Brushless motor for quick work progress and maximum efficiency.
- Depth stop adjustment without using tools.
- Vario (V) electronics for working at material-appropriate stroke rate.
- Saw blade can be rotated 180° for comfortable overhead work.
- Metabo Quick to change saw blades without the need for any tools.
- Selectable orbital stroke.

Supplied with: Without battery and charger, in a cardboard box.

Note:
07 8216 – See No. 073841 – No. 073850 for suitable batteries and chargers.
07 8223 – See No. 073870 – No. 073890 for suitable batteries and chargers.

CAS 18



078223_SSEP18LTBL

AS 18



07 8216_BUS18SBL

Type		SSEP18LTBL	BUS18SBL
03D 07 8223 metabo / 07A 07 8216 AEG	Cordless sabre saw without battery	eShop / –	– / –
Manufacturer's designation		SSEP 18 L BL	BUS18SBL-0
Number of rechargeable batteries contained			
Type of rechargeable battery		Lithium-ion	
Battery voltage	V	18	
Stroke length	mm	32	23
Rate of strokes	min^{-1}	0 – 3000	
Weight	kg	3	1.75
maximum vibration to EN	m/s^2	14.5	–

Sabre saws

07 8222 – Powerful 1400 W sabre saw with stroke rate held constant for the toughest applications.
- Switchable 3-stage pendulum stroke for optimum sawing performance in any material.
- Saw blade can be rotated 180° for comfortable overhead work.
- Metabo VibraTech (MVT): Integrated mass compensation to reduce vibrations.



07 8222_SSEP1400

07 8224 – Powerful and robust 1500 W **Milwaukee universal sabre saw** with metal gearbox casing.
- **FIXTEC** quick-release saw blade clamping system, no tools required.
- Electronic control of rate of strokes, **orbital stroke can be switched off.**
- AVS anti-vibration system and patented eccentric gearbox for **very smooth running.**
- **Kick-back protection system** to protect the gearbox against kick-backs from the workpiece..



07 8224_SSPE1500X

07 8225 – Powerful 1300 W **AEG sabre saw**, ideal for cutting wood, plastic, metal pipes and profiles.

Supplied with: Transport case, saw blade.



07 8225_US1300XE

Type		US1300XE	SSEP1400	SSPE1500X
03D 07 8222 metabo / 03M 07 8224 Milwaukee / 07A 07 8225 AEG	Sabre saw	– / – / –	– / – / –	– / eShop / –
Manufacturer's designation		US1300XE	SSEP 1400 MVT	SSPE1500X
Power consumption	W	1300	1400	1500
Stroke length	mm	30	32	32
Rate of strokes	min^{-1}	0 – 2800		
Weight	kg	3.8	4.6	4
maximum vibration to EN	m/s^2	18.5	12.9	15.2
Special features		FIXTEC	Metabo Quick	FIXTEC / AVS

Cordless bandsaw

FUEL™ compact powerful cordless bandsaw with brushless POWERSTATE™ motor for mobile sawing for improved handling characteristics.

- Easy band saw blade change **without using tools.**
- **Steplessly** variable saw blade speed control with speed switch.
- Sturdy metal frame, metal hook.
- LED illumination of the cutting area.

Supplied with:

07 8202 – Supplied with 2 pcs. M12 B4 batteries, charger, transport case.

07 8205 – Supplied with charger, 2 pcs. M18 B2 batteries, 14 TPI bi-metal saw blade, carrying case.

Note: See 073801 – 073840 for suitable batteries and chargers.

MHB 12 MB 12



07 8202_M12FBS64

Type		M12FBS64	M18FBS85
03L 07 8202	Cordless compact bandsaw	eShop	–
03L 07 8205		–	eShop
Number of rechargeable batteries contained		2	
Type of rechargeable battery		Lithium-ion	
Battery capacity	Ah	4	2
Battery voltage	V	12	18
Belt speed	m/min	0 – 116	0 – 165
maximum cutting depth 90°	mm	64	85
Band saw width	mm	13	
Band saw length	mm	776	898
Weight	kg	3.2	6
maximum vibration to EN	m/s²	< 2.5	

MHB 18 MB 18



07 8205_M18FBS85

Cordless pipe cutter

Compact cordless pipe cutter with stainless cutting head. **Automatic adaptation** to the pipe ∅.

Size 4933498374 – Minimum wall distance 43 mm. **Suitable for stainless steel, C-steel and copper pipes.** The viewing window on the cutting mechanism and the built-in lighting allow the user to cut the pipe precisely.

Size M12PCSS/0 – Overall width 40 mm, minimum wall clearance 40 mm. Suitable for **stainless steel pipes.**

Note: See No. 073801 – No. 073840 for suitable batteries and chargers.

MB 12



07 8218_4933498374

Type		4933498374	M12PCSS/0
03L 07 8218	Cordless pipe cutter	eShop	eShop
Battery voltage	V	12	
Speed range	min⁻¹	0 – 330	0 – 500
maximum pipe ∅ copper	mm	35 – 54	12 – 28
maximum pipe ∅ stainless steel	mm	35 – 54	12 – 28
Weight	kg	3	1.5
maximum vibration to EN	m/s²	<2.5	

MB 12



07 8218_M12PCSS/0

Cordless sheet metal shears / cordless nibbler

07 8104 – Compact cordless sheet metal slitters / shears for clean, distortion-free cuts in steel up to max. 2.0 mm.

- 360° rotatable cutting head with 12 locking positions – ideal for accessing tight spaces.
- Electronic speed control.
- In-line design for the best possible control.

07 8105 – Extremely light cordless nibbler with Auto-Control start function (the cutting speed is slowly increased after start) for a working depth of up to 168 mm.

- Tool-free cutting direction change in 90° steps.

Supplied with: Without battery and without charger, in a cardboard box.

07 8105 – Includes 2 die holders in long and short versions.

Note: Suitable replacement batteries and chargers can be found under No. 073801 – No 073840.

MB 18



07 8104_M18BMS20-0

Type		M18BMS20-0	M12FNB16-0
03L 07 8104	Cordless sheet metal shears	eShop	–
03L 07 8105	Cordless nibbler	–	eShop
Number of rechargeable batteries contained		0	
Type of rechargeable battery		Lithium-ion	
Battery voltage	V	18	12
maximum cutting performance on aluminium	mm	3.2	2.1
maximum cutting performance on steel	mm	2	1.6
Radius of the smallest curve	mm	180	40.7
Width of cut	mm	5	
Weight	kg	2.3	1
maximum vibration to EN	m/s²	1.5	

MB 12



07 8105_M12FNB16-0

Sheet metal slitters / shears / nibblers

AMPShare Powered by BOSCH

07 8103 Size 71300561 – **Cordless sheet metal slitter** for mobile use.
Size 71300661 – **Cordless sheet metal shears** for mobile use.
07 8108 Size 71321161 – **Cordless sheet metal nibbler** for portable use.
07 8111 Size 7232466 – Powerful nibbler with unlimited curve manoeuvrability for recesses and cut-outs.
Size 7232476 – Powerful nibbler for heavy-duty dismantling and cutting work.
07 8102 Size 723031/8103 Size 71300561 – **Sheet metal slitter**.

- **Distortion-free cut.**
- **Open cutting head** for best view on to the cut.
- **QuickIN quick-change system** for quick blade changing without tools or adjustment.

07 8102 Size 723034/8103 Size 71300661 – **Aviation snips.**

- Cuts well round curves with only minor sheet metal deformation.
- Comfortable and quick for seaming and cutting to length.
- For sheet metal up to 800 N/mm² and stainless steels.
- **Four-way changeover blade:** cleaner, burr-free cutting with low operating costs.

07 8108/8111 –

- Very **economical operating costs** due to long working life of die and matrix.
- **QuickIN quick-change system** for quick die and matrix changing without tools
- Working direction can be changed without tools.

07 8108 Size 71321161/8111 Size 723241 –

- Slim design ensures optimum handling even under difficult working conditions.
- Highly suitable for **trapezoidal sheet** up to 1.3 mm thick and **up to 85 mm step depth.**

07 8108 Size 71321161/8111 Size 723241 – **Flexible nibblers with high manoeuvrability** for thin sheet metal, trapezoidal sheet, corrugated sheet and sections.

Supplied with:

07 8103/8108 – Including L-BOXX, **without** battery and **without** charger.

Note:

07 8103/8108 – See No. 073851 – No. 073866 for suitable batteries and chargers.

B 18 L-BOXX



_71300561

B 18 L-BOXX



_71300661



_723031



_723034

B 18 L-BOXX



_71321161



Cutting width 5 mm.



Cutting width 4 – 5 mm.

L-BOXX



07 8111_7232466

L-BOXX



07 8111_7232476



_723241

Type		71300561	71300661	723031	723034	71321161	723241	7232466	7232476
03F 07 8103	Cordless sheet metal slitters / shears	(eShop)	(eShop)	–	–	–	–	–	–
03F 07 8102	Sheet metal slitter / shears	–	–	eShop	eShop	–	–	–	–
03F 07 8108	Cordless nibbler	–	–	–	–	(eShop)	–	–	–
03F 07 8111	Nibblers	–	–	–	–	–	(eShop)	eShop	eShop
Manufacturer's designation		ABSS 18 1.6 E AS	ABLS 18 1.6 E AS	BSS 1.6 CE	BLS 1.6E	ABLK 18 1.6 E AS	BLK 1.3TE	BLK 3.5E	BLK 5.0
Number of rechargeable batteries contained		0	0	–	–	0	–	–	–
Type of rechargeable battery		Lithium-ion	Lithium-ion	–	–	Lithium-ion	–	–	–
Battery voltage	V	18	18	–	–	18	–	–	–
Rate of strokes	min^{-1}	3500	4000	3800	4000	–	1800	820	820
maximum material thickness steel 400 N/mm²	mm	1.6	1.6	1.6	1.6	1.6	1.3	3.5	5
maximum material thickness steel 800 N/mm²	mm	0.8	1	0.8	1	0.7	0.6	1.8	2.5
Radius of the smallest curve	mm	90	15	90	15	30	30	7	90
Cutting speed	m/min	5 – 8	5 – 8	6 – 10	5 – 8	1.9	2.3	1.5	1.3
Width of cut	mm	5	0	5	0	5	4	14	8
Weight	kg	1.9	2	1.4	1.6	2.1	1.8	3.6	3.8
maximum vibration to EN	m/s^2	<2.5	<2.5	< 2.5	< 2.5	<2.5	< 2.5	<2.5	<2.5
Power consumption	W	–	–	350	350	–	350	1700	1700

Battery / mains radios

Sturdy site radio, splash-proof (IP54) for mains and battery operation.

07 3960 Size M12RCDAB – Battery/mains radio with charging function. DAB+, AM and FM tuner.

Size 4933493530 – M18™ Bluetooth® cordless speaker
- Provides audio for small and medium-sized areas.
- Unlimited hanging and attachment options with the integrated hooks, nail hooks and through-holes.

Size 4933492344 – Bluetooth® cordless radio with powerful audio system.
- Shock-absorbing end caps to protect against falls
- USB-C port for charging mobile devices
- Up to 13 hours of operation with a Milwaukee 18 V/5 Ah rechargeable battery.
- Operation with Milwaukee 18 V batteries or with 230 V mains voltage.

07 3961 Size GPB18VH-6 – Powerful radio with charging function for 12V and 18V rechargeable batteries.
- Premium sound with DAB+, FM, Bluetooth®, AUX and multi-speaker sound.
- Compatible with L-BOXX to easily transport the radio to any construction site.

Supplied with: Includes mains cable, 2 back-up batteries, AUX connection cable, without batteries.

MB 18



_4933492344

MB 18

NEW



_4933493530

MB 12



_M12RCDAB

Type		M12RCDAB	4933493530	4933492344	GPB18VH-6
03L 07 3960	Battery / mains radio	eShop	eShop	eShop	–
03B 07 3961	Battery / mains radio	–	–	–	eShop
Battery voltage	V	12	18	18	12; 18
Length	mm	523	213	515	476
Width	mm	155	145	228	249
Height	mm	386	333	218	336
Weight	kg	1.9	3.8	5	8.2

B 12

B 18

NEW



_GPB18VH-6

Cordless soldering iron

Cordless soldering iron for temperature range up to 400°C and heating power of 90 W.

Supplied with: Supplied with 1 pc. Li-ion battery 12 V / 2.0 Ah, charger and carrying case.

Note: For a suitable battery see No. 073814 size MB12.

MB 12



07 3955

Manufacturer's designation		M12SI201C
03L 07 3955	Cordless soldering iron	eShop
Warm-up time	s	30
Heating power	W	90
Battery voltage	V	12

Cordless blow gun

Powerful and versatile cordless blow gun with strong airflow for cleaning, blowing out, inflating and venting.

Note: See No. 073870 – No. 073890 for suitable batteries and chargers.

NEW



07 7336

Manufacturer's designation		BP18LTXBL
03D 07 7336	Cordless blow gun	eShop
Battery voltage	V	18
Weight	kg	0.8

AEG Accessories

Rechargeable batteries

Powerful 18 V Li-ion rechargeable batteries, compatible with all AEG 18 V machines and chargers.
- Temperature monitoring: Protects the battery against overheating.
- Electronic overload protection: Controls immediate shut-down in the event of overload.
- Single cell monitoring: Protects the battery against deep discharge.

07 3846 – SHD rechargeable battery technology:
Suitable for high performance in demanding applications.

07 3848 – The latest tabless rechargeable battery technology –
smaller design with more power compared with SHD rechargeable battery.

NEW



07 3846_4



07 3848_8



07 3848_12

Battery type		4	8	12
07A 07 3846	Li-ion battery SHD	–	–	–
07A 07 3848	Li-ion battery SHD	–	–	–
Number of rechargeable batteries contained		1		
Type of rechargeable battery		Lithium-ion		
Battery capacity	Ah	4	8	12
Battery voltage	V	18		

Starter set

Rechargeable battery starter set – suitable for all AEG cordless devices in the 18 volt class.

Supplied with:

07 3843 – Supplied with charger and 1 pc. 18 V rechargeable battery.

07 3844 – Supplied with charger and 1 pc. 18 V rechargeable battery and carrying bag.



_SETL1820S



_L1840SHD

Type			SETL1820S	L1840SHD
07A 07 3843	Battery starter set	2.0 Ah	–	–
07A 07 3844	Battery starter set **SHD**	4.0 Ah	–	–
Number of rechargeable batteries contained			1	
Battery capacity		Ah	2	4
Battery voltage		V	18	

Chargers

AEG 18V charger Duo

Charge up to two AEG Pro 18V rechargeable batteries in parallel with 4 A charging current each.



07 3841

Type			BL18C2
07A 07 3841	Battery charger		–
maximum charging current		A	4

Batteries and chargers

07 3834 – "HighPower" Li-ion battery with charge status display and FEIN SafetyCell Technology. Protects the battery and the machine against overheating and deep discharge. 100% compatible with all FEIN 12V cordless tools and 18V cordless tools with MultiVolt interfaces.

07 3835–3837 – Li-ion battery with charge status display and FEIN SafetyCell Technology. Protects the battery and the machine against overheating and deep discharge. 100% compatible with all FEIN 12V cordless tools and 18V cordless tools with MultiVolt interfaces.



07 3836_FE14



07 3837_FE12



07 3837_FE18



07 3834_FE18



07 3835_FE18

Battery type, battery voltage		V	FE12	FE14	FE18
03G 07 3836	Li-ion battery	2.5 Ah	–	eShop	–
03G 07 3837		3.0 Ah	eShop	–	eShop
03G 07 3834	Li-ion battery **HighPower**	5.2 Ah	–	–	eShop
03G 07 3835	Li-ion battery	6.0 Ah	–	–	–
Number of rechargeable batteries contained			1		
Type of rechargeable battery			Lithium-ion		
Battery capacity (07 3836, 07 3834)		Ah	–	2.5	5.2
Battery capacity (07 3837)		Ah	3	–	3
Battery capacity (07 3835)		Ah	–	–	6
Battery voltage		V	12	14.4	18



"DID YOU KNOW?"

Fein is an AmpShare partner – the cross-brand rechargeable battery system for professionals in manual trades and industry. As a result, you can now use all Fein rechargeable battery innovations with Bosch rechargeable batteries.

AMPShare Powered by BOSCH -COMPATIBLE

07

metabo Accessories

CAS 18 | CAS CORDLESS ALLIANCE SYSTEM

Rechargeable batteries

Powerful 18 V **Li-Ion** batteries, **compatible with all 18 V machines** and chargers **of the CAS platform.**

- Permanent electronic single-cell monitoring.
- Display for permanent monitoring of the remaining capacity.
- Low self-discharge rate and long storage capability.
- Processor-controlled charge and discharge management.


07 3870_2


07 3870_4


07 3870_5,2

Battery capacity	Ah	2	4	5,2
03D 07 3870	Battery pack **Li-Power**	eShop	eShop	eShop
Battery voltage	V	18		

LiHD battery packs for ultimate performance and ultra-long use with minimal temperature increase.


07 3875_4


07 3875_5,5


07 3875_8


07 3875_10

Battery capacity	Ah	4	5,5	8	10
03D 07 3875	Battery pack **LiHD**	–	–	–	–
Battery voltage	V	18			

The new benchmark for performance when working with battery power: LiHDX high-performance battery packs with tabless technology. Ideal for extreme applications.



07 3876_4



07 3876_8

Battery capacity	Ah	4	8
03D 07 3876	Battery pack **LiHDX**	–	–
Battery voltage	V	18	

Starter set

Li-Power starter set suitable for all Metabo battery devices in the 18 volt class, as well as all battery devices of the **CAS platform.**

Advantage: **100 % compatibility of the batteries – now also cross-manufacturer**.
All 18 V devices and battery packs from CAS partners are 100% compatible with each other.
CAS stands for Cordless Alliance System.

Supplied with:

Size 4 – Includes charger ASC 55 and 2× battery pack 4.0 Ah.
Size 5,2 – Includes charger ASC 145 and 2× battery pack 5.2 Ah.


07 3880_4


07 3880_5,2

Battery capacity	Ah	4	5,2
03D 07 3880	Battery starter set **Li-Power**	eShop	eShop
Number of rechargeable batteries contained		2	
Battery voltage	V	18	

LiHD starter set suitable for all Metabo battery devices in the 18 volt class, as well as all battery devices of the **CAS platform.**

Supplied with:

Size 4 – Includes charger ASC 55 and 3× battery pack 4.0 Ah.
Size 5,5 – Includes charger ASC 145 and 2× battery pack 5.5 Ah.


07 3881_4


07 3881_5,5

Battery capacity	Ah	4	5,5
03D 07 3881	Battery starter set **LiHD**	–	–
Number of rechargeable batteries contained		3	2
Battery voltage	V	18	

Chargers

Charger for sliding seat battery packs of all voltage classes (12 – 36 V). Patented "AIR COOLED" charging technology for short charging times by cooling the battery pack during charging.

Size ASC55 – Universal charger with 55 watts output power.
Size ASC145 – Quick charger with 145 watt output power and up to 4x charging speed.
Size ASC290 – Quick charger with air cooling and up to 8x charging speed.
Size ASC55-8 – Charging station with **8 parallel charging slots.** Robust aluminium housing with hook for wall mounting and carrying handle for mobile use.


07 3890_ASC55


07 3890_AS145



07 3890_ASC290


07 3890_ASC55-8

Type		ASC55	ASC145	ASC290	ASC55-8
03D 07 3890	Battery charger	–	–	–	–
Nominal voltage	V	12; 18; 36			
Maximum number of charging points		1	1	1	8

BOSCH Accessories

AMP Share Powered by BOSCH

Bosch 18 V rechargeable batteries and chargers are compatible with all 18 V machines and chargers from the AMPShare platform.

Rechargeable batteries

Compact and powerful **Li-ion batteries.**

- **No memory effect.**
- No drop-off in power.
- Low self-discharge rate.
- **Battery recharges quickly.**
- Very powerful even at temperatures below 0 °C.

Size B18 – **Bosch CoolPack – Optimum protection for the cells** against excessive warming by special heat dissipating casing on the underside.

07 3860 – **ProCORE 18V+** Professional rechargeable battery. Up to 71% longer runtimes for demanding applications thanks to the latest innovative "tabless" cell technology. Compatible with the Bosch Professional 18V system and the AMPShare battery alliance.

07 3856–3858 – **ProCORE 18V** Professional battery with CoolPack 2.0 technology. Compatible with the Bosch Professional 18V system and the AMPShare battery alliance.


07 3851_B12
07 3855_B12


07 3859_B12

Battery type, battery voltage		V	B18	B12
03B 07 3851	Li-ion battery	2.0 Ah	eShop	eShop
03B 07 3855		3.0 Ah	–	eShop
03B 07 3853		4.0 Ah	eShop	–
03B 07 3854		5.0 Ah	eShop	–
03B 07 3859		6.0 Ah	–	eShop
Battery voltage		V	18	12


07 3851_B18


07 3854_B18

Battery type, battery voltage		V	C18
03B 07 3856	Li-ion battery ProCore	4.0 Ah	eShop
03B 07 3857		8.0 Ah	–
03B 07 3858		12.0 Ah	–
Battery voltage		V	18


07 3856_C18


07 3857_C18


07 3858_C18

Battery capacity		Ah	8
03B 07 3860	Li-ion battery ProCore+		–
Number of rechargeable batteries contained			1
Type of rechargeable battery			Lithium-ion
Battery capacity		Ah	8
Battery voltage		V	18


07 3860_8

Starter set

ProCORE battery starter set Professional – suitable for all Bosch cordless devices in the 18 Volt class.

Supplied with:

07 3867 – Supplied with charger and 2 battery packs.




07 3865_C18

Battery type, battery voltage		V	C18
03B 07 3863	Battery starter set ProCore	4.0 Ah	eShop
03B 07 3865		8.0 Ah	–
03B 07 3867		12.0 Ah	–
Battery capacity (07 3863)		Ah	4
Battery capacity (07 3865)		Ah	8
Battery capacity (07 3867)		Ah	12
Battery voltage		V	18


07 3861_8

Battery capacity		Ah	8
03B 07 3861	Battery starter set ProCore+		–
Battery voltage		V	18

Chargers

Size GAL1218V80 – Simple and practical charger compatible with all Bosch Professional 12 V and 18 V batteries. Fast charging with 8 A charging current (fully charges a 18 V 5.5 Ah battery in 46 minutes).

Size GAL18V6-80 – Charger with 6 battery interfaces for 14.4 – 18 V.

Size GAL18V160 – Li-ion quick charger with 16 ampere charging current for 14.4V and 18V batteries. This charger has an interface for two different charging modes ("Long Life" mode for longer battery life and "PowerBoost" mode for maximum charging speed).

Size GAL12V40 – Li-ion quick charger for 12V batteries. Only 36 minutes charging time (3.0 Ah rechargeable battery).


NEW
_GAL1218V80


_GAL18V6-80


_GAL18V160


_GAL12V40

Type			GAL1218V80	GAL18V6-80	GAL18V160	GAL12V40
03B 07 3866	Battery charger		eShop	eShop	eShop	eShop
Nominal voltage		V	12 – 18	18	14.4 – 18	12
Maximum number of charging points			1	6	1	1

Accessories

Size MB12; MB18 – MILWAUKEE **REDLITHIUM-ION™ battery technology.**

- For all professional users.
- LED battery charge status display gives information at the push of a button about the current status of charge of the battery at all times.
- Problem-solver use down to - 20 °C.

Note: When using Milwaukee M18 devices that come into contact with chemicals, it is recommended that you use the 073816 MB18-CR rechargeable battery.

Battery type			MB12	MB18
07 07 3814	Li-ion system M4B2/M12B2	2.0 Ah	eShop	–
07 07 3815	Li-ion system M12B4	4.0 Ah	eShop	–
07 07 3829	Li-ion system M12B6	6.0 Ah	eShop	–
07 07 3827	Li-ion system M18B2	2.0 Ah	–	eShop
07 07 3816	Li-ion system M18B5	5.0 Ah	–	eShop
Battery voltage		V	12	18


07 3815_MB12


07 3829_MB12


07 3827_MB18


07 3816_MB18

Size M12NRG4 – 2 pcs. M12 B4 battery packs, C12 C charger.
Size M18NRG5 – 2 pcs. M18 B5 battery packs, M12-18 FC charger.

Type			M12NRG4	M18NRG5
07 07 3839	Battery starter set		eShop	eShop
Battery capacity		Ah	4	5
Battery voltage		V	12	18


07 3839_M12NRG4


07 3839_M18NRG5

07 3801–3809 – Milwaukee REDLITHIUM-ION™ **HIGH OUTPUT™** batteries.

- With improved cooling for longer working life and more power.
- For extremely demanding high-power applications - for use down to -28 °C.

Supplied with:

07 3826/3830 – Including a quick charger.

Battery type			MHB25	MHB5
07 07 3801	Li-ion battery **High Output™**	2.5 Ah	eShop	–
07 07 3803		5.0 Ah	–	eShop
Battery voltage		V	12	


07 3801_MHB25


07 3803_MHB5

Battery type			MHB3	MHB55
07 07 3808	Li-ion battery **High Output™**	3.0 Ah	eShop	–
07 07 3809		5.5 Ah	–	eShop
Battery voltage		V	18	


07 3808_MHB3


07 3809_MHB55

Battery type			M18HNRG3	M18HNRG55
07 07 3826	Battery starter set **High Output™**	3.0 Ah	eShop	–
07 07 3830		5.5 Ah	–	eShop
Battery voltage		V	18	


07 3826_M18HNRG3

REDLITHIUM FORGE™ offers the most powerful, fastest-charging, longest-lasting rechargeable batteries in the REDLITHIUM range.

Battery type			6	8	12
07 07 3805	Li-ion battery **REDLITHIUM FORGE™**		–	–	–
Battery voltage		V	18		



07 3805_6



07 3805_8

Supplied with:

Size 8 – Consisting of 2 pcs. 073805 8 rechargeable batteries and 1 pc. charger 073840 M1218FC.
Size 12 – Consisting of 2 pcs. 073805 12 rechargeable batteries and 1 pc. charger 073840 M1218FC.

Type			8	12
07 07 3807	Battery starter set **REDLITHIUM FORGE™**		–	–
Battery voltage		V	18	



07 3805_12


07 3807_12

Size MB18-CR – Milwaukee M18™ REDLITHIUM-ION™ rechargeable battery, resistant to chemicals.

- Perfect for applications where contact between the rechargeable battery pack and oils, greases and solvents cannot be avoided.
- increased protection against crack formation.

Note: When using Milwaukee M18 devices that come into contact with chemicals, it is recommended that you use the 073816 MB18-CR rechargeable battery.

Battery type			MB18-CR
07 07 3816	Li-ion system M18B5	5.0 Ah	eShop
Type of rechargeable battery			Lithium-ion
Battery capacity		Ah	5
Battery voltage		V	18


07 3816_MB18-CR

Chargers

Chip-controlled impulse charge technology. With battery charge display and overload protection.
The batteries are charged successively in sequence as they have been inserted.

- Red, continuous light: The battery is being charged.
- Red, slow flashing: Battery in waiting mode.
- Green, continuous light: Battery charged.

Size M1218C – Charger for batteries with 12, 14, and 18 V Li-ion technology.
Size M1218FC – Quick charger for batteries with 12, 14, and 18 V Li-ion technology.
Size M18DFC – M18 cordless double simultaneous quick charger.
Size M18DBSC – Quick charger allows two rechargeable batteries to be charged simultaneously.
Size M1418C6 – Multi-charger M1418 C6 with slots for 6 rechargeable batteries.


_M1218C


_M1218FC



07 3840_M18DBSC


_M1418C6


_M18DFC

Type		M1218C	M1218FC	M18DFC	M18DBSC	M1418C6
07A 07 3840	Battery charger	eShop	eShop	eShop	eShop	eShop
Manufacturer's designation		M12-18C	M12-18 FC	M18 DFC	M18 DBSC	M1418C6
Nominal voltage	V	–	–	–	230	–

Cordless vacuum cleaner systems

07 0230 Size M18VC2-0 – Portable and powerful 18 V cordless wet / dry vacuum cleaner.
- 80 mbar vacuum.

07 0231 – Cordless vacuum cleaner for mobile vacuuming. Easy transport and comfortable handling thanks to support loops on which the vacuum cleaner can be suspended.

Size GAS1812MC – Rechargeable vacuum cleaner, dust protection class M.
- Makes work easier thanks to Bosch's cable-free Auto-Start system.
- Superior suction power through brushless motor.

07 0233 – Powerful 18-V hand vacuum cleaner for wood, metal and coarse dirt.
- HEPA filter traps 99.97 % of all dust particles.
- Viewing window for easy checking of amount of dirt in the collection container.
- Lockable switch for continuous operation.

Supplied with: **Without battery and without charger.**

07 0230 – Supplied with filter, suction hose, coarse dirt nozzle and crevice nozzle.
07 0233 – Including flexible suction hose, 2 extension tubes, crevice nozzle, coarse dirt nozzle.

Note:
07 0230 – See No. 073816, No. 073827 and No. 073840 for suitable replacement batteries and chargers.
07 0231 – Suitable spare batteries and chargers can be found under No. 073851 – 073866. Refer to No. 070237 and onwards for the appropriate auto-start system.
07 0233 – Suitable replacement batteries and chargers can be found under No. 073808 – No 073840.

B 18


07 0231_GAS1812MC

MB 18


07 0230_M18VC2-0


07 0231_GAS1810L

B 18

MB 18


07 0233_M18CV-0

Type		M18VC2-0	GAS1810L	GAS1812MC	M18CV-0
03L 07 0230	Cordless wet / dry vacuum cleaner	eShop	–	–	–
03B 07 0231	Cordless wet / dry vacuum cleaner	–	eShop	eShop	–
03L 07 0233	Cordless hand vacuum cleaner	–	–	–	eShop
Number of rechargeable batteries contained		0			
Type of rechargeable battery		Lithium-ion			
Battery voltage	V	18			
Container volume	l	7.5	7.5	8	2.5
Length of suction hose	m	0.47	1.6	1.6	1.2
Volumetric flow	l/min	1300	1440	1800	1019
Weight without battery	kg	5.3	6	8	1.6

KÄRCHER Wet and dry vacuum cleaner

With the NT 22/1 Ap Bp L we offer the first cordless wet/dry vacuum cleaner for professional requirements. With high-specification Battery Power and battery for very high suction power and long operating times.

Supplied with: Suction hose, suction tube 2 pcs. 0.5 m, fleece filter bag, wet dry floor nozzle 300 mm, crevice nozzle, flat-fold filter.

Note: See No. 078518 CHARGER and 078519 BATTERY for suitable BATTERY and CHARGER.


07 8520

Type		NT22AP-0
07C 07 8520	Wet and dry vacuum cleaner	(eShop)
Number of rechargeable batteries contained		0
Type of rechargeable battery		Lithium-ion
Battery voltage	V	36
Container volume	l	22
Volumetric flow	l/min	342
maximum vacuum performance	mbar	152
Weight including rechargeable battery	kg	8.6

KÄRCHER Wet and dry vacuum cleaners

Powerful all-purpose **wet and dry cleaners** with high suction power and compact design, hose storage, and accessory storage on the cleaner. **Automatic shut-down** when the maximum filling level is reached in the container.

- Folded filter enables **wet and dry suction without removing the filter.**
- The **Tact automatic filter cleaning system** permits uninterrupted work in combination with low maintenance costs and long working life of the filter.
- The **central rotary** switch permits easy switching between the suction programs.

Size NT22APTE – Wet / dry vacuum cleaner with device socket and automatic start-up for electric tools.
- PES cartridge filter unaffected by moisture.
- **Robust 22-litre container with bumpers and castors.**

Size NT55T2ME –
- Outstanding suitability for removing even **large quantities of fine dust** right through to coarse dust and liquids.
- For **emptying**, the **stainless steel tank** can be completely **removed** from the mobility trolley and taken to a disposal point.
- **Anti-static system (grounding up to the suction hose connection) and protection class I.**
- **Robust 55-litre container with bumpers and metal castors.**

Size NT30TL; NT30TEL –
- The large top-mounted Eco flat fold filter permits **immediate change from wet to dry suction without removing the filter.**
- The **central rotary** switch permits easy switching between the suction programmes.

Supplied with:

Size NT75APMETC – With hose for draining liquids.

Size NT27ME; NT30TL; NT30TEL; NT65APME; NT55T2ME; NT75APMETC – Suction hose with elbow, metal suction tube 2×0.5 m, floor nozzle, and crevice nozzle, flat fold filter or paper filter bag.

Note:	Industrial vacuum cleaner No. 078522 for materials that are oily or contain oil.


_NT22APTE


_NT27ME


_NT30TL /_NT30TEL


_NT65APME


_NT75APMETC


_NT55T2ME

Manufacturer's designation		NT22APTE	NT27ME	NT30TL	NT30TEL	NT65APME	NT75APMETC	NT55T2ME
07 8521	Wet and dry vacuum cleaner	–	–	–	eShop	eShop	–	–
Power consumption	W	1300	1380	1380	1380	2760	2760	2760
Container volume	l	22	27	30	30	65	75	55
Connection width	mm	35	35	35	35	40	40	40
Length	mm	380	420	560	560	600	700	710
Width	mm	370	420	370	370	480	505	570
Height	mm	480	540	580	580	920	995	1070
Suction hose length	m	1.9	2.5	2.5	4	4	4	4
Cable length	m	6	7.5	7.5	7.5	10	10	10
Number of turbines		1	1	1	1	2	2	2
Air flow volume	l/s	71	67	74	74	2×74	2×74	2×74
Vacuum	mbar	255	200	254	254	254	254	254
Operating noise	dB(A)	72	72	69	69	73	73	73
Automatic switch-on		yes	–	–	yes	–	–	–
Anti-static system		–	–	–	yes	–	–	yes
Fine dust suitability		–	–	–	–	–	–	yes
Filter cleaning		ApClean semi-automatic filter cleaning	–	Tact automatic filter cleaning	Tact automatic filter cleaning	ApClean semi-automatic filter cleaning	ApClean semi-automatic filter cleaning	Tact² automatic filter cleaning
Dust class — vacuum cleaner					L			
Weight	kg	6.1	8.2	13.9	14	23	26.5	45
Filter system		Cartridge filter	Cartridge filter	Eco flat fold filter	Eco flat fold filter	Fan-fold filter	Fan-fold filter	Fan-fold filter
Special features		Compact	Stainless steel tank, particularly mobile	Robust container with bumper	Robust container with bumper	Stainless steel tank	Stainless steel tank, tilting mobility trolley	Stainless steel tank, anti-static, protection class I

Nilfisk Wet / dry / swarf vacuum cleaner

Wet / dry / swarf vacuum cleaner

Robust and powerful **wet / dry vacuum cleaners** with flexible hose connection system (MultiFit) and for performing a very wide variety of professional cleaning tasks. **Degree of separation > 99.9%.**

07 8540 Size 21-01 – Compact all-purpose vacuum cleaner with Push & Clean **filter cleaning system.**

Size 21-21INOX –
- With **socket and automatic switch-on** for connection of an electric power tool (maximum 2000 W).
- **Stainless steel tank** with handle and hose clip.

07 8541 Size 44-2LICM –
- Extremely quiet industrial vacuum cleaner with 42 l tank, washable PTFE fan-fold filter for vacuuming up even fine dust.

Size 751-11 –
- **Extremely quiet industrial vacuum cleaners** with long-lasting washable PET fleece filter.
- Soft start, generous tool storage, and additional power tool socket.

Size 961-01 –
- **Dual-motor industrial vacuum cleaner** with long-lasting washable PET fleece filter.
- Push & Clean **filter cleaning system**.
- High-performance vacuum cleaner with large tilting mobility trolley and detachable **stainless steel tank** (tank capacity 70 litres).
- MultiFit accessories system with float switch and audible signal on reaching the maximum tank capacity.

07 8542 Size 33-2HIC – Compact **safety vacuum cleaners** for working with hazardous dusts of **class L, M, H and asbestos**.

Supplied with:

07 8541 Size 44-2LICM – Including M class washable PTFE flat fold filter, **anti-static suction hose** ∅ 32 mm, D 36 stainless steel extension tubes (3 × 350 mm), curved stainless steel hand tube, adapter plate for a tool box, 400 mm industrial floor nozzle, universal nozzle, suction brush, crevice nozzle, anti-static tool adaptor, trolley handle for easy transport and secure storage.

Size 751-11 – Supplied with curved stainless steel hand tube, rubber oblique-end nozzle, **without drain hose**.

Size 961-01 – Including stainless steel extension tubes (2×0.5 m), stainless steel hand tube, 400 mm floor nozzle and 300 mm crevice nozzle.

07 8542 Size 33-2HIC – Including washable PTFE fan-fold filter, **anti-static suction hose** ∅ 32 mm, D 36 stainless steel extension tubes (2 × 505 mm), curved stainless steel hand tube, 300 mm industrial floor nozzle, crevice nozzle, anti-static tool adapter.

07 8541/8542 – Supplied with suction hose, curved hand tube, wet filter and washable filter element (PET), hose storage, and cable storage.

Note: Other safety vacuum cleaners for all hazard classes (health hazard or explosive dusts) are available on request (class L, M, H).


_21-21INOX


_21-01


_751-11


_44-2LICM


_33-2HIC


_961-01

Manufacturer's designation		21-01	21-21INOX	44-2LICM	751-11	961-01	33-2HIC
07 8540	Wet and dry vacuum cleaner AERO	eShop	eShop	–	–	–	–
07 8541	Wet and dry vacuum cleaner ATTIX	–	–	eShop	eShop	eShop	–
07 8542	Safety vacuum cleaner ATTIX	–	–	–	–	–	eShop
Power consumption	W	1250	1250	1400	1500	3000	1400
Container volume	l	20	20	42	70	70	30
Length	mm	375	390	565	605	580	565
Width	mm	385	400	385	580	600	385
Height	mm	505	525	650	970	970	520
Suction hose length	m	2.5	2.5	4	4	4	4
Hose ∅	mm	32	32	32	36	38	36
Cable length	m	5	5	7.5	7.5	10	7.5
Number of turbines		1	1	1	1	2	1
Air flow volume	l/s	60	60	75	60	2×60	75
Vacuum	mbar	210	210	250	230	250	250
Operating noise	dB(A)	64	64	60	57	67	60
Automatic switch-on		–	yes	yes	–	–	yes
Anti-static system		–	–	yes	–	–	yes
Fine dust suitability		–	–	yes	–	–	–
Filter cleaning		Push & Clean system	Push & Clean system	InfiniClean™ fully automatic	–	Push & Clean system	InfiniClean™ fully automatic
Dust class – vacuum cleaner		–	–	L	–	–	L; M; H; Asbestos
Weight	kg	7.5	8.5	17.5	25	30	14.5
Filter system		PET filter element	PET filter element	PTFE flat fold filter element	PET fleece filter	PET fleece filter	PTFE flat fold filter
Special features		Compact	Compact stainless steel container	Vacuum cleaner for fine dust	Extremely quiet	tip-up stainless steel container	Safety vacuum cleaner

KÄRCHER Accessories for wet/dry vacuum cleaners


07 8527


07 8528


07 8539

Connection width		DN35	DN40
07 8527	Rubber oblique-end nozzle	eShop	eShop
07 8528	Crevice nozzle, narrow, 13 mm	eShop	eShop
07 8539	Metal crevice nozzle, 500 mm	eShop	–
suitable for		NT27ME, NT30T, NT30TE, NT35T, NT35TE, NT22APTE	NT65APME, NT75APMETC, NT55T2ME

Nilfisk Accessories for Nilfisk ATTIX wet / dry / swarf vacuum cleaner

Additional suction set for No. 078541 and No. 078542 for general-purpose workshop use.

Supplied with:
- Suction hose 4 m, Ø 36 mm.
- Curved stainless steel hand tube and extension tube 2×500 mm.
- Professional floor nozzle 360 mm and plastic crevice nozzle 300 mm.
- Rubber oblique-end nozzle 190 mm.


07 8543

Manufacturer's designation		ATTIX5
07 8543	Workshop set	eShop
suitable for		ATTIX 33-2HIC, 44-2LICM, 751-11, 961-01

07 8545 – Special chip suction hose for vacuuming up metal chips, including rubber oblique-end nozzle No. 078546 size 7868. **Suitable for No. 078541, all sizes.**

07 8546 – Rubber oblique-end nozzle for vacuuming up chips No. 078545.

07 8547 – Rubber crevice nozzle for vacuuming up chips No. 078545.

07 8555 – Professional plastic floor nozzle for wet and dry vacuum cleaner No. 078541 size 751-11; 078541 size 44-2LICM; 078540 size 21-01; 21-21INOX.

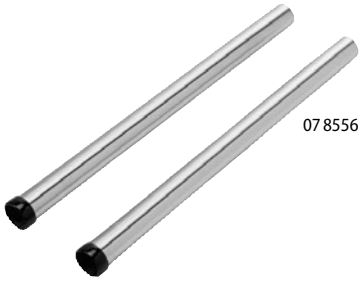
07 8556 – Stainless steel extension tube, 2-part for wet and dry vacuum cleaner No. 078541 size 751-11; 901-01; 078541 size 44-2LICM; 078540 size 21-01; 21-21INOX.


07 8545


07 8546


07 8547


07 8555


07 8556

Manufacturer's designation		DN50	7868	7102	3666	8074
07 8545	Chip suction hose set	eShop	–	–	–	–
07 8546	Rubber oblique-end nozzle	–	eShop	–	–	–
07 8547	Joint nozzle	–	–	eShop	–	–
07 8555	Floor nozzle, 400 mm wide	–	–	–	eShop	–
07 8556	Stainless steel extension tube	–	–	–	–	eShop
Ø	mm	50	50	50	36	36
Length	m	4	0.26	0.37	–	2×0.5

Durable chip basket for separation of metal chips.


07 8544

Manufacturer's designation		ATTIX7	ATTIX9
07 8544	Chip basket	eShop	eShop
suitable for		ATTIX 751-11	ATTIX 961-01

KÄRCHER Industrial vacuum cleaners



Industrial vacuum cleaner suitable for vacuuming up and separating **coolants, lubricating emulsions, water or oil with solids (e.g. metal chips).**

- Compact design and robust materials for the best movement characteristics.
- Maximum flexibility in use and long working life for the oil-resistant power cable.
- Suction is applied via a 360° rotatable hose connection on the suction head.

Size IVRL65/12 – 1-motor 1.2 kW industrial vacuum cleaner with **tilting mobility trolley** and **65 litre tank.**

Size IVRL65/24 – 2-motor 2.4 kW industrial vacuum cleaner with **tilting mobility trolley** and **65 litre tank.**

Size IVR-L100TC – 2-motor 2.4 kW industrial vacuum cleaner with **tilting mobility trolley** and **100 litre tank**.

Size IVRL-100DP – 2-motor 2.4 kW industrial vacuum cleaner with **tilting mobility trolley, 100 litre tank and integral barrel pump** for easy and complete emptying.

Supplied with:

Size IVR-L100TC; IVRL-100DP – With tilting chassis, and drain hose with level indicator. **Without accessories. Suitable accessories can be found under No. 078524, 078529 and 078533.**

Note:	A version with 100-litre stainless steel container can be found under No. 078522 size IVR-L100DP in our eShop.



_IVRL6512



_IVRL6524



_IVR-L100TC



_IVRL-100DP

Manufacturer's designation			IVRL65/12	IVRL65/24	IVR-L100TC	IVRL-100DP
07D 07 8522	Industrial vacuum cleaner		(eShop)	(eShop)	(eShop)	(eShop)
Power consumption		W	1200	2400	2400	2400
Container volume		l	65	65	100	100
Connection width		mm	DN50			
Length		mm	718	737	840	840
Width		mm	526	532	660	660
Height		mm	1251	1326	1320	1320
Cable length		m	–	6	6	6
Number of turbines			1	2	2	2
Air flow volume		l/s	72	144	148	148
Vacuum		mbar	235	235	230	230
Operating noise		dB(A)	70	70	68	68
Dust class – vacuum cleaner			L; L	L	L; L	L
Weight		kg	33	43	58	57

Accessories for Kärcher wet / dry and industrial vacuum cleaners

Volume		l	20	40
07D 07 8524	Swarf basket for the industrial vacuum cleaner		–	eShop
suitable for			IVR-L40, IVR-L65/20	IVR-L100 TC, IVR-L100 DP

07 8524



Supplied with:

07 8531 Size DN40 – ME-PU suction hose (3 m) oil- and cut-resistant, handle, standard nozzle, reducer, flat nozzle

Size DN50 – ME-PU suction hose (3 m) oil- and cut-resistant, handle, standard nozzle, flat nozzle.



07 8531_DN40

Connection width		DN40	DN50
07D 07 8531	Set for vacuuming chips and liquids	eShop	eShop
07D 07 8533	Reducing adaptor	eShop	–
suitable for		IVRL65/12	IVR-L100 TC, IVRL-100 DP, IVRL65/24



07 8533



07 8531_DN50

Nilfisk Industrial vacuum cleaners

High quality, very durable Nilfisk CFM "grey line" industrial vacuum cleaner.

07 8559 Size VHO200 – Powerful **liquid vacuum cleaner** with high-power oil-resistant cleaning set. Equipped with **air reverse blowing valve** for simple and reliable emptying of the dirt container. A chip basket and emptying kit are already incorporated. Suitable for a very wide range of cleaning work in the metal industry.

Size ECO-OIL13 – **Swarf and liquid suction set.** With powerful smooth-running 1.3-kW turbine. Inlet ∅ 50mm. Oil-proof castors with parking brakes and oil-resistant seals. Metal chips are **separated from liquids** by the swarf basket included in the scope of delivery. This allows the re-use of coolants and assists the recycling of the metal chips.

Supplied with:

07 8559 Size VHO200 – Supplied with chip basket, integral emptying kit including oil-resistant cleaning set.

Size ECO-OIL13 – Supplied with chip basket (30L), mobility trolley, drain hose. **Without accessories.**

Note:	See under 078551-078552 for suitable accessories.



07 8558_VHS120CB



07 8559_VHO200



07 8559_ECO-OIL13

Manufacturer's designation		VHS120CB	VHO200	ECO-OIL13
07D 07 8558	Dry vacuum cleaner	(eShop)	–	–
07D 07 8559	Swarf and liquid vacuum cleaner	–	(eShop)	(eShop)
Power consumption	W	2000	2400	1300
Container volume	l	37	75	180
Length	mm	560	580	1050
Width	mm	570	880	670
Height	mm	1015	1230	1500
Number of turbines		–	1	1
Air flow volume	l/s	–	55	46
Vacuum	mbar	–	230	320
Operating noise	dB(A)	74	70	76
Weight	kg	38	60	120

Special accessories for industrial vacuum cleaners

Supplied with:

07 8551 – Rubber hose (3 m), 1 curved hand tube, 1 rubber oblique-end nozzle, 1 400 mm floor nozzle, 50 to 40 reducer piece, galvanised hose sleeve.

07 8552 – PU hose (3 m), 1 hand tube, 1 floor nozzle (400 mm), 1 rubber angle tube nozzle, 50 to 40 reducer piece, galvanised hose connector, galvanised flat 500 mm crevice nozzle, ∅ 80 mm round brush with nylon bristles.



07 8551



07 8552

Hose ∅ mm		40	50
07C 07 8551	Industrial set **oil-resistant**	eShop	–
07C 07 8552	Industrial set	–	eShop
suitable for		VHS120CB, VHO200, ECO-OIL 13	

Nilfisk Sweeper

Manually-guided sweepers with tool-less adjustment of side brush and main brush for optimum cleaning even under varying floor conditions.
Manually operated, **large collection hopper** and fold-away handle.
Suitable for indoor and outdoor use.

Application: For hard floors and also for carpeted floors. Ideal for sweeping up leaves, small quantities of dry dirt, crown caps, cigarettes etc.

Supplied with: Manually-guided sweeper, main sweeper roller, side brush, integral filter.

Size SW200 – Main cylindrical sweeping brush and side brushes.

Size SW250 – Main cylindrical sweeping brush and two side brushes.



_SW200



_SW250

Manufacturer's designation		SW200	SW250
07C 07 8550	Sweeper	eShop	eShop
Container volume	l	38	
Length	mm	1470	
Width	mm	850	920
Height	mm	1120	
Theoretical area output	m²/h	2800	3680
Working width with side brushes	mm	700	920
Weight	kg	19.5	20

KÄRCHER High-pressure cleaner

Mobile high pressure jet cleaner with AC motor. Cleaner has **pressure switch control**, anti-kink system, high-pressure hose that can be rotated under pressure and rotatable stainless steel tubular jet.
Sturdy 3-piston axial pump with brass cylinder head. Water infeed of brass.
Maximum infeed temperature 60 °C.

Size HD615MPLUS – ■ 3-piston axial pump with hardened stainless steel pistons.

Supplied with:

Size HD615MPLUS – 10 m high premium pressure hose, EASY!Force gun with softgrip inlay, stainless steel tubular jet 840 mm, power nozzle and dirt abrader.

Size HD511P – Supplied with 10 m high-pressure hose, stainless steel tubular jet 850 mm with one-way nozzle.



EASY! Force gun



07 8571_HD615MPLUS



07 8571_HD511P

Manufacturer's designation		HD615MPLUS	HD511P
07C 07 8571	High pressure cleaner unheated	–	eShop
Power consumption	W	3100	2200
Mains supply fuse	A	16	10
Working pressure	bar	150	110
Pumped volume	l/h	560	490
Weight	kg	30	20.5

18 V cordless heat gun

07 8334 – Cordless heat gun with 2 temperature settings (300° / 500°)
- ■ **Quick heating,** only 6 seconds to 300°.
- ■ LED light to illuminate the working area.
- ■ Compatible with all nozzles for cable-connected heat guns from Bosch.

07 8335 – Cordless heat gun with a temperature setting of up to a maximum of 470°
- ■ **Fast heating up** in just 6 seconds
- ■ LED light to illuminate the working area

Supplied with:

07 8334 – **Without battery, without charger.** Incl. L-BOXX, reflector nozzle and reducer nozzle.

07 8335 – Without battery, without charger. Incl. reflector nozzle and reducer nozzle.

Note:

07 8334 – Suitable batteries, starter sets and chargers for the Bosch 18V system can be found under No. 073851 – No. 073858 and No. 073863 – No. 073867.

07 8335 – Suitable batteries, starter sets and chargers for the Milwaukee 18V system under No. 073808 – No. 073840.

L-BOXX B 18



07 8334_GHG18V50

MB 18



07 8335_M18BHG

Type		GHG18V50	M18BHG
03B 07 8334	BOSCH Cordless heat gun	eShop	–
03L 07 8335	Milwaukee Cordless heat gun	–	eShop
Manufacturer's designation		GHG18V-50	M18BHG-0
Air temperature	°C	300 – 500	470
Air flow volume	l/min	175	170
Number of temperature levels		2	1
Type of rechargeable battery		Lithium-ion	
Battery voltage	V	18	
Number of rechargeable batteries contained		0	
Weight	g	590	670

steinel Heat gun

07 8321 Size 89504 – **High-quality straight handle heat gun HM 2620 E** for professional applications. Electronically controlled with stepless regulation of the air quantity.

Size 351601 – **High-quality heat gun HG 2520 EKF in pistol format** for professional applications, with carrying case. Electronically controlled with stepless regulation of the air quantity.

Size 89672 – **Heat gun set HM 2320 EKF** in a plastic case, consisting of:

- Heat gun with stepless air flow control, four memory programmes, temperature and residual heat display, LOC function, single-hand operation.
- Reducer nozzle 9 mm, wide angle nozzle 50 mm, reflector nozzle, 100-piece shrink sleeve set.

Size 066611; 063993 – Compact cordless heat gun mobile heat MH 5 offers four application-specific programs. Air volume can be regulated digitally in six steps (up to 300 l/min).

Size 066604; 063986 – Cordless heat gun 18V with 2 temperature settings (300° / 500°).

07 8321 Size 89603; 89610 – **Electronically controlled heat gun HM 2120 E,** air volume adjustment 150 – 500 l/min in 3 stages. Can be ordered as a set and 0 version.

Supplied with:

07 8322 – Cordless heat gun including 1 pc. 18 V / 8.0 Ah battery, charger and case.

07 8323 – Version without battery and without charger, case.

Note:

07 8322/8323 – See No. 078327 – No. 078328 for suitable batteries and chargers.


_89504


_351601


_89672


_89603
_89610


CAS 18
_066604

Type		89504	351601	89672	89603	89610	066611	066604	063993	063986
07E 07 8321	Heat gun	–	eShop	–	–	–	–	–	–	–
07E 07 8322	18V cordless heat gun	–	–	–	–	–	–	–	–	–
07E 07 8323		–	–	–	–	–	–	–	eShop	eShop
Power consumption	W	2300	2300	2300	2200	2200	2200	–	2200	–
Air temperature	°C	50 – 700	50 – 700	80 – 650	80 – 630	80 – 630	50 – 500	300 – 500	50 – 500	300 – 500
Air flow volume	l/min	150 – 500	150 – 500	150 – 500	–	–	300	200	300	200
Battery voltage	V	–	–	–	–	–	18	18	18	18
Number of rechargeable batteries contained		–	–	–	–	–	1	1	0	0
Weight	g	840	840	960	–	850	660	680	660	680
Manufacturer's designation		HM 2620 E	HG 2520 EKF	HM 2320 EKF	HM 2120 E	HM 2120 EKF	–	–	–	–
Version		–	–	Range	–	Range	Set	Set	–	–

Heat gun accessories

Supplied with: 12-piece set consisting of: Wide angle nozzle 75 mm, blasting nozzle 75 mm, reducer nozzles 14 and 9 mm, wide slot nozzle, soldering nozzle, reflector nozzle, scraper, scraper handle, 3 spare blades, plastic case.


07 8329

Type		075569
07E 07 8329	Heat gun accessory set **12 pieces**	eShop
suitable for		HM 2320, HM 2120, MH3, MH5

Hot glue gun

Size 84684 – **MobileGlue 5011 cordless hot glue gun** for cordless working of up to 90 minutes. High delivery rate of approx. 20 g/min, short warm-up time of only 1.5 min.

Size 85360 – **GlueMatic 3011 hot glue gun** for repair projects of all sizes.

Size 86947 – **GlueMatic 7011 hot glue gun** for continuous daily use with a very high delivery rate of 35 g/min and a short warm-up time of < 2 min.

Supplied with:

Size 84684 – Without battery and charger.

Size 85360 – Without case.

Size 86947 – Includes case and 3 glue sticks.


CAS 18
08 3385_84684


08 3386_85360

Manufacturer's product number		84684	85360	86947
07E 08 3385	MobileGlue glue gun	eShop	–	–
07E 08 3386	GlueMatic glue gun	–	–	–


08 3386_86947

Low-drip glue stick ∅ 11 mm.

Size 048419 – Transparent glue sticks for invisible bonding.

Size 044930 – **Ultra Power** white glue sticks for bonding a wide variety of materials.

Size 052423 – **"Flex"** glue stick. Temperature 190 °C, for large areas.

Size 050092 – **"Universal"** glue stick. Temperature 190°C.

Suitable for:

Size 048419; 044930 – Hot glue gun No. 083385 and 083386.

Size 052423; 050092 – Hot glue gun Glue PRO 300 No. 083386.


08 3388

Manufacturer's product number		048419	044930	052423	050092
07E 08 3388	Glue stick set, 20 pieces	eShop	eShop	eShop	eShop

Electric and manual tacker / staple gun

User-friendly, ergonomic professional tackers for precision driving of round-wire and flat staples and nails.

07 8405 – **Sturdy hammer tacker** with integral staple insertion slide and non-slip grip.

07 8407 – **Durable professional staple gun** with robust, low-recoil zinc die-cast housing. T he re-strike function ensures that staples / nails of all types are driven flush.

07 8409 Size J-551 – Powerful, professional battery-powered tacker for perfect attachment of a wide variety of materials.

07 8410 Size J-150 – Powerful electric tacker (230 V/16 A) for professional attachment of different materials.

07 8407–8410 –
- Reload system in the base for quick and easy reloading.
- Distance stop for insertion of parallel rows of staples.
- Impact force control.
- Patented safety unlocking.
- Good access to restricted spaces.
- Staple supply viewing window.

Supplied with:

07 8409 Size J-551 – Supplied with 1 pc. 18 V 2.0 Ah battery, charger, staples and transport case.

Note:
07 8409 Size J-551 – For suitable spare batteries see No. 073870.



07 8405 _J-033



07 8407_J-29

CAS CORDLESS ALLIANCE SYSTEM



07 8409 _J-551



07 8410_J-150

Manufacturer's designation			J-033	J-29	J-551	J-150
07E 07 8405	NOVUS	Hammer tacker	eShop	–	–	–
07E 07 8407	NOVUS	Hand staple gun	–	eShop	–	–
07E 07 8409	NOVUS	Cordless staple gun	–	–	eShop	–
07E 07 8410	NOVUS	Electric staple gun	–	–	–	–
maximum staple insertion depth		mm	10	16	14	14
suitable type of staple			G	E, A, D, H, G	D, G, E	A, H, E
Weight		kg	0.5	1	2.7	1.2

Staples and nails for tacker / staple guns

07 8417 – **Round wire staples type A 53/6-14** for strip wood, wire mesh, metal labels, textiles, etc.

07 8418 – **Flat wire staples type D 53F/6-14** for film, aluminium cladding, card, labels etc.

07 8419 – **Nails type E J/16** for decorative strips, corner strips etc.

07 8420 – **Flat wire staples type G 11/6-14** for film, aluminium cladding, sarking membranes, paper and card, labels etc.

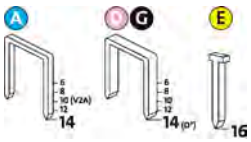

07 8417_8


07 8417


07 8418_8
07 8420_8


07 8418


07 8419



maximum staple insertion depth			mm	6	8	10	14	Set contents
07E 07 8417	NOVUS	Round wire staples set **5000 pieces**	**Type A**	eShop	eShop	eShop	eShop	5000 pieces
07E 07 8418	NOVUS	Flat wire staples set **1200 pieces or 600 pieces**	**Type D**	eShop	–	eShop	eShop	Sizes 6, 8 = 1200 pieces; sizes 10, 14 = 600 pieces
07E 07 8419	NOVUS	Nail set **1000 pieces or 2600 pieces**	**Type E**	–	–	–	eShop	Size 14 = 1000 pieces; size 16 = 2600 pieces
07E 07 8420	NOVUS	Flat wire staples set **1200 pieces or 600 pieces**	**Type G**	eShop	eShop	eShop	eShop	Sizes 6, 8 = 1200 pieces; sizes 10, 14 = 600 pieces

Cordless staple gun

MB 12

Compact and powerful M12™ **cordless stapler** with integral staple insertion slide and non-slip grip.
Up to 2000 staples per 2.0 Ah battery charge. Function to prevent accidental operation.

Suitable for: Type G staples with maximum insertion depth of 6–14 mm.

Supplied with:

07 8402 – Supplied with 2 pcs. 12 V / 2.0 Ah batteries, C12 C charger, HD box.

07 8403 – Version **without rechargeable battery, without charger, without HD box.**



07 8402

Manufacturer's designation			M12BST
03L 07 8402	Milwaukee	Cordless stapler	eShop
03L 07 8403	Milwaukee	Cordless stapler	eShop
Manufacturer's designation			M12BST
Battery capacity (07 8402)		Ah	2
Battery voltage		V	12
maximum staple insertion depth		mm	14
suitable type of staple			G

Pneumatic tools

All technical data relate to a dynamic pressure of **6.3 bar** and the specified hose internal ∅.

Pneumatic drills

A range of powerful and very smooth running drills with pistol grip and a drilling power of up to 13 mm in steel. Exhaust air is discharged through the handle, to prevent drill chips from swirling up. With quick-release chuck.

Size D2116RQ; D2148RQ – With changeover valve for **clockwise / anticlockwise rotation** (for use as a screwdriver or tap driver).

Size D2163Q – Angle drill, width across head 115 mm / 25 mm.

Supplied with: **Quick-clamping chuck.**

Size D2121Q; D2148RQ – Additionally with support handle.

Spare part: **Selected service kits:** Sets of replacement parts for most Atlas Copco pneumatic tools can be supplied on request for preventive maintenance and servicing.


_D2112Q
_D2116Q
_D2116RQ


_D2121Q


_D2148-R

NEW


_D2163Q

Type			D2112Q	D2116Q	D2116RQ	D2121Q	D2148RQ	D2163Q	D2148-R
03R 07 9051	Atlas Copco	Pneumatic drill	eShop	eShop	eShop	eShop	eShop	eShop	(eShop)
Output power		W	350	350	250	350	250	330	250
maximum speed		min^{-1}	0 – 5400	0 – 2400	0 – 2400	0 – 750	0 – 750	0 – 2000	0 – 750
Quick-clamping chuck range		mm	1.5 – 10	1.5 – 10	1.5 – 10	1.5 – 13	1.5 – 13	1.5 – 10	2 – 13
maximum air consumption		l/min	600	600	600	600	600	540	600
Connection thread						BSP			
Compressed air connection		in				1/4			
recommended hose size (internal ∅)		mm				10			
Weight		kg	1	1	1	1.4	1.4	1.1	1.5
Operating noise		dB(A)	80	82	82	87	85	78	85
maximum vibration to EN		m/s^2	< 2.5	< 2.5	< 2.5	2.5	3.7	< 2.5	<2,5
Length		mm	211	211	211	248	248	242	244

Pneumatic ratchet screwdriver

07 9121 – Reversible ratchet screwdriver with speed control in a compact design with glass-fibre composite casing for good thermal insulation. Exhaust air outlet can be rotated 360°.

Size W2611 – Overall length only 192 mm, ideal for restricted spaces.

07 9122 – Pneumatic mini ratchet screwdriver with 130 mm overall length. Quick-change button for socket changes.

Spare part: **Selected service kits:** Sets of replacement parts for most Atlas Copco pneumatic tools can be supplied on request for preventive maintenance and servicing.


07 9121_W2611


07 9121_W2621
07 9121_W2630


07 9122_9427

Type			W2611	W2630	W2621	9427
03R 07 9121	Atlas Copco	Pneumatic ratchet screwdriver	eShop	eShop	eShop	–
03R 07 9122	Chicago Pneumatic		–	–	–	eShop
Torque range		Nm	4 – 40	25 – 80	5 – 68	7 – 35
maximum screw ∅ (8.8 - 12.9)			M8	M14	M12	M8
maximum speed		min^{-1}	280	200	170	270
Tool arbor size		in	1/4	1/2	3/8	3/8
maximum air consumption		l/min	540	660	600	336
Connection thread				BSP		
Compressed air connection		in		1/4		
recommended hose size (internal ∅)		mm		10		
Weight		kg	0.5	1.2	1.1	0.5
Operating noise		dB(A)	85	86	87	93
maximum vibration to EN		m/s^2	8,8	10.5	15	5
Length		mm	192	307	271	130

Chicago Pneumatic The new CP86 series

Innovative high torque cordless nutrunner for everyday use – with app.

- Screw fastenings for torque and angle of rotation.
- Collect data, count screws, and keep an eye on maintenance intervals.
- Up to 8,100 Nm.
- Up to 250 screw cycles with only one battery charge.

Now available on request.



Pneumatic screwdriver with switch-off function

The S24 PRO pistol screwdrivers have a switch-off function to ensure high-quality screwdriving. These tools meet industry requirements for performance, accuracy and stability. The ergonomically well-balanced PRO small screwdrivers are handy, productive and offer simple torque adjustment.

Spare part: **Selected service kits:** Sets of replacement parts for most Atlas Copco pneumatic tools can be supplied on request for preventive maintenance and servicing.



079162_S2465-L



079162_S2443-P

Type		S2465-L	S2443-P
03R 07 9162 Atlas Copco Pneumatic screwdriver		(eShop)	(eShop)
Torque range	Nm	0.8-6.5	
maximum screw ∅ (8.8 - 12.9)		M5	
maximum speed	min^{-1}	1000	
Bit socket		F 6.3	
Format		Rod	Pistol
maximum air consumption	l/min	870	390
Connection thread		NPT	
Compressed air connection	in	1/4	
recommended hose size (internal ∅)	mm	10	
Weight	kg	0.8	
Operating noise	dB(A)	87	
maximum vibration to EN	m/s^2	<2,5	
Length	mm	232	

Pneumatic screwdriver with slip clutch

The S23 PRO pistol screwdriver has a classic slip clutch that responds as soon as the desired torque is reached. S23 models are suitable for soft joints, screwing self-tapping screws and wood screws, as well as self-drilling screws where the torque may temporarily increase during the screw-in process.

Spare part: **Selected service kits:** Sets of replacement parts for most Atlas Copco pneumatic tools can be supplied on request for preventive maintenance and servicing.



079163_S2306-CE



079163_S2355-CE

Type		S2306-CE	S2355-CE
03R 07 9163 Atlas Copco Pneumatic screwdriver		(eShop)	(eShop)
Torque range	Nm	1-6	1.5-5.5
maximum screw ∅ (8.8 - 12.9)		M5	
maximum speed	min^{-1}	1700	
Bit socket		F 6.3	
Format		Pistol	Rod
maximum air consumption	l/min	600	820
Connection thread		NPT	
Compressed air connection	in	1/4	
recommended hose size (internal ∅)	mm	10	
Weight	kg	0.9	0.8
Operating noise	dB(A)	88	89
maximum vibration to EN	m/s^2	<2,5	
Length	mm	190	207

Pneumatic impact wrench

Powerful impact wrench.
Exhaust air passes through the handle, **reversible.**

Application:

Size W2411 – Suitable for light assembly work.
Size W2412 – Suitable for places where access is difficult and places where space is restricted.
Size W2428 – Suitable for heavy-duty disassembly work.
Size W2910–W2920 – Suitable for heavy-duty use.


07 9171_W2412


07 9171_W2910
_W2911
_W2915
_W2920


07 9171_W2411


07 9171_W2428

Type		W2411	W2412	W2910	W2911	W2915	W2920	W2428
03R 07 9171 Atlas Copco Pneumatic impact wrench		eShop	eShop	eShop	eShop	eShop	eShop	eShop
Torque range	Nm	13 – 80	100 – 300	150 – 400	150 – 400	200 – 800	300 – 1450	800 – 1600
Maximum screw ∅ (8.8 - 12.9)		M10	M16	M14	M14	M16	M30	M33
maximum speed	min^{-1}	7000	7400	6500	7300	7700	5500	5000
Tool arbor drive profile					□			
Tool arbor size	in	3/8	1/2	3/8	1/2	1/2	3/4	1
Format		Pistol	Pistol	Pistol	Pistol	Pistol	Pistol	Straight
maximum air consumption	l/min	678	780	1020	1020	1080	1620	2880
Connection thread					BSP			
Compressed air connection	in	1/4	1/4	1/4	1/4	1/4	3/8	1/2
recommended hose size (internal ∅)	mm	10	10	10	10	10	13	19
Weight	kg	1	1.4	1.2	1.2	2	3.2	10.5
Operating noise	dB(A)	88	88	89	92	96	96	98
maximum vibration to EN	m/s^2	7	5.6	3.3	5.1	7.5	10.2	10.67
Length	mm	154	113	160	160	185	218	345
Height	mm	165	178	178	178	186	206	131

Pneumatic impact wrench

07 9191 – Ultra-compact impact wrench with jumbo hammer impact mechanism, one-hand changeover and **three-stage clockwise rotation**. 1200 Nm maximum release torque.

07 9192 – Impact wrench with high-performance double hammer impact mechanism. 1890 Nm maximum release torque.

07 9193 – Impact wrench with high-performance double hammer impact mechanism.

Size 9012TT – **Twin Turbo technology.** 2200 Nm maximum release torque.

Size 9013TT – Long tool life and very efficient working in industrial and automotive applications. **Removable handle, adjustable 360°. Twin Turbo technology.** 4100 Nm maximum release torque.

07 9194 – **Twin Turbo impact wrench** with pivot mechanism for the best accessibility. Double hammer impact mechanism. 550 Nm maximum release torque.


07 9191_9012M-1


07 9192_9013M


07 9193_9012TT


07 9193_9013TT

Type		9012M-1	9013M	9012TT	9013TT	9012ATT
03R 07 9191	Pneumatic impact wrench **Short version**	eShop	–	–	–	–
03R 07 9192	Pneumatic impact wrench	–	eShop	–	–	–
03R 07 9193	Pneumatic impact wrench **Twin Turbo**	–	–	eShop	eShop	–
03R 07 9194	Pneumatic angle impact wrench **Twin Turbo**	–	–	–	–	eShop
maximum torque	Nm	678	1085	1356	2170	500
maximum speed	min^{-1}	8800	7300	8300	5200	8000
Tool arbor drive profile				Square		
Tool arbor size	in	1/2	3/4	1/2	3/4	1/2
maximum air consumption	l/min	127.4	153	147.2	243.5	113
Compressed air connection	in	1/4	3/8	1/4	3/8	1/4
recommended hose size (internal ∅)	mm	10	10	10	13	10
Weight	kg	1.27	2.1	1.6	4.5	1.3
Operating noise	dB(A)	92.2	104	99.7	99.5	90.1
maximum vibration to EN	m/s^2	13.49	7.47	8.69	10.69	4.89
Length	mm	80	188	128	184	277


07 91949_9012ATT



Pneumatic impact wrench

07 9200 – Compact powerful angle impact wrench with aluminium casing. Very flat design. One-hand changeover and a **single-hammer impact mechanism with long working life.**

07 9204 – **Impact wrench for the most demanding applications** and highest torques. **Exceptionally robust 2-claw impact mechanism** (twin lobe) for a very long working life under rough conditions. The screw tightening phase starts slowly and increases with every impact. **Suitable for all bolt-tightening requirements.** Simple 3-piece design for **very low maintenance requirements.**

07 9220 – Powerful very sturdy impact wrench with **long-life double hammer impact drive mounted in an oil bath.** Simple one-hand controls. Balanced handle for ergonomic handling. Fitted with a suspension hook for attachment to spring suspension. With **ATEX certification.**


07 9200_7737


07 9204_0611


07 9204_6120



07 9220_6748EX

Type		7737	0611	6120	6748EX
03R 07 9200	Pneumatic angle impact wrench **compact**	eShop	–	–	–
03R 07 9204	Pneumatic impact wrench	–	(eShop)	(eShop)	–
03R 07 9220	Pneumatic impact wrench **ATEX**	–	–	–	eShop
Torque range	Nm	34 – 224	1220 – 2440	815 – 2710	180 – 760
Maximum screw ∅ (8.8 - 12.9)		M20	M36	M36	M20
maximum speed	min^{-1}	9000	3500	3500	8400
Tool arbor drive profile				Square	
Tool arbor size	in	1/2	1	1,1/2	1/2
maximum air consumption	l/min	703.8	1920	1698	852
Connection thread				NPT	
Compressed air connection	in	1/4	1/2	1/2	1/4
recommended hose size (internal ∅)	mm	10	13	13	10
Weight	kg	1.12	10.4	15.7	2.4
Operating noise	dB(A)	93	99	97	93
maximum vibration to EN	m/s^2	10.3	18	21.8	8.7
Length	mm	240	360	420	200

Balancer

Balancers make power tools, especially heavy ones, both easier and safer to use.

- **"Weightless" equipment.**
- **Tidiness** at the workplace.
- **Equipment and tools** within easy reach.
- **Safety** at the workplace due to suspension of equipment and leads.
- Equipment in clear view and in reach of the user.
- Weight compensation and thus balance can be maintained over the entire cord travel.

07 9295 – Shock-resistant plastic casing.
07 9298 – Sturdy aluminium casing, cable of stainless steel.

07 9295 Size 3; 5 – **With arrester** – for limiting the travel of the rope lifting gear.
Size 10; 14 – **With cable stop** – keeps the weight at the chosen height.



07 9295_1,5 | 07 9295_3/_5 | 07 9298

maximum towing capacity	kg	1,5	2,5	3	4	5	6	8	10	14
03F 07 9295	Balancer	eShop	–	eShop	–	eShop	–	–	–	–
03R 07 9298	Balancer	–	eShop	–	eShop	–	eShop	eShop	eShop	eShop
Cord travel length	m	0.9	2	2	2	2	2	2	2.5	2.5
Safe working load	kg	0.5 – 1.5	1 – 2.5	1 – 3	2 – 4	2.5 – 5	4 – 6	6 – 8	8 – 10	10 – 14
Weight	kg	0.35	2	3.2	2	3.2	2.3	2.5	3.8	4

Pneumatic random orbital sander

Powerful random orbital sanders with polyurethane hook and loop fastening backing pads. **Easy to use** due to light-weight composite housing and ergonomic hand application area. **Robust, smooth-running,** and **low-vibration pneumatic drive** with steel cylinder, low noise level.

07 9655 Size G2438-65C – For **roughing and intermediate sanding** with a 5 mm orbital stroke. Connection for **external suction.**
Size G2438-65N – For **roughing and intermediate sanding** with a 5 mm orbital stroke **without dust extraction.**
07 9657 Size R036CS1HL – Powerful random orbital sander with **integral extraction** for clean surfaces. With a 5 mm orbital stroke.
Size R036CC2HL – Powerful random orbital sander for **external extraction system**. With a 2.5 mm orbital stroke.
Size R036CC1HL – Powerful random orbital sander for **external extraction system**. With a 5 mm orbital stroke.
Size 4152HLSR – Lightweight and reliable 75 mm random orbital sander for **external extraction system**. With a 2.5 mm orbital stroke.

Note: See No. 567775 or 567901 for hook and loop grinding discs.


_G2438-65C


_G2438-65N


_R036CS1HL


_R036CC2HL


_R036CC1HL

Type		G2438-65C	G2438-65N	R036CS1HL	R036CC2HL	R036CC1HL	4152HLSR
03R 07 9655	Pneumatic random orbital sander	eShop	eShop	–	–	–	–
03I 07 9657	Pneumatic random orbital sander	–	–	eShop	eShop	eShop	eShop
maximum speed	min^{-1}	12000	12000	13000	13000	13000	12000
maximum air consumption	l/min	540	540	498	498	498	430
Backing pad ∅	mm	150	150	150	150	150	75
Type of extraction		External	–	Own dust extraction	External	External	External
Stroke	mm	5	5	5	2.5	5	2.5
Weight	kg	0.9	0.9	0.9	0.8	0.9	0.8
Operating noise	dB(A)	85	85	82	82	82	82
maximum vibration to EN	m/s^2	8.7	10.5	3.9	3.9	3.9	4.7


_4152HLSR

ata tools Pneumatic straight die grinder

07 9440 – ATA – Pneumatic straight die grinder **with 3 mm collets** for fine milling, grinding and engraving. **Integral pre-filter.**

Size SPM60R – 85 W straight die grinder with high operating comfort with a maximum speed of 60000 rpm.
- Slim design for restricted working.
- Removable collet guard.

Size SPT80R – 63 W straight die grinder with unique motor design without wearing parts in the motor with a long service life and a maximum speed of 800000 rpm.

Size SPT100R – 63 W straight die grinder with unique motor design without wearing parts in the motor with a long service life and a maximum speed of 100000 rpm.

Size ST100 – 40W straight die grinder with high operating comfort and a maximum speed of 100,000 rpm.

07 9442 – ATA – Pneumatic straight die grinder **with 6 mm collet**.

Size S25 – Ergonomic straight die grinder for light to medium applications with one-handed operation.
- Push-pull lever for continuous use.
- Excellent weight/performance ratio.

Size SDM26LR – Straight die grinder for light to medium applications with high user comfort and one-handed operation.
- Speed control.
- Excellent weight/performance ratio.

Size SM25LR – Powerful straight die grinder for the most demanding applications with high user comfort.
- Speed control.
- Smooth start-up.

Size SMX16LR – Extended and ergonomic straight die grinder with two-handed operation.
- Speed control.
- Smooth start-up.

Size SMD25LR – Ergonomic straight die grinder with unique vibration damping system.
- Smooth start-up.

Application:

Size SPT80R–ST100 – **Use only oil-free compressed air. Do not add oil!**


_SPM60R


_SPT80R
_SPT100R


_ST100


_S25


_SDM26LR


_SM25LR


_SMX16LR


_SMD25LR

Type		SPM60R	SPT80R	SPT100R	ST100	S25	SDM26LR	SM25LR	SMX16LR	SMD25LR
03R 07 9440	Pneumatic straight die grinder	eShop	eShop	eShop	eShop	–	–	–	–	–
03R 07 9442		–	–	–	–	eShop	eShop	eShop	eShop	eShop
Output power	W	85	63	63	40	190	300	820	820	820
maximum speed	min^{-1}	60000	80000	100000	100000	25000	25000	25000	16000	25000
maximum air consumption	l/min	230	170	170	170	450	570	620	620	620
Connection thread						BSP				
Compressed air connection	in					1/4				
Collet ∅	mm	3	3	3	3	6	6	6	6	6
Weight	kg	0.17	0.15	0.15	0.24	0.46	0.52	0.75	1.3	0.8
Operating noise	dB(A)	68	68	70	62	68	72	72	75	77
maximum vibration to EN	m/s^2	< 2,5	< 2,5	< 2,5	< 2.5	3.14	3.14	3.21	3.19	2.27
Length	mm	140	135	135	160	164	154	213	345	208

Pneumatic straight die grinder

07 9452 – **Pneumatic straight die grinder.** Sturdy and smooth-running. The safety switch prevents accidental switching on.
Size G2412 – Short version, maximum speed **20,000 rpm.**
Size G2422 – Long version with slim shank, ideal for holes, maximum speed **20,000 rpm.**
07 9453 – Pneumatic straight die grinder with 1050 W output power and a maximum speed of **18,000 rpm**.


_G2412


_G2422

Type			G2412	G2422	3550-180	3550-180ES
03R 07 9452	Atlas Copco	Pneumatic straight die grinder collet ∅ **6 mm**	eShop	eShop	–	–
03R 07 9453	Chicago Pneumatic		–	–	eShop	eShop
Output power		W	350	350	1050	1050
maximum speed		min^{-1}	20000	20000	18000	18000
maximum air consumption		l/min	618	618	1560	1560
Connection thread			BSP	BSP	NPT	NPT
Compressed air connection		in	1/4			
Weight		kg	0.5	0.7	1.2	1.4
Operating noise		dB(A)	79	77	81	81
maximum vibration to EN		m/s^2	< 2.5	3.4	<2.5	<2.5
Length		mm	180	277	248	365


07 9453_3550-180


07 9453_3550-180ES

Powerful and **robust smooth-running straight die grinders**. The safety switch prevents accidental switching on. Application-optimised maximum speeds between **8500 and 25,000 rpm.**
07 9447 – Short design, length 215 mm.
07 9448 – With long, slim spindle, ideal for holes length 317 mm.
Supplied with: Including the necessary coupling adaptors.
Spare part: **Selected service kits:**
Sets of replacement parts for most Atlas Copco pneumatic tools can be supplied on request for preventive maintenance and servicing.

Type			S085	S150	S200	S250
03R 07 9447	Atlas Copco	Pneumatic straight die grinder G2414, collet ∅ 6 mm **short**	eShop	eShop	eShop	eShop
Output power		W	500	850	900	950
maximum speed		min^{-1}	8500	15000	20000	25000
maximum air consumption		l/min	252	432	540	870
Connection thread			BSP			
Compressed air connection		in	3/8			
recommended hose size (internal ∅)		mm	13			
Weight		kg	0.78			
Operating noise		dB(A)	70	76	81	85
maximum vibration to EN		m/s^2	< 2.5	2.5	< 2.5	< 2.5


07 9447

Type			S085	S150	S200	S250
03R 07 9448	Atlas Copco	Pneumatic straight die grinder G2424, collet ∅ 6 mm **long**	eShop	eShop	eShop	eShop
Output power		W	440	750	850	900
maximum speed		min^{-1}	8500	15000	20000	25000
maximum air consumption		l/min	252	432	540	870
Connection thread			BSP			
Compressed air connection		in	3/8			
recommended hose size (internal ∅)		mm	13			
Weight		kg	0.96			
Operating noise		dB(A)	70	76	81	85
maximum vibration to EN		m/s^2	5.3	< 2.5	< 2.5	3.5


07 9448

Mini die grinder with high no-load speed for quiet and efficient grinding. Precise power and control due to integrated speed controller.
Supplied with: Supplied with 1 each of 1/4 inch and 6 mm collet.

Type			7405	7410
03R 07 9456	Chicago Pneumatic	Pneumatic straight die grinder collet ∅ 6 mm **short**	eShop	–
03R 07 9457		Pneumatic straight die grinder collet ∅ 6 mm **long**	–	eShop
Output power		W	250	
maximum speed		min^{-1}	28000	27000
maximum air consumption		l/min	78	
Connection thread			NPT	
Compressed air connection		in	1/4	
recommended hose size (internal ∅)		mm	10	
Weight		kg	0.5	0.65
Operating noise		dB(A)	76.2	76
maximum vibration to EN		m/s^2	3.6	4.9
Length		mm	200	275


07 9456


07 9457

Pneumatic angle grinder

07 9311 – **Small pistol-grip angle grinder** with two Roloc® mini-grinding discs ∅ 50/75 mm. Speed can be precisely adjusted using the starter pushbutton. Rubber-coated handle is comfortable to use.

07 9312 – **Powerful angle grinder,** whose operating speed under load scarcely dips when load is applied. The safety starter prevents accidental starting.

Size G2511-125 – Angle grinder for one-hand operation in ergonomic lightweight construction with composite casing. The length of the mounting piece is adjustable for easier access to restricted places. With spindle locking and quick adjustment of the guard. **M14 mounting thread.**

07 9313 – Pneumatic turbine grinding machine for very heavy-duty applications, which keeps speed even at high loads. The turbine motor ensures a high power-to-weight ratio and does not require lubrication.

07 9316 Size RAM20LR – Compact angle grinder with ergonomic design and narrow head for easy access in confined spaces. For Roloc® mini-grinding discs ∅ 50/75 mm.

Size RAM16L – Durable and powerful angle grinder. 10° offset. With 6 mm collet chuck.

Size G2588-180; G2588-230 – Angle grinder with 1700 Watt output power, designed for heavy-duty use and constant high material removal rate. Ergonomic in use. **M14 mounting thread.**

07 9314/9315 – **Compact** and **powerful** angle grinder for very high service life on heavy-duty applications, up to 1000 hours maintenance intervals. Ergonomic and vibration-damped handle. Protective hood adjustable without using tools. **M14 spindle thread.**

Note:

07 9311 – The 3M Roloc® small grinding system ∅ 55 / 75 mm can be found under No. 554005 ff.



07 9311_G2302

07 9312_G2408-115



07 9312_G2511-125



07 9312_G2588-230



07 9313_CP3T30



07 9314_7550 -A



07 9315_3550-120



07 9316_RAM20LR



07 9316_RAM16L

Type			G2302	G2408-115	G2511-125	G2588-180	G2588-230	CP3T30	7550-A	3550-120	RAM20LR	RAM16L
03R 07 9311	Atlas Copco	Pneumatic pistol-grip angle grinder	eShop	–	–	–	–	–	–	–	–	–
03R 07 9312	Atlas Copco	Pneumatic angle grinder	–	eShop	eShop	eShop	eShop	–	–	–	–	–
03R 07 9313	Chicago Pneumatic	Pneumatic turbine grinder	–	–	–	–	–	eShop	–	–	–	–
03R 07 9314	Chicago Pneumatic	Pneumatic angle grinder	–	–	–	–	–	–	eShop	–	–	–
03R 07 9315	Chicago Pneumatic	Pneumatic angle grinder	–	–	–	–	–	–	–	eShop	–	–
03R 07 9316	ara tools	Pneumatic small angle grinder	–	–	–	–	–	–	–	–	eShop	eShop
Output power		W	175	350	900	1700	1700	2300	840	1100	300	370
maximum speed		min^{-1}	17000	12000	12000	8500	6600	12000	12000	12000	20000	16000
maximum air consumption		l/min	534	786	1020	2160	2160	2010	1134	1560	1207	1271
Connection thread			BSP	BSP	BSP	BSP	BSP	M14	BSP	NPT	BSP	BSP
Compressed air connection		in	1/4	1/4	3/8	1/2	1/2	3/8	1/4	3/8	1/4	1/4
maximum vibration to EN		m/s^2	< 2.5	8,1	6.5	7.1	7,8	2.6	7	9.8	2.58	4.41
recommended hose size (internal ∅)		mm	10	10	13	16	16	13	10	13	8	8
maximum disc ∅		mm	75	115	125	180	230	125	125	125	75	75
Minimum disc ∅		mm	50	–	–	–	–	–	–	–	–	–
Weight		kg	0.6	0.9	1.77	2.4	2.4	2.2	1.6	1.9	0.6	1.3
Operating noise		dB(A)	81	81	84	90	90	78	85	84	74	73

Pneumatic belt linisher

07 9570 – Robust belt grinders for professional use.
- 360° swivelling grinding head
- Easy change of grinding media and contact arm
- Simple and robust design

Size 3260D12 – Linishing belt size 13×305 mm

Size 3260D12K – Linishing belt size 3×305 mm, 8×305 mm, 13×305 mm, 16×305 mm

Size 4200D24 – Linishing belt size 13×610 mm

Size 4200H18K – Linishing belt size 3×457 mm, 13×457 mm, 16–19×457 mm

07 9571 – **Atlas Copco** belt linishing machine for use in **confined places.** The angle between handle and linishing belt guide can be adjusted for improved handling. Linishing belt dimensions 13×305 mm (see No. 558205, 558423).

Supplied with:

07 9570 Size 3260D12 – 1 contact arm, linishing belt 13 × 305 mm.

Size 3260D12K – 4 contact arms, linishing belt 3×305 mm, 8×305 mm, 13×305 mm, 16×305 mm.

Size 4200D24 – 1 contact arm, linishing belt 13 × 610 mm.

Size 4200H18K – 4 contact arms, linishing belt 3×457 mm, 13×457 mm, 16×457 mm, 17×457 mm, 18×457 mm, 19×457 mm.



07 9570_3260D12



07 9570_3260D12K



07 9570_ 4200D24



_G2410



07 9570_4200H18K

Type		3260D12	3260D12K	4200D24	4200H18K	G2410
03R 07 9570 (Chicago Pneumatic) Pneumatic belt linisher		eShop	eShop	eShop	eShop	–
03R 07 9571 (Atlas Copco) Pneumatic belt linisher		–	–	–	–	eShop
Output power	W	300	300	400	400	275
maximum speed	min^{-1}	26000	26000	20000	20000	25000
maximum air consumption	l/min	1020	1020	1260	1260	660
Connection thread		NPT	NPT	NPT	NPT	BSP
Compressed air connection	in			1/4		
Tape width	mm	13	3, 13 16-19	13	3, 13, 16-19	13
Band length	mm	305	305	610	457	305
Weight	kg	0.77	0.77	1.39	1.39	0.9
Operating noise	dB(A)	81.5	81.5	78	78	89
maximum vibration to EN	m/s^2			< 2.5		

Pneumatic tools

Pneumatic engraving / chiselling, and filing pen

07 9709 Size 140EP – Convenient pneumatic engraving pen engraves even the hardest surfaces with ease. Thanks to the ergonomic design with a soft rubber handle and slim housing, it is suitable for continuous use.

07 9710 Size P2505 – **Pencil-sized engraving pen** with greatly improved engraving head, for marking tools, engraving, and delicate cleaning jobs. Carbide tips are easy to replace.

Size P2506 – Engraving pen with **adjustable power** and outstanding durability. Can be converted to a chisel hammer.

Supplied with:

07 9709 Size 140EP – Includes 1.5 m PVC hose.

07 9710 Size P2505 – 1.8 m PVC hose, internal ∅ 3.2 mm.

Size P2506 – Supplied with 2.5 m connection hose with filter, pin insert, chisel, blank, case.

Note:

07 9710 Size P2505 – Spare D-bit kit, see No. 079719.



07 9709_140EP


07 9710_P2505

Type			140EP	P2505	P2506
03I 07 9709	Ingersoll Rand	Pneumatic engraving pen	eShop	–	–
03R 07 9710	Atlas Copco		–	eShop	eShop
maximum air consumption		l/min	30	36	6
Impact frequency		Hz	190	190	225
Connection thread			NPT	BSP	NPT
Compressed air connection		in		1/8	
Weight		kg	0.2	0.12	0.14
Operating noise		dB(A)	75	72	79
maximum vibration to EN		m/s²	5	5.6	5.1
∅		mm	17	19	18.4
Length		mm	140	148	127


07 9710_P2506

Pneumatic needle descalers and chisel hammers

07 9720 – Lightweight **needle descaler** for removing welding slag, rust, and paint. **No tools required to change needles. Highly vibration-damping** characteristics for optimum safety in all applications.

07 9730 – Handy **chisel hammer** for chiselling and separating.

Size P2551 – With good vibration-damping characteristics.


07 9730_P2531-H

Type			P2531-H	P2551	P2541
03R 07 9720	Atlas Copco	Pneumatic needle descaler	–	–	eShop
03R 07 9730		Pneumatic chisel hammer	eShop	eShop	–
Tool arbor size		mm	10.2	12.7	–
Tool arbor shape			Hexagon	Square	–
maximum air consumption		l/min	402	480	480
Impact frequency		Hz	50	40	40
Connection thread				BSP	
Compressed air connection		in		1/4	
recommended hose size (internal ∅)		mm		10	
Weight		kg	1.5	2.95	2.35
Operating noise		dB(A)	100	85	85
maximum vibration to EN		m/s²	11.5	6.7	3.1
Length		mm	193	435	370


07 9730_P2551


07 9720_P2541

Pneumatic accessories

07 9729 – Needle set, 19 pieces, ∅ 3 mm.

Suitable for:

Size 180 – Needle descaler No. 079720 P2541.

Size 3,2×178; 20×178 – Chisel hammer No. 079730 size P2531-H.

Size 19×178; 35×178 – Chisel hammer No. 079730 size P2551.


07 9739_3.2×178


07 9739_19×178


07 9739_20×178


07 9739 _35×178


07 9729_180

Dimensions		mm	3,2×178	19×178	20×178	35×178	180
03R 07 9729	Atlas Copco	Pack of spare needles	–	–	–	–	eShop
03R 07 9739		Chisel	eShop	(eShop)	eShop	(eShop)	–
Shape of chisel			taper	flat	flat	flat	–

Construction site & workshop compressor

07 9842 Size 180/5W – Compact and portable reciprocating compressor. Ideal for stapling and nailing.
Size 250/24W – Powerful and robust compressor for simple applications.
Size 400/50D – Powerful and robust compressor for demanding applications with instrument panel and belt drive.
Size 700/90D – Powerful and robust compressor for demanding applications. Extremely high performance and long service life.
07 9844 – M18 FUEL™ cordless compressor. Conventional nailers and tackers can be operated with an air pressure of 2.8 bar and an effective delivery quantity of 48 l/m. Sound pressure level of only 68 dB(A) for pleasant working conditions.

Supplied with:
07 9844 Size M18FAC – Version without batteries and without charger.

Note:
07 9844 – See No. 073833 size M18HNRG12 for suitable battery starter set.


_180/5W


_250/24W


_400/50D


_700/90D


_M18FAC

Type			180/5W	250/24W	400/50D	700/90D	M18FAC
03D 07 9842	metabo	Construction site & workshop compressor	–	–	–	–	–
03L 07 9844	Milwaukee	Cordless compressor	–	–	–	–	(eShop)
Power consumption		kW	1.1	1.5	2.2	4	0.4
maximum pressure (air)		bar	8	8	10	11	9.31
maximum suction rate		l/min	160	220	400	650	126
maximum filling rate		l/min	90	120	360	520	74
Pressure vessel volume		l	5	24	50	90	7.6
Weight		kg	16	24	73	119	14.4
Length		mm	370	620	1050	1188	500
Width		mm	395	340	410	520	500
Height		mm	286	580	817	1110	500
AC supply voltage		V	230	230	380-415	380-415	–
Battery voltage		V	–	–	–	–	18

RIEGLER Service units

Service unit in modular series ("multifix" system), consisting of filter, pressure regulator and mist atomiser. Control range 0.5- 10 bar, operating pressure maximum 16 bar, operating temperature maximum 60 °C.
08 0015 – 2-part service unit, assembled, with pressure regulator, oil atomiser and filter.
Advantage: The service unit can be configured individually, e. g. with several pressure regulators, without oil atomiser (for oil-free tools) etc.



08 0012 / 08 0013 / 08 0014
Individual modules can be assembled into a three-part unit.


08 0015
Two-part service unit, delivered assembled.

Internal thread ∅		in	1/4	3/8	1/2
08A 08 0011	Filter controller		eShop	eShop	eShop
08A 08 0012	Pressure regulator **0.5 –10 bar**		eShop	eShop	eShop
08A 08 0013	Oil atomiser		eShop	eShop	eShop
08A 08 0014	Filters **5 µm**		eShop	eShop	eShop
08A 08 0015	Service unit **2-part assembled**		eShop	eShop	eShop
Height (H)		mm	190	196	248
Overall length (L) as 2-part service unit (08 0015)		mm	93	93	136
Overall length (L) as 3-part service unit (08 0012, 08 0013, 08 0014)		mm	138	183	202
Flow rate for 3-part service unit (08 0012, 08 0013, 08 0014)		l/min	1150	1150	3100


08 0011


08 0012


08 0013


08 0014

Application: Oil atomiser for reliable supply to oil-lubricated pneumatic tools, even in long piping systems.

Internal thread ∅		in	G1/4
08A 08 0022	Oil atomiser attachment 1/4 inch		eShop


08 0022

Digital pressure gauge with backlighting in a sturdy plastic case for monitoring and measurement of pressures in dry oil-free compressed air and non-toxic non-aggressive gases.
Supplied with: Button cell CR2032.

Display range		bar	0-10
08A 08 0031	Digital pressure gauge		eShop
Connection thread		in	1/4 inch external thread



08 0031

RIEGLER Pneumatic oil

Special pneumatic oil 32 in a can. Type HVLP to DIN 51524, T 3 mineral-oil based for high functional and operating reliability. Pays for itself by providing good corrosion protection, exceptional resistance to ageing and outstanding wear protection. Free of zinc compounds.

Application: For oil mist atomisers, pneumatic systems and all pneumatic tools (except for: dry tools).



08 0146

Contents		l	2,5
08A 08 0146	Special pneumatic oil		–

Hoses

Hose with polyester fibre reinforcement. Temperature range -15 °C to 60 °C.

08 0036 – Super Nobelair Soft, **due to Full-Soft technology highly flexible** even at low temperatures. For use indoors and outdoors. Operating pressure 15 bar.

08 0037 – Airsoft Performance braided hose, flexible oil-resistant compressed air hose for pneumatic tools. Operating pressure 15 bar.

08 0042 – TCN-AL, flexible pressure-resistant hose with long working life. High chemical resistance. Operating pressure 15 bar. Foodstuffs approved (VO/2011 - category A/B/C).

08 0220/0221 – Very light, flexible, and abrasion-resistant PU hose. Outstanding resistance to oil, solvents, and non-aqueous solvents. Operating pressure 16 bar.



08 0036



08 0042



08 0037



08 0220

Hose internal ∅				mm	8	9	11	13
08A 08 0036		Braided hose, blue plasticised PVC	**Length 50 m**		–	eShop	–	eShop
08A 08 0037	TRICOFLEX	AIRSOFT braided hose, black PVC	**Length 50 m**		–	eShop	–	eShop
08A 08 0042		Braided hose, transparent PVC	**Length 50 m**		–	eShop	–	eShop
08A 08 0220	EJN	PU braided hose, blue	**Length 50 m**		eShop	–	–	–
08A 08 0221			**Length 25 m**		–	–	(eShop)	(eShop)
Hose external ∅ (08 0036, 08 0037, 08 0042, 08 0220)				mm	12	15	–	20
Hose external ∅ (08 0221)				mm	–	–	16	18

High-quality twist-resistant water hose in yellow.



08 0047

Hose internal ∅				13	19	25
08A 08 0047	TRICOFLEX	Water hose, yellow, PVC	**Length 50 m**	eShop	eShop	eShop
maximum operating pressure			bar	8	6	6
Hose external ∅			mm	15.25	21.4	28

Hose set

Very light, flexible, and abrasion-resistant PU hose with good retracting force.

08 0242/0243 – Well suited to oiled compressed air.

08 0246/0247 – Hose kit in the signal colour green (high-visibility).

Supplied with: Includes steel **safety** quick-change coupling and steel coupling adaptor.



08 0242



08 0246

usable hose length			m	5	10
01A 08 0242	Garant	PU hose set with steel safety coupling **∅ 8 × 12 mm**		eShop	eShop
01A 08 0243		PU hose set with steel safety coupling **∅ 11 × 16 mm**		–	eShop
08A 08 0246	EJN	High Vis PU hose set with eSafe steel safety coupling **∅ 8 × 12 mm**		eShop	eShop
08A 08 0247		High Vis PU hose set with eSafe steel safety coupling **∅ 11 × 16 mm**		–	eShop
maximum operating pressure			bar	16	

RIEGLER Pneumatic accessories

Hose support

Aluminium hose support, unpainted. For easy wall -mounting.
Suitable for: Maximum 50 m hose turns at an internal ∅ of:
Size 9 – 9 mm
Size 13 – 13 mm


08 0027


Fig. Hose support No. 955760_225

Type		9	13
08A 08 0027	Hose support	eShop	eShop

Hose clips

08 0052 – Hose clip of chromium steel with galvanised 7AF hexagon bolt. Belt width 9 mm.
08 0054 – 2-lug hose clips of bright chromium galvanised steel.

Note: For hose clip pliers see No. 719985 size 220.


08 0052


08 0054

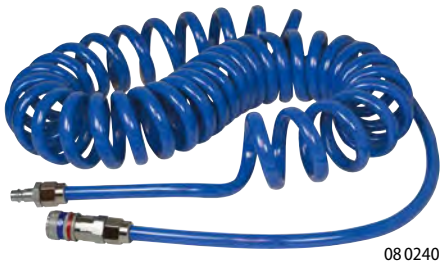
Clamping range hose external ∅	mm	5-7	7-9	9-11	11-13	13-15	14-17	17-20	20-23	10-16	12-20
08A 08 0052	Hose clip set **10 pieces**	–	–	–	–	–	–	–	–	eShop	eShop
08A 08 0054	2-lug hose clip set **10 pieces**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	–	–

Coiled hoses

Very light, flexible, and abrasion-resistant PU spiral hose with good spring retention. Temperature-resistant from -20 / 60 °C.
Supplied with:
08 0240/0241 – **Safety** steel coupling No. 080285 and steel coupling adaptor No. 080290 included.
08 0238/0239 – Includes **GARANT steel safety quick-change coupling** and steel coupling adaptor.


08 0238

usable hose length		m	3	5
01A 08 0238	Garant	PU coiled hose 1/4 inch with steel safety coupling **∅ 8 × 12 mm**	eShop	eShop
01A 08 0239		PU coiled hose 1/2 inch with steel safety coupling **∅ 11 × 16 mm**	eShop	eShop
maximum operating pressure		bar	10	


08 0240

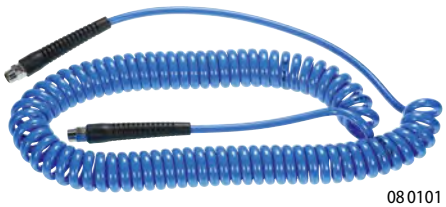
usable hose length		m	2	4	6	8
08A 08 0240	EJN	PU coiled hose 1/4 inch with eSafe steel safety coupling **∅ 8 × 12 mm**	eShop	eShop	eShop	eShop
08A 08 0241		PU coiled hose 1/2 inch with eSafe steel safety coupling **∅ 11 × 16 mm**	–	eShop	eShop	eShop
maximum operating pressure		bar	10			

Flexible nylon hose. Temperature-resistant from -60 / +60°C.
Supplied with: Supplied with 1 piece each of brass quick-release coupling and coupling adaptor.


08 0057
08 0058

usable hose length		m	2,5	5	7,5
02A 08 0057	HOLEX	Coiled 1/4 inch nylon hose, with coupling	eShop	eShop	eShop
02A 08 0058		Coiled 3/8 inch nylon hose, with coupling	–	eShop	–
maximum operating pressure		bar	10		
Hose external ∅ (08 0057)		mm	8		
Hose external ∅ (08 0058)		mm	–	12	–
Hose internal ∅ (08 0057)		mm	6		
Hose internal ∅ (08 0058)		mm	–	9	–

Hose is polyurethane, therefore extremely resilient, **extremely high retracting force, low pressure drop** and **low permanent deformation. Temperature-resistant from -40/ + 60°C.**
Supplied with: Rotating assembly and kink protection spring.


08 0101
08 0106

usable hose length		m	3	7,5
08A 08 0101	RIEGLER	PU coiled hose 1/4 inch with rotating screw attachment and anti-kink protection	eShop	eShop
08A 08 0106		PU coiled hose 3/8 inch with rotating screw attachment and anti-kink protection	eShop	eShop
Hose external ∅ (08 0101)		mm	8	
Hose external ∅ (08 0106)		mm	12	
Hose internal ∅ (08 0101)		mm	5	
Hose internal ∅ (08 0106)		mm	8	

Enclosed safety hose reel

- Safety hose reel with high-impact enclosed plastic casing for use in dirty and dusty environments.
- Hose guide and controlled retraction system.
- Integral stop ball.
- **PU hose** with high resistance to abrasion and steel compressed air connections suitable for high flow rates.
- Pivoted bracket for wall mounting and the wall or ceiling.

08 0078 – Hose reel for compressed air. Sturdy hose in bright orange **signal colour**. Ensures safe handling.

08 0079 – Water hose reel for liquids. Hose colour steel blue.

Supplied with:

08 0078 – Supplied with GARANT steel safety coupling and coupling adaptor.

08 0079 – Includes coupling adaptor.

Note:

08 0079 – For water coupling see No. 080149 1/2.



08 0078_10



08 0078_15


08 0079_15

usable hose length				10	15
01A 08 0078	Garant	Safety hose reel, plastic casing **Compressed air**		eShop	eShop
01A 08 0079	Garant	Safety hose reel, plastic casing **Water**		–	eShop
Body width			mm	310	490
Body depth			mm	190	
Body height			mm	406	409
Connection outlet (08 0078)			in	1/4	3/8
Connection outlet (08 0079)			in	–	1/2
maximum operating pressure			bar	16	
usable hose length			m	10	15
Hose external ∅			mm	12	13.5
Hose internal ∅			mm	8	9.5

Impact resistant enclosed **plastic casing** for use in dirty and dusty environments. Compact design, easy to mount on the wall or ceiling, with **180° swing angle. PU hose** suitable for high throughputs, with high abrasion resistance and steel compressed air connection fittings.
Safety hose reel with **hose guide** and powerful controlled retraction.

08 0071 – Hose reel with PU hose in **neon green** signal colour.

08 0073 – **Water hose reel**, suitable for wet and damp environments, ideal for washing applications, liquid filling stations, and washing areas. PU hose in green colour for better differentiation.

Note:

08 0073 – For water coupling see No. 080149 size 1/2.

08 0071/0072/0077 – For coupling, see No. 080286.




08 0071


08 0072 / 08 0077

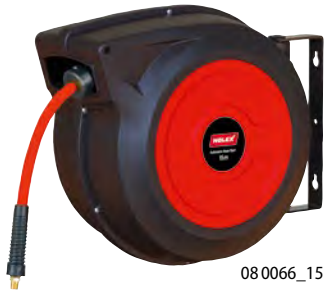

08 0073

usable hose length				10S	14S	17S
08A 08 0071	EJN	Safety hose reel, plastic casing **Compressed air**	**∅ 8 ×12 mm**	eShop	–	–
08A 08 0072	EJN	Safety hose reel, plastic casing **Compressed air**	**∅ 8 ×12 mm**	eShop	–	eShop
08A 08 0073	EJN	Safety hose reel, plastic casing **Water**	**∅ 9.5 ×13.5 mm**	–	eShop	–
08A 08 0077	EJN	Safety hose reel, plastic casing **Compressed air**	**∅ 11 ×16 mm**	eShop	–	–
Body width (08 0071, 08 0072, 08 0073)			mm	406	490	490
Body width (08 0077)			mm	490	–	–
Body depth			mm	190		
Body height (08 0071, 08 0072, 08 0073)			mm	313	409	409
Body height (08 0077)			mm	409	–	–
Connection outlet (08 0071, 08 0072, 08 0073)			in	1/4	3/8	1/4
Connection outlet (08 0077)			in	1/2	–	–
maximum operating pressure (08 0071, 08 0072, 08 0073)			bar	16	9	16
maximum operating pressure (08 0077)			bar	12	–	–
usable hose length			m	10	14	17

HOLEX Enclosed hose reel

Automatic hose reel in plastic housing. PU flexible hose for compressed air with anti-kink protection.
Integral **hose guide.** Pivoted bracket for wall mounting.

usable hose length		m	15
02A 08 0066	Automatic hose reel		eShop
Body width		mm	465
Body depth		mm	220
Body height		mm	400
Connection outlet		in	3/8
Connection inlet		in	3/8
maximum operating pressure		bar	20
usable hose length		m	15
Hose internal ∅		mm	10


08 0066_15

Open hose reel

Hose reels with **automatic pull-out and roll-up mechanism guided** by long life steel springs with **multiple stop points per revolution.**

Size 15SCS; 20SCS – With patented SCS controlled automatic roll-up mechanism for avoidance of damage and injuries.

08 0074 – Open hose roll-up reel with **aluminium cast body,** galvanised **pivoting run-out guide,** and robust **nylon-reinforced PVC hose.**

08 0076 – Open hose reel in **painted, partially galvanised sheet steel design**with **variable run-out guide** and robust **rubber hose.**

Application: For increased ergonomics by relieving cable tension, and for ensuring tidiness and for avoiding the risk of accidents and injuries due to hoses lying on the ground.

08 0074 – Suitable for air.

08 0076 – Suitable for air, water, oil, diesel.

RAPID SCS Safety Control System

Size 15SCS and 20SCS with damped automatic roll-up mechanism.


08 0074


08 0076

Type			20	20SCS	15	15SCS
08A 08 0074	rapid	Hose reel cast aluminum reel	eShop	eShop	–	–
08A 08 0076	rapid	Hose reel sheet metal reel	–	–	eShop	eShop
Body width		mm	380	380	470	470
Body depth		mm	155	155	180	180
Body height		mm	375	375	494	494
Connection outlet		in	3/8	3/8	1/2	1/2
Connection inlet		in	3/8	3/8	1/2	1/2
maximum operating pressure		bar	20	20	50	50
usable hose length		m	20	20	15	15

Mounting plates for attaching hose reels to the wall with 120° pivoting range.

08A 08 0084	rapid	Pivoting mounting plate for No. 080074	eShop
08A 08 0086	rapid	Pivoting mounting plate for No. 080076	(eShop)


08 0084

Sheet steel industrial hose reel with ergonomic handle, high stability, turning handle and drum brake.
Hose internal ∅ = 9 mm; operating pressure maximum 12 bar.

usable hose length		m	20
08B 08 0061	HEDI Compressed air hose reel 1/4 inch		eShop
maximum operating pressure		bar	12
usable hose length		m	20
Hose internal ∅		mm	9



08 0061

EJN Drip-free couplings for liquids

For the field of fluid supply, we offer high-quality, drip and leakage-free couplings and hose sets tailored to each application area on request.

Designed for all types of liquid transfer e.g. cold or hot water, dielectric liquids, glycols and mineral oil and synthetic-based heat transfer oils.



Colour and mechanical coding prevents them from being mixed up accidentally.

Compressed air couplings

Compressed air couplings (Euro standard DN 7.6)

The GARANT safety shut-off is a high-performance coupling of galvanised steel, with extremely high flow rate capacity.
New improved single-handed operation. Rate of flow: 2250 ltr/min, maximum operating pressure 16 bar. Satisfies the ISO standard 4414 and EN 983.

Note: See No. 080290 – 080293 for suitable coupling adapters.
The GARANT series satisfies Euro standard 7.6 (nominal ∅ 7.6 mm, Euro profile) and is compatible with all popular systems.

Connection external thread		in	1/4	3/8	1/2
01A 08 0270	Garant	Safety coupling **External thread**	eShop	eShop	eShop
Connection internal thread		in	1/4	3/8	1/2
01A 08 0271	Garant	Safety coupling **Internal thread**	eShop	eShop	eShop
Hose connection internal ∅ (nominal bore)		mm	8	11	13
01A 08 0272	Garant	Safety coupling **Hose connection**	eShop	eShop	eShop



08 0270 08 0271 08 0272

eSafe compressed air couplings series 320 (Euro standard)

The **eSafe safety coupling** satisfies the ISO standard 4414 and EN 983 It is first depressurised and then decoupled in a second step (no whiplash).
New improved single-handed operation. Rate of flow: 2250 ltr/min, maximum operating pressure 16 bar.

08 0297 – Stream-Line hose adapter simply and effectively clamps the hose on to the coupling by means of a threaded nut - no hose clip required.

Application: For improving the performance, economics, and safety of industrial compressed air installations.

Note: **The CEJN series 320 satisfies Euro standard 7.6 (nominal ∅ 7.6 mm, Euro profile) and is compatible with all popular systems.**

Connection external thread		in	1/4	3/8	1/2
08A 08 0285	CEJN	Safety coupling **External thread**	eShop	eShop	eShop
Connection internal thread		in	1/4	3/8	1/2
08A 08 0286	CEJN	Safety coupling **Internal thread**	eShop	eShop	eShop
Hose connection internal ∅ (nominal bore)		mm	8	11	13
08A 08 0287	CEJN	Safety coupling **Hose connection**	eShop	eShop	eShop
08A 08 0297		Safety coupling **Stream-Line**	eShop	eShop	–



08 0285 08 0286 08 0287 08 0297

CEJN Industrial steel coupling adaptor series 320 (Euro standard)

Connection external thread		in	1/4	3/8	1/2
08A 08 0290	Coupling adaptor with external thread **5-piece set**		eShop	eShop	eShop
Connection internal thread		in	1/4	3/8	1/2
08A 08 0291	Coupling adaptor with internal thread **5-piece set**		eShop	eShop	eShop
Hose connection internal ∅ (nominal bore)		mm	8	11	13
08A 08 0292	Coupling adaptor with hose coupling **5-piece set**		eShop	eShop	eShop
08A 08 0293	Coupling adaptor with Stream-Line		eShop	eShop	–



08 0290 08 0291 08 0292 08 0293

CEJN Compressed air accessories series 320 (Euro standard)

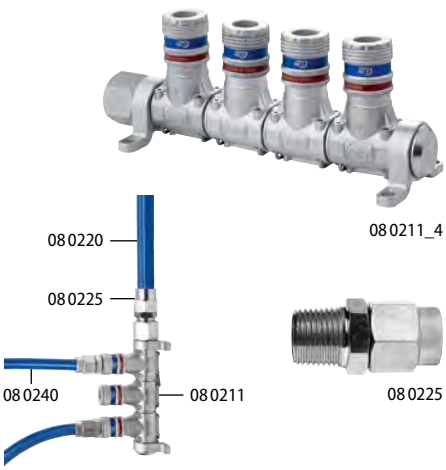
Multi-Link multiple distribution system and accessories

The Multi-Link system combines **optimum compressed air distribution** and flexibility within a very small space. The system is suitable for compressed air distribution in both new and also existing workplaces.
Assembly and installation times are reduced to a minimum. The connections can be **rotated through 180°.**

Number of distributor sockets			2	3	4
08A 08 0211	eSafe Multi-Link system with steel safety coupling		eShop	eShop	eShop
Connection internal thread		in		1/2	

Suitable for: No. 080211.

Hose connection internal ∅ (nominal bore)		mm	8	11	13
08A 08 0225	Stream-Line hose adapter		eShop	eShop	eShop
Connection thread		in	1/4	1/2	1/2



08 0211_4 08 0225

Compressed air couplings

Brass – standard couplings and male couplings

Quick-release couplings nominal value 7.2. Flow rate 1000 l/min (air). Brass material (bright finish). Operating pressure: PN 35 bar / temperature: -20 °C to +100 °C.

Connection external thread		in	1/4	3/8	1/2
02A 08 0170	HOLEX	Quick connect **With external thread**	eShop	eShop	eShop
Flow rate		l/min	1000		
Connection internal thread		in	1/4	3/8	1/2
02A 08 0171	HOLEX	Quick connect **with internal thread**	eShop	eShop	eShop
Flow rate		l/min	1000		
Hose internal thread connection ∅		mm	6	9	13
02A 08 0172	HOLEX	Quick connect **With hose connection**	eShop	eShop	eShop
Flow rate		l/min	1000		
Connection internal thread		in	1/4	3/8	1/2
02A 08 0173	HOLEX	Nipple pack with internal thread **10 pieces**	eShop	eShop	eShop
Connection external thread		in	1/4	3/8	1/2
02A 08 0174	HOLEX	Nipple pack with external thread **10 pieces**	eShop	eShop	eShop
Hose internal thread connection ∅		mm	9	13	
02A 08 0176	HOLEX	Hose coupling adaptor set **10 pieces**	eShop	eShop	


08 0170 08 0171 08 0172


08 0173 08 0174 08 0176

Industrial couplings and coupling adaptors

Industrial coupling designed for an optimised high flow rate of 2000 l/min (air)**, nominal value 7.8.** High-quality and sturdy quick-release coupling that shuts off on one side. Flow-optimised valve, extremely high flow rates, low pressure drop, long service life, excellent operational reliability and absolute leak-tightness.
Operating pressure: PN 35 bar / temperature: -20 °C to +100 °C.

Material: Nickel-plated brass, sleeve steel hardened and nickel-plated.

Connection external thread		in	1/4	3/8	1/2
02A 08 0230	HOLEX	Industrial coupling **External thread**	eShop	eShop	eShop
Flow rate		l/min	2000		
Connection internal thread		in	1/4	3/8	1/2
02A 08 0231	HOLEX	Industrial coupling **Internal thread**	eShop	eShop	eShop
Flow rate		l/min	2000		
Hose connection internal ∅ (nominal bore)		mm	6	9	13
02A 08 0232	HOLEX	Industrial coupling **Hose connection**	eShop	eShop	eShop
Flow rate		l/min	2000		


08 0230 08 0231 08 0232

Adaptors and coupling adaptors for couplings of nominal value 7.2 – nominal value 7.8 steel hardened.

Suitable for: Industrial couplings No. 080230; 080231 and 080232 and steel safety coupling No. 080153 and 080154.

Connection internal thread		in	1/4	3/8	1/2
02A 08 0233	HOLEX	Nipple pack with internal thread **10 pieces**	eShop	eShop	eShop
Connection external thread		in	1/4	3/8	1/2
02A 08 0234	HOLEX	Nipple pack with external thread **10 pieces**	eShop	eShop	eShop
Hose internal thread connection ∅		mm	6	9	13
02A 08 0235	HOLEX	Adaptor pack with hose coupling **10 pieces**	eShop	eShop	eShop


08 0233 08 0234 08 0235

Steel safety coupling

Pushbutton for safety coupling of nominal value 7.4. Pushing the button releases the pent-up pressure – the coupling can then be disconnected without triggering a whiplash effect.

Standard: Safety version satisfies the ISO standard DIN EN ISO 4414.

Suitable for: Coupling adaptors No. 080233; 080234 and 080235.


08 0153

Connection external thread		in	1/4	3/8	1/2
08A 08 0153	RIEGLER	Safety coupling with external thread, aluminium	eShop	eShop	eShop
Hose internal thread connection ∅		mm	6	9	13
08A 08 0154	RIEGLER	Safety coupling with hose coupling, aluminium	eShop	eShop	eShop


08 0154

Compressed air blow guns

Compressed air blow gun

High-quality blow gun for compressed air, with very good ergonomic grip, scratch-resistant surface and solvent-resistant for general-purpose use. Easy to use **interchangeable nozzles.**
Rotating quick-release head is unlocked, stops in a range of detent positions.

Supplied with:

08 0122 – Compressed air blow gun with connection adapters size 1/4 inch steel, with 7-piece nozzle set No. 080124 size AIR.
08 0123 – Compressed air blow gun with connection adapters size 1/4 inch steel, with interchangeable nozzle tube 100 mm.

Note: Suitable compressed air gun holders can be found under No. 080260 size H1 and No. 955750.
Single nozzles can be found under No. 080126.



08 0122_AIR

08 0123_AIR

Type		AIR
01A 08 0122	Garant AIR compressed air blow gun	eShop ■
01A 08 0123		eShop ■
maximum operating pressure bar		15
Flow rate at 6 bar l/min		330

Transparent protective shield with angular design and hanging option. Protects the user against dirt and swarf.

Suitable for: 080122 AIR, 080123 AIR, 080125 100 and all popular compressed air blow guns with 6-mm nozzle pipe.



08 0127_AIR

Type		AIR
01A 08 0127	Garant Protective shield for compressed air blow gun	eShop ■
Height mm		160

7-piece plastic nozzle set. For compressed air blow guns GARANT up to 15 bar operating pressure.

Content: Angled nozzle 100 mm 6 mm ∅, angle plastic nozzle 100 mm 6 mm ∅, low-noise OSHA plastic nozzles, wide angle nozzle, rubber nozzle as socket for long metal nozzle.



08 0124_AIR

Type		AIR
01A 08 0124	Garant 7-piece nozzle set **for compressed air blow gun**	eShop
Length mm		255
Width mm		145
Height mm		45
Storage in		ABS plastic box

Plastic compressed air blow gun for compressed air, with fixed nozzle pipe 100 mm long 6 mm ∅, angled. Easy metering and good grip due to the serrated surface.

Supplied with: Supplied with connection adapter size 1/4 inch steel.

Note: Suitable compressed air gun holders can be found under 080263 H1 and 955750.



08 0125_100

Length exhaust pipe mm		100
02A 08 0125	HOLEX Compressed air blow gun	eShop
Flow rate at 6 bar l/min		250

Compressed air blow guns aluminium and nozzles

Universally applicable, up to 10 bar operating pressure.

Supplied with:

08 0118 – With 1.5 mm standard nozzle. Supplied with male coupling 1/4 inch.
08 0119 – With **low-noise safety nozzle**. Supplied with male coupling 1/4 inch.

Note:
08 0118 – Suitable compressed air gun holders can be found under 080263 H1 and 955750.



08 0118_ALU

08 0119_ALU

Type		ALU
02A 08 0118	HOLEX Compressed air blow gun	eShop ■
02A 08 0119	Compressed air blow gun with low-noise safety nozzle	eShop
Flow rate at 6 bar (08 0118) l/min		250
Flow rate at 6 bar (08 0119) l/min		367



08 0132_SILENT3



08 0132_SILENT1

Size 150 – Extension nozzle 150 mm.
Size SILENT1 – Combined safety and silencer nozzle.
Size SILENT2 – Noise-reduction round nozzle.
Size SILENT3 – Noise-reducing plastic round nozzle.

Suitable for: Compressed air gun No. 080118 and 080119 size ALU.



08 0132_150



08 0132_SILENT2

Type		150	SILENT1	SILENT2	SILENT3
08A 08 0132	Nozzle for ALU compressed air blow gun	eShop	eShop	eShop	eShop

Compressed air and fluid blow guns series 320 (Euro standard)

Compressed air and fluid blow gun 208 and 209 and accessories

Compressed air guns with steplessly adjustable air flow, low weight, flexible suspension options, and easy handling.

08 0251 – Safety air blow gun (series 208) with low-noise nozzle (79 dB(A)).

08 0269 – Safety compressed air blow gun (series 209) with low-noise nozzle and improved ergonomics thanks to the soft grip on the handle and on the trigger.

Supplied with: Supplied with steel coupling adapter No. 080290 size 1/4.

Note: **The CEJN series 320 satisfies Euro standard 7.6 (nominal Ø 7.6 mm, Euro profile) and is compatible with all popular systems.**



08 0250
08 0251

Length exhaust pipe		mm	90	Flow rate l/min
08A 08 0250	Air blow gun, plastic with permanently attached pipe		eShop	500
08A 08 0251	Safety compressed air gun with permanently attached pipe "StarTip"		eShop ■	190
08A 08 0269			eShop	208



08 0251, 08 0269

Star tip – includes six separate outlets.

08 0269

08 0256 – The protective shield protects the operator against flying dirt particles. To assemble, push it onto the discharge pipe.

08 0257 – Rubber nozzles for use on delicate surfaces. Fit directly on to the tube. Whisper-quiet nozzle reduces noise generation. Noise level 82 dB(A).

Suitable for: Accessories for air blow gun No. 080250.

Supplied with:

08 0257 – 3× rubber nozzles and 1× whisper-quiet nozzle.



08 0256



08 0257

External Ø		mm	100
08A 08 0256	Protective shield, transparent for compressed air blow gun		eShop
08A 08 0257	Pipe nozzle and whisper-quiet nozzle set		eShop
External Ø		mm	14; 20; 25; 35

Magnetic holder kit for easy attachment of the air blow gun to the machine.
Holding force: 25 kg (on a clean and unpainted surface)



08 0261

08A 08 0261	Magnetic holder kit series	eShop

Compressed air and fluid blow gun 210, MultiFLOW

08 0253 – Steel fluid coupling adapter.

08 0254 – Safety compressed air blow gun with **low-noise nozzle, adjustable flow rate.**

08 0259 – Magnetic holder and 3 m water hose resistant to **coolants and lubricants** (8×12 mm) with 1/4 inch connection.

08 0252/0253 – **Compressed air and fluid blow gun** with jet nozzle, **adjustable jet** (point to flat) **controllable flow** (air: 200 -1200 ltr/min, liquid: 7– 46 ltr/min).

08 0252/0254 – Supplied with steel coupling adapter 1/4 inch.

Note:

08 0253 – Suitable quick-release coupling for water connection can be found under No. 080149 size 1/2.

08 0252–0254 – **The CEJN series 320 satisfies Euro standard 7.6 (nominal Ø 7.6 mm, Euro profile) and is compatible with all popular systems.**





Connector 080253, similar to Gardena.



08 0252



08 0254

			Flow rate l/min
08A 08 0252	Compressed air and fluid blow gun, adjustable **Air connection**	eShop	200 – 1200
08A 08 0253	Compressed air and fluid blow gun, adjustable **Water connection**	eShop	200 – 1200
08A 08 0254	Safety compressed air blow gun with "StarTip" pipe **Air connection**	eShop	100 – 1100
08A 08 0259	Compressed air and fluid blow gun, adjustable **Magnetic holder and water hose**	eShop	200 – 1200



08 0259

Compressed air blow guns

Blow guns and accessories

08 0120 – **High-power** compressed air blow gun, **precisely controllable; 3 times the blow volume** of conventional compressed air guns.

08 0121 – **High-performance compressed air blow gun** made from aluminium, **low-noise safety nozzle, connection 1/2 – 27 UNS.**

08 0120/0121 – **Universally applicable,** up to 10 bar operating pressure.

Supplied with:

08 0120/0121 – Supplied with coupling adapter and hose adapter 9 mm.

Note:

08 0120/0121 – Suitable compressed air blow gun holders can be found under No. 080263 H1 and 955750.



08 0120_STAR



08 0121_STAR

Type			STAR
08A 08 0120	RIEGLER	Compressed air blow gun	eShop
08A 08 0121	RIEGLER	Compressed air blow gun with low-noise safety nozzle	eShop
maximum operating pressure (08 0120)		bar	10
Flow rate at 6 bar (08 0120)		l/min	680
Flow rate at 6 bar (08 0121)		l/min	1216

Length		mm	300
08A 08 0134	RIEGLER	Extension pipe for compressed air blow gun	eShop
Suitable for: Compressed air gun			No. 080120 size STAR



08 0134

Bleeder valve of aluminium, steplessly controllable air flow by the actuator lever, including hose connection. General purpose, up to 12 bar operating pressure.



08 0136

Hose internal thread connection ∅		mm	9	13
08A 08 0136	RIEGLER	Bleeder valve	eShop	eShop
∅		mm	21.7	21.5
Length		mm	113	

Spray gun with straight spray tube and plastic container, red matt, 1 L contents.



08 0144

Type			SPR
08A 08 0144	RIEGLER	Spray gun	eShop
maximum operating temperature		°C	90
Flow rate at 5 bar		l/min	286

Professional cleaning gun, ideal for cleaning jobs in trade and industry
up to an operating temperature of maximum 50 °C.
Resistant to water, commercial cleaning agents, citric acid (maximum 10% solution), cold cleaners.
Steplessly adjustable spray jet. size 1/2 inch internal thread.



08 0145

Type			RP1
08A 08 0145	RIEGLER	Cleaning gun	eShop

Tyre inflator

08 0137 – Uncalibrated manual tyre inflater and pressure gauge with 63 mm ∅, protected by a plastic cap.
Incl. steel male coupling for connection to NB 7.2.

08 0138 – Sturdy professional tyre inflator of plastic with protected pressure gauge 80 mm ∅.
Inflating and deflating controllable by an actuation lever.
Calibrated version.
Incl. steel male coupling for connection to NB 7.2 – 7.8.

08 0139 – Digital professional tyre inflator with fully rubberised protective cover and 80 mm pressure gauge.
Display with bar and psi indication.



08 0137_BASIC



08 0138_PRO



08 0139_DIGITAL

Type			BASIC	PRO	DIGITAL
02A 08 0137	HOLEX	Compressed air tyre inflator **Clip connector**	eShop	–	–
02A 08 0138	HOLEX	Compressed air tyre inflator **Clip connector**	–	eShop	–
02A 08 0139	HOLEX	Compressed air tyre inflator **Clip connector**	–	–	eShop
Measuring range		bar	0 – 12		
Hose length		mm	400	500	500

Compressed air accessories

Swivelling hose connection

360° swivelling compressed air swivel joint enables full, strain-relieved freedom of movement of the connected tools.





08 0192

Connection external thread		in	1/4
03R 08 0192	HAZET	Swivelling hose connection	eShop
Connection external thread			G
Compressed air connection		in	1/4
Flow rate		l/s	11.8

Distributor socket

Distributor socket of fibreglass-reinforced plastic, 3-way distributor socket, sturdy brass threaded insert G1/2 inch.

08 0140 – End distributor socket
08 0141 – Distributor socket with through hole

Supplied with:
- Distributor socket
- 2× connection screws



08 0140

Number of distributor sockets			3
08A 08 0140	RIEGLER	End distributor socket, plastic	eShop
08A 08 0141	RIEGLER	Plastic distributor socket with through hole	eShop
Inlet thread		in	1/2
Number of distributor sockets			3

Compressed air distributor

08 0180 – Y-coupling with 2 couplings and thread, brass.
08 0181 – Y-coupling with 3 couplings and thread, brass.





08 0180 08 0181

Connection external thread		in	1/4	3/8	1/2
08A 08 0180	RIEGLER	Y-coupling with 2 couplings	eShop	eShop	eShop
08A 08 0181	RIEGLER	Distributor with 3 couplings	eShop	eShop	eShop

Standard screw fastenings

Double-ended adapter, cylindrical external thread on both sides, brass.

Note: T threaded pieces can be found under No. 080035 in the online shop.



08 0167

Connection external thread		in	1/4	3/8	1/2
08A 08 0167	RIEGLER	Double-ended adapter set **10 pieces**	eShop	eShop	eShop
Length		mm	23	23	28
Connection external thread		in	G1/4	G3/8	G1/2
Width across flats		mm	17	19	24
Number of external threads				2	

Reducing bushes, short version. With cylindrical external and internal threads, brass.



08 0168

Connection thread		in	3/8-1/4	1/2-3/8	1/2-1/4
08A 08 0168	RIEGLER	Reducing bushes set **10 pieces**	eShop	eShop	eShop
Length		mm	14	17	17
External thread			G3/8	G1/2	G1/2
Internal thread			G1/4	G3/8	G1/4

Ball valves

08 0029 – Sandblasted mini ball valve with rotary handle.



08 0026



08 0029

Internal thread ∅		in	1/4	3/8	1/2
08A 08 0026	RIEGLER	Ball valve with hand lever	eShop	eShop	eShop
08A 08 0029	RIEGLER	Ball valve with rotary handle	eShop	eShop	eShop

Compressed air distributor

Distribution blocks made from aluminium (red anodised) for pneumatic hoses. They can be mounted directly on the machine. The clear arrangement of pneumatic hoses increases the safety of work and production, and saves on energy and hose cables thanks to the central supply.

Supplied with:

08 0208 – Distributor block including industrial coupling No. 080230 size 1/4. Without blanking plugs.

08 0209 – Distribution block without nipples, without couplings and without blanking plugs.

Note: See No. 080207 V for suitable blanking plugs.



08 0208



08 0209

Number of distributor sockets			4
02A 08 0208	HOLEX	Distribution block **for compressed air coupling 1/4 inch**	eShop
02A 08 0209	HOLEX	Distribution block **for compressed air coupling 1/4 inch**	eShop
Inlet thread		in	3/4

Magnetic holder

Magnetic holders with high holding force ensure a safe workplace without tripping hazards.

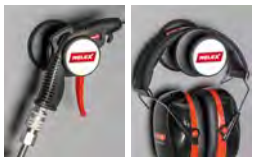
08 0260 – ■ Anodised blue magnetic stand with 52 kg holding force.
■ Prevents accidental slippage.

08 0263 – ■ Rubberised contact surface is oil-resistant and prevents scratching.
■ Two separately usable zones (e.g. compressed air gun and hose).

Suitable for:

08 0260 – No. 080122 size AIR and No. 080123 size AIR.

08 0263 – No. 080125 size 100.





08 0263


08 0260

Type			H1
02A 08 0263	HOLEX	Magnetic holder **black**	eShop ■
01A 08 0260	Garant	Magnetic holder **anodised blue**	eShop

HEDI Cable drums

HEDI® cable drums stand for "Made in Germany" quality and a long service life.
The drum body is specially designed to optimally guide the cable. The integrated rotation stop switch prevents accidental rotation of the drum.
All cable drums are equipped with thermal cut-out switches.

Cable drums 400 V

IP 44 K2

Sturdy cable drum of high-impact plastic with **thermal overload protection**.
Certified for continuous exterior use and for use in humid environments.

- 400 V CEE input plug 16 A.
- 1 pc. 400 V CEE output plug 16 A with self-closing cover and thermal cut-out switch.
- 2 pcs. 250 V standard Schuko sockets with self-closing covers.
- Inclined 7 degrees for greater ground clearance and to make it comfortable to carry.
- Removable cable holder and guide for optimum cable control.
- Water drainage grooves.
- Easy to mount on a wall.

08 1131/1132 – Compact, high-quality HEDI® all-plastic cable reel with a reel diameter of 250 mm and ergonomic and safety features.

08 1133/1134 – Large and high-quality HEDI® all-plastic cable drum with a drum diameter of 290 mm and numerous ergonomic and safety features.
Folding rotary handle for individual clockwise and anticlockwise operation when winding and unwinding.



_20N2



08 1133 / 1134

Type			20N2	25B2
08B 08 1131	All-plastic cable drum		eShop	–
08B 08 1132	All-plastic cable drum for F, B, PL and CZ		eShop	–
08B 08 1133	All-plastic cable drum		–	eShop
08B 08 1134	All-plastic cable drum for F, B, PL and CZ		–	eShop
Rated power unrolled		W	5500 (16 A)	
Cable class			H07RN-F	H07BQ-F
Cable structure			5G2.5	
Material cable			Neoprene rubber	Armoured cable
Cable length		m	20	25

Cable drums 250 V - Coworker

IP 20

Affordable HEDI® all-plastic cable reel with a reel diameter of 250 mm.

- Inclined 3 degrees for greater ground clearance and to make it comfortable to carry.
- Easy to mount on a wall.



08 1119

Type		25V	50V
08B 08 1118	All-plastic cable drum	eShop	eShop
08B 08 1119	All-plastic cable drum for F, B, PL and CZ	eShop	eShop
Rated power unrolled	W	3500 (16 A)	
Cable class		H05VV-F	
Cable structure		3G1.5	
Material cable		PVC	
Cable length	m	25	50
Number of sockets		4	
Diagnostic system present		no	

Cable drums 250 V - Companion

IP 44

Compact, high-quality HEDI® all-plastic cable reels with a reel diameter of 250 mm and ergonomic and safety features.

- Inclined 7 degrees for greater ground clearance and to make it comfortable to carry.
- Removable cable holder and guide for optimum cable control.
- Easy to mount on a wall.

Size 25N; 40N – Certified for continuous exterior use and for use in humid environments.
Size 50R – For short-term outdoor use.

K2



_25N / _40N



_50R

Type		25N	40N	50R
08B 08 1103	All-plastic cable drum	–	–	eShop
08B 08 1104	All-plastic cable drum for F, B, PL, CZ	–	–	eShop
Rated power unrolled	W	3500 (16 A)		
Cable class		H07RN-F	H07RN-F	H05RR-F
Cable structure		3G1.5		
Material cable		Neoprene rubber	Neoprene rubber	Rubber
Cable length	m	25	40	50
Number of sockets		3		
Diagnostic system present		yes		

Cable drums 250 V - Champion

IP 54 K2

Large, high-quality HEDI® all-plastic cable reel with a reel diameter of 290 mm and numerous ergonomic and safety features.

- Inclined 7 degrees for greater ground clearance and to make it comfortable to carry.
- Removable cable holder and guide for optimum cable control.
- Water drainage grooves.
- Twist grip for individual right-hand and left-hand operation when winding or unwinding the cable.
- Easy to mount on a wall.
- Certified for continuous exterior use and for use in humid environments.

Size 40B2P – With personal protection switch PRCD-S (mounted on the cable).


_40B / _40B2 / _50B

With personal safety switch



_40B2P

Type		40B	40B2	40B2P	50B
08B 08 1108	All-plastic cable drum	eShop	eShop	eShop	eShop
08B 08 1109	All-plastic cable drum for F, B, PL and CZ	eShop	eShop	–	eShop
Rated power unrolled	W	3500 (16 A)			
Cable class		H07BQ-F			
Cable structure		3G1.5	3G2.5	3G2.5	3G1.5
Material cable		Armoured cable			
Cable length	m	40	40	40	50
Number of sockets		4			
Diagnostic system present		yes			

IP 44 K2

brennenstuhl®

Cable drums

The cable drums meet the specifications set out in DGUV I 203-006 (formerly BGI 608).

08 1106 – Sturdy cable drum with drum body made of sheet metal, double insulated front and back.

08 1113 – Plastic cable drum with all-round rollover protection and practical folding handle.

Note:

08 1113 – A suitable holder for attachment to the GARANT roller cabinets and mobile workbenches can be found under 914935 1.



08 1106_25N-4

08 1106_50B-4



08 1113_50B-5

			25N-4	33N-4	40N-4	50B-4	50B-5
08B	08 1106	Cable drum steel core	eShop	–	eShop	eShop	–
08B	08 1113	Professional plastic drum "Cube"	–	eShop	–	–	eShop
Rated power unrolled		W	3500 (16 A)				
Cable class			H07RN-F	H07RN-F	H07RN-F	H07BQ-F	H07BQ-F
Cable structure			3G2.5	3G1.5	3G1.5	3G1.5	3G1.5
Material cable			Rubber/neo-prene	Rubber/neo-prene	Rubber/neo-prene	PUR (polyure-thane)	PUR (polyure-thane)
Cable length		m	25	33	40	50	50
Number of sockets			4	4	4	4	5
Diagnostic system present			yes				

Cable reel

Cable reel with **guided automatic draw-in and roll-up, with multiple stop points per revolution.** High-impact enclosed **plastic housing.** Thermal **overload cut-out,** sturdy H07RN-F neoprene cable with connection point.

08 1198/1192/1193 –Easy to mount on the wall or ceiling, with **180° pivoting range.**

08 1194–1197 – Easy to mount on the wall or ceiling with **150° pivoting range.**

Application: Improved ergonomics by relieving cable tension, and for ensuring tidiness and avoiding the risk of accidents and injuries due to cables lying on the ground.

Note: For spring return hose reels see No. 080066 to 080079.



08 1198



08 1192

Spring-loaded cable reel

Type			10S	15	17S
01A	08 1198	Garant Safety cable reel	–	eShop	–
08A	08 1192	EJN Safety cable reel	eShop	–	eShop
Rated power unrolled		W	3500	2400	2400
Nominal voltage		V	240	250	250
Length		mm	406	496	490
Width		mm	190	192	190
Height		mm	313	401	410
Cable class				H07RN-F	
Cable structure			3G2.5	3G1.5	3G1.5
Material cable				Neoprene rubber	
Cable length		m	10	15	17



08 1193



08 1194
08 1195

Type			10N	15	15N	15N2	20N
02A	08 1193	HOLEX Cable reel	–	–	–	–	–
08B	08 1194	Cable reel	eShop	–	–	–	–
08B	08 1195	HEDI Cable reel for F, B, PL, CZ	eShop	–	eShop	–	–
08B	08 1197	Cable reel	–	–	–	eShop	eShop
Rated power unrolled		W	2000 (16 A)	2000 (16 A)	2000 (16 A)	5000 (16 A)	3000 (16 A)
Nominal voltage		V	250	230	250	400	400
Length		mm	325	429	325	361	361
Width		mm	185	175	185	208	208
Height		mm	275	390	275	450	450
Cable class					H07RN-F		
Cable structure			3G1.5	3G1.5	3G1.5	5G2,5	5G1.5
Material cable					Neoprene rubber		
Cable length		m	10	15	15	15	20



08 1197_15N2

Cable reels

Robust cable reel of unbreakable plastic. Easy to roll up and unroll. With 4-way multiple sockets and thermal shut-off.

08 1158 – **Plastic bracket** for attachment to walls or perforated panels with square holes 9×9 mm on a 37 mm grid.



08 1158

Suitable for Hoffmann Group workstations and storage equipment and roller cabinets





08 1155

Type			15V
08B 08 1155	HEDI	Cable reel	eShop
08B 08 1157	HEDI	Cable reel for F, B, PL and CZ	eShop
08B 08 1158	HEDI	Plastic bracket for cable reel	eShop
Rated power unrolled (08 1155, 08 1157)		W	3500 (16 A)
Cable class (08 1155, 08 1157)			H05V V-F
Cable structure (08 1155, 08 1157)			3G1.5
Material cable (08 1155, 08 1157)			PVC
Cable length (08 1155, 08 1157)		m	15

Extension cables

IP 44

Size 5N; 10N; 15N; 25N – Resistant to oil, petrol, UV radiation.

Size 10BQ2; 15B – For heavy duty use, oil and acid-resistant, with smooth wear-resistant surface.

K2

08 1182_5N; _10N; _25N
08 1183_5N; _10N; _25N
08 1184; 08 1186
08 1185; 08 1188
Shock-resistant and splash-proof all-rubber plug and socket.



08 1182_5N/25N



08 1183_10N



08 1184_15N



08 1182_15B

Type			5N	10N	15N	15B	25N
08B 08 1182	HEDI	Extension cable 250 V	eShop	eShop	–	eShop	eShop
08B 08 1183	HEDI	Extension cable for F, B, PL, CZ 250 V	eShop	eShop	–	eShop	eShop
08B 08 1184	HEDI	Extension cable with 3-way outlet 250 V	–	–	eShop	–	–
08B 08 1186	HEDI	Extension cable with 3-way outlet for F, B, PL, CZ 250 V	–	–	eShop	–	–
Cable class			H07RN-F	H07RN-F	H07RN-F	H07BQ-F	H07RN-F
Cable structure			3G1.5				
Material cable			Neoprene	Neoprene	Neoprene	Armoured cable	Neoprene
Cable length		m	5	10	15	15	25

Type			10N	10BQ2
08B 08 1185	HEDI	Extension cable 400 V / 16 A	–	eShop
08B 08 1188	brennenstuhl	Extension cable 400 V / 16 A	eShop	–
Cable class			H07RN-F	H07BQ-F
Cable structure			5G1.5	5G2.5
Material cable			Neoprene	Armoured cable
Cable length		m	10	



08 1188_10N



08 1185_10BQ2

Spiral cable 250 V / 16 A

IP 44 K2

Spiral-Plus cable with PU sheath, extends from 1 – 5m (recommended 1 – 3m). An additional glass fibre braid in the cable sheath ensures long-lasting and consistent coil resilience.

Supplied with: With two metal clips for strain relief.

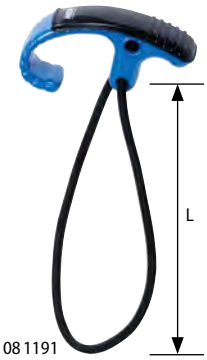


08 1145

08B 08 1145	HEDI	Spiral cable 1 – 5 m 250 V	eShop
Cable class			H07BQ-F
Cable structure			3G1.5
Material cable			Armoured cable

Suspension system for cables and leads

Carrying handle made from plastic with exceptionally sturdy hook. For hanging up cables, wires, hoses, buckets and more.



08 1191



Type			S	L	XL
08B 08 1191	HEDI	CableFix cable suspension system	eShop	eShop	eShop
Loop length L		mm	100	210	300
maximum load capacity		kg	20	50	100

Multiple socket strips

08 1129 – With illuminated safety switch and sockets offset at 45°.

08 1152 – 6-way Ecolor socket strip, black, 1.5 m H05VV-F 3G1.5.

- Elegant, slim, timeless and high-quality design
- Polished surface
- Shuttered contact sockets at a 45° angle, also suitable for angled plugs
- Illuminated, two-pole on/off safety switch
- Sockets with enhanced touch protection

08 1156 – 4-way socket strip IP44, black 2 m H07RN-F 3G1.5.

- 230-V sockets, with spring-loaded covers, IP 44.
- 2-m neoprene connection cable.
- Screw sockets for fastening.

08 1159 – Alu-Line premium socket strip with sturdy aluminium casing and innovative fastening concept.

08 1163 – Impact resistant casing with cable inlet at the opposite end to the safety switch placed for easy operation, and with additional suspension loop.
The **surge protection** (13,000 A) prevents damage to connected equipment due to voltage spikes.

08 1165 – **Splashproof sockets** with self-closing covers and sealing rings. Shock-resistant, unbreakable plastic housing with sturdy suspension loop.

- With illuminated safety switch

08 1176 – **6-way black socket strip with 3m H05VV-F 3G1.5 rubber cable.**
Sockets arranged at an angle of 90°, thus ideally suited to accept angled plugs.
Particularly wide spacing for insertion of power supply units.
Illuminated two-pole on/off safety switch.
Holes for permanent 4-point attachment of the socket strip, e.g. to a wall.

08 1179 – The Primera-Tec 7-series multiple socket strip **with 2 permanent, 1 main and 4 follow sockets,** overvoltage protection and 2 m cable impresses with its quality and safety in all areas. It has increased touch protection.

08 1199 – 4-way socket strip with sockets arranged at 90°, with protection against touching and **space-saving flat plug.**


08 1152


08 1156


08 1159


08 1163


08 1165


08 1176


08 1129



08 1179


08 1199

Number of sockets		4	5	6	7	8	Length of strip mm	Cable structure	Cable class	Cable length m
08B 08 1152	6-way socket strip with switch	–	–	eShop	–	–	355	3G1.5	H05VV-F	1.5
08B 08 1156	4-way socket strip IP44	eShop	–	–	–	–	385	3G1.5	H07RN-F	2
08B 08 1159	Aluminium socket strip with switch	–	–	eShop	–	–	410	3G1.5	H05VV-F	3
08B 08 1163	Socket strip with overvoltage protection	–	–	–	–	eShop	630	3G1.5	H05VV-F	2.5
08B 08 1165	Socket strip IP44	–	eShop	–	–	–	520	3G1.5	H07RN-F	2
08B 08 1176	Socket strip with switch	–	–	eShop	–	–	400	3G1.5	H05VV-F	3
08B 08 1129		–	–	eShop	–	–	360	3G1.5	H05VV-F	1.5
08B 08 1179	Socket strip with Master-Slave function	–	–	–	eShop	–	575	3G1.5	H05VV-F	2
08B 08 1199	Socket strip with flat plug	eShop	–	–	–	–	310	3G1.5	H05VV-F	2

USB socket strips

08 1178 – Socket strip with 2-way USB charger function. Sockets arranged at an angle of 90°. Bolt holes for wall mounting.

08 1181 – Desk socket outlet with 2 pcs. **USB 2.0 charger sockets** and **2 desk socket outlets**. Charging current of 2100 mA for quick charging.

08 1196 – **Alu-Office-Line socket strip with USB charger function.** With 4 desk socket outlets and 2 USB charger sockets. Shuttered contact sockets at a **45° angle, suitable for angled plugs.** For easy connection of devices directly on the desk.

Note: Adapter plug with earth contact 250 V / 16 A for connecting earth contact plugs to other European plug systems can be found in the online shop under No. 081172 and No. 081174.

IP 20


08 1181


08 1196


08 1178_5B


08 1178_5W

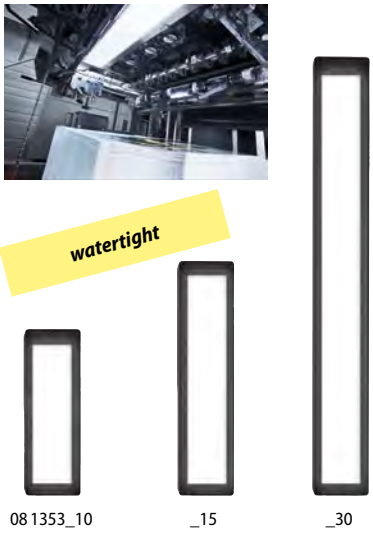
Number of sockets		6	4	5B	5W	Length of strip mm	Cable structure	Cable class	Cable length m
08B 08 1178	Socket strip with USB **7-fold**	–	–	eShop	eShop	430	3G1.5	H05VV-F	3
08B 08 1181	Tabletop socket **4-fold**	–	eShop	–	–	160	3G1.5	H05VV-F	1.8
08B 08 1196	Alu-Office-Line socket strip **6-fold**	eShop	–	–	–	390	3G1.5	H05VV-F	1.8

Workshop lamps

Planonlight LED-light **black series** is the most intense, **most dense** and **most compact** of the Planonlight work lights. Add-on variant with flexible fastening options for the most demanding industrial applications.

- **Very high illumination intensity** with 157 Lumen/Watt LEDs.
- **Absolutely maintenance-free** (with a long working life of 50,000 h).
- Very compact design makes it ideal for retrofitting and for use in very intricate machines.
- Very wide range of variants, with 8 different models (built-in versions on request).
- Flexible attachment: **Flush fitted** in-built or with suitable, adjustable attachment 081381 for 45° surface mounting.
- **Improved** and **proven sealing principle** with IP68 and IP69K (leak-free against emulsion).

Note:	**Operating voltage 24 V DC – connection directly to the mains (230 V/50 Hz) will damage the lamp beyond repair!**Use transformer No. 081375 to connect to the mains.



08 1353_10 _15 _30

Power consumption	W	10	15	30
04E 08 1353 hagnleone LIGHTING Working area lamp Planonlight LED Black Series		eShop	eShop	eShop
Manufacturer's designation		10487	10488	10493
Illumination	lm	1300	2000	4000
Overall length	mm	168.5	234	430.5
Overall width	mm		65	
Overall height	mm		20	
Weight	g	500	600	900

Revolutionary working area lamp with the latest LED technology. Almost **doubled light intensity** in comparison to existing lighting systems, **giving very high sharpness for contours and contrast**.
Due to the **minimum installation height of 28 mm** the PLANONLIGHT LED saves space in virtually every workstation.

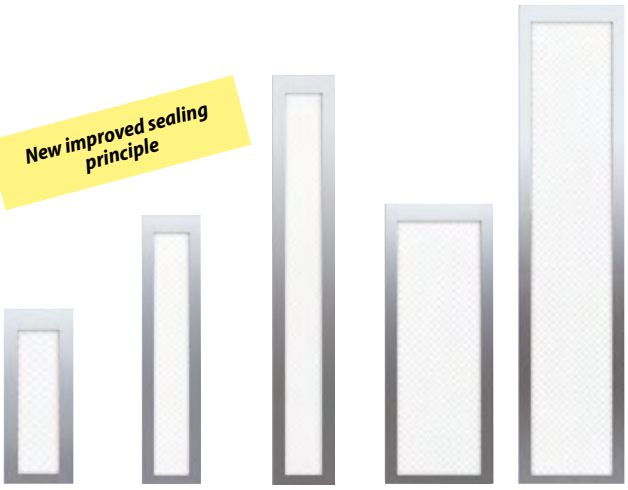
- **Very high light density** over the entire area.
- **Extremely high illumination of daylight quality**, whilst remaining dazzle-free and flicker-free, with no stroboscopic effects.
- Steplessly dimmable (transformer not included).
- **Immersion-proof (IP68) even against aggressive emulsions (IP69K).**
- **Very easy to clean** – smooth surface and low surface temperature (maximum 10 °C above ambient).
- **Absolutely maintenance-free.**
- Certified to UL standards – for world-wide use.
- **Easy retrofitting** by self-installation.
- Direct connection via an M12 machine plug connector or using the connecting cable supplied

Function: IP69K: Protected against continuous submersion in pressurised water (pressurised watertight) and protected against penetration by dust (dust-tight), also completely protected against touching.

Note:	**Operating voltage 24 V DC – connection directly to the mains (230 V/50 Hz) will damage the lamp beyond repair!** Use transformer No. 081375 to connect to the mains.




waterproof



Power consumption	W	10	20	30	33	66
04E 08 1350 hagnleone LIGHTING Working area lamp Planonlight LED		eShop	eShop	eShop	eShop	eShop
Manufacturer's designation		20290	20291	20292	20293	20294
Illumination	lm	750	1800	2800	3000	6000
Overall length	mm	241	441	641	421	771
Overall width	mm	97	97	97	171	171
Overall height	mm			28		
Weight	g	1200	1800	2600	2900	5200

Accessories for workshop lamps

08 1375 – Transformer cannot be dimmed. Suitable dimmable transformer on request.

			suitable for
04E 08 1375	Transformer for PLANONLIGHT LED 24 V / 100 W	eShop	081350; 081353
04E 08 1380	hagnleone LIGHTING Bracket for PLANONLIGHT LED with ball joint	eShop	081350
04E 08 1381	hagnleone LIGHTING Bracket for Black series 45°	eShop	081353



08 1375



08 1380



08 1381

IP 65

SCANGRIP® Rope light

The "ROPE LIGHT" is a 25 m long, flicker-free and approved rope light with an output of 20,000 lumens. The light can be used both for orientation and as a work light. The drum enables the light to be conveniently rolled up. ROPE LIGHT is operated at low voltage (48 V DC), so there is no risk of an electric shock if the rope is accidentally trapped or cut.

Note:	To prevent overheating, always fully uncoil the rope light from the drum before you connect it to the power supply.



08 1605

Type		ROPE-LIGHT
08C 08 1605	Rope light	eShop
Illumination	lm	20000
Overall length	mm	25000

Bauer Böcker LED inspection lamps

Robust cordless inspection lamps with LED lamp head.

- Flexible arm, non-dazzle and non-flicker.
- Can be recharged via USB-C.
  - Size 10 – With 30 mm round mirror.
  - Size 15 – With rectangular mirror 65×43 mm.
  - Size 20 – With 30 mm round mirror and rectangular mirror 65×43 mm.



08 1621_10
08 1621_15
08 1621_20

Type		10	15	20
08C 08 1621	LED inspection set	eShop	eShop	eShop

IP 67

Bauer Böcker LED machine lamps

Sturdy LED machine lamps in an **aluminium casing**, with a satinised acrylic lens for **homogeneous 160-degree illumination**.

- Low-reflection, non-dazzle and non-flicker.
- For connection to a 24 V **mains adapter** or **24 V machine control system.**
  - 08 1435 – Rotatable.
  - 08 1438 – Flat lighting strip, can pivot through 45°.
  - 08 1439 – Ring illumination "circle light" for shadow-free 360° illumination around the spindle on milling machines and drilling machines. Flexible attachment to different types of machine using the adjustable magnetic holder.

Supplied with: With rubber-clad magnets, mains adapter.


08 1435_140


08 1435_250


08 1438_303

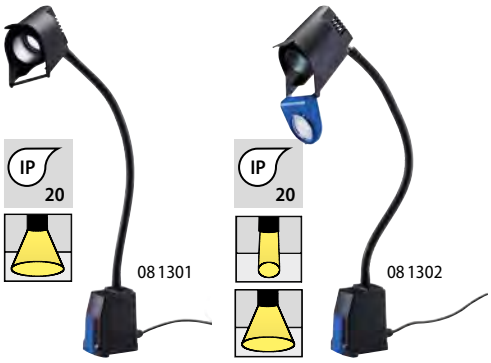

08 1438_546


08 1439

Type		140	250	303	546	160
08C 08 1435	LED machine lamp **round**	eShop	eShop	–	–	–
08C 08 1438	LED machine lamp **flat**	–	–	eShop	eShop	–
08C 08 1439	LED machine lamp **Ring**	–	–	–	–	eShop
Nominal voltage	V	–	–	–	–	24
Light output	W	3	9	12	24	7.5
Illumination	lm	300	900	1200	2400	460
Overall length	mm	140	250	303	546	–
Overall width	mm	–	–	40	40	–
Overall height	mm	–	–	39	36	42
Head ∅	mm	40	40	–	–	–
External ∅	mm	–	–	–	–	160
Internal ∅	mm	–	–	–	–	100

HEDI Machine / workstation lamps

High-quality, universally usable lamps, with on/off switch, 3-m rubber connection cable.
All HEDI® machine/workstation lamps come with table clamps, integrated magnet and 4 screws for flexible attachment of the lamp to a wide variety of surfaces as standard.



Classic machine lamp in wide-beam version. Lamp head can be rotated and swivelled 340° using the ball joint. With exchangeable light source.

Type		3LED	6LED
08B 08 1301	Machine lamp	eShop	eShop
Light output	W	4.6	6
Illumination	lm	480	621
Light colour		cold white	
Colour temperature	K	6500	

A fold-away lens allows the lamp to be quickly and easily switched over between spot and wide-beam illumination. Lamp head can be rotated and swivelled 340° using the ball joint. With exchangeable light source.

Type		6LEDDUO
08B 08 1302	Machine lamp DUO	eShop
Light output	W	6
Illumination	lm	621
Light colour		cold white
Colour temperature	K	6500



Proven machine lamp with extremely sturdy lamp head, protected against splashed water and dust-tight, for professional use in tough working environments or use on and in machines.
Radio interference suppression according to DIN EN 62493.

Type		9LED	9LED-24V	10LED
08B 08 1300	Machine lamp	eShop	–	–
08B 08 1303		–	eShop	–
08B 08 1304		–	–	eShop
Nominal voltage	V	250	24	250
Light focussing		Focussed light beam	Focussed light beam	non-dazzling flood beam
Beam dispersion angle fixed	degrees	60	60	150
Light output	W	9.9	9.9	10
Illumination	lm	1140	1140	1250

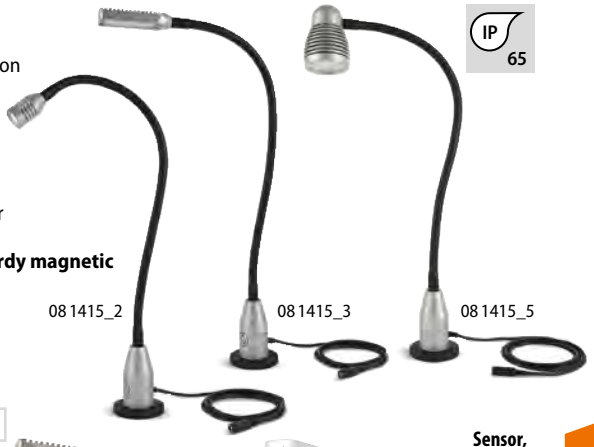


With 3 brightness levels for optimal illumination of the workplace; innovative design enables object to be assessed from above using the lamp, extended 600 mm flexible metal arm.

Type		9LED-BR
08B 08 1305	Machine lamp	eShop
Light output	W	6
Illumination	lm	750



Bauer Böcker LED work lamps



08 1409 – Innovative workstation lamp **with gesture control** at the lamp head for switching on and off and dimming function. Colour temperature can be changed as required. The lamp can be used in various different fields of application.

- Strong magnetic base.
- Uniform, homogeneous and low-reflection 120° illumination.
- Non-dazzling and flicker-free.
- The light colour can be changed from cold white to warm white using the sensor on the lamp head.

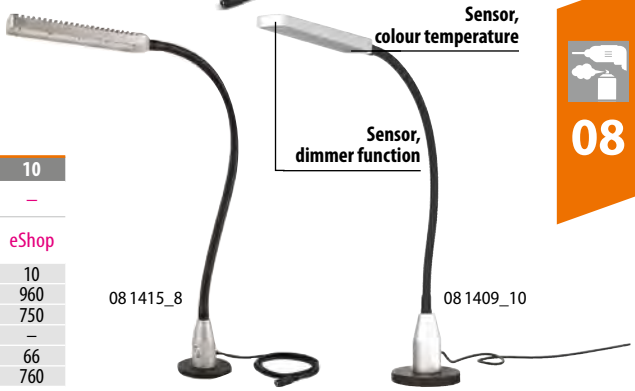
08 1415 – Powerful, dimmable, long-lived and robust work lamps with **flexible neck** and **sturdy magnetic base**. For connection to a 24 V mains adapter or 24 V machine control system. High-performance LED in an aluminium casing, cold white approx. 5500 Kelvin.

Size 2 – Spot beam for focussed light.

Size 3; 8 – Wide beam dispersion angle 120° with uniform illumination.

Supplied with: Supplied with 250-V power supply unit.

Note: Suitable table clamps and magnetic holders can be found under 081418/081419.



Type		2	3	5	8	10
08C 08 1415	LED work lamp	eShop	eShop	eShop	eShop	–
08C 08 1409	LED workstation lamp **with gesture control**	–	–	–	–	eShop
Light output	W	2	2.5	4.5	9	10
Illumination	lm	200	300	450	900	960
Overall height	mm	600	620	600	850	750
Lamp head ∅	mm	28	–	60	–	–
Magnetic base ∅	mm	66	66	66	88	66
Weight	g	760	550	800	1600	760

LED floodlight

08 1123 – Stand can be extended for stepless height adjustment 0.8 to 1.75 m, LED floodlight with switch.

08 1209 – **NOVA "For Life" LED floodlight** with integrated carrying handle and 5-step dimmer function.

- New, updated design with highly efficient multi-LEDs.
- New **OPTILight function** for optimised light output and superior duration.
- Compact and durable for demanding work environments.

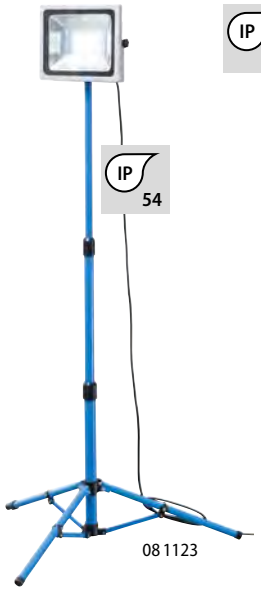
08 1211 – Die-cast aluminium housing with bulb and aluminium reflector. On/ off switch on casing. SMD-LED floodlights for portable use with robust stands (all-round protection).

08 1245 – **NOVA "For Life" LED floodlight** with integrated carrying handle and 5-step dimmer function.

- New, updated design with highly efficient multi-LEDs.
- New **OPTILight function** for optimised light output and superior duration.
- Compact and durable for demanding work environments.

Sturdy LED floodlight with shock-resistant aluminium casing and rubber protective edge.

- Soft non-shadowing anti-glare lamp, with low heat emission.
- High light output, low energy consumption.
- Certified for exterior use and for use in humid environments.



08 1123



08 1211_50



08 1245

Power consumption			W	30	43	50	55	88	150
08B 08 1123	HEDI	LED floodlight with stand	230 V	–	–	eShop	–	–	–
08B 08 1211	HEDI	Portable LED floodlight	230 V	eShop	–	eShop	–	–	eShop
08C 08 1245	SCANGRIP	LED floodlight	230 V	–	eShop	–	–	eShop	–
02A 08 1209	HOLEX	LED floodlight	230 V	–	–	–	eShop	–	–
Power consumption (08 1211)			W	30	–	50	–	–	–
Illumination			lm	3150	600 – 6000	5400	2500 – 5000	1200 – 12000	16500
Overall length			mm	240	267	360	292	302	430
Overall width			mm	200	87	300	292	102	310
Overall height			mm	280	262	350	84	298	430
Connection cable length			m	5					
Weight			g	4400	2660	–	3600	4100	8300



08 1209

LED floodlights

IP 54

Non-shadowing and non-dazzle version with wide spread of light.

08 1266 – With 2 lighting levels and up to 3 hours illumination. Base of steel, powder-coated.

08 1267 – High-power 360° work lamp with Schuko socket. The lamp can be hung anywhere on a sturdy hook, and stood directly on the workbench.

08 1274 – With integrated handle and base for direct mounting of the floodlight. Two Schuko sockets allow the connection of electric tools quickly and easily, without having to additionally use a cable.

08 1264/1268 – Robust work lamp with rubberised side parts and five different inclination angles depending on the positioning (90°, 35°, 25°, 15°, 0°). Integral carrying handle, on/off switch at the back. Approved for continuous use and on building sites/installation sites to BGI 608.

Suitable for:

Size 18; 48; 65 – Three-leg stand No. 081252 size 1.35-3.


08 1264
08 1268



08 1266
08 1274

Power consumption			W	18	35	48	65
08B 08 1264	HEDI	LED cordless work light		–	eShop	–	–
08B 08 1268	HEDI	LED floodlight	230 V	–	eShop	–	–
08C 08 1266		LED cordless floodlight		eShop	–	–	–
08C 08 1267	SCANGRIP	LED area floodlight	230 V	–	–	–	eShop
08C 08 1274		LED floodlight		–	–	eShop	–
ATEX zone (08 1264, 08 1266)				no	no	–	–
Illumination (08 1264, 08 1266, 08 1267, 08 1274)			lm	2500	3850	6000	6000
Illumination (08 1268)			lm	–	4920	–	–
Illumination step 2 (08 1264, 08 1266)			lm	750	1650	–	–
Illumination time (08 1264, 08 1266)			h	3	4.5	–	–
CRI value				80	–	–	–
Number of rechargeable batteries contained (08 1264, 08 1266)				1	1	–	–
Type of rechargeable battery (08 1264, 08 1266)				Lithium-ion	Lithium-ion	–	–
Battery voltage			V	11.1	–	–	–
Overall length			mm	288	273	318	305
Overall width			mm	103	256	117	199
Overall height			mm	280	163	310	199
Connection cable length (08 1268, 08 1267, 08 1274)			m	–	3	5	5
Weight (08 1268, 08 1266, 08 1267, 08 1274)			g	1600	2300	3430	3500



08 1267

LED cordless floodlight

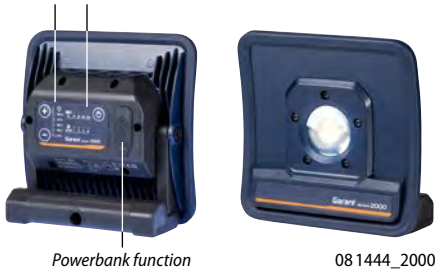
IP 67

Cordless LED battery floodlight with sturdy aluminium casing for everyday use in rough environments.

- High-performance COB LED modules.
- Dimmable in 5 steps from 10 to 100 %.
- Practical monitoring of the state of charge of the battery by LED display directly on the lamp.
- Base with integral 10 mm hole, for mounting on suitable stands.
  08 1445 – Flexibility in use. Cordless or mains power.

Supplied with:

08 1444 – Supplied with USB charging cable and plug-in power supply unit.
08 1445 – Including battery charger.



08 1444_2000



08 1445_3000

Type		2000	3000
01A 08 1444	Garant Cordless LED floodlight	eShop ■	–
01A 08 1445		–	eShop
Illumination	lm	200 – 2000	400 – 4000
Illumination time	h	2 – 20	1 – 14
Type of rechargeable battery		Lithium-ion	
Overall length	mm	163	234
Overall width	mm	63	88
Overall height	mm	163	233

IP 67

for LIFE

Sturdy LED floodlight with shock-resistant aluminium casing and rubber protective edge.

- Soft non-shadowing anti-glare lamp, with low heat emission.
- High light output, low energy consumption.
- Certified for exterior use and for use in humid environments.
  08 1208 – **NOVA "For Life" cordless floodlight** with integrated carrying handle and 5-step dimmer function.
- New, updated design with highly efficient multi-LEDs.
- New **OPTILight function** for optimised light output and superior duration.
- Compact and durable for demanding work environments.
  08 1285 – **NOVA "For Life" cordless floodlight** with integrated carrying handle and 5-step dimmer function.
  - New, updated design with highly efficient multi-LEDs.
  - New **OPTILight function** for optimised light output and superior duration.
  - Compact and durable for demanding work environments.

  Size 26; 39 – Due to the dual system, can be used both as a mobile cordless floodlight, and also with mains cable.

Supplied with:

Size 20–39 – Including battery charger.
Size 13 – Supplied with USB charging cable and plug-in power supply unit.



08 1285_13



08 1285_39

Power consumption		13	20	26	39
08C 08 1285	SCANGRIP LED cordless floodlight	eShop	–	eShop	eShop
02A 08 1208	HOLEX	–	eShop	–	–
Power consumption	W	13	20	26	39
Illumination	lm	200 – 2000	1100 – 2200	400 – 4000	600 – 6000
Type of rechargeable battery		Lithium-ion			
Overall length	mm	163	196	235	275
Overall width	mm	63	68	88	92
Overall height	mm	163	226	233	275

IP 65

NEW



08 1286



08 1252

Height	m	1,35-3
08C 08 1252	SCANGRIP Three-leg stand	eShop
Suitable for:		081232; 081233;081234; 081235; 081236; 081285; 081245; 081266; 081267; 081274; 081444; 081445; 081516 STAR; 081514 MULTI-R

LED cordless lights CONNECT

Scangrip CONNECT work lights are based on the CAS system and are also compatible with 18-V batteries from all leading power tool manufacturers.

Supplied with: Lights are supplied without battery and charger.

Note: Suitable batteries, chargers and power supply units for wired power supply can be found under 073870 – 073890 and 081249.

LED cordless floodlight

High-performance cordless LED floodlight with dimmer function. The housing is made of injection-moulded aluminium and is extremely robust andresistant to strong blows, impacts and vibrations.
For use with CAS 12 V and 18 Vbatteries, 18-V batteries from leading power tool manufacturers or direct connection to the SCANGRIP® power supply.

08 1233/1234 –
- BLUETOOTH light control enables up to four lights to be switched on/off and the light output to be adjusted in five levels to suit the respective task.
- With removable diffuser.
- Integral carrying handle and new base for flexible alignment and for direct mounting on the SCANGRIP® stand or with magnetic holders.

IP 30



08 1232_Nova-2

IP 65



08 1234_Nova-10

IP 65



08 1233_Nova-4

Type		NOVA-2	NOVA-4	NOVA-10
07A 08 1232	LED floodlight with dimmer function **CONNECT**	eShop	–	–
07A 08 1233		–	eShop	–
07A 08 1234		–	–	eShop
Illumination	lm	200 – 2000	400 – 4000	1000 – 10000
Number of rechargeable batteries contained		0		
Type of rechargeable battery		Lithium-ion		
Battery voltage	V	12; 18		
Overall length	mm	163	240	305
Overall width	mm	63	104	125
Overall height	mm	163	230	290

LED cordless floodlight

High-performance cordless LED floodlight with uniform, non-dazzle illumination.
The sturdy, shock-resistant plastic housing of the lights is perfect for all working environments.
Can be mounted on the SCANGRIP® stand. For CAS 18-V batteries, 18-V batteries from leading power tool manufacturers or direct connection to the SCANGRIP® power supply.

08 1235 –
- Beam dispersion angle of 360° or 180° can be selected.
- Dimmable in five lighting levels.
- BLUETOOTH light control enables up to four lights to be switched on/off and the light output to be adjusted in five levels to suit the respective task.

IP 65



08 1235_Area-10

IP 54



08 1236_Vega-4

Type		AREA-10	VEGA-4
07A 08 1235	360° LED floodlight with dimmer function **CONNECT**	eShop	–
07A 08 1236	LED floodlight **CONNECT**	–	eShop
Illumination	lm	1000 – 10000	4000
Number of rechargeable batteries contained		0	
Type of rechargeable battery		Lithium-ion	
Battery voltage	V	12; 18	18
Overall length	mm	212	280
Overall width	mm	200	103
Overall height	mm	395	288

LED rechargeable work light

Universal CONNECT rechargeable battery work light with 180° folding lamp head and suspension hook.

IP 30



08 1238_Basic

Type		BASIC
07A 08 1238	LED rechargeable work light **CONNECT**	eShop
Illumination	lm	500 – 1000
Number of rechargeable batteries contained		0
Type of rechargeable battery		Lithium-ion
Battery voltage	V	18

Accessories for the CONNECT LED cordless lights

Connector for the use of 18-V batteries from leading power tool manufacturers on Scangrip CONNECT work lights.



08 1237

		BOSCH	FEIN	MILWAUKEE
07A 08 1237	Connector	eShop	eShop	eShop

Power supply for mains operation of all SCANGRIP® CONNECT lights and floodlights. Instead of the battery, the power supply unit is pushed onto the light, which enables wired operation for any desired period of time.



08 1249_Power-C

Type		POWER-C
07A 08 1249	100-240V power supply unit **Schuko**	eShop

LED cordless lights

Supplied with: **Cordless light without battery and without charger.**

07 3203 – 12 V work light with 10 LEDs and two brightness levels.
Adjustable angle up to 200°, suspension hook, carabiner and integral magnet.

07 3205 Size GLI18300 – Robust 18 V Li-ion cordless light with adjustable LED head.
6 powerful LEDs with 300 Lumens and very long working life.

Size GLI182200C – Sturdy cordless building site light 120°.
Individual control and adjustment using **Bosch Connectivity app.**

Note:	Suitable spare batteries and chargers can be found under No. 073851– 073866.





Type			GLI12330	GLI18300	GLI182200C
03B 07 3203	LED cordless light	12 V	eShop	–	–
03B 07 3205	LED cordless light **0 version without battery**	18 V	–	eShop	eShop
Manufacturer's designation			GLI 12-330	GLI 18V-300	GLI 18-2200C
Illumination		lm	330	300	2200
Illumination step 2		lm	–	–	300
Number of rechargeable batteries contained				0	
Type of rechargeable battery				Lithium-ion	
Battery voltage		V	12	18	18

Robust Li-Ion battery lights with high light intensity.

Size M12TLED; M18TLED – With adjustable LED head

Size M12UCL – LED work light and assembly light.
- **With swivel joint, adjustable 300° horizontally and 180° vertically.**
- **Magnetic base** and large **magnetic storage.**

Size M18SLED – **Robust Li-ion battery lights with TRUEVIEW™ technology.**
- Tiltable floodlight head with up to 1,250 Lumen.
- Range 650 m.
- 4 lighting levels for maximum flexibility.

Size M18AL –
- Handy and very robust cordless light with high illumination intensity of 1500 Lumen.
- 2 brightness levels.
- Integral handle. Can be hung vertically and horizontally on a 13 mm ∅ pipe.

Size M18MDTL –
- Handy and very robust cordless light with high illumination intensity of 4500 Lumen.
- 3 individual light heads to direct the light to different applications.

Size M18HOAL –
- LED floodlight with TrueView™ technology and 120° rotating radiator head.
- Hybrid power source: operates either with an 18V rechargeable battery or with a cable.

Size M18HOSALC –
- Very sturdy 18 Volt LED floodlight **with stand.**
- Shock-resistant radiator head with 3 separate and individually adjustable LED modules.
- Hybrid power source: operates either with an 18V rechargeable battery or with a cable.
- **Integral M18™ rechargeable battery charger** and 2.1 ampere USB charger.



Suitable for:

07 3210 – Milwaukee 12 V batteries MB12.

07 3211 – Milwaukee 18 V batteries (No. 073816 MB18 and 073827 MB18).



Type			M12TLED	M12UCL	M18TLED	M18SLED	M18AL	M18MDTL	M18HOAL	M18HOSALC
07A 07 3210	LED cordless light	12 V	eShop	eShop	–	–	–	–	–	–
07A 07 3211	LED cordless light **0 version without battery**	18 V	–	–	eShop	eShop	eShop	eShop	eShop	eShop
Manufacturer's designation			M12TLED-0	M12 UCL	M18TLED-0	M18SLED-0	M18AL-0	M18 MDTL-0	M18 HOAL	M18 HOSALC-0
Illumination		lm	120	1200	120	1250	1500	4500	4000	6000
Illumination step 2		lm	–	800	–	1200	780	2000	2000	4000
Illumination step 3		lm	–	600	–	–	–	1200	1200	1700
Number of rechargeable batteries contained						0				
Type of rechargeable battery						Lithium-ion				
Battery voltage		V	12	12	18	18	18	18	18	18

Garant LED work lights



Turn the spotlight on your work.

Discover the powerful and efficient GARANT work lights.

The flexible and highly efficient GARANT LED work lights help you to light up areas that general lighting doesn't reach. Illuminate dark or inaccessible areas in a targeted manner, thereby making your work easier. The shock and break-resistant housing is optimally designed for harder working conditions. The work light is therefore extremely energy-efficient.

IP 65

Garant Work lights

Versatile LED cordless work light in slim sturdy design with a wide range of applications.
Practical monitoring of the state of charge of the battery by LED display directly on the light.

- Main light steplessly dimmable from 10 - 100 %.
- Integral spotlight function.
- Flexible use thanks to 180° pivoting magnetic base, together with fold-up and rotating suspension hook.

08 1442 – Charging station compatible with the GARANT easyFix system.
Uncomplicated charging, ready to hand at all times.

Supplied with: Supplied with USB-C charging cable and plug-in power supply unit.

Note: For mounting on GARANT easyFix perforated panels, also order the base plate No. 955820 size 2.

GARANT easyFix compatible



08 1441_200 08 1442_500

Type		200	500
01A 08 1441	LED cordless work light	eShop	–
01A 08 1442		–	eShop
Illumination	lm	20 – 200	50 – 500
Illumination time	h	2 – 20	
Number of rechargeable batteries contained		1	
Type of rechargeable battery		Lithium-ion	
Overall length	mm	200	230
Overall width	mm	39	47
Weight	g	157	257

IP 30

Garant LED rechargeable pen light

Extremely slim rechargeable LED pen torch with sturdy and elegant aluminium casing.
The steplessly dimmable main beam, and the strongly focussed spotlight LED ensure optimum illumination in restricted spaces.

- Sturdy metal clip on the back.
- Strong magnet in the lamp base.
- Battery charge is always clearly visible through the central LED display.

Function:

Size 200 – IP30: Protected against penetration by foreign bodies with Ø > 2.5 mm, however tools and wires should be kept away, and offers no protection against water.

Supplied with: Supplied with USB-C charging cable.



Type		200
01A 08 1448	LED rechargeable pen light	eShop ■
Illumination	lm	20 – 200
Illumination time	h	1 – 10
Number of rechargeable batteries contained		1
Type of rechargeable battery		Lithium-ion
Overall length	mm	173
Overall width	mm	17
Weight	g	56

LED work lights

08 1449 – Sturdy slim LED rechargeable work light with rubberised outer surface, holder magnet and additional LED in the head of the lamp.
3 different illumination settings (spot, bright, dimmed).
Rechargeable via a USB-C interface.
Ideal as an inspection lamp in restricted spaces.

08 1543 – LED rechargeable work lamp with adjustable lamp head angle, rotary knob for stepless dimming. Translucent cover for non-dazzle 360° illumination.
Stand with integral magnet and suspension hook.

08 1549 – Slim LED rechargeable lamp with main beam and spotlight for illumination even in narrow spaces. Free-moving rotary knob for stepless dimming. Flexible attachment by means of rotary magnetic base with integral suspension hook.

08 1567 – LED rechargeable work light with 2 brightness levels and spotlight (100 lumens). With suspension hook, folding stand and USB-C charging port.

08 1572 – Slim rechargeable LED inspection lamp with swan neck and sturdy 200 mm flexible shank. Main lamp steplessly dimmable. Additional spotlight function. The stable magnetic base with an integral suspension hook also allows use a desk lamp.

Supplied with:

08 1543/1572 – Supplied with charging cable and plug-in power supply unit.

08 1567/1549 – Charging cable.



08 1567_205

08 1449_260



08 1572_460

08 1543_360

08 1549_380

Type		260	205	360	380	460
02A 08 1567	LED rechargeable work light	–	eShop	–	–	–
02A 08 1449	LED rechargeable work light	eShop	–	–	–	–
02A 08 1543	LED rechargeable work light	–	–	eShop	–	–
02A 08 1549		–	–	–	eShop	–
02A 08 1572	LED rechargeable inspection lamp **with swan neck**	–	–	–	–	eShop ■
Illumination	lm	400	350	60 – 1000	120 – 500	50 – 500
Illumination step 2	lm	40	150	–	–	–
Illumination time	h	3 – 20	3 – 6.5	1.5	2.5	2 – 22
Number of rechargeable batteries contained		1				
Type of rechargeable battery		Lithium-ion				
Overall length	mm	260	205	260	380	470
Weight	g	94	201	470	250	325

08 1576 – Handy powerful rechargeable pocket LED work light. Steplessly dimmable main beam and additional spotlight function. Attachment by means of a strong magnet or fold-away suspension hook.

08 1577 – Rechargeable LED pen light with steplessly dimmable main beam and additional spotlight function. Strong magnet in the lamp base.

08 1579 – LED rechargeable pen light with main beam and spotlight, with a pocket clip with powerful attachment magnet. Magnetic base with 360° rotation.

Supplied with: Including USB charging cable.



08 1579

08 1576_118

08 1577_175

Type		118	170	175
02A 08 1576	LED pocket rechargeable work light	eShop	–	–
02A 08 1577	Rechargeable LED pen light	–	–	eShop ■
02A 08 1579		–	eShop ■	–
ATEX zone		no		
Illumination	lm	50 – 500	220	20 – 200
Illumination step 2	lm	–	80	–
Illumination time	h	1 – 10	2.5	2 – 16
Number of rechargeable batteries contained		1		
Type of rechargeable battery		Lithium-ion		
Battery voltage	V	1.5	–	–
Overall length	mm	108	170	175
Overall width	mm	47	20	23
Weight	g	114	83	77

SCANGRIP® Work lights

LED rechargeable work light with high-power LEDs for high light output. With fold-out swivel support hook and powerful attachment magnet.
Size MINI-PRO; MAG-PRO; MAGPEN3 – Steplessly dimmable.
08 1516 Size MINI-PRO – New generation of the **MINI-MAG** version, powerful spotlight and main light, with charge indicator at the front.
Size MAG-PRO – New generation of the **MAG3** version, with exceptionally high light output, very powerful spotlight and main light, with charge indicator at the front.
Size STAR – **Handy cordless work lamp** and floodlight combined in a single lamp. **Flexible handle** with built-in magnet, suitable for direct mounting on a Scangrip stand. Built-in power bank with USB socket. Without suspension hook.
08 1517 Size MAGPEN3 – Powerful general-purpose LED **rechargeable battery** torch with side main beam and torch head spotlight. With pocket clip and integral magnet.
Size MINI-PRO; MAG-PRO – High-performance **COB LED technology for extremely bright homogeneous lighting of an area at two levels of brightness.**
Supplied with:
08 1516 Size MINI-PRO–STAR – Supplied with USB charging cable.



Type		MINI-PRO	MAG	MAG-PRO	STAR	MAGPEN3
08C 08 1516	LED rechargeable work light	eShop	eShop	eShop	eShop	–
08C 08 1517	LED rechargeable pencil work light	–	–	–	–	eShop
Illumination	lm	20 – 200	300 – 500	60 – 600	1000	15 – 150
Illumination step 2	lm	–	150	–	500	–
Illumination time	h	2 – 20	2.5	1.5 – 15	2.5	2 – 20
Number of rechargeable batteries contained		1				
Type of rechargeable battery		Lithium-ion				
Overall length	mm	202	260	270	156	174
Overall width	mm	40	61	70	103	–
Weight	g	143	273	312	710	98

LED "For Life" rechargeable work lights in a new design with highly efficient multi-LEDs. New **OPTILight function** ensures optimised light output and duration.
Size MINIFORM – Ultra-slim, practical LED work light with spotlight and built-in magnet and belt clip.
Size UNIFORM – Compact and robust LED rechargeable work light with spotlight and built-in magnet and belt clip.
Size UNIPEN – Handy 2-in-1 LED pen torch with spotlight and built-in magnets.



Type		MINIFORM	UNIFORM	UNIPEN
08C 08 1404		eShop	–	–
08C 08 1405	LED rechargeable work light	–	eShop	–
08C 08 1407		–	–	eShop
Illumination	lm	20 – 200	50 – 500	15 – 150
Illumination time	h	3 – 28	3 – 31.5	3 – 30
Number of rechargeable batteries contained		1		
Type of rechargeable battery		Lithium-ion		
Overall length	mm	120	190	155
Overall width	mm	59	60	27
Weight	g	138	265	80

Keep the lighting you love throughout your life – FOR LIFE

SCANGRIP is dedicated to developing the most resource-efficient and durable LED work lights for professionals.
The new concept, FOR LIFE, focusses on sustainability and underlines its commitment to developing products that last significantly longer than current standards.

The extensive product development work aimed to improve the effectiveness and service life of Scangrip's work lights, which are already superior in the market.
A significant extension of a product's service life was particularly useful for Scangrip and provides the greatest environmental impact.

- New, improved battery system with double the service life
- New highly efficient multi-LEDs with up to 15% improved efficiency
- New OPTILight function for optimised light output and superior illumination duration
- Optimised electronic LED driver design with up to 50% improved efficiency
- Recycled materials and plastic-free packaging
- 5-year warranty upon registration

08

SCANGRIP® LED work light

Folding 3-in-1 **"For Life" work light** in a new design with highly efficient multi-LEDs.
Extremely slim and compact design.
Permits inspection and lighting in difficult to access and narrow places.
New **OPTILight function** for optimised light output and illumination duration.
Pocket-size when fully folded away, the light works like a conventional torch.
Additional spotlight and two lighting levels (50 and 100 %).
Strong built-in magnet and hook.

IP 30



08 1406_240

Overall length		mm	240	310
08C	08 1406	LED rechargeable rod light	eShop	eShop
Illumination		lm	200	500
Illumination step 2		lm	100	250
Illumination time		h	2.5	
Illumination time stage 2		h	5	
Type of rechargeable battery			Lithium-ion	
Number of rechargeable batteries contained			1	
Overall length		mm	240	310
Weight		g	100	228

HOLEX LED rechargeable work light

Foldable and slim LED cordless work lights with **three lighting options.**
Can be used in many applications due to the slim design and two magnets.

- One spotlight and two main lights.
- Front main light dimmable in 2 light levels.
- can be folded 180°.
- Battery charge is always clearly visible through the LED display.

Supplied with: Supplied with USB-C charging cable.

IP 20



08 1564_220

IP 54



08 1564_300

Length		mm	220	300
02A	08 1564	LED rechargeable rod light	eShop	eShop ■
Illumination		lm	50 – 100	80 – 300
Illumination time		h	3 – 6	
Number of rechargeable batteries contained			1	
Type of rechargeable battery			Lithium-ion	
Overall width		mm	30	35
Weight		g	61	98

Mini LED floodlight

Compact and powerful cordless LED floodlights for mobile use.
The compact dimensions mean they are perfectly suitable for use as hand lamps.
The adjustable magnetic bases allow them to be used as stationary light sources.

08 1451 – New **OPTILight function** for optimised light output and duration.
The SMART Grip 4-in-1 system integrates several functions in one unit:
a ring for secure grip, a clip for easy attachment, a strong magnet and a base.

Supplied with:

08 1451 – Including USB charging cable.
08 1573 – Supplied with USB-C charging cable.

IP 65



08 1451_1000



08 1573_7

Type			1000	7
08C	08 1451	SCANGRIP® Mini LED floodlight	eShop	–
02A	08 1573	HOLEX Mini LED floodlight	–	eShop
Illumination		lm	100 – 1000	100
Illumination step 2		lm	–	350
Illumination step 3		lm	–	700
Illumination time		h	1.5 – 15	10
Illumination time stage 2		h	–	4
Illumination time stage 3		h	–	2
Number of rechargeable batteries contained			1	
Type of rechargeable battery			Lithium-ion	
Battery voltage		V	3.7	
Overall length		mm	104	89
Overall width		mm	38	30
Overall height		mm	96	95
Weight		g	250	255

LED rechargeable work light

08 1259 – **Rechargeable rod light** with rotating plastic hook;
On/Off switch, floodlight and torch can be controlled separately.

08 1341 – The Line Light work light is formed of an extruded acrylic profile with an **integral lens** (beam dispersion angle 75°). It is thus exceptionally **sturdy and shock-resistant.**
With additional torch on the end (150 lumen).

Supplied with:

08 1341 – Work light with rechargeable battery, power supply unit, mounting clip with magnet and lockable hook.

IP 20



08 1259

Type			160	465
08C 08 1341	SCANGRIP	Line Light rechargeable inspection lamp	–	eShop
08B 08 1259	HEDI	LED rechargeable rod light	eShop	–
Light output		W	10	2.6
Illumination		lm	1000	150 – 600
Illumination time		h	2	1.5
Number of rechargeable batteries contained			1	
Overall length		mm	520	357
Head ∅		mm	58	25
Weight		g	300	220

IP 65



08 1341

SCANGRIP LED torches

08 1511 – Sturdy and elegant LED torch of aluminium, with handy retainer clip for professional use.

Size PEN – With focussable light beam from 10–60° spread.

Size PENCIL – Ultra-thin pen torch with head ∅ only 15 mm.

08 1569 – Rechargeable mini-LED torch in an elegant and extremely compact design.

- With integrated charging cable which also serves as a key ring.
- Steplessly dimmable from 10 – 100 %.
- Switch-on delay to prevent accidental switching on in the pocket.

Note:
08 1511 Size PENCIL – For suitable batteries see No. 081561 size LR8D425.

IP 54



08 1511_PEN

IP 54



08 1511_PENCIL

Type		PEN	PENCIL	MICRO
08C 08 1511	LED pen torch **with batteries**	eShop ■	eShop	–
08C 08 1569	LED torch with rechargeable battery	–	–	eShop
Illumination lm		100 – 200	75	7.5
Illumination time h		1.75 – 3.5	2.5	0.25 – 2.5
Number of batteries contained		2	2	–
Battery type		Micro, AAA	Mini, AAAA	–
Overall length mm		153	131	55
Overall width mm		–	–	25
Head ∅ mm		16	15	–
Weight g		62	32	17

IP 20



08 1569

IP 54

Garant LED torches

Long-life and very sturdy LED torch of anodised aluminium.
LED technology with **outstanding lighting power**.

- **Tight beam** with little scatter loss.
- High energy efficiency for long illumination time.
- **Illuminated ring,** easy to find in the dark.
- Splash-proof, protection class IP54.

Size 125 – Homogeneous illumination via the diffusion lens, single-hand push-button switch at the front.

Size 140 – Switch at rear.

Note: For suitable batteries see No. 081551 ff.



_125



_140

Type	mm	125	140
01A 08 1505	LED torches **with batteries**	eShop ■	eShop ■
Illumination	lm	100 – 250	35
Illumination time	h	4 – 10	10
Number of batteries contained		3	2
Battery type		Micro, AAA	
Overall length	mm	125	140
Head ∅	mm	29	16
Weight	g	119	54

LEDLENSER LED torches

Ledlenser is one of the technology leaders for LED torches.
Within the **splash–proof aluminium housing,** all the contacts are gold-plated,
high-quality lenses gather the light uniformly and without losses.
All lamps are equipped with focussable lamp head.

IP 54

Supplied with:

Size P3–P5 – Including batteries.
Size P7 – Including batteries, wrist strap.



08 1397_P5



08 1397_P3



08 1397_P4



08 1397_P7

Type		P3	P4	P5	P7
04B **08 1397**	LED torches **with batteries**	eShop	eShop	eShop	eShop
Illumination	lm	130	180	200	650
Illumination step 2	lm	60	80	80	300
Illumination step 3	lm	20	20	20	40
Illumination time	h	2.5	5	2	1
Illumination time stage 2	h	4	10	4	3
Illumination time stage 3	h	6.5	23	8	30
Number of batteries contained		1	2	1	4
Battery type		Micro, AAA	Micro, AAA	Mignon, AA	Micro, AAA
Overall length	mm	94	142	119	130
Head ∅	mm	20	15	26	37
Weight	g	43	60	80	175

IP 68

Size P7R-PRO; P7R – Intuitive operation via rotary dial.
Size P2R; P3R; P4R – Dual Power – operation with rechargeable battery or standard batteries.

Supplied with:

08 1398 Size P2R; P3R; P4R – Includes rechargeable battery.
Size P5R–P7R – Supplied with rechargeable battery, wrist strap.
Size P5R-PRO; P7R-PRO – Includes rechargeable battery, charging station, wrist strap, protective elements.



_P4R



_P7R



_P5R



_P5R-PRO



_P2R



_P3R



_P6R



_P7R-PRO

Type		P2R	P3R	P4R	P5R	P6R	P7R	P5R-PRO	P7R-PRO
04B **08 1398**	LED torch **with rechargeable battery**	eShop	eShop	eShop	eShop	eShop	eShop	–	–
04B **08 1399**	LED torch Pro **with rechargeable battery**	–	–	–	–	–	–	eShop	eShop
Illumination	lm	200	200	300	350	650	1200	350	1000
Illumination step 2	lm	80	90	100	100	300	450	100	450
Illumination step 3	lm	20	15	25	25	25	25	25	35
Light current boost	lm	–	–	–	750	1300	2000	750	2000
Illumination time	h	1	1.5	1.5	1	2.5	2	1	2
Illumination time stage 2	h	2	3	3	4	7.5	5.5	4	5.5
Illumination time stage 3	h	8	25	13	15	65	50	15	50
Illumination time boost	s	–	–	–	10	10	10	10	10
Number of rechargeable batteries contained		1							
Type of rechargeable battery		Lithium-ion							
Overall length	mm	98	94	142	121	150	159	131	170
Head ∅	mm	15	20	15	30	35	35	36	42
Weight	g	36	41	57	98	170	200	115	224

HOLEX LED RECHARGEABLE BATTERY TORCHES

Simply clever:
Your work in the best light.

HOLEX LED rechargeable battery torches illuminate everyday working life with handy functions.

- **Cleverly variable:** Step switch with separate boost function.
- **Cleverly bright:** Energy-efficient LED technology for a long illumination time.
- **Cleverly sustainable:** Rechargeable battery technology instead of disposable batteries.



IP 54

HOLEX LED rechargeable torch

Sturdy, rechargeable LED torch made of anodised aluminium. **The 2 settings** with additional **boost function** provide **outstanding light output** for all applications. The single-hand focussing enables quick and easy adjustment of the beam.

- Charging and discharge monitoring by means of coloured LED in the switch.
- Long running time with constant light output.
- USB-C charging socket.
- Anti-roll protection.
- With focussable lamp head.

Supplied with: Supplied with USB-C charging cable and battery.
08 1360 Size 120/1362 Size 130/1363 Size 150/1364 Size 170 – With hand loop.
08 1361 Size 160 – With practical pocket clip.

Note:	For suitable replacement batteries see No. 081365



08 1362_130



08 1363 _150



08 1364_170

Type		130	150	170
02A 08 1362	LED torch with rechargeable battery	eShop ■	–	–
02A 08 1363		–	eShop ■	–
02A 08 1364		–	–	eShop ■
Illumination	lm	300	400	500
Illumination step 2	lm	100	140	200
Light current boost	lm	450	700	900
Illumination time	h	1	1.5	2
Illumination time stage 2	h	2.5	5	4.5
Illumination time boost	s		30	
CRI value			>80	
Number of rechargeable batteries contained			1	
Type of rechargeable battery			Lithium-ion	
Overall length	mm	118 – 130	144 – 154	164 – 176
Head ∅	mm	26	28	32
Weight	g	70	95	160

Type		120	160
02A 08 1360	LED pen torch with rechargeable battery	eShop ■	–
02A 08 1361		–	eShop ■
Illumination	lm	80	150
Illumination step 2	lm	30	50
Light current boost	lm	130	250
Illumination time	h	1	
Illumination time stage 2	h	3	
Illumination time boost	s	30	
CRI value		>80	
Number of rechargeable batteries contained		1	
Type of rechargeable battery		Lithium-ion	
Overall length	mm	112 – 120	154 – 161
Head ∅	mm	18	
Weight	g	29.5	41


08 1360_120 08 1361_160

IP 54

LED torches

High-quality, long-life and sturdy LED torch of anodised aluminium. **Latest LED technology** with **outstanding lighting power**.

- Anti-roll protection.
- Rubber cover for the operating button.

With **focussable** lamp head.

08 1533 Size 94 – ■ Small and handy, but with a powerful beam.
■ With a handy key ring.


08 1533_94


08 1533_117


08 1533_160

Type		94	117	160
02A 08 1533	LED torch, black **with batteries**	eShop	eShop ■	eShop ■
Illumination	lm	35	160	250
Illumination time	h	7	5	9
Number of batteries contained		1	1	2
Battery type		Micro, AAA	Mignon, AA	Mignon, AA
Overall length	mm	94	117	160


08 1437_BLACK


08 1437_SILVER


08 1437_GREY


08 1437_RED

Colour		BLACK	SILVER	GREY	RED
02A 08 1437	LED torch **with batteries**	eShop ■	eShop	eShop ■	eShop
Illumination	lm	250			
Illumination step 2	lm	100			
Illumination time	h	4			
Illumination time stage 2	h	12			
Number of batteries contained		3			
Battery type		Micro, AAA			
Overall length	mm	143			
Head ∅	mm	27			

Size PEN – Handy LED pen torch with **focussable lamp head** for bundled and concentrated illumination between 10° and 80°. Practical pocket clip and push-button.

Type		PEN
02A 08 1461	LED pen torch **with batteries**	eShop ■
Illumination	lm	170
Illumination time	h	6
Number of batteries contained		2
Battery type		Micro, AAA
Overall length	mm	135
Head ∅	mm	17
Weight	g	60

Improved version with more light output


08 1461

IP 54

LED / UV torch with rechargeable battery

Rechargeable anodized aluminium LED torch with battery, 3-stage LED, **switchable to UV light, 90° rotating head** and magnetic base. Latest LED technology with outstanding lighting power.

- Rubber cover for the operating button.

Supplied with: Supplied with USB-C charging cable.

Improved version with more light output


08 1518

Type		UV-LED
02A 08 1518	Torch LED and UV **with rechargeable battery**	eShop ■
Illumination	lm	450
Illumination step 2	lm	300
Illumination step 3	lm	120
Illumination time	h	2 – 8
Wavelength of UV radiation	nm	395
Number of rechargeable batteries contained		1
Type of rechargeable battery		Lithium-ion
Overall length	mm	158
Head ∅	mm	29

SCANGRIP® UV-LED lights

UV CURING. Special LED lights for quick curing of UV-curing primers, fillers, paints and also adhesives.

Size UV-LIGHT – Flexible cordless LED hand-held light for UV curing of small and medium-sized areas. Curing area Ø 10 cm.
Supplied with charging station, Li-ion battery (2.6 Ah).

Size NOVA-UV – Rechargeable floodlight for UV curing of large areas.
Curing area Ø 25 cm. Supplied with charger, Li-ion battery (5.4 Ah), integral power bank with USB port.

IP 30



08 1525_UV-LIGHT



08 1525_NOVA-UV

Type		UV-LIGHT	NOVA-UV
08C 08 1525	UV work light with rechargeable battery	eShop	eShop
Illumination time	h	1.5	
Number of rechargeable batteries contained		1	
Type of rechargeable battery		Lithium-ion	
Battery voltage	V	3.7	

LED true colour work lights

08 1461 Size CRI-PEN – LED pen torch with focussable lamp head, pocket clip and push-button.
True colour LED with **high CRI value** (> 95) for recognition of colour matching.

08 1513 Size PEN – **MATCHPEN.** Small portable pen torch with focus function for bundled and concentrated illumination between 10° and 70°.
Ideal for detecting scratches and scuffs during quality control.

Size MINI – **MINIMATCH.** With a 2 COLOUR LIGHT function. This allows the choice between two colour temperatures depending on the work in hand.
Warm light (4500 K) for light surfaces and cold light (6500 K) for dark surfaces.

Size SUN4 – **SUNMATCH 4.** Handy cordless LED work light with 180° flexible lamp head for preparation and colour matching.
With stepless CCT SCAN function.

08 1514 Size MULTI-R – **MULTIMATCH R.** Powerful, portable battery work light with continuous CCT SCAN function. Display at the back, showing battery capacity and remaining runtime. Integral adjustment base for direct mounting on Scangrip stand 081252 1.35-3.

08 1513/1514 – **COLOUR MATCH**. Special LED with high CRI value for **perfect colour reproduction** and extremely long LED working life.
Perfect for all painting, polishing, cleaning and preparation work.
Designed for use in paint shops.
Exchangeable glass lens and resistant to all types of solvent, even when cleaned every day.

08 1513 Size SUN4/1514 Size MULTI-R – With stepless CCT SCAN function. When activated, the light automatically scans the surface of the object with the entire colour spectrum range.
Locking is possible at any time. Ideal for detecting paint defects.



Supplied with:

08 1513 Size SUN4 – Supplied with charger and charging station.

08 1461 Size CRI-PEN/1513 Size PEN – Supplied with 2 × AAA batteries.

08 1513 Size MINI/1514 Size MULTI-R – Charging cable.

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08 1461_CRI-PEN

IP 54



08 1513_PEN

IP 65



08 1513_MINI

IP 65



08 1513_SUN4

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08 1514_MULTI-R

Type		CRI-PEN	PEN	MINI	SUN4	MULTI-R
02A 08 1461	HOLEX LED pen torch **with batteries**	eShop ■	–	–	–	–
08C 08 1513	SCANGRIP COLOUR MATCH LED true colour work light	–	eShop	eShop	eShop	–
08C 08 1514	SCANGRIP COLOUR MATCH LED true colour rechargeable work light	–	–	–	–	eShop
Illumination	lm	100	100	200	50 – 500	120 – 1200
Illumination time	h	2	2	2	2 – 10	1 – 10
CRI value		95	95	96	95	95
Number of batteries contained		2	2	–	–	–
Battery type		Micro, AAA	Micro, AAA	–	–	–
Number of rechargeable batteries contained		–	–	1	1	1
Type of rechargeable battery		–	–	Lithium-ion	Lithium-ion	Lithium-ion
Battery voltage	V	–	–	3.7	3.7	–
Overall length	mm	135	150	156	203	165
Overall width	mm	17	16	60	89	155
Weight	g	60	60	190	270	820

LED Ex lights

Explosion-proof work light, tested to the applicable ATEX guideline.
Extremely bright illumination and very long working life.

08 1462 – Sturdy and robust cordless LED EX work light.
08 1491 – Multi-functional work light with removable magnetic base, sticks to metallic surfaces. Lamp head can be rotated 360° and tilted 120° upwards and downwards (can be locked in any position). With steel clip and front switch.
08 1515 – Rechargeable multi-function LED EX work light. Main light with two-stage switch and upper spotlight.

Supplied with:

08 1462 – Supplied with 5 m charging cable.
08 1515 – Supplied with charging cable and charging station.

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08 1491_3AALH

IP 65



08 1515_UNI-EX

IP 65



08 1462_NOVA-EXR

Type			3AALH	UNI-EX	NOVA-EXR
08C	08 1491	Underwater Kinetics LED EX work light **with battery**	eShop	–	–
08C	08 1515	SCANGRIP Rechargeable LED EX work light	–	eShop	–
08C	08 1462		–	–	eShop
ATEX zone			Zone 0; Zone 20	Zone 20; zone 20	Zone 21; Zone 1
Illumination		lm	228	200	2000
Illumination step 2		lm	–	330	4000
Illumination time		h	8.4	7.5	2
CRI value			–	80	80
Number of batteries contained			3	–	–
Battery type			Mignon, AA	–	–
Number of rechargeable batteries contained			–	1	1
Type of rechargeable battery			–	Lithium-ion	Lithium-ion
Battery voltage		V	–	3.2	21.6
Overall length		mm	182	220	270
Overall width		mm	54	70	261
Overall height		mm	–	39	130
Weight		g	185	420	3900

LED headlamps with Ex protection (ATEX)

Explosion-proof headlamp, tested to the applicable ATEX guidelines.

08 1330 – Headband lamp with two light sources, wide floodlight and focused spotlight. Flexible to use, as both a rubber strap for use on protective helmets and a nylon strap for use on the head are supplied.
08 1494 – Sturdy and light-weight headlamp. Able to switch between wide beam and focussable beam. Lamp head can be removed and used separately as a work lamp.
08 1519 – Flat, lightweight LED headlamp. Optimum illumination due to adjustable beam angle, 3 light levels and 3 selectable beam shapes. Removable LED module for use as a stand light / work light. With non-slip rubber helmet strap (textile strap available as an option).

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08 1330_ISHL

IP 65



08 1494_EX-VIEW

IP 67



08 1519_1

Type			ISHL	EX-VIEW	1
03L	08 1330	Milwaukee LED-EX headlamp **with battery**	eShop	–	–
08C	08 1494	SCANGRIP LED-EX headlamp **with battery**	–	eShop	–
08C	08 1519	Underwater Kinetics Vizion 2 LED-EX headlamp **with battery**	–	–	eShop
Manufacturer's designation			ISHL	EX-VIEW	Vizion 2
ATEX zone			Zone 0	Zone 2; Zone 22	Zone 0; Zone 21
Illumination		lm	25 – 310	200	60 – 250
Illumination step 2		lm	–	100	–
Illumination time		h	4 – 40	1.75	3.5 – 30
Illumination time stage 2		h	–	3.5	–
Number of batteries contained			3	–	3
Battery type			Micro, AAA	–	Micro, AAA
Number of rechargeable batteries contained			–	1	–
Type of rechargeable battery			–	Lithium-ion	–
Head ∅		mm	–	–	45
Weight		g	150	240	113

LED torches with Ex protection (ATEX)

Explosion-proof torch, tested to the applicable ATEX guidelines.

08 1484 – The lamps of the new LED Lenser EX series are certified both for maximum dustproof and waterproof qualities.

Size EX4 – Handy lightweight pen torch, with pressure switch.

Size EX7 – Torch with patented Advanced Focus System for focussing the light beam. Comfortable "Magnetic Switch" for easy operation even when wearing gloves and protective equipment.

08 1521 – With **LED reflector technology.**

Size 3AA – **LED hand lamp and helmet lamp made of flame-retardant materials.** Wide spot beam, ideal for fire fighting and extreme cold.

Size 4AAZOOM – **LED hand lamp and helmet lamp with zoom function.** Beam of light can be focused (beam 16° – 33°). Patented optical system.

Size 4AARFL – **LED hand lamp and helmet lamp with special protection technology.** Smooth, wide centre beam. Thanks to the patented optical system, ideal for illuminating wide working areas. Corrosion-resistant. Switch at rear. Easy to attach to work and safety helmet using a helmet holder.

Size 4AA2B – **LED hand lamp with primary and secondary light,** front beam for primary light (shines forwards), rotary head switch for secondary light (shines on the feet). No reduction in operating time when using both beams of light at the same time.

08 1522 – **High-performance inspection lamp, shock-resistant, dust-proof and waterproof.**

Powerful LED pen lamp with pocket clip. Centre-reinforced beam, 6500K. Lightweight, fits into any tool bag and holds onto any jacket pocket. Switch at rear. With fibre optic attachment ideal for illuminating confined spaces that are difficult to access.

ATEX ZONE 0 + 20 IICT4 / IIC T_{200}135°C



08 1484_EX4

ATEX ZONE 0 + 20 IICT4 / IIC T_{200}135°C



08 1484_EX7

ATEX ZONE 1 + 21 IIB T4 / IIIC T60°C


08 1522_2ELED

ATEX ZONE 0 + 20 IICT4 / IIC T_{200}135°C


08 1521_3AA

ATEX ZONE 0 + 20 IICT4 / IIC T_{200}135°C


08 1521_4AAZOOM

ATEX ZONE 0 + 20 IICT4 / IIC T_{200}135°C


08 1521_3AA

ATEX ZONE 0 + 20 IICT4 / IIC T_{200}135°C



08 1521_4AA2B

Type		EX4	EX7	2ELED	3AA	4AAZOOM	4AARFL	4AA2B
04B 08 1484	LED-EX torch **with battery**	eShop	eShop	–	–	–	–	–
08C 08 1521	LED-EX torch **with batteries**	–	–	–	eShop	eShop	eShop	eShop
08C 08 1522		–	–	eShop	–	–	–	–
ATEX zone		Zone 0; Zone 20	Zone 0; Zone 20	Zone 1; Zone 21	zone 0; zone 20	zone 0; zone 20	Zone 0; zone 20	Zone 0; zone 20
Illumination	lm	50	60 – 200	40	150	130 – 165	225	170
Illumination step 2	lm	–	–	–	–	–	–	20
Illumination time	h	7	16 – 45	3	8	8	5.5	6
Number of batteries contained		2	3	2	3	4	4	4
Battery type		Micro, AAA	Micro, AAA	Micro, AAA	Mignon, AA	Mignon, AA	Mignon, AA	Mignon, AA
Overall length	mm	140	161	132	135	170	158	158
Head ∅	mm	20	41	22	35	35	35	35
Weight	g	65	232	55	139	176	158	153

Type		2ELED
08C 08 1528	Fibre optic attachment for pin-point illumination	eShop
suitable for		081522 2ELED


08 1528_2ELED

LEDLENSER Technical highlights of the Ledlenser headlamps

	Function	products
ADVANCED FOCUS SYSTEM	Combination of lens and reflector permits stepless transition from homogeneous local beam to sharply focussed long-range beam.	H5-CORE, H5R-CORE, H7R-CORE, H15R-CORE
FLEX SEALING TECHNOLOGY	The electronic parts of the lamp head are completely sealed against penetration by water and dust – whilst retaining the Advanced Focus System.	H5-CORE, H5R-CORE, H7R-CORE, H15R-CORE
DIGITAL ADVANCED FOCUS SYSTEM	The Digital Advanced Focus System enables an almost stepless transition from homogeneous local beam to focussed long-range beam and allows for a particularly slim design.	HF8R-WORK
ADAPTIVE LIGHT BEAM	Adaptive Light Beam Technology enables automatic dimming and focussing for hands-free use of your lamp.	HF8R-WORK

LEDLENSER LED headlamp

Powerful high-performance LED headlamps for professional use.

- **Pivoting head** and stepless focussing function.
- Intuitive operation and stepless dimming.
- Exchangeable and washable head band.
- Ledlenser connecting system as a standardised interface permits easy connection with a comprehensive range of accessories.



08 1390_H5-CORE



08 1479_H5R-CORE



08 1479_H7R-CORE



08 1479_H15R-CORE



08 1391_HF8R-WORK

Type		H5-CORE	H5R-CORE	H7R-CORE	H15R-CORE	HF8R-WORK
04B 08 1390	LED headlamp **with battery**	eShop	–	–	–	–
04B 08 1391	LED headlamp **with rechargeable battery**	–	–	–	–	eShop
04B 08 1479		–	eShop	eShop	eShop	–
Manufacturer's designation				H7R Core	H15R Core	HF8R WORK
Illumination	lm	200	400	600	1000	300 – 900
Illumination step 2	lm	15	15	15	20	20
Light current boost	lm	350	500	1000	2500	1600
Illumination time	h	2	2	4	5	3 – 10
Illumination time stage 2	h	20	50	65	80	90
Number of batteries contained		2	–	–	–	–
Battery type		Mignon, AA	–	–	–	–
Number of rechargeable batteries contained		–	1	1	1	1
Type of rechargeable battery		–	Lithium-ion	Lithium-ion	Lithium-ion	Lithium-ion
Head ∅	mm	32	32	41	47	–
Weight	g	178	167	259	380	198

SCANGRIP LED headlamp

08 1443 – Small and handy multi-functional lamp for high working comfort. The lamp has a main light with a wide beam of light and a focused spot LED on the side. Variable application options.

- As a classic headband lamp, with the lamp head rotatable through 360°
- As an orientation light when attached to the side of the headband and using the spotlight
- As a work lamp with magnet and handy clip

08 1446 – Compact and powerful LED headlamp with wide spread of light for optimum illumination of the entire work area. New highly efficient multi-LEDs and new **OPTILight function** for optimised light output and duration. Non-contact switching on and off thanks to the sensor system. Stepless dimming function from 10 – 100%.

Supplied with:

08 1443 – Supplied with USB charging cable, headband and bracket for attachment to hats and caps

08 1446 – Supplied with USB charging cable.



08 1446_I-VIEW



08 1443_FLEX-WEAR

Type		I-VIEW	FLEX-WEAR
08C 08 1446	LED headlamp **with rechargeable battery**	eShop	–
08C 08 1443	LED multi-functional headlamp **with rechargeable battery**	–	eShop
Manufacturer's designation		I-VIEW	FLEX WEAR KIT
Illumination	lm	40 – 400	75 – 150
Illumination time	h	1.25 – 19	2 – 4
Number of rechargeable batteries contained		1	
Type of rechargeable battery		Lithium-ion	
Weight	g	240	42



HOLEX Headlamp

08 1346 – LED headlamp with two different beam angles (spot and flood) and a red light function.
08 1347 – Powerful LED headlamp with 2 light settings and a boost function. The head can be focused
08 1472 – LED headlamp with efficient COB LED for extensive illumination of the work area. Non-contact switching on and off thanks to sensor system; steplessly dimmable from 10 – 100%.
08 1493 – LED work headlamp with wide spread of light for optimum illumination of the entire work area. Non-contact switching on and off, thanks to sensor system with 2 lighting levels.

Supplied with:
08 1493/1346/1347 – Charging cable.
08 1472 – Supplied with 3 pcs. batteries.

IP 54


08 1472

IP 65


08 1493

NEW
IP 54


08 1346

NEW
IP 54


08 1347

Type		150	300	400	500
02A 08 1472	LED headlamp with battery	eShop ■	–	–	–
02A 08 1493	LED headlamp with rechargeable battery	–	eShop ■	–	–
02A 08 1346		–	–	eShop	–
02A 08 1347		–	–	–	eShop
Illumination	lm	15 – 150	100 – 300	70 – 390	20 – 530
Light current boost	lm	–	–	1100	1000
Illumination time	h	6 – 60	2 – 6	2 – 6	2 – 5
Illumination time boost	s	–	–	35	35
Number of batteries contained		3	–	–	–
Battery type		Micro, AAA	–	–	–
Number of rechargeable batteries contained		–	1	1	1
Type of rechargeable battery		–	Lithium-ion	Lithium-ion	Lithium-ion
Weight	g	100	111	133	248

Batteries

08 1559 – High-quality branded **Lithium-metal** batteries with very high capacity and very low self-discharge rate. 10 year working life (smoke detectors, control units, etc.). Operating temperature range -40 °C to 60 °C.
08 1561 – High-quality and high performance **VARTA LONGLIFE Power alkali manganese** battery for use in power tools with high power consumption. Quality **"Made in Germany"** (except for 6LR61). **Guaranteed shelf life 10 years.**
08 1551–1554 – High-quality **alkaline batteries** have a **working life 2 to 3 times longer than,** and a **shelf life more than twice** that of zinc-carbon batteries.
08 1551/1552 – HOLEX batteries offer reliable and sustained energy output.
08 1553/1554 – High-performance branded X-Power alkaline batteries of outstanding quality with sustained energy output for demanding applications in power tools with high power consumption. Long shelf life of up to 7 years.


08 1551_LR3


08 1551_LR6


08 1551_LR14


08 1551_LR20


08 1551_6LR61


08 1553_LR3


08 1553_LR6


08 1553_LR14


08 1553_LR20


08 1553_6LR61


08 1561_LR3


08 1561_LR6


08 1561_LR14


08 1561_LR20


08 1561_6LR61

International size			LR3	LR6	LR14	LR20	6LR61
02A 08 1551	HOLEX	Alkaline-manganese batteries	eShop	eShop	eShop	eShop	eShop
02A 08 1552			eShop	eShop	–	–	–
08C 08 1553			eShop	eShop	eShop	eShop	eShop
08C 08 1554	ANSMANN		eShop	eShop	–	–	–
08C 08 1559		Lithium-metal batteries	eShop	eShop	–	–	eShop
08C 08 1561	VARTA CONSUMER BATTERIES	Alkaline-manganese batteries	eShop	eShop	eShop	eShop	eShop
Number of batteries contained (08 1551, 08 1553, 08 1561)			4	4	2	2	1
Number of batteries contained (08 1552, 08 1554)			20	20	–	–	–
Number of batteries contained (08 1559)			2	2	–	–	1
chemical composition (08 1551, 08 1552, 08 1553, 08 1554, 08 1561)			Alkaline manganese				
chemical composition (08 1559)			Lithium-metal	Lithium-metal	–	–	Lithium-metal
Battery designation			Micro, AAA	Mignon, AA	Baby, C	Mono, D	9 V block
Nominal voltage	V		1.5	1.5	1.5	1.5	9


08 1552_LR3


08 1552_LR6


08 1554_LR3


08 1554_LR6


08 1559_LR3


08 1559_LR6


08 1559_6LR61

Special batteries

High quality special batteries.
Size 357 – Also for digital calipers.
Size LS14250 – Also for electronic locks

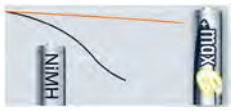


Battery type		LR41	LR43	LR44	357	13ZL	CR2016	CR2025	CR2032	CR1632	CR2430	CR2450
08 1560	Button cell / special battery	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	–	eShop	eShop	eShop
Number of batteries contained		1	1	1	1	6	1	1	1	1	1	1
chemical composition		Alkaline manganese	Alkaline manganese	Alkaline manganese	AgO round	Zinc-air	Lithi-um-metal	Lithi-um-metal	Lithi-um-metal	Lithi-um-metal	Lithi-um-metal	Lithi-um-metal
Battery designation		AG3	LR43	LR44	SR44	13ZL	CR2016	CR2025	CR2032	CR1632	CR2430	CR2450
Nominal voltage	V	1.5	1.5	1.5	1.5	1.4	3	3	3	3	3	3



Battery type		A23	A27	LR1	CR123A	SL760	LS14250
08 1560	Button cell / special battery	eShop	eShop	eShop	eShop	eShop	eShop
Number of batteries contained		1					
chemical composition		Alkaline manganese	Alkaline manganese	Alkaline manganese	Lithium-metal	Lithium-metal	Lithium-metal
Battery designation		A23	A27	LR1	CR123A	LS14500	LS14250
Nominal voltage	V	12	12	1.5	3	3.6	3.6

Rechargeable NiMH batteries



Rechargeable cells with **very high capacity** for long discharge times in non-polluting NiMH technology; rechargeable up to 1000 times.

08 1575 – New maxE battery technology. Supplied **pre-charged,** can be used for 1 year without recharging, **very low self-discharge-rate,** ideal for low-power devices. Maximum charging current 1400 mA.

International size		LR3	LR6	LR14	LR20	6LR61
08 1570	Set of NiMH rechargeable batteries	eShop	eShop	–	–	–
08 1575	Set of NiMH rechargeable batteries **pre-charged**	eShop	eShop	eShop	eShop	eShop
Number of rechargeable batteries contained		2	2	2	2	1
chemical composition		Nickel metal hydride				
Type of rechargeable battery		Micro, AAA	Mignon, AA	Baby, C	Mono, D	9 V block
International size		LR3	HR6	LR14	LR20	6LR61
Nominal voltage	V	1.2	1.2	1.2	1.2	8.4
Battery capacity (08 1570)	mAh	1100	2850	–	–	–
Battery capacity (08 1575)	mAh	800	2100	4500	8500	200


08 1570_LR3


08 1570_LR6


08 1575_LR3


08 1575_LR6


08 1575_LR14


08 1575_LR20


08 1575_6LR61

Li-ion battery cell

Li-ion battery cells with safety circuit. Very low self-discharge rate, and high energy efficiency. Protected against short circuit, overcharge, overload and deep discharge.

Capacitance	mAh	2600	3500
08 1574	Li-ion battery cell, rechargeable	eShop	eShop
Number of rechargeable batteries contained		1	
chemical composition		Lithium-ion	
International size		18650	
Nominal voltage	V	3.6	
Battery capacity	mAh	2600	3500


08 1574 _2600


08 1574_3500

Battery test device

Compact and user-friendly test device for checking all popular cells and batteries. Within 2 – 3 seconds the **actual energy content** of the cell is displayed in 10 % steps, together with the **cell voltage.**

Application: AAA, AA, C, D, 9 V, A23 (12 V), CR all types (Lithium button cells 3 V), LR all types (alkaline button cells), V all types (zinc-air button cells).


08 1592

08 1592	Battery test device Energy-Check LCD	eShop

Chargers and charging accessories

Microprocessor-controlled charging and servicing stations for battery cells with **individual channel monitoring** and battery fault detection. Status display for each charging slot, automatic charging switch-off, overload protection and **trickle charging.** Input voltage 100–240 V.

Size 4ULTRA; LITHIUM4 – With LC display for detailed monitoring of the charging process and additional acoustic feedback.

Size C-MULTI – With intelligent "PERFECT 7" charging technology (rapid capacity test, gentle pre-charging, battery analysis, rapid charge, IQ shutdown, top-off charging, trickle charging) and 3-colour LED display for reading the cell status.

Application:

Size 4ULTRA – **NiMH/NiCd battery charging points:** 1-4 × Micro AAA / Mignon AA or 1-3 × Baby C or 1-2 × Mono D.
Li-Ion battery charging points: 1-4 × 18650, 18500, 17670, 16340, 14500 etc. or 1-3 × 26650, 26500, 25500, 22650 or 1-2 × 3265.

Size 4SMART – **NiMH battery charging points:** 1 – 4 × Micro AAA / Mignon AA.

Size C-MULTI – **NiMH battery charging points:** 1 – 4 × Micro AAA / Mignon AA / Baby C / Mono D and 1 × 9V block.

Size LITHIUM4 – **NiMH battery charging points:** 1 – 4 × Micro AAA / Mignon AA or 1 – 2 × Baby C.
Li-ion / LiFePO4 battery charging points: 1 – 4 × 18650; 17670; 14500 etc.


_ 4ULTRA


_ 4SMART


_ C-MULTI


_ LITHIUM4

Type		4ULTRA	4SMART	C-MULTI	LITHIUM4
08C 08 1590	Battery charger	–	–	–	–
Nominal voltage	V	100 – 240			
maximum charging current	A	2	0.5	0.8	2
Maximum number of charging points		4	4	5	4
Number of charging slots for USB		1	–	–	–

Size 10 – The VARTA Energy power bank with 4 ports (1x micro USB input, 2x USB A output, 1x bi-directional USB C port) offers the perfect capacity for every individual energy requirement with 10,000 mAh.

		10
08C 08 1604	Power bank energy box	eShop
Number of charging slots for USB		4



08 1604

Suitable for devices which are charged or operated via USB.
The intelligent charging control ensures optimised charging, where Multisafe technology protects the connected end devices and charger.

08 1602 – Integrated Power Delivery and Quick Charge charging protocol. Quick Charge 3.0 compatible.

Shank size		HC105	HC218PD
08C 08 1601	USB charger	–	–
08C 08 1602	USB quick charger	–	–
maximum charging current	A	1	3
Maximum power	W	5	18
Charging voltage	V	5	


08 1601_ HC105


08 1602_ HC218PD

USB cable for charging and data transmission.

Plug type		MICRO-USB	USB-C
08C 08 1603	USB data and charging cable	eShop	eShop
maximum charging current	A	3	
maximum data transmission	Mbit/s	480	
Cable length	m	1	


_ MICRO-USB


_ USB-C

Inspection mirror set

08 1682 – 3-piece telescopic mirror set with break-proof mirror plates of polished stainless steel. All mirrors fitted with a 360° joint for places where access is difficult.

08 1683 – The mirror can be changed quickly and easily using the quick-release fastener similar to a bit holder.

- Handle dip rubberised.
- Retainer with magnet and additional spring clamp.


08 1682


08 1683

Number of mirrors		3	2
02A 08 1682	Telescopic stainless steel mirror set	eShop	–
08C 08 1683	Telescopic inspection mirror set **with Quick Fix mounting**	–	eShop
Supplied with: 2× oval mirror		1× mirror size 65×95 mm 1× mirror size 30×45 mm Length without mirror 195-790 mm in each case	1× mirror size 45×30 mm 1× mirror size 69×46 mm each with a hexagonal connector
1× round mirror (08 1682)		Mirror ∅ 50 mm, length without mirror 195-790 mm	–
1× telescopic handle (08 1683)		–	Length 200 to 780 mm with hexagonal quick release fastener
Storage in		Case with mirror protection 121×299 mm	Case 210×86 mm

HOLEX Inspection set

Perfectly matched inspection set, ideal for maintenance in places where access is difficult. The tools are packed in a robust case which can be washed down; with a zip fastener and loop for secure storage.

Number of tools		5
02A 08 1681	Inspection set	eShop
Supplied with: LED pen torch		1× No. 081461 size PEN
Claw retriever		1× No. 081610 size 500
Magnetic retriever		1× No. 081670 size 500
Telescopic inspection mirror		1× No. 081630 size 30
Tweezers with flat blunt nose, straight		1× No. 727550 size N


08 1681

Claw retriever, inspection mirror

Claw retriever

With 3 claw jaws, which automatically grips parts using spring pressure. Jaws open to maximum 15 mm.
Size 170 – Rigid shank with pocket clip.
Size 500 – Flexible shank.


08 1610_170


08 1610_500

Length	mm	170	500
08C 08 1610	Claw retriever	eShop	eShop ■
Head ∅	mm	9	

Inspection mirror

Mirror with metal surround, chrome-plated shank.
08 1625 – Plastic frame, fully insulated handle.
08 1630 – With extendable telescopic shank. **Anti-twist,** large handle and robust joint.


08 1620


08 1625


08 1630_30


08 1630_43×65

Mirror dimensions	mm	14	20	30	43×65	50	83	23
08C 08 1620	Inspection mirror	–	–	–	–	–	–	eShop ■
08C 08 1625	Inspection mirror plastic	–	–	–	–	–	–	eShop
02A 08 1630	HOLEX Telescopic inspection mirror	eShop	eShop	eShop ■	eShop ■	eShop ■	eShop	–
Overall length	mm	–	–	–	–	–	–	270
Length without mirror	mm	270 – 640			270 – 980			–
Mirror ∅	mm	14	20	30	–	50	83	23

Magnetic retriever

Telescopic magnetic retriever

Chrome-plated telescopic extractable shank. Handle with pocket clip, scriber under a protective cap.

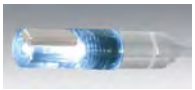

08 1650

08C 08 1650	Telescopic magnetic retriever	eShop ■
External ∅	mm	8
Overall length	mm	160 – 670
Magnet ∅	mm	6
Magnet retaining force	N	5

Telescopic magnetic holder with integral LED lamp

Chrome-plated, extendable telescopic shaft, handle with clip.
LED illumination integrated in the magnetic head, automatic switching on when extended; lighting life approx. 4 h.

Note: For spare batteries (3 required) see **No. 081560 size LR41.**




08 1665

08C 08 1665	Telescopic inspection lamp	eShop ■
Battery type		LR41
Overall length	mm	170 – 670
Head ∅	mm	11

Magnetic retriever, flexible

With permanent magnet. Flexible chrome-plated shank with permanent magnet, 2-component plastic handle.


08 1670_300


08 1670_1000


08 1670_3000

Magnet tensile force	g	300	500	1000	2000	3000
02A 08 1670	HOLEX Magnetic retriever flexible	eShop ■	eShop ■	eShop	eShop	eShop
External ∅	mm	7.5	8	12	15	19
Overall length	mm			520		
Magnet ∅	mm	5	6	10	13	17
Magnet retaining force	N	3	5	10	20	30

kurtz ersa Soldering irons

Tough industrial soldering irons with **Ersadur long–life soldering tips**
(30 times the working life of conventional copper soldering tips).
Warm–up time 3 min. (for size 300, approx. 5 min.).
Power cable 1.5 m rubber cable (PVC for size 30).
With support stand (not size 30).

Size 30 – Proven Ersa soldering iron with attachable support stand.
Size 150 – Powerful soldering iron for copper cables up to 6 mm² cross section.


08 2100_30


08 2100_80-150

Heating power	W	30	80	150
04C 08 2100	Multi-purpose soldering iron	eShop	eShop	eShop
Soldering tip width	mm	3.1	4.8	5.3
Heating power	W	30	80	150
Soldering tip temperature after 3 minutes	°C	380	410	450
suitable for copper cross sections up to	mm²	2.5	4	6
Weight without power lead	g	80	220	245

Powerful general-purpose soldering iron with a precisely regulated temperature sensor located directly below the internally heated soldering tip. The combination of this direct temperature measurement with the precise control electronics integrated in the handle enables the **most delicate soldering jobs** to be professionally done on sensitive electronic components **and also applications with very high thermal requirements.**

Application: For mobile use in the field of service, maintenance and repairs.
The ERSA Multi-TC has the functionality of a large soldering station,
but no galvanic separation.


Warm-up time 34 sec


08 2150_75

Heating power	W	75
04C 08 2150	Universal soldering iron Multi-TC with temperature control	eShop
Heating power	W	285
Warm-up time	s	approx. 34
Heating power	W	75
Control range of soldering tip temperature	°C	250 – 450
Weight without power lead	g	60

Unusually light soldering gun without transformer; with PTC heating element.
Warm-up time approx. 20 sec. Periodic pressing of the trigger allows heat output to be matched to the heat requirements of the joint. High efficiency internally heated soldering tip. Power cable 1.5 m.

Application: Particularly useful for assembly and repair work, because of its
working range of 15 – 100 W (used as standard soldering iron).


Warm-up time 20 sec.

08 2200_960ED

ERSA Type		960ED
04C 08 2200	Quick soldering iron Multi-Sprint	eShop
Soldering tip width	mm	3.2
Heating power	W	150
Heating power	W	75
Soldering tip temperature after 3 minutes	°C	350
Weight without power lead	g	100

kurtz ersa Gas soldering devices

Ergonomic gas soldering iron with **easy to use piezo ignition.**
Requires commercially available butane gas (as for gas lighters).

Application: For maintenance and repair work, in particular where no power supply is available or the power has been switched off.

Supplied with: Chisel-shaped soldering tips 1.0, 2.4, 3.2, and 4.8 mm.
Flame nozzle (up to maximum 1400 °C), hot gas nozzle (up to max. 700 °C),
soldering tip, reflector plate for applying shrink sleeving,
cleaning sponge and sponge holder, in a handy plastic case.


08 2250_75

ERSA Type		75	130
04C 08 2250	Gas soldering kit Independent	eShop ■	eShop ■
Soldering tip width	mm	1 – 4.8	
Warm-up time	s	approx. 46	approx. 50
Heating power steplessly adjustable	W	15 – 75	25 – 130
maximum soldering tip temperature	°C	580	
Operating life per gas filling	min	30 – 90	40 – 120
Weight of the gas-heated soldering iron	g	73	121

kurtz ersa Soldering stations

Size PICOMK2 – Simple i-CON PICO operating concept, for entry-level users. Universal application. Very small footprint and smart functions, can be set using a micro-SD card.

Size NANOMK2 – Anti-static i-CON NANO microprocessor-controlled soldering station with high soldering heat output from an efficient high-power heating element. Solder tips are available with the ideal tip geometry for every soldering task.

Size ICON1MK2 – Multifunctional high-performance soldering station, adjustable via microSD memory card. Intelligent power management for the connected tools. Intuitive one-touch operation and large multifunction display. The station meets ESD requirements. Temperature control with dynamic power management.



08 2301_NANOMK2



08 2301_PICOMK2



08 2301_ICON1MK2

Manufacturer's designation		PICOMK2	NANOMK2	ICON1MK2
04K 08 2301	Soldering station	eShop	eShop	eShop
Warm-up time to 280 °C	s	9	9	–
Control range of soldering tip temperature	°C	150 – 450	150 – 450	50 – 450
Weight of soldering iron without power cable	g	30	30	–

Soldering fumes extraction

High extraction power – efficient filter performance – quiet operation. Filter the process air in 3 steps:

- Pre-filter for dust and larger particles.
- Combination filter for micro-particles.
- Activated carbon filter absorbs harmful gases.

Visual and audible display for filter change. Identical filter for EASY ARM 1 and EASY ARM 2. Interface for connecting i-CON soldering stations.
The system is fitted using a suitable bench holder. Accessories such as extraction arms and nozzles can be found in the online shop under No. 082306 – 082313.

08 2304 – Extraction power is set on the system at the touch of a button, individually for each extraction arm.



08 2303

08 2304

Number of filters/arms		1	2
04K 08 2303	Soldering fumes extraction **Easy Arm 1**	eShop	–
04K 08 2304	Soldering fumes extraction **Easy Arm 2**	–	eShop

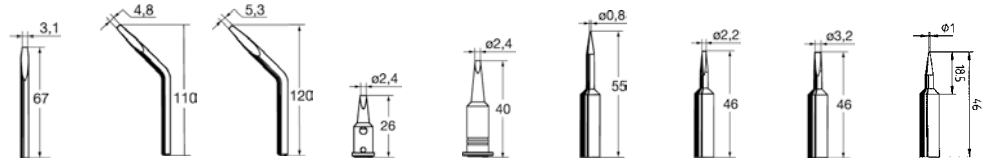
Accessories

08 2365 – Solder wire with 3.5 % flux core containing none of the prohibited elements Pb, Cd, Cr_6, Hg. **Regulations effective since 01. 07. 2006** (melt temperature 217 ° C)



08 2365

Soldering wire ∅	mm	1	1,5
04C 08 2365	Lead-free soldering wire Sn96.5, Ag3.0, Cu0.5, roll of 250 g	eShop	eShop



Manufacturer's designation		32KD	82JD	152JD	G072KN	G132KN	832SDLF	832CDLF	832EDLF	BDLF
04C 08 2400	Soldering tip	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Soldering tip width	mm	3.1	4.8	5.3	2.4	2.4	0.8	2.2	3.2	1
suitable for		082100 30	082100 80	082100 150	082250 75	082250 130	082300; 082200	082300; 082200	082300; 082200	082150; 082200; 082300



Manufacturer's designation		PDLF01	CDLF12	CDLF16	CDLF24	CDLF32	PDLF08	PDLF10	CDLF24A	CDLF46A
04K 08 2402	Soldering tip	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Soldering tip width	mm	0.1	1.2	1.6	2.4	3.2	0.8	1	2.4	4.6
suitable for		082301								

HAZET Universal thread repair tool

Universal thread repair tool for external threads.

- **Quick attachment** using the adjustment screw.
- Blade automatically adjusts to any thread lead.
- For cutting right-hand and left-hand threads to length **(take into account the direction of rotation!).**
- **Suitable for all types of thread** (60° flank angle).







_4–13



_16–38

for thread ∅	mm	4-13	16-38
04D 08 2855	Universal thread repair tool	eShop	eShop

Koken Screw / nut extractor for right-hand threads

Made of tough chrome molybdenum steel. The sharp edges of the flutes bite into the jammed or broken screw / nut and bolt and allow it to be unscrewed. For use in combination with a ratchet, T-handle etc.
Also suitable for round profiles or hexagon socket head screws.



08 2890

suitable for size across flats	mm	8	10	13	15	16	17	19	22	24
04D 08 2890	Screw / nut extractor	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
∅ drive output end	mm	11.5	14.8	18.5	20.7	22.2	23.5	26	29.5	32
Length	mm	32	32	32	32	32	42	42	42	42
Square drive	in	3/8	3/8	3/8	3/8	3/8	1/2	1/2	1/2	1/2
suitable for screws		M5	M6	M8	M10	M10	M10	M12	M14	M16

Screw / nut extractor set

Set contents	5
04D 08 2892 Screw / nut extractor set **5 pieces**	eShop
Content: 5 screw extractors No. 082890	Size 10; 13; 17; 19; 24



08 2892

Screw extractor

Made of chrome vanadium steel.
The sharp edges of the flutes dig into the drilled screw and allow it to be unscrewed.
With square drive for use with tap wrench etc.

Application:

08 2861 – **Suitable for both left-hand and right-hand threads.** Suitable for hardened steel.
08 2862 – Suitable for aluminium, brass, stainless steel.
08 2865 – For extraction of broken-off screws with right-hand thread.
08 2862/2864 – For extraction of broken off screws with right-hand thread (pre-drill the hole ∅ as listed in the table; turn the screw extractor anti-clockwise).

Note: UNC and UNF threads available on request.



08 2861



08 2862



08 2864



08 2865

Type		1	2	3	4	5	6
04D 08 2861	RENNSTEIG Screw extractor **double-edged, with tip**	eShop	eShop	eShop	eShop	eShop	–
04D 08 2862	STAHLWILLE Screw extractor **with coarse flutes**	eShop	eShop	eShop	eShop	eShop	eShop
04D 08 2864	PEDDINGHAUS Screw extractor **"Hi Trac"**	eShop	eShop	eShop	eShop	eShop	eShop
01A 08 2865	Garant Screw extractor **with fine flutes**	eShop	eShop	eShop	eShop	eShop	eShop
Pre-drill ∅ (08 2861)	mm	3.2	4.8	6.4	9.5	11.1	–
Pre-drill ∅ (08 2862)	mm	2	3	5	6.4	8	12
Pre-drill ∅ (08 2864)	mm	1.8	3.2	4.5	6.5	8.5	12
suitable for screws/bolts (08 2861)		M5 – M6	M8 – M10	M10 – M12	M12 – M16	M16 – M20	–
suitable for screws/bolts (08 2862)		M3 – M4	M5 – M7	M8	M10 – M12	M16	M18 – M22
suitable for screws/bolts (08 2864)		M4	M5 – M7	M8 – M11	M12 – M14	M16 – M20	M20 – M24
suitable for screws/bolts (08 2865)		M4	M6 – M8	M8 – M10	M12 – M14	M14 – M18	M18 – M24
suitable for (08 2861, 08 2864, 08 2865)		hardened steel					
suitable for (08 2862)		Aluminium; Brass; INOX					
suitable for pipe spigots (couplings) (08 2862, 08 2864, 08 2865)	in	–	–	–	–	1/4	3/8

Screw extractor sets

Supplied with:

08 2866 – 6 extractors No. 082865 size 1; 2; 3; 4; 5; 6.
08 2870 – 6 extractors No. 082862 size 1; 2; 3; 4; 5; 6.
08 2871 – 5 extractors No. 082861 size 1; 2; 3; 4; 5.
08 2874 – 6 extractors No. 082864 size 1; 2; 3; 4; 5; 6.



08 2866


08 2871


08 2870


08 2874

Type			5	6
01A 08 2866	Garant	Screw extractor set, 6 pieces, in a box **with fine flutes**	–	eShop
04D 08 2871	RENNSTEIG	Screw extractor set 5 pieces **double-edged**	eShop	–
04D 08 2870	STAHLWILLE	Screw extractor set, 6 pieces, in a textile wallet **with coarse flutes**	–	eShop ■
04D 08 2874	PEDDINGHAUS	Screw extractor set, 6 pieces, in a box **"Hi Trac"**	–	eShop

Sets in a case

for Thread type / size			M3-12	M3-20
04D 08 2850		Extractor set for hand taps, in a case	eShop	eShop
04D 08 2852		Extractor set for machine taps, in a case	eShop	eShop
Content: Fingers for hand taps (08 2850)			3 fingers M3 – M6; 4 fingers M8 – M12	3 fingers M3 – M6; 4 fingers M8 – M20
Fingers for machine taps (08 2852)			3 fingers M3 – M12	3 fingers M3 – M16; 4 fingers M20


08 2850

Extractors of tough chrome vanadium molybdenum steel, jobber drills of HSS, burnished.
Pre-drill with the drill supplied, then insert the screw extractor, push the ring spanner right down and extract the screw without tilting.

Application: For extracting damaged or sheared-off screws with **right-hand or left-hand threads**, sizes M4 – M16.


08 2880

04D 08 2880	wiha	Screw extractor set, 16 pieces, with jobber drills in a metal case	eShop ■
Content:			8 screw extractors (hexagon 2; 2.5; 3; 4; 5; 6; 8; 10 mm), 8 jobber drills (∅ 2.3; 2.8; 3.4; 4.5; 5.7; 6.8; 9; 11 mm)

Take note of our extensive range of tools for drilling and thread machining – including for **manual use**.
You can find the appropriate tools for **drilling, countersinking, reaming** and **thread machining** in the catalogue volume 1 (machining / clamping technology) as well as in the online shop.


HSS Mono drilling
In volume 1
Section 11
HSS drilling tools


Mono countersinking
In volume 1
Section 15
Countersinking and deburring tools


Mono reaming
In volume 1
Section 16
Reaming tools


Internal thread
In volume 1
Section 13
Taps,
Fluteless taps,
Thread mills


External thread / accessories
In volume 1
Section 14
Dies,
Thread cutting sets,
Holder tools

Garant Cleaning agents without hazard labels

08 8001 – The **flexible degreaser** for quick cleaning of oils, emulsions and greases. Can be mixed with water up to a ratio of 1:10.

08 8002 – The **acidic all-rounder** without hazard labels. Removes rust, lime scale and mineral contamination safely and gently. Can be mixed with water up to a ratio of 1:10.

08 8004 – The **degreaser and finisher** for fast, daily removal of cutting and corrosion protection oils, light waxes, emulsions, sticky residues and other contamination. Meets the highest cleanliness requirements, especially before lacquering, coating and bonding. Drastic VOC-reduction compared to conventional solvents.

08 8005 – **Cleans, protects and preserves stainless steel**, aluminium, non-ferrous metals and plastics. Removes dust, fingerprints and oils reliably and easily. Leaves behind a brilliant shine.

08 8006 – **Extreme degreasing power** through hybrid technology. Burnt-in contamination, special greases, oils, soot, rubber residue, bitumen, waxes and pastes are loosened using plant extracts and quickly removed from the surface using surfactant technology.

08 8001–8006 – NSF certification. Suitable for use in the food industry.



08 8001_200



08 8004_20

100% recycled PET
Can be refilled many times.



08 8004_500



08 8010

Contents (ml or l)		500	20	200
08 8001	GARANT GreenPlus cleaner **Flex Cleaner**	–	–	–
08 8002	GARANT GreenPlus cleaner **Acid Cleaner**	–	–	–
08 8004	GARANT GreenPlus degreaser **Finisher**	–	–	–
08 8005	GARANT GreenPlus stainless steel cleaner **Inox Care**	–	–	–
08 8006	GARANT GreenPlus degreaser **Power Force**	–	–	–
Version		Spray bottle	Can	Barrel
Contents	l	0.5	20	200

suitable for can size	l	20-30
08 8010	GARANT GreenPlus can discharge valve	–

Garant GARANT GreenPlus cleaning agents

Article number	Product designation	Contamination	Application			Materials							NSF
			Manual cleaning	Part cleaning device	Ultrasound	Steel/ stainless steel	Aluminium	Non-ferrous metals	Plastic	Painted surfaces	Galvanised surfaces	pH value	
08 8001	**Flex Cleaner** The versatile degreaser for quick cleaning	Oils, emulsions, greases	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	A1
08 8002	**Acid Cleaner** The acidic, all-purpose solution without hazard labels	Rust, lime, mineral contamination	✓	✓	✓	✓	✓	✓	✓	✓	●	2.2	A3
08 8004	**Finisher** The degreaser and finisher for quick cleaning	Machining oils, corrosion protection oils, light waxes, sticky residues	✓			✓	●	●	✓	✓	✓	11.4	A1
08 8005	**Inox Care** Cleans, protects and preserves all metals	Dust, fingerprints, oil as well as minor limescale and rust film residues	✓			✓	✓	✓	✓	✓	✓	11.4	A7, C1
08 8006	**Power Force** Super degreaser via hybrid technology	Burnt-in contamination, special greases, carbon black, rubber residue, bitumen, waxes, pastes	✓	✓	✓	✓	●	●	●	●	●	10.5-11	C1

✓ suitable ● suitable in principle (check for compatibility) unsuitable

Garant Weld spatter separation spray without hazard labels

Premium **2-in-1 welding anti-spatter fluid Clean & Weld** with cleaning function.
Effectively prevents spatter from sticking when carrying out MIG/MAG welding and laser cutting.
Thanks to its excellent wetting properties, can also be used as a cleaner before welding.



08 8003_500



08 8003_20

Contents (ml or l)		500	20	200
08 8003	GARANT GreenPlus separating agent **Clean & Weld**	–	–	–
Version		Spray bottle	Can	Barrel
Contents	l	0.5	20	200

Garant Ultrasonic cleaners without hazard labels – powerful and safe

GARANT GreenPlus **ultrasonic cleaners** – top performance with maximum flexibility.
Do you work with complex workpiece geometries and delicate surfaces? Then the Sonic Cleaner series is made for you.
The cleaning series from GARANT GreenPlus, specially designed for ultrasonic systems, includes alkaline, acid and neutral cleaners for a wide variety of materials and fields of application. Depending on the requirements and degree of dirt, the highly concentrated cleaners can be diluted and are powerful even at room temperature. This makes optimum use of the medium.
Their long service life also saves time and money.
All Sonic Cleaners are **hazard-label-free, biologically degradable, VOC-free and silicate-free.**
For companies, this means the products are easy to handle and ensures both your employees and the environment are protected.

08 8015 – Sonic Cleaner AL-D, **alkaline demulsifying** cleaning concentrate
for general-purpose ultrasonic applications and an extremely long service life with high material compatibility.
Demulsifying cleaner, floating oils can easily be removed from the bath.
The component receives a film of oil when removed.

08 8016 – Sonic Cleaner AL-E, **alkaline emulsifying** cleaning concentrate
for general-purpose ultrasonic applications with high material compatibility.
Emulsifying cleaner, the removed oil disperses in the cleaning bath and mixes with the liquid contained, which ensures that the component is clean when it is removed.

08 8017 – Sonic Cleaner N, **neutral** cleaning concentrate for particularly gentle cleaning of sensitive materials such as aluminium, non-ferrous metals, painted and galvanized surfaces.

08 8018 – Sonic Cleaner AC – **acid, odourless** cleaning concentrate, is used to remove rust from ferrous materials.
In addition, lime, oxides and mineral deposits can be removed.

08 8019 – Sonic Protect CP – **corrosion protection** additive for metallic materials susceptible to corrosion, such as steel, cast iron and carbides. Materials are coated with a molecular protective film, which permits temporary intermediate storage. Sonic Protect CP is low-foam, easy to wash off - subsequent coating or hardening processes are possible. Can be combined with Sonic Cleaner AL-E, AL-D and N.
Can also be used in passivation baths or dip baths and as a water treatment agent.

Application: For ultrasonic cleaning baths.



08 8015 – 8018

Contents			1	5	200
1 L 08 8015	GARANT GreenPlus ultrasonic cleaner **Sonic Cleaner AL-D**	**alkaline demulsifying**	–	–	–
1 L 08 8016	GARANT GreenPlus ultrasonic cleaner **Sonic Cleaner AL-E**	**alkaline emulsifying**	–	–	–
1 L 08 8017	GARANT GreenPlus ultrasonic cleaner **Sonic Cleaner N**	**neutral**	–	–	–
1 L 08 8018	GARANT GreenPlus ultrasonic cleaner **Sonic Cleaner AC**	**Acid**	–	–	–
1 L 08 8019	GARANT GreenPlus ultrasonic cleaner **Sonic Protect CP**	**Corrosion protection**	–	–	–



08 8015 – 8018



08 8019

suitable for can size		5
1 L 08 8010	GARANT GreenPlus can discharge valve	–



08 8010_5

Garant GREENPLUS Overview of the use of ultrasonic cleaners

Article number	Product designation		Contamination	Material compatibility	pH value	Dosage	Recommended temperature range
088015	**Sonic Cleaner AL-D**	Alkaline de-emulsifying universal cleaner	Emulsions, oils, greases, drawing greases, anti-corrosion agents, grinding dust, soot, inks, toners, lapping and polishing agents.	Common materials such as steel and non-ferrous metals, glass, plastic, ceramic, rubber. High material compatibility – check in advance for sensitive surfaces.	10	3 – 10 %	20 – 80 °C
088016	**Sonic Cleaner AL-E**	Alkaline emulsifying universal cleaner	Emulsions, oils, greases, drawing greases, anti-corrosion agents, grinding dust, soot, inks, toners, lapping and polishing agents.	Common materials such as steel and non-ferrous metals, glass, plastic, ceramic, rubber. High material compatibility – check in advance for sensitive surfaces.	11	3 – 10 %	20 – 80 °C
088017	**Sonic Cleaner N**	Neutral special cleaner – alkali-free and acid-free	Light dirt such as grease and machining oils, abrasives, polishing and lapping agents, fingerprints, grinding dust.	Sensitive materials such as aluminium, non-ferrous metals, varnished and galvanised surfaces, as well as steel, stainless steel, plastic, glass, ceramic and rubber.	9.6	2 – 5 %	20 – 60 °C
088018	**Sonic Cleaner AC**	Acid cleaner	Rust, lime, oxides, mineral deposits as well as oils and greases.	Iron materials, aluminum, stainless steel, non-ferrous metals, glass, plastic. **Then neutralise parts with 08 8004 GARANT GreenPlus Finisher and protect them if necessary!**	2.2	5 – 100 %	20 – 80 °C
088019	**Sonic Protect CP**	Corrosion protection	Additive for metallic materials susceptible to corrosion, such as steel, cast iron and carbides.	Materials are coated with a molecular protective film that temporarily protects against corrosion. Subsequent coating or hardening processes are not impaired.	8.6	0.5 – 2.5 %	20 – 80 °C

Ultrasonic cleaning units

For removal of oil, grease, grinding fluids, polishing fluids, paint residues, flux, oxide layers, carbon deposits, scale from nearly all surfaces and even from inaccessible places, whilst treating the component being cleaned with the utmost care.
Use special power cleaner depending on the dirt and effectiveness required.
The component to be cleaned must be completely surrounded by cleaning fluid.
The ultrasonic cleaning devices from the Elmasonic Select series are powerful and individual.

- 5 ultrasonic modes.
- 4 individual cleaning programs can be saved.
- Clear display showing all relevant cleaning parameters.
- Acoustic and visual feedback about the operating status.
- Tray made of drawn stainless steel
  Size 3 – This version does not have a stopcock on the rear of the device.

Adjustable limit temperature



08 2000_3

Type		3	6	12	18	30	50	90
045 08 2000	Ultrasonic cleaning unit **Elmasonic Select**	–	–	–	–	–	–	–
Manufacturer's designation		Select 30	Select 60	Select 120	Select 180	Select 300	Select 500	Select 900
Volume	l	2.7	5.9	12.9	17.8	27.5	49.7	89
Item length	mm	305	370	380	405	575	775	875
Item width	mm	170	210	300	360	360	425	595
Length of component basket	mm	195	255	250	280	455	460	545
Width of component basket	mm	105	115	190	250	250	300	460
Cleaning bath height	mm	95	145	195	195	195	290	285
Heating power	W	200	400	800	800	1200	1600	2000
Maximum ultrasonic power	W	480	600	800	800	1200	2160	3840
Nominal voltage	V				220 – 240			
Weight	kg	3.6	5.2	7.7	10.2	12.2	30.4	43.4
Recommended working volume	l	1.6	4.3	10	14.2	22	40.3	63.7

Powerful ultrasonic cleaning by the Elmasonic xtra series for heavy-duty applications.

- Greater ultrasonic effect due to automatic dynamic function.
- Selectable Eco mode for gentle cleaning and energy savings.
- Integrated sweep function for even sound distribution in the cleaning bath.
- Individual timer and temperature control.
- Clearly arranged, splash-proof control panel.
- Automatic safety shutdown.

Sturdy tray made from welded stainless steel, suitable for continuous operation.



08 2006_4

Type		4	6	12	18
045 08 2006	Ultrasonic cleaning unit **Elmasonic Xtra**	–	–	–	–
Manufacturer's designation		Xtra 40	Xtra 60	Xtra 120	Xtra 180
Volume	l	5	6.3	14.2	19.7
Item length	mm	435	500	500	530
Item width	mm	215	215	315	380
Length of component basket	mm	195	255	245	275
Width of component basket	mm	105	105	195	255
Cleaning bath height	mm	150	150	190	190
Heating power	W	400	400	800	1000
Maximum ultrasonic power	W	560	640	880	1040
Nominal voltage	V		220 – 240		
Weight	kg	6.8	7.9	11.3	13.2
Recommended working volume	l	4	5.1	12.1	16.7

Elmasonic xtra ST is the ideal ultrasonic device for the heaviest contamination and is particularly suitable for the most demanding applications in industrial cleaning.

- 2 selectable ultrasonic frequencies (25 kHz for the most stubborn contamination and 45 kHz for gentle cleaning).
- Integrated sweep function for even sound distribution in the cleaning bath.
- Selectable pulse function increases the ultrasonic peak power.
- Dynamic function (ultrasonic power can be increased temporarily by up to 20%).
- Sturdy tray made from welded stainless steel.
- Castors with parking brake for mobile use of the device when unfilled.

Can be combined with optional accessories such as filter units or the "Elma Move" – active basket movement in an ultrasonic bath for optimum cleaning results.



08 2002_250

Type		50	60	160	250
045 08 2002	Ultrasonic cleaning unit **Elmasonic xtra ST**	–	–	–	–
Manufacturer's designation		xtra ST 500H	xtra ST 600H	xtra ST 1600H	xtra ST 2500H
Volume	l	48.7	56.3	156.3	245.1
Item length	mm	655	825	935	1080
Item width	mm	555	595	865	915
Length of component basket	mm	255	415	480	575
Width of component basket	mm	230	255	525	630
Cleaning bath height	mm	480	330	415	485
Heating power	W	1400	1400	7500	7500
Maximum ultrasonic power	W	2400	3600	7200	8000
Nominal voltage	V	220 – 240	400	400	400
Weight	kg	45	55	93	107
Recommended working volume	l	42	45	133	215

For removal of oil, grease, grinding fluids, polishing fluids, paint residues, flux, oxide layers, carbon deposits, scale from nearly all surfaces and even from inaccessible places, whilst treating the component being cleaned with the utmost care.
Use special power cleaner depending on the dirt and effectiveness required.
The component to be cleaned must be completely surrounded by cleaning fluid.

The ultrasonic cleaning devices from the Elmasonic Easy series are powerful and ideal for beginners.

- 2 ultrasonic modes.
- Temperature can be adjusted in steps of 5°C.
- Electronic selector switch and LED display of all operating statuses.
- Acoustic and visual feedback about the operating status.
- Tray made of drawn stainless steel.


08 2003_3

Type		1	3	6	12	18	30
045 08 2003	Ultrasonic cleaning unit **Elmasonic Easy**	–	–	–	–	–	–
Manufacturer's designation		Elmasonic Easy 1L	Elmasonic Easy 3L	Elmasonic Easy 6L	Elmasonic Easy 12L	Elmasonic Easy 18L	Elmasonic Easy 30L
Volume	l	0.9	2.7	5.9	12.9	17.8	27.5
Item length	mm	235	305	370	380	405	575
Item width	mm	135	190	225	315	375	375
Length of component basket	mm	155	195	255	250	280	450
Width of component basket	mm	70	105	105	195	255	255
Cleaning bath height	mm	55	95	145	195	195	195
Heating power	W	60	200	400	800	800	1200
Nominal voltage	V	220 – 240					
Weight	kg	2	3.3	5.1	7.5	8.5	11
Recommended working volume	l	0.7	1.2	4.3	10	14.2	22

Ultrasonic cleaning accessories

Rinsing unit

The new Elma Sink is an important addition to the overall cleaning process. Once the cleaning process in the ultrasonic unit is complete, the component basket can be inserted directly into the Elma Sink. This will ensure that any residues and cleaning chemicals are rinsed off – thoroughly. In conjunction with a suitable rinsing medium, this guarantees optimal cleaning results.

Type		S	M	L	XL
045 08 2004	Rinsing unit	–	–	–	–
Manufacturer's designation		Elma Sink S	Elma Sink M	Elma Sink L	Elma Sink XL
Volume	l	3.9	5.9	17.8	27.5
Item length	mm	305	365	395	565
Item width	mm	155	170	315	315
Cleaning bath length	mm	215	280	300	475
Cleaning bath width	mm	115	130	270	270
Cleaning bath height	mm	220	145	195	195
Weight	kg	2	2.8	4.7	6.1
Recommended working volume	l	2.9	4.3	14.2	22


08 2004_5

Drying unit

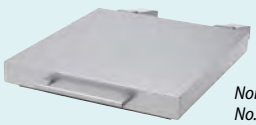
Elma Dry drying units are designed for use in production facilities, workshops and service areas.
After cleaning in the ultrasonic bath, the items in the Elma component basket are first rinsed in the Elma Sink (No. 082004) and then dried easily and conveniently in the Elma Dry.
Its **cold/hot-air blower (70°C)** ensures that even delicate parts can be dried gently. In cold-air mode, the parts can also be cooled down quickly. The cover includes ventilation slits that maximise the air turbulence and discharge the humid air to the outside. At the same time, the cover reduces energy consumption.
The **dust filter** on the underside of the base is replaceable and prevents recontamination of the cleaned parts due to dust in the room air (filter fineness 33ppi). Due to the safety shutdown when the limit temperature is reached, Elma Dry units are both **extremely safe and gentle on their contents.**

Type		3	12	30
045 08 2005	Drying unit	–	–	–
Manufacturer's designation		Elma Dry 30	Elma Dry 120	Elma Dry 300
Volume	l	3	12	30
Item length	mm	300	362	568
Item width	mm	186	285	347
Length of component basket	mm	220	275	475
Cleaning bath height	mm	95	195	195
Heating power	W	480	550	1100
maximum temperature	°C	70		
Nominal voltage	V	220 – 240		
Weight	kg	3.6	6.1	10.2


08 2005_3

Note

You can find suitable accessories in our online shop under No. 08 2101, 08 2102, 08 2103 and 08 2105.


Noise protection cover No. 08 2105_50


Component basket No. 08 2101_3

Cleaning medium

Component cleaner and degreaser

08 3015 – Quick cleaner for brake, clutch and gearbox parts, also carburettor and fuel pumps.

08 3019 – Powerful, biodegradable degreaser, quickly removes greases, oils, lubricants and other stubborn impurities.

08 3022 – **Powerful, deep-penetrating cleaner** with enhanced **application safety.** High breakdown strength of 43 kV, high flashpoint of 63°C. Ideal for **stubborn dirt** on mechanical components and on electric motors, control cabinets, transformers etc.

08 3027 – Powerful **industrial cleaner based on natural orange terpenes**. For universal use when cleaning oil, grease and oil from machine and equipment parts. Releases obstinate residues such as resin, tar, adhesives, and varnish residues. Pleasant smell.

08 3043 – Brake cleaner removes oil, grease, resin incrustations, brake fluid and other stubborn dirt.

08 3061 – VOC-free brake cleaner quickly and reliably removes brake fluid, grease, oil, hardened deposits and other contaminants.

08 3095 – Highly effective mould cleaner for injection moulding. Solvent-based liquid cleaner fro removal of dirt and polymer residues.

08 3011/3014 – **High performance general purpose cleaner** and **degreaser** with wide range of effectiveness. Suitable for degreasing and removal of adhesive residues and resinous residues from metal surfaces. For cleaning tools, bolts, fittings, and also for pre-treatment of surfaces to be glued, quickly drying without residues.



08 3015



08 3061



08 3014



08 3019

Contents			ml	400	500	1000	5000	
08E 08 3011		Universal cleaner **Professional Degreaser**		–	–	–	–	6
08E 08 3014				–	–	–	–	12
08E 08 3019	CRC	Universal degreaser **HydroPower**		–	–	–	–	12
08E 08 3015		Brake cleaner **Brakleen Pro**		–	–	–	–	12
08E 08 3061		Brake cleaner **Brakleen VOC Free**		–	–	–	–	1
08E 08 3043	BALLISTOL	Brake cleaner		–	–	–	–	6
08E 08 3022		Safety cleaner **Lectra Clean II**		–	–	–	–	12
08E 08 3027	CRC	Power cleaner **Citro Cleaner**		–	–	–	–	12
08E 08 3095		Mould cleaner **Mould Clean**		–	–	–	–	12
Version				Spray can	Spray can	Can	Can	



08 3043_500



08 3043_5000

Special cleaning agents

08 3018 – **Contact cleaner spray** for electrical engineering and fine mechanical work. Quickly removes rust, oil, and grease - leaves no residues. Ideal for cleaning measuring devices, tools, switches, and sensors. Approval NSF® K2 for foodstuffs.

08 3112 – Thanks to its high spray pressure, the **Dust Clean PB compressed-gas cleaner** with convenient spray head effectively blows away dust and dirt from items such as office equipment and computers.

08 3113 – **Multi-Surface Citro COVKleen** spray with citrus fragrance is suitable for commercial cleaning and disinfection of commonly used surfaces. It quickly and reliably removes dirt, oil, viruses, bacteria and germs from metal, stone, textiles and many plastics.

08 3395 – **Label Off Super** label remover for removing self-adhesive paper labels. Removes self-adhesive paper labels from most surfaces in 2–3 minutes. Approval NSF K3 for foodstuffs.

Attention:

08 3113 – Use biocidal products carefully. Before use, always read the label and product information.



08 3112



08 3113

Contents			ml	400	500	
08E 08 3113	CRC	Multi Surface Citro COVKleen		–	–	12
08E 08 3112		Compressed-gas cleaner		–	–	12
08E 08 3018	CRC	Contact cleaner		–	–	12
08E 08 3395		Label remover	400 ml	–	–	12
Version				Spray can		

Surface and foam cleaner

08 3016 – Alkalis, **water-soluble cleaning concentrate** for general-purpose cleaning of large areas on machines, plant, floors, work surfaces, and conveyor belts. Active components are easily **biodegradable** surfactants. Approval NSF® A1 for foodstuffs.

08 3024 – **Cleaning and polishing foam** for stainless steel, chrome, aluminium and plastics. Removes all types of residues and leaves a water-repellent protective film (prevents fingerprints). Approval NSF® A7/C1 for foodstuffs.

08 3026 – Solvent-free, antistatic **special cleaner for TFT / LCD display screens** and for quick and gentle cleaning of casings, fittings, glass, and smooth metal surfaces. **The foam does not trickle down on vertical surfaces.** Approval NSF® K2 for foodstuffs.



08 3016

Contents			ml	500	5000	
08E 08 3016	CRC	Workshop and machine cleaner **Eco Complex Blue**	5000 ml	–	–	2
08E 08 3024	CRC	Stainless steel cleaner **Inox Kleen**	500 ml	–	–	12
08E 08 3026	CRC	Screen cleaner **Flatscreen cleaner**	500 ml	–	–	12
Version				Spray can	Can	

Lubricant

Penetrating oil and lubricating oil

08 3052 – This **rust remover** penetrates into the smallest gaps in a flash; the powerful penetrating **capillary action** loosens bolts and mechanisms. Further **improved sliding properties, avoiding recurrence of seizing through the action of the MoS_2 additive.**

08 3053 – Special lubrication and care for plastics and sliding pairings made from different materials. Lubricates and protects parts made from rubber, polymers, plastic and metals. Eliminates squeaking and creaking noises. Ideal also for care and restoration.

08 3054 – SILICONE IND is the versatile synthetic oil spray. The silicone oil creates a thin, water-repellent film which is highly compatible with plastic, rubber and varnishes. SILICONE IND refreshes plastic surfaces, protects rubber against icing up and is a highly effective separating agent. The product does not age and become sticky, and can be used between **-40°C and 200°C**.

08 3062 – Waterproof lubricant with **excellent adhesion.** Creates a long-term lubricant film.

08 3097 – Synthetic long-term lubricant, resistant to high temperatures.



08 3053



08 3054

Contents			ml	400	500		Version
08E 08 3052	CRC	Rust remover **Rust Off Ind**		–	–	12	Spray can
08E 08 3054	CRC	Silicone spray **Silicone Ind**		–	–	12	Spray can
08E 08 3053	BALLISTOL	Silicone oil		–	–	6	Spray can
08E 08 3062	CRC	Tenacious lubricant **High Speed Chain Oil**		–	–	12	Spray can
08E 08 3097	CRC	High-temperature oil **Ejector Lube**		–	–	12	Spray can

Greases and pastes

08 3058 – **General-purpose spray-on grease, white**, with PTFE with excellent adhesion. Provides long-term protection and lubrication for moving parts and sliding surfaces (e.g. chains, ball bearings, hinges), even under heavy loadings (up to 120°C). Resistant to water and high pressure.

08 3068 – High-quality anti-seize thread and assembly paste based on high-quality **copper powder** in non-drip grease base. **Temperature-resistant from -30 °C to 1100 °C.**

08 3066–3068 – **The paste prevents sticking, seizing, and corrosion.** Specially for parts and bolts, which are exposed to heat, high pressure or corrosive environments.

08 3066/3069 – **High temperature-resistant ceramic paste,** with an effective range from **–30 °C to 1400 °C.** Non-volatile, very good parting properties, **emulsion-resistant.**



08 3066



08 3069_500



08 3069_100



08 3068_500



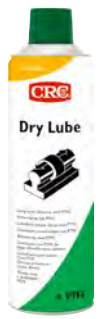
08 3068_100

Contents			ml	30	100	500	
08E 08 3058	CRC	Spray-on grease **White Lithium Grease**		–	–	–	12
08E 08 3066	WEKEM	High temperature ceramic paste		–	–	–	12
08E 08 3069	CRC	Ceramic paste **Ceramic Paste**		–	–	–	12
08E 08 3068	CRC	Copper paste **Copper Paste**		–	–	–	12

Dry lubricant

Non-greasy smooth and dry lubricant with excellent anti-adhesion properties due to the formation of a PTFE coating**.** Free of oil and silicone.

Contents			ml	500		Version
08E 08 3056	CRC	PTFE dry lubricant **Dry Lube**		–	12	Spray can



08 3056

Anti-corrosion agent

Rust protection

08 3025 – **Cleaning and protective oil for metal surfaces.** Removes residues of dirt, **displaces moisture** and creates a thin protective film. Creates a uniform lustre on the surface. Contains no silicones, resins or acids. Approval NSF® H2 for foodstuffs.

08 3055 – Seawater-resistant protective wax, also for protection during outdoor storage. Corrosion protection wax for up to 2 years of protection when stored outside. The brown, dry wax film offers reliable transport and storage protection even in direct exposure to weather conditions or in a saline or corrosive atmosphere.

08 3094 – Transparent waxy anti-corrosion agent for mould tools and metal surfaces of all kinds. Long-term protection for storage and transport.

08 3096 – **Corrosion protection wax** based on paraffinic mineral oils with corrosion protection additives. Offers special corrosion protection for transport (especially sea transport) and also long-term protection for tools, profiles, precision parts and machines. For use within the temperature range: - 30 °C to 160 °C.



08 3025



08 3096

Contents			ml	500		Version
08E 08 3025		Protective oil **3-36**		–	12	Spray can
08E 08 3094	CRC	Corrosion protection wax **Mould Protect**		–	12	Spray can
08E 08 3055		Corrosion protection wax **SP 400**		–	12	Spray can
08E 08 3096	WEKEM	Corrosion protection wax **WS 440**		–	12	Spray can

Protective lacquers



08 3074



08 3078

Contents			ml	500		Version
08E 08 3071		High-gloss aluminium spray **Galva Shine**		–	12	Spray can
08E 08 3072		Anti-rust primer **Zinc Primer**		–	12	Spray can
08E 08 3093	CRC	Zinc coating repair spray **Galva Brite**		–	12	Spray can
08E 08 3074		Zinc spray **Zinc**		–	12	Spray can
08E 08 3077		Stainless steel spray **Inox 200**		–	12	Spray can

2-in-1 anti-corrosion paints

Excellent long-term protection, short processing time. Combination of zinc phosphate primer and high-quality protective lacquers in specified RAL colours.

Colour				BLUE1	GREY1	GREY2	BLACK	SILVER	WHITE		Version
08E 08 3078	CRC	Zinc anti-corrosion spray **Galvacolor "2 in 1"**	**500 ml**	–	–	–	–	–	–	12	Spray can
RAL colour number				5005	7035	7016	9005	9006	9010		

CRC Separating agents

Welding anti-spatter fluids

Protect workpieces against weld spatter and keep nozzles free.

08 3083 – **Based on aqueous emulsion,** contains no solvents, non-flammable.

08 3084 – **Based on high-quality ester oils,** contains no water, quick-drying.



08 3084

Contents		ml	500		Version
08E 08 3083	Weld separation spray **Eco Bio Weld**		–	12	Spray can
08E 08 3084	Weld separation spray **Easy Weld**		–	12	Spray can

Moulded-part separating agent for processing plastics



08 3089

Contents		ml	500		Version
08E 08 3087	Wet film separating agent **NSR Multi**		–	12	Spray can
08E 08 3088	Dry film separating agent **NSR Dry**		–	12	Spray can
08E 08 3089	Wet film separating agent containing silicone **SR Multi**		–	12	Spray can
08E 08 3091	Wet film separating agent **NSR Food**		–	12	Spray can
08E 08 3092	Wet film separating agent containing silicone **SR Food**		–	12	Spray can

Testing equipment

08 3057 – Special gas for surfaces and objects for **immediate cooling** of surfaces and parts **down to -52°C.**

08 3081 – **Cooling spray** with strong **cooling effect down to – -45 °C** using a coolant based on HFO, **non-flammable.** Evaporates leaving no residue. Assists trouble-shooting in electronics, for freeze-shrinking of small metal parts, for shock-freezing of rubber, plastic.

08 3086 – DVGW-tested **leak finder spray** for gas and compressed air systems for virtually all types of gas, even including oxygen systems. The water-based liquid forms clearly visible bubbles around the site of the leakage. DIN EN 14291. Classification NSF® P1.

08 2980–2982 – Non-destructive **CRICK** test system for visually inspecting defective places on metal and plastic surfaces in accordance with the DIN EN ISO 3452 penetrant test method.

Contents		ml	300	500		Version
08E 08 2980	CRC	Cleaning crack detection dye **CRICK 110**	–	–	12	Spray can
08E 08 2981		Red dye penetrant **CRICK 120 crack detection agent**	–	–	12	Spray can
08E 08 2982		Wet developer **CRICK 130 crack detection agent**	–	–	12	Spray can
08E 08 3057	BALLISTOL	Cold spray	–	–	6	Spray can
08E 08 3081	CRC	Cooling spray **Minus 45**	–	–	12	Spray can
08E 08 3086		Leak finder spray **Eco Leak Finder**	–	–	12	Spray can



08 3057



08 3081

Multi-function oil

08 3032 – High-quality multi-function oil, silicone-free, does not gum up. With PTFE additive and "clever straw" spray technology. The mechanic's oil lubricates, releases, protects and displaces moisture. The PTFE lubrication additive ensures continuous protection against wear, high pressure stability and reliable lubrication even under extreme conditions. The product can be used between -50°C to 150°C.

08 3120/3121 – Multi-function oil with high creep effect protects metal surfaces against corrosion and displaces water and moisture. Releases dirt, rust and grease residues. Compatible with all types of metal and most types of rubber, plastics and coatings.

Note:	Not available in all countries. Express delivery not available.



Contents		ml	400	500		Version
08E 08 3032	Multi-function oil **5-56 BIO**		–	–	12	Spray can
08E 08 3120	Multi-function oil **5-56**		–	–	12	Spray can
08E 08 3121	Multi-function oil **5-56 Pro Clever Straw**		–	–	12	Spray can
Spray head (08 3032, 08 3120)			Clever Straw	Standard		
Spray head (08 3121)			–	Clever Straw		
Contents		l	0.4	0.5		



08 3120 08 3032 08 3121

Universal oil spray and corrosion protection oil sprays

Application:

08 3042 – The 12.5 cm long VarioFlex spray tube is flexible and can be bent in all directions. Inaccessible corners can be reached quickly and easily. The spray jet is very fine and precisely controllable. But the capability to emit a spray mist is still available; simply fold the spray tube vertically downwards and click into place.

08 3047 – Maintains and protects all sorts of metals against corrosion, without sticking or gumming up.

08 3041/3044/3045 – Ideal for **servicing, maintenance and preservation** of all types of tools. Proven for tooling, chucks, measuring tools, grinding vices and for the protection of press tools in storage. Neutralises weak acids and perspiration and is very **gentle to the skin**. **Ecologically non-hazardous**, free of resins, offers unsurpassed versatility.

Note:	Not available in all countries. Express delivery not possible.

Contents		ml	200	400	350	5000		Version
08E 08 3041	General-purpose oil		–	–	–	–	1	Can
08E 08 3042			–	–	–	–	12	Spray can
08E 08 3044			–	–	–	–	12	Spray can
08E 08 3045			–	–	–	–	12	Spray can
08E 08 3047	Corrosion protection oil		–	–	–	–	12	Spray can
Spray head			Standard	Standard	Flexi Straw	–		



08 3041 08 3042 08 3045 08 3047

Garant Multi-function oil

The **GARANT multi-function oil** is ideal for **lubricating, cleaning and protecting**.
Thanks to its excellent capillary action, it penetrates deep into the smallest gaps, removes stubborn dirt and ensures thorough cleaning.
At the same time, it forms a reliable **lubricating film** that **prevents corrosion**, effectively removes rust films and does not gum up.
The versatile spray is **ideal for removing resinous greases and oils and for lubricating** a wide range of components.
In addition, it protects against rust and leakage currents, making it perfect for tools, machines, electronic circuits and motors.
The GARANT multi-function oil is **free of acids, silicones and Teflon.**

Note:	The GARANT multi-function oil is ideal for looking after granite measuring and control surface plates and can be used to full effect in combination with the GARANT GreenPlus Granite Cleaner (431842 500), the specialised cleaning agent for granite comparison scales. Together, they are the ideal solution for cleaning and protection in order to extend the life and precision of your measuring and control surface plates.

Contents (ml or l)		500	20
01L 08 8025	Multi-function oil	–	–
Version		Spray bottle	Can
Contents	l	0.5	20



08 8025_500



08 8025_20

Multi-function product

WD-40® multi-purpose oil helps maintain the value of machines and tools during maintenance work.
The product displaces moisture, protects metal from rust and corrosion, penetrates into trapped parts and releases jammed mechanisms and moving parts. It removes grease, soot and other dirt from surfaces and prevents squeaking.
Contains no silicone, resin or PTFE, temperature application range -50 to +150°C, non-conductive,
360° valve for use from any position.

Application:

08 3003 – WD-40 Flexible® for working in hard-to-reach areas without disassembling the parts to be worked on. The product has an 18.5 cm long, flexible spray tube made of extremely malleable, wear-resistant and heat-resistant metal.

08 3004 – WD-40® multifunctional product Smart Straw® for spraying over large areas as well as in specific spots.

08 3005 – By wide-scale use **of the spray dispenser No. 083006 or No. 083509 – 083517** for economic application over large surfaces.

Note:	Approved by: **Rolls Royce, Daimler, Airbus, VW** amongst others. Not available in all countries. Express delivery not available.



08 3003



08 3004

Contents	ml	400	5000	25000		Version
08E 08 3003	WD-40® multi-function product **Flexible**	–	–	–	6	Spray can
08E 08 3004	WD-40® multi-function product **Smart Straw**	–	–	–	12	Spray can
08E 08 3005	Multi-function product	–	–	–	1	Can
Version		–	–	Can		
Spray head (08 3003)		Flexi Straw	–	–		
Spray head (08 3004)		Smart Straw	–	–		
Contents	l	0.4	5	25		

Application: Pump atomiser, content 500 ml. Largely resistant to aggressive cleaners.

			Version	Capacity l
08E 08 3006	Spray dispenser	–	Spray bottle	0.5



08 3006

Now also available in a 25 litre drum



08 3005

SCHWEIZER Optics cleaning set

Special very soft lint-free dry cloth together with a gentle cleaning solution for all lenses and magnifying glasses, of glass or plastic.

49A 08 9199	Optics cleaning set	–



System and glass cleaner

Glass cleaner for internal cleaning of viewing windows on machine tools and machining centres.
Removes resinous cooling lubricants from viewing windows. 100 % free of tensides.

Contents	l	0,5
08J 08 4343	OptiClean glass and windscreen cleaner	–
Version		Spray bottle



Garant Anaerobic adhesives without hazard labels

Note: Clean the material to be machined in advance with cleaner without hazard labels No. 088004.

Threadlockers

The use of threadlockers prevents the screw fastenings from accidentally releasing and coming undone. The single-component anaerobic threadlockers are suitable for all thread types and forms. Screw fastenings are sealed. Seizing is reliably prevented.

08 8060 – Type **2GP22** low-strength. Medium viscosity. Ideal for easy-to-remove screw fastenings. For securing screws with fine threads.

08 8061 – Type **2GP43** medium-strength. Seals and locks many types of screw fastenings. High resistance to vibrations. Quick curing on a high number of ferrous metals. Increased oil tolerance.

08 8062 – Type **2GP70** high-strength. For fixing studs, ball bearings and roller bearings which normally can no longer be released. For highly stressed screw fastenings.

08 8063 – Type **2GP90** medium-strength. Reliable sealing of cast housings and weld seams. Also for subsequently securing and fixing small screws and cylindrical parts.

Application: **Low strength** – Can be undone with normal tools. **Medium strength** – Can still be undone with normal tools. **High strength** – Can be undone only with special tools or by heating (>150°C).



08 8060_50



08 8060_250

Contents		ml	50
OTK	08 8060	GARANT GreenPlus threadlocker **2GP22**	–
Operating temperature range		°C	-55 – 180
Functional strength to		h	3 – 6
for thread size M to			M36
Strength class			low strength
minimum break-away torque		Nm	5.5 – 11.5
Colour			violet

Contents		ml	50	250
OTK	08 8061	GARANT GreenPlus threadlocker **2GP43**	–	–
Operating temperature range		°C	-55 – 180	
Functional strength to		h	3 – 6	
for thread size M to			M36	
Strength class			medium strength	
minimum break-away torque		Nm	15 – 25	
Colour			blue	

Contents		ml	50	250
OTK	08 8062	GARANT GreenPlus threadlocker **2GP70**	–	–
Operating temperature range		°C	-55 – 180	
Functional strength to		h	3 – 6	
for thread size M to			M20	
Strength class			high-strength	
minimum break-away torque		Nm	35 – 45	
Colour			green	

Contents		ml	50
OTK	08 8063	GARANT GreenPlus threadlocker **2GP90**	–
Operating temperature range		°C	-55 – 180
Functional strength to		h	5 – 8
for thread size M to			M6
Strength class			medium strength
minimum break-away torque		Nm	10 – 15
Colour			green

Thread sealant

Thread sealants prevent leakage of gaseous and liquid media. Thread sealants are typically used for sealing conical metal threads and connecting pieces, amongst other things.

08 8064 – Type **5GP42.** Sealant for workpieces with threads in hydraulic or pneumatic systems and connecting parts. Effective protection against oil, water, hydrocarbons and chemical products.

08 8065 – Type **5GP11.** Seals against water, compressed air, gas, petrol, LPG, and chemical products. PTFE additive allows easy disassembly. Specially for sealing conical/cylindrical pipe screw connections. When it has cured it creates an elastic coating.

08 8066 – Type **5GP77.** Seals conical/cylindrical pipe thread fastenings up to R3 inch, e.g. gas piping systems. Heat-resistant.



08 8065_50

Contents		ml	50
OTK	08 8064	GARANT GreenPlus thread sealant **5GP42**	–
Functional strength to		h	3 – 6
for thread size M to			M26
minimum break-away torque		Nm	15 – 25

Contents		ml	50
OTK	08 8065	GARANT GreenPlus thread sealant **5GP11**	–
Functional strength to		h	1 – 3
for thread size M to			M80
minimum break-away torque		Nm	5 – 15

Contents		ml	50
OTK	08 8066	GARANT GreenPlus thread sealant **5GP77**	–
Functional strength to		h	3 – 6
for thread size M to			M80
minimum break-away torque		Nm	20 – 30

Garant GREENPLUS

Simply sustainable and environmentally friendly – cleaning and bonding.

Your path to products without hazard labels in technical chemistry.
GARANT GreenPlus, the real alternative to hazardous substances to protect people and nature.

The products are marked with this icon in the catalogue.

OUR "GREEN" RANGE: THE BENEFITS TO YOU AT A GLANCE.

Our products have a "white safety data sheet". This means: **They are safe to use**.
GARANT GreenPlus products therefore also do not have to be marked with hazard symbols or risk or safety phrases (R and S phrases).

By using chemicals that do not require a hazard label, you can significantly reduce the amount of pollutants within your production system.
You also **benefit in many other ways!**
This overview provides further details.



White safety data sheet
Not marked with hazard symbols etc.



Protect your employees
Fewer health problems, meaning less downtime.



Easy to use
No need to create operating instructions.



Fewer protective measures
As the pollutant levels are low, no complex protective measures are required.



Safe working
Fewer potential risks (e.g. risk of explosion and fire).

Garant GREENPLUS

So-called R and S phrases describe special hazards (risk phrases) that may arise from hazardous substances or preparations, or safety advice (safety phrases) for the hazardous substance.
They constitute practical **instructions for avoiding hazards when handling** hazardous substances, and measures to take if the substance is released. They also provide information on **how to cope with the effects of an accident** and how to administer first aid.



Comply with regulations
Avoid possible sanctions, e.g. for exceeding workplace limit values.

No hazardous chemicals
No need to justify yourself to auditors regarding the use of hazardous chemicals.

Simple storage & logistics
No need to store them in hazardous substance cabinets.

Save money
Thanks to lower disposal costs.

Protect the environment
Fewer pollutants = less environmental pollution.

Garant

Anaerobic adhesives without hazard labels

Note:	Clean the material to be machined in advance with cleaner without hazard labels No. 088004.

Surface sealants

Sealant that cures when applied as a hermetic seal between close-fitting metal surfaces.

08 8067 – Type **5GP74.** For sealing flanges and surfaces. Quick-curing, slightly flexible sealant film.

08 8068 – Type **5GP73.** Medium-strength thixotropic surface seal for sealing metallic threaded parts. Sealing of covers, flanges and surfaces. Quick-curing, slightly flexible sealant film.

Contents		ml	50
01K 08 8067	GARANT GreenPlus surface sealant **5GP74**		–
Operating temperature range		°C	-55 – 180
Functional strength to		h	3 – 6
Maximum gap size		mm	0.25
Strength class			medium strength
minimum break-away torque		Nm	10 – 20

Contents		ml	50
01K 08 8068	GARANT GreenPlus surface sealant **5GP73**		–
Operating temperature range		°C	-55 – 180
Functional strength to		h	3 – 6
Maximum gap size		mm	0.2
Strength class			medium strength
minimum break-away torque		Nm	10 – 20



08 8068_50

Joint connection agents

When using joining as a production technique, two or more components are connected through positive contact. When using the adhesive, the full jointing face is used to establish a solid connection. It allows for high force transfer and dynamic loads (high shear strength).

08 8069 – Type **6GP38.** Quick-curing universal product with very high strength for static shear stresses and dynamic loads. For fixing gears, pulleys, rotor/shaft connections on electric motors.

08 8070 – Type **6GP48.** Quick-curing heat-resistant product for fixing cylindrical joint connections, such as cylinder liners in engine blocks. Also suitable for fixing bearings in heating furnaces.

08 8071 – Type **6GP60.** For repair of worn areas and restoring correct fits. Large gap size suitable. Cured product can be machined by drilling, milling or grinding.

Contents		ml	50
01K 08 8069	GARANT GreenPlus joint connection agent **6GP38**		–
Operating temperature range		°C	-55 – 180
Touch dry after		min	5 – 15
Functional strength to		h	1 – 3
Maximum gap size		mm	0.25
Strength class			high-strength



08 8069_50

Contents		ml	50
01K 08 8070	GARANT GreenPlus joint connection agent **6GP48**		–
Operating temperature range		°C	-55 – 180
Touch dry after		min	5 – 15
Functional strength to		h	3 – 6
Maximum gap size		mm	0.2
Strength class			high-strength

Contents		ml	50
01K 08 8071	GARANT GreenPlus joint connection agent **6GP60**		–
Operating temperature range		°C	-55 – 180
Touch dry after		min	5 – 15
Functional strength to		h	3 – 6
Maximum gap size		mm	0.3
Strength class			high-strength

08

Garant

Thread locking marker without hazard labels

Securing and identification lacquer without hazard labels. Protects components against third-party intervention. Protects against corrosion.

Contents		ml	50
01K 08 8072	GARANT GreenPlus thread locking marker		–
Operating temperature range		°C	-40 – 80
Functional strength to		h	0.5
Colour			red



08 8072

Threadlocking

The use of thread-lockers prevents the screw fastenings from accidentally releasing and coming undone. The single-component anaerobic adhesives are suitable for all thread types and forms. Screw fastenings are sealed. Seizing is reliably prevented.

Application: **Low strength** – can be undone with normal tools.
Medium strength – can still be undone with normal tools.
High strength – Can be undone only with special tools or by heating (>150 °C).

Size 222 – Low-strength, permits easy disassembly, suitable for all metals and passive materials.
Size 243 – Medium-strength, performs screw locking and sealing at the same time.
Size 270 – High-strength, for permanent screw fastenings, liquid.
Size 2701 – Ideal for use on passive surfaces such as high-alloy CrNi steels.
Size 290 – For small screws up to M6 and for locking screws after insertion.
Size 32-18 – Low-strength, easy disassembly, for all metals, carries no hazard labels.
Size 55-03 – Medium-strength, for use as screw locking and thread sealing up to 200 °C, also the passive materials, carries no hazard labels.
Size 70-14 – High-strength, for small screws up to M5 or for locking screw fastenings after they are made.
Size 83-05 – High-strength, for passive materials such high-alloy CrNi steels, for use also in thread sealing and making joints.
Size 83-54 – High-strength, for permanent screw fastenings up to 200 °C temperature range.

Manufacturer's designation				222	243	270	2701	290
04L 08 3301	LOCTITE	Threadlocker	50 ml	–	–	–	–	–
04L 08 3303			250 ml	–	–	–	–	–
Operating temperature range			°C	-55 – 150	-55 – 180	-55 – 180	-55 – 150	-55 – 150
Functional strength to			h	6	2	3	6	3
for thread size M to				M36	M36	M20	M20	M6
Strength class				low strength	medium strength	high-strength	high-strength	medium strength
minimum break-away torque			Nm	6	26	33	38	10
Colour				violet	blue	green	green	green



08 3303

Manufacturer's designation				32-18	55-03	70-14	83-05	83-54
08G 08 3313	LOXEAL	Threadlocker	50 ml	–	–	–	–	–
08G 08 3314			250 ml	–	–	–	–	–
Operating temperature range			°C	-55 – 150	-55 – 200	-55 – 150	-55 – 200	-55 – 200
Functional strength to			h	3 – 6	1 – 3	2 – 3	2 – 3	2 – 3
for thread size M to				M12	M36	M5	M25	M20
Strength class				low strength	medium strength	high-strength	high-strength	high-strength
minimum break-away torque			Nm	6 – 10	18 – 23	10 – 25	25 – 35	25 – 35
Colour				violet	blue	green	green	green



08 3313

Sealants for metals

These sealants replace hemp, sealing tapes, and pastes, they are resistant to gases, liquids, air, water, oils, hydrocarbons and many chemical products. **Complete surface contact** ensures a **100% seal.** Unscrewing, or correction of position during assembly can be performed using conventional tools at any time before the sealant hardens. No sealant residues to block filters and valves.

Thread sealants

08 3312 – Non-curing thread yarn, seals instantly, DVGW / KTW, WRC-approved.
08 3319 Size GOLD – Particularly strong, leak-proof, resilient Teflon strip of the highest quality, for all types of threads. Suitable for propane, butane, natural gas, benzene, and fuels. Temperature range –240 to + 260 °C.

Application:

Size 55 – **Thread sealant yarn** for plastics and metal in heating systems and plumbing applications.
Size 511 – Suitable for metal threads up to M80 / R3.
Size 577 – Immediate effect, leak-proof against low forces, suitable for all metals.
Size 542 – **Fine thread sealant for hydraulic and pneumatic systems.**
Size 18-10 – Low-strength resilient pipe and thread sealant with PTFE, up to 2 inch threads.
Size 53-14 – Medium-strength hydraulic and pneumatic sealant, immediately leak-tight at low pressures, **carries no hazard labels**.
Size 58-11 – Medium-strength pipe and thread sealant, NSF-P1 approved, **carries no hazard labels**.
Size 86-55 – High-strength anaerobic thread sealant and adhesive. Slow-curing.

Note: Before applying sealant, clean the threads with general-purpose cleaner No. 083391 and No. 083392.





08 3312

Manufacturer ID				55
04L 08 3312	LOCTITE	Thread sealant yarn	160 m	–
for thread size M to				M110
for imperial thread size			in	4

Type				GOLD	FINE	COARSE
08G 08 3319	WEICON	Teflon sealing tape	12 m	eShop	eShop	eShop
for thread types				All	fine	coarse
Width			mm	12		
Thickness			mm	0.1		



08 3319



Manufacturer ID				18-10	53-14	58-11	86-55	511	577	542
04L 08 3321	LOCTITE	Thread sealant	50 ml	–	–	–	–	–	–	–
08G 08 3322	LOXEAL		50 ml	–	–	–	–	–	–	–
Functional strength to			h	1 – 3	1 – 3	1 – 2	12 – 24	72	1	3
for thread size M to				M50	M20	M56	M50	M80	M80	M26
minimum break-away torque			Nm	6 – 11	8 – 12	18 – 24	15 – 35	6	33	15

Flat gasket sealants

Application:

Size 574 – For torsion-resistant metal flanges.
Size 5970 – Silicone. For use as a replacement for cork and paper gaskets.
Size 28-10 – Low-strength, very flexible, can be disassembled, bonds across gaps up to 0.3 mm.
Size 58-14 – Medium-strength, flexible, for general-purpose use, good ability to bond across gaps.

Note: Before applying sealant, clean the surfaces with general-purpose cleaner No. 083391 and No. 083392.



_574 _5970

Manufacturer ID				574	5970	28-10	58-14
04L 08 3331	LOCTITE	Flat gasket sealant	50 ml	–	–	–	–
08G 08 3332	LOXEAL		75 ml	–	–	–	–
08G 08 3334			250 ml	–	–	–	–
Operating temperature range			°C	-55 – 150	-55 – 200	-55 – 150	-55 – 150
Functional strength to			h	6	12	3 – 6	3 – 6
Maximum gap size			mm	0.25	0.25	0.3	0.5
Strength class				medium strength	low strength	low strength	medium strength
minimum break-away torque			Nm	6	7	4	5



_28-10 _58-14

Joining

Joining products for shaft-hub joints

When using joining as a production technique, two or more components are connected through positive contact. When using the adhesive, the full jointing face is used to establish a solid connection. It allows for high force transfer and dynamic loads (high shear strength).

Application:

Size 648 – Universal jointing product, high temperature resistance. Preferred for bearings, shafts etc.
Size 638 – High durability when subjected to dynamic, axial, and radial loads.
Size 82-33 – High-strength, for small gaps, even where some slight oily contamination is present. Ideal for securing bearings.
Size 83-21 – High-strength, quick-curing, mechanically tough, for bonding in and bonding on bearings, bushes and gear wheels. Viscosity 400 – 600 mPas.
Size 85-21 – High-strength, quick-curing, ideal for bonding in and bonding on bearings, bushes and gear wheels, permits larger production tolerances. Viscosity 2600 – 3400 mPas.

Note: Surfaces should first be treated with general-purpose cleaner No. 083391 and No. 083392.





08 3341_648 08 3341_638



08 3345_83-21 08 3345_85-21

Manufacturer ID				638	648	82-33	83-21	85-21
04L 08 3341	LOCTITE	Retaining compound	50 ml	–	–	–	–	–
04L 08 3343			250 ml	–	–	–	–	–
08G 08 3345	LOXEAL		50 ml	–	–	–	–	–
Operating temperature range			°C	-75 – 180	-75 – 180	-55 – 150	-55 – 175	-55 – 150
Touch dry after			min	15	10	5 – 10	2 – 5	2 – 5
Maximum gap size			mm	0.25	0.15	0.1	0.15	0.2
Strength class				high-strength				

Peristaltic hand pump for 50 ml bottles

Manual metering device for screwing on to 50 ml bottles, operates in any position, non-drip, easy to control. Requires no electrical power or compressed air.

Application: Meters thread locking fluids and retaining compounds exactly from 0.01 to 0.4 ml. Unsuitable for instant adhesives and primers.



08 3344 _50

Suitable for container size			ml	50
04L 08 3344	LOCTITE	Peristaltic hand pump with metering needle set		eShop

LOCTITE Cleaner, degreaser and activator spray

Cleaner and degreaser for parts, machines, and surfaces prior to adhesive application.

08 3391 – **Solvent-based (acetone) universal cleaner** for removing paint, resin, and adhesives. Evaporates very quickly.

08 3392 – **Solvent-based universal parts cleaner,** ideal for pre-treatment before application of adhesives and sealants; leaves no residue.

08 3393 – **Activator spray.** For quick hardening of LOCTITE® products, even at low temperatures.





08 3391 08 3392 08 3393

Manufacturer ID			7061	7063	7240	
04L 08 3391	Cleaner and degreaser spray	400 ml	–	–	–	10
04L 08 3392		400 ml	–	–	–	12
04L 08 3393	Activator spray blue-green	90 ml	–	–	–	12

3M Spray adhesive

08 3397 – 3M™ Foam Fast spray adhesive 74 is a quick-drying spray adhesive that permanently leaves soft and flexible adhesive seams.

08 3398 – 3M™ Foam Fast spray adhesive 77 is a quick-drying, versatile spray adhesive.

08 3399 – 3M™ Hi-Strength 90 is a synthetic, high-strength spray adhesive for permanent bonding.

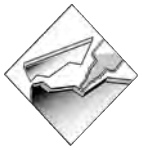


08 3397 08 3398 08 3399

Contents		ml	500
08M 08 3397	Spray adhesive **Foam bonding**		–
08M 08 3398	Spray adhesive **Multi-purpose adhesive**		–
08M 08 3399	Spray adhesive **PE, PP**		–

Instant adhesives

Note:	Not available in all countries. Express delivery not available.





08 3351_401 08 3352_401

Universally applicable for bonding dissimilar materials. Quick curing and clean, nearly invisible joints. Hardens by atmospheric humidity.

Application:

Size 401 – Universal instant adhesive for virtually all materials such as plastics, elastomers, metals, preferably for **paper, cardboard, wood, leather** and **fabrics.**

Size 454 – Universal instant adhesive **gel.** Suitable for **virtually all materials.** Non-drip, ideal for applications on vertical surfaces or overhead.

Size 480 – Black high-impact instant adhesive for bonding metal to metal and **metal to rubber.** Best resistance to shear and impact stresses, and to moisture.

Size 496 – Universal instant adhesive for nearly all materials. Very suitable for **metals.** In comparison to size 401 slightly higher strength but less temperature stability.



08 3352_454 08 3352_480 08 3352_496

Manufacturer ID			401	454	480	496	
04L 08 3351	LOCTITE Instant adhesive	3 g	–	–	–	–	12
04L 08 3352		20 g	–	–	–	–	1
Dynamic viscosity		mPas	70 – 110	150 – 450	100 – 200	125	
Touch dry after (08 3351)		s	3 – 10	5 – 10	–	–	
Touch dry after (08 3352)		s	5 – 10	5 – 10	60 – 120	20 – 40	
Tensile shear strength		N/mm²	20	20.9	22 – 30	20 – 30	

Universally applicable for bonding dissimilar materials. Hardens by atmospheric humidity.

Size UNI – For general purpose use, suitable for most **plastics, metal and wood.**

Size SLOW – Slow-curing, high-strength and gap filling ability, suitable for **metal and hard plastics** and **all absorbent surfaces/materials** such as **leather, wood, cork.**

Size FAST – Quick-curing, low viscosity, suitable for **EPDM elastomers, solid rubber, foam rubber and plastic.** Perfect for the production of O-rings.

Size BLACK – Black instant adhesive, very suitable for **bonding a wide range of materials** such as **metal to rubber** or **metal to plastic.**



_UNI _BLACK

Type			UNI	SLOW	FAST	BLACK
02A 08 3361	HOLEX Instant adhesive	20 g	–	–	–	–
Dynamic viscosity		mPas	95 – 200	600 – 1500	10 – 20	2000 – 4000
Touch dry after		s	5 – 40	20 – 50	10 – 30	30 – 90
Tensile shear strength		N/mm²	10 – 20	10 – 22	10 – 20	18 – 28

2-component adhesive and accessories

2-component adhesive

A two-component adhesive (2C adhesive) consists of two components (resin and hardener). Mixing these components causes a chemical reaction that produces a durable, stable and resilient connection.

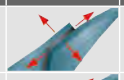
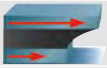
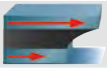




_DP8710NS

Manufacturer ID		DP490	DP8405	DP110	DP190	DP100PLUS	DP8610NS	DP8710NS
08M 08 3374	3M 2-component adhesive	–	–	–	–	–	–	–
Chemical basis		Epoxy resin	Acrylate	Epoxy resin	Epoxy resin	Epoxy resin	Acrylate	Acrylate
Operating temperature range	°C	-55	-40	-55	-55 – 80	-55 – 80	-55 – 120	-40 – 120
Touch dry after	min	240 – 360	14 – 16	8 – 10	480	20	18	13
Tensile shear strength	N/mm²	31	17	17	18	7	–	–
Lap shear strength	N/mm²	31	30	17	17.6	24	17.9	6.9
Colour		black	green	translucent	grey	transparent	black	black
Capacity	g	50	45	50	50	50	45	45
suitable for manual dispensing gun					083373			
suitable for plunger		083375 KOLBEN 3	083375 KOLBEN 10	083375 KOLBEN 3	083375 KOLBEN 3	083375 KOLBEN 3	083375 KOLBEN 10	083375 KOLBEN 10
suitable for mixing tube		083383 MIXER	083375 MIXER	083383 MIXER	083383 MIXER	083383 MIXER	083375 MIXER	083375 MIXER

3M 2-component product selection aid

Type	Static and dynamic loads	Adhesion of materials with a different dilatation	Surface energy high	Surface energy medium	Surface energy low	Working time in min	Feature
DP490			++	+	–	90	Outstanding resistance to impacts and heat (120°C), excellent ageing characteristics.
DP8405			++	++	–	4 – 6	Adheres to different surfaces, including most metals and many plastics.
DP110			++	+	–	8	For versatile bonding of metals, plastics, concrete, wood and composite materials.
DP190			++	+	–	90	For versatile bonding of metals, ceramics, wood, fibreboards, glass, rubber and many plastics.
DP100 Plus			++	+	–	4	Exceptionally flexible 2-component epoxy resin adhesive with short processing time.

Size 3430 – **Quick-curing 5-minute adhesive made from epoxy resin** is ideal for bonding transparent parts.
Size 3090 – **2-component adhesive made from ethyl cyanoacrylate** with high gap-filling capability (up to 5 mm) and quick curing. **Suitable for applications overhead and on vertical surfaces.**
Size 9466 – Tough impact-resistant adhesive, high bonding strength on all materials. For applications that require a long working time and high strength.
08 3377 – The innovative **hybrid adhesive** HY 4090 combines the **fast curing** of instant adhesives with the high strength and durability of structural adhesives and is suitable for metals, plastics and elastomers.
08 3389 – Gel-type 2-component instant adhesive with high gap filling capacity (up to 5 mm), including between low-energy and porous substrates. Overhead work or work on vertical surfaces is possible.



08 3371_3430



08 3371_3090



08 3372_9466



08 3377_4090



08 3389_11

Type			3430	3090	9466	4090	11
04L 08 3371	LOCTITE	2-component adhesive	–	–	–	–	–
04L 08 3372			–	–	–	–	–
04L 08 3377		2-component hybrid adhesive	–	–	–	–	–
08G 08 3389	WEKEM	2-component gel glue	–	–	–	–	–
Chemical basis			Epoxy resin	Ethyl cyanoacrylate	Epoxy resin	Ethyl cyanoacrylate	Ethyl cyanoacrylate
Operating temperature range		°C	-55 – 100	-20	-55	-40	-10 – 40
Touch dry after		min	7	1.5 – 3	3	3 – 5	2 – 3
Tensile shear strength		N/mm²	22	15.1	37	17	14 – 16
Colour			transparent	transparent	yellowish	yellowish	translucent
Capacity		g	24	10	50	50	11

Accessories

Size PISTOLE – Manual application gun for 50 ml Loctite double cartridge.
08 3375 Size MIXER – **Individual** mixing tubes for No. 083374 size DP8405.
Size KOLBEN3 – EPX delivery piston for No. 083374 size DP110; DP490; DP410; DP190 and DP100PLUS.
Size KOLBEN10 – EPX advance piston for No. 083374 size DP8405.
08 3376 – Mixing tubes **set, 12 pieces,** length 100 mm for No. 083372 size 9466
08 3379 – Mixing tubes **set, 10 pieces**, for No. 083377 size 4090.
08 3383 Size MIXER – Mixing tubes, **36 pieces**, for 2-component adhesive No. 083374 size DP110; DP490; DP410; DP190 and DP100PLUS.

Application: Metering and mixing of epoxy and other 2-component adhesives with manual metering mixing device.





Version			MIXER	KOLBEN3	KOLBEN10
08M 08 3375	3M	2-component adhesive accessories	eShop	eShop	eShop
08M 08 3383		2-component mixing nozzle **Set, 36 pieces**	eShop	–	–

Version			MIXER
04L 08 3376	LOCTITE	2-component adhesive accessories, mixing nozzle	eShop
04L 08 3379		2-component mixing nozzle, hybrid	eShop

Version			PISTOLE
04L 08 3373	LOCTITE	Manual dispensing gun	eShop





WEKEM® 2-component epoxy liquid metal

Note: Not available in all countries. Express delivery not available.

08 3380 – Quick-curing grey 2-component liquid metal made from epoxy resin, suitable for mechanical machining **(sawing, drilling, milling, tapping).**
08 3382 – 2-component liquid metal paste made from epoxy resin, consisting of two components (A + B) for steel with high pressure resistance. Outstanding resistance to aggressive chemicals. Highly suitable for machining after curing.

Contents		ml	50	500
08G 08 3380	Liquid metal **50 ml**		–	–
04L 08 3382	Liquid metal paste **Component A + B each 250 g**		–	–
Operating temperature range		°C	-20 – 80	
Tensile shear strength		N/mm²	25	
Colour			grey	
Capacity		g	50	500





08 3382 08 3380

2-component instant adhesive with high tensile and shear strength, does not shrink and is resistant to many chemicals. Connects **metal, glass, ceramic, wood and concrete** with and to each other. Simple application. The adhesive bond hardens reliably even at low temperatures.
Optional extras: 2-component mixing nozzle No. 083379 size MIXER.

Contents		ml	24	50
08G 08 3387	5-minute epoxy		–	–
Operating temperature range		°C	-40 – 80	
Tensile shear strength		N/mm²	12 – 14	
Colour			transparent	



08 3387_50

Note

Filling spatulas for working 2-component epoxy liquid metals can be found under No. 08 7670.



WEKEM® Silicone adhesives and sealants

High quality **1-component adhesive and sealant compound, based on MS polymer,** weather-resistant and UV-resistant. Even adheres to moist substrates, permanently resilient, quick curing even at low temperatures. Easy to work, can be painted over.



08 3482 08 3484

Colour			CLEAR	WHITE	GREY	BLACK	
08G 08 3482	MS polymer adhesive and sealant **Multiflex**	**290 ml**	–	–	–	–	**12**
08G 08 3484	MS polymer adhesive **Multiflex Strong**	**290 ml**	–	–	–	–	**12**
Colour			transparent	white	grey	black	

Silicone cartridges for gasketing, bonding, sealing, and compensation for tolerance and temperature differences.



08 3487 08 3490 08 3493 08 3495

Colour			CLEAR	WHITE	GREY	RED	BLACK
08G 08 3487	Silicone cartridge for industrial use, cures by neutral cross-linking	**310 ml**	–	–	–	–	–
08G 08 3490	Silicone cartridge for sanitary use, cures by acetic acid cross-linking	**310 ml**	–	–	–	–	–
08G 08 3493	High-temperature silicone tube	**80 ml**	–	–	–	–	–
08G 08 3495	High-temperature silicone cartridge	**310 ml**	–	–	–	–	–
Colour			transparent	white	grey	red	black

Which sealant for which area of application?	
08 3482/84	For virtually all materials such as metal, building materials, most plastics, wood, glass, enamels.
08 3487	All-round silicone, suitable for many applications, including natural stone.
08 3490	Especially for sanitary work and use outdoors. Equipped with fungicide.
08 3493/95	For boilers, central heating units, dryers, ideal as a deformable seal on motors, gearboxes.

Cartridge guns

08 3501 – Heavy-duty version with more powerful drive, stepless feed, and **patented non-drip function** (prevents dripping by pressure release). For 290 ml and 310 ml cartridges (e. g. No. 083482 – 083495).

08 3504/3508 – Innovative version with 2 sliding blocks enables twice as much force to be transferred from the squeeze grip to the push rod. For 290 ml and 310 ml cartridges (e.g. 083482 – 083495).


08 3501/04/08

			12	18	26	maximum press-out pressure kg	Transmission ratio
02A 08 3501		Cartridge gun **12:1**	eShop	–	–	250	12:1
02A 08 3504	HOLEX	Cartridge gun **18:1**	–	eShop	–	350	18:1
02A 08 3508		Cartridge gun **26:1**	–	–	eShop	450	26:1

08 3502 – **Fully enclosed** cartridge gun in a range with aluminium and transparent plastic tube, metering nozzle, and thrust plate. **Suitable for both cartridges and bags.**

08 3505 – Metering nozzle set for No. 083502.


08 3502
08 3505

02A 08 3502	HOLEX	Fully enclosed cartridge gun assortment, **4 pieces**	eShop
02A 08 3505		Metering nozzle set, **10 pieces**	eShop

08 3503 – ■ Push rod automatically returns to prevent drips.
■ Press-out speed is regulated electronically using a control wheel with 6 speed settings.

08 3507 – Sturdy **compressed-air cartridge gun** for quick and easy application, with a smooth uninterrupted flow. Direct-acting piston delivers compressed air directly to the cartridge piston (no dribbling). Suitable for all types of sealant.


08 3507

Supplied with:

08 3503 – Supplied with 1 pc. M18 B2 battery pack, 1 pc. M12-18 C charger, tool case.

08H 08 3507	Compressed-air cartridge gun	eShop

Type			C18PCG-310
03L 08 3503	Milwaukee	Cordless cartridge gun	eShop
Number of rechargeable batteries contained			1
Type of rechargeable battery			Lithium-ion
Battery capacity		Ah	2
Battery voltage		V	18
maximum press-out pressure		kg	459
suitable for cartridge size		g	310



08 3503

HOLEX Adhesive tapes

General-purpose adhesive tapes for numerous areas of application such as **repairing, protecting, masking and packaging.**

Fabric adhesive tapes

General-purpose product for repair work.

08 3767 – UV-resistant, very good tear resistance and abrasion resistance. Good adhesive bonding, even on rough substrates.



Width×length (mm× m)			48×50	38×25
02A 08 3765	Fabric adhesive tape	silver	eShop	–
02A 08 3766		black	eShop	–
02A 08 3767		red	–	eShop
Type of adhesive tape			single-sided	
Thickness		mm	0.17	0.3

PVC adhesive tapes

To protect smooth substrates such as wood, aluminium or glass.

08 3796 – Crosswise grooves making it easy to tear in a straight line.







Width×length (mm× m)			50×33
02A 08 3791	PVC adhesive tape	white	eShop
02A 08 3792		blue	eShop
02A 08 3793		orange	eShop
02A 08 3794		red	eShop
02A 08 3795		yellow	eShop
02A 08 3796	PVC adhesive tape **crosswise grooves**	white	eShop
Thickness (08 3791, 08 3792, 08 3793, 08 3794, 08 3795)		mm	0.13
Thickness (08 3796)		mm	0.16



Croswise grooves

Fine crepe tapes

Slightly creped tape with good adhesive strength for short-term masking of smooth substrates in indoor areas. Temperature-resistant up to 60°C.





Width×length (mm× m)			18×50	24×50	48×50
02A 08 3769	Fine crepe adhesive tape set, natural		eShop	eShop	eShop
Thickness		mm	0.14		
Number of adhesive tapes			12	9	5

Precision adhesive tapes

For sharp edges to paint finishes on both smooth and rough substrates; UV-resistant.

- Thin standard masking tape made from special paper (washi) for sharp edges to paint on smooth and slightly rough substrates.
- Good tack and good tear resistance.
- Duration of use indoors up to 3 months and up to 4 weeks outdoors.





Width×length (mm× m)			18×50	30×50
02A 08 3772	Precision adhesive tape set		eShop	eShop
Thickness		mm	0.08	
Number of adhesive tapes			12	8

Packaging tapes

Packaging tape and manual dispenser

General-purpose packaging tape, can be used with all commercially available manual dispensers, **unrolls quietly**.

08 3672 – **tesapack® 4120** is a universal PVC packaging tape with a strong natural rubber adhesive component.

08 3673 – **tesapack® 4024** is a **virtually invisible** PP adhesive tape. Resistance to UV, ageing and temperature for an attractive appearance and longer shelf life.



08 3672_BEIGE

08 3672_CLEAR

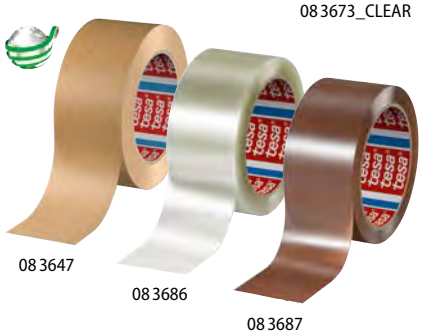
08 3673_CLEAR

Colour			BEIGE	CLEAR
08M 08 3672	tesa	Packaging tape 6-piece set	eShop	eShop
08M 08 3673			–	eShop
Length		m	66	
Width		mm	50	
Thickness		mm	0.05	

General-purpose and **recyclable packaging tape.**

08 3647 – **tesa® 4713** consists of a paper backing material and a natural rubber adhesive component.

08 3686/3687 – **tesa® 60412** consists of 90% recycled PET carriers and a water-based acrylate adhesive.



08 3647

08 3686

08 3687

Width×length (mm× m)				50×50	50×66
08M 08 3647	tesa	Recycled packaging tape	brown	eShop	–
08M 08 3686			transparent	–	eShop
08M 08 3687			brown	–	eShop
Safe working load			kg	10	30

tesa® 6400 is a **robust and professional manual dispenser** with manually adjustable roller braking. Covered knife (protects against injury) and soft rubber ergonomic handle.

Application: For dispensing adhesive tapes, maximum width 50 mm, maximum roll ∅ 140 mm.



08 3676

08M 08 3676	tesa	Professional manual dispenser	eShop

Filament adhesive tape

3M™ 8954 is made of PP with **high-tensile glass fibre-reinforcement (across and along)** with very high tear resistance and abrasion resistance. **Suitable for packaging hazardous goods for transport!**

Application: For binding and securing, e.g. for securing pallets or products.

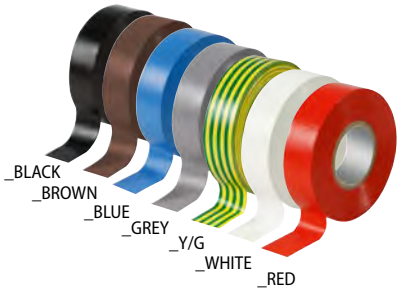


08 3666

Width×length (mm× m)			25×50	50×50
08M 08 3666	3M	Filament adhesive tape	eShop	eShop
Thickness		mm	0.13	

3M Electric and insulating adhesive tapes

3M™ Temflex® 165 is a **general-purpose soft PVC insulating tape.** Flame resistant. Self-extinguishing, good resistance to oil and solvents.



_BLACK
_BROWN
_BLUE
_GREY
_Y/G
_WHITE
_RED

Colour			BLACK	BROWN	BLUE	GREY	Y/G	WHITE	RED	
08M 08 3652	Insulating tape	15 mm×10 m	eShop ■	eShop	eShop	eShop	eShop	eShop	eShop	10
08M 08 3654		19 mm×25 m	eShop	–	eShop	–	–	eShop	–	10
Thickness		mm	0.15							

08 3655 – The **3M Scotch® 23** is an ozone-resistant ethylene-propylene-rubber adhesive tape. It has outstanding dielectric characteristics, is ozone-resistant and is compatible with all cable sheathing materials.

08 3656/3657 – **3M Scotch® Super 88** and **Scotch® Super 33+** are particularly resilient and UV-resistant premium adhesive tapes with very good electrical characteristics and resistance to moisture, alkalis, many acids and solvents.



08 3655_19×9

08 3656_19×20

Width×length (mm× m)			19×6	19×20	19×33	19×9
08M 08 3655	Self-sealing insulating tape		–	–	–	eShop
08M 08 3656	Electrical insulating tape		eShop	eShop	eShop	–
08M 08 3657			–	eShop	–	–
Thickness (08 3655, 08 3656)		mm	0.18	0.18	0.18	0.76
Thickness (08 3657)		mm	–	0.22	–	–

Fabric adhesive tapes

The **tesa® 60462** and **tesa® 4615** are made of recycled material and guarantee adhesion to a wide range of materials. They can be torn by hand, are water-repellent and durable.

08 3623/3624 – Can be used even on rough surfaces.

Width×length (mm× m)				50×50
08M 08 3621	tesa	Recycled Duct Tape fabric adhesive tape	grey	eShop
08M 08 3622	tesa	Recycled Duct Tape fabric adhesive tape	black	eShop
08M 08 3623	tesa	Recycled Heavy Duct Tape fabric adhesive tape	grey	eShop
08M 08 3624	tesa	Recycled Heavy Duct Tape fabric adhesive tape	black	eShop
Type of adhesive tape				single-sided
Adhesive				Synthetic rubber
Thickness (08 3621, 08 3622)			mm	0.175
Thickness (08 3623, 08 3624)			mm	0.215


08 3621


08 3622

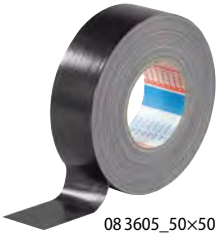

08 3623

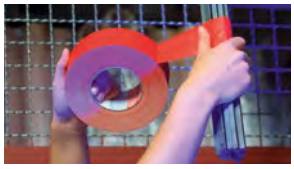

08 3624

tesa® 53799 exhibits very good adhesive strength even on rough substrates. It can be torn by hand easily and cleanly, is water-repellent, weather-resistant, resists heavy weights and is very supple. Thus it is ideal for a wide range of repair work and construction work, and also for packaging, bundling, bonding, etc.

Width×length (mm× m)			38×25	50×50
08M 08 3605	tesa	Fabric adhesive tape **stabilised**	eShop	eShop
Type of adhesive tape			single-sided	
Adhesive			Natural rubber	
Thickness		mm	0.31	


08 3605_38×25

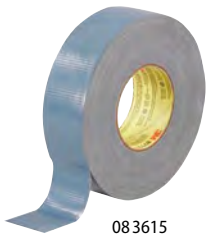

08 3605_50×50



08 3615 – Due to its supple structure and **UV resistance** the **3M™ 8979** is suitable for permanent and temporary applications **indoors and outdoors**. In addition it is **water-repellent** and thus can also be used for **sealing**.

08 3618 – **tesa® 56497** Ultra Power Clear has been designed for **use in indoor and outdoor areas**. Thanks to its high **UV and temperature resistance**, it can also be used in extreme weather conditions and **temperatures from -10°C to +90°C.** The transparent repair tape is ideal for outdoor activities, but is of course also very useful in domestic households when performing (temporary) repairs.

Width×length (mm× m)				48×23	48×20
08M 08 3615	3M	Fabric adhesive tape **UV-resistant**	blue-grey	eShop	–
08M 08 3618	tesa	Fabric adhesive tape **UV-resistant**	transparent	–	eShop
Type of adhesive tape				single-sided	
Adhesive				Natural rubber	Synthetic rubber
Thickness			mm	0.31	0.17


08 3615

tesa® Flat crepe and masking tapes

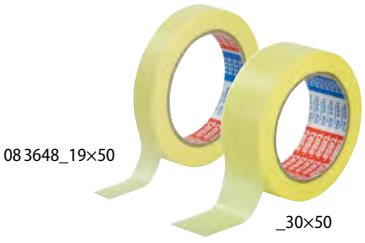
08 3645 – The **tesakrepp® 4329** is a finely creped thin paper masking tape. The product is thin and flexible, has good wet abrasion resistance and good paint and filler adhesion to the adhesive tape carrier. Furthermore, it is also suitable for general masking at a temperature load of up to 70°C.

08 3648 – The **tesa Präzisionsskrepp® 4334** consists of an extremely thin and tear-resistant paper backing, with an acrylate adhesive.
The product is suitable for many painting applications up to 6 months indoors and up to 8 weeks outdoors which require flat, precise painting which is sharp right to the edge. It can be used on a wide variety of sensitive surfaces such as glass, aluminium, HPVC and wood.

Width×length (mm× m)			19×50	25×50	50×50
08M 08 3645	Paper masking tape set		eShop	eShop	eShop
Adhesive			Natural rubber		
Thickness		mm	0.13		
Number of adhesive tapes			16	12	6

Width×length (mm× m)			19×50	30×50
08M 08 3648	Precision masking tape		eShop	eShop
Adhesive			Acrylate	
Thickness		mm	0.09	
Number of adhesive tapes			1	


08 3645_19×50 _25×50 _50×50


08 3648_19×50 _30×50

3M PVC masking and floor marking tapes

The 3M™ coloured marking and floor marking tapes are ideally suited for use in situations of building maintenance and for improving safety within the plant. The special structure of the coloured PVC adhesive tapes resists scratching, abrasion, weather and most chemicals. Easy to apply, very supple even on uneven surfaces.

Colour		BLUE	GREEN	ORANGE	RED	WHITE	YELLOW	BLACK	YB	WR
08M 08 3636	PVC adhesive tape	eShop	eShop	eShop	eShop	eShop	eShop	–	–	–
08M 08 3641	PVC adhesive tape **soft**	eShop	eShop	–	eShop	eShop	eShop	eShop	–	–
08M 08 3637	PVC warning marker tape	–	–	–	–	–	–	–	eShop	eShop
08M 08 3632	PVC warning marker tape **strong**	–	–	–	–	–	–	–	eShop	–
08M 08 3639	Floor marking tape **extra strong**	eShop	eShop	eShop	eShop	eShop	–	–	–	–
Adhesive (08 3636, 08 3632)		Natural rubber	Natural rubber	Natural rubber	Natural rubber	Natural rubber	Natural rubber	–	Vulcanised rubber	–
Adhesive (08 3641, 08 3637, 08 3639)		Vulcanised rubber	Vulcanised rubber	Vulcanised rubber	Vulcanised rubber	Vulcanised rubber	Vulcanised rubber	Vulcanised rubber	Natural rubber	Natural rubber
Length	m					33				
Width	mm					50				
Thickness (08 3636, 08 3632)	mm	0.125	0.125	0.125	0.125	0.125	0.125	–	0.14	–
Thickness (08 3641)	mm	0.13	0.13	–	0.13	0.13	0.13	0.13	–	–
Thickness (08 3637, 08 3639)	mm	0.43	0.43	0.43	0.43	0.43	–	–	0.125	0.125

3M Which tape for which application area?

Product	Manufacturer's ID	Use	Can be removed leaving no residues	Traffic/ loading	Application range
 08 3641	471				Very supple, resistant to abrasion and resistant to many solvents.
 08 3636	764i				Suitable for coloured marking and floor markings in all non-critical applications.
 08 3637	766/767				Suitable for safety markings in all non-critical applications.
 08 3639	971				Durable floor markings, especially for areas subject to the toughest loads.
 08 3632	5702				Resistant to abrasion, scuffing, moisture and weather, with a long working life.

tesa Double-sided adhesive tapes

08 3661 – The **tesafix® 4934** is especially suitable for bonding on rough and fibrous adhesive primers.
08 3662 – The **tesafix® 4965** is suitable for use indoors and outdoors. Ideal for bonding to glass, metal, smooth tiles, treated wood and many types of plastics such as ABS and EPDM. Temperature-resistant up to 100°C.
08 3663 – The **tesa® 51960** is a double-sided flooring tape and is suitable for laying carpets with foam or textile back. Ensures a secure fit and is still easy to remove without any residue.



Width×length (mm× m)		19×50	50×50	50×25
08M 08 3661	Double-sided adhesive tape	–	–	eShop
08M 08 3662		eShop	eShop	–
08M 08 3663		–	–	eShop
Thickness (08 3661, 08 3662)	mm	0.205	0.2	0.2
Thickness (08 3663)	mm	–	–	0.248

Double-sided adhesive tapes

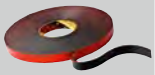
VHB adhesive tapes

Double-sided high-performance **adhesive tape** of pure acrylate adhesive (VHB) for permanent strong bonds. High instant tack, high resistance to temperature, weather, UV and solvents. Excellent sealing function, vibration-damping.

Note: Further 3M™ VHB™ tapes in different thicknesses and lengths are available on request.

Width×length (mm× m)				19×8	19×5,5	12×33	25×33	19×11	19×33
08M 08 3781	3M	VHB™ adhesive tape	white	–	–	eShop	–	–	eShop
08M 08 3782			black	eShop	–	(eShop)	(eShop)	–	eShop
08M 08 3786			grey	–	–	eShop	(eShop)	eShop	eShop
08M 08 3787			transparent	–	–	(eShop)	(eShop)	eShop	eShop
08M 08 3789			black	–	–	eShop	(eShop)	eShop	eShop
08M 08 3776			grey	–	eShop	–	–	–	–
Thickness (08 3781, 08 3786, 08 3789, 08 3776)			mm	–	2.3	1.1	1.1	1.1	1.1
Thickness (08 3782)			mm	1.6	–	1.6	1.6	–	1.6
Thickness (08 3787)			mm	–	–	1	1	1	1

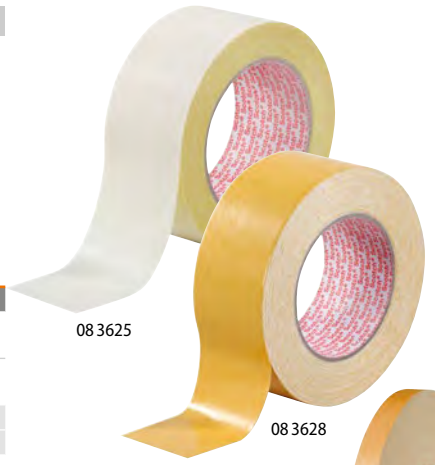
3M Which tape for which application area?

Product	Application area	Material expansion	Joint gap tolerances	Long-term temperature resistance to °C	Short-term temperature resistance to °C	Peel strength [N/cm]
 08 3781	For low-energy plastics such as PP, TPO, TPE, composite materials Manufacturer's ID: **LSE**	 max: 3.30 mm	 max. 0.55 mm	100	150	44
 08 3786	For applications with **high operating temperatures,** such as before processing in a powder-coating line. Manufacturer ID: **GPH**	 max: 3.30 mm	 max. 0.55 mm	150	230	37
 08 3787	For **transparent materials** such as glass, Perspex (PMMA), polycarbonate Manufacturer's ID: **4910**	 max: 3.30 mm	 max. 0.50 mm	90	150	26
 08 3782 / 08 3789	For **powder-coated surfaces,** metal, glass, sealed wood, acrylic, polycarbonate, ABS Manufacturer's ID: **5952**	 max: 3.30 mm	 max. 0.55 mm	120	150	39
 08 3776	For high-energy materials, for metals such as steel, stainless steel and aluminium, glass, polycarbonate and acrylic. Provides resistance to plasticisers Manufacturer ID: **4991**	 Max: 6.90 mm	 max. 1.15 mm	90	150	35

Double-sided adhesive tape

08 3625 – **3M™ 9195** is a double-sided acrylate adhesive tape (carpet tape) with different adhesive strengths on the two sides (strongly bonding / removable). After use, the bonded carpets can be removed again from solid floors or substrates, leaving no residues.

08 3628 – The **3M™ 9191** is a double-sided adhesive tape and is characterised by a **pressure-sensitive** synthetic rubber adhesive with high bonding strength and instant tack.



Width×length (mm× m)			50×25
08M 08 3625	3M	Double-sided adhesive tape **removable**	eShop
08M 08 3628		Double-sided adhesive tape	–
Thickness (08 3625)		mm	0.13
Thickness (08 3628)		mm	0.26

Mirror adhesive tape

tesafix® 4952 is a double-sided PE foam adhesive tape with acrylate adhesive. Forms a permanent strong bond with high tack. High tensile and shear strength, resistant to high temperatures and ageing. Ideal for **attaching mirrors.**

Type			4952
08M 08 3783	tesa	Mirror adhesive tape	eShop
Thickness		mm	1.15



3M High-performance sealing tape

The **3M™ 4411** is a high-performance sealing tape that adheres to many metals and plastics without drying times, drips or dirt. Adheres to contours, edges, rivets and screw heads for a watertight seal. Extremely weather and UV-resistant.

Width×length (mm× m)			50×5,5
08M 08 3770	High-performance sealing tape **translucent**		eShop
08M 08 3771	High-performance sealing tape **black**		eShop
Adhesive			Acrylate
Thickness		mm	1



3M Repair and assembly adhesive tapes

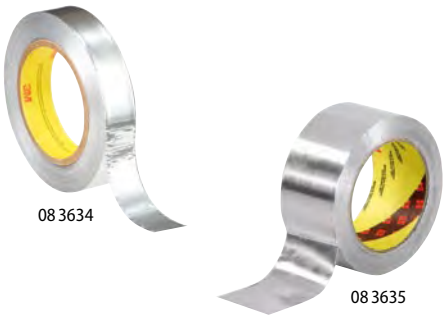
Aluminium adhesive tape

The soft aluminium adhesive tape is suitable for galvanising, provides strong reflection of heat and light and is resistant to weather and chemicals.

08 3634 – The **3M™ 425** can be removed almost completely without residues, and due to its suppleness is suitable for use on curved and uneven surfaces.

08 3635 – The **3M™ 431** exhibits outstanding sealing properties and provides good screening against moisture. It can be used without problems for long-term applications.

Width×length (mm× m)			25×55	38×50	50×55
08M 08 3634	Aluminium adhesive tape		eShop	–	eShop
08M 08 3635			eShop	eShop	eShop
Adhesive			Acrylate		
Thickness (08 3634)		mm	0.12	–	0.12
Thickness (08 3635)		mm	0.09		



High-density polyethylene slip tape

The **3M™ 5423** protects surfaces by virtue of its excellent resistance to abrasion. It creates a smooth surface which permits frictionless contact. There is no need for additional lubricants, which can so often be the source of problems. In addition it is **resistant to chemicals, transparent,** and with its protective paper it performs well in press tool processes.

Width×length (mm× m)			19×16
08M 08 3790	Polyethylene slip tape		eShop
Thickness		mm	0.28



HellermannTyton Cable ties

08 3710 – Corrosion-resistant and non-magnetic cable ties of **non-rusting stainless steel.** Outstanding chemical resistance. Forked end to the tie.

08 3700/3705 – Robust cable tie made of polyamide 6.6, internally serrated.

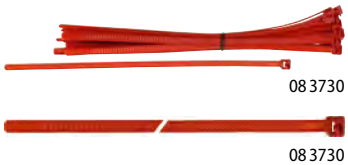
Application: Installation with gun or by hand for binding together and attaching cables, wires, and hoses.

Width		mm	2,5	3,5	4,6	7,9
08M 08 3700	Cable tie set T-Tie, white	**100 pieces**	eShop	eShop	eShop	–
08M 08 3705	Cable tie set T-Tie, black	**100 pieces**	eShop ■	eShop ■	eShop ■	–
08M 08 3710	Cable tie set stainless steel	**50 pieces**	–	–	–	eShop
maximum bundle ∅		mm	22	50	81	150
Length		mm	100	150	300	500
Operating temperature range		°C	-40 – 85	-40 – 85	-40 – 85	-80 – 538



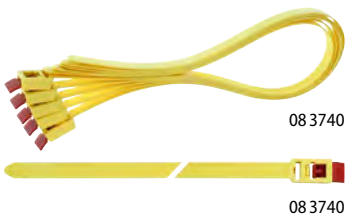
Releasable ties LR55 of polyamide 6.6 are easy to use. Minimum pull-out force 244 N. The external toothing leaves no imprint on delicate components.

Width			mm	4,8
08M 08 3730	Cable tie set LR55, releasable, red	**25 pieces**		eShop
maximum bundle ∅			mm	55



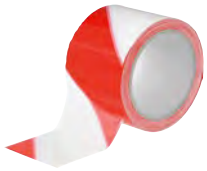
The Speedy Tie **releasable ties** of polyamide 6.6 with the patented quick release are easy to use and convenient to release. Minimum pull-out force 888 N; the end of the tie can be tucked into the tie head.

Width			mm	13
08M 08 3740	Universal pipe binders set SpeedyTie, yellow	**5 pieces**		eShop
maximum bundle ∅			mm	210



3M Barrier tape / warning tape

Non-adhesive marking tape of hard-wearing polyethylene film.



Width×length (mm× m)			70×100
08M 08 3760	Barrier tape, red-white		eShop
Thickness		µm	33

HOLEX Industrial spray dispenser

Plastic container with high-quality pump mechanism for light oils, washing agents, solvents and cleaning agents. Unsuitable for thinners and brush cleaners.

08 3497 – Liquid container with **red spray head cover** for common **neutral and alkaline liquids.**
08 3498 – Liquid container with **white spray head cover** for common **liquids containing acids, alcohols, alkalines, and ketones.**
08 3499 – Liquid container with **black spray head cover** for common **liquids containing solvents, alcohols, and mineral oils.**



08 3497_600 08 3498_600 08 3499_600



08 3497_900 08 3498_900 08 3499_900

Contents		ml	600	900	Material of the spray nozzle	Spray head material
08H 08 3497	Industrial spray dispenser		eShop ■	eShop	Brass	PP
08H 08 3498			eShop	eShop	Brass	PP
08H 08 3499			eShop	eShop	Brass	PP

Pressure sprayer

High-quality plastic container. Handy mushroom shaped handle for pressure build-up.
Adjustable **brass spray nozzle** – from spray mist to jet.

08 3512 – GARANT pressure sprayer with visible scale and stable base.
08 3515 – 2 nozzles of different **lengths, sprays in any position**, with Viton seal. With latching lever for continuous spray function.

Application:

08 3512 Size VL1 – Resistant to common **alkaline liquids and alcohols.**
Size VA1 – Resistant to common liquids **containing acids.**
Size VS1 – Resistant to common liquids **containing solvents**, hydrocarbons (brake cleaners), mineral oils and greases.
08 3515 Size 2 – Resistant to common liquids **containing solvents**, hydrocarbons (brake cleaners), mineral oils and greases.
Unsuitable for aggressive liquids which might attack the Viton seal.
08 3517 – Resistant to common liquids **containing solvents.**
08 3519 Size 1 – Resistant to acids such as phosphoric acid, sulphuric acid, acetic acid, silicic acid, oxalic acid. Suitable for methanol, alkalis such as sodium hydroxide, ammonia, calcium hydroxide.



08 3517 08 3515



08 3512_VL1 08 3512_VA1 08 3512_VS1

Type			VL1	VA1	VS1	2	1	Capacity l	maximum operating pressure bar
01A 08 3512	Garant	Pressure sprayer	eShop ■	eShop ■	eShop ■	–	–	1.5	3
08H 08 3515	EPOCA	Pressure sprayer with 2 different nozzles	–	–	–	eShop	–	2	3
08G 08 3517	WEKEM	Pressure sprayer	–	–	–	–	eShop	1	3
08G 08 3519	WEKEM	Pressure sprayer	–	–	–	–	eShop	1	3
Material of seal (08 3512, 08 3515, 08 3517)			EPDM	Viton	Viton	Viton	Viton		
Material of seal (08 3519)			–	–	–	–	EPDM		
Spray head material			PP	PP	PA	PA	PA		

Garant Refillable compressed-air can

Refillable and sustainable aluminium compressed-air can suitable for **acetone-free liquids such as cleaners, rust protection agents and rust removers**. Can be refilled with air pressure via a universal valve shaft. Has a **safety valve** to prevent excessive pressure.
2 spray nozzles, can be set in two positions for a targeted jet or spray mist.
Attention: Do not use with strong chemical, corrosive or highly viscous liquids.



Contents		ml	620	1000	maximum operating pressure bar
01A 08 3544	Refillable compressed-air can		eShop	eShop	9.65
Material of seal			Viton		

mato Oil cans

08 3522 – **High-quality stainless steel oiler** for professional use in all maintenance and service areas with identifiable oil level. **Sturdy nickel-plated double-action pump** with angled suction tube that can be turned. **Oil can be applied in any position.**

08 3523 – As No. 083522, but **container is of plastic (HDPE).**

Capacity		ml	300	500
08H 08 3522	Stainless steel oil can		eShop	eShop
08H 08 3523	Oil can, plastic		eShop	eShop
Container height (08 3522)		mm	300	335
Container height (08 3523)		mm	305	345
Base ∅		mm	85	


08 3522_300


08 3523_300

High-quality spray dispenser for professional use in all maintenance and service areas. High-quality nickel-plated double pump mechanism with angled, rotating suction tube, for atomising thin oils, paraffin and similar media.

Capacity		ml	300	500
08H 08 3537	Stainless steel spray dispenser		eShop	eShop
08H 08 3521	Spray dispenser made of plastic		eShop	eShop


08 3537_300


08 3521_300

Machine oil spray can of sheet metal with rigid and flexible discharge tube. Sturdy brass pump, outlet can be unscrewed. Tube length 120 mm.

Capacity		ml	300	500
08H 08 3724	Machine oil can with 2 different discharge tubes		eShop	eShop
Container height		mm	140	
Base ∅		mm	73	88


08 3724_300


08 3724_500

Professional pressure oiler

Resilient, transparent plastic container with 3 exchangeable brass needle heads ∅ 0.25; 0.5, and 1 mm for precise application of very small or variable oil quantities.

08H 08 3528	Minimal quantity lubrication set with 3 needle heads		eShop
Capacity		cm^3	59


08 3528

Pressure oiler of polyethylene

Unbreakable flexible pressure oiler made from polythene, resistant to oils, acids and fuel, for all types of rust removers and oils.

Size 70 – Bellows oiler with pump-action suction for metered application of liquids, with captive protective cap on the discharge spout.

Size 80 – Leak-proof pocket oiler with rigid brass spout with leather seal, proof against rotary catch at the tip.

Capacity		ml	70	80
08H 08 3529	Small plastic bottle oiler		eShop	eShop
Container length		mm	55	40
Container width		mm	30	20
Container height		mm	55	70
Material of the discharge tube			Plastic	Brass


_70


_80

08 3532 – Unbreakable, flexible pressure oiler, of polyethylene with extendable brass discharge tube, rotary closure at the spout tip. Tube guide with adjusting nut.
Resistant to ethanol and isopropanol-based disinfectants.

08 3534 – Pressure oiler made from polyethylene.

Capacity		ml	125	250	500
08H 08 3532	Plastic oiler with discharge tube		eShop ■	eShop ■	eShop ■
08H 08 3534	mato Plastic oiler with plastic discharge tube		–	eShop	–
Overall height		mm	90	205	260
Overall height - tube extended (08 3532)		mm	220	285	345
Base ∅		mm	51	60	75


08 3532_125 _250 _500 08 3534_250

SAMOA Top-up funnel

Funnel with removable outlet. Funnel ∅ 160 mm.

Size 1 – **Plastic funnel** with integral sieve of stainless steel and removable flexible outlet tube.

Size 1; 5 – **Compatibility:**
foodstuffs-compatible, oil and acid-resistant, resistant to chemicals, resistant to petrol, fuel, kerosene and heating oil. Resistant also to salt water, brake fluid, ethanol and glycol, coolant and anti-freeze. Temperature resistance: -20 °C to 80 °C.

Size 3; 4 – **Funnel of galvanised steel** with integral sieve of brass, can be unscrewed, straight outlet of polyethylene for use even at low heights.

Size 4 – Additional flexible metal discharge, 90° flexibility.

Size 5 – **Plastic funnel** with integral sieve of stainless steel and removable angled outlet.



Type		1	3	4	5
08H 08 3541	Top-up funnel	eShop	eShop	eShop	eShop
Length of the discharge tube	mm	330	–	280	300

Plastic funnel set of polyethylene, **foodstuffs-compatible**, oil and acid-resistant, resistant to chemicals, resistant to petrol, fuel, kerosene and heating oil. Resistant also to salt water, brake fluid, ethanol and glycol, coolant and anti-freeze. Temperature resistance: -20 °C to 80 °C.
Resistant to ethanol and isopropanol-based disinfectants.

Supplied with: 1 funnel each of ∅ 50, 75, 100, 120, 150, and 160 mm. Version 160 mm with additional integral sieve of stainless steel.



Number of funnels		6
08H 08 3542	Set of funnels	eShop
Material		Plastic

Measuring jug

Measuring jug set of transparent polypropylene, resistant to oil and acid. Scale with ml divisions, ergonomic handle, stackable.

Supplied with: 1 measuring jug 0.5 litre, scale division **10 ml.**
1 measuring jug 1.0 litre, scale division **10 ml.**
1 measuring jug 2.0litre, scale division **20 ml.**



Number of measuring jugs		3
08H 08 3543	mato Set of measuring jugs	eShop

Tin-plate pouring can with funnel-shaped discharge, stable base and handle.

Size 1/FLEX – With **flexible spout.**



Capacity	l	1	2	1/FLEX
08H 08 3546	mato Oil can	eShop	eShop	eShop

Fluid measuring can made of thick-walled, galvanised sheet metal with funnel-shaped and heat-resistant discharge and stable base. With inner measuring scale made of brass, with stable carrying handle and secure grip for spill-free pouring.



Capacity	l	5	10
08H 08 3547	Oil can	eShop	eShop

SAMOA Plastic pouring cans of polyethylene

Plastic pouring cans with protective cover and screw-on flexible spout. Free-standing design.
Liquid is optimally protected against dirt.
Resistant to ethanol and isopropanol-based disinfectants.



Capacity	l	1	3	5
08H 08 3548	Plastic pouring can	eShop	eShop	eShop

SAMOA Professional grease guns

High-quality galvanised high-pressure grease gun **100% leak-tight.**
Application area: For areas with reduced lubrication requirement on vehicles and machines. For clean transport in tool boxes or in the storage compartment for on-board tool kits of vehicles or machines. Delivery capability: max. 0.3 cm^3/stroke. Pressure: max. 250 bar.
Size 60–150 – suitable for medium-consistency greases (class 2) and high-viscosity oils.


08 3557_60


08 3557_62


08 3557_150

Contents		ml	60	62	150
08H 08 3557	Professional grease gun with nozzle		eShop	–	–
Overall length		mm	170	170	235
∅ press container		mm	30.5	30.5	40
Nozzle type			Universal	Pointed	General purpose / pointed

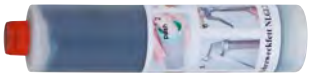
Versatile **professional grease gun with screw-in cartridge** of temperature-resistant and heat-resistant plastic. Visual level indication. **Quick, easy, and absolutely clean fitting and removal of grease cartridges.** Suitable for medium-consistency grease(class 2) and high-viscosity oil. **Ideal for any toolbox and roller cabinet.**


08 3558_1


08 3558_2

Type			1	2
08H 08 3558	Professional grease gun K100 with screw-in cartridge		–	–
Overall length		mm	228	234
∅ press container		mm	38	
Nozzle type			Universal	Pointed

Lithium soap grease to NLGI class 2.
Suitable for: Professional grease gun No. 083558.


08 3559

Type			UNI
08H 08 3559	Multi-purpose screw-in grease cartridge	**100 g**	–

Cordless grease guns

For filling with loose grease (contents up to 500 ml) or with cartridges (contents 400 g). **Suitable for greases up to NLGI 3.**

08 3568 – With bleed valve. Grease gun length 355 mm, hose length 1219 mm.
08 3578 – With bleed valve. Grease gun length 355 mm, hose length 914 mm, universal nozzle.
08 3715/3716 – Also suitable for 400 g Lube-Shuttle and 500 g screw cartridges.

Supplied with:

08 3568 – Charger, 1 pc. 18 V/2 Ah rechargeable battery, hose with angle coupling, transport case.
08 3578 – C12C quick charger, 1 pc. 12 V/4 Ah rechargeable battery, hose with universal coupling, transport bag.
08 3715 – High-pressure rubberised armoured hose, mounting pipe for 400 g Lube-Shuttle and Pull-Off cartridges. Adapter for 500 g screw cartridges, carrying case, **without battery and charger.**
08 3716 – Charger, 18 V Bosch battery with AMPShare, high-pressure rubberised armoured hose, mounting pipe for 400 g Lube-Shuttle and Pull-Off cartridges. Adapter for 500g screw cartridges, carrying case, carrying strap.

Note:
08 3578/3568 – For matching spare batteries and accessories see from No. 073814.
08 3715 – See No. 073853 size B18 for suitable batteries.

AMPShare Powered by BOSCH

Bosch 18 V rechargeable batteries and chargers are compatible with all 18 V machines and chargers from the AMPShare platform.


08 3716_S-LSP



08 3578_M12GG



08 3568_M18GG

Type			S-LSP	M12GG	M18GG
08H 08 3715	mato	Cordless grease gun 700 bar **Basic Line**	eShop	–	–
08H 08 3716	mato	Cordless grease gun 700 bar **Professional-Line**	eShop	–	–
03L 08 3578	Milwaukee	Cordless grease gun 562 bar	–	eShop	–
03L 08 3568	Milwaukee	Cordless grease gun 562 bar	–	–	eShop
Number of rechargeable batteries contained (08 3715, 08 3578, 08 3568)			0	1	1
Number of rechargeable batteries contained (08 3716)			1	–	–
Type of rechargeable battery (08 3716, 08 3578, 08 3568)				Lithium-ion	
Battery capacity		Ah	4	4	2
Battery voltage		V	18	12	18
Filling volume loose material		cm^3		500	
Hose connection thread			1/8 inch	M10×1	1/8 inch
suitable for cartridge size		g	400 – 500	400	400
suitable cartridge			083590-083593	083590	083590

mato Manual lever grease gun

High-quality **industrial specification** (no apparent lubrication) with stepless piston rod fixing. Can be refilled with loose grease (contents 500 cm³) or cartridge (contents 400 g).

08 3582 – Professional manual lever grease gun with short stroke system, **filling / bleed valve.**

Standard: **DIN 1283**

Supplied with:

08 3571 – Armoured hose, 4-jaw hydraulic push-on connector.

08 3582 – Safety **armoured rubber hose** ∅ 13 mm, 4-jaw hydraulic push-on connector.



08 3571

08H	08 3571	Manual lever grease gun	400 g	eShop
08H	08 3572	Manual lever grease gun **without accessories**	400 g	eShop
08H	08 3582	Manual lever grease gun Professional	400 g	eShop
Working pressure			bar	400
Test pressure			bar	800
Hose connection thread			in	R1/8



08 3582

mato Single-hand manual grease gun

TG500-S single-hand manual grease gun set for 400 g cartridges or loose grease (contents 500 cm³), with filling nipple and bleed nipple. 2 connections R 1/8 inch for horizontal and vertical use.



08H	08 3579	Single-hand grease gun TG 500 S with nozzle	400 g	eShop
Working pressure			bar	300
Hose connection thread			in	R1/8

mato Lube-Shuttle® system grease gun

Quick, easy, and absolutely clean fitting and removing of grease cartridges without having to open the gun.

Type and remaining quantity of grease can be seen at a glance. **No need for bleeding!**

08 3563 – Manual lever grease gun for 500 g screw cartridge.

08 3581 – Manual lever grease gun for Lube-Shuttle system cartridges with galvanised grease container.

Supplied with: Armoured hose, 4-jaw hydraulic push-on connector.



08 3581



08 3563

08H	08 3581	Lube-Shuttle® system grease gun	400 g	eShop
08H	08 3563	Manual lever grease gun LS500	500 g	eShop
Working pressure			bar	400
Test pressure			bar	800
Hose connection thread			in	R1/8

mato Pneumatic grease guns

One-handed pneumatic grease guns, outstandingly well balanced. **Single-shot system for optimum grease management (1 cm³ / stroke),** pressure ratio 1:60.

08 3585 – Refilling with loose grease (contents: 500 cm³) or cartridges (contents: 400 g).
Suitable for greases up to NLGI 2.

08 3587 – Refilling with Lube-Shuttle® cartridges (contents: 400 g).
Suitable for greases up to NLGI class 3 and very low temperatures.

Supplied with: Rubberised armoured hose, 4-jaw hydraulic push-on connector.



08 3585



08 3587

08H	08 3585	Pneumatic grease gun	400 g	eShop
08H	08 3587	Lube-Shuttle® pneumatic grease gun	400 g	eShop
Working pressure			bar	400
Test pressure			bar	800
Hose connection thread			in	R1/8
Operational range compressed air supply			bar	3 – 8

mato Grease gun assortment case

Content:

08 3701 –
- Assortment case with Lube-Shuttle® system grease gun.
- Connecting piece.
- Safety armoured rubber hose RH-30CC and 4-jaw hydraulic push-on connector.
- Nozzle tube E4024 with union nut for securely and easily screwing on to the grease gun.
- Nozzle tube with push-on connector SK16 with quick-change adaptor.
- Nozzle tube for cardan shafts F4020 with quick-change adaptor.
- Pointed and universal nozzle.

08 3702 –
- Assortment case with grease gun E500.
- Connecting piece.
- High-pressure armoured rubber hose RH-30CC.
- Nozzle tube E4024 with union nut for securely and easily screwing on to the grease gun.
- Nozzle tube with push-on connector SK16 with quick-change adaptor.
- Nozzle tube for cardan shafts F4020 with quick-change adaptor.
- Pointed and universal nozzle.


08 3701


08 3702

Type		SET1	SET2
08H 08 3701	Lubrication set **Lube-Shuttle®**	eShop	–
08H 08 3702	Lubrication set **E480**	–	eShop

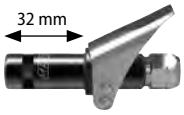
mato Accessory for grease guns (R1/8 inch and M10 connection thread)

08 3596/3594 – **safeLOCK** for safe coupling and uncoupling up to more than 600 bar.

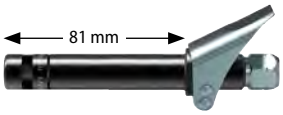
Suitable for:

Size 1/8 – Grease guns No. 083571; 083572; 083581; 083585; 083587.

Size M10 – Grease guns with connection thread M10×1.



08 3596_1/8



08 3594_M10

Connection thread		1/8	M10	Overall length mm
08H 08 3596	4-jaw hydraulic push-on connector **safeLOCK**	eShop	eShop	70
08H 08 3594	4-jaw hydraulic push-on connector **safeLOCK-L**	eShop	eShop	120.5
08H 08 3588	Armoured hose with push-on connector	eShop	eShop	300
08H 08 3589	4-jaw hydraulic push-on connector	eShop	eShop	36
08H 08 3583	Nozzle with universal connector	eShop	–	150
08H 08 3584	Nozzle with conical connector	eShop	–	150
08H 08 3586	Armoured hose with 4-jaw hydraulic push-on connector	eShop	eShop	300


08 3588


08 3589


08 3583


08 3584


08 3586

Lithium general-purpose grease for ball, roller, and plain bearings

08 3590 – **Silicon-free lithium general-purpose grease for ball, roller, and plain bearings.**

08 3592/3593 – **Lithium general-purpose grease for ball, roller, and plain bearings.**

Suitable for:

08 3590 – Grease guns No. 083571; 083572; 083579; 083582; 083585.

08 3592 – Grease guns No. 083581 and No. 083587.

08 3593 – Grease gun No. 083563.

Type			UNI	PLUS	∅ mm	Length mm
08H 08 3590	Multi-purpose grease cartridge for **Standard grease guns**	400 g	–	–	53	235
08H 08 3592	Multi-purpose grease cartridge for **Lube-Shuttle® grease guns**	400 g	–	–	53	262
08H 08 3593	Multi-purpose screwed cartridge for **LS500 grease guns**	500 g	–	–	60	240
Temperature range		°C	-30 – 120	-30 – 130		
Designation to DIN 51502			K2K-30	KP2K-30		



08 3590_UNI



08 3592_PLUS

Barrel and container pumps

08 4354 – Professional crank pump made of cast iron for use under high stress, heavy-duty quality. Robust, powerful, self-priming and completely leak-proof. With 2-inch connection for 60 and 200 litre drums. Conveys heating oil, hydraulic and engine oil as well as diesel.

08 4355 – Handy barrel pump for pumping out hydraulic oil, engine oil, heating oil, and diesel. With 2-inch connection suitable for 60 and 200 litre drums.

08 4356 – General-purpose hand pump for emptying jerrycans of coolant concentrates, thinners, solvents, anti-freeze etc. Piston rod of stainless steel. Suitable for 20-30 litre jerrycans.

08 4357 – Chemicals hand pump made from PP with Viton® seals. Telescopic suction tube, 3-piece, length 320, 700 and 980 mm for 25, 50 and 60 litre containers and 200 litre drums for transporting fluids such as cleaning agents, alkalis and degreasers.

Suitable for:

08 4356 – Cutting oils: No. 084210 size 20, No. 084220 size 20. High-performance coolant and grinding oil concentrates: No. 084241 size 20, No. 084260 size 20, No. 084265 size 20, No. 084270 size 20.

08 4354/4355 – No. 084241 size 200, No. 084242 size 200, No. 084243 size 200, No. 084270 size 200.

Supplied with:

08 4354 – Crank pump, 3-piece metal suction tube with base sieve, adjustable G2 inch drum adaptor, with 1-m transparent plastic hose, nominal width 25, incl. 1 roll Teflon sealing tape.

08 4355 – Barrel pump, 1 m plastic hose with discharge spout, suction tube.

08 4356 – Container lift pump, 2 m plastic hose with discharge nozzle, 2 m PVC discharge hose with discharge nozzle, with connection adapter for containers with DIN 61 external thread.

08 4357 Size 200 – Chemicals hand pump of polypropylene with Viton® seals, 1 pc. G2 inch drum adapter.

Size SET – Chemicals hand pump of polypropylene with Viton® seals, 1 pc. 3 m PVC hose with pourer, 2 pcs. adapter (G2 inch i × 2 inch a for Mauser coarse thread and Tri-Sure 2 inch adapter).



Application example



08 4354 08 4355



08 4356



08 4357_200



08 4357_SET



Type			20/30	60/200	200	SET	Manufacturer's designation	Delivery per stroke l
08H 08 4354		Crank pump	–	eShop	–	–	MZR-003/200	0.3
08H 08 4355		Barrel pump	–	eShop	–	–	MZE-04	0.4
08H 08 4356	mato	Container hand pump	eShop	–	–	–	KLP-C 25	0.25
08H 08 4357		Chemicals barrel pump	–	–	eShop	eShop	HP-05/25-200	0.5

Economical oil reservoir – "Schucotopf"

Shockproof, transparent plastic container for lubricating oil etc. (not for caustic solutions, acids and the like).

Supplied with: 2 brushes, 1 dirt trap, 1 bracket.



08 3552

08H 08 3552	Economical oil reservoir **0.5 litres**	eShop

Set of lubrication brushes

Width	mm	9	14	22
08R 08 3555	Set of lubrication brushes **10 pieces**	eShop	eShop	eShop
Brush length	mm	130	160	180



08 3555

SAMOA Compressed air lubrication device

Mobile compressed air lubrication unit with trolley for economic and reliable delivery of long-term greases. High delivery quantity, due to transmission ratio 1: 55, together with large diameter suction port and security lubrication hose. Suitable for oils and greases up to consistency class 2, including bio-greases (general-purpose greases).

Supplied with: Grease follower cover, steel dust protection cover, high-pressure grease guns and 4m hose.

Note:	The lubrication system is self-lubricating and requires no additional pipe lubricators. The use of a pressure reducer with water separator is recommended.



suitable for container unit	kg	15/18	25	50
08H 08 4000	Mobile compressed air lubrication unit	(eShop)	(eShop)	(eShop)
Internal ∅ of container	mm	255 – 282	300 – 340	360 – 405
maximum delivery quantity	g/min	600		
maximum lubrication pressure	bar	400		
required compressed air pressure	bar	3 – 10		

SAMOA Grease gun filling device

Stable, wear-resistant grease gun filling device of steel with high suction intake capacity due to the long stroke and large suction and valve ports. Suitable for greases of consistency class 2 (including liquid greases). It takes 10 strokes to fill a 500 cm³ grease gun.



suitable for container unit	kg	15/18	25	50
08H 08 4010	Grease gun filling device	(eShop)	(eShop)	(eShop)
Internal ∅ of container	mm	255 – 282	300 – 335	340 – 393
Pumped volume	cm³/Hub	50		

ARIANA Swarf hook with protective shield

Sturdy swarf hook, conically tapered, plastic handle with protective shield ∅ 135 mm.



Length without handle	mm	300	500
08J 08 4500	Swarf hook with protective shield	eShop ■	eShop

HOLEX Magnetic swarf catcher

Size 400 – The integral permanent magnet attracts all magnetic swarf to its surface; overall length approx. 400 mm.



Length	mm	400
02A 08 4521	Magnetic swarf catcher	eShop

emtez Oil and chemical absorbent fleece

Oil and chemical absorbent fleece with **exceptional absorption capacity (up to 20 times its own weight), very low disposal costs because of greatly reduced waste.** The absorbent fleeces are 100 % polypropylene and are **suitable for virtually all chemicals.** Significant improvement of safety and cleanliness in operation, neither liquids nor granules are spread on the ground. **Colour code system for distinguishing the wipes by application.**
Items of size **OIL** take up only oil (e.g. separation of oil and water, or use outdoors). Items of size **UNI** take up all liquids (e.g. oil, water, chemicals).



Reinforced wipes and rolls

Wipes and rolls with **tear-resistant reinforced double-layer structure** for heavy-duty use. Suitable also for use on the floor. Lint-free.

08 4373/4375 – Individual wipes, perforated down the middle.
08 4377/4378 – On a roll, perforated across every 50 cm.



Area of application		OIL	UNI	maximum absorption volume l	Scope of supply pcs./ box
08J 08 4373	Absorbent fleece wipes, 0.4×0.5 m **10 pieces**	eShop	eShop	10.1	10
08J 08 4375	Absorbent fleece wipes, 0.4×0.5 m **100 pieces**	eShop	eShop	101	100
08J 08 4377	Absorbent fleece roll 0.4×40 m	eShop	eShop	162	2
08J 08 4378	Absorbent fleece roll 0.8×40 m	eShop	eShop	162	1
Colour		blue	grey		


08 4373_OIL


08 4375_UNI


08 4377_OIL


08 4378_UNI

Leakage emergency kits

Emergency kit for dealing with leakages, with take-up capacity of 75 ltr.

Size OIL – Emergency kit, only for hydrocarbons.
Size UNI – Emergency kit for all liquids.

Supplied with: Plastic case with cover and pull-out handle, 35 first cloths HW 40 × 50 cm, 3 suction hoses ∅ 7 cm × 1.20 m, 1 suction hose ∅ 7 cm × 3 m, 2 cushions 40 × 40 cm, 10 wiper cloths, 3 disposal sacks, 1 pair of gloves.

Area of application		OIL	UNI
08J 08 4379	Emergency kit **in a case**	eShop	(eShop)
Colour		blue	grey


08 4379_OIL


08 4379_UNI

Filled barriers and cushions

Barriers and cushions filled with flock.

08 4388 – Ideal for taking up larger amounts of liquids.
08 4385/4386 – Ideal for containing and taking up liquids around leakage points and in restricted areas. Liquids are held back securely.

Area of application		OIL	UNI	maximum absorption volume l	Scope of supply pcs./ box
08J 08 4385	Barrier 0.075×1.2 m	eShop	eShop	80	20
08J 08 4386	Barrier 0.075×3.0 m	eShop	eShop	80	8
08J 08 4388	Cushion 0.4×0.4 m	eShop	eShop	110	16
Colour		blue	grey		


08 4385_OIL


08 4385_UNI


08 4388_OIL


08 4388_UNI

Absorbent carpets

Absorbent carpet with **three-layer structure** and an **impervious non-slip film.** Ideal for laying out in gangways and production areas, and as protection around machines. The liquid that is held back is securely absorbed into the fleece. **100 % ground protection.**





Area of application		OIL	UNI	maximum absorption volume l	Scope of supply pcs./ box
08J 08 4390	Absorbent carpet 0.4×30 m	eShop	eShop	103	2
08J 08 4391	Absorbent carpet 0.8×30 m	eShop	eShop	103	1
Colour		brown	black		


08 4391_OIL


08 4391_UNI

Marking

Mechanical universal marker

Refillable marker for weather-resistant and UV-resistant marking. Abrasion-resistant, ideal for use on smooth, rough, rusty or dirty surfaces.

Supplied with: 1 body, 12 leads (∅ 3 mm).



08 5010_R



Writing colour		W	R	Y	BL
08W 08 5010	MARKAL Universal marker set **13 pieces**	eShop	eShop	eShop	eShop
Writing colour		white	red	yellow	black

Automatic clutch pencil

08 5012 – Deep hole marker with a thin, **extra long tip (45 mm) for inaccessible places**. Tip, body and retainer clip are made of metal and therefore very sturdy. **Integral lead sharpener** permits drawing continuous and precise lines. Easily replaceable leads.

08 5016 – edding 8880 – deep-hole construction pencil with robust aluminium barrel, long nib (42 mm), precise markings, reaches even hard-to-reach areas thanks to long nib (42 mm) and is refillable. Equipped with integrated sharpener in the holster.

08 5017 – Refill leads for edding 8880 deep-hole construction pencil (No. 085017 size 8702112).

The edding 8881 refill leads can be easily replaced by unscrewing the push button at the rear end of the edding 8880 deep-hole construction pencil.

Size 8702999 – Set of 6 leads, sorted by colour. For precise markings on rough and smooth surfaces such as wood, plastic, cardboard, metal and tiles. The replaceable lead has a diameter of 2.8 mm. Set contains 2 graphite leads, 2 red and 2 yellow leads (wax-based). Yellow and red leads (wax-based texture) are ideal for very smooth and dark surfaces. Waterproof (except on glass). Light-fast. Store leads at a maximum of 40°C.

Size 8702112 – Set of 6 graphite leads. For precise markings on rough and smooth surfaces such as wood, plastic, cardboard, metal and tiles. The replaceable lead has a diameter of 2.8 mm. Can be removed from smooth surfaces. Light-fast. Store leads at a maximum of 40°C.



08 5012



08 5016

Application:

08 5012 – For marking deep-lying surfaces and in attachment holes. Suitable for steel, iron, stone, tiles, ceramics, glass, and plastic.

Size 096263 – Yellow and red suitable for dusty, rough, smooth, greasy, damp, and dark surfaces.

08 5016 – For marking deep-lying surfaces and in attachment holes on almost all materials like wood, metal, plastic, tiles and cardboard.



08 5013_096263

Supplied with:

Size 096260 – Deep hole marker Trades-Marker-Dry with 1 piece graphite lead.

Size 096263; 8702999 – 2 graphite leads, 2 red leads, 2 yellow leads.

Size 096262 – 6 graphite leads.

Size 096265 – 6 red leads.

Size 096266 – 6 yellow leads.

Size 8700112 – 2 graphite leads, 2 red leads, 2 yellow leads.

Size 8702112 – ■ 6 graphite leads



08 5017_8702999

Type		096260	8700112
08W 08 5012	MARKAL Deep hole marker	–	–
08W 08 5016	edding edding 8880 deep-hole construction pencil **graphite**	–	eShop
Writing colour		Graphite	

Type		096262	096263	096265	096266	8702999	8702112
08W 08 5013	MARKAL Spare leads pack of 6, ∅ 2.8 mm	–	–	–	–	–	–
08W 08 5017	edding Refillable leads edding 8881 for edding 8880 deep-hole construction pencil	–	–	–	–	eShop	eShop
Writing colour		Graphite	Graphite; Red; Yellow	Red	Yellow	Graphite; Red; Yellow	Graphite

Carpenter's pencils

High-quality design, oval, length 240 mm, unsharpened, painted red, multi-purpose, in boxes of 12.



08 5015

08W 08 5015	MARKAL Carpenter's pencils set **12 pieces**	–

Marking crayon and white industrial chalk

08 5022 – High-quality white school chalk wrapped in paper. 12-piece pack in a carton.

08 5030 – Pointed hexagonal chalk marking stick. The inscription is permanent but can easily be removed with conventional cleaning agents. Ø×length 12×110 mm 12-piece set in a carton.

Application:

08 5030 – For marking a wide variety of materials such as metal (hot / cold), plastic, leather, paper, wood etc. Not for use on extremely smooth surfaces such as glass.



08 5022_W


08 5030_R

Writing colour			W	R	Y	B
08W 08 5022	MARKAL	Industrial chalk set **12 pieces**	eShop	–	–	–
08W 08 5030	MARKAL	Marking crayon set **12 pieces**	eShop	eShop	eShop	eShop
Writing colour			white	red	yellow	blue





Suitable for: No. 085030.


08 5035

08W 08 5035	MARKAL	Holder for marking crayon	eShop

Welder's pencil and soapstone crayon

08 5060 – Welder's pencils leave markings that are resistant to welding torches and, unlike soapstone, are abrasion-resistant and do not burn off. Ideal for marking fine lines during metal preparation and metal fabrication. For making visible markings when welding.

08 5065 – Specially for heat-resistant marking of metal.



08 5060_R



08 5060_S


08 5065_W

Print colour			R	S	W
08W 08 5060	MARKAL	Welder's pencils set **12 pieces**	eShop	eShop	–
08W 08 5065	MARKAL	Soapstone crayon set **50 pieces**	–	–	–
Writing colour			red	silver	white

Solid coloured crayons for hot and cold surfaces

08 5080 – Solid coloured crayon B® Paintstik ensures permanent, clearly visible markings on rough, rusty, oily or dirty surfaces. Can even be used under water.

08 5085 – Solid coloured crayon H® Paintstik for hot surfaces and industrial use. High-temperature metal marker for marking on hot surfaces between 100 °C and 600 °C. Ideal for permanent marking of coils, plates, castings and forgings. Will not run, burn, peel off or crack.



08 5080 _W



08 5080_Y

Print colour			W	Y
08W 08 5080	MARKAL	Universal coloured crayon set **12 pieces**	eShop	eShop
08W 08 5085	MARKAL	High-temperature coloured crayon set **144 pieces**	eShop	eShop
Writing colour			white	yellow


08 5085 _W


08 5085 _Y

Quick-drying solid coloured crayon in a twist-up holder

Solid coloured crayon Quik Stik® in a handy rotary casing of plastic. Ideal for fine line markings on smooth or rough surfaces. Temperature-resistant up to 200 °C.

Application: Quick-drying (5 – 7 minutes), intense markings on practically all surfaces. Resistant to UV and water.

08 5096 – Also suitable for use on wet or oily surfaces.



08 5090_Y



08 5096_R

Print colour			W	R	Y	BL	
08W 08 5090	MARKAL	Quik Stik® mini solid coloured crayon in a twist-up holder	eShop	eShop	eShop	eShop	12
08W 08 5096	MARKAL	Quik Stik® solid coloured crayon in a twist-up holder	–	–	–	–	12
Writing colour			white	red	yellow	black	

Permanent marker / deep hole marker

08 5130 – edding 3000, round point, line thickness approx. 1.5 – 3 mm. Barrel made of 100% recycled aluminium (post-consumer recycled material)
08 5131 – edding retract 11, round point, line thickness approx. 1.5– 3 mm. One-hand operation.
08 5133 – edding 3300, wedge point, line thickness approx. 1 – 5 mm. Barrel made of 100% recycled aluminium (post-consumer recycled material)
08 5140 – edding 400, round point, line thickness approx. 1 mm.
08 5145 – edding 8404, **Aerospace Marker**, line thickness approx 0.75 mm, low-odour, light-resistant, round point, **for low-corrosion marking** of metals and precious metals. To standard ABP 9-3323, class A.

Application: For marking on almost all materials, even metal, glass, plastic.



08 5130_R



08 5131_R



08 5133_B

Print colour		R	BL	B	GR	
08W 08 5130	edding Permanent marker	eShop	eShop	eShop	eShop	10
08W 08 5131		–	–	–	–	10
08W 08 5133		–	–	–	–	10
08W 08 5140		eShop	eShop	eShop	eShop	10
08W 08 5145		–	–	–	–	10
Writing colour		red	black	blue	green	



08 5140_BL



08 5145_BL

08 5146 – edding 3000, permanent marker with round point, line thickness approx. 1.5-3 mm, waterproof and abrasion-resistant. Barrel made of 100% recycled aluminium (post-consumer recycled material).
08 5147 – edding 8407, **cable marker** with fine round point, line thickness approx 0.3 mm, waterproof.

Application:
08 5146 – For marking almost all materials, such as paper, cardboard, metal, glass, plastic.
08 5147 – For particularly fine labelling of different types of cables and fuses.

Supplied with:
08 5146 – 1 pen each in light green, grey, ochre, turquoise, olive green, light orange, steel blue, dark brown, carmine red and red violet.
08 5147 – 1× black, red, blue, green each.


08 5147_SET
08 5146_SET

Type		SET
08W 08 5146	edding Permanent marker set, edding 3000 **10 pieces**	eShop
08W 08 5147	Permanent marker set **4 pieces**	–



08 5152_BL

08 5152 – Dura-Ink® 5 deep hole marker with extended micro-point. 1 mm wide round point. Ideal for marking in inaccessible places such as drilled holes or retaining clips.
08 5154 – Dura-Ink® 15 with round point, line thickness 1.5 – 3 mm.
08 5156 – Dura-Ink® 20 with retractable point, line thickness 1.5 – 3 mm.
08 5158 – Dura-Ink® 55 with wedge point, line thickness 1.5 – 4.5 mm.

Application: For marking a wide variety of materials such as metal, plastic, wood, etc.



08 5154_B



08 5156_BL



08 5158_B

Print colour		B	R	BL	
08W 08 5152	MARKAL Dura-Ink® 5 deep hole marker	eShop	eShop	eShop ■	12
08W 08 5154	Dura-Ink® 15 permanent marker	eShop	eShop	eShop	12
08W 08 5156	Dura-Ink® 20 permanent marker	–	eShop	eShop	12
08W 08 5158	Dura-Ink® 55 permanent marker	eShop	eShop	eShop	12
Writing colour		blue	red	black	



08 5158_R


08 5152_BL

Permanent paint markers

08 5159 – The quick-drying abrasion-resistant durable paint permits immediate further processing and thus **reduces unproductive waiting time**. Furthermore the paint is **free of xylol** and thus reduces the health risks.
08 5168 – Extra fine tips. Line thickness approx. 0.8 mm.
08 5171 – Quick-drying, water-based **Paint-Riter™** paint marker for long-lasting, wear-resistant and weather-resistant markings. Low VOC and low odour.
08 5160–5169 – **Odourless paint,** round tip. Resistant to UV and water.
08 5160–5169 – For marking widths 2 – 4 mm.

Application:

08 5159 – The marking is heat resistant up to 100 °C (212 °F).
08 5160 – For writing on and marking all clean surfaces.
08 5162 – Ideal for marking on oily, coated and cold surfaces. "IMDS registered".
08 5165 – Ideal for use on stainless steel or superalloys. Low chloride and halogen values in the lacquer.
08 5169 – Quick-drying paint for temperatures up to 1000 °C.
08 5167/5168 – High-coverage markings on dark and smooth surfaces with a solvent-resistant and heat-resistant ink. Heat resistant up to 400°C (white up to 1000°C).



08 5159_W



08 5160_Y



08 5171



08 5162



08 5165



08 5167



08 5168



08 5169

Print colour			W	R	Y	BL	B	GR	OR	P	
02A 08 5159	HOLEX	Paint marker	–	–	–	–	–	–	–	–	12
08W 08 5160	MARKAL	Paint marker SL100	eShop	eShop	eShop	eShop ■	eShop	eShop	eShop	eShop	12
08W 08 5171	MARKAL	Paint-Riter™ paint marker	–	–	–	–	–	–	–	–	12
08W 08 5162	MARKAL	PRO-LINE® HP paint marker	–	–	–	–	–	–	–	–	12
08W 08 5165	MARKAL	VAPM® INOX paint marker	eShop	eShop	eShop	eShop	–	–	–	–	12
08W 08 5167	edding	Paint marker 750	eShop	eShop	eShop	eShop	eShop	eShop	–	–	10
08W 08 5168	edding	Paint marker 780	–	–	–	–	–	–	–	–	10
08W 08 5169	MARKAL	PRO-LINE® HT paint marker	–	–	–	–	–	–	–	–	12
Writing colour			white	red	yellow	black	blue	green	orange	pink	

Odourless lacquer marker, wedge point from 5 to 14 mm line thickness, waterproof, weather-resistant and UV-resistant.

Application: Ideal for marking on oily and greasy surfaces.



08 5175_R

Print colour			W	R	Y	BL	
08W 08 5175	MARKAL	Paint marker PRO-MAX	eShop	eShop	eShop	eShop	6
Writing colour			white	red	yellow	black	

Non-permanent paint markers

Chalk water-based marking ink. Round point for 2 – 4 mm wide markings. UV-resistant.
Size Y; GR; P; OR – Fluorescent pigments, especially vibrant colours with high brightness.

Application: The markings can simply be wiped off with water, leaving no trace or residues.



08 5170_Y



08 5170_R

Print colour			W	R	Y	BL	B	GR	P	OR	
08W 08 5170	MARKAL	Non-permanent marker SL130	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	12
Writing colour			white	red	yellow	black	blue	green	pink	orange	

Tube marker with ball tip

08 5178 – **Tube marker** with **3mm steel ball tip.** Thick ink. Temperature-resistant up to **200°C.**
08 5180/5185 – **Tubular nib pen** with **3 mm steel ball point.** Thick ink. Temperature-resistant up to **200 °C.**

Application:
08 5178 – Ideal for use on stainless steel or superalloys. Low chloride and halogen values. Resistant to weathering, water and UV.
08 5180 – When marking, press downwards on the workpiece (so the steel ball opens) and maintain light pressure on the tube (for an even flow of ink).



08 5178_W



08 5180_BL

Print colour				W	R	Y	BL	B	GR	
08W 08 5178	MARKAL	Tube marker, stainless steel		–	–	–	–	–	–	10
08W 08 5180	MARKAL	Multi-purpose tube marker	50 ml	–	–	–	–	–	–	10
Writing colour				white	red	yellow	black	blue	green	

08W 08 5185	MARKAL	Pack of multi-purpose tube markers, white, red, yellow **3 pieces**	50 ml	–
Writing colour				white; red; yellow



08 5185

Thread locking marker

Maximum visibility **security lacquer** for quick and easy visual checking during safety inspections or changes to original settings. Facilitates recognition of any adjustment movements. **Temperature-resistant up to 200 °C.**
Extension tip: The handy 4 steps allow the tip to be easily extended to the desired length to achieve the desired marking line width. Easy to use, simply screw the tip on to the head of the tube. The extension tip extends the tube tip by 3 cm for effortless marking in places where access is difficult.

Application: Outstanding adhesion to a wide variety of surfaces. Ideal for use on connectors, pins, nuts and assemblies after they have been set to the correct tension or position.



08 5188

Print colour				W	R	Y	OR	BL
08W 08 5188	MARKAL	Security Check thread locking marker	50 ml	–	–	–	–	–
Writing colour				white	red	yellow	orange	black

Security lacquer

Security lacquer for detection of tampering.
Application: Blue protective lacquer for detection of unauthorised access. For fittings, pins, nuts, casing fastenings. Good bonding, no corrosive effects, can be used even outdoors.



08 3394

Manufacturer ID				7414
04L 08 3394	LOCTITE	Security lacquer tube	50 ml	–
Writing colour				blue

CRC Fluorescent marker spray

Waterproof and colour-fast marker spray with good adhesion on a wide variety of substrates, even on damp surfaces. 360° valve permits spraying in any position. Easily visible because of the fluorescent composition. Dries quickly in approx. 5 minutes. Persistence depending on the substrate, use and exposure to UV radiation: 9 – 12 months. The cap colour indicates the spray colour.
Application: Spot and area marking from any position. For temporary marking work.







Print colour				B	F	Y	GR	OR	R	V	DY	BL	W
08E 08 5191	Marker spray **MARKER PAINT**		500 ml	–	–	–	–	–	–	–	–	–	–
Marking colour				blue	fuchsia	bright yellow	green	orange	red	violet	matt yellow	black	white

Marking inks, solvents, and engineer's blue

08 5388 – Engineer's blue for checking the surface quality.
08 5381–5388 – Ready for use, quick drying, will not flake.

Application:
08 5381–5385 – For marking workpieces in preparation for machining. Also for labelling forgings and castings. For scribers see from No. 458300 onwards.

Note: Not available in all countries. Express delivery not possible.


08 5382


08 5381


08 5385



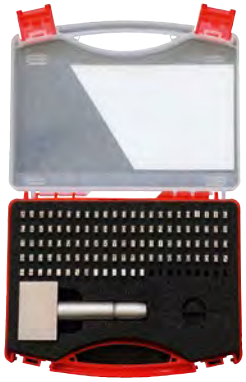
08 5388


08 5391

Colour			BLUE	RED
08W 08 5382	Marking out spray	400 ml	–	–
08W 08 5381	Marking ink – fluid	500 ml	–	–
08W 08 5385	Marking pen		–	–
08W 08 5388	Engineer's blue – tube	80 ml	eShop ■	–
Colour			blue	red

Content		ml	400
08W 08 5391	Solvent	400 ml	–

PRYOR Interchangeable number and letter punch set with type holder



High precision punch holder for quick and efficient marking with **several letters and numbers at the same time.**

Application: For punching into materials (e.g. identification plates, tools, machine parts etc.) with **strengths up to 1200 N/mm².**

Supplied with:
100 stamp types
12 spacers (font height 5 mm: 6 pieces)
1 pair of tweezers
1 hexagon L-wrench
1 holder
in a plastic box.

Spare part: Individual type punches can be ordered under No. 085481 stating the desired font size / type (e. g. No. 085481 size 3/E).

Character height		mm	1,5	2	2,5	3	4	5
08W 08 5480	Interchangeable number and letter punch set normal script 0 - 9 and A - Z		eShop	eShop	eShop	eShop	eShop	eShop
Length of punch holder		mm	20	29	29	29	39	39
Length of punch type		mm	15.87	19.05	19.05	19.05	19.05	19.05
Width of punch type		mm	1.6	2	2.5	3.2	4	4.8
Height of punch type		mm	3.2	6.4	6.4	6.4	8	8
Number of punch types that can be used			12	14	12	9	9	8

Each set includes the following types						
AAA	BB	CC	DD	EEEE	FF	GG
HH	III	JJ	KK	LLL	MM	NNN
000	PP	Q	RRR	SSS	TT	UUU
V	WW	XX	Y	Z	&	//
– –	. .	, ,	1111	2222	333	4444
555	666	777	888	999	000	

HW Pickardt eK Hand punch holders

High-precision punching tool for signatures of numeric sequences. Designed for very heady duty use.
With pin locking. All parts chemically nickel-plated. Wheels with 11 segments = engraving 0 – 9 and blank.
Packed in a plastic box.

Size 5–10 – **Safety impact cap** reduces the risk of accidents and protects the body.

Application: For variable numbering of materials with **strengths up to 1500 N/mm².**

Note: Other punch holder versions, e. g. with automatic numeric advance or other font heights, are available on request.


Safety impact cap size 5 – 10



08 5471_3

Character height		mm	2	3	4	5	6	8	10
08W 08 5471	Hand punch holder		(eShop)	eShop	eShop	eShop	eShop	(eShop)	(eShop)
Number of positions			8	8	8	8	8	6	6
Imprint width		mm	23	23	23	30	30	35	35
Wheel width = character width		mm	3	3	3	4	4	6	6

HW Pickardt eK Punch wheels

Highest quality due to CNC engraving and punch head tempering.
Easy to use due to visible engraving and spark eroded strike areas. Wheel width = script height + 3 mm.

Application: Handy method for punching variable texts into materials with **strengths up to 1200 N/mm².**

Note: Letter punch wheels (3 wheels) or wheels with special characters are available on request.





Character height		mm	2	3	4	5	6
08W 08 5465	Punch wheel 0 – 9		(eShop)	eShop	eShop	eShop	eShop
Mounting hole ∅		mm			10		
Punch wheel outside ∅		mm			78		

Number and letter punch sets, DIN 7353

Made of hard and tough steel with particularly precise machine engraving and depth tolerance; accurately centred. Calibrated shank, through hardened. Striking head enhancement for safe working. Supplied in a plastic case.

08 5405–5442 – **High performance precision punches,** chemically nickel-plated, very long service life.

08 5405/5425/5430/5442 – **Normal script;** i. e. the punched character can be read directly on the component.

08 5420/5440 – **Mirror script;** i.e. the punched character appears laterally reversed on the component (for die making).

08 5425/5442 – **Low stress Dotstress hand punches** with a rounded nose, so that the material surface is exposed to lower stress when the punch is struck

08 5446/5456 – High quality, burnished surface.

Application: For punching into materials with a **strength up to 1200 N/mm².**

Spare part:

08 5405–5442 – Individual number punches under No. 085411 size font height/number, e. g. No. 085411 size 3/1.
Individual letter punches under No. 085431 size font height/character, e.g. No. 085431 size 3/A.

Note: Other hand and machine punches of all types, such as punches with a company's logo etc., are available on request.


08 5430


08 5405

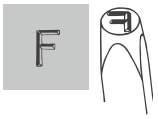

08 5456

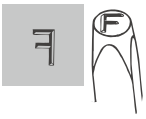

08 5446


08 5442


08 5425


Engraved, as seen


Normal script imprint


Mirror script imprint


Dotstress engraving, punched, plan view


Example of special punches

Character font and size (punched).

Character height		mm	1	2	3	4	5	6	8	10
08W 08 5405	PRYOR	Number punch set, 10 pieces **Normal script 0 – 9**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
08W 08 5420	PRYOR	Number punch set, 10 pieces **Mirror script 0 – 9**	–	eShop	eShop	eShop	eShop	eShop	–	–
08W 08 5425	PRYOR	Number punch set, 10 pieces **Dotstress 0 – 9**	–	–	eShop	eShop	eShop	eShop	–	–
08W 08 5430	PRYOR	Letter punch set, 27 pieces **Normal script A – Z, &**	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
08W 08 5440	PRYOR	Letter punch set, 27 pieces **Mirror script A – Z, &**	–	eShop	eShop	eShop	eShop	eShop	–	–
08W 08 5442	PRYOR	Letter punch set, 26 pieces **Dotstress A – Z**	–	–	eShop	eShop	eShop	eShop	–	–
02A 08 5446	HOLEX	Number punch set **Normal script 0 – 9**	–	–	eShop	eShop	eShop	eShop	–	–
02A 08 5456	HOLEX	Letter punch set, 27 pieces **Normal script A – Z, &**	–	–	eShop	eShop	eShop	eShop	–	–
overall length (08 5405, 08 5420, 08 5430, 08 5440, 08 5442)		mm	63.5	63.5	63.5	70	70	70	89	89
overall length (08 5425)		mm	–	–	63.5	70	70	89	–	–
overall length (08 5446, 08 5456)		mm	–	–	61	62	62	68	–	–
Shank thickness (08 5405, 08 5420, 08 5430, 08 5440, 08 5442)			6.35	6.35	6.35	9.5	9.5	9.5	12.7	14.3
Shank thickness (08 5425)			–	–	6.35	9.5	9.5	12.7	–	–
Shank thickness (08 5446, 08 5456)			–	–	6.35	7.93	7.93	9.52	–	–

08

PRYOR Punch holder

Ergonomics and the **high-grip surface** of the holder permit a **comfortable** and secure grip. Suitable for all Hoffmann numeric punches and alphabetic punches.


08 5475

Type		GRIP
08W 08 5475	Punch holder	eShop

Pocket calculator

Technical calculator with 252 integrated functions (e.g. logarithms, exponential and trigonometric functions). Large easy-to-read display, with battery and solar cell. Supplied with battery and hard case for protection. (See No. 081560 LR44 for spare battery).

Note:	The pocket calculator is only available in German.


08 5211

			DE
18A	**08 5211**	Pocket calculator	eShop

Electrical engraving pencil

Plastic housing moulded to the shape of the hand, electrical drive on the oscillating armature principle (230 Volt, 50/60 Hz); double insulated and maintenance-free. The stroke length (impact force) can be steplessly adjusted and exactly set up to a maximum of 3 mm.

Application: For neat freehand marking and identification, as well as engraving all types of metal, max. HR60, glass, plastic, stone, wood, leather etc.

Supplied with: Includes
1 diamond stylus No. 085705, 1 carbide stylus No. 085706, 2 modelling points, 1 adapter for points, 1 plastic wallet.

Note:	Accessories available on request.



08 5701

08U	**08 5701**	MARKAL Electrical engraving pencil	–

Mini engraving tool

For simple engraving on many different surfaces, such as metal, glass, ceramic.

Supplied with: Case, 2 AAA (LR3) batteries, L-wrench.



08 5725

Length	mm	150	20
08U **08 5725**	Mini engraving tool	eShop	–
08Q **08 5726**	Spare engraving points set, 2 pieces	–	eShop
Diamond point ∅	mm	1	–
Tool shank ∅	mm	2.35	–
Spindle speed	min^{-1}	12000	–

DYMO Desk label printer LabelWriter

Size LW550 – **Easy to use** desk unit for **quick** (62 labels per minute) and **uncomplicated creation** of address, dispatch, file, name, CD/DVD, and many other labels. Pin-sharp **direct thermal printing**. Resolution 300×300 dpi.

- For labels up to maximum of 61 mm in width.
- Compatible with **PC and Mac, USB port,** can print address labels directly from Office programs.
- Printing and generating all popular **barcodes and QR codes,** special characters and graphics files with **300 dpi resolution.**

Supplied with: With mains adapter, USB cable, software CD, starter roll of labels 28×89 mm.



08 5505

Type		LW550
08U **08 5505**	Label printer LabelWriter	eShop

Labels

Label width×label height	mm	25×54	28×89	36×89	54×101
08Q **08 5565**	Address label set, white	eShop	eShop	eShop	–
08Q **08 5567**	Dispatch label set, white	–	–	–	eShop
Number of labels per roll		500	130	260	220
Number of rolls		1	2	2	1



08 5565_28×89



08 5567_54×101

DYMO Labelling machines / tape cartridges

Robust portable labelling machines for fast and simple production of self-adhesive plastic labels. Permanent thermal transfer printing. Adjustable tape advance and reverse. Power supply from rechargeable **Li-ion battery**, mains charger. Simple text generation with quick-access buttons.

Size LM280 – Standard LabelManager™ 280 for office and home use with additional editing facilities on PC / Mac via USB port.

Size LM420P – Slim-line printer with **ABC keyboard** and large 4-line display with background lighting and print preview. USB port.

Size LM640CB – **With full-colour touch screen**, also prints graphics, barcodes and logos with 300 dpi resolution. **USB-C interface and Bluetooth.**

Size 4200; 5200 – **Robust industrial label printer** for easy labelling of cables, control panels, shelves etc. **Direct access buttons** for frequently-used electro-technical symbols.

Supplied with:

Size LM640CB –
- LabelManager™ labelling device
- 1 pc. D1 standard lettering tape
- rechargeable battery
- USB-C cable (USB-C to USB-C)
- Quick guide

Size 4200 – **Without battery and mains adapter.**


_LM280


_LM360D


_LM420P


LM640CB


_4200


_5200

Type		LM280	LM280F	LM360D	LM420P	LM640CB	4200	5200
080 08 5500	Labelling machine	eShop	(eShop)	eShop	eShop	eShop	eShop	eShop
suitable tape cartridge		D1	D1	D1	D1	D1	RHINO	RHINO
Type		LM280	LM280F	LM360D	LM420P	–	Rhino 4200	Rhino 5200
available tape widths	mm	6; 9; 12	6; 9; 12	6; 9; 12; 19	6; 9; 12; 19	6 to 24	6; 9; 12; 19	9; 12; 19
maximum character height	mm	8.1	8.1	14.9	14.9	–	13	13
Number of font sizes		3	3	7	7	9	7	7
Number of font widths		2	2	3	8	–	2	2
Number of lettering styles		6	6	7	12	12	5	4
Number of visible characters in the display		2×14	2×14	2×14	4×30	–	11	2×14
Number of available characters/symbols		220	220	221	325	–	50	100
Number of text lines		2	2	2	1 – 4	5	1 – 4	1-4
Keyboard layout		QWERTY	AZERTY	QWERTZ	ABC	QWERTZ	QWERTZ	ABC
Special features		USB	USB	–	USB	USB-C; Bluetooth	Label storage	Label storage
Length	mm	206	206	150	215	185	181	64
Width	mm	108	108	197	104	150	127	124
Height	mm	41	41	71	57	75	62	234

Tape cartridges

08 5517 – Flexible vinyl tape, permanent adhesion even at tight radii.

08 5509/5510 – **Industrial vinyl label** resistant to moisture, extreme temperatures, UV radiation.

08 5515/5516 – **Highly flexible** nylon strip, **permanently adhesive** even to **small radii** and **rough surfaces.**

08 5517/5515/5516/5520/5530/5540/5550/5560 – Waterproof, **removable D1 tape cartridges.**

Note: Other labels can be found in the online shop. Also available in value packs (No. 085519 W, 085539 W, 085551 W).


08 5517

Type		T	W	Y	R		Type
080 08 5509	Printer ribbon cartridge **9 mm × 5.5 m vinyl**	–	eShop	–	–	1	RHINO
080 08 5517	Printer ribbon cartridge **12 mm×5.5 m vinyl**	–	eShop	–	–	5	RHINO
080 08 5510	Printer ribbon cartridge **19 mm×5.5 m vinyl**	–	eShop	–	–	1	RHINO
080 08 5515	Printer ribbon cartridge **12 mm×3.5 m nylon**	–	eShop	–	–	1	RHINO
080 08 5516	Printer ribbon cartridge **19 mm×3.5 m nylon**	–	eShop	–	–	5	D1
080 08 5520	Printer ribbon cartridge **12 mm×7 m polyester**	eShop	eShop	eShop	eShop	5	D1
080 08 5530	Printer ribbon cartridge **6 mm×7 m polyester**	–	eShop	–	–	5	D1
080 08 5540	Printer ribbon cartridge **9 mm×7 m polyester**	–	eShop	eShop	–	5	D1
080 08 5550	Printer ribbon cartridge **19 mm×7 m polyester**	eShop	eShop	eShop	eShop	5	D1
080 08 5560	Printer ribbon cartridge **24 mm×7 m polyester**	–	eShop	eShop	eShop	5	D1
Print colour		black					
Tape colour		transparent	white	yellow	red		

FLYMARKER® CNC needle markers

Hand marking system

For permanent identification / marking / lettering of batch and series production parts of different materials (steel, stainless steel, aluminium, copper, brass, plastics, tool steel, hardened steels up to 62 HRC, etc.).

- Powerful electro-magnetic marking needle drive.
- Simple, intuitive software with password protection and redesigned parameter display for a quick look into each program line.
- Large 4.3-inch colour display.
- Latest processor technology for smooth menu navigation and a very short start-up time (boot time).
- 1:1 preview of the marking field in the display.
- Casing made of break-proof and glass fibre-reinforced plastic.
- Interfaces: USB-A, USB-B and Ethernet.
- Font: Dot matrix in a 5×7 or 9×13 grid, font height 1.0 – 10.0 mm and larger.
- High-quality double linear guides for precise marking results.
- Round parts can be marked radially and axially, and also in an arc of a circle.

Extremely handy 100% mobile **cordless manual marking system** with touch user interface and large 4.3 inch colour display.

Supplied with: Including tool kit, solid carbide marking needle 90°. Adjustment bracket with non-slip coating, setting gauge, and carrying case, **2 pcs. 18 V Li-ion batteries**, charger.

Note: Fonts for character heights greater than 10.0 mm on request.



Battery capacity		2×2	2×4	2×5,2	2×10	maximum marker field width mm	maximum marker field height mm
04F 08 5754	FlyMarker® mini 65/30 needle marker **Cordless**	–	–	–	–	65	30
04F 08 5755	FlyMarker® mini 85/45 needle marker **Cordless**	–	–	–	–	85	45
Battery capacity	Ah	2	4	5.2	10		
Nominal voltage	V	18					

Benchtop marker system

Size STATION – Table marker system with:

- capacitive touch screen
- toggle lever for quick change of workpiece
- electromagnetic drive
- switchable LED lighting of the marking area
- cable track guide for the electronics cable
- laser pointer for simulation of the marking process
- 30 adjustable impact forces
- integrated software



Type		STATION
04F 08 5756	Benchtop marker system mini 120/100 Station Touch	–
Interface		Digimatic interface; Ethernet
Character height	mm	1 – 99.9
maximum marker field width	mm	120
maximum marker field height	mm	100
Power supply		Mains-powered
Nominal voltage	V	230

Accessories

Note: Further accessories for the FlyMarker mini can be found in the online shop.

Angle of the marking needle tip	degrees	60	90	110
04F 08 5790	Marking needle for FlyMarker®	eShop	–	–
Material to be marked		Plastics	Universal	up to 62 HRC, scaled

Padlocks

Solid lever action security lock, housing **weatherproof galvanised.**

Size 394 – With brass keyhole cover.

Supplied with: Padlock with 2 keys.



08 5822_393 08 5822_394

Type		393	394
080 08 5822	Padlock galvanised **individual keys**	eShop	eShop
Body ∅	mm	45	
Hoop ∅	mm	6.5	

TSA / combination padlock, combination can be set individually. **Permits TSA check by the customs authorities to be performed without damage (TSA = Travel Sentry Approved).**



08 5825

Body ∅	mm	30
080 08 5825	TSA / combination padlock	eShop
Hoop ∅	mm	3.5
Number of number rings		3

08 5830 – Solid brass body. **Number combinations can be selected individually.**

Size 50 – The combination lock has **four number rings** which can be set, and has an additional security feature: It must first be released using a key before the code can be input.



08 5830_20 08 5830_40 08 5831_50 08 5832_50

Body ∅	mm	20	30	40	50
080 08 5830	Combination padlock	eShop	eShop	eShop	–
080 08 5831		–	–	–	eShop
080 08 5832	Combination padlock with high shackle	–	–	–	eShop
Hoop ∅	mm	3.2	5	6.5	8
Number of number rings		3	3	4	4

Solid brass body, rust-free precision lock mechanism, steel shackle hardened and chrome-plated, double locked. The Magno range is not available in special versions.

Supplied with:

08 5851 – Padlock with 2 keys.

08 5852 – Padlock with 6 keys.



08 5851_30 08 5852_40

Body ∅	mm	30	40	50
080 08 5851	Precision cylinder padlock **individual keys**	eShop	eShop	eShop
080 08 5852		–	eShop	–
Series		Magno		
Hoop ∅	mm	5	6.5	8
Internal height of shackle (08 5851)	mm	17	23.5	29.5

Solid brass bodies with hardened steel shackle.

08 5866 – With extra high shackle.

Supplied with:

08 5865 – 4 padlocks with 1 key each.

08 5860/5866 – Padlock with 2 keys.



08 5860_30



08 5865



08 5866_30

Body ∅	mm	30	40	50
080 08 5860	Cylinder padlock standard quality **individual keys**	eShop	eShop	eShop
080 08 5865	Cylinder padlock set **4 pieces per set, shared keys**	eShop	eShop	–
080 08 5866	Cylinder padlock with high shackle **individual keys**	eShop	eShop	–
Hoop ∅	mm	5	6	7
Internal height of shackle (08 5866)	mm	45	65	–

Solid brass body, rust-free precision lock mechanism, steel shackle hardened and chrome-plated, double locked.
The 116 Profi range is available on request in the following special versions:
Locks according to a sample pattern or locking, with master key system and additional keys.

08 5875/5876 – With extra high shackle.

Supplied with: Padlock with 2 keys.



08 5870_40 08 5875_30 08 5876_30

Body ∅	mm	30	40	50
080 08 5870	Precision cylinder padlock **shared keys**	eShop	eShop	eShop
080 08 5875	Precision cylinder padlock with high shackle **individual keys**	eShop	eShop	–
080 08 5876	Precision cylinder padlock with high shackle **shared keys**	eShop	eShop	–
Series		116 Profi		
Hoop ∅ (08 5870, 08 5875)	mm	5	6	8
Internal height of shackle (08 5875, 08 5876)	mm	45	60	–

Padlocks

Padlock with rustproof precision lock mechanism, hardened steel shackle, chrome-plated and double lever mechanism.

08 5880 – Solid brass body.
08 5882 – Solid brass body with high shackle.
08 5890 – Solid stainless steel body, non-rusting.

Function: **Individual keys** means each key can open and close only **one** lock or cylinder, i.e. the key is unique.

Supplied with: Padlock with 3 keys.



08 5880 08 5882 08 5890

Body ∅		mm	30	40	50
02A 08 5880		Cylinder padlock **individual keys**	eShop	eShop	eShop
02A 08 5882	HOLEX	Cylinder padlock with high shackle **individual keys**	eShop	eShop	–
02A 08 5890		Cylinder padlock **individual keys**	eShop	eShop	eShop
Hoop ∅		mm	5	6	8

Solid aluminium body, rust-free lock mechanism, steel shackle hardened and double locked.

Supplied with: Padlock with 2 keys.



08 5868 08 5885_30 08 5885_40

Body ∅		mm	30	40	50
08Q 08 5868	BURG WÄCHTER	ALUTITAN padlock **individual keys**	eShop	eShop	eShop
Hoop ∅		mm	5	6.5	8

Solid brass body. **Number combinations can be selected individually.**

Body ∅		mm	30	40
02A 08 5885	HOLEX	Combination padlock	eShop	eShop
Hoop ∅		mm	5	6.4

Padlocks with cylinder insert

Precision padlock, brass body nickel-plated, shackle made of hardened steel, chrome-plated, and double locked. With integrated lock barrel No. 950050 (not for No. 085816) for individual configuration / integration into your existing DOM locking system. Can be individually fitted using lock barrel No. 950050 to suit your requirements.

Note: For individually configurable lock barrels see No. 950050 and No. 950072.



08 5812 08 5814



Body ∅		mm	45
08Q 08 5812		Precision cylinder padlock **with lock barrel, shared key**	eShop
08Q 08 5814		Precision cylinder padlock **with lock barrel, individual keys**	eShop
08Q 08 5816		Precision cylinder padlock **without lock barrel**	eShop
Hoop ∅		mm	6

Magnetic container

08 5904 – Plastic container with powerful permanent magnet. **Ideally suited for placing as a lubricant pot in a CNC machine.**
08 5905 – Stainless steel container with powerful permanent magnets.
08 5906 – Plastic container with powerful permanent magnets. Special shape for use on vertical walls.

Application: For safe storage of small components, tools, fasteners etc. **Magnetisable small components are stored safely, even in the upright position.**



08 5904



08 5905_150 08 5905 _240×140 08 5905 _360×160

Container ∅ or length×width		mm	75	110	150	240×140	360×160
02A 08 5904		Plastic magnetic lubricant pot	eShop	–	–	–	–
02A 08 5905		Stainless steel magnetic container	–	–	eShop ■	eShop ■	eShop
02A 08 5906		Plastic magnetic container	–	eShop	eShop	–	–
Number of magnets per container			1	1	1	2	3



08 5906 _110 08 5906 _150

Flat magnets without thread, ferrite

Shielded flat magnets with magnetic core made of **hard ferrite.**

08 5910 – ■ Galvanised surface.
■ **Temperature-resistant up to maximum 120 °C.**
08 5912 – ■ Plastic surface.
■ **Temperature-resistant at room temperature.**

Application: For clamping, assembling, incorporation by pressing in / gluing and fixing / holding.


08 5910


08 5912
Pack of 4

∅		mm	10	13	16	20	25	32	40	50	63	80
08Q 08 5910	Flat magnet without thread	Ferrite	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
08Q 08 5912	Organiser magnet set 4 pieces, printed	Ferrite	–	–	–	–	eShop	eShop	–	–	–	–
Nominal clamping force		N	4	10	18	30	40	80	125	220	350	600
Height		mm	4.5	4.5	4.5	6	7	7	8	10	14	18

Flat magnets with threaded socket, ferrite

■ Shielded flat magnet made of **hard ferrite with insert nut.**
■ Galvanised surface.
■ **Temperature-resistant up to maximum 120 °C.**

Application: For clamping, assembling, incorporation by screw fastening.

Note: Screw-in hooks with external thread under No. 085921.


08 5915

∅		mm	10	13	16	20	25	32	40	50	63	80	100
08Q 08 5915	Flat magnet with internal thread	Ferrite	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Nominal clamping force		N	4	10	18	30	40	80	125	220	350	600	900
Height		mm	4.5	4.5	4.5	6	7	7	8	10	14	18	22
Height with thread		mm	11.5	11.5	11.5	13	15	15	18	22	30	34	42
Thread		mm	M3	M3	M3	M3	M4	M4	M5	M6	M8	M10	M12

Flat magnets with/without threaded socket, $SmCo_5$ / Neodymium

■ Shielded flat magnet **with 3 to 6 times the clamping force compared to hard ferrite magnets.**
08 5920/5922 – ■ **Temperature-resistant up to maximum 200 °C.**
■ Galvanised surface, magnetic core made of samarium-cobalt ($SmCo_5$).
08 5923/5924 – ■ **Temperature-resistant up to maximum 80 °C.**
■ Galvanised surface, magnetic core made of neodymium.

Application: For clamping, assembling, incorporation by pressing in, gluing or encapsulating.

Note:
08 5922/5924 – Screw-in hooks with external thread under No. 085921.


08 5920


08 5922

∅		mm	6	8	10	13	16	20	25	32
08Q 08 5920	Flat magnet without thread	$SmCo_5$	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
08Q 08 5922	Flat magnet with internal thread	$SmCo_5$	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
08Q 08 5923	Flat magnet without thread	Neodymium	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
08Q 08 5924	Flat magnet with internal thread	Neodymium	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Nominal clamping force (08 5920, 08 5922)		N	5	11	20	40	60	90	150	220
Nominal clamping force (08 5923, 08 5924)		N	5	13	25	60	95	140	200	350
Height		mm	4.5	4.5	4.5	4.5	4.5	6	7	7
Height with thread (08 5922, 08 5924)		mm	11.5	11.5	11.5	11.5	11.5	13	14	15.5
Thread (08 5922, 08 5924)		mm	M3	M3	M3	M3	M4	M4	M4	M5

Flat magnets with hole, Neodymium

■ **Temperature-resistant up to maximum 80 °C.**
■ Galvanised surface, magnetic core made of neodymium.

Application: For clamping, assembling, incorporation by screw fastening.


08 5932

∅		mm	10	13	16	20	25	32	40	48
08Q 08 5932	Flat magnet with bore	Neodymium	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Nominal clamping force		N	13	30	75	105	160	310	500	870
Bore ∅		mm	3	3	3.5	4.5	4.5	5.5	5.5	8.5
Height		mm	4.5	4.5	4.5	6	7	7	8	11.5

Screw-in hook

Suitable for: No. 085915; 085922; 085924.


08 5921

Thread		M3	M4	M5	M6
08Q 08 5921	Screw-in hook set with external thread **10 pieces**	eShop	eShop	eShop	eShop

HOLEX Rubberised flat magnet with thread, Neodymium

- Shielded flat magnet **with 3 to 6 times the clamping force compared to hard ferrite magnets.**
- Corrosion resistance and surface protection due to the rubberised surface.
- Rubberisation increases the lateral holding forces.
- Neodymium magnetic core.

Application: On painted surfaces, will not scratch or slip.

Note: 08 5938/5939 – Screw-in hooks with external thread under No. 085921.

∅		mm	22	43	66	88
080 08 5937	Flat magnet 2-part set with threaded stud	Neodymium	eShop	eShop	eShop	eShop
Nominal clamping force		N	50	85	180	420
Height		mm	6	6	8.5	8.5
Height with thread		mm	12.5	21	23.5	23.5
Thread			M4	M6	M8	M8


08 5937

∅		mm	22	66	88	43
080 08 5938	Flat magnet 2-part set with threaded socket	Neodymium	eShop	eShop	eShop	eShop
Nominal clamping force		N	50	180	420	85
Height		mm	6	8.5	8.5	6
Height with thread		mm	11	15	17	10.5
Thread			M4	M5	M8	M4


08 5938

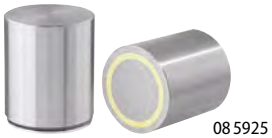
∅		mm	22	43	66	88
080 08 5939	Flat magnet 2-part set with threaded socket **flat**	Neodymium	eShop	eShop	eShop	eShop
Nominal clamping force		N	50	85	180	420
Height		mm	6	6	8.5	8.5
Height with thread		mm	6	6	8.5	8.5
Thread			M4	M4	M5	M8


08 5939

Cylindrical magnets with toleranced dimensions, AlNiCo

- Shielded bar magnet with **magnetic core of AlNiCo.**
- **Fit tolerance** on the external ∅ **h6.**
- **Temperature-resistant up to maximum 220 °C.**

Application: For clamping, assembling, incorporation by pressing in, gluing or encapsulating.


08 5925

∅		mm	6	8	10	13	16	20	25	32	40	50
080 08 5925	Deep pot magnet with toleranced dimensions	AlNiCo	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Nominal clamping force		N	2	3	5	10	15	35	80	150	200	350
Height		mm	10	12	16	18	20	25	30	35	45	50
maximum shortening dimension rear		mm	2	3	6	7	5	6	5	3	5	2

Cylindrical magnets with toleranced dimensions, $SmCo_5$ / Neodymium

- Shielded cylindrical magnets with **3 to 6 times the clamping force of hard ferrite magnets.**
- **Fit tolerance** on the external ∅ **h6.**

08 5928 –
- **Temperature-resistant up to maximum 200 °C.**
- Magnetic core made of samarium-cobalt ($SmCo_5$).

08 5929 –
- **Temperature-resistant up to maximum 80 °C.**
- Magnetic core made of neodymium.

Application: For clamping, assembling, incorporation by pressing in, gluing or encapsulating.


08 5928

∅		mm	6	8	10	13	16	20	25	32
080 08 5928	Deep pot magnet with toleranced dimensions	$SmCo_5$	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
080 08 5929		Neodymium	eShop	eShop	eShop	eShop	eShop	eShop	eShop	eShop
Nominal clamping force (08 5928)		N	8	22	40	60	125	230	400	600
Nominal clamping force (08 5929)		N	10	25	45	70	150	280	450	700
Height		mm	20	20	20	20	20	25	35	40
maximum shortening dimension rear		mm	10	10	8	6	2	6	7	5

HOLEX Strong magnet, AlCo Max

- Strong, bridge-shaped magnet.
- With hole for fixing the magnet. (sizes 35 and 41 with 2 holes).
- Magnetic material temperature-resistant up to maximum 550 °C.

Application: For holding, lifting or sorting small iron parts or for installation in electrical relays, measuring instruments etc.

Remove the keeper plate before use.



08 5934

Overall height		mm	20	25	30	35	41	54
02A 08 5934	Strong magnet with keeper plate	AlNiCo	eShop	eShop	eShop	eShop	eShop	eShop
Nominal clamping force		N	45	90	118	235	370	470
Single-pole width		mm	20	25.4	28.6	44	57	82
Single-pole depth		mm	8	9.5	11	11	15	20

Cylindrical magnets, AlCo Max III

- Cylindrical form, notch marking of polarity.
- Magnetic material temperature-resistant up to maximum 550 °C (paint finish 100 °C).
- Bar magnets can be extended by lining them up together.



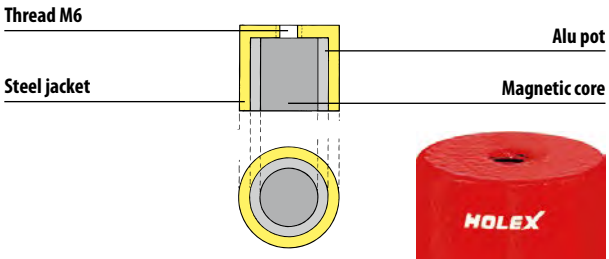
08 5936

∅×Length		mm	6×20	8×25	10×30
02A 08 5936	Cylindrical magnet **Set 2 pieces**	AlNiCo	eShop	eShop	eShop

Pot magnets, AlCo Max III

- Machining the steel jacket will not impair magnet performance.
- Magnetic force directed downwards as cased in an aluminium ring.
- Tapped hole in the magnet top face, for fastening.
- Magnetic material temperature-resistant up to maximum 220 °C.

Application: Incorporation in jigs, for holding or lifting.



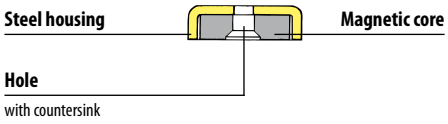
Remove the keeper plate before use.

∅		mm	17	21	27
02A 08 5940	Pot magnet with keeper plate	AlNiCo	eShop	eShop	eShop
Nominal clamping force		N	26.5	40	61
Height		mm	16	19	25
Tapped attachment hole in the magnet head		mm		M6	

Flat pot magnets, AlCo Max III

- Flat magnet in a protective steel jacket.
- Magnet fixed from below via countersunk hole.
- Magnetic material temperature-resistant up to maximum °C (size 19 up to 100 °C).

Application: Jigs and fixtures.





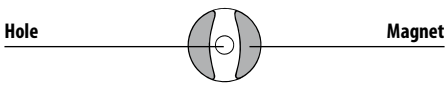
Remove the keeper plate before use.

∅		mm	19	29	38
02A 08 5944	Flat pot magnet with keeper plate	AlNiCo	eShop	eShop	eShop
Nominal clamping force		N	30	50	130
Attachment hole ∅		mm	4.5	5.2	5.2
Height		mm	7.5	8.7	10.35

Button magnets, AlCo Max III

- Round magnet with split adhesion surface and bore.
- Magnetic material temperature-resistant up to maximum 550 °C.

Application:
- For use with dial gauges.
- Fixing of small metal objects.





Remove the keeper plate before use.

∅		mm	13	19	25	32
02A 08 5946	Button magnet with keeper plate	AlNiCo	eShop	eShop	eShop	eShop
Nominal clamping force		N	7	19	34	48
Attachment hole ∅		mm	4.4	4.8	4.8	7.1
Height		mm	9.5	12.7	15.9	25.4

Magnetic clamp, welding aid

Adjustable magnetic clamp — Ferrite magnet

Jaws **adjustable from 25° to 280°.** Most common angles 90°, 60°, 45°, and 30° are marked for quick reference.

Application: For precise holding of steel plates and pipes during welding and assembly operations.


08 5950

Type			952
08Q 08 5950	Adjustable magnetic clamp	Ferrite	eShop
Nominal clamping force		N	200
Height		mm	200
Length		mm	195
Width		mm	11
Weight		kg	0.49

Adjustable magnetic clamp for heavy-duty applications — Ferrite magnet

The arms of the jaw can be fixed to any **angle between 45° and 90°.**

Application: Aid for clamping larger components during welding and assembly operations.

Type			974
080 08 5952	Adjustable magnetic clamp **heavy-duty**	**Ferrite**	eShop
Nominal clamping force		N	400
Height		mm	140
Length		mm	140
Width		mm	35
Weight		kg	1.4



08 5952_974

Magnetic clamp with fixed 90° angle — Ferrite magnet

Angular tolerance ± 0.05 / 100 mm.

Size 973 – With two additional pressure levers.

Application: For clamping components at a fixed angle of 90° and for preparing welding and assembly operations.

Type			971	972	973
080 08 5954	Magnetic clamp with 90° (fixed)	**Ferrite**	eShop	eShop	eShop
Nominal clamping force		N	400	750	2000
Height		mm	140	225	300
Length		mm	140	225	300
Width		mm	35	22	35
Weight		kg	1.4	2.2	4.7



08 5954_971
08 5954_972
08 5954_973

Magnetic welding clamp

Welding clamp, adjustable to **30°, 60° and 90°**.

Size IOWCC – The set consists of 2 pieces of welding clamps (internal / external angle) of length 75 mm and 125 mm.

Application: Aid for positioning, fixing and holding components during welding work.

Type			IOWCC	IOWCL
080 08 5955	Welding clamps, internal / external angle		eShop	eShop
Nominal clamping force		N	90; 150	180
Length		mm	75; 125	165
Width		mm	52; 85	110
Weight		kg	0.13; 0.4	0.8


08 5955_IOWCC

Magnetic holder — Alcomax magnet

Steplessly adjustable magnetic force. The clamp has **6 magnetic faces:**
3 flat and 3 "Vee-form", set at an angle of 120°.

Application: For powerful, fixed support of flat and round components (pipe ∅ up to 76 mm) in a variety of angular positions.

Type			925
080 08 5956	Magnetic holder	**AlNiCo**	eShop
maximum nominal clamping force		N	1000
Height		mm	140
Length		mm	108
Width		mm	108
Weight		kg	5.7



08 5956_925

Switchable welding aid

Holds workpieces at angles of 45° and 90°. Temperature-resistant up to maximum 180 °C.
Ideal for round and rectangular hollow section, and also for angle material and flat material.

Type			QHCSS	QHCSL
080 08 5957	Switchable welding aid		eShop	eShop
Nominal clamping force		N	400	750
Height		mm	95	130
Length		mm	111	152
Width		mm	29	35
Weight		kg	0.7	1.4



08 5957_QHCSL

Permanent magnetic links

Magnetic blocks can be fixed at **any angle.**

08 5960 – Temperature-resistant up to maximum 220 °C, 1 magnetic face.
08 5962 – Temperature-resistant up to maximum 100 °C, 3 magnetic faces.

08Q				
08 5960	Adjustable magnetic link **1 face magnetic**	**AlNiCo**	eShop
08 5962	Adjustable magnetic link **3 faces magnetic**	**Ferrite**	eShop
maximum nominal clamping force		N	120
Length single block		mm	60
Single block width		mm	29
Single block height		mm	25



08 5960

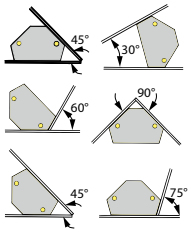


08 5962

Permanent multiple magnetic clamp — Ferrite magnet

Offering angles of **30°, 45°, 60°, 75°**and **90°**. Temperature-resistant up to maximum 180 °C.

08Q				
08 5964	Multiple magnetic clamp	**Ferrite**	eShop
maximum nominal clamping force		N	100
Bore ∅		mm	5
Height		mm	65
Length		mm	100.5
Thickness		mm	12
Weight		kg	0.3





08 5964

Permanent magnetic mitre clamp — Ferrite magnet

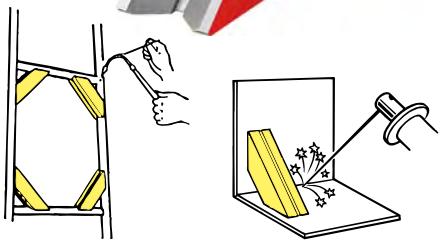
All side faces including Vees are magnetic. The **Vee faces are suitable for round material**.
Temperature-resistant up to maximum 200 °C.

Application: For powerful rigid support of round components (pipe ∅ up to 76 mm) in a variety of angular positions.

Vee face suitable for round material.



08 5966



08Q				
08 5966	Magnetic mitre clamp	**Ferrite**	eShop
maximum nominal clamping force		N	680
Height		mm	45
Length		mm	184
Thickness		mm	43
Weight		kg	1.65

ECLIPSE MAGNETICS "Hold fast" – pot magnets, AlCo Max III

To lift the magnet from the component via a press release spindle.
With 2 tapped holes M8 for fixing brackets.



Remove the keeper plate before use.

∅		mm	44	55	70
08Q 08 5968	"Hold fast" pot magnet	**AlNiCo**	eShop	eShop	eShop
Nominal clamping force		N	200	400	880
Magnet body height		mm	44.5	49.2	64.5
Weight		kg	0.6	1	2

ECLIPSE MAGNETICS Magnetic lifter for sheets/plates, ferrite

Strong permanent ferrite magnet in aluminium housing.
With quick-release mechanism for releasing the sheet/plate.

Application: For safe transport of metal sheets and steel plates.



08 5970



Type			964
08Q 08 5970	Magnetic lifter for sheets/plates	**Ferrite**	eShop
maximum clamping force along the axis		N	1700
maximum clamping force 90° to the axis		N	340
Height		mm	38
Length		mm	118
Width		mm	98
Weight		kg	2.8

Bohle Suction lifter

08 6200 – Bridge handle for one-hand operation, for quick and efficient work.
08 6201 – Veribor® **2-head plastic suction lifter**. Improved grip area made of non-slip rubber prevents slipping of the hand when carrying. With proven toggle lever technology.
08 6202 – Veribor® **pump suction lifter** made of plastic. Integrated pump tappet for quick and easy operation. With vacuum safety display with yellow ring on the pump tappet.
08 6203 – With proven toggle lever technology.
08 6200/6203 – Veribor® suction lifter made from sturdy aluminium, with rubber vacuum cups for a long working life.

Application: For lifting materials with smooth, grease-free, and air-tight surface finishes.

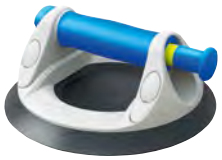
Note:
08 6200/6203 – Suction lifter should be released for storage, so that the rubber cups do not deform permanently.


08 6200_1


08 6201_2


08 6203_3


08 6203_2


08 6202_1

Type		1	2	3
Z80 08 6200	Suction lifter, aluminium	eShop	–	–
Z80 08 6201	Suction lifter, plastic	–	eShop	–
Z80 08 6203	Suction lifter, aluminium	–	eShop	eShop
Suction head ∅	mm		120	
maximum load capacity	kg	30	60	100

Type		1
Z80 08 6202	Pump suction lifter, plastic	eShop
Suction head ∅	mm	210
maximum load capacity	kg	120

Girder clamp and sheet metal clamp

Girder clamp for attaching to T-girders or H-profile girders.
Approved for the **transport of personnel**.
Girder clamps act as the **attachment point** for hoists, diverter rollers or work platforms.




08 6026

Load capacity	t	1	2
A80 08 6026	Tractel CORSO™ girder clamp	eShop	eShop
Manufacturer's designation		LT-1B	LT-2B
Weight	kg	4.8	5.6

The clamp is opened and closed using the locking lever.
The safety lock prevents the clamp from slipping from the material being transported, even without pulling load.

Application: For the vertical transport of individual sheet metals and switching panels, profiles, and steel constructions.

Note: **The surface hardness of the material being transported must be less than HRC 30! The weight of the load to be lifted must not be less than 10 % of the given lifting capacity.** Further sizes and types on request.


08 6032

Safe working load	t	1,5	2	3	4	6
A80 08 6032	Yale Sheet metal clamp TBL plus	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Gripping range	mm	0 – 20	0 – 32	0 – 32	0 – 32	0 – 50
Weight	kg	3	9.3	9.3	11.2	20.6

Tractel Hand-operated winches and hoists

Multi-purpose hoist with additional basic accessories consisting of lever tube, 20 m rope with tip and grommet, wound on to a manual reel.

Note: Further multi-purpose hoists (e. g. "Jockey") and accessories available on request.



08 6021

Safe working load	t	0,8	1,6	3,2
A80 08 6021	Multi-purpose hoist with basic accessories	(eShop)	eShop	eShop
Manufacturer's designation		T 508D	T 516D	T 532D
Lever tube weight	kg	1	2.4	2.4
Multi-purpose hoist weight	kg	6.6	13.5	24

All-purpose chain lever hoists for lifting, drawing, and securing

All-purpose devices AL, chain lever hoists (aluminium)

Sturdy construction of high-tensile **aluminium alloy** in compact design with low net weight. Smooth-running **chain release.**

Application: Primarily for **mobile use,** where no great lifting forces are required.

Safe working load		t	0,25	0,5	0,75	1,5	3
08Y 08 6012	Yale	AL all-purpose lever hoist with round steel link chain	–	–	(eShop)	(eShop)	(eShop)
08Y 08 6013		BRAVO™ aluminium lever hoist	eShop	eShop	–	–	–
Standard lifting height		m	1.5				
Number of chains			1				
Safe working load		kg	250	500	750	1500	3000
Weight		kg	2.3	3.3	6.4	10	18

other lifting heights available



08 6012



08 6013_0,5

All-purpose chain lever hoists

Hoist with **sheet steel casing,** extremely low weight, with **chain release as standard, low height, rotatable** bearing, forged hook.

08 6014 Size 0,25 – Exceptionally compact hoist (installed length 240 mm).

08 6015 Size 0,25; 0,5 – "Yalehandy" all-purpose hoist.

Application: Versatile hoist for use even under the most difficult conditions.

Note:
08 6014 – **Hoists with overload protection (slip clutch) available on request.**

Safe working load		t	0,25	0,5	0,75	1,5
08Y 08 6014		Chain lever hoist BRAVO™ with round steel link chain	eShop	–	eShop	eShop
08Y 08 6015	Yale	Lever hoist with round steel link chain	eShop	eShop	–	–
minimum length between hooks		mm	230	282	315	365
Standard lifting height		m	1.5			
Number of chains			1			
Safe working load		kg	250	500	750	1500
Weight		kg	2.2	2.8	7	11.5



08 6014_0.25



08 6015_0.5
„Handy"



08 6014_1,5

All-purpose lever hoists UNO plus A

Robust construction made of sheet steel in compact design. Smooth-running **chain release.** Chain guides for trouble-free chain running.

Application: Standard, handy all-purpose hoist for versatile applications.

Note: **ATEX version on request**

Safe working load		t	0,75	1,5	3
08Y 08 6017	Yale	UNO plus A lever hoist with round steel link chain	eShop	eShop	eShop
Standard lifting height		m	1.5		
Number of chains			1		
Safe working load		kg	750	1500	3000
Weight		kg	6.3	9.2	16.9



08 6017

All-purpose lever hoist ERGO 360

Hoist with **ERGO aluminium hand lever and integrated, non-slip folding handle.** Permits various different working positions and non-tiring work by changing the grip position. Up to 30% less lever force. Ergonomic product design for optimum safety. Folding handle locks and can be folded in both directions. Suitable for carrying the hoist.

Application: All-purpose device for intensive, versatile applications.

Lifting capacity		t	0,75	1,5	3
08Y 08 6018	Yale	ERGO360 all-purpose lever hoist with folding handle	eShop	eShop	eShop
Standard lifting height		m	1.5		
Number of chains			1		
Safe working load		kg	750	1500	3000
Weight		kg	6.7	9.6	17.2



Fold-out handle



08 6018

Spur-gear block and tackle

Each spur-gear block and tackle is factory overload-tested and supplied with a user manual and test certificate.
All-steel construction. Needle bearings and ball bearings on all rotating parts. Automatic load pressure brake. 360° rotating forged hook.

Note:	**Lifting capacity up to 20 tons, chain box and overload protection available on request.**



08 6019



08 6020_1

Safe working load	t	0,25	0,5	1	2
08 6019	Spur-gear block and tackle Tralift™	eShop	–	–	–
08 6020	Yale Spur-gear block and tackle VS III	eShop	eShop	eShop	(eShop)
Lifting force at nominal load (08 6019)	daN	11	–	–	–
Lifting force at nominal load (08 6020)	daN	20	21	24	29
Standard lifting height	m	3			
Number of chains		1	1	1	2
Safe working load	kg	250	500	1000	2000
Weight (08 6019)	kg	3.2	–	–	–
Weight (08 6020)	kg	4.9	9	11.5	17.3

Yale Spur-gear block and tackle Yalelift 360°

Each spur-gear block and tackle is factory overload-tested and supplied with a user manual and test certificate.
The 360° rotatable manual chain guide permits operation from all positions. Designed for heavy-duty use. Satisfies the latest European safety regulations. The user is no longer forced to work in the hazardous area of the load.

Note:	**Lifting capacity up to 20 tons, chain box and overload protection available on request.** Version with integrated power traverse, galvanised version and ATEX on request.



08 6025

Safe working load	t	0,5	1	3	5
08 6025	Spur-gear block and tackle Yalelift 360°	(eShop)	(eShop)	(eShop)	(eShop)
Lifting force at nominal load	daN	21	30	38	34
Standard lifting height	m	3			
Number of chains		1	1	1	2
Safe working load	kg	500	1000	3000	5000
Weight	kg	9	13	34	48

Yale Electric chain hoists CPV/CPVF VEGO

Electric chain hoist with **lifting hook** in robust and reliable design. The integral **end-of-travel switch** for the highest and lowest hook positions protects the clutch, motor, and housing and extends their working life. Drive group 1 Am, 50 % duty cycle at one speed, standard operating voltage (400 V / 50 Hz). Enhanced operating safety due to 42 V contactor controls, encapsulated control switches to Index of Protection IP65, motors to IP55.

08 6036 – With two speeds (precision lifting).

Note:	Versions with 2 speeds (precision lifting) and other lifting heights, power traverse, chain box and radio and 230 V power supply available on request.



08 6035_0,5-8

Type		0,25-8	0,5-4	0,5-8	1-4	1-8	2-4
08 6035	Electric chain hoist CPV VEGO	–	–	(eShop)	(eShop)	(eShop)	(eShop)
08 6036	Electric chain hoist CPVF VEGO	(eShop)	(eShop)	–	–	–	–
Lifting speed	m/min	8; 2	4; 1	8	4	8	4
Standard lifting height	m	3					
Number of chains		1	2	1	2	1	2
Safe working load	kg	250	500	500	1000	1000	2000
Weight	kg	18	21	26	28	58	63

Lashing straps, load straps, and securing straps, EN 1492, 12195



Lashing straps, load straps, and securing straps

08 6105/6205 – Specially designed friction lock to prevent slipping; wide opening and high clamping force.

08 6120/6220 – Extra-strong low-stretch polyester straps with durable PU coating (EN 12195-2). Strong, corrosion–resistant ratchet and end hooks, easy to use.

Application: For **lashing down, securing**, and **holding together** components in the workshop and during transport.

Note: Lashing straps are not colour-coded. Colours may vary.

Length		m	2	5
Z80 08 6105	Yale	1-piece lashing strap with friction lock, set of 2 pieces	eShop	eShop
Z80 08 6205		1-piece lashing strap with friction lock, set of 2 pieces	–	–
maximum lashing force LC		daN	300	
Strap width		mm	25	



08 6105



08 6205

Length		m	2	4	6
Z80 08 6110	Yale	1-piece lashing strap with ratchet	eShop	eShop	eShop
Z80 08 6210		1-piece lashing strap with ratchet	–	–	–
maximum lashing force LC		daN	800		
Pre-load force when tightened manually (50 daN)		daN	160		
Strap width		mm	25		



08 6110



08 6210

Length		m	6	8
Z80 08 6115	Yale	1-piece lashing strap with ratchet	eShop	eShop
Z80 08 6215		1-piece lashing strap with ratchet	–	–
maximum lashing force LC		daN	1000	
Pre-load force when tightened manually (50 daN)		daN	150	
Strap width		mm	35	



08 6115



08 6215

Length		m	6	8	10
Z80 08 6120	Yale	2-piece lashing strap with ratchet and end hook	eShop	eShop	eShop
Z80 08 6220		2-piece lashing strap with ratchet and end hook	–	–	–
maximum lashing force LC		daN	1000	2000	2000
Pre-load force when tightened manually (50 daN)		daN	150	300	300
Strap width		mm	35	50	50



08 6120



08 6220

Automatic load strap

Lashing straps with ratchet and handy automatic roll-up function. Tested to EN 12195-2.

- For quick and easy securing of loads.
- Steplessly extendable and retractable.
- Simple rolling up at the touch of a button.
- Hard-wearing strap of polyester.

08 6132 – Width 25 mm, with 2 plastic-coated S-hooks, length 3 m.

08 6134 – Width 50 mm, with 2 end hooks, length 3 m.

Length		m	3
Z80 08 6132	Yale	Automatic lashing strap 25 mm	eShop
Z80 08 6134		Automatic lashing strap 50 mm	eShop
maximum lashing force LC (08 6132)		daN	300
maximum lashing force LC (08 6134)		daN	750
Strap width (08 6132)		mm	25
Strap width (08 6134)		mm	50



08 6132 08 6134

Round slings, lifting straps and accessories

Lifting slings

Extremely hard wearing lifting slings (Euro-slings EN 1492-1 to form B2).
With reinforced spliced (crane) loops at the two free ends.
Application: For lifting large parts, easy to attach and to release the load.



08 6170



Length			m	2	3	4	5	Strap width	Safe working load direct lift	Safe working load looped	Safe working load < 7°	Safe working load 7° – 45°	Safe working load 45° – 60°
								mm	kg	kg	kg	kg	kg
Z80 08 6170	Yale	Lifting sling violet 1000 kg, two-layer		eShop	eShop	eShop	eShop	30	1000	800	2000	1400	1000
Z80 08 6271				–	–	–	–	30	1000	800	2000	1400	1000
Z80 08 6172	Yale	Lifting sling green 2000 kg, two-layer		eShop	eShop	eShop	eShop	60	2000	1600	4000	2800	2000
Z80 08 6272				–	–	–	–	60	2000	1600	4000	2800	2000
Z80 08 6174	Yale	Lifting sling yellow 3000 kg, two-layer		eShop	eShop	eShop	eShop	90	3000	2400	6000	4200	3000
Z80 08 6274				–	–	–	–	90	3000	2400	6000	4200	3000

Round slings / lifting slings

Extremely wear-resistant round lifting slings (EN 1492-2) with seamless, single-layer sleeving.
Application: For lifting and transporting components.

Note: Available up to the following lift ratings: 150 t (polyester), 180 t (Dyneema).





08 6160



Usable length			m	0,5	1	1,5	2	3	4	5	6	Sling width	Safe working load direct lift	Safe working load looped	Safe working load < 7°	Safe working load 7° – 45°	Safe working load 45° – 60°
												mm	kg	kg	kg	kg	kg
Z80 08 6140	Yale	Round sling violet 1000 kg		–	eShop	eShop	eShop	eShop	–	–	–	46	1000	800	2000	1400	1000
Z80 08 6240				–	–	–	–	–	–	–	–	46	1000	1000	2000	1400	1020
Z80 08 6150	Yale	Round sling green 2000 kg		–	eShop	eShop	eShop	eShop	eShop	–	–	46	2000	1600	4000	2800	2000
Z80 08 6255				–	–	–	–	–	–	–	–	48	2000	1600	4000	2800	2000
Z80 08 6160	Yale	Round sling yellow 3000 kg		–	eShop	eShop	eShop	eShop	eShop	–	–	60	3000	2400	6000	4200	3000
Z80 08 6260				–	–	–	–	–	–	–	–	54	3000	2400	6000	4200	3000
Z80 08 6275		Round sling red 5000 kg		–	–	–	–	–	–	–	–	72	5000	4000	10000	7000	5000
Z80 08 6280		Round sling blue 8000 kg		–	–	–	–	–	–	–	–	90	8000	6400	16000	11200	8000
Z80 08 6285		Round sling, orange, 10,000 kg		–	–	–	–	–	–	–	–	91	10000	8000	20000	14000	10000
Circumference			m	1	2	3	4	6	8	10	12						

MILLER by Honeywell SKYLOTEC Industry-born. Sports-driven.

Fall protection

Fall protection devices can be found in our catalogue Volume 4 **"Personal protective equipment"** as from No. 09 8104.



Edge protector for lashing straps

Strong profile edge protector safeguards the load and protects the lashing straps.

For belt width		mm	70
08 6178	Yale Edge protector for lashing straps		eShop
Stock length		mm	135×170



08 6178

Abrasion protection for straps and slings

08 6180 – Abrasion protection, for sliding over straps and slings, length 4×250 mm.
Not suitable for protection against cutting!

08 6290 – Dyneema® edge protection pad, very flexible, extremely resistant to cutting and abrasion.

Application:

08 6290 – In combination with round slings and lifting slings.

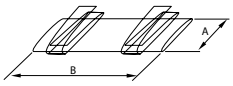


08 6180

Width A		mm	35	50
08 6180	Yale Protective sleeve set 4 pieces, slideable		eShop	eShop
Length		mm	4×250	

Dyneema® is a registered trademark of Royal DSM N. V.

Width A		mm	65	75	100
08 6290	ULTRAPROTECT edge protection pad **with hook-and-loop fastener**		–	–	–
Dimension B		mm	200	200	300
suitable for WLL lifting straps		kg	1000	2000	3000
suitable for WLL round slings		kg	1000 – 3000	4000 – 6000	8000 – 10000





08 6290

Chain hooks, quality class 8

Chain hooks with H-stamp (approval of the German trade association).
High-strength chain hook with fork-head hook with black painted chain.

Size A1–A5 – Chain hooks, **can be shortened.**
The length of the chain can be reduced using the shortening hook with fork head.

Note: Other sizes and versions (e. g. safety locking hooks) available on request.

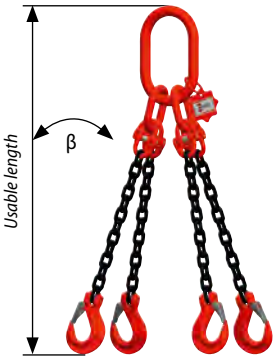
Fork head shortening element



08 6425



08 6438_A1



08 6448_1

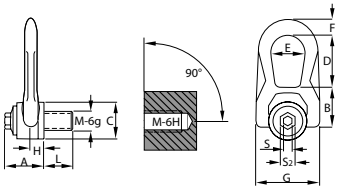
Chain hooks / chain hooks that can be shortened

Usable length m		1	2	3	4	5	A1	A2	A3	A4	A5	Chain Ø mm	Safe working load WLL β = 0° kg	Safe working load WLL β = 0° - 45° kg	Safe working load WLL β = 45° - 60° kg
08 6415	Chain hook **1-chain**	–	–	(eShop)	(eShop)	(eShop)	–	–	(eShop)	(eShop)	(eShop)	6	1120	–	–
08 6416		–	–	(eShop)	(eShop)	(eShop)	–	–	(eShop)	(eShop)	(eShop)	8	2000	–	–
08 6417		(eShop)	–	–	(eShop)	(eShop)	(eShop)	–	–	(eShop)	(eShop)	10	3150	–	–
08 6418		(eShop)	–	(eShop)	–	(eShop)	(eShop)	–	eShop	(eShop)	(eShop)	13	5300	–	–
08 6425	Chain hook **2-chain**	–	–	(eShop)	(eShop)	(eShop)	–	–	(eShop)	(eShop)	(eShop)	6	–	1600	1120
08 6426		–	–	–	(eShop)	(eShop)	–	–	–	(eShop)	(eShop)	8	–	2800	2000
08 6427		(eShop)	–	–	(eShop)	(eShop)	(eShop)	–	–	(eShop)	(eShop)	10	–	4250	3150
08 6428		(eShop)	–	(eShop)	–	(eShop)	(eShop)	–	–	–	(eShop)	13	–	7500	5300
08 6435	Chain hook **3-chain**	–	–	–	(eShop)	(eShop)	–	–	–	(eShop)	(eShop)	6	–	2360	1700
08 6436		–	–	(eShop)	(eShop)	(eShop)	–	–	(eShop)	(eShop)	(eShop)	8	–	4250	3000
08 6437		(eShop)	–	eShop	(eShop)	(eShop)	(eShop)	–	–	–	(eShop)	10	–	6700	4750
08 6438		(eShop)	–	eShop	eShop	(eShop)	(eShop)	(eShop)	(eShop)	–	(eShop)	13	–	11200	8000
08 6445	Chain hook **4-chain**	–	–	–	(eShop)	(eShop)	–	–	–	(eShop)	(eShop)	6	–	2360	1700
08 6446		(eShop)	–	–	–	(eShop)	(eShop)	–	–	–	(eShop)	8	–	4250	3000
08 6447		(eShop)	–	–	–	(eShop)	(eShop)	–	–	–	(eShop)	10	–	6700	4750
08 6448		(eShop)	–	–	–	(eShop)	(eShop)	–	–	–	(eShop)	13	–	11200	8000

Screw-on attachment eye to EN 1677-1, quality class 8

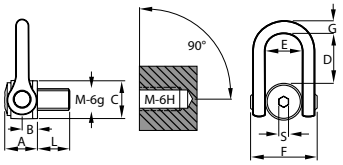
Compact, high-strength attachment eye for screwing in. Rotates 360° , pivots 180° .

Note: **SF 5:1 = Safety Factor 5.**
SF 4:1 = Safety Factor 4.





08 6452





08 6453

Thread ∅	08 6452 DSR attachment eye	Lifting capacity WLL SF 5:1	Lifting capacity WLL SF 4:1	L	S	A	B	C	D	E	F	G
		t	t	mm	mm	mm	mm	mm	mm	mm	mm	mm
M6×1	eShop	0.15	0.2	15	8	33	30	30	38	27	14	53
M8×1,25	eShop	0.4	0.5	15	8	33	30	30	38	27	14	53
M10×1,5	eShop	0.7	0.9	18	8	33	30	30	38	27	14	53
M12×1,75	eShop	1.05	1.3	21	8	33	30	30	38	27	14	53
M14×2	(eShop)	1.4	1.8	23	8	45	40	45	53	38	17	76
M16×2	eShop	2	2.3	27	8	45	40	45	53	38	17	76
M18×2,5	(eShop)	2.3	2.3	27	8	45	40	45	53	38	17	76
M20×2,5	eShop	2.5	2.5	30	8	45	40	45	53	38	17	76
M22×2,5	(eShop)	3.5	4.5	33	14	62	55	60	83	55	25	115
M24×3	eShop	4.4	5.5	36	14	62	55	60	83	55	25	115
M27×3	(eShop)	5.7	6	40	14	62	55	60	83	55	25	115
M30×3,5	eShop	6	6.3	45	14	62	55	60	83	55	25	115

Thread ∅	08 6453 DSS attachment eye	Lifting capacity WLL SF 5:1	Lifting capacity WLL SF 4:1	L	S	A	B	C	D	E	F	G
		t	t	mm	mm	mm	mm	mm	mm	mm	mm	mm
M30×3,5	(eShop)	7.7	8.5	45	19	61	31	70	104	73	149	33
M33×3,5	(eShop)	8.5	10.5	50	19	61	31	70	104	73	149	33
M36×4	(eShop)	11	12	54	19	61	31	70	104	73	149	33
M42×4,5	(eShop)	13	15	63	19	61	31	70	104	73	149	33
M45×4,5	(eShop)	14.5	16	63	19	61	31	70	104	73	149	33
M48×5	(eShop)	17	20	68	19	79	38	90	125	91	182	45
M56×5,5	(eShop)	22	25	78	19	79	38	90	125	91	182	45

Screw-on attachment eye to EN 1677-1, quality class 8

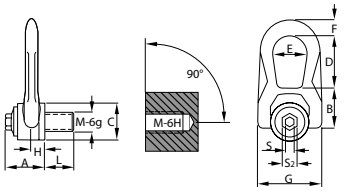
Compact, high-strength steel Quick Lift DSR attachment eye for screwing in. Rotates 360°, pivots 180°. Time saving of up to 80% compared with screwing in a traditional attachment eye (DSR vs. Quick Lift DSR). **Can be rotated under load.** Easy to use as the system is purely mechanical. Maintenance-free, safe and reliable. The Quick Lift DSR can be fastened in the internal thread in seconds by pressing in the screw head. This is a purely mechanical process based on actuating a spring.

Note: **SF 5:1 = Safety Factor 5.**

Quick Lift push-button



08 6454



Thread ∅	08 6454 Attachment eye **Quick Lift DSR**	Lifting capacity WLL SF 5:1	L	S	A	B	C	D	E	F	G
		t	mm	mm	mm	mm	mm	mm	mm	mm	mm
M8×1,25	eShop	0.25	17.5	18	31	30	30	38	27	14	53
M10×1,5	eShop	0.4	19.5	18	31	30	30	38	27	14	53
M12×1,75	eShop	0.65	23	27	40	40	45	53	38	17	76
M14×2	eShop	0.7	23	27	40	40	45	53	38	17	76
M16×2	eShop	1.05	27	27	40	40	45	53	38	17	76
M20×2,5	eShop	1.7	30	40	55	55	60	83	55	25	115
M24×3	eShop	2.5	36	40	55	55	60	83	55	25	115

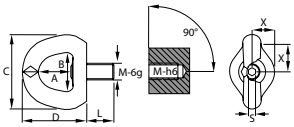
Swivel eye bolts, quality class 8

High-strength swivel eye bolts, can be rotated through 360°, painted red.

Note: **SF 5:1 = Safety Factor 5.**
SF 4:1 = Safety Factor 4.

Thread ∅	08Y 08 6467 Swivel eye bolt SEB	Lifting capacity WLL SF 5:1	Lifting capacity WLL SF 4:1	L	x	A	B	C	D
		t	t	mm	mm	mm	mm	mm	mm
M8	eShop	0.4	0.5	14	20	30	34	60	57
M10	eShop	0.5	0.7	17	20	30	34	60	57
M12	eShop	0.8	0.9	21	20	30	34	60	57
M16	eShop	1.4	1.8	27	35	38	45	88	80
M20	eShop	2	2.7	30	35	38	45	88	80
M24	eShop	3.2	3.8	36	35	38	45	88	80
M30	eShop	5.5	6.3	45	50	58	70	115	106





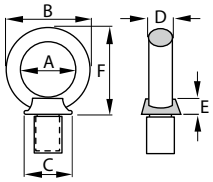
Eye bolts / nuts to EN 1677-1, high-strength, quality class 8

High-strength eye bolts / nuts, red paint finish.

Note: Do not place a load on the eye bolt / nut at 90° to the screw thread axis!
SF 4:1 = Safety Factor 4.

Thread ∅	08Y 08 6472 Eye bolt	08Y 08 6477 Eye nut	Lifting capacity WLL SF 4:1	A	B	C	D	E	F	Thread length 08 6472
			t	mm	mm	mm	mm	mm	mm	mm
M6	eShop	eShop	0.4	25	45	25	10	10	45	13
M8	eShop	eShop	0.8	25	45	25	10	10	45	13
M10	eShop	eShop	1	25	45	25	10	10	45	17
M12	eShop	eShop	1.6	35	63	35	14	14	62	21
M16	eShop	eShop	4	35	63	35	14	14	62	27
M20	eShop	eShop	6	50	90	50	20	20	90	30
M24	eShop	eShop	8	50	90	50	20	20	90	36
M30	eShop	eShop	12	60	108	65	24	24	109	45
M36	(eShop)	–	16	70	126	75	28	26	128	54
M42	(eShop)	–	24	80	144	85	32	30	147	63
M48	(eShop)	–	32	90	166	100	38	35	168	68





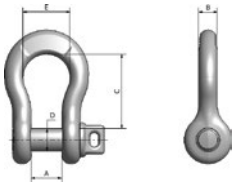
Shackle, quality class 8

Curved shackle with locking screw made from high-tensile steel, galvanised surface.

Note: **SF 6:1 = Safety Factor 6.**

Lifting capacity WLL SF 6:1	08Y 08 6482 Shackle	A	B	C	D	E
t		mm	mm	mm	mm	mm
0,5	eShop	12	6	29	8	20
0,75	eShop	14	8	31	10	21
1	eShop	17	10	37	11	26
2	eShop	21	13	48	16	33
4,75	eShop	32	19	71	22	51
8,5	eShop	43	25	95	29	68
12	eShop	52	32	119	35	82
17	(eShop)	61	38	148	42	98
25	(eShop)	73	45	177	51	127





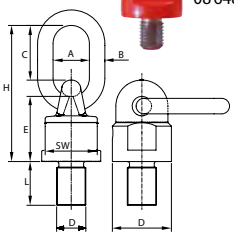
Hoist ring, quality class 8

Screw-on, 360° rotating attachment point for lifting heavy loads, ball-bearing mounted, 100% crack detection tested, **certified by the DGUV.**

Note: **SF 4:1 = Safety Factor 4.**

Thread ∅	08Y 08 6486 Hoist ring	Lifting capacity WLL SF 4:1	A	B	C	D	E	H
		t	mm	mm	mm	mm	mm	mm
M16	eShop	1.12	30	13	46	38	50	105
M20	eShop	2	34	16	57	50	61	131
M24	eShop	3.15	40	18	70	58	68	153
M30	eShop	5.3	45	22	65	75	80	165

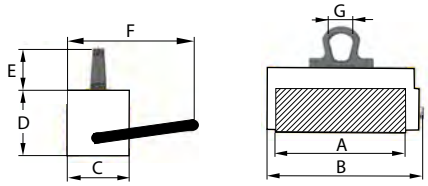




ECLIPSE MAGNETICS Manually operated Neodymium permanent magnets for lifting

Compact, robust design with neodymium permanent magnets.
Optimum performance even with large air gaps, no stray fields.
Certified break-away force (see **test certificate**).
Easy-action operating handle with safety catch for the switch mechanism.
The lifting magnets have a safety factor of 3:1.

Application: For safe handling and transporting of flat and round materials (No. 085980).
For steel or cast iron parts, plates, rods or pipes.
For use in warehouses, foundries / steelworks, storage of steel, tool-making, and production areas.




08 5980

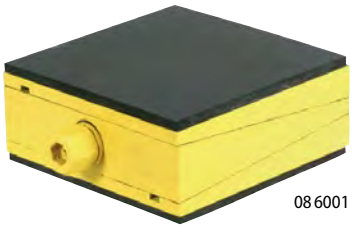
maximum loading capacity (level)	08P 08 5980 Lifting magnet UL E	maximum Ø round	maximum length flat	minimum material wall thickness, flat	minimum material wall thickness, round	A	B	C	D	E	F	G	maximum lifting capacity flat	maximum lifting capacity round	Weight
kg		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	kg	kg
100	eShop	80	1000	7.5	7.5	91	131	65	75	49	185	32	100	65	3
300	eShop	100	1500	10	10	157	202	95	95	74	253	46	300	150	10
600	eShop	140	2000	12.5	12.5	213	265	116	116	106	223	59	600	300	20
1000	eShop	180	2500	15	15	266	320	145	148	71	342	81	1000	300	39

EFFBE Machine supports, machine mounts

Anti-vibration systems for machines. The decoupling of machines and equipment, which are sensitive to vibration, improves process reliability and accuracy.
The inserted elastomers damp body noise, vibration and impacts, and ensure optimum production results with reduced noise levels.
All mounts are easy to fit and have levelling adjustment.
Levelling pad, holds a set level, with **non-slip coating**.
Adjustment is performed with a wedge actuated by a fine pitch adjusting screw.

Application: For machines without fastening possibility and for machines which require specially stiff mounting.

Note: Machine mounts can be found under No. 086002 – No. 086006.
For higher loads and special applications further mounts are available on request.
Screw-through levelling pads available on request.


08 6001

Precision levelling pad

maximum load capacity		kg	2600	8000
08Y 08 6001	KE precision levelling pad		eShop	eShop
Height H		mm	40	46
Length A		mm	115	200
Width B		mm	115	200
Coating H_W		mm	5	
maximum levelling range (height adjustment Ni)		mm	± 4	±3

Yale Hydraulic range 700 bar

All components and attachments satisfy **metric standard ranges**, which considerably simplifies assembly, service, and the procurement of spare parts. **100 % compatibility** with all commercially-available 700 bar hydraulic systems.

Note:	**Closed systems are pre-mounted ex works, filled and air bled.**

Suitable accessories under No. 08 6070, 08 6080 onwards in the online shop.

Hydraulic hand pumps 700 bar

2-stage hand pump **with rapid movement setting** (except size 1/0.7). The switch from first to second stage is performed automatically. **With pressure limiting valves adjustable in the range 0 – 700 bar. All-metal construction** with fine-adjustment release valve, bleeding and filling screw and a carrying eye on the operating handle.

Supplied with: Filled with oil, without manometer.



08 6050

Number of steps / Tank volume	l	1/0,7	2/0,7	2/2	2/4
08Y 08 6050	Hydraulic hand pump HPS	(eShop)	(eShop)	(eShop)	(eShop)
Number of pressure stages		1	2	2	2
Delivery quantity per no-load stroke (1st stage)	ml	–	11	11	11
Delivery quantity per load stroke (2nd stage)	ml	2			
usable tank volume	ml	700	700	2000	4000
Weight	kg	7	7	10	13

Universal cylinder, single acting, with spring return

Universal cylinders are characterised by extremely **good side load capability,** they are fitted with spring return and have only one hose connection.

Application: For all compression operations where high force has to be developed in a confined space. Ideal for use in jigs and workshop presses thanks to the fitting of metric threaded securing points as standard. **Can be used at any angle.**

Supplied with: Supplied with 3/8 NPT pressure connection. Equipment is supplied ready to use, including connection sleeve, hardened steel load piece (head) and securing thread **without** connection hoses and adaptors.

Note:	For hydraulic hand pump see No. 086050, hydraulic hose No. 086081, pressure gauge No. 086087.



08 6060

Pressure force / stroke (t / mm)		5/75	10/50	10/100	10/150	10/250	15/350	23/250	50/160
08Y 08 6060	Universal cylinder YS	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Lifting height	mm	75	50	100	150	250	350	250	160
Oil volume	ml	53	73	146	218	363	744	830	1135
Cylinder external ∅	mm	42	57	57	57	57	67	85	125
Length retracted	mm	157	125	178	250	352	472	376	285
maximum compressive force	kN	50	100	100	100	100	150	230	500
Weight	kg	1.5	2.1	2.8	4.1	5.5	10	13.5	24

Hollow piston cylinder, single acting, with spring return

Due to their **central through hole**, these cylinders are suitable for applications where a high tensile force has to be exerted via a **threaded spindle**, quick-release connection.

Application: **Pre-loading** of anchor fastenings, **pressing bearings, axles, and shafts in and out**, **pulling off** gear wheels and pulleys, and pulling or moving heavy fabrications.

Supplied with: Supplied with 3/8 NPT pressure connection. Equipment is supplied ready to use, including connection sleeve, hardened steel load piece (head) and securing thread **without** connection hoses and adaptors.

Note:	Hydraulic hand pump see No. 086050,hydraulic hose No. 086081.



08 6070

Pressure force / stroke (t / mm)		12/40	12/75	21/50	21/150	33/150
08Y 08 6070	Hollow piston cylinder YCS	(eShop)	(eShop)	(eShop)	(eShop)	(eShop)
Lifting height	mm	40	75	50	150	150
Oil volume	ml	71	132	153	458	716
Cylinder external ∅	mm	70	70	100	100	114
Through hole ∅	mm	20	20	27	27	33
Length retracted	mm	142	195	173	335	343
maximum compressive force	kN	120	120	214	214	335
Weight	kg	3.5	4.5	8.5	15	21



Yale DIN steel jack

Geared jack with lifting toe.
Automatic load pressure brake holds the load securely at the desired height.
Steel jack type SJ **with** ratchet crank, satisfies UVV.

Standard: **DIN 7355**


08 6040

Safe working load		t	1,5	3	5
08Y 08 6040	Steel jack SJ		(eShop)	(eShop)	(eShop)
Construction height		mm	725	735	730
Lifting height		mm	1085	1095	1080
Weight		kg	17	20	27

Yale Hydraulic bottle jacks

Robust design with large baseplate for stability, with pressure limiter. Easy-action pump handle with connection for valve control. Head face grooved and can additionally be drilled out for tapping in the centre.


08 6045

Safe working load		t	2	4	6	8	12	20
08Y 08 6045	Hydraulic bottle jack JH		eShop	eShop	eShop	(eShop)	(eShop)	(eShop)
smallest height		mm	181	205	219	225	240	240
Lifting height		mm	115	126	130	152	153	153

Yale Machine lifter with lifting claw

Machine lifter with compact dimensions, the load can be lifted both with the lifting claw and also with the lifting head.
High stability, the pump lever can be turned through 270° (not size 2).


_02


_05


_10


_15

Safe working load		t	2	5	10	15
08Y 08 6046	Machine lifter with lifting claw YAM		eShop	eShop	(eShop)	(eShop)
Length		mm	180	257	280	321
Width		mm	125	182	240	258
Height		mm	235	290	325	344
Lifting height		mm	113	120	145	140
Claw length		mm	50	57	60	60
Claw width		mm	50	75	100	110
minimum insertion height		mm	16	26	33	33
automatic spring retraction			no	yes	yes	no
Weight		kg	8	19	38	53

Yale Transport chassis elements

Maintenance-free chassis components for transporting medium-weight loads. The abrasion-resistant nylon wheels with anti-slip rubber coating can be fitted individually or as an entire system.

08 6007 – Version with two captive ball bearings for each fixed wheel.
08 6008 – Version with four freely rotating castor wheels made of abrasion-resistant nylon.


08 6007_2,5


08 6007_6


08 6008_1

Safe working load		t	1	2,5	6
08Y 08 6007	Chassis element and transport roller type LF **fixed wheels**		–	eShop	eShop
08Y 08 6008	Chassis element and transport roller type LFL **castor wheels**		eShop	–	–
Manufacturer's designation			LFL-1-4	LF-2.5	LF-6
Height		mm	120	100	100
Length		mm	430	275	415
Width		mm	340	120	210
Weight		kg	14	4	12

Three-point heavy load chassis elements for transporting medium-weight loads. With a towbar and a rear chassis element. The two identical rear chassis elements have adjustable connecting rods. Overall load capacity is distributed 50:50 between the front and rear chassis elements.

Supplied with: Three chassis elements, two connecting bars, one towbar.

08 6009_6



08 6009_12

Safe working load		t	6	12
08Y 08 6009	Three-point chassis system type LX, with towbar **manoeuvrable**		eShop	(eShop)
Manufacturer's designation			LX-6	LX-12
Front loading area height		mm	115	
Front loading area length		mm	185	400
Width front loading area		mm	150	220
Rear adjustment range from – to		mm	500 – 1400	
Weight		kg	45	80

GECHTER Hand lever toggle presses

Sturdy, hollow cast body with large base. Base with 4 holes for attachment to workbench etc.
The press tool carriage runs without play on dovetail guides and is adjustable for height.
Additionally the press stroke (ram stroke) can also be set by an adjusting screw to give the desired vertical lift.
The table has a 10 mm T-slot for attaching clamps.

Size 12; 16 – The lever bolt can be moved to give varying forces and different stroke lengths (see table).

Colour: Light grey RAL 7035.

Application: For embossing, riveting, upsetting, and punching as well as for bending, compressing, and pressing in bushes etc.

Note: Hand lever presses with air support available in the online shop under No. 086761.


08 6760_12

Type			2,5	5	12	16
08V	08 6760	Hand lever toggle press	eShop	eShop	eShop	eShop
Force for long stroke		kN	–	–	16	24
Force for short stroke		kN	8	14	20	32
Stroke length long		mm	0 – 42	0 – 40	0 – 45	0 – 58
Stroke length short		mm	–	–	0 – 23	0 – 25
Throat		mm	90	90	120	160
Installation height		mm	70 – 190	70 – 195	75 – 240	100 – 320
Mounting hole in the slide ram		mm	10 H 7	10 H 7	10 H 7	15 H 7
Table width		mm	150	180	200	325
Table depth		mm	100	110	170	230
T-slot to DIN 650			1 pc. size 10	1 pc. size 10	1 pc. size 10	2 pcs. size 10
Height without hand lever		mm	320	420	500	710
Footprint width		mm	150	180	180	300
Footprint depth		mm	200	240	310	420
Weight		kg	11.5	20	32	79

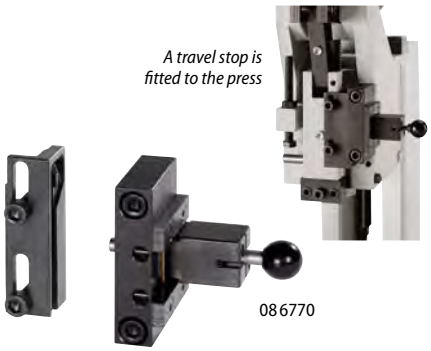
GECHTER Travel stop for hand lever toggle presses

Travel stop for quick and easy fitting to hand lever toggle presses (No. 086760).

Application: Where exact embossing, bending, riveting, and cutting work is required, the travel stop ensures that the press ram reaches precisely the bottom of its stroke (i.e. the operator knows they have to push the ram through to the stop).

- **Process and quality monitoring.**
- **Minimises operator error.**

A travel stop is fitted to the press


08 6770

Type		2,5	5	12	16
08V	08 6770 Travel stop	eShop	eShop	eShop	eShop

WESTEX Trowels

Plastering trowel made of stainless steel with wooden handle and spot-welded fastening for greater stability and durability.

Further trowels in the online shop.



08 7238

Length		mm	180	Length mm	Width mm	Thickness mm
08R	08 7238	Plastering trowel, rustproof	eShop	180	120	1.2

Paint scraper

08 7241 – Stainless steel scraper with ergonomic 2-component handle for fatigue-free working.
08 7242 – Highly flexible, long blade made of **rust-resistant** stainless steel for filling and repair work with plaster, putty and light-weight plasters.
08 7650 – Flexible blade of **rust-proof** steel strip, flat-oval wooden handle.

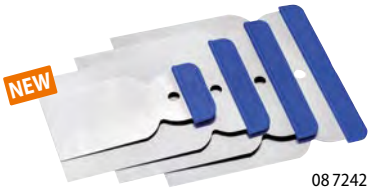
Further scrapers in the online shop.



08 7650 08 7241_60

Width			mm	30	40	50	60	80	100
08R	08 7650		Scraper, wooden handle	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■	eShop ■
08R	08 7241	WESTEX	Stainless steel scraper, 2-component handle	–	eShop	–	eShop	–	–

Number of scrapers in the set			4
08R	08 7242	WESTEX Japanese scraper set	eShop
Supplied with: 1 each Japanese scraper of width			50; 80; 100; 120 mm



08 7242

Paintbrushes

Brush – painting

08 7002/7004 – Round brush , black synthetic bristles. With double thread binding, cambered brush head and unpainted hardwood handle. Best brush guidance possible, ideally suited for painting around wall edges such as windows and doors. Also for thin and thick-layered wood glazes.

08 7007/7009 – Synthetic bristles, unpainted wooden handle.


08 7002


08 7007


08 7009

			20	25	30	35	40	50	60	65	75	80	
08R 08 7002		SolidPro M round brush **for high-quality paintwork**	–	eShop	eShop	eShop	–	–	–	–	–	–	12
08R 08 7004			eShop	–	–	–	–	–	–	–	–	–	12
08R 08 7007	WESTEX	SolidPro M flat brush **for solvent-based media**	eShop	–	eShop	–	eShop	eShop	eShop	–	–	eShop	12
08R 08 7009		SolidPro M nook and cranny brush **for high-quality paintwork**	–	eShop	–	–	eShop	eShop	–	eShop	eShop	–	12

Brush – all-rounder for varnishing and painting

Artificial bristles mix, unpainted wooden handle.


08 7006


08 7008

∅ mm			20	25	30	35	40	50	60	80	
08R 08 7006	WESTEX	SolidPro L round brush **for water-based media**	eShop	eShop	eShop	eShop	–	–	–	–	6
08R 08 7008		SolidPro L flat brush **for water-based media**	–	–	eShop	–	eShop	eShop	eShop	eShop	12

Brush – wall, ceiling, & façade paints

Surface covering brush made from synthetic bristle mix, graduated, vulcanised.


08 7083

Length×Width mm			30×100	
08R 08 7083	WESTEX	SolidPro M surface covering brush	eShop	6

Ring brush, "No Loss", tight, extremely sturdy PET plastic bristles prevent bristle loss.


08 7073

∅ mm			20	25	30	35	40	45	
08R 08 7073	WESTEX	Ring brush	eShop	eShop	eShop	eShop	eShop	eShop	24

Brush – industrial & one-off applications

Brush for industry and simple work. Light natural bristles.


08 7036


08 7037


08 7038

∅ mm			20	25	30	35	40	50	60	
02A 08 7036		Industrial round brush	eShop	–	eShop	–	–	–	–	12
02A 08 7037	HOLEX	Industrial flat brush	–	–	eShop	–	eShop	eShop	eShop	12
02A 08 7038		Industrial radiator brush	–	eShop	–	eShop	–	eShop	eShop	12

Other brushes and accessories for special applications can be found in the online shop.

Brush – special applications

08R 08 7070	WESTEX	Paint stripping brush, nylon bristles, ∅ 35 mm	eShop	12
08R 08 7071		Lining-out brush, pale Chinese bristle, size 8, ∅ 4 mm	eShop	12


08 7070

08 7071

Paint rollers and accessories

Roller – painting

Length			cm	5	10	12	18		Pile height mm
02A 08 7041		Polyester roller for water-based paints and glazes		eShop	eShop	eShop	eShop	10	5
02A 08 7044	HOLEX	Foam roller for paints and glazes		–	–	eShop	–	10	–
02A 08 7045		Foam roller for sealants and adhesives		eShop	eShop	–	–	10	–


08 7041


08 7044


08 7045

Roller – wall, ceiling and façade paints

08 7156 – Planotex Q4 for a fine finish on all smooth substrates of the Q4 class, such as plasterboard and fine plaster.
08 7157 – Polytron black line roller for structure-free finish for all smooth surfaces with highly pigmented colours.
08 7039/7040 – Duotex universal roller for slightly structured to rough surfaces, high area coverage.

Length			cm	6	10	25	27		Pile height mm
02A 08 7039	HOLEX	Durotex paint roller		–	–	eShop	eShop	10	18
02A 08 7040				eShop	eShop	–	–	10	13
08R 08 7156	WESTEX	Planotex Q4 paint roller		–	–	eShop	–	12	15
08R 08 7157		Polytron paint roller		–	–	eShop	–	12	12


08 7039


08 7040


08 7156


08 7157

Roller – coatings (2 component, epoxy resin, sealants, liquid plastics)

08 7158 – For high-quality coatings on wood and steel, especially parquet lacquers, oils, water-based acrylic and PU paints.
08 7166 – Ergonomically shaped handle spindle of galvanised steel rod.
08 7042/7043 – **Textured nylon,** tough and solvent-resistant, for synthetic resin-based paints, anti-corrosion paints, epoxy, and 2-component paints.


08 7042

Length			cm	10	25		Pile height mm
02A 08 7042	HOLEX	Paint roller for solvent-based paints and glazes		eShop	eShop	50	13
02A 08 7043				eShop	eShop	10	6
08R 08 7158	WESTEX	Varnish parquet sealing roller		eShop	eShop	10	9


08 7043


08 7166_18

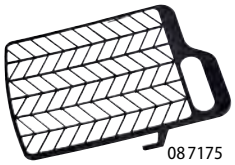

08 7158

Type			5-7	10-12	18	25	
08R 08 7166	WESTEX	Paint roller handle, galvanised steel rod	eShop	eShop	eShop	eShop	10

Type			15-27	33-34	
02A 08 7046	HOLEX	Paint tray, plastic	eShop	eShop	20
Width		cm	15	33	


08 7046

Type			11×20	27×29	
08R 08 7175	WESTEX	Scraper grid, plastic	eShop	eShop	20
Width		cm	11	27	
Depth		cm	20	29	


08 7175

Width			m	0,55	1,4	Length m	Film thickness µm	Use on substrates	can be removed without leaving a mark up to d
08R 08 7202	WESTEX	Covering film with crepe tape		eShop	–	33	9	smooth, slightly rough for interior	7
08R 08 7205		Covering film with fabric tape		eShop	eShop	20	9	rough, for indoors and outdoors	21
				5	5				


08 7202_0.55


08 7205_2.4

width×length			m	4×5	4×12,5	Colour
08R 08 7212	WESTEX	Drop cloth HDPE, 10 µm		eShop	eShop	transparent
08R 08 7215		Drop cloth LDPE, 30 µm		eShop	eShop	transparent



08 7212


08 7223

Width×length			m	1×10	1×25	1×50	Colour
08R 08 7223	WESTEX	Absorbent fleece cover, self-adhesive		–	eShop	–	white
08R 08 7225		Absorbent fleece cover, non-slip		eShop	–	eShop	grey
Weight per unit area			g/m²	180	130	220	


08 7225

Nölle PROFI BRUSH Industrial indoor and outdoor brooms

08 7510 – Wooden head with hole for handle ∅ 24 mm. For smooth floors and fine dirt.
08 7515 – Wooden head with hole for handle ∅ 24 mm. Strong black vegetable fibre, water-resistant, for coarser dirt.
08 7520 – Wooden head with hole for handle ∅ 24 mm. For coarse dirt, water-resistant, extremely durable.
Size 800 – With screw-on heavy metal handle holder.
08 7526 – **X-bristles,** with screw-on universal broom handle socket for handle ∅ from 22 – 28 mm for universal use.
08 7528 – Wooden head with hole for handle ∅ 24 mm. For medium-coarse and coarse dirt, water-resistant.
08 7530 – Saddle wood with hole for handle ∅ 24 mm, fully fitted. For coarse dirt. **Natural coconut fibre**.
08 7531 – Wooden head with hole for handle ∅ 24 mm. Improved brushing performance. New long-life **Poly-Kokos®** material.
08 7532 – Flat wood **with scratch protection plate** and handle holder for handle ∅ 28 mm. For very coarse dirt and **metal chips.**

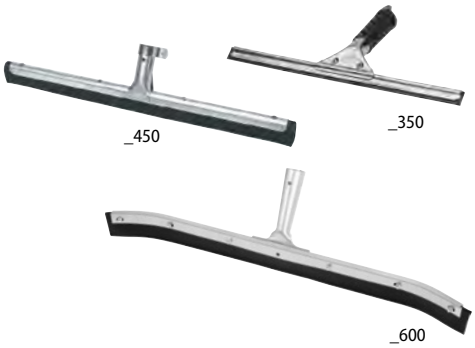
Length		mm	400	600	800
08R 08 7510	Industrial floor broom **Good quality mixture**		eShop	eShop	–
08R 08 7515	Industrial floor broom **Arenga**		eShop	eShop	–
08R 08 7520	Industrial floor broom **Elastomer**		eShop	eShop	eShop
08R 08 7528	Industrial floor broom **Arenga-elastomer mixture**		eShop	eShop	eShop
08R 08 7530	Industrial floor broom **Natural coconut fibre**		eShop	eShop	–
08R 08 7531	Industrial floor broom **Polymer coconut fibre®**		eShop	eShop	–
08R 08 7526	Industrial floor broom **Elastomer**		eShop	–	–
08R 08 7532	Industrial yard broom **Arenga-elastomer-steel wire mixture**		eShop	–	–


08 7510_400
08 7515_400
08 7520_400
08 7520_800
08 7528_400
08 7530_400
08 7531_400
08 7526
08 7532

Nölle PROFI BRUSH Rubber wiper / water squeegee

Size 450 – Galvanised metal frame. Double synthetic foam rubber strips (synthetic rubber lip No. 087506 size 450).
Size 600 – Professional water squeegee, curved galvanised metal frame. With 5 mm hard rubber lip for water, slush, sludge, snow, shards, sawdust, etc.
Size 350 – Professional window-wiper, **stainless steel**, non-slip handle, replaceable rubber lip.

Length		mm	350	450	600
08R 08 7505	Rubber wiper / water squeegee		eShop	eShop	eShop
suitable for handle ∅		mm	–	24	28


_450
_350
_600

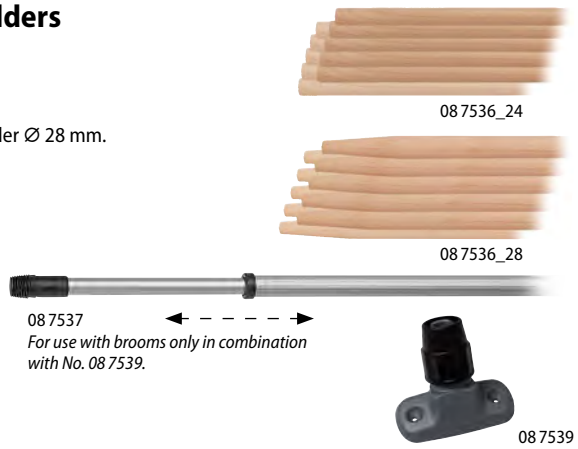
Nölle PROFI BRUSH Broom handles / device handles, broom handle holders

Wooden handle with round head, sanded smooth.
Available only in Germany, Austria and Switzerland.
Size 24 – Broom handle of specially stiff and robust hardwood.
Size 28 – Round head with taper. Suitable for hole for handle ∅ 24 mm and handle holder ∅ 28 mm.

Handle ∅		mm	24	28
08R 08 7536	Broom / device handles set **10 pieces**		eShop	eShop

Handle ∅		mm	24
08R 08 7537	Telescopic handle for length adjustment		eShop

suitable for handle ∅		mm	24-28
08R 08 7539	Universal broom handle holder		eShop


08 7536_24
08 7536_28
08 7537
For use with brooms only in combination with No. 08 7539.
08 7539

Nölle PROFI BRUSH Workbench hand brush

Straight wooden body with rounded edges to the handle. Brush area approx 150×40 mm, bristle length 70/60 mm.

Length		mm	280	420
08R 08 7552	Workbench hand brushes **Natural coconut fibre**		eShop	eShop
08R 08 7553	Workbench hand brushes **Polymer coconut fibre®**		eShop	eShop
08R 08 7554	Workbench hand brushes **Good quality mixture**		eShop ■	–
08R 08 7556	Workbench hand brushes **Arenga-elastomer mixture**		eShop	eShop


08 7552_280
08 7553_280
08 7554_280
08 7556_280

ECLIPSE MAGNETICS Magnetic broom

For easy removal of metal chips from the floor. Adjustable telescopic handle up to length 1050 mm.




08 5909

Width		mm	385	620
08Q 08 5909	Magnetic broom		eShop	eShop

Workbench dustpan

08 7568 – Metal, painted black, slim design with wooden handle.
08 7570 – Metal, hot dip galvanised, standard model with wooden handle.
08 7572 – Stainless steel, lightweight model with rubber lip.
08 7574 – Professional dustpan of stainless steel, **sheet metal thickness 0.8 mm.**


08 7568
08 7570
08 7572
08 7574

				Overall length mm	Length of dustpan mm	Width of dustpan mm
08R 08 7568		Workshop dustpan, narrow	eShop	395	170	105
08R 08 7570	Nölle PROFI BRUSH	Workshop dustpan	eShop	420	230	230
08R 08 7572		Workbench dustpan, stainless steel	eShop ■	380	230	230
08R 08 7574		Professional dustpan, stainless steel **0.8 mm sheet metal thickness**	eShop	460	250	230

Nölle PROFI BRUSH Metal buckets and builder's buckets

08 7580 – Metal bucket, galvanised metal handle and wooden grip.
08 7582 – Plastic bucket, sturdy version. With measurement markings and heavy metal handle.


08 7580_10


08 7582_20

Contents		l	10	12	20
08R 08 7580	Bucket, metal galvanised		eShop	–	–
08R 08 7582	Builder's bucket, plastic		–	eShop	eShop

Garant Professional cleaning and polishing cloths

The professional cleaning cloths are the ideal solution for demanding cleaning tasks in industry and trades.
Thanks to their fine, highly absorbent fibres, they remove dirt, oil and grease effortlessly without damaging sensitive surfaces.
They enable thorough cleaning with minimal use of chemicals, reduce water consumption and are long-lasting.
Ideal for stubborn dirt.

- Polyester and polyamide material.
- Washable at up to 60°C.
- Dimensions 400×400 mm.

Size BLUE – The **GARANT GreenPlus professional cleaning cloth** is ideal for professional use in industry and trades.
The cleaning cloth for industrial cleaning is a more sustainable option as it is made from **82% recycled polyester.**
It provides a powerful solution for the efficient removal of coarse dirt and stubborn impurities such as **oils, greases and resinous lubricants** and is **suitable for all surfaces.**

Size GREY – The **GARANT professional polishing cloth** is **universally applicable** and is the ideal choice for demanding cleaning tasks in industrial and trade areas. Thanks to its dense fabric, it easily absorbs **moisture, dirt, oils and greases** and ensures **thorough, streak-free cleaning on all surfaces.**
Its **high absorbency and durability** make it a reliable aid in production facilities and workshops.

Colour		BLUE	GREY
01A 08 3722	Professional cleaning cloth	eShop	eShop
Colour		blue	anthracite
Version		Professional cleaning cloth	Professional polishing cloth


_BLUE


_GREY

3M High performance cleaning and polishing cloths

With **patented polyester and nylon fibre combination**.
The grease and dirt absorption is up to 100 times higher than with conventional cleaning cloths.
Washable at up to 95 °C; size 360×360 mm; can be used with and without cleaning chemicals.
Suitable for dry, moist or wet cleaning.

Application:

Size BLUE – Extremely economical cleaning of all surfaces.
Ideal for optical equipment and for intermediate cleaning of ground surfaces.

Size YELLOW – For **cleaning and polishing work** on all surfaces such as chromium, stainless steel, plastic, glass etc. Very high liquid absorbency.
Ideal for varnished surfaces. Leaves polished surfaces free of lint and streaks, without creating micro-scratches on the surface.



_BLUE

_YELLOW



Colour		BLUE	YELLOW	
08M 08 9190	Cleaning cloth	eShop	eShop	5
Colour		blue	yellow	
Version		High-performance cleaning cloth	Premium polishing cloth	

emtez Industrial wipes

Moist industrial wipes for metal surfaces, double-sided, with **micro-dots** on one side to move the dirt and a smooth surface on the other side for wiping down. Low-linting, kind to the skin, satisfy the requirements of the Cosmetics Directive EC 1223/2009, gentle to surfaces, good absorbency.
Wide range of special wipes for wiping and cleaning. Each wipe has been designed for a specific task.
With the appropriate hygienic dispenser, you obtain an efficient system.



08 9197

Type		1	Perfora-tions	Width mm	Length mm	suitable for holder / dispenser
08J 08 9197	Moist industrial wipes	–	80	200	220	Dispenser bucket

Cleaning wipes dispensers and accessories

08 9160 Size F1 – Stable **floor stand** with rollers, metal frame.
Size W1 – Stable **wall-mounted holder** including fastening materials.
Size W2 – Robust **inside roll dispenser** of impact resistant plastic.
Dispenses individual wipes.
Size W4 – Hygienic **individual wipe dispenser.** One wipe with every pull.
08 9161 – **Rubbish bag holder** with sturdy baseplate for attachment to paper roll holder No. 089160 size F1. **Secure mounting for all commercially-available rubbish bags** (120 litres), No. 089175. Supplied without rubbish bag.

08 9160 Size F1; W1 – For paper rolls with sleeve ∅ 71 - 73 mm. Maximum width 43 cm.


Ideal for flexible workstations – place the mobile dispenser where you need it.


08 9160_F1


08 9161_F1

089161_F1 supplied without paper roll holder, paper roll and rubbish bag.


08 9160_W1


08 9160_W2


08 9160_W4

Manufacturer's designation			F1	W1	W2	W4
08T 08 9160	TORK Think ahead.	Performance **Paper roll holder / dispenser**	eShop	eShop	eShop	eShop
08T 08 9161		Performance **Rubbish bag holder**	eShop	–	–	–

Rubbish bags, PE, capacity 120 litre, size 700×1100 mm, thickness 0.07 mm, colour blue.

08T 08 9175	Nölle PROFI BRUSH	Rubbish bags 120 litre, **roll of 25 bags**	eShop


08 9175

Wipes and cleaning cloths

Wide range of special wipes for wiping and cleaning. Each wipe has been designed for a specific task.
With the appropriate hygienic dispenser, you obtain an efficient system.



Wiping

Using the correct wiping cloth will enable you to mop up leaked or spilled liquids much more efficiently and effectively and wipe away dirt and dust. Your hands are protected against contamination and heat.
Wiping cloths available as a roll or as individual cloths.
Discover the wide range of Tork products, designed to make your work environment cleaner, safer and more efficient. All Tork wiping cloths are FSC- and EU Ecolabel-certified.

The right wipe for any application		Strong	High absorbency	Oil + Water	Low-linting	FSC-certified
For simple wiping tasks, 2-layer	 08 9101  08 9103	■■□□□	■■□□□	■■□□□	■■■■□	✓
For tough wiping tasks, 2-layer	 2x 750 08 9130  2x 750 08 9125  1x 1000 08 9105	■■□□□	■■■□□	■■□□□	■■■■□	✓
For extra-tough wiping tasks, 2-layer	 2x 500 08 9131  1x 1000 08 9132	■■■□□	■■■■□	■■■■□	■■■■■	✓
For demanding wiping tasks, 3-layer	 08 9126  1x 750 08 9127	■■■■□	■■■■■	■■■■■	■■■■■	✓
For demanding wiping tasks, 2-layer	 2x 350 08 9136	■■■□□	■■■■■	■■■■■	■■■■■	✓

Type		RW	W	Perforations	Width mm	Length mm	suitable for holder / dispenser
08T 08 9101	Standard paper wipes, set **2-part set, (white)**	–	eShop	2×1000	230	340	F1
08T 08 9103	Standard paper wipes set **2-part set (blue)**	–	eShop	2×1000	369	340	F1, W1
08T 08 9105	Industrial paper wipes **(blue)**	–	eShop ■	1000	369	340	F1, W1
08T 08 9125	Strong multi-purpose paper wipes, set **2-part set**	–	eShop ■	2×750	235	340	F1, W1, W2
08T 08 9130	Strong multi-purpose paper wipes, set **2-part set (blue)**	–	eShop	2×750	235	340	F1, W1, W2
08T 08 9131	Extra strong multi-purpose paper wiping cloths, set **2-part set**	–	eShop	2×500	235	340	F1, W1, W2
08T 08 9132	Extra strong multi-purpose paper wipes (blue)	–	eShop	1000	369	340	F1, W1
08T 08 9126	Extra strong industrial paper wipes, set **5-part set**	–	eShop	5×100	385	324	W4
08T 08 9127	Extra strong industrial paper wipes	–	eShop	750	369	340	F1, W1
08T 08 9136	Extra strong multi-purpose paper wipes **2 -part set**	eShop	–	2×350	255	335	F1, W1, W2

Scouring and cleaning cloth

The Tork 2-in-1 scouring and cleaning cloth is an abrasive and absorbent wiping cloth that was developed for efficient cleaning. It removes dirt that is difficult to clean and does not scratch surfaces.
The wiping cloth can be rinsed and reused and is compatible with common cleaning agents.



Type		SR	Perforations	Width mm	Length mm
08T 08 9142	2-in-1 scouring and cleaning cloth	eShop	45	300	385

Cleaning cloths

Take advantage of Tork exelCLEAN® non-woven cleaning cloths for maximum efficiency in your working environment.



Cleaning

The right cleaning cloth for every application

		Strong	Flexible	Solvent compatible	Removes oil	Low-linting	FSC-certified
Low-linting cleaning cloths	 08 9134 08 9135 08 9180	●●○○	●●●●●	●●●●●	●●○○	●●●●●	✓
Extra-low-linting industrial cleaning cloths	 08 9137	●●○○	●○○○	●●●●●	●○○○	●●●●●	
Standard cleaning cloths	 08 9184 08 9138	●●○○	●●●●●	●●●●○	●●●●○	●●●○○	✓
Industrial cleaning cloths	 08 9181 08 9182 08 9144 08 9146	●●○○	●●●●○	●●●●○	●●●●●	●●●○○	✓
Extra-strong cleaning cloths	 08 9187	●●●●○	●●○○○	●●●●○	●●●●●	●●●○○	✓
Extra-strong industrial cleaning cloths	 08 9148 08 9186	●●●●●	●○○○○	●●●●○	●●●●●	●○○○○	✓
Moist cleaning wipes	 08 9196 08 9133	●●●●○	●●●●○	–	–	●●●○○	✓

Type		R	Perforations	Width mm	Length mm	suitable for holder / dispenser
08T 08 9134	Extra low-linting cleaning cloths, set **Single cloths, 8-part set**	eShop	8×75	300	385	Small pack
08T 08 9135	Extra low-linting cleaning cloths **Large roll**	eShop	500	275	360	F1, W1
08T 08 9180	Low-linting cleaning cloths, set **Dispenser bucket, 4-part set**	eShop	4×200	165	300	W1
08T 08 9137	Low-linting industrial cleaning cloths, set **Single cloths, 5-part set**	eShop	5×80	324	390	W4
08T 08 9138	Cleaning cloth for simple applications **Large roll**	eShop	600	315	250	F1, W1, W2, W3
08T 08 9184	Cleaning cloths **Large roll**	eShop	400	315	380	F1, W1, W2, W3
08T 08 9181	Industrial cleaning cloths **Large roll**	eShop	390	315	380	F1, W1, W2, W3
08T 08 9182	Industrial cleaning cloths **Single cloths, 8-part set**	eShop	8×55	315	385	W8
08T 08 9144	Industrial cleaning cloths **Single cloths**	eShop	210	355	415	W7
08T 08 9146	Industrial cleaning cloths **Large roll**	eShop	950	420	380	F1, W1
08T 08 9187	Extra strong cleaning cloths **Single cloths**	eShop	180	355	415	W7
08T 08 9148	Extra strong industrial cleaning cloths **Large roll**	eShop	160	315	380	F1, W1, W2
08T 08 9186	Extra strong industrial cleaning cloths **Single cloths, 4-part set**	eShop	4×60	355	415	W4
08T 08 9196	Surface cleaning wet wipes **Dispenser bucket**	–	58	270	270	Dispenser bucket
08T 08 9133	Surface cleaning wet wipes **Refill**	–	58	270	270	Dispenser bucket

WIPES

Wiping cloth solutions from Wypall® and Kimtech™.

Each individual product is designed for a wide variety of cleaning tasks, from the Wypall® range of professional paper wipes and industrial wipes through to the Kimtech™ range for special cleaning.
From simple wiping up of spilt liquids through to complex cleaning tasks in industry, from hospitals to extremely demanding production environments – Wypall® offers very high performance and consistent quality.
The following overview helps you to choose the right product to make your workplaces healthier, safer and more productive.

The right wipe for every task		Absorbency	Tear resistance 1–10	Rough surface	Oil & grease	Solvents	Spilt liquid	Dust & dirt	Sensitive surface
Can be used once – for various applications for cleaning and maintenance, and for removing coarse dirt and liquids.									
Wypall® L10 wipes. **For light cleaning of the surface.**	 08 9280	●●○○	3		×		×	×	
Wypall® L20 wipes. **For light cleaning of the surface.**	 08 9281	●●●○	3		×		×	×	×
Wypall® L30 wipes. **For maintenance work.**	 08 9282	●●●●	4	×	×		×		×
Wypall® L40 wipes. **For coarse dirt and liquids.**	 08 9283	●●●●	4		×		×	×	×
Reusable – removal of oil and dirt – for light to demanding cleaning tasks.									
Wypall® X60 wipes. **For light removal of oil and dirt.**	 08 9296  08 9285	●●●●	6	×	×	×	×	×	× *
Wypall® X70 wipes. **For general removal of oil and dirt.**	 08 9295  08 9287	●●●●	7	×	×	×	×	×	× *
Wypall® X80 wipes. **For demanding removal of oil, grease and dirt.**	 08 9294  08 9289	●●●●	8	×	×	×	×	×	× *
Wypall® X90 wipes. **For demanding removal of oil, grease and dirt.**	 08 9290	●●●●	8		×	×	×	×	×
Special application – oily hands and tools.									
Wypall® cleaning wipes. **For oily hands and tools.**	 08 9291  08 9299	●●○○	4	×	×		×	×	×

* Check before use on sensitive surfaces.

Kimberly-Clark® wipes and cleaning cloths



08 9241

08 9241/9240/9241 – Safe, simple and reliable: the **Wettask™** bucket enables more efficient removal of wipes and can be filled with the cleaner and solvent of your choice. The Wettask™ wiping system gives you wipes that are soaked with the desired amount of liquid. As a closed system, the Wettask™ bucket ensures fewer VOC emissions are emitted and enables a reduction in solvent consumption by at least 20%. It can also be stacked to save space.

08 9240 – Wettask™ dispenser system with first-class protection **for processes in ESD-sensitive areas and potentially explosive areas.**

08 9241 – **Wettask™ dispenser system** for cleaning cloths, perfect for industrial and medical environments.

08 9242 – **Kimtech™ Pure™ cleaning cloths** are powerful wipes, which are suitable for use in cleanrooms of ISO class 4 and higher. They are **perfect for dry wiping critical devices and surfaces** in a wide variety of industries. Low-lint and high absorbency for sensitive applications and surfaces.

08 9244 – Kimtech™ lab wipe for cleaning delicate glass equipment, instruments and surfaces.

08 9245 – Kimtech™ precision wipe for cleaning electronic components, contacts and optical lenses.

08 9292 – WypAll® Wettask™ wiping cloth for solvents for low-lint, powerful cleaning.

08 9299 – WypAll® wiping cloth is perfect for high traffic areas. Compatible with the Wettask™ dispensing system and any cleaning agent, solvent or chemical of your choice.



08 9298



08 9292

Type			W	K	Width mm	Length mm	Perfo-rations	suitable for holder / dispenser
08T 08 9280	WYPALL	WypAll® L10 EXTRA+ wipes **Large roll**	eShop	–	325	380	1000	089265, 089266, 089267
08T 08 9281	WYPALL	WypAll® L20 Essential™ wipes **Large roll**	eShop	–	340	380	1000	089265, 089266, 089267
08T 08 9282	WYPALL	WypAll® L30 Ultra™ wipes **Large roll**	eShop	–	340	380	1000	089265, 089266, 089267
08T 08 9283	WYPALL	WypAll® L40 wipes **Large roll**	eShop	–	320	340	950	089265, 089266, 089267
08T 08 9296	WYPALL	X60 General Clean™ Multi-Task cleaning wipes **Large roll in box**	eShop	–	310	310	235	089265, 089266, 089267
08T 08 9285	WYPALL	WypAll® X60 multi-task cleaning cloths **Large roll**	eShop	–	420	380	650	089265, 089266, 089267
08T 08 9295	WYPALL	X70 Power Clean™ multi-task cleaning wipes **Large roll in box**	eShop	–	310	310	215	089265, 089266, 089267
08T 08 9287	WYPALL	WypAll® X70 cleaning cloths **Large roll**	eShop	–	315	340	870	089265, 089266, 089267
08T 08 9294	WYPALL	X80 Power Clean™ multi-task cleaning wipes **Large roll in box**	eShop	–	310	310	180	089265, 089266, 089267
08T 08 9289	WYPALL	WypAll® X80 wipes **Large roll**	eShop	–	315	340	475	089265, 089266, 089267
08T 08 9290	WYPALL	WypAll® X90 wipes **Large roll**	eShop	–	300	320	450	089265, 089266, 089267
08T 08 9291	WYPALL	WypAll® cleaning wipes **Dispenser bucket**	eShop	–	270	270	90	–
08T 08 9299	WYPALL	Power Clean™ wet cleaning wipes **Dispenser container**	eShop	–	270	270	50	–
08T 08 9298	WYPALL	WypAll® wipes	eShop	–	305	317	50	089240, 089241
08T 08 9292	WYPALL	WypAll® Wettask™ low-lint cleaning cloths for solvents **Large roll**	eShop	–	150	305	120	089240, 089241
08T 08 9240	KIMTECH	Kimtech™ Wettask™ ESD wipes dispenser **Dispenser bucket**	–	eShop	220	235	–	–
08T 08 9241	KIMTECH	Kimtech™ Wettask™ wipes dispenser **Dispenser bucket**	–	eShop	220	235	–	–
08T 08 9244	KIMTECH	Kimtech™ Science™ lab wipes **Dispenser box**	–	eShop	200	205	200	–
08T 08 9245	KIMTECH	Kimtech™ Science™ precision wipes **Dispenser box**	–	eShop	112	208	286	–
08T 08 9242	KIMTECH	Kimtech™ Pure™ wipes **Large roll**	–	eShop	340	380	600	089265, 089266, 089267
08T 08 9243	KIMTECH	Kimtech™ process wipes **Large roll**	–	eShop	340	380	500	089265, 089266, 089267



08 9240



08 9244



08 9245



08 9242



08 9243

Wiping cloth dispenser for large rolls

Suitable for: No. 089290 size W, No. 089289 size W, No. 089287 size W, No. 089283 size W, No. 089282 size W, No. 089281 size W, No. 089280 size W, No. 089285 size W, No. 089242 size K, No. 089243 size K

Type		KC	Width mm	Depth mm	Height mm
08T 08 9265	Kimberly-Clark® Professional™ wall mounted dispenser	eShop	515	328	300
08T 08 9266	Kimberly-Clark® Professional™ floor standing dispenser	eShop	515	960	550
08T 08 9267	Kimberly-Clark® Professional™ floor standing dispenser, mobile	eShop	500	1090	740



08 9265

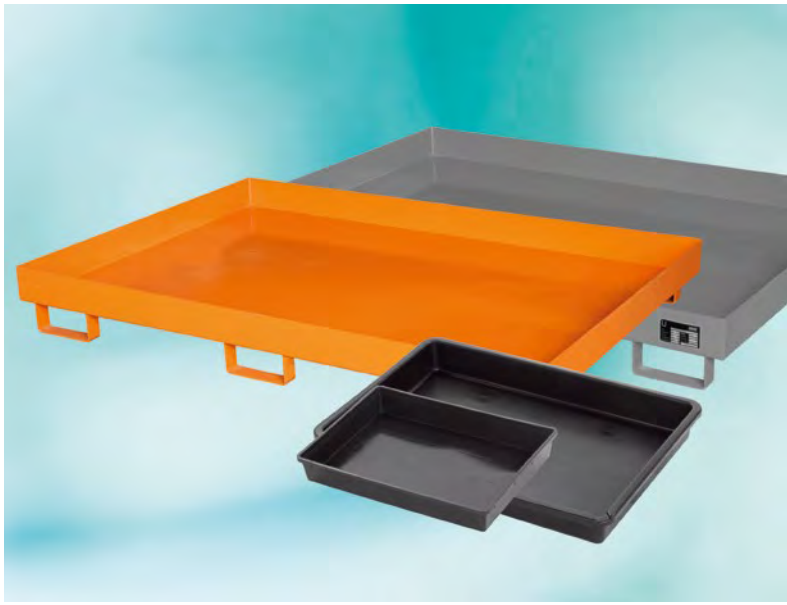


08 9266



08 9267



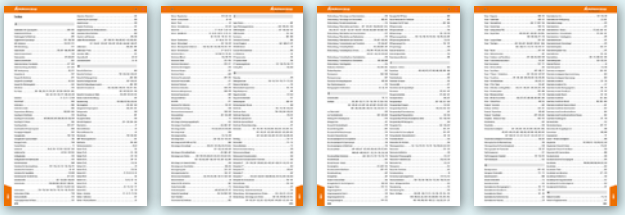




CLEANING AND ORGANISING AT WORK

For more innovative and practical collection systems, cleaning systems and storage systems see our new catalogue volume 3 – **Workstations and Storage.**





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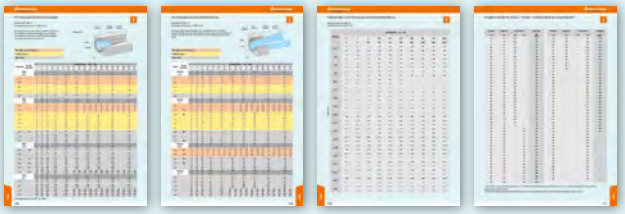


ISO uniform shaft and bores
Table comparing Vickers / Brinell / Rockwell hardness and tensile strength

1225 – 1228



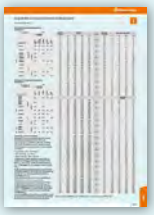
TORX screwdrivers
Width across flats

1229 – 1230



Slot-head bits /
cross-head bits

1231



Torques

1232

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Data protection,
information on deliveries,
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partner addresses of the Hoffmann Group

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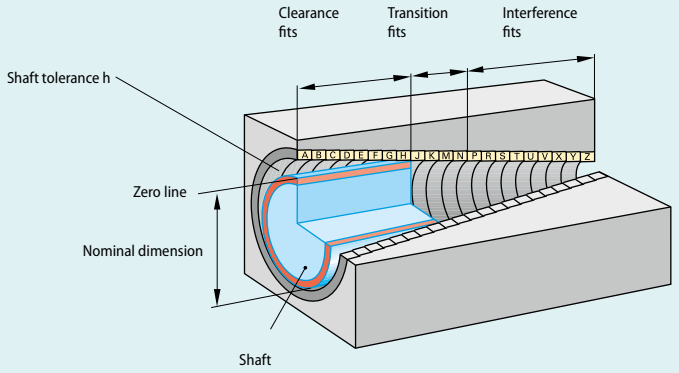
ISO system of standardised fits for shafts

(see DIN ISO 286-2)
Size limits in µm (= 0.001 mm).

In the standardised shaft system, all shafts are given h tolerances. The largest dimension of a shaft is taken as both the zero line and the nominal size. The smallest dimension is smaller than the nominal size by the amount of the tolerance.



Interference fit (press fit)
Transition fit
Clearance fit

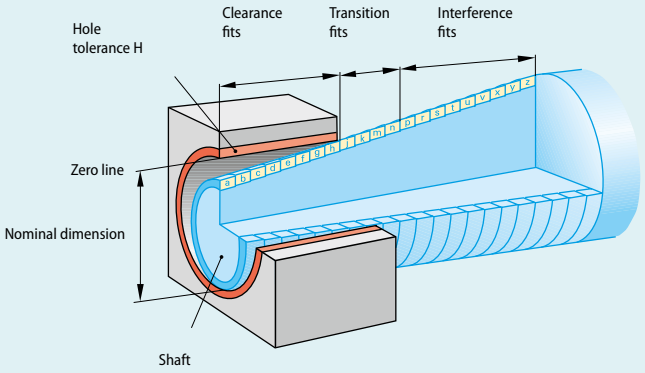
Holes	Preferred fit*)	Nominal dimension over . . . to . . . mm																			
		1	3	6	10	14	18	24	30	40	50	65	80	100	120	140	160	180	200	225	
		3	6	10	14	18	24	30	40	50	65	80	100	120	140	160	180	200	225	250	
Shaft h 5		0 -4	0 -5	0 -6	0 -8		0 -9		0 -11		0 -13		0 -15		0 -18			0 -20			
P 6		-6 -12	-9 -17	-12 -21	-15 -26		-18 -31		-21 -37		-26 -45		-30 -52		-36 -61			-41 -70			
N 6		-4 -10	-5 -13	-7 -16	-9 -20		-11 -24		-12 -28		-14 -33		-16 -38		-20 -45			-22 -51			
M 6		-2 -8	-1 -9	-3 -12	-4 -15		-4 -17		-4 -20		-5 -24		-6 -28		-8 -33			-8 -37			
J 6		+2 -4	+5 -3	+5 -4	+6 -5		+8 -5		+10 -6		+13 -6		+16 -6		+18 -7			+22 -7			
H 6		+6 0	+8 0	+9 0	+11 0		+13 0		+16 0		+19 0		+22 0		+25 0			+29 0			
Shaft h 6		0 -6	0 -8	0 -9	0 -11		0 -13		0 -16		0 -19		0 -22		0 -25			0 -29			
S 7		-14 -24	-15 -27	-17 -32	-21 -39		-27 -48		-34 -59		-42 -72	-48 -78	-58 -93	-66 -101	-77 -117	-85 -125	-93 -133	-105 -151	-113 -159	-123 -169	
R 7		-10 -20	-11 -23	-13 -28	-16 -34		-20 -41		-25 -50		-30 -60	-32 -62	-38 -73	-41 -76	-48 -88	-50 -90	-53 -93	-60 -106	-63 -109	-67 -113	
N 7		-4 -14	-4 -16	-4 -19	-5 -23		-7 -28		-8 -33		-9 -39		-10 -45		-12 -52			-14 -60			
M 7		-2 -12	0 -12	0 -15	0 -18		0 -21		0 -25		0 -30		0 -35		0 -40			0 -46			
K 7		0 -10	+3 -9	+5 -10	+6 -12		+6 -15		+7 -18		+9 -21		+10 -25		+12 -28			+13 -33			
J 7		+4 -6	+6 -6	+8 -7	+10 -8		+12 -9		+14 -11		+18 -12		+22 -13		+26 -14			+30 -16			
H 7	●	+10 0	+12 0	+15 0	+18 0		+21 0		+25 0		+30 0		+35 0		+40 0			+46 0			
G 7		+12 +2	+16 +4	+20 +5	+24 +6		+28 +7		+34 +9		+40 +10		+47 +12		+54 +14			+61 +15			
F 7		+16 +6	+22 +10	+28 +13	+34 +16		+41 +20		+50 +25		+60 +30		+71 +36		+83 +43			+96 +50			
Shaft h 9		0 -25	0 -30	0 -36	0 -43		0 -52		0 -62		0 -74		0 -87		0 -100			0 -115			
H 8	●	+14 0	+18 0	+22 0	+27 0		+33 0		+39 0		+46 0		+54 0		+63 0			+72 0			
H 11		+60 0	+75 0	+90 0	+110 0		+130 0		+160 0		+190 0		+220 0		+250 0			+290 0			
F 8	●	+20 +6	+28 +10	+35 +13	+43 +16		+53 +20		+64 +25		+76 +30		+90 +36		+106 +43			+122 +50			
E 9	●	+39 +14	+50 +20	+61 +25	+75 +32		+92 +40		+112 +50		+134 +60		+159 +72		+185 +85			+215 +100			
D 10	●	+60 +20	+78 +30	+98 +40	+120 +50		+149 +65		+180 +80		+220 +100		+260 +120		+305 +145			+355 +170			
C 11	●	+120 +60	+145 +70	+170 +80	+205 +95		+240 +110		+280 +110	+290 +130	+330 +140	+340 +150	+390 +170	+400 +180	+450 +200	+460 +210	+480 +230	+530 +240	+550 +260	+570 +280	
Shaft h 11		0 -60	0 -75	0 -90	0 -110		0 -130		0 -160		0 -190		0 -220		0 -250			0 -290			
H 11		+60 0	+75 0	+90 0	+110 0		+130 0		+160 0		+190 0		+220 0		+250 0			+290 0			
D 11		+80 +20	+105 +30	+130 +40	+160 +50		+195 +65		+240 +80		+290 +100		+340 +120		+395 +145			+460 +170			
C 11		+120 +60	+145 +70	+170 +80	+205 +95		+240 +110		+280 +120	+290 +130	+330 +140	+340 +150	+390 +170	+400 +180	+450 +200	+460 +210	+480 +230	+530 +240	+550 +260	+570 +280	
A 11		+330 +270	+345 +270	+370 +280	+400 +290		+430 +300		+470 +310	+480 +320	+530 +340	+550 +360	+600 +380	+630 +410	+710 +460	+770 +520	+830 +580	+950 +660	+1030 +740	+1110 +820	

*) Preferred fits to DIN 7157, series 1.

ISO system of standardised fits for holes

(see DIN ISO 286-2)
Limit dimensions in µm (= 0.001 mm).

In this system, all holes are produced with a standard H tolerance.
The smallest dimension is taken as both the zero line and the nominal size.
The largest dimension is larger than the zero line by the amount of the tolerance.



Interference fit (press fit)
Transition fit
Clearance fit

Shafts	Preferred fit*)	Nominal dimension over . . . to . . . mm																		
		1	3	6	10	14	18	24	30	40	50	65	80	100	120	140	160	180	200	225
		3	6	10	14	18	24	30	40	50	65	80	100	120	140	160	180	200	225	250
Hole H 6		+6 0	+8 0	+9 0	+11 0		+13 0		+16 0		+19 0		+22 0		+25 0			+29 0		
p 5		+10 +6	+17 +12	+21 +15	+26 +18		+31 +22		+37 +26		+45 +32		+52 +37		+61 +43			+70 +50		
n 5		+8 +4	+13 +8	+16 +10	+20 +12		+24 +15		+28 +17		+33 +20		+38 +23		+45 +27			+51 +31		
k 6		+6 0	+9 +1	+10 +1	+12 +1		+15 +2		+18 +2		+21 +2		+25 +3		+28 +3			+33 +4		
j 6		+4 -2	+6 -2	+7 -2	+8 -3		+9 -4		+11 -5		+12 -7		+13 -9		+14 -11			+16 -13		
h 5		0 -4	0 -5	0 -6	0 -8		0 -9		0 -11		0 -13		0 -15		0 -18			0 -20		
Hole H 7		+10 0	+12 0	+15 0	+18 0		+21 0		+25 0		+30 0		+35 0		+40 0			+46 0		
s 6		+20 +14	+27 +19	+32 +23	+39 +28		+48 +35		+59 +43		+72 +53	+78 +59	+93 +71	+101 +79	+117 +92	+125 +100	+133 +108	+151 +122	+159 +130	+169 +140
r 6	●	+16 +10	+23 +15	+28 +19	+34 +23		+41 +28		+50 +34		+60 +41	+62 +43	+73 +51	+76 +54	+88 +63	+90 +65	+93 +68	+106 +77	+109 +80	+113 +84
n 6	●	+10 +4	+16 +8	+19 +10	+23 +12		+28 +15		+33 +17		+39 +20		+45 +23		+52 +27			+60 +31		
m 6		+8 +2	+12 +4	+15 +6	+18 +7		+21 +8		+25 +9		+30 +11		+35 +13		+40 +15			+46 +17		
k 6		+6 0	+9 +1	+10 +1	+12 +1		+15 +2		+18 +2		+21 +2		+25 +3		+28 +3			+33 +4		
j 6		+4 -2	+6 -2	+7 -2	+8 -3		+9 -4		+11 -5		+12 -7		+13 -9		+14 -11			+16 -13		
h 6	●	0 -6	0 -8	0 -9	0 -11		0 -13		0 -16		0 -19		0 -22		0 -25			0 -29		
g 6		-2 -8	-4 -12	-5 -14	-6 -17		-7 -20		-9 -25		-10 -29		-12 -34		-14 -39			-15 -44		
r 7	●	-6 -16	-10 -22	-13 -28	-16 -34		-20 -41		-25 -50		-30 -60		-36 -71		-43 -83			-50 -96		
Hole H 8		+14 0	+18 0	+22 0	+27 0		+33 0		+39 0		+46 0		+54 0		+63 0			+72 0		
x 8	●	+34 +20	+46 +28	+56 +34	+67 +40	+72 +45	+87 +54	+97 +64	+119 +70	+136 +97	+168 +122	+192 +146	+232 +178	+264 +210	+311 +248	+343 +280	+373 +310	+422 +350	+457 +385	+497 +425
u 8	●	+32 +18	+41 +23	+50 +28	+60 +33	+60 +33	+74 +41	+81 +48	+99 +60	+109 +70	+133 +87	+148 +102	+178 +124	+198 +144	+233 +170	+253 +190	+273 +210	+308 +236	+330 +258	+356 +284
h 9	●	0 -25	0 -30	0 -36	0 -43		0 -52		0 -62		0 -74		0 -87		0 -100			0 -115		
f 7	●	-6 -16	-10 -22	-13 -28	-16 -34		-20 -41		-25 -50		-30 -60		-36 -71		-43 -83			-50 -96		
d 9		-20 -45	-30 -60	-40 -76	-50 -93		-65 -117		-80 -142		-100 -174		-120 -207		-145 -245			-170 -285		
Hole H 11		+60 0	+75 0	+90 0	+110 0		+130 0		+160 0		+190 0		+220 0		+250 0			+290 0		
h 9		0 -25	0 -30	0 -36	0 -43		0 -52		0 -62		0 -74		0 -87		0 -100			0 -115		
h 11		0 -60	0 -75	0 -90	0 -110		0 -130		0 -160		0 -190		0 -220		0 -250			0 -290		
d 9		-20 -45	-30 -60	-40 -76	-50 -93		-65 -117		-80 -142		-100 -174		-120 -207		-145 -245			-170 -285		
c 11		-60 -120	-70 -145	-80 -170	-95 -205		-110 -240		-120 -280	-130 -290	-140 -330	-150 -340	-170 -390	-180 -400	-200 -450	-210 -460	-230 -480	-240 -530	-260 -550	-280 -570
a 11		-270 -330	-270 -345	-280 -370	-290 -400		-300 -430		-310 -470	-320 -480	-340 -530	-360 -550	-380 -600	-410 -630	-460 -710	-520 -770	-580 -830	-660 -950	-740 -1030	-820 -1110

Supplement to ISO system of standardised fits for holes

(Extract from DIN 7160, DIN 7161)
Size limits in µm (= 0.001 mm).

External sizes

Shafts	Nominal size over ... to ... mm									
	1 3	3 6	6 10	10 18	18 30	30 50	50 80	80 120	120 180	180 250
d 11	- 20 - 80	- 30 - 105	- 40 - 130	- 50 - 160	- 65 - 195	- 80 - 240	- 100 - 290	- 120 - 340	- 145 - 395	- 170 - 460
e 8	- 14 - 28	- 20 - 38	- 25 - 47	- 32 - 59	- 40 - 73	- 50 - 89	- 60 - 106	- 72 - 126	- 85 - 148	- 100 - 172
f 8	- 6 - 20	- 10 - 28	- 13 - 35	- 16 - 43	- 20 - 53	- 25 - 64	- 30 - 76	- 36 - 90	- 43 - 106	- 50 - 122
f 9	- 6 - 31	- 10 - 40	- 13 - 49	- 16 - 59	- 20 - 72	- 25 - 87	- 30 - 104	- 36 - 123	- 43 - 143	- 50 - 165
fg 6	- 4 - 10	- 6 - 14	- 8 - 17							
h 7	0 - 10	0 - 12	0 - 15	0 - 18	0 - 21	0 - 25	0 - 30	0 - 35	0 - 40	0 - 46
h 8	0 - 14	0 - 18	0 - 22	0 - 27	0 - 33	0 - 39	0 - 46	0 - 54	0 - 63	0 - 72
h 10	0 - 40	0 - 48	0 - 58	0 - 70	0 - 84	0 - 100	0 - 120	0 - 140	0 - 160	0 - 185
h 12	0 - 100	0 - 120	0 - 150	0 - 180	0 - 210	0 - 250	0 - 300	0 - 350	0 - 400	0 - 460
js 11	+ 30 - 30	+ 38 - 38	+ 45 - 45	+ 55 - 55	+ 65 - 65	+ 80 - 80	+ 95 - 95	+ 110 - 110	+ 125 - 125	+ 145 - 145
js 12	+ 50 - 50	+ 60 - 60	+ 75 - 75	+ 90 - 90	+ 105 - 105	+ 125 - 125	+ 150 - 150	+ 175 - 175	+ 200 - 200	+ 230 - 230
js 14	+ 125 - 125	+ 150 - 150	+ 180 - 180	+ 215 - 215	+ 260 - 260	+ 310 - 310	+ 370 - 370	+ 435 - 435	+ 500 - 500	+ 575 - 575
js 16	+ 300 - 300	+ 375 - 375	+ 450 - 450	+ 550 - 550	+ 650 - 650	+ 800 - 800	+ 950 - 950	+ 1100 - 1100	+ 1250 - 1250	+ 1450 - 1450
k 10	+ 40 0	+ 48 0	+ 58 0	+ 70 0	+ 84 0	+ 100 0	+ 120 0	+ 140 0	+ 160 0	+ 180 0
k 11	+ 60 0	+ 75 0	+ 90 0	+ 110 0	+ 130 0	+ 160 0	+ 190 0	+ 220 0	+ 250 0	+ 290 0
k 12	+ 90 0	+ 120 0	+ 150 0	+ 180 0	+ 210 0	+ 250 0	+ 300 0	+ 350 0	+ 400 0	+ 460 0
k 16	+ 600 0	+ 750 0	+ 900 0	+ 1100 0	+ 1300 0	+ 1600 0	+ 1900 0	+ 2200 0	+ 2500 0	+ 2900 0
p 6	+ 12 + 6	+ 20 + 12	+ 24 + 15	+ 29 + 18	+ 35 + 22	+ 42 + 26	+ 51 + 32	+ 59 + 37	+ 68 + 43	+ 79 + 50

Comparison table of Vickers / Brinell / Rockwell hardness and tensile strength[1)]

Vickers hardness	Brinell hardness 2)	Rockwell hardness 3)		Tensile strength
HV 10	HB 30	HRB	HRC	σB N/mm2
85	81	41.0	-	270
91	87	49.0	-	290
97	92	53.4	-	310
100	95	56.2	-	320
107	101	60.2	-	340
113	107	63.4	-	360
118	112	66.0	-	380
121	116	67.4	-	390
128	122	70.4	-	410
132	125	71.8	-	420
138	131	74.1	-	440
143	136	76.2	-	460
147	140	77.5	-	470
153	146	79.7	-	490
157	149	80.7	-	500
163	154	82.5	-	520
168	160	84.5	-	540
172	163	85.4	-	550
178	169	86.8	-	570
184	175	88.0	-	590
187	178	88.7	-	600
193	184	90.2	-	620
200	190	91.5	-	640
205	195	92.5	-	660
208	198	93.2	-	670
212	291	93.7	-	680
222	211	95.4	-	710
225	214	96.0	-	720
228	217	96.4	-	730
233	222	97.2	-	750
236	225	-	19.2	760
243	231	-	21.0	780
250	238	-	22.2	800
255	242	-	23.1	820
258	245	-	23.7	830
265	252	-	24.8	850
272	258	-	25.8	870
275	261	-	26.4	880
280	266	-	27.1	900
287	273	-	28.0	920
293	278	-	28.8	940
295	280	-	29.7	950
302	287	-	30.0	970
308	293	-	30.8	990
314	299	-	31.5	1010
323	307	-	32.5	1040
336	319	-	33.9	1080
345	328	-	34.9	1110
355	338	-	36.0	1140

Vickers hardness	Brinell hardness 2)	Rockwell hardness 3)		Tensile strength
HV 10	HB 30	HRB	HRC	σB N/mm2
364	346	-	37.1	1170
373	355	-	38.1	1200
383	364	-	39.1	1230
391	372	-	39.9	1260
400	380	-	40.8	1290
410	390	-	41.8	1320
420	399	-	42.7	1350
429	408	-	43.4	1380
437	415	-	44.2	1410
443	421	-	44.7	1430
452	430	-	45.4	1460
455	-	-	45.7	1470
464	-	-	46.4	1500
473	-	-	47.1	1530
481	-	-	47.8	1560
489	-	-	48.3	1590
500	-	-	49.1	1630
509	-	-	49.7	1660
520	-	-	50.5	1700
528	-	-	51.0	1730
536	-	-	51.4	1760
547	-	-	52.1	1800
556	-	-	52.7	1830
567	-	-	53.4	1870
575	-	-	53.9	1900
586	-	-	54.4	1940
596	-	-	55.0	1980
607	-	-	55.6	2020
615	-	-	56.0	2050
629	-	-	56.7	2100
639	-	-	57.2	2140
650	-	-	57.8	2180
670	-	-	58.0	-
680	-	-	58.5	-
690	-	-	59.0	-
700	-	-	59.5	-
720	-	-	60.4	-
740	-	-	61.2	-
760	-	-	62.0	-
780	-	-	62.8	-
800	-	-	63.6	-
820	-	-	64.3	-
840	-	-	65.0	-
860	-	-	65.7	-
880	-	-	66.3	-
900	-	-	66.9	-
920	-	-	67.5	-
940	-	-	68.0	-

1) All hardness values are determined using different hardness tests for different materials and are hence only approximately comparable; to DIN 50150.
2) Calculation based on: HD = 0.95×HV.
3) Rockwell hardnesses shown as a decimal value are only to be used for interpolation and the end result rounded up or down to a whole number.

Comparison table spanner size (A) / thread of Torx® and Torx Plus® screws

The dimension A is the same for Torx® (designation T or TX) and Torx Plus® (designation IP).

Torx internal drive

Designation	A mm	metric screws
TX 5	1.42	- M 1.8
TX 6	1.67	M 2
TX 7	1.99	M 2
TX 8	2.31	M 2.5
TX 9	2.50	M 3
TX 10	2.74	M 3 - M 3.5
TX 15	3.27	M 3.5 - M 4
TX 20	3.86	M 4 - M5

Designation	A mm	metric screws
TX 25	4.43	M 4.5 - M5
TX 27	4.99	M 4.5 - M5 - M6
TX 30	5.52	M 6 - M 7
TX 40	6.65	M 7 - M 8
TX 45	7.82	M 8 - M 10
TX 50	8.83	M 10
TX 55	11.22	M 12
TX 60	13.25	M 14

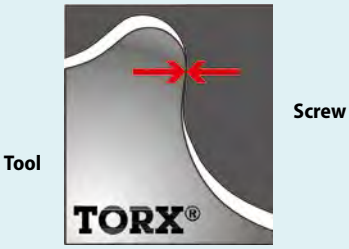


Torx external drive

Designation	A mm	metric screws	Grub screws
E 4	3.86	M 3	M 5
E 5	4.75	M 4	M 6
E 6	5.74	M 4; M 5	M 7
E 7	6.20	-	M 8
E 8	7.52	M 5; M 6	M 10
E 10	9.42	M 6; M 8	M 12
E 12	11.70	M 8; M 10	M 14
E 14	12.90	M 10; M 12	M 16
E 16	14.71	-	M 20
E 18	16.64	M 12; M 14	-
E 20	18.41	M 14; M 16	M 24

Torx®/ Torx Plus®

Torx Plus® is a further development of the Torx® profile.
The larger contact surfaces of Torx Plus® tools and the Torx Plus® screw as well as the improved angle of drive force enable higher torques and extend the working life of the tool and screw.
Torx Plus® tools cannot be used on Torx® screws.





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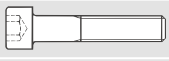
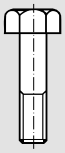
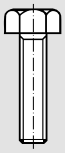
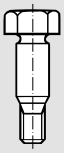
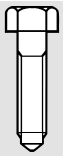
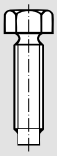
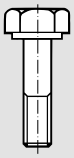
Conversion table inches to millimetres

inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
1/16	1.588	1/8	3.175	7/32	5.556	3/8	9.525	9/16	14.288	7/8	22.225
5/64	1.984	9/64	3.572	1/4	6.350	7/16	11.113	5/8	15.875	1	25.400
3/32	2.381	5/32	3.969	9/32	7.144	1/2	12.700	3/4	19.050		

Width across flats of hexagon socket screws

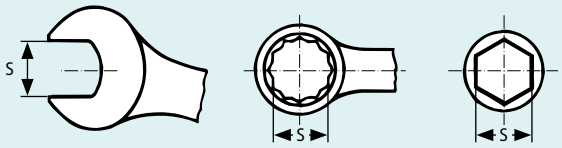
Drive size ⬣ mm	0.7	0.9	1.3	1.5	2	2.5	3	4	5	6	7	8	10	12	14	17	19	22	24	27	32	36
 DIN EN ISO 4762	-	-	M 1.4	M 1.6 M 2	M 2.5	M 3	M 4	M 5	M 6	M 8	-	M 10	M 12	M 14	M 16 M 18	M 20 M 22	M 24 M 27	M 30	M 33	M 36	M 42	M 48
 DIN 6912 (with pilot pin)	-	-	-	-	-	-	M 4	M 5	M 6	M 8	-	M 10	M 12	M 14	M 16 M 18	M 20	-	-	-	-	-	-
 DIN 7984	-	-	-	-	M 3	M 4	M 5	M 6	M 8	-	M 10	M 12	M 14	M 16 M 18	M 20 M 22	M 24	-	-	-	-	-	-
 DIN EN ISO 10642	-	-	-	-	M 3	M 4	M 5	M 6	M 8	M 10	-	M 12	M 14 M 16	M 18 M 20	M 22 M 24	-	-	-	-	-	-	-
 DIN EN ISO 4026 / 4029																						
 DIN EN ISO 4027																						
 DIN EN ISO 4028	M 1.4 M 1.6 M 1.8	M 2	M 2.5	M 3	M 4	M 5	M 6	M 8	M 10	M 12 M 14	-	M 16	M 18 M 20	M 22 M 24	-	-	-	-	-	-	-	-

Width across flats of screws and nuts

Standard range			With small hexagon		With large hexagon		Wood screws	
 DIN EN ISO 4016 4014 8765	 DIN EN ISO 4018 4017 8676	 DIN 609 610 7968	 DIN 561	 DIN 564	 DIN EN 14399		 DIN 571	
 DIN EN ISO 24036 4034 4032 10513 10512 10511	 DIN 917 1587 986	 DIN 935			 DIN EN 14399			
Threads	⬣ mm	Threads	⬣ mm		Threads	⬣ mm	∅	⬣ mm
M 1.6	3.2							
M 2	4							
M 2.5	5							
M 3	5.5							
M 4	7						**4**	7
M 5	8						**5**	8
M 6	10	**M 6**	8				**6**	10
M 8	13	**M 8**	10				**8**	13
M 10	16 (17)	**M 10**	13				**10**	17
M 12	18 (19)	**M 12**	17		**M 12**	22	**12**	19
M 14	21 (22)							
M 16	24	**M 16**	19		**M 16**	27	**16**	24
M 18	27							
M 20	30	**M 20**	24		**M 20**	32	**20**	30
M 22	34 (32)				**M 22**	36		
M 24	36	**M 24**	30		**M 24**	41		
M 27	41				**M 27**	46		
M 30	46	**M 30**	36		**M 30**	50		
M 33	50							
M 36	55	**M 36**	46		**M 36**	60		
M 39	60							
M 42	65	**M 42**	55					
M 45	70							
M 48	75	**M 48**	65					
M 52	80							

Tolerances for width across flats

Extract from DIN ISO 691.



Width across flats in mm S			Width across flats in mm S			Width across flats in mm S		
Nominal dimension	minimum	maximum	Nominal dimension	minimum	maximum	Nominal dimension	minimum	maximum
3.2*	3.22	3.28	**17***	17.05	17.30	**46***	46.10	46.60
3.5	3.52	3.60	**18***	18.05	18.30	**50***	50.10	50.60
4*	4.02	4.12	**19***	19.06	19.36	**55***	55.12	55.72
4.5	4.52	4.62	**20***	20.06	20.36	**60***	60.12	60.72
5*	5.02	5.12	**21***	21.06	21.36	**65***	65.12	65.72
5.5*	5.52	5.62	**22***	22.06	22.36	**70***	70.12	70.72
6*	6.03	6.15	**23***	23.06	23.36	**75***	75.15	75.85
7*	7.03	7.15	**24***	24.06	24.36	**80***	80.15	80.85
8*	8.03	8.15	**25***	25.06	25.36	**85***	85.15	85.85
9*	9.03	9.15	**26***	26.08	26.48	**90***	90.15	90.85
10*	10.04	10.19	**27***	27.08	27.48	**95***	95.15	95.85
11*	11.04	11.19	**28***	28.08	28.48	**100***	100.15	100.85
12*	12.04	12.24	**30***	30.08	30.48	**105***	105.20	106.00
13*	13.04	13.24	**32***	32.08	32.48	**110***	110.20	111.00
14*	14.05	14.27	**34***	34.10	34.60	**115***	115.20	116.00
15*	15.05	15.27	**36***	36.10	36.60	**120***	120.20	121.00
16*	16.05	16.27	**41***	41.10	41.60			

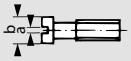
The widths marked * comply with International Standards.

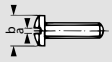
Table of screw slot sizes / screwdriver blades DIN 5264 / ISO 2380-2

1. Threaded screws

Manual screwdrivers



Size		M 1.2	M 1.4	M 1.6	M 1.8	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10
DIN EN ISO 1207 	a)	0.3	0.3	0.4	0.4	0.5	0.6	0.8	1	1.2	1.2	1.6	2	2.5
	b)	2.3	2.6	3	3.4	3.8	4.5	5.5	6	7	8.5	10	13	16
Screwdriver tip	mm	2×0.3		2.5×0.4		3×0.5 (3.5×0.5)	3.5×0.6 (4×0.6)	4×0.8 (5.5×0.8)	5.5×1	6.5×1.2 (8×1.2)	8×1.2	10×1.6	12×2	14×2.5

Size		M 1.2	M 1.4	M 1.6	M 1.8	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10
DIN EN ISO 1580 	a)	-	-	-	-	-	-	0.8	1	1.2	1.2	1.6	2	2.5
	b)	-	-	-	-	-	-	6	7	8	10	12	16	20
Screwdriver tip	mm	-	-	-	-	-	-	4×0.8 (5.5×0.8)	5.5×1 (6.5×1)	8×1.2		10×1.6	12×2	14×2.5

Size		M 1.2	M 1.4	M 1.6	M 1.8	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10
DIN EN ISO 2009 DIN EN ISO 2010 	a)	0.3	0.3	0.4	0.4	0.5	0.6	0.8	0.8	1	1.2	1.6	2	2.5
	b)	2.3	2.6	3	3.4	3.8	4.7	5.6	6.5	7.5	9.2	11	14.5	18
Screwdriver tip	mm	2×0.3		2.5×0.4		3×0.5 (3.5×0.5)	3.5×0.6 (4×0.6)	4×0.8 (5.5×0.8)		5.5×1	8×1.2	10×1.6	12×2	14×2.5

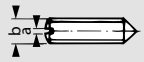
2. Sheet metal screws

Size	Ø mm	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
DIN EN ISO 1481 	a)	0.6	0.8	1	1	1.2	1.2	1.6	1.6
	b)	4.2	5.6	6.9	7.5	8.2	9.5	10.8	12.5
Screwdriver tip	mm	3.5×0.6 (4×0.6)	4×0.8 (5.5×0.8)	5.5×1 (6.5×1)		8×1.2		10×1.6	

Size	Ø mm	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
DIN EN ISO 1482 	a)	0.5	0.8	1	1	1.2	1.2	1.6	1.6
	b)	4.3	5.5	7.3	7.5	8.4	9.5	10.8	12.4
Screwdriver tip	mm	3.5×0.5 (3.5×0.5)	4×0.8 (5.5×0.8)	5.5×1 (6.5×1)		6.5×1.2 (8×1.2)		10×1.6	

Size	Ø mm	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
DIN EN ISO 1483 	a)	0.5	0.8	1	1	1.2	1.2	1.6	1.6
	b)	4.3	5.5	7.3	7.5	8.2	9.5	10.8	12.4
Screwdriver tip	mm	3.5×0.5 (3.5×0.5)	4×0.8 (5.5×0.8)	5.5×1 (6.5×1)		6.5×1.2 (8×1.2)		10×1.6	

3. Grub screws

Size		M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10	M 12
ISO 7435, DIN EN ISO 2342 	a)	0.4	0.4	0.4	0.6	0.8	1	1.2	1.6	2
	b)	2.5	3	3.5	4	5	6	8	10	12
Screwdriver tip	mm	2×0.4		2.5×0.4	3×0.6	4×0.8	5×1.0	6.5×1.2	8×1.6	

Blade widths shown in brackets ( ) meet the VSM standard.
The 45° chamfer on the screwdriver tip allows wider blades to be used on countersunk screws and raised head screws.

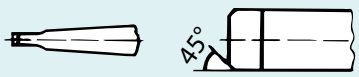
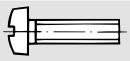
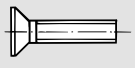
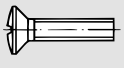


Table of cross-head screw slots / screwdriver blades to DIN ISO 8764

1. Threaded screws



Size	M 1.6	M 1.8	M 2	M 2.5	M 3	M 3.5	M 4	M 5	M 6	M 8	M 10
DIN EN ISO 7045 	0			1			2		3		4
	Size designation for cross-head slots										
DIN EN ISO 7046  DIN EN ISO 7047 	0			1			2		3		4
	Size designation for cross-head slots										

2. Sheet metal screws

Size	Ø mm	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
DIN EN ISO 7049  DIN EN ISO 7050  DIN EN ISO 7051 	1		2				3				
	Size designation for cross-head slots										

3. Wood screws

Size	Ø mm	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8
DIN 7996  DIN 7997  DIN 7995 	0	1			2				3		4
	Size designation for cross-head slots										

Clamping forces and torques

For metric screws.

Indicative coefficient of friction of thread µ (minimum values).

Screw thread / Nut thread				Steel				
				blackened or Zn phosphated				
				pressed rolled	turned cut	ground	ground 6 µ	galvanized 6 µ
Steel	rolled		slightly oiled	0.14	0.10	0.16	0.10	0.10
	ground			0.16	0.10	0.16	0.10	0.10
	rolled ground	Zn phosphate		0.14		0.10		
	turned ground			0.10				
	turned ground			0.10		0.10	0.10	0.10
	cadmium plated	µ					0.14	
	galvanised							0.10
	cadmium plated	6	dry	0.10		0.10	0.14	
	galvanised			0.10		0.10		0.14

Indicative coefficient of friction under head µ (minimum values).

Screw head or nut / Workpiece surface				Steel				
				blackened or Zn phosphated				
				extruded	turned	ground	cadmium plated 6 µ	galvanized 6 µ
Steel	planed milled turned		slightly oiled	0.10		0.10	0.10	0.10
	planed milled turned	Zn phosphate		0.10				
	ground			0.14		0.10		
	ground			0.16	0.10	0.16	0.10	0.10
	cadmium plated	µ		0.10	0.10	0.10	0.14	
	galvanised			0.10	0.10	0.10		0.16
	cadmium plated	6	dry	0.10		0.10	0.16	
	galvanised			0.10		0.10		
GG	planed milled turned		slightly oiled	0.10		0.10	0.10	0.10
GTS	ground			0.16	0.10	0.16	0.10	0.10

Clamping forces and clamping torques

Clamping forces Fsp and clamping torques Msp for screws with metric coarse pitch threads to **DIN 13** , and head contact dimensions **to DIN 6912, DIN 7984, DIN 7990, DIN EN ISO 4762, DIN EN ISO 4014, DIN EN ISO 24032.**

The table values Fsp and Msp are based on the SI unit N (Newton).

1 N = 0.102 kP, 1 Ncm = 0.102 kPcm,

1 Nm = 0.102 kPm, 1 kp = 9.81 N,

1 kPcm = 9.81 cNm, 1 kPm = 9.81 Nm.

The clamping forces Fsp shown in the left-hand table generate a screw extension 90% of the elastic limit $\sigma_{0.2}$ **(DIN 267 sheet. 3)** by means of the comparative tension σ_{red1} in conjunction with the relevant thread friction factor µ. The clamping force table shows which screw size and tensile grade is required to achieve the specified assembly force F_M ($Fsp \geq F_M$).

The clamping torques Msp are calculated from the clamping forces Fsp, assuming $\mu = \mu K = \mu_{tot1}$.

The clamping torque Msp required to achieve 90% of the elastic limit of a screw of given dimensions and grade is found in the right-hand table, depending on the under-head coefficient of friction (μ_K), which is taken to be the same as the thread coefficient of friction.

The nominal torque used in practice should be the clamping torque Msp value shown in the table less half the spread of the intended torque wrench.

Coefficient of friction of thread µ	Clamping force Fsp (N)				Threads	Under head coefficient of friction μ_K	Clamping torque Msp (cNm)			
	6.9	8.8	10.9	12.9			6.9	8.8	10.9	12.9
0.10	475	565	795	955		0.10	12.5	14.5	21	25
0.14	440	520	730	875	BM 1.6	0.14	15	18	25	30
0.16	420	495	700	840		0.16	16	19	27	32
0.10	560	665	935	1120		0.10	15.5	18.5	26	31
0.14	520	610	860	1030	M 1.7	0.14	19	22	31	38
0.16	495	585	825	990		0.16	20	24	34	40
0.10	790	940	1320	1590		0.10	26	30	43	51
0.14	730	865	1210	1460	M 2	0.14	31	37	52	62
0.16	700	825	1160	1400		0.16	34	40	56	67
0.10	1140	1350	1900	2280		0.10	41	49	69	83
0.14	1050	1250	1750	2100	M 2.3	0.14	51	60	84	101
0.16	1010	1190	1680	2020		0.16	54	65	91	109
0.10	1320	1570	2210	2650		0.10	52	62	88	105
0.14	1220	1450	2030	2440	M 2.5	0.14	64	76	107	128
0.16	1170	1380	1950	2340		0.16	69	82	115	138
0.10	1460	1730	2440	2930		0.10	59	70	99	119
0.14	1350	1600	2250	2700	M 2.6	0.14	73	86	121	145
0.16	1290	1530	2150	2580		0.16	78	93	130	156
0.10	2020	2390	3370	4040		0.10	92	109	154	185
0.14	1860	2210	3110	3730	M 3	0.14	113	134	189	225
0.16	1790	2120	2980	3580		0.16	122	145	205	242
0.10	2710	3210	4520	5420		0.10	142	168	235	285
0.14	2500	2960	4170	5000	M 3.5	0.14	173	205	290	345
0.16	2400	2840	4000	4790		0.16	187	220	310	375
0.10	3500	4150	5830	7000		0.10	210	250	350	425
0.14	3230	3830	5380	6460	M 4	0.14	260	305	430	515
0.16	3100	3670	5160	6160		0.16	280	330	465	555
0.10	5720	6780	9540	11450		0.10	415	490	690	830
0.14	5280	6260	8810	10550	M 5	0.14	510	605	850	1020
0.16	5070	6010	8450	10150		0.16	550	650	915	1100
							Clamping torques Msp (Nm)			
0.10	8080	9570	13450	16150		0.10	7.1	8.5	12	14.5
0.14	7450	8830	12400	14900	M 6	0.14	8.7	10.5	14.5	17.5
0.16	7150	8470	11900	14300		0.16	9.4	11	15.5	19
0.10	11800	14000	19650	23600		0.10	11.5	14	19.5	23
0.14	10900	12950	18200	21800	M 7	0.14	14.5	17	24	29
0.16	10450	12400	17450	20900		0.16	15.5	18.5	26	31
0.10	14800	17550	24700	29600		0.10	17	20	29	34
0.14	13700	16200	22800	27400	M 8	0.14	21	25	35	42
0.16	13150	15550	21900	26300		0.16	23	27	38	46
0.10	23600	27900	39300	47200		0.10	34	41	57	69
0.14	21800	25800	36300	43600	M 10	0.14	42	50	71	85
0.16	20900	24800	34900	41800		0.16	46	54	76	92
0.10	34400	40700	57300	68700		0.10	59	70	99	119
0.14	31800	37700	53000	63500	M 12	0.14	73	87	122	147
0.16	30500	36100	50800	61000		0.16	79	94	132	159
0.10	47200	55900	78600	94300		0.10	94	112	157	189
0.14	43600	51700	72700	87300	M 14	0.14	117	138	195	235
0.16	41900	49600	69800	83800		0.16	126	150	210	250
0.10	64800	76800	108000	129500		0.10	144	170	240	285
0.14	60100	71200	100000	120000	M 16	0.14	179	210	300	360
0.16	57700	68400	96100	115500		0.16	194	230	325	385
0.10	78900	93500	131500	157500		0.10	199	235	330	395
0.14	73000	86500	121500	146000	M 18	0.14	245	290	410	490
0.16	70100	83000	117000	140000		0.16	265	315	445	530
0.10	101500	120000	169000	202500		0.10	280	330	465	560
0.14	93900	111000	156500	187500	M 20	0.14	350	410	580	695
0.16	90100	107000	150000	180500		0.16	375	445	625	755
0.10	126500	150000	211000	253000		0.10	375	445	625	755
0.14	117500	139000	195500	235000	M 22	0.14	470	555	785	940
0.16	112500	133500	188000	225000		0.16	510	605	850	1020
0.10	146000	173000	243000	292000		0.10	480	570	800	965
0.14	135000	160000	225000	270000	M 24	0.14	560	710	1000	1200
0.16	130000	154000	216000	260000		0.16	650	770	1080	1300
0.10	192000	227000	320000	384000		0.10	710	840	1180	1420
0.14	178000	211000	297000	356000	M 27	0.14	890	1050	1480	1780
0.16	171000	203000	285000	342000		0.16	965	1140	1610	1930
0.10	233000	276000	385000	466000		0.10	965	1140	1610	1930
0.14	216000	256000	361000	433000	M 30	0.14	1200	1430	2010	2410
0.16	208000	246000	346000	416000		0.16	1310	1550	2180	2610
0.10	291000	34400	484000	581000		0.10	1300	1540	2170	2600
0.14	270000	320000	450000	539000	M 33	0.14	1630	1940	2720	3270
0.16	259000	307000	432000	518000		0.16	1770	2100	2950	3540
0.10	341000	404000	568000	682000		0.10	1680	1990	2790	3350
0.14	216000	375000	527000	633000	M 36	0.14	2100	2490	3500	4200
0.16	304000	360000	507000	608000		0.16	2300	2700	3790	4550
0.10	410000	485000	663000	819000		0.10	2170	2570	3610	4330
0.14	380000	451000	634000	761000	M 39	0.14	2720	3220	4540	5440
0.16	366000	433000	610000	731000		0.16	2960	3500	4930	5910

Calculation of table values and instructions for use according to VDI 2230.



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Information on deliveries

Electrical equipment (ElectroG)

Old equipment must be disposed of separately to household waste. Any (rechargeable) batteries and lamps (bulbs) that are not fixed in place must be removed and disposed of separately in an environmentally friendly manner. As a retailer, we are legally obligated to take back old equipment free of charge. It can be returned to us when it is not being used any more. It will then be disposed of properly or recycled in line with the legal regulations.

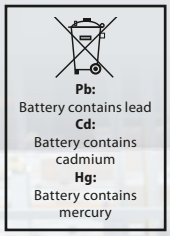
The icon with the bin crossed out indicates that the device must not be disposed of with household waste once it reaches the end of its service life, and instead must be disposed of at an approved collection or disposal point.

The end user themselves is responsible for deleting any personal data that may be on the old equipment intended for disposal.

We are registered with the German electronic waste recycling register "Stiftung **E**lektro-**A**ltgeräte **R**egister" (**EAR**) under registration number DE35368485.

Batteries and rechargeable batteries (BattG)

End users are legally obligated to return old (rechargeable) batteries. (Rechargeable) batteries can be returned to us free of charge after reaching the end of their service life. This ensures that you comply with your legal obligations and help to protect the environment. We will recycle the materials in an environmentally responsible manner. In order to prevent short circuits, mask off any exposed battery poles before returning the products.



The "Collect batteries separately" icon indicates that batteries must be disposed of at special recycling points rather than with general household waste. Batteries containing substances like mercury (Hg), cadmium (Cd) or lead (Pb) are also marked with a chemical identifier.

Like all other batteries, lithium batteries must never be disposed of with general rubbish.

German Packaging Act (VerpackG)

The German Packaging Act (VerpackG) obligates us to participate in a dual system for waste recycling and disposal, which is why we take part in the "Der Grüne Punkt" (The Green Dot) system. We are registered in the LUCID packaging register under number DE3394933750264.

According to the German Packaging Act (VerpackG), we are obligated to take back transport packaging free of charge pursuant to Art. 15 Paragraph 1 Sentence 1. This must be done at the location where it is actually handed over or in its immediate vicinity. If this cannot be done, you are able to send the packaging back to us.

We restrict the volume of packaging to whatever is really necessary and we promote re-usable materials.

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For some products, we are prevented by law from offering express delivery (by air freight) outside Germany. These products are therefore indicated by a special note in the catalogue. Certain products cannot currently be delivered to some countries.



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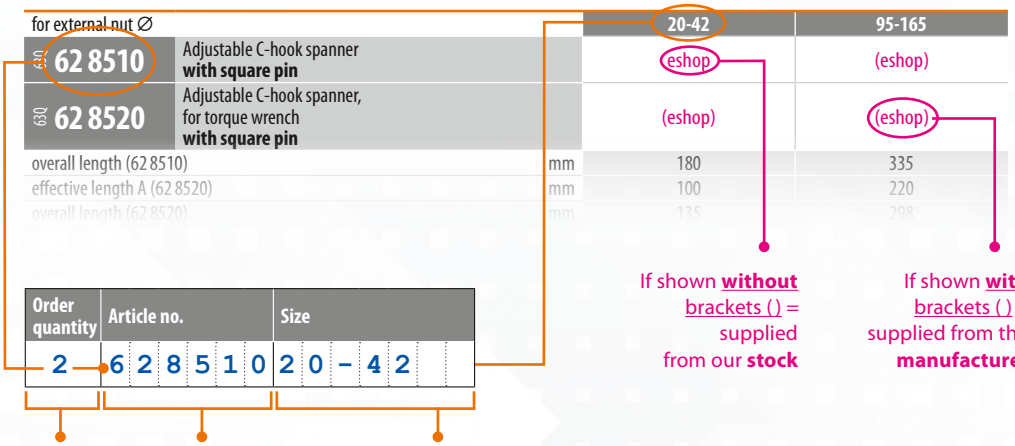

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